

COBRA



COBRA CASE STUDY

Composite Body Shell Cladding
for Security Robots



CASE STUDY: Composite Body Shell Cladding for Security Robots

Bringing composites into new sectors

COBRA takes great pride in providing a Design and Development (D&D) service for its clients, especially those who are completely new to the world of possibilities provided by composite materials. Taking a client's initial ideas and developing prototypes followed by production ready parts is a massive part of bringing composites into new product sectors like robotics.



Composite body shell cladding

In late 2017, COBRA was asked by a leading Thai robotics provider to help bring their novel new building security robot concept to life. By using cameras and sensors integrated into robots, building operators can provide more effective and flexible security monitoring systems, providing a 24/7 autonomous patrol service around the residential area. The client had already developed the robotic systems and asked COBRA to provide a set of 8 composite parts that form the body shell cladding of the stylish and streamlined 1.35m high robot.

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From design to production

The COBRA D&D department worked on several prototype versions with the final design version being signed off in mid-2019. COBRA also developed the mould tools for the composite parts with some moulds made inhouse and the balance produced by COBRA's network of local tooling partners.

The glassfibre and epoxy composite laminate for the robot shell parts was designed by the COBRA team to provide a stiff, lightweight yet cost effective cladding for the robot. A combination of woven and stitched multi-axial reinforcements were hand laminated with epoxy resins before curing under vacuum bag consolidation.

Patrolling parking areas

With final prototype testing and sign-off complete the next stage is to start production of the first batch of robots. Look out for these exciting COBRA built composite shelled robots that will soon be patrolling the parking areas and communal spaces of the latest tech-enabled commercial and residential real estate developments.





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Strong, Light and Beautiful Composite Products

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