

# ING Renault F1 CAR Center, Oxford, UK

Pole position for professional visualization

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John Mardle, Operations Director,  
ING Renault F1 Team



The ING Renault F1 Team is a consistently innovative force in Formula 1, having won recent titles in the Constructors’ as well as Drivers’ championships in the 2005 and 2006 seasons. With F1 engine development frozen by FIA regulations, aerodynamics is the last great area where innovation is the deciding factor. For this reason, the ING Renault F1 Team decided to invest in a dedicated Computational Aerodynamics Research facility with this specific CFD (computational fluid dynamics) research area.

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### Aerodynamic research and image streamlining

The ING Renault F1 Team conceived its new Computational Aerodynamics Research Center near Oxford, UK not just as an aerodynamics research hub, but also to showcase its achievements and capabilities to sponsors and visitors. In both areas, visualization is a key stepping stone to success. "Only Barco could provide us with the high-quality display equipment we needed for both goals," states John Mardle, Operations Director for the ING Renault F1 Team, "Their wide range of products and expertise in similar projects gave them a deep understanding of what we required."

One of the key parts in the design of next-generation F1 cars is aerodynamic research. Computational Fluid Dynamics (CFD) is an applied science that attempts to solve challenges involving fluid flows, and represents a great improvement in the design and testing of F1 vehicles. The ING Renault F1 Team decided to tap into the power of recent breakthroughs in computing and visualization to build a CFD Center that could simulate a variety of cars and aerodynamics scenarios. In this way, the ING Renault F1 Team saves millions of dollars compared with the alternative of building a second wind tunnel.

### Creating one out of many

Three Barco Galaxy NH-12 projectors drive the CFD center's display wall from behind a 7m wide screen, which was also custom-built by Barco. The Galaxy NH-12 is a high-brightness, active 3D stereo projector that can project bright images even in rooms with lots of ambient light. With special edge blending, color and brightness matching technologies, Barco ensures that the composite image of the three projectors remains free of disturbances. At no point are engineers reminded that they are looking at an image generated by three projectors - it feels exactly like one image.

### Getting the message across

An equally important task for Barco was to design visualization that would help convey the ING Renault F1 Team's prestige as a leading team in Formula 1. For the CAR Center's exhibition area, Barco installed a 4x4 Barco NX-4 LED display system. The award-winning NX-4 is renowned for its true black LED technology, which makes it the most high-contrast LED wall on today's market. "With its 4mm pixel pitch, it displays images with sharp detail even from a reasonably close distance, and immediately draws attention with its bright colors," comments Mr. Mardle.



In addition, Barco installed its CLM R10+ projector in the Heritage & Communication Center, adjacent to the CAR Centre. With its bright 10,000 lumens light output, Barco's CLM R10+ is among the most cost-effective high-brightness projectors on the market. During presentations or dinners at the H&C Center, the CLM adds a touch of brilliance with its bright light output and vibrant colors.

"Thanks to Barco's display technology," concludes Mr. Mardle, "we simultaneously improve the aerodynamic design of our cars, and underline our prestigious brand image with top-notch visualization."



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