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The UK Pavilion is by artist Wolfgang Buttress, and spectacularly fuses nature and technology to highlight a crisis in our food chain. Herbert Wright reports

There's bound to be a big buzz about the British Pavilion at Milan Expo 2015, the brainchild of artist Wolfgang Buttress. It's all about bees, a surprisingly suitable subject to tie in with the Expo's official theme of Feeding the Planet, Energy for Life. According to the British Beekeepers Association, upto a third of our food depends on bees as pollinators, and in Milan bee-energy monitored in a real UK hive will drive a multimedia experience in the pavilion's centrepiece, a virtual hive. There's an urgency here as well, reminding us of the fact that bee populations are plummeting, along with our food security.

Buttress, whose large, stop-and-think sculptures now grace four continents, admits that 'I'd never seen a beehive' before 'complete serendipity' brought research work by Dr Martin Bencsik at Nottingham Trent University to his attention. Bees communicate through movement in the hive, and Bencsik uses accelerometers to measure the vibrations that causes. He has identified the message that bees give shortly before they exit en masse to swarm, the stage when they are most vulnerable.

Data submitted by Bencsik's accelerometers will translate into sound and light within a 9-metre spherical void, embedded with LEDs. This is set within a 14m cuboid lattice – made of 30,000 nodes and 40 tonnes of aluminium – of hexagons that form Fibonacci spirals. The Hive is an extraordinary, dynamic sculptural structure, but it is only one element of the £6m British Pavilion, which occupies a rectangular plot of 20m x 100m.

At one end, 70m from the Hive and framed by gabion walls, a small orchard of British fruit trees prefaces the reception, across which is displayed a real time video feed of actual UK bees. Beyond this, like Alice entering the garden of roses, one steps into a 40m-long meadow planted with native British floral species, which should attract pollinators. It is irrigated by grey water from a canal, and bedded behind Corten steel banks at waist height beside the path that cuts through it. Buttress says the first 'idea was to be immersive: take the British landscape. Second, raise the height: be at the same height as the bee. A very simple metaphor'. Before you, the dynamic Hive looms. The path becomes a mini-hexagonal maze that references the dance of bees, then leads through an amphitheatre into an open piazza. Above this, the Hive is buzzing and pulsing with light through a clear ceiling.

Stairs beyond the Hive lead up to the 300 sq m terrace on the building at the end of the plot. The ground floor below has

an auditorium and event space. The terrace has trees, seating and a cafe, and a bridge back into the Hive. Cross it, and the experience of the Hive will be as close to the real thing as possible.

The meadow will be planted by April, a month before the Expo opens, while Hive construction is underway at Stage One, fabricator of recent Serpentine Pavilions and Heatherwick's Olympic Cauldron. Buttress drops by there once a week. 'I like being hands-on,' he says, adding that at his seven-strong Nottingham studio, 'I don't tell people to do anything that I can't do myself.' As for the virtual hive, Buttress says that 'it harks back to Paxton expositions', referencing the Crystal Palace of the first World Expo in 1851.

Is there a precedent for it in his own work? Buttress suggests Rise (2011) in Belfast – two concentric geodesic spheres reaching 37.5m high – clearly descended from Buckminster Fuller's Biosphere, the geodesic dome for the American pavilion at Montreal's Expo 67. Buttress comments how there was 'no distance between form and structure,' and like it, Rise and his Hive are 'large but delicate and strong at the same time, creating something out of nothing'. Then there's UNA (2013) in Canberra, a 4m-thick, solid-metal sphere perforated with 9,100 holes corresponding to all the visible stars. Like Hive, it was a scientific collaboration, this time with Australian astrophysicist Daniel Bayliss, which continues with a work at the John Hancock Tower, Chicago. Such projects deepen Buttress' distinct profile, but he says 'I don't want it to be like a brand.'

Inevitably, comparisons will be made between the Hive and Shanghai Expo 2010's world-wowling Seed Cathedral. 'It's one of the great things about this country that we look out of the box', says Buttress. There is the ghost of a box in the forms of both Heatherwick's splash of rods and the Buttress Hive, and both dissolve into the air above their Expo skylines. But the Hive's revelation of the spherical void, its lattice texture and not least the almost alien sound and light, make it very different. As for competition in Milan, Buttress has deliberately not looked much at other national pavilion designs, but he admits that 'the Chinese one looks madly impressive'.

The British Pavilion has a six-month stint at the Expo, then hopefully a legacy afterlife in the UK. Buttress says: 'It's got to look amazing. This isn't the Chelsea Flower Show.' Indeed, with its fusion of nature and technology and focus on a vital insect in crisis, this pavilion has a real sting.

1 – The UK pavilion's designer Wolfgang Buttress, who is based in Nottingham

2 – The pavilion's centrepiece is a virtual Hive, embedded with LEDs and set within a lattice structure

3 – The Hive is fronted by a 40m-long meadow of British plants

4 – The lattice structure has 30,000 nodes that will create a multimedia experience

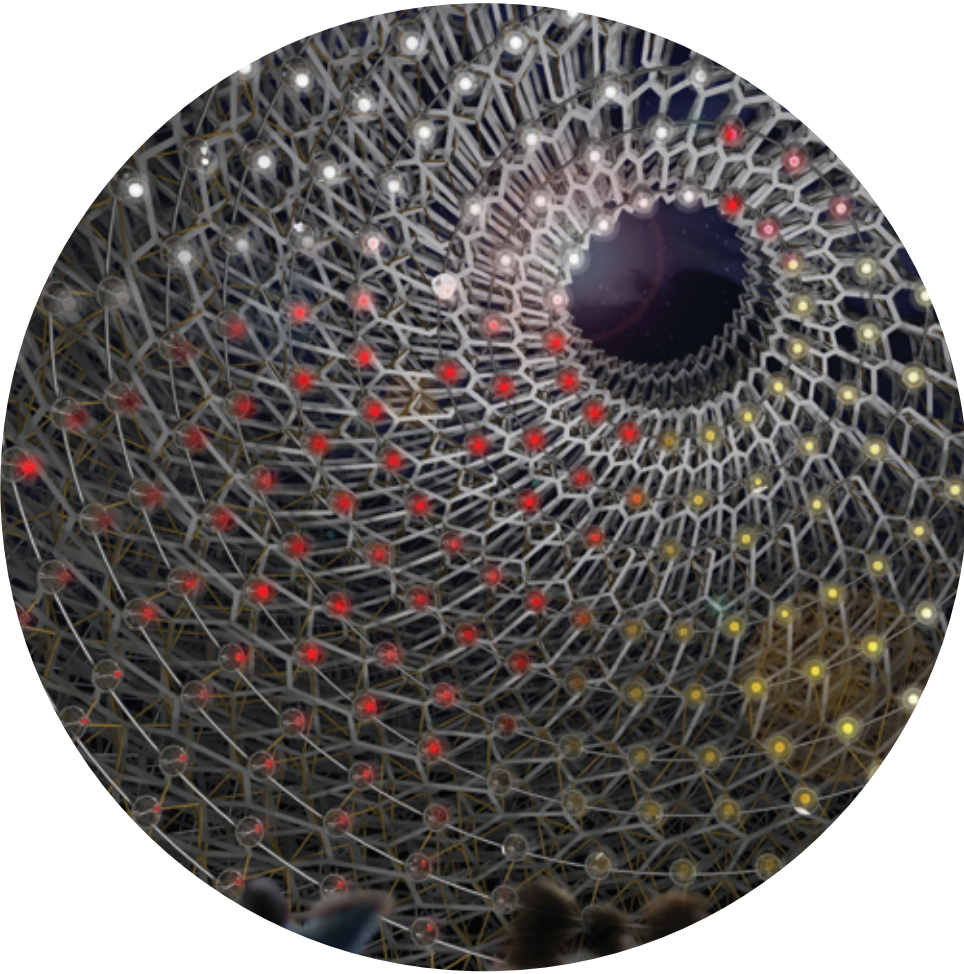
1 MELTON ORIGINAL PORTRAITS



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