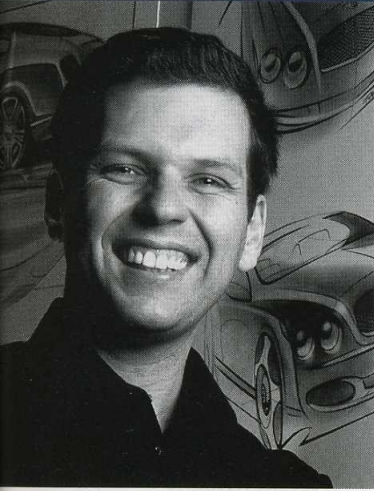


RAUL PIRES

Head of Exterior Design, Bentley Motors



You don't need to be an industry insider to see that the Bentley Continental is a beautiful car, clearly displaying what Head of Exterior Design Raul Pires calls 'the Bentley DNA'. He tells us: "The Bentley heritage is so important to us; not just the history of the brand, not just the names and personalities but the understanding of the shape of some of our previous cars, too. The Continental family is a great example. You don't see a retro design but you instantly recognise it as a Bentley."

But how does Pires go about designing such aesthetically appealing vehicles? "We develop our ideas as 2D sketches, usually in *Adobe Photoshop*, to the point where we're confident it is what we want," he explains. "Then we work with one-third scale clay models and ultimately a full-size clay. We do so much work in clay because it can be difficult to define the complex shapes, curves and tangencies we want on computer." The clay model is then scanned into *ICEM Surf* [an advanced suite of software for surface modelling, surface quality analysis and design visualisation] for further work and design review. "From that data we'll mill the clay so we can be sure we have captured our design exactly. We go round that loop as many times as we need to achieve the quality we want. That way, the computer technology helps us but doesn't impose any limitations." Pires continues: "Once we're happy with the design we develop the A-class surfaces in *ICEM Surf* while the engineers work on the feasibility in parallel. Not only does this approach save the business time and money, it also gives the designer more time to be creative in solving any difficulties found by the engineers."

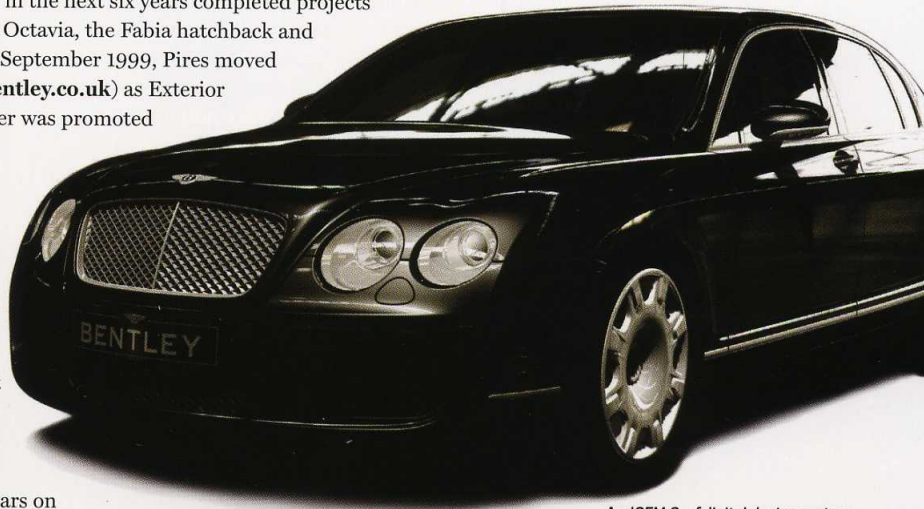
"We develop the A-class surfaces in ICEM Surf while the engineers work on the feasibility in parallel"

Pires, who is originally from Brazil, tells us of how he grew up "just a few miles from the Interlagos circuit in São Paulo at a time when there wasn't tight security. I remember a bunch of us kids sitting on our bikes just 20 metres away from the racecars as they came in and out of the pits during testing. I grew up used to that." At Mackenzie University in São Paulo, Pires achieved an honours degree in Industrial Design and in 1992, he joined Volkswagen Design as an Exterior Designer. He moved within the same automotive group to Skoda Design in the same role the following year, and in the next six years completed projects including the facelift of the Octavia, the Fabia hatchback and Kombi, and the Superb. In September 1999, Pires moved to Bentley Design (www.bentley.co.uk) as Exterior Designer, and two years later was promoted to his current position.

Does Pires think that computer technology will ever completely replace physical modelling? "You can't really predict what technology will come up with," he replies, "but from where we stand now I don't see it happening at Bentley. It really is difficult to judge the sophisticated and sculptured surfaces of our cars on screen." But a prestige marque such as Bentley is clearly a small market sector. Of trends in the wider world of automotive styling, Pires believes: "The segmentation of the market provides designers with amazing possibilities to do many different things. Today there are so many different types of vehicles: four-door, coupés, off-roads, cross-overs, cabriolets. It gives designers much more opportunity to express themselves while at the same time giving more value to the design." **John Marchant**



The Bentley Continental Flying Spur inside *ICEM Surf* with the patch structure and menus turned on. This level of visual realism is real time and persistent, which means that the designer can model and work at this level all the time without resorting to stand-alone visualisation tools



An *ICEM Surf* digital design review image of the Bentley Continental Flying Spur, with the menus turned off, inside a Reference Manager session. At any time, the users can model the geometry and alter the CAD data at this level of realism



Raul Pires' sketch studies of the Bentley Continental Flying Spur