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Nottingham-based artist, Wolfgang Buttress creates The Hive at Milan's Expo Pavilion through UK innovation and design

Photos courtesy of Jeff Eden, RBG Kew



Inspired by the deep visceral hum of bees, Nottingham-based artist, Wolfgang Buttress, together with engineer Tristan Simmonds, designed the UK Pavilion debuting 'The Hive', which has received multiple awards since the giant beehive was unveiled at Milan Expo 2015, in Italy. The main sculptural installation of the pavilion now stands as a centrepiece of a wildflower meadow to reconnect with visitors at the spectacular landscape of Kew at London's Royal Botanic Gardens.

The Hive is a 17-metre tall, 40-tonne installation that is firmly supported by the construction of about 170,000 aluminium bars, forming the orbicular interior. This new approach to design showcases British creativity, innovation and appreciation for aesthetics to portray art in a captivating way. The immersive art installation, too, probes the core of sustainable issues and energy use for life.

As The Hive was relocated from Milan Expo to Kew

and opened its door to visitors during summer, it is no surprise that London's Kew on Royal Botanic Gardens became a star attraction even for overseas travellers. The surrounding greens were undulating and huge while the impressive sculptural installation emphasised on sustainability, technology and food, convened under the theme "Feeding the Planet, Energy for Life".

Beyond eco-friendly matters, The Hive explores pertinent issues of the honeybee's intimate relationships with plants and what else could also possibly form life inside a beehive?

Commenting on the successful realisation of Wolfgang Buttress' design for the UK Pavilion, Buttress wanted to express in a simple metaphor to stress on the importance of what pollinators do. "Pollinators are responsible for 30 per cent of the food we eat and the bee is one of the most important of the pollinators." He continued, "The audio systems designed by Hoare Lea was crucial in revealing this metaphor."



“ The quality of the listening experiences produced by the audio system will help to create a space within the hive in which to think and feel. ”

- Award-winning Artist, Wolfgang Buttress

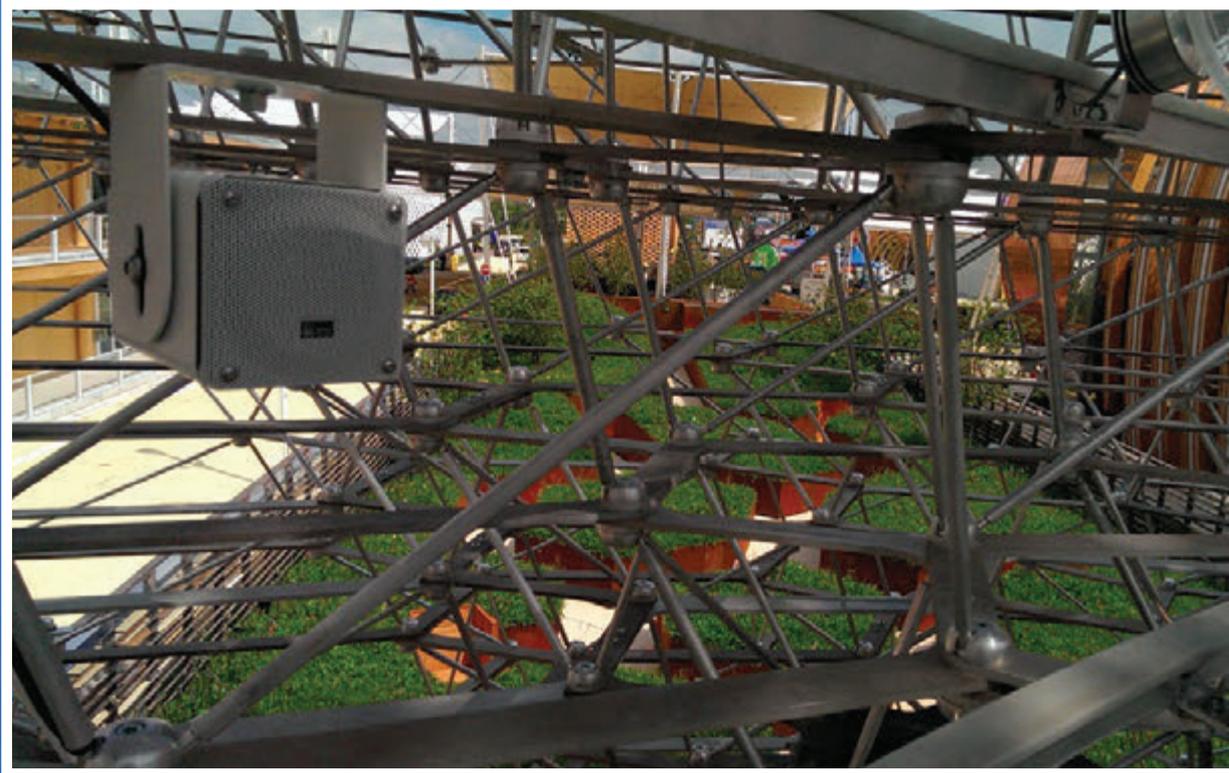


Photo courtesy of Jeff Eden

Then a sudden clever idea struck Wolfgang Buttress and that was to bring forth a multi-sensory experience to visitors of the bees' natural environment through the amplification of the speakers' sound. "The quality of the listening experiences produced by the audio system will help to create a space within the hive in which to think and feel," said Buttress.

The idea was also to draw visitors inside of The Hive as they 'follow the dance of a bee' through the varying landscapes, very suggestive of a honeybee returning to the hive. Once inside, be greeted by thousands of flickering LED lights, illuminating the 40-tonne installation, bringing it to life. Also, to discover within, the immersive sound and visual experience that tells a story of the honey bees and the importance about how pollination is vital to global food supply. Beautiful symphony of orchestral sound had been composed and recorded (released as an album) and played to set the mood within The Hive.

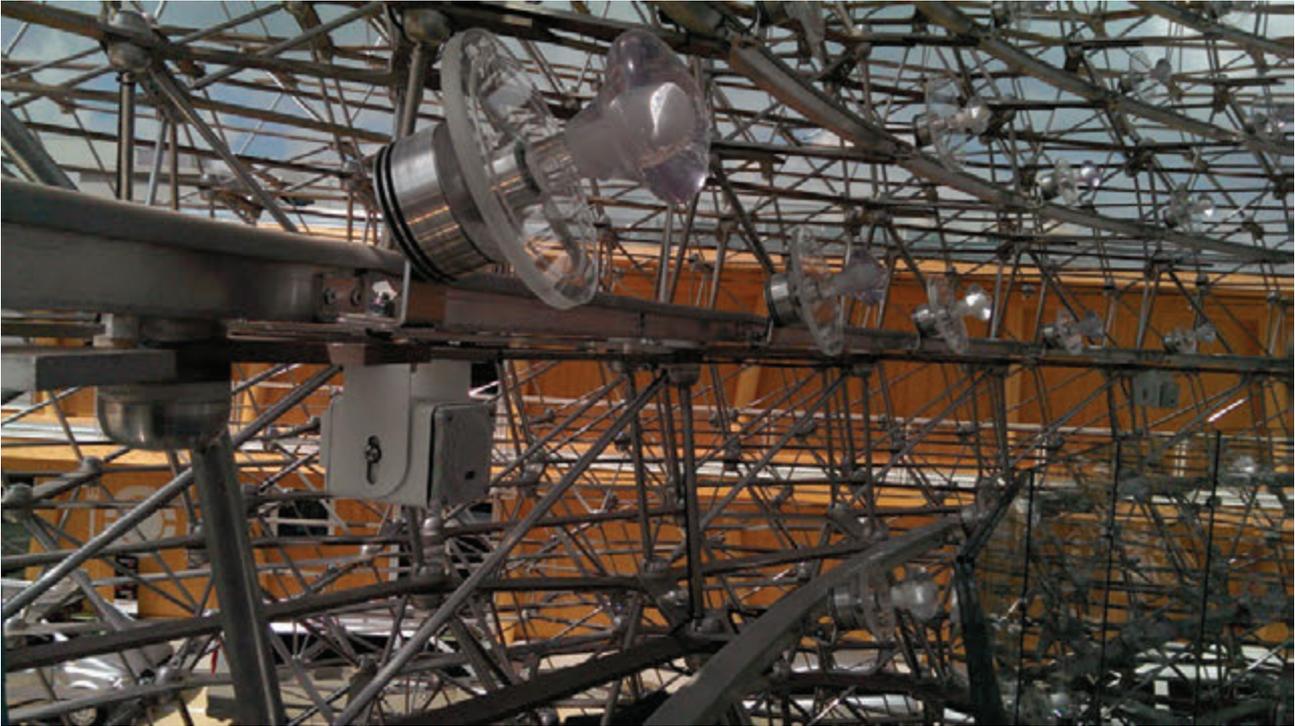
In collaboration with the UK Pavilion at the Milan World Expo, Sound Designer, Mike Bedford, from consulting engineers Hoare Lea commissioned Out Board's Robin Whittaker and TiMax SoundHub for immersive live 3D audio spatialisation and playback to create the soundscape for The Hive. And a Hive of TiMax activity at Kew Gardens began. TiMax proposed a constantly changing composition of music and bee sounds around the various spaces. The sounds within the hive were a primary aspect of Wolfgang Buttress' overall concept.

A composition entitled 'The Journey', which intertwined live bee broadcasts, multi-channel bee recordings and a mix of multi-track music stems, featured musicians who had recorded with artists including Spiritualized, Sigur Ros, Soulsavers, The Orb, Youth and Spring Heel Jack. The latter comprised drifting layers of both classical and electronic instrumentation, as well as human singing voices.

To capture the activity of a real beehive in Nottingham, movement-sensing accelerometers were installed in a real beehive in Nottingham as part of a scientific research project by Nottingham Trent University's Martin Bencsik. The derived real time data was streamed from the UK live to the UK Pavilion in Milan, where it controlled the volume and composition of the soundscape experienced by visitors.



Hundreds of glowing LED lights bring this 40-tonne lattice structure to life, while a beautiful symphony of orchestral arrangement sets the mood



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Programmer Andy Coates created custom control data algorithms to provide interactive control and custom MIDI triggering software to TiMax Soundhub, which in turn responded with a live 3D audio surround mix and spatial panning events in the hive. Coates' software also controlled multi-element LED arrays distributed within the hive structure to sync both light and sound to the real-time bee activity in Nottingham.

A total of 30 compact Meyer Sound MM4 loudspeakers were planted around the meadow and within the four-storey high hive structure, augmented by six Meyer Sound sub bass cabinets. One 48 channel/track TiMax SoundHub audio show control matrix handles the multitrack playback and scheduling, processing, zone level management and multichannel distribution for all areas, as well as the synchronised 3D audio spatialisation.

"We decided to work with the TiMax processor as it offered a broad palette of functionality in a compact single unit, which could be quickly programmed and easily experimented," explained Mike Bedford, Principal, Hoare Lea Intelligent Buildings. The TiMax provided sequenced and live multi-channel playback; 3D spatialisation; flexible inputs and outputs; and various show control and interfacing to other systems. This control flexibility, combined with the Meyer Sound system design and Robin Whittaker's show control programming experience, meant that we were able to exceed the soundscape design aspirations.'

Today, life at London's Kew Gardens has never fall short of a sphere of activities with enchanting musical performances, meet the experts guided tours, talks by a group of specially trained 'Hive Explainers' and trails are conducted to warmly invite people into the meadow green to share in an arguably urban cultural space. The development of the infrastructure and soundscape were constructed to truly reflect the design-centric experience.

Just last December, friends of Kew gathered for festive activities at the iconic London attraction and experienced the winter trail where seasonal illuminations lighted the Kew after dark. With glowing torches and some 60,000 lights, giant crystals suspended from the brightly lit trees and colour-changing reeds, visitors navigated through the pathway and 'wow' in delight as they basked in the atmospheric botanical art. Amongst other host of breath-taking activities happening inside of the honeycomb-shaped architecture, Bang & Olufsen was said to have met up with Wolfgang Buttress prior to a performance to view the sculptural installation at Kew Gardens designed by Wolfgang Buttress. 📍

The Hive installation will run in Kew Gardens UK until November 2017.