

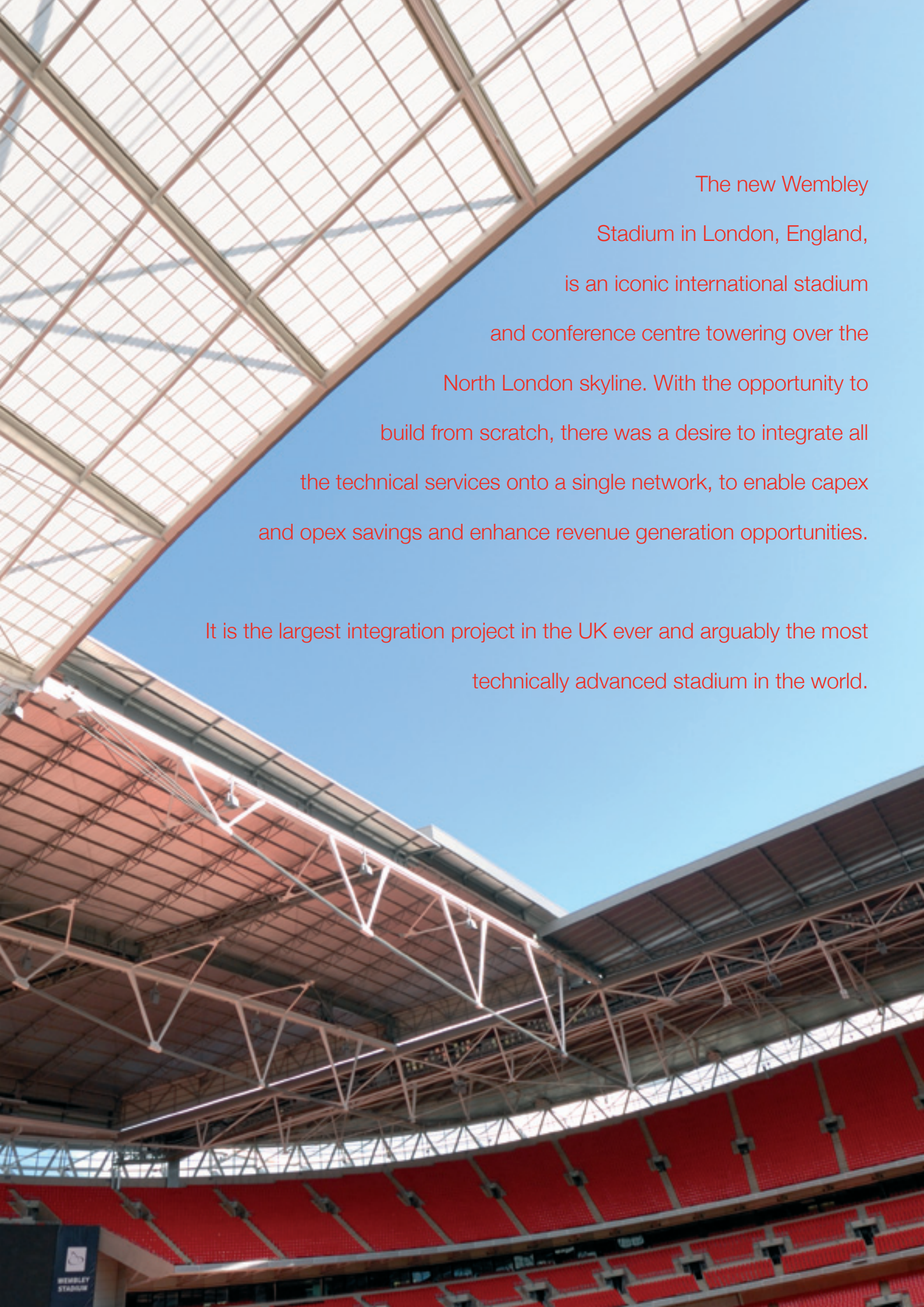
case study



Intelligent solutions set new Wembley Stadium on winning streak

Honeywell integrated building, security and life safety management solutions combine with network services to deliver a world class stadium that is safer, more secure and more productive.

Honeywell

The image shows the interior of Wembley Stadium, looking up at the massive, white, lattice-like roof structure. The roof is supported by a complex network of steel beams. Below the roof, the stadium seating is visible, consisting of rows of red seats. The sky is a clear, bright blue. The text is overlaid on the right side of the image.

The new Wembley Stadium in London, England, is an iconic international stadium and conference centre towering over the North London skyline. With the opportunity to build from scratch, there was a desire to integrate all the technical services onto a single network, to enable capex and opex savings and enhance revenue generation opportunities.

It is the largest integration project in the UK ever and arguably the most technically advanced stadium in the world.

Integrated Building Management



THE CUSTOMER

Wembley National Stadium Limited (WNSL) is the company that has redeveloped Wembley Stadium as the world's leading sport and music venue. Offering up to 90,000 fans unrivalled views of the action in state-of-the-art facilities while generating an unbeatable atmosphere, Wembley Stadium is setting new standards for supporters and performers alike.

The four million cubic metres stadium has a 1km circumference, an arch span of 315m – the longest single span roof structure in the world and wide enough for a train to travel through – and 90,000 covered seats. It also houses four of the largest restaurants in London along with the capital's largest banqueting facility.

The new stadium is built on the site of the old one and cost £757 million.



THE ISSUE

WNSL wanted a showcase stadium. In pursuit of flexibility, interoperability and efficiency, it sought to integrate all the technical services – building, security and life safety management along with data, voice and video communication – for the entire stadium on one, common network. It wanted to provide for a safer, more secure and more comfortable facility and to bring about better building control as well as lower operating costs. It stipulated an intelligent control solution that would support new and improved operations and services over the life span of the stadium – benefiting the public and customer service, stadium operators and Honeywell, the technical operator.

WNSL also stipulated that the stadium's building management applications should integrate with its business systems, electronic point of sale (EPOS), supply chain and payroll for example. It wanted to convert collected data into Management Information in order to maximise its return on investment.



Integrated Building Management



THE HONEYWELL SOLUTION

Honeywell was the main IT services and controls contractor on the project. Honeywell Network Services designed and installed the IT network platform capable of supporting all the applications encountered in an intelligent building management solution. This required the installation of 1,617 km of cabling, comprising 753 km of fibre backbone, 234 km of broadcast cabling and 630 km of horizontal structured and fire rated cabling. This supports resilient backbones and ensures that IP communication is provided with the necessary bandwidth in all operational modes of the stadium. It links 72 communication rooms housing the network switches which provide 7,500 network points and 3,500 devices on the network. It also facilitates the linking of stadium operations to its parent organisation, the internet and, via a second control room, to the (London) Metropolitan Police and other emergency authorities.

Honeywell's Building Solutions business focused on the design, installation, commissioning, project management and technical support of all the building, security and life safety management systems – Honeywell and third party. Factoring in the stadium's business goals, it provided the integration expertise to bring all the different applications together into one common operating platform, Honeywell Enterprise Buildings Integrator™ (EBI), which, in turn, is linked to a bespoke (Honeywell designed) Stadium Management System.



Building management:

- Heating, ventilation and air conditioning (HVAC)
- Lighting controls
- Lifts / escalators and extra low voltage (ELV) services
- Telephones
- Stewards' emergency phones



Security & Life Safety management:

- Fire detection and alarm systems
- Public Address Voice Announcement (PA/VA)
- Closed circuit television (CCTV)
- Access control and turnstiles
- People and asset management



Data, voice & video communications:

- Scoreboards / large format video
- Broadcast systems
- Master Aerial television (MATV)
- Wireless networking
- Press internet access
- Integration with business systems including EPOS

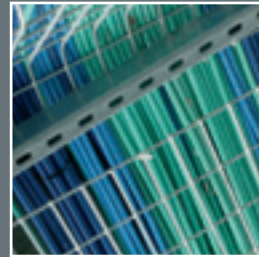
THE PROJECT DELIVERY

Work commenced in 2004 with a final, intensive push – one week instead of the original plan of two months – post practical completion. As well as managing successful project delivery, support services include training Wembley Stadium staff to operate and maintain the installed systems, on going maintenance and technical support – there are resident Honeywell engineers permanently on site, their number more than doubling for event days.

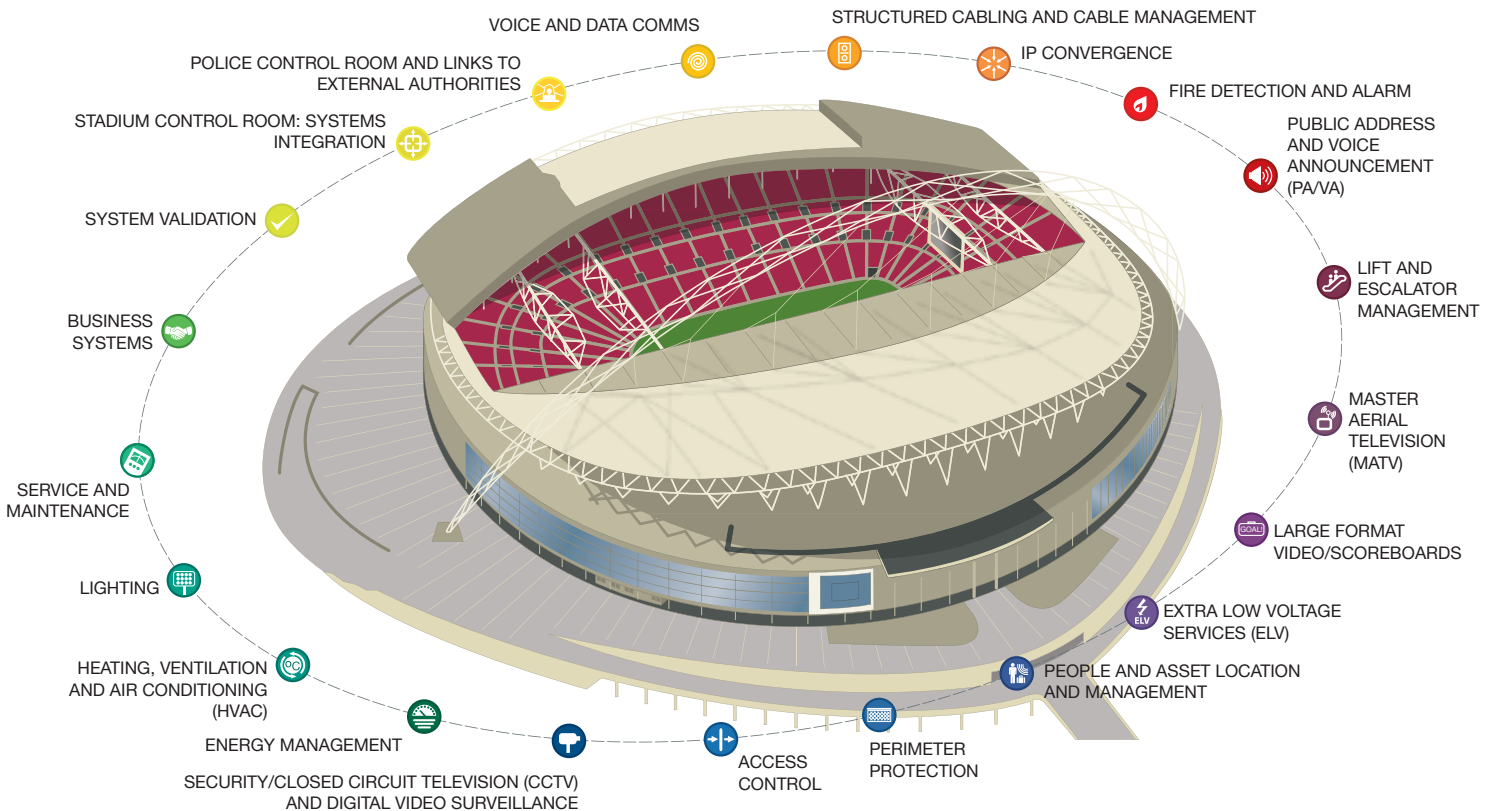
Two days prior to a football match or concert, these additional engineers arrive to deliver operational services support to the Event Control Room, the Security Control Room and in the field. Working with Wembley Stadium's own operators they check all stadium technical services – the BMS, Fire and Security (access and CCTV, public address system), the Police Control Room and the master aerial television system. They stay on site throughout the duration of the event and do not leave until it is officially over.

Technical & economic benefits of integration:

- Integrated design approach, enables efficient design development for faster implementation
- Common infrastructure resiliency
- Common upgrade path
- Centralised data management systems
- Data collection supports Management Information and cost savings in respect of operating the system / the building. Also revenue generation.
- Optimal energy management / energy savings
- Building management systems linked into business systems eg. supply chain, EPOS, HR database
- Cost savings on installation, including leveraging the use of cabling infrastructure
- Improved ROI over Stadium's life cycle



Action Images / WNSL



The most technically advanced stadium in the world is safe and secure, comfortable and energy efficient, productive and very innovative.

BUSINESS BENEFITS

Following a long and complex construction phase, the new Wembley Stadium is open for business. The most technically advanced stadium in the world, this 'mini city' is safe and secure, comfortable and energy efficient, productive and very innovative. It will deliver on WNSL's business objectives.

Says Wembley Stadium's IT and Business Process Director, Peter Warren, "Pulling the different technical systems together into one integrated solution centralises data and enables our stadium operators to make sense of a lot of information – and quickly. Practically they can access the entire system via a PC screen and manage all of the technical services in the stadium from a small number of work stations located in critical locations such as the Event, Security and Police control rooms.

"IP convergence lifts the system's intelligence higher still. It enables us to enhance customer service, link to EPOS and leverage new revenue generating opportunities – now and in the future."

This ability to collect, integrate and distribute data from/to multiple points taps the full potential of information exchange and uses technology and process to enforce operation as intended. Adopting a 'big picture' perspective also supports an understanding of 'cause and effect' issues and ensures an informed response. It clears the facts in an emergency and mitigates risk.

For example the system is supporting the inter-dependency of Wembley's Facilities Management and IT teams; they are learning how to work together and familiarising themselves with running the stadium. Though too early to quantify the reduction in operating costs, a full energy efficiency analysis will be undertaken which will demonstrate savings and operational efficiencies over time.

And, because EBI enables automated building control processes to perform on the basis of all the information available within the different applications, management has the ability to satisfy seemingly conflicting goals – to increase productivity yet reduce costs (installation, operating and energy) while delivering all the services needed by a world class stadium, conferencing and banqueting centre.

The system is also very flexible. Changes can be made without disruption to business as usual. It also integrates with the stadium's business systems to support permanent stadium occupancy of 400 people, and rise to the challenge of a major event, including the arrival of 90,000 visitors. Added to this IP convergence allows stadium management to leverage income generating opportunities. It can, for example, link mobile phone bar codes with EPOS applications and capitalise on new income-generating opportunities.

Says Peter Warren, "At the end of the day integration delivers a measurable return on investment. It allows us to do more with less – to drive productivity improvement, validate for regulatory compliance, set new benchmarks in respect of customer service and deliver on our financial goals and all against the backdrop of a safe, secure, comfortable and energy efficient stadium. It's an investment that will serve us very well for many years to come."



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Peter Warren, Wembley Stadium’s IT and Business Process Director



Action Images / WNSL

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