



Bot Cave

Text / Luo Jingmei Images / Courtesy of Ministry of Design

Ministry of Design's works are characterised by spectacle and wit — qualities perfectly suited to the design of creative offices and boutique hotels, which comprise much of the Singapore firm's portfolio. But what about a laboratory for robotics?

This was a challenge the multidisciplinary design firm faced and gamely welcomed when hired by the Robotics Application Centre of Excellence to design a display and education space. A collaboration between Nanyang Technological University and local precision engineering company PBA Group, the lab aims to advance the use of automated robotics within existing manufacturing industries in Singapore to drive Industry 4.0 change. Located in Yishun Industrial Park, it holds robotics courses at various levels for everyone from policymakers to business owners.

A mysterious blackened lift lobby splayed with white stripes provides an enigmatic prelude. Through a large door is a dazzling, cavernous space with multifaceted walls and ceiling surfaces, layered with 6,000 hollow aluminium tubes and LED lights positioned in an array of angles to create drama against a foil of black. The cumulative aesthetic is akin to that of a futuristic film set and the soundtrack, according to MOD's founder Colin Seah, would be the tech-driven music of German electronic pioneers Kraftwerk.

The design cleverly accommodates various complex requirements. For one, flexibility had to be considered for the lab to simultaneously work as a display and assembly space for different robot types and sizes. It also had to cater to both intimate and large training groups. Thus, a large

central space allows for group gatherings while the strategic tapering of the faceted 'skin' creates cosy alcoves off to the side. 'We wanted this skin to be the main feature, yet also act as a natural sectioning device to create enclaves for small group settings within the large space,' explains Seah.

Unightly mechanical and electrical services are well camouflaged in the darkened surfaces and complex tubing patterns. One would have to look very closely to notice the air-conditioning pipes overhead or that behind each enclave is a hatched door supplying electricity and data points to the robots. The layout of the LED lights also blurs the boundary between wall and ceiling, heightening a sense of fluidity and movement. Additionally, with the facility planning to relocate in two years' time, the modularity of the components — fixed upon a self-supporting, freestanding frame — allows for easy detachment and transportability.

Questioning what the essence of robotics would be in spatial form, says Seah, was the critical starting point behind the design. 'The inspiration was robotics itself. The final design is characterised by modularity and influenced by aesthetics of precision and dynamism.'

The futuristic installation reflects the cutting-edge nature of robotics, the charged aesthetic rendering a palpable sense of excitement to the happenings within. 'We wanted RACE to be a dynamic backdrop to an age of automation and robotics,' says Seah. 'We felt that it was important to excite and incentivise mid-career professionals to learn these new skills and embrace new robotics technologies by emphasising the future-forward character of this industry.'

Inside the new RACE robotics lab in Singapore, designed by Ministry of Design



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