

# GROW YOUR OWN

From fungus to furniture:

Sebastian Cox explains how he's combining tradition

with biotech futurism to create a homeware range out of mushrooms.

'It's very satisfying to email a customer and write,

Thank you for your order, your product is now growing,' he says...

Words Hugh Francis Anderson | Photographs Philip Sinden

It's a warm autumn day when I meet furniture designer and craftsman Sebastian Cox at his Thames-side studio in Greenwich. When I enter, I'm met by his warm smile and a firm handshake. Sawdust covers his suede boots, and his canvas jacket matches his mouse-brown hair. As founder of his eponymous design studio and workshop, Sebastian Cox's unique and often groundbreaking approach to crafting has garnered him a worldwide reputation. With a focus on sustainability and traditional crafts, alongside a staunch belief in sourcing British-born woods to work with, Cox has come to form the epitome of a modern British master craftsman. Yet it's not all traditional here: displayed for the first time at the London Design Festival earlier this year, Cox showcased a beautiful new collection of furniture made from mycelium (fungus), demonstrating the breadth of the new wave, bio-facture movement.

Behind the doors of the studio and workshops, six of Cox's craftsmen and women diligently work on various projects. Someone is turning a table leg, someone else is hand-finishing a dovetail joint – and from the kitchen I hear the familiar burr of a coffee grinder. 'I started the business in 2010,' says Cox, as he sniffs out the brewing coffee. 'The origins of the business started when I did an MA in sustainable design; I wanted to look at how we can better use resources, specifically wood, that grow here in the UK.' He hands me a mug of coffee and we continue through the workshop. 'We import 90 per cent of the wood





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here in the UK, yet we have acres of over-stood woodland that is not used and has very little commercial value,’ he asserts. ‘Certainly when I started the business, it felt like there was a big disconnect between the amount of wood we were using and the lack of traditional craft, so there was a great opportunity – especially for sustainable design, in terms of bringing together contemporary products that can use wood and the rich resource of craft that was associated with that. The business from its very origins has been an amalgamation of design and craft.’

Born and raised on a farm in the Kent countryside, Cox’s exposure to wood and traditional craft started at a young age. ‘My parents started a business when I was born where they restored medieval and historic properties, so I spent a lot of time as a child on building sites around carpenters, watching what they were doing,’ he says. ‘The smell of green oak, for example, is very resonant for me, and takes me back to being about three years old.’ It was only natural then that he went on to study furniture design and craftsmanship at the University of Lincoln, followed by a postgraduate degree in sustainable design. After selling 24 pieces made during his MA course at a design fair, Cox realised the commercial value in his work. ‘I sold my pieces to a shop in Paris, and I was suddenly in business,’ he says. ‘That was great because it was commercial verification for the thing that I had been academically talking about. I’ve always been quite open about how pro-business I am; about how business can be very good.’ And by the size of his studio, business is very good indeed.

As the tour continues, Cox takes me into another part

of the workshop, which houses his latest addition. ‘A great new part of the business is that we now have our own mill,’ he says. ‘In the last year or so, we’ve been able to go to a client’s house, mill their tree, and then make something for them with their own tree, which has been a really interesting process.’ Indeed, as with many emerging businesses nowadays, putting the human element back into the commercial is a vital part of development. ‘You’re right, and it’s also a very powerful sales tool and justifies the workshops being in London,’ he says. ‘Clients can come and meet us and see their work being created. We even had a customer fly over from New York to come and see their pieces. It’s not just about the object, it’s also about who made it.’ In this vein, Cox offers more than just sustainably sourced, beautifully crafted furniture.

Back in the studio, his wife Brogan sits at her desk, scrupulously running the back end of the business. At her feet, Willow, their snowy white Parson Russell terrier, watches us with intrigue as we enter, before bounding over to greet us. Here, numerous pieces from Cox’s Bayleaf collection adorn the space, demonstrating the level of skill at which he and his team operate. On the table before me lies an odd form; a mismatched collection of wood bound together with a nougat-like substance. I pick it up with intrigue. ‘That’s one of the first attempts using the fungus,’ says Cox. ‘I was playing around with a wattle and daub effect.’ This early example of Cox’s Mycelium project almost defies belief. ‘It all started about two years ago,’ he explains, ‘when I was coppicing in the woods at home, harvesting some hazel, and two branches of a tree



Top left: Cox at his Thames-side studio in Greenwich. His experiments with mycelium (right) came about from a chance discovery while coppicing



‘IT’S AN  
IRREVERSIBLE  
CHEMICAL REACTION,  
LIKE FRYING  
AN EGG’



Left: experiments at his homemade mycelium laboratory, situated on a mezzanine level at Cox’s studio, include lampshades that have effectively been ‘grown’ in vacuum-packed formers, using techniques he developed with Ninela Ivanova

were stuck together, which I found really interesting.’ He pulls out his phone and shows me the picture he took that day. ‘You can see this kind of welding, which is actually fungus. So I thought there could be something in this. I’ve always been against chucking wood in resin – effectively MDF. The thing that binds the wood together is always less pleasant than the wood. Hazel is a small, fast-growing timber; you couldn’t make a dining table from it, so I thought about making a type of MDF from it. When I saw the fungus, I thought that it could be the bonding agent.’

It was only a few days later that Cox heard about a ‘Friday Late’ event at the V&A in London on the subject of growing the future through bio-facture. ‘There were objects grown from cellulose, they’d made cheese from human sweat; it was weird but it was the brilliant idea of bio-facture, which was a word I’d never heard of. So I thought that my fungus bonding-agent idea wasn’t unique; there were others already looking into this field; designers looking to the natural world to grow things from.’

A simple idea quickly took root and Cox set about turning it into reality. ‘I started looking at mycelium (the vegetative part of a fungus), and realised I knew nothing about it, so I got in touch with the British Mycological Society. They introduced me to Ninela Ivanova, who was their outreach worker for the design industry and was using mycelium in a textiles application.’ Looking carefully into the structure of fungi, and its relationship to wood, Cox and Ivanova discovered the natural relationship between the two. ‘It’s a completely essential process of nature that stuff decomposes, and the way it decomposes is that the thread-like structure of the mycelium grows through wood and decomposes it.’ Through this process, they discovered that British hardwoods, such as oak and chestnut, have a natural defence against such fungi, yet lesser valued woods, which ordinarily have little use in traditional crafts, bound together well. ‘We discovered that there was a specific fungus called Horse Hoof, which bound birch and Goat Willow really well, so we then had a composite material. It took about a year of research to find out, because you have to set it up and leave it for six weeks to see what happens.’

Cox offers to show me around his homemade mycelium laboratory that sits on a mezzanine level within the workshop. In this cramped, cluttered space, he grows batch upon batch of mycelium to use in his ever-expanding range. I ask him about the process; from fungus to furniture. ‘We buy in the mycelium – there are actually commercial producers, mainly grown for medicinal purposes, who are certificated, so it makes it easier. Ours is grown on grain; it’s basically a bag of wheat that’s slightly rotten and covered in white mycelium. Once it’s inoculated, it becomes quite easy to then infuse the wood.’

Naturally, as a fungus, one imagines it to be hostile and

unstable. ‘The biggest issue with bio-facture is that you do need a sterile environment. So we chip the wood, we steam it to sterilise it, at which point it becomes this damp cold wood, which is absolutely ideal for rot. You have to make sure that the only thing that gets in there is the species of fungus that you want,’ he says. ‘We have a success rate of about 75 per cent.’ The mycelium-infused mulch then sits in storage boxes for six weeks before it can be taken out and put into a form. He shows me an example of a lampshade that he recently finished. ‘We put them into vacuum-packed formers in shapes we design, let it re-grow – which takes about two weeks – then we take it out and dry it in a kiln. Once you bake it, all the live bacteria die: it’s an irreversible chemical reaction, like frying an egg.’

What you’re left with is this oddly satisfying spongy mass, which can also be set against other pieces of wood to create a wide array of objects. ‘Some of our stools are infused with the seat and the legs, so the mycelium becomes the binding agent for the frame and legs,’ says Cox, pointing to a stool, ‘It’s incredibly strong, incredibly light, and has good insulative properties.’

Although in its infancy, the Mycelium project attests not only to the mind of Sebastian Cox, but to the possibilities of bio-facture. To hold a piece of furniture that is entirely biological is a rare occurrence in the 21st century, and offers another commercial element to the business. ‘It’s early days, but we are selling it. It’s very satisfying to email a customer and write, Thank you for your order, your product is now growing,’ he laughs.

So where does a project like this go now? ‘We’re going back to the drawing board, review the products and design new pieces,’ he says. ‘It’s great that it’s entirely compostable, so disposable items could be good to look at, as well as continuing the domestic range. It’s very exciting from a wood perspective, because if we could find a large-scale use for something like Goat Willow, it would be a lovely gap to plug. If you’re a forester and you need to fell an acre of ‘useless’ wood to reach the oak trees, it would be great if there was some commercial value for the stuff that’s in the way.’

As we stroll back to the studio, I ask Cox what it is about the project that he loves so much. ‘What excites me most about bio-facture is that if we turn biodiversity into a commodity, it’s a very good way of slowing or stopping this period of mass extinction that we’re in,’ he says. ‘Who knows if there’s not a fungus out there than can conduct electricity – that could be grown into cables? If those opportunities are there, it becomes an argument for saving biodiversity, so it’s a very exciting new area of manufacture and research. It’s all about meaning, I guess. I think that’s probably what William Morris would have said.’

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