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## RETAIL

# Built by robots: London is home to the world's first 3D-printed store

**LONDON** – A project of this scale has never been 3D printed with recycled plastic,' says Oliver Wayman, director of Bottletop. The sustainable accessories brand teamed up with Krause Architects and Ai Build for a London flagship with a difference: the Regent Street interior developed over time, 3D printed by robots.

Serving as a microcosm of the growing circular economy, the store is a blueprint for a responsible, zero-waste approach to construction. The project also reflects the brand values of Bottletop, whose bags are produced using recycled bottle-tops and ring-pulls from aluminium beverage cans. With nothing but filament made entirely from upcycled plastic waste (the equivalent of 60,000 plastic bottles), Kuka robots printed the retail interior. 'Using recycled plastic wasn't without its challenges,' says Wayman, 'in particular, maintaining the consistency of the plastic filament as it's being reworked.' The floor, meanwhile, is fashioned from 75 upcycled rubber tyres.

To demystify the production process, a robot was displayed in the window for the first four months. 'The public could see how the wall panels were being printed,' says Wayman. 'As it's a world first, we wanted people to feel like they were part of the process – and for Londoners who walk by regularly to see the store evolve organically.' He adds that 'live projects can be both educational and inspirational. If we were to just have the finished product on the walls and ceiling, there would be no way for the customer to understand

the complexities and intricacies of the work undertaken and the exciting future that we can create.'

The distinctive, sinuous design of the space has direct links to nature. 'We infused biomimicry into the design process to learn how we can improve our own production methods by emulating nature's evolutionary learning curve. There's something beautifully poetic about the way in which we are now looking back to nature to give us the answers to some of design's and construction's greatest challenges, having destroyed our natural environment for near on 200 years.'

The project may have generated hype, but was it *really* zero-waste? 'Every innovation must go through a process of trial and error to achieve quality and consistency,' says Wayman. 'We did produce some test panels, which we will reuse on a different project. We're now confident that we can develop close to zero-waste projects going forward.'

The three collaborators are already developing the method to suit other projects, such as hotels, restaurants, offices and event spaces. 'We're looking beyond our own stores to things like festivals, conferences and exhibition centres. There's a huge amount of waste generated by temporary events, and we have a responsibility to harness new technologies and creative thinking to better use our resources.' – BL

bottletop.org  
krausearchitects.com  
ai-build.com