

From aerofoils through artificial limbs to sculptures, Composite Wings runs the gamut of manufacturing in fibreglass and carbon fibre, as **Jonathan Rayner** discovers

reinforcing materials such as epoxy resin, foam, Kevlar or other substances. They are so rugged and so versatile that these days we see them everywhere. They are used for everything from car and aeroplane bodywork to artificial limbs, golf clubs and tennis racquets.

However, 17 years ago they were still an innovative and unproven product when Messrs Greenwood and Cutter formed Composite Wings

Van Dieman, French Courage Competition, Jonathan Palmer Motorsport and Prototype Car Design.

The company has customers throughout the UK, Europe, Canada and the US, and is constantly being contracted to produce an ever-broadening range of products. Says Greenwood: "In recent years, the demand for carbon fibre products has increased dramatically. We are being asked to

from simple grappling hooks to parts of highly sophisticated aircraft defence systems."

This is not to say that Composite Wings simply makes things to order. "Anything we make must be tailored to suit the task it is expected to perform," says Greenwood. "Carbon fibre composites have many qualities – varying levels of strength, flexibility, resistance to heat or cold – and the

TAKING WING OVER WATTON

THE WORLD'S tallest mobile sculpture and some of the world's fastest racing cars have this much in common: they owe part of their success to a company tucked away in rural Norfolk.

That company is Composite Wings.

Composite Wings started some 30 years ago, when former Lotus Cars (Norwich) employees Dave Greenwood and Roger Cutter set up a glass fibre moulding company. They based their fledgling company in Watton, a small town lying 12 miles or so off the A11, near Swaffham.

The company is still in Watton and the fibreglass side of the business is flourishing but as technology progressed, they were able – 17 years ago – to add composites of carbon fibre to their repertoire.

These composites are a strong, lightweight material made from a combination of carbon fibre and binding or

Limited – named after the wings (or aerofoils) they still manufacture for racing cars.

The company has never looked back, and now employs some 50 staff at its 30,000sq ft premises. Despite its rural setting, it has never had significant recruitment problems.

"There will always be skills shortages," says Dave Greenwood. "Industry is so diverse that you can't expect a ready-made – and readily available – pool of specialist craftsmen for every trade. We train our people. Some are local, others travel in from Norwich and beyond. And they seem to stay."

The company's core business is still making aerofoils and other components for the motor sport industry. This is high precision work, requiring aerodynamic products that combine optimum strength with maximum lightness. High profile clients include Lotus,

manufacture products as diverse as furniture, motorbike and road car parts, artificial limbs, camera tripods, X-ray tables, knee pads for chainsaw operators, and lightweight shafts and rollers for the printing industry. And where the military is concerned, we run the gamut of technology –

proposed application must take these into account. We have the experience and the knowledge to find and develop a solution to meet our customers' requirements."

All of this skill and know-how was required when Composite Wings was asked to help an internationally-renowned sculptress create the world's

To give an idea of the proportions of this sculpture, it is about one-third taller than the 65ft Angel of the North



tallest 'mobile' sculpture.

Angela Conner's project was a 96ft abstract, called Irish Wave, that had been commissioned by Parkwest Developments for a new business park outside Dublin.

To give an idea of the proportions of this sculpture, it is about one-third taller than the 65ft Angel of the North. It weighs 4 tons and took over 5,000 man-hours to manufacture. And it required leading-edge software to produce the 160 sectional templates that were needed to ensure that the end product replicated (to scale) its two-foot high miniature maquette.

The final manufacturing challenge was the installation of a counterbalance in the sculpture's cradle base. This not only allows the high density foam and uni-directional carbon fibre laminate structure to sway in

normal winds, it is also designed to ensure that it withstands the 150mph gales that scientists predict could hit Dublin every 50 years.

As if all this was not enough, the logistics of transporting Irish Wave to where the business park is located

presented Composite Wings with still more hurdles.

These were successfully overcome with the help of a special 125ft extendable lorry that was fitted with front and rear steering. The precious cargo had to be painstakingly loaded on to the lorry by two

giant cranes and then escorted to Dublin via Liverpool and the Irish Sea.

Angela Conner is fulsome in her praise: "I needed to find a particular expertise to help me with the Dublin project," she says. "Composite Wings has more than proved that it has the depth of knowledge to deal with precise construction, using specialised materials to give strength, flexibility and lightness in equal measures." Proof that those words were sincerely meant is in the fact that she is already talking to Composite Wings about a second project – this time for a 100ft. sculpture for the interior of a building.

But the final word goes to Dave Greenwood: "The project lasted 12 months," he says. "And I had tears in my eyes when it finally left for Ireland."

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