

aim for perfection? why not?





►►► by the use of materials – particularly metals and polymers – and also the energy used in making parts. This is building on the knowledge gained during the development of Joy, G64 and G68 chairs, where we had built up a strong knowledge bank, especially in the area of material specification and utilisation.

‘Fiona Roper, our Environmental Manager and Gareth Banks, Design Manager, attended a seminar about the Cradle to Cradle protocol given by Michael Braungart (yes, that man again! Ed) of EPEA. This is a unique approach where Michael and his team of researchers and scientists look at all the chemical ingredients in the materials used – everything is looked at to consider whether it is a biological or technical nutrient.

The theory is that we put biological nutrients back in the soil and we re-use technical nutrients – recycling them time and time again. Through the existing systems for recycling, polymers can easily lose their value through the process, so you have to use a high percentage of virgin material every time you manufacture a new component. Cradle to Cradle means that at the end of a product’s life you take the materials and re-use them for a similar quality application. There’s no degradation of the product.

‘EPEA agreed to collaborate on this project in a response to what they saw as Orangebox’s agility and integrity. ‘What we’ve done is a first in the UK. We’re the first British furniture manufacturer to attempt to produce a task chair designed to the Cradle to Cradle protocol. We want to develop products so that the polymers can retain their value at the end of the chair’s useful life, bringing the products back and re-using the materials to make an equally good product. For example, something as simple as changing the colour of a plastic can influence its ability to be recycled. So the formulation of the polymers has to be carefully considered for each application.’

Mino confirms the point that this is a total, not piecemeal, approach. ‘If we’re going to do this with authenticity we have to change our company culture. If we are true to our word we have to change our policy on transport, energy, waste, everything – otherwise it means nothing. At the same time we acknowledge that you simply can’t do everything at once.’

Design Director Gerry Taylor underlines the size of the challenge. ‘We’re going for the highest standard we can, the worldwide benchmark. You either do integrity or you don’t – we think this way is the best way of doing it correctly. Things like recycling centres have to catch up; all you can do is

align yourself correctly and head in the right direction.

‘We’re also working with the Government funded Ecodesign Centre (EDC), specialists who are advising industry how to become greener. They’re really well informed and are especially helpful in comparing different industries and processes. EPEA has some 25 engineers and scientists in Hamburg, so combined with EDC we get good knowledge of materials and processes. For example, one of the key considerations throughout the Cradle to Cradle process was encouraging sustainability without a functioning infrastructure for the End of Life management of products. Working with EDC we initiated a program of research to investigate the potential for an End of Life system to support any Cradle to Cradle activity in the company. These activities are still ongoing.

EDC have been working with a number of companies in Wales like us; facilitating, guiding and training to support the development of more environmentally friendly products and services and embedding eco-design in core business strategies. EDC also plays a key role in influencing policy development and working with design educators to mainstream eco-design in Wales (see www.edcw.org). The eco-design support package we worked through has been about discussing the challenges, taking incremental steps towards better practices and enhancing our communication. In particular EDC’s input into our thinking about potential End of Life strategies has been extremely helpful.’

▶▶▶▶▶ ‘This makes absolute sense, commercially and morally,’ agrees Mino. ‘We’re cutting our teeth on the development of Ara. The biggest challenge is changing mindsets to embrace the vision and concept of Cradle to Cradle.’

‘Killer task chairs – that’s our key phrase!’ says Gerry. ‘Our aim is to have the killer task chair for each market segment – and you can’t be more ambitious than that. We have a portfolio ranging from Joy to premium products like Spina, so in developing Ara we didn’t look at the product in isolation.’

‘Our objective is for a product to punch above its weight, to have added value to outstrip its competitors,’ explains Mino. ‘It’s got to be a no-brainer for the customer. We wanted Ara to be a mid-mid market sector product – higher than Joy, lower than G64. It was challenging!’

‘The price position guides everything we spend on components,’ says Gerry. ‘Every penny is measured – save money here to spend it there – based on a firm but malleable schedule. There are archetypes in furniture, people get confidence from each other. The three archetypes in office seating are upholstery, mesh and plastic. We decided that Ara was going to look at mesh in a new way. Mind you, at first we thought we would re-invent upholstery! We spent a year on the development of a slimline sealed air cell in a chair back – very comfortable it was too!’

‘But we couldn’t do it for the price – air is cheap but the cell to contain it was too expensive,’ notes Mino with a smile.

‘We moved on from that typology and were struggling with plastics for technical and cost reasons,’ explains Gerry. ‘What we wanted was something that was technically advanced but simple. Think of a modern mobile phone – a well designed model is visually simple and intuitive to use. This made our use of materials critical. The flexible back membrane material is a thermoplastic elastomer; we had envisaged that it’s dynamic performance characteristics would give the chair a unique comfort value – values we could pull through.’

‘We initially invested in prototype tooling to prove this principle,’ continues Luke. ‘We played with different materials and section thicknesses to get the right levels of suspension and displacement.’

Elastomers range from very rigid to highly flexible so we had to tune these parameters to achieve the feel we wanted. Then we developed a simple but effective way to join the flexible membrane to the structural back frame. This was our biggest technical challenge. The key driver was a clean aesthetic – no visible screws, if possible no screws, and no glue either as bonding two parts together would have been undesirable from an environmental perspective.’

‘We’re juggling three balls: price, design values and green values. That’s a lot of balls to juggle!’ adds Gerry. ‘We haven’t done it in a hurry, spending time on each element to ensure we add value. Take for example the beautiful aluminium wishbone which connects to the plastic frame – the values of aluminium and plastic are very different, but if you do it simply, it works.’

‘You can’t do a ‘nearly’ chair any more. The market is very discerning and the competition is strong. You simply can’t afford to get it wrong,’ comments Mino.

‘We have a reputation developed over many years for producing good ergonomic chairs. We know our strengths and we know

our limitations. But we also know we have a responsibility to use the resources available to us intelligently. We put a lot of thinking into the design so that Ara can be completely stripped down, taken back by us and recycled at the end of its first life – a product with a built in plan for the future. The last 18 months have seen a massive turnaround as we strive to achieve zero landfill. Four years ago we sent 457 waste skips to landfill – in the last year and a half we’ve reduced that figure from 365 to 65. It’s the last 65 which is challenging us now as we look at alternative uses for our waste product. This is also good business sense too – we used to pay to have our waste to be removed, now we have a revenue stream from others who use our recycled waste materials.

‘It’s a about a common sense approach with resource utilisation in mind, developing products and considering our end of life responsibility. What started as Project RD93 and then became Ara has taken the green agenda to the top of our business agenda. In fact our environmental agenda is our business agenda.’ ●

