The Society of Light and Lighting

LIGHT LINES

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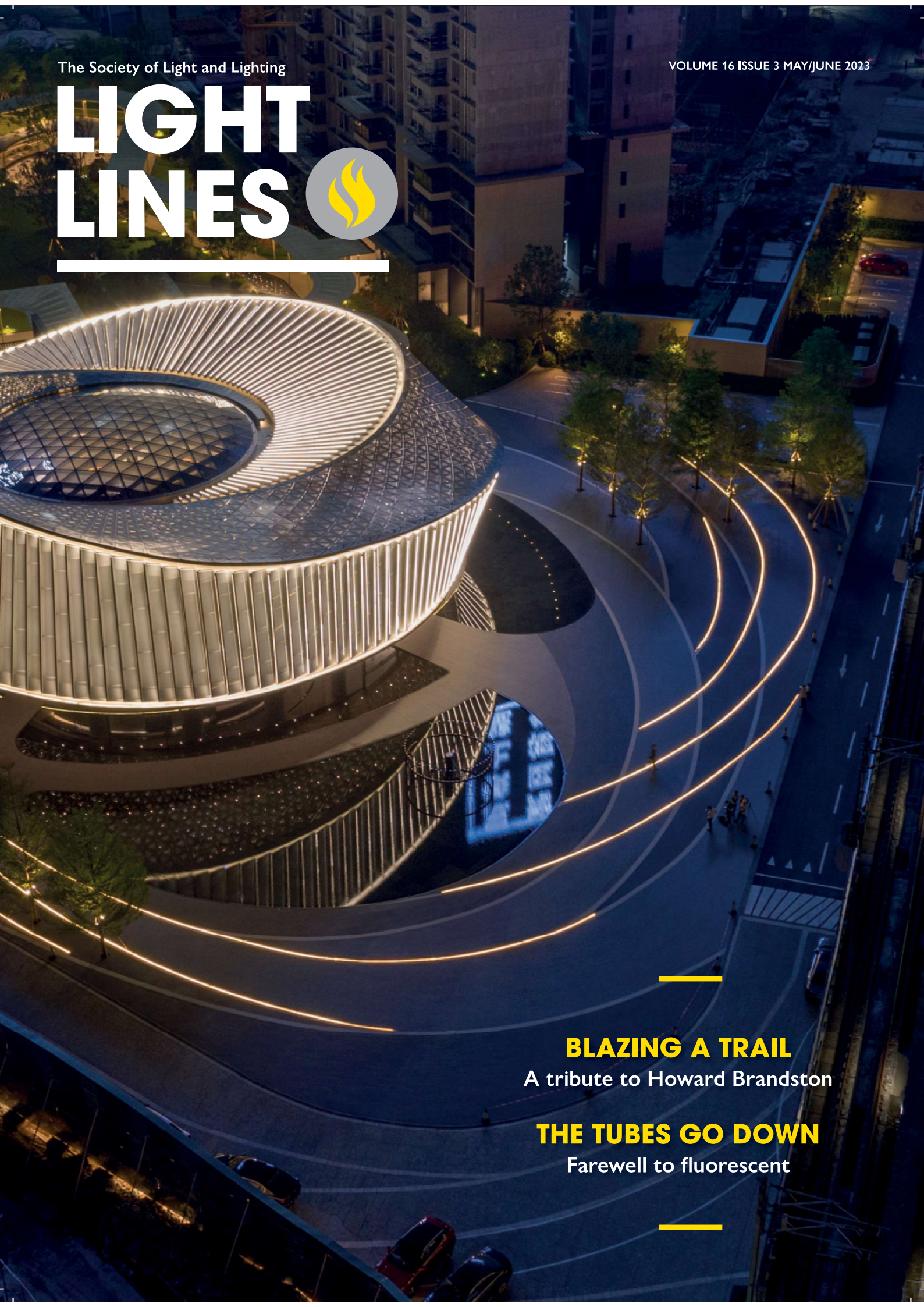


BLAZING A TRAIL

A tribute to Howard Brandston

THE TUBES GO DOWN

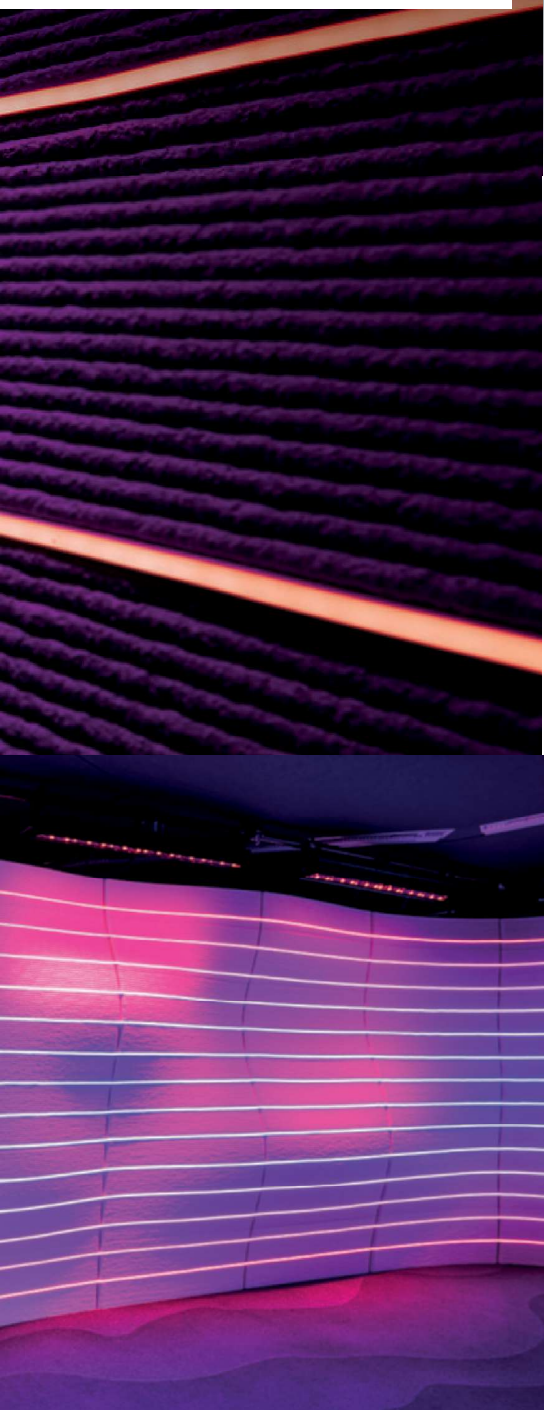
Farewell to fluorescent

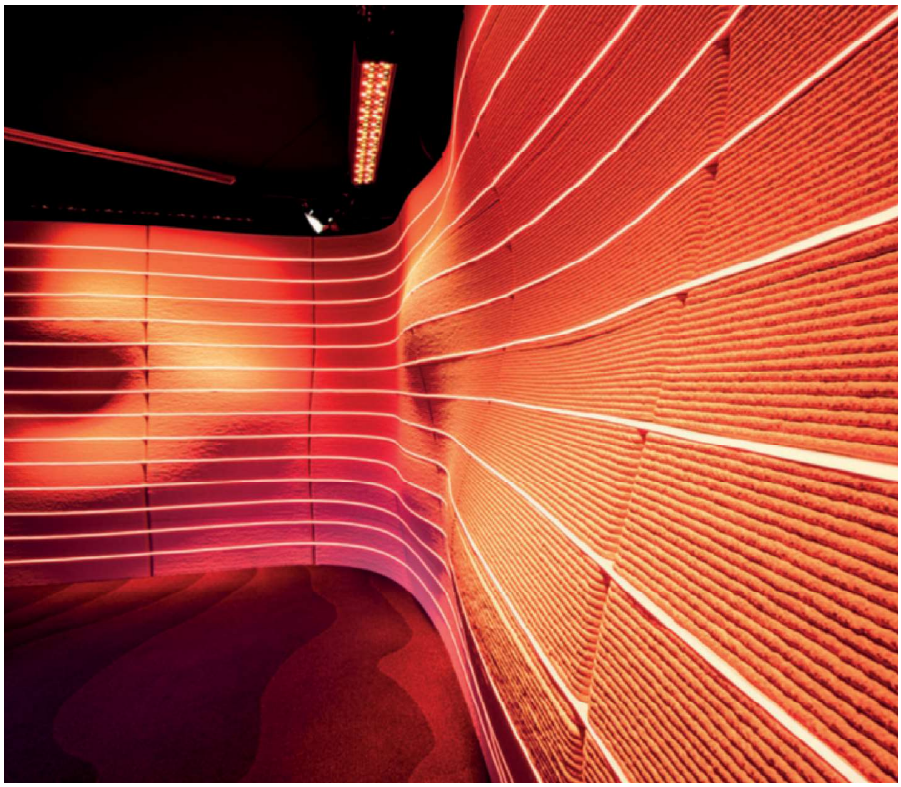
ANOTHER TRICK IN THE WALL

▲ The main lighting system of the film studio comprises 14 LED strips inserted horizontally into prefabricated joints

'Components produced by additive manufacturing with concrete offer completely new creative qualities and possibilities in interior design, particularly in the combination with LED technology'

Designer Philipp Aduatz has integrated LED lighting into a pioneering 3D-printed structure





Images by Paris Tsitsos

Vienna-based designer Philipp Aduatz has created the world's first 3D-printed film studio featuring integrated LED lighting. He was commissioned by Casinos Austria and Austrian Lotteries to design and realise the studio, which he produced in collaboration with set designer Dominik Freynschlag and 3D concrete printing manufacturer incremental3d. 'A new and innovative application was realised through a unique structure using additive manufacturing and the latest LED technology,' says Aduatz, who creates limited-edition functional objects that are highly sculptural in nature.

Working with innovative materials and fabrication technologies, he is influenced by scientific developments in areas such as chemistry, physics and material technologies. His process combines traditional craft concepts and methods with cutting-edge techniques such as 3D printing, 3D laser scanning, CNC milling and rapid prototyping. On the arts side his great influences are sculptors Constantin Brancusi and Tony Cragg. Aduatz's experimentation with different materials and their behaviour is an important part of his research 'at the intersection of design and sculpture'.

The main lighting system of the film studio comprises 14 LED strips inserted horizontally into prefabricated joints. By replacing the print layers with LED strips of the same thickness, the lighting technology could be perfectly integrated into the design. The LED elements are connected to the rest of the studio RGB lighting through a control system, creating an almost unlimited number of colour combinations.

The concrete wall measures 6.5m wide, 3.5m deep and 2.5m high and has a total weight of 3500kg. It was printed in a total of 10 work steps using a 3D concrete printing process from an innovative special mortar based on white cement. The structure has 60 individual segments, with six parts each stacked to form a segment in height. All individual parts are screwed together in each horizontal plane, so that the wall can be completely disassembled and is also operationally safe during use.

Due to its material-saving properties (no formwork materials are required), concrete 3D printing is considered a sustainable alternative to conventional concrete construction methods. 'Components produced by additive manufacturing with concrete are not only suitable for building construction applications, but also offer completely new creative qualities and possibilities in interior design, particularly in the combination with LED technology, as this project demonstrates,' says Aduatz.

www.philippaduatz.com/portfolio-item/digital-film-studio/