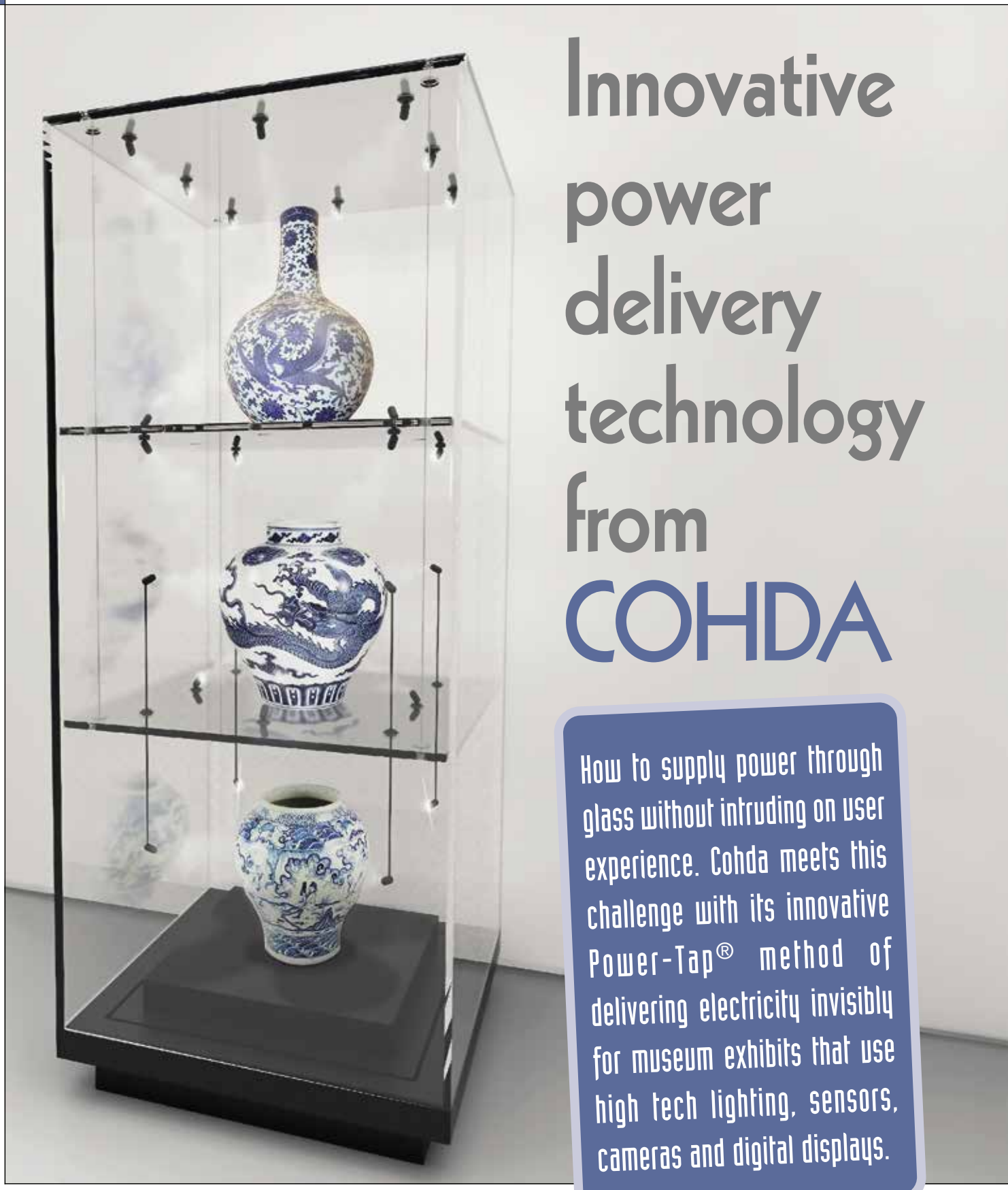
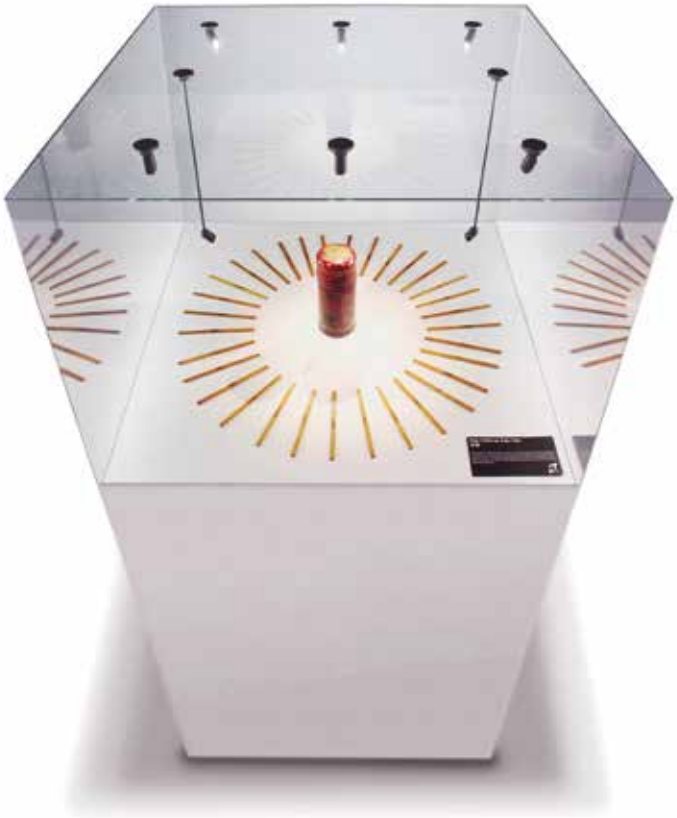


Innovative power delivery technology from COHDA

How to supply power through glass without intruding on user experience. Cohda meets this challenge with its innovative Power-Tap® method of delivering electricity invisibly for museum exhibits that use high tech lighting, sensors, cameras and digital displays.



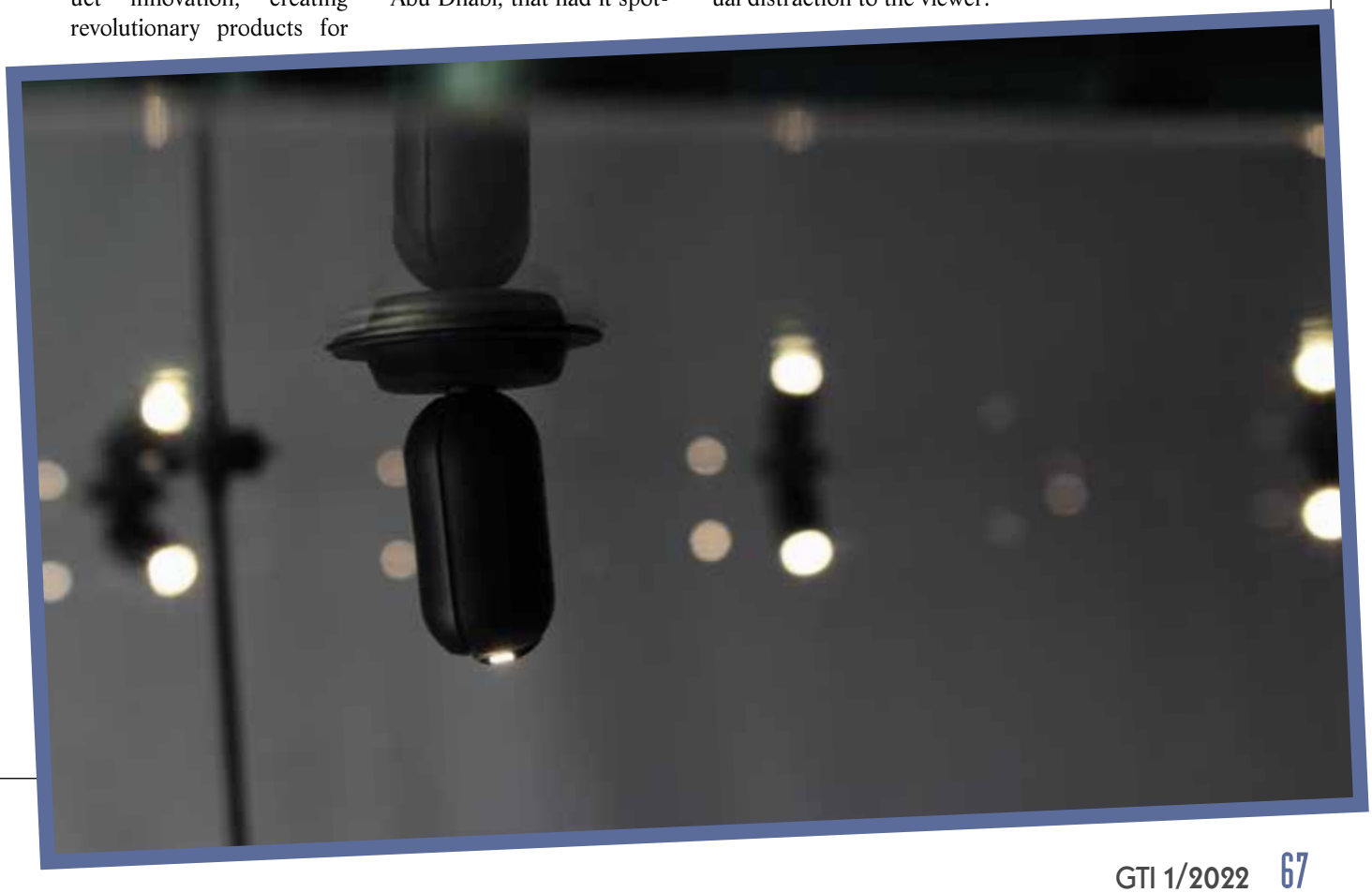
A HISTORY OF INNOVATION

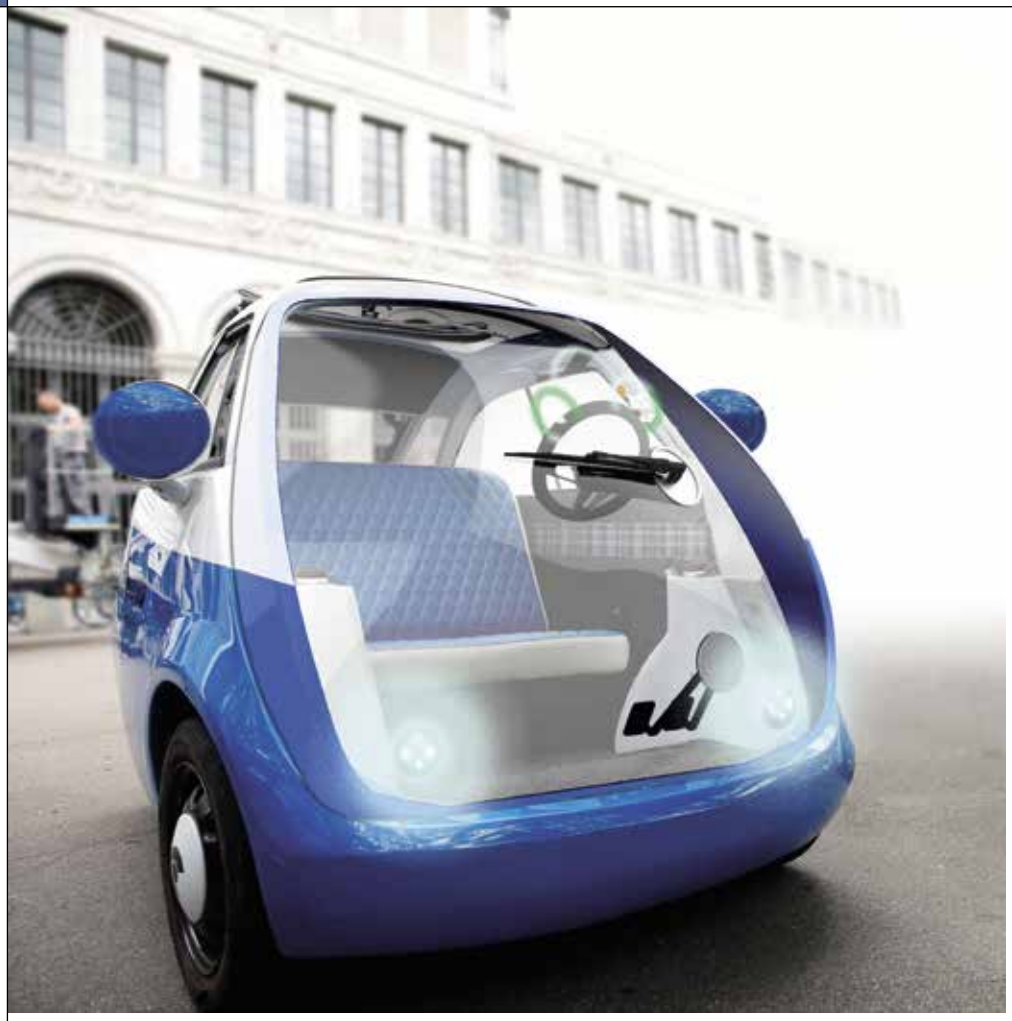
Founded in 2003, Cohda has spent over 17 years dedicated to research, experimentation and product innovation, creating revolutionary products for global clients. Indeed, it was the company's history of working on some of the world's most innovative Museum projects, such as the revolutionary Jean Nouvel designed Louvre Abu Dhabi, that had it spotting an opportunity to solve a key challenge facing this market.

Like many industries, the Museum Showcase sector is undergoing its own digital transformation. However, unlike other markets exhibits are generally encased in a secure glass structure. Maintaining transparency remains imperative, which creates the issue solved by Cohda of developing a power supply technology that will not compromise user experience. Here devices are traditionally powered by cable or rod systems, which can be both obtrusive and distracting. Adding more systems necessitates more power and data cables, which results in greater visual distraction to the viewer. It was felt that if transparent power delivery were achieved and the need for wires removed, then the ability to locate devices in premium locations within a glass structure as opposed to locations dictated to by a wiring loom would offer limitless new design opportunities to the museum market. Preliminary user research suggested that any device powered through the glass would also need to be as minimal and unobtrusive as possible in order to further enhance the invisibility and value of the system.

TEAMWORK IN RESEARCH

With a diverse studio team of Designers, Engineers and Material Experts,





Cohda was able to undertake this challenge as a secretive in-house brief. Over a five-year period the evolving project generated more than 300 prototypes and test rigs before a final solution emerged, codenamed P-Tap®.

Key challenges during the development process were:

a Creating a stable power delivery system that could deliver different power requirements;

b Maintaining the integrity and security of the showcase; and

c Offering a stable microclimate for any delicate display works.

The manufacture of Power-Tap® glass panels, too, was hardly a straightforward process. Requirements for high tolerance and specialist processing techniques being beyond that of a most glass processors warranted partnerships with companies in the glass sector that operate to the very tightest tolerances, namely those within the touch screen market.

EMERGING PRODUCTS

The final outcome to this challenging project is the now patented Power-Tap® Glass Tech. Power-Tap® is a transparent lamination of conductive and non-conductive glass. This arrangement allows power or data signals to be transferred across individual layers within the lamination. Pre-machined apertures create taps in the glass that supply power delivery to embedded devices with showcases and glass displays. These connected devices appear as free floating within an optically clear glass panel with no visible means of power connection.

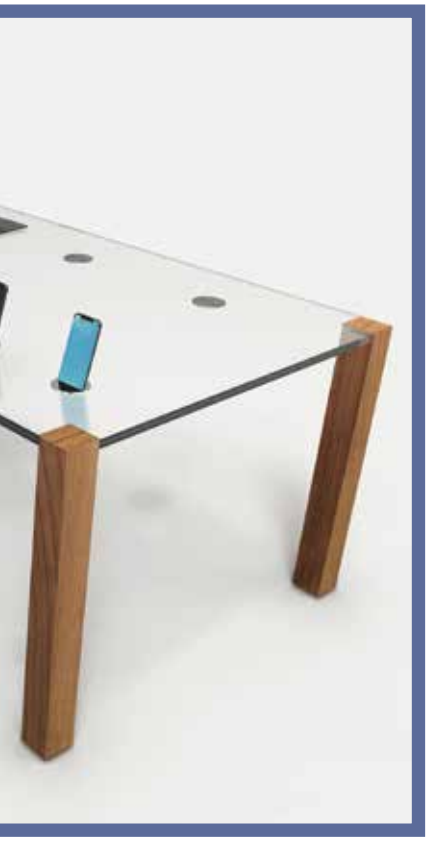
Coinciding with the launch of Power-Tap®, Cohda developed a range of products to marry seamlessly with the Power-Tap® glass technology. The first from this range is the magnetically connected micro spotlight system for the museum market, named CompassLED. The CompassLED system is made up of two main assemblies:

1. a two-sided magnetic plug socket embedded into the Power-Tap® glass panel
2. a lighting spot that magnetically connects to either side of the socket and instantly draws off power.

Both the locations of CompassLED lights and the number of CompassLED sockets within a panel are fully customisable, giving designers and users

the freedom to place lights wherever they wish. The final system offers easy installation, light replacement and adjustment of 360-degree full rotation in all axes, individual or group dimming and the ability to illuminate through the Power-Tap® glass panel offering previously unseen lighting flexibility.

Additional products from this range are set to be released throughout 2022 and will include fixed spotlights, strip lights (for museum and retail shelving), induction charges, USB plugs, touch payment devices, rotating display tables, audio resonators, magnetic locks, digital remote cameras and alarm systems.



NEW MARKET OPENINGS

Since its public release Power-tap has gained interest from other market, including: Retail, taking the form of Point of Sale Tables powering-Induction chargers, USB sockets, charge stands, electro magnets, proximity sensors and alarms. Automotive, where there is a market shift in the autonomous and electric vehicle sector toward increasing the size of automotive glassing and a consequent need to directly embed devices onto the glass. Architecture, where alarms, sensors, cameras and safety equipment can become part of the glazing of a building. Domestic goods, where embedded devices can inter-communicate through glass while maintaining full transparency. Other highlighted markets include Aviation, Defence, Security, Renewables, Farming and Commercial Lighting.

Commercial agreements to utilise the Power-Tap intellectual property and technology are currently underway. Initial partnerships include leading touchscreen display manufacturer Zytronic and global glass company NSG Group.

Cohda Design Limited

COHDA™

William Street Felling
Gateshead Tyne & Wear
NE10 0JP - United Kingdom
Tel.: +44-191 423 6247
E-mail: studio@cohda.com
www.cohda.com