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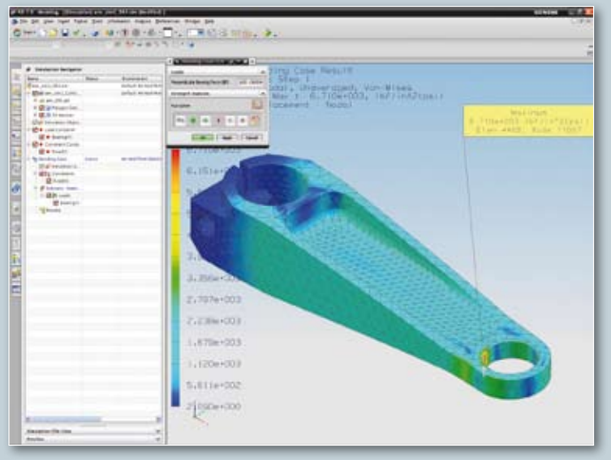
Siemens and Red Bull Racing

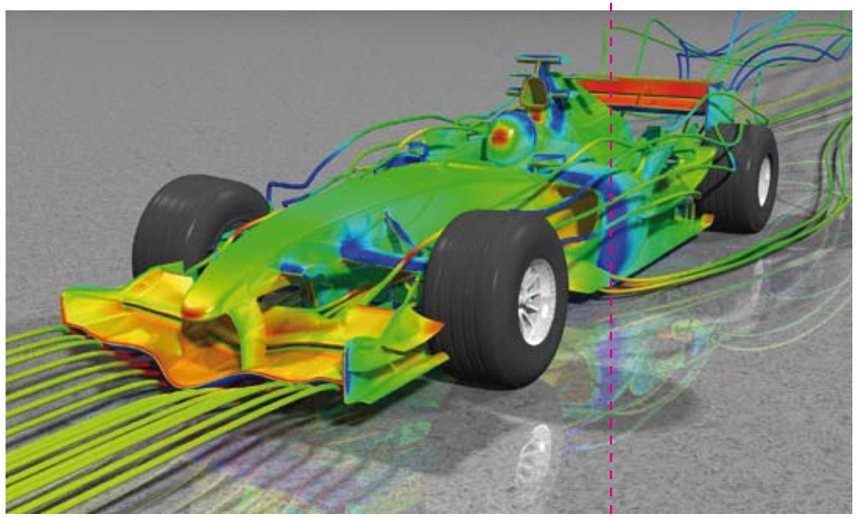
Technology is the key to success in modern day motorsports and cutting-edge innovations are fundamental to prevail in the world of Formula One. In fact, Grand Prix racing is one of the most "time-critical" businesses in the world with on-track success dependent upon a complex and reliable development process subject to daily if not hourly deadlines. It is for no other reason but high performance and commitment that the Red Bull Racing Team and Sebastian Vettel not only emerged as World Champions in both the constructors as well as drivers ranking in 2010 but also defended those titles with impressive manner in 2011.

Since the founding of Red Bull Racing, formerly Steward Grand Prix (1996-1999) and Jaguar Racing (2000-2004), the alignment of the team's needs and Siemens industry-leading capabilities, has defined a mutually beneficial partnership. In 2004 when the team was re-named Red Bull Racing, Siemens was introduced as an Innovation Partner, a relationship which has only blossomed since, putting both parties on the inside track to success in their respective fields.

After each Formula One race, Red Bull Racing team management must decide which vehicle alterations represent the optimal response to the lessons learned in the previous race. The time span to implement these changes can be as short as one week. Red Bull Racing develops and manufactures its championship winning car at the UK headquarters in Milton Keynes relying on a broad selection of Siemens' technologies.

Red Bull Racing SIEMENS
INNOVATION PARTNER





„Siemens has a clear and realistic roadmap, which it always manages to deliver upon.“

Christian Horner, Red Bull Racing, Team Principal

The digital backbone

Siemens PLM Software has long been a market leader in developing software for digital product development and manufacturing featuring embedded intelligence and collaboration tools which accelerate the process of designing and developing race cars.

With the help of these solutions, Red Bull Racing has developed into an incredible success story and produced two seasons for the record books in 2010 and 2011. Siemens PLM Software provides Red Bull Racing with its unrivalled NX digital product design and manufacturing tools. The Teamcenter® software forms the digital backbone allowing the team of over 180 engineers to design, develop and manufacture simultaneously in the virtual world. Excellent technical and business support is provided by the Siemens PLM professional services team, becoming an integral part of the Red Bull Racing Team.

Red Bull Racing also represents an ideal partner for Siemens PLM Software. Continuously pushing the software's limits in an effort to improve on-track performance, the team consistently drives its products to the highest level of innovation. The cooperation, in turn, serves as a unique showcase of Siemens PLM Software to customers and supplies invaluable data and metrics for the development of future products and solutions for other industries.

In light of current sustainability trends, Siemens PLM Software also understands its engagement in Formula One as a source of innovation throughout its business with invaluable synergies to other business activities. Siemens PLM Software is proud that as a result of its work, Red Bull Racing has significantly reduced physical prototyping and limited material waste. Meanwhile, designers regained up to 75% of their time with the tedious and repetitive portions of the design process being eliminated.

„Siemens proactively comes to us with solutions to problems that, sometimes, we didn't even know we had!"

Steve Nevey, Red Bull Racing,
Relationship Manager Technical Partnership

Transforming business with Siemens PLM Software

Siemens PLM Software solutions unite the Red Bull Racing organization around product and process innovation and unleash the hidden power in the product lifecycle – from concept design to product development, manufacturing, launch and retirement. When working with Siemens PLM, organizations can move forward strategically, heading to the long-term while achieving near-term results. En route, they will recognize signs that they are on the road to more innovation and measurable growth – and well on their way to meeting five key business requirements:

Innovate more – Rapid innovation is facilitated by providing a virtual environment that results in the delivery of more competitive products.

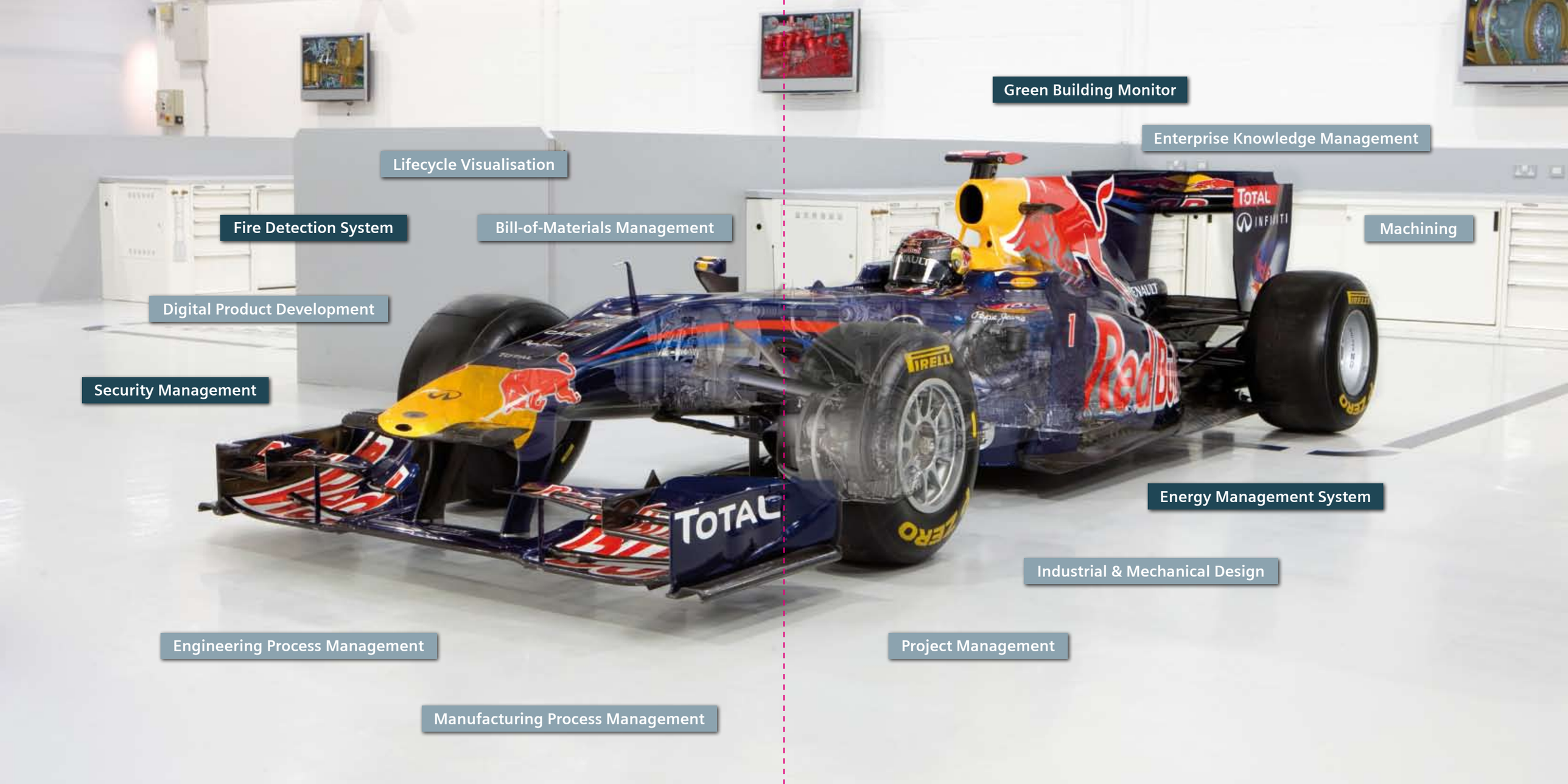
Move faster – Project management tools help manage performance against goals and compress time-to-market.

Be compliant – Non-compliant components and conditions are avoided by addressing business and market requirements.

Get optimized – Re-use of intellectual capital translates into faster response times to markets, as well as improved quality.

Go global – By using PLM to establish a highly secure, real-time digital environment, organizations can unite individuals in a widely distributed organization and maximize the advantages of globalization.

To establish an effective digital backbone, the information technology strategy must be built on a coherent data structure that enables real-time, virtual collaboration and data sharing. Siemens PLM software unites the work of functionally or geographically separated teams in a single shared environment to ensure efficient communication and reliable exchange of product and process information.

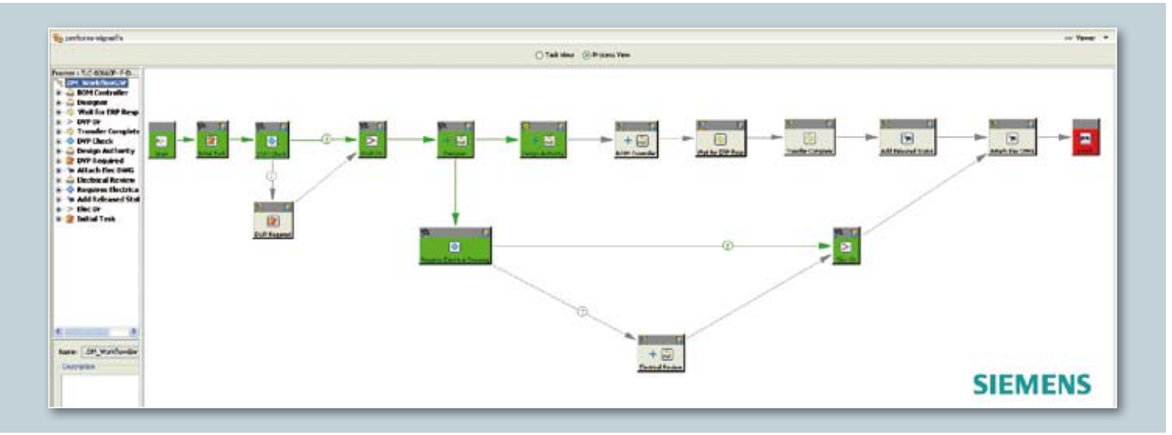

Green Building Monitor
Enterprise Knowledge Management
Lifecycle Visualisation
Fire Detection System
Bill-of-Materials Management
Machining
Digital Product Development
Security Management
Energy Management System
Industrial & Mechanical Design
Engineering Process Management
Project Management
Manufacturing Process Management

We never let a customer fail

To compete successfully in the fast-paced motorsport environment, Red Bull Racing must be able to modify its vehicle design rapidly, make or acquire the new parts quickly and still have time to test and refine developments prior to the race.

From the early stages during the off-season, the team's cars are developed entirely in Siemens software, based on functional requirements and regulations. The model proceeds to outline structure where the Red Bull Racing design team has work-stations running the fully integrated CAD/CAM/CAE suite, NX to develop geometric part models for the entire vehicle. This is all managed within the digital lifecycle management and visualization capabilities of Teamcenter.

The fully integrated Siemens PLM solutions provide an integrated design-through-manufacturing environment to set the stage for highly competitive Red Bull Racing.



Holding it all together – Teamcenter®

Teamcenter® enables Red Bull Racing to engage all parts of their business in the introduction of successful new race cars. Integrated idea capture and management, real-time engineering collaboration and project management tools are combined with industry-leading product design and development solutions in a single shared source of product and process knowledge. Teamcenter not only manages the complete product definition and revisions as the car is developed, but also manages the process of introduction of the changes.

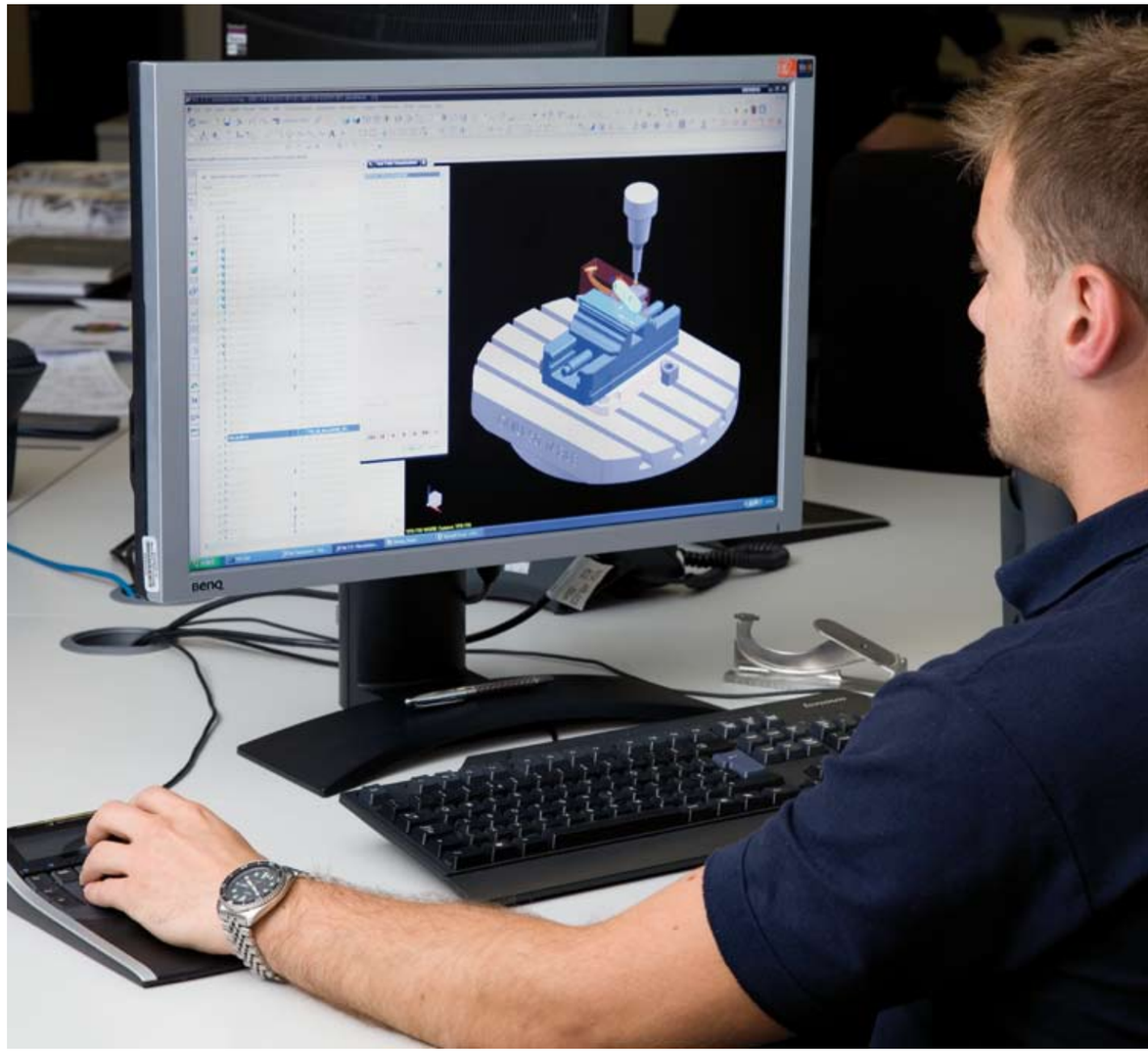
Teamcenter® maximizes the power of product and process knowledge to drive productivity and innovation. All this work behind the scenes has one purpose: faster lap times. After all, a design change that drops the lap time by a fraction of a second can determine the race.

From concept ideation to manufacturing – NX®

NX® is used to design the car and create the machine tool cutter paths for manufacturing parts on the milling and turning machines. It transforms the entire product development process by enabling Red Bull Racing to reduce physical prototyping, improve quality, shorten cycle time and deliver more innovative products. Design engineers reference each other's areas of responsibility as they create the digital car, using the PLM system to control access and manage geometric and non-geometric data.

During the racing season, as modifications to the car are ordered, designers revise the digital model and review a 3D image of the changes with the team's senior technical management. Digital data drives in-house manufacturing machines to produce new and redesigned parts. Outside part suppliers also work from digital data. The parametric modelling capabilities of NX ensure that defined geometric relationships, such as those required by regulations, are maintained as design modifications are considered.

NX® is the industry's only unified solution that addresses every aspect of product development from concept ideation to manufacturing.



Creating an efficient, environmental balance with Siemens Building Technologies

Red Bull Racing knows a thing or two about optimising efficiency and maximising performance. Luckily so does Siemens. So when it came to upgrading Red Bull Racing's UK headquarters, a partnership with Siemens was the natural choice.

In such a highly competitive environment, creating the right environment for productivity is essential. And in today's world, where resources are scarce, minimising the environmental impact of business activities is not an option, it is a necessity.

To help increase that competitive edge and balance ecology with economy, as Red Bull Racing's Green Technology Partner, Siemens has installed a comprehensive selection of the latest building technologies products and solutions in the team's Milton Keynes flagship site.

This upgrade programme combines the practical day-to-day operational needs of Red Bull Racing with innovative products and solutions designed to create the highest levels of sustainability, operational and energy efficiency, safety / security and comfort.

Protecting people, processes, information and assets

At the heart is a Siemens DESIGO™ Building Energy Management System (BEMS) intelligently controlling heating, lighting and ventilation systems across a BACNet/IP system. Extensive sub-metering, using Siemens PAC meters, feeding into the BEMS helps to monitor total energy usage, exactly at the point where the energy is being consumed and against set targets. All captured data is linked to a Siemens Green Building Monitor, providing a visual display of objectives and achievements and encouraging energy saving behaviours and awareness.

For Red Bull Racing this means lower energy costs, decreased CO_2 emissions and instant management information – all accurately controlled within one flexible system. The added bonus – increased savings means more money to invest in research, development and design. Another important benefit for Red Bull Racing is the flexibility to reconfigure, reassign and re-use their facilities and the ability to extend the systems to other buildings as appropriate to meet their future needs.

Red Bull Racing has a significant amount to protect: intellectual property rights, employees, buildings, championship titles – the list is extensive. Siemens has worked with Red Bull Racing to design an integrated solution to meet their critical needs for security, fire safety and business continuity, 24 hours a day, 365 days a year.

The very latest technology provides enhanced on-site security and consolidates all security disciplines (CCTV, access control and intrusion detection) into one single management platform using Siveillance™ Fusion. It also includes a state-of-the-art biometric finger print based access control system and centralised video management for both live CCTV data as well as recorded data. This ensures that Red Bull Racing can take a proactive approach to security management – protection at the highest level, instantly available 24/7.

The Fusion System is also linked to the DESIGO BEM'S System and Sinteso Fire System via Inputs; this allows events from either of these Systems to also be displayed all from one platform.

And when it comes to life safety, the Siemens Sinteso™ fire detection system, with its unique guarantee against false alarms, features intelligent detectors that can be individually tailored to protecting different areas of the workplace.

From dusty or harsh engineering environments, through to catering facilities, clean areas and server rooms, the sophisticated Advanced Signal Analysis (ASA) detection technology is able to accurately assess the difference between expected fire phenomena (e.g. smoke) and a situation that could potentially trigger a false fire alert (e.g. steam or welding sparks).

And let's face it; false starts are unacceptable for a team for whom the difference of a fraction of a second can determine a podium position.

For more information about our partnership with Red Bull Racing or our products and services portfolio, please contact:

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