CREATING WINNING VENUES
SPORT AND ENTERTAINMENT BROCHURE
WWW.RAMBOLL.COM/STADIA
Designing hundreds of buildings every year, Ramboll has a rich heritage in realising many landmark schemes.

Our passion for design and creativity has led us to work with an array of world leading architects and clients to realise the ambitions for their projects. As a result we are a leading global engineering and consultancy company.

Our unwavering commitment to design is married with a deep appreciation of a building’s function, buildability and adaptability. Whether it’s designing and engineering world class stadia, sensitively modernising A grade commercial premises, or restoring priceless heritage assets, we have a great imagination for the future and a deep rooted sense of responsibility for the past.

Our Nordic heritage and founding principles underpin how we operate; we strive to create sustainable solutions where people and nature flourish. Our deeply ethical standpoint ensures we consider the impact on the local environment, in a societal, cultural and sustainable context. Furthermore our Liveable Cities Lab in Copenhagen is spearheading research into improving liveability, providing further insight for our progressive solutions.

We pride ourselves in understanding a brief, so that what gets designed and built achieves a client’s aims. We believe the best outcomes are achieved when we challenge and are challenged, the winner is always the project, and is why we champion open and collaborative dialogue.
Delivering ambitious and diverse venues
The design of sport and entertainment venues has changed significantly over recent years. With a growing need to maximise revenue, venues require the flexibility to accommodate a diverse array of events and activities in addition to their primary use. Our global teams have delivered hundreds of facilities from major sports stadia to leisure venues and entertainment destinations to temporary event buildings. We bring insight and experiences of delivering upon diverse and differing requirements from across the globe. Coupling our experience and passion for creativity with expertise in all relevant engineering and consulting disciplines, we provide a holistic service and a team that can turn your vision into reality.

Iconic facilities deliver more than a venue
We understand that the growing competition in the sport and entertainment market has put increased pressure on delivering quality venues, as premium facilities that create enhanced experiences receive proportionately higher revenues. Having worked with world leading architects to deliver some of the world’s most iconic facilities, we can pull together dynamic teams to deliver on specific venue needs. This includes structural and services engineers who have worked on complex and constrained sites, maximised value of new and reconfigured schemes through innovative concepts, delivered exciting schemes through our design culture and designed flexibly using zoned smart approaches to low energy design. Furthermore we can review local assets to ascertain how they can be utilised or supported, such as district heating and energy from waste. And with sporting and entertainment venues often providing the catalyst for wider urban regeneration, our planners bring urban development strategies to benefit and create accessibility for all.

FERRARI WORLD
The glass funnel sits at the centre of the iconic, ‘Rosso Corsa’ within the world’s only Ferrari themed entertainment park.
OUR APPROACH

BALANCING TECHNICAL DESIGN AND INNOVATION

Game changer
Like the sports and entertainment market capitalising on digital technology to enhance experiences for fans, Ramboll is using digital technology to transform design, engineering and construction today. With the delivery of sport and entertainment projects often taking many years from conception to delivery, time compression presents a key benefit. The early stages of a project in particular can be constrained by lengthy design periods to develop a concept with robust cost and programme data that shareholders can buy into. To overcome this we use our own bespoke digital design tools to collaborate with the architect to rapidly generate building options, whilst simultaneously undertaking early engineering analysis to evolve them. We’re able to run multiple iterations, collecting the data and presenting the optimum solution based on any combination of key criteria. Clients join us on the design journey and explore multiple options in real time. This enables informed value decisions on where to invest and where to save, with demonstration of the robustness of the proposal in concept, price and programme.

Maximising value and consistent delivery
One of our particular strengths is the contribution we make at concept design stage. Through early stage optioneering we influence the design of the venue and establish its engineering logic to exploit the site’s potential and meet energy and emission targets. We couple this with a concise design philosophy to prevent dilution or erosion of the design essence and fundamentals as the project team naturally expands to include contractors and subcontractors. We take pride in realising the concept through to completion and ensure even the small details are right, with a focus on delivering consistent quality.

The successful team environment
Digital tools are vital to ensuring clear and consistent communication, both within the design team and to stakeholders. Our industry leading dynamic dashboards empower clients by providing a clear visualisation of quantitative design data. This improved transparency and flexibility creates enhanced collaboration with the design team, leading to better informed decisions earlier in the process. It also creates a good platform for communication and empowers our designers to innovate, optimise and add value in a way that could not be achieved using traditional engineering techniques.

MOLINEUX STADIUM
Molineux Stadium, home to Wolverhampton Wanderers Football Club, is undergoing a major phased masterplan redevelopment.
MINIMISING DISRUPTION, MAXIMISING QUALITY
Ashton Gate Stadium is the home of Bristol City and Bristol Rugby Club. Its £45 million pound rebuild transformed it into a state-of-the-art 27,000 capacity stadium. Site boundaries and location of existing stands made the site highly constrained. A tight construction programme required an extremely well planned phasing of works to minimise impact on supporting and visiting crowds. The new scheme includes new conference facilities, hospitality lounges, corporate boxes, changing and warm up facilities for players, administration offices, sports bar, café and improved pitch sightlines.
WORLD CLASS PROJECTS

From Abu Dhabi to Anfield, our diverse portfolio has created a wealth of experience from across the globe. Our multidisciplinary teams understand the need for flexibility and bring passion and creativity to every project.

FIFA 2022 WORLD CUP STADIUM AND PRECINCT
Ramboll was the lead designer and provided multidisciplinary engineering services for a 40,000 seat World Cup stadium. The highly challenging brief including a BIM Strategy and BIM Management plan, detailing the exacting standard the stadium was to be built to. The stadium features highly innovative, energy efficient cooling technology developed by Ramboll. Advanced computational fluid dynamics, thermal comfort analysis and dynamic thermal modelling was used to ensure the comfort of players and fans.

HELSINKI OLYMPIC STADIUM CONVERSION
The 1952 Helsinki’s Olympic stadium is undergoing a major renovation. Expected to attract one million visitors annually the new international standard venue will become a sports, cultural and entertainment hub. Ramboll is delivering building services engineering for the project that aims to deliver high quality, durable, accessible and easily convertible facilities for the next 75 years. An additional 20,000sqm capacity doubles the size of the original facility, which will include a visitors centre, attractive restaurant, versatile conference rooms and new VIP corporate boxes.

Venues:
• Stadia
• Arenas
• Expos
• Theme Parks
• New build
• Refurbishment
AMEX STADIUM
Ramboll supported the development of Brighton & Hove’s new stadium in early stage planning and contractor procurement and management. Our specialist consultants provided expertise and fieldwork management throughout the environmental impact assessment and construction phases, where an early prehistoric site of unprecedented importance in East Sussex was uncovered. An archaeological mitigation strategy was designed to ensure the preservation of remains during construction to discharge planning conditions. Since completion the Club’s exponential revenue growth has been firmly attributed to the new facility, which has also created jobs and become a commodity for the community.
WORLD CLASS PROJECTS

NEW ANFIELD STADIUM
A striking roof design was central to the plan for a new stadium in Stanley Park for Liverpool Football Club. Liverpool Football Club’s previous owner was the catalyst behind the plan for a new, 73,000 seat landmark stadium, with substantially expanded facilities. Ramboll’s structural, infrastructure and ground engineers were involved in the design process for the Stanley Park site adjacent to Anfield, working closely with HKS architects. The owners at the time were keen to make reference to the club’s potent history and association with Anfield - home of the club since 1892.

PARKEN STADIUM
Home ground of the Danish national football club, Parken stadium underwent major refurbishment to expand capacity and enable more flexible use of space. Working closely with architect Gert Andersson, Ramboll developed the concept design for a part-fixed, part-retractable stadium roof. Our building services engineers designed an efficient heating and ventilation system, powerful enough to heat the covered arena to 21°C within 48 hours. This enables the space to be easily transformed into a large multi-purpose indoor events arena for concerts and conferences. The incredibly fast track programme was designed and completed in less than nine months.

CHELSEA WEST STAND
First built in 1876 to house the London Athletics club, the historic Stamford Bridge has been home to Chelsea FC since 1984. A major refurbishment transformed the stadium to provide new covered stands on all four sides of the pitch. Ramboll engineered the largest and last of the stands to be built – the West Stand. At three tiers high and 14,000 seating capacity, it provides additional layers of executive seating, lounge and clubroom areas slotted in between the tiers as well as retail, office and conference room facilities. Image: Richard Bryant (bottom right)
WORLD CLASS PROJECTS

TAMPERE ARENA
Tampere Arena is the centre piece for a new unique central area in Finland located above existing railway lines. This multipurpose arena and 13,000 capacity entertainment venue will accommodate two ice hockey teams, and play host to music, comedy, family entertainment shows and other sports exhibition events. A 300 bed hotel completely integrated within the arena also accommodates 10,000m² commercial and flexible spaces. Furthermore two towers alongside the arena provide residential and office space over 21 floors completing the wider urban development. Ramboll is delivering all engineering design services and providing consultancy in relation to the railway works.

FRANKLIN’S GARDENS
Franklin’s Gardens is home of Northampton Saints Rugby Club. Ramboll supported the delivery of the new Barwell Stand, containing 1,900 seats. The stand features a new member’s bar, hospitality suite and executive boxes in addition to a new main kitchen and control room. Space either side of the stand was extremely tight due to the location of the ownership boundary. Unlike previous phases of development no oversailing rights were granted for the structure, requiring complex structural solutions to support the roof. Ramboll worked closely with the main contractor to maximise seat provision and on construction sequencing.

PLYMOUTH ARGYLE
Designed to host international level sporting events and music concerts, this 43,000 seat stadium, designed with Populous architects provides significantly enhanced spectator capacity and hospitality facilities. The asymmetric shape of the stadium was carefully designed to maximise spectator capacity, within a physically and ecologically constrained site. The roof form is a defining feature of the external facade. Geometric studies were performed to achieve a roof surface that would be simple and economical to design and construct, while achieving the required undulating shape. Geometry optimisation also reduced the steel tonnage in the roof.

VANKE PAVILION
Vanke Pavilion, the centrepiece at the Milan Expo 2015 received over 20 million visitors. Designed by architects Studio Daniel Libeskind for the Chinese residential real estate giant, Vanke, the façade comprised hundreds of ceramic tiles to create this uniquely shaped building. Using our unwavering passion for design Ramboll’s engineering team used advanced coding techniques. This enabled the team to digitally rationalise the ceramic tiles to simplify the construction of this complex structure, without compromising the design.
FERRARI WORLD
Ferrari World covers 25sq km on Yas Island. It is the world’s only Ferrari themed entertainment park and contains a Formula 1 track, hotels and retail centre. Ramboll’s early involvement focused on schematic design of its 90,000sqm roof. Under the roof we engineered all three concrete frame levels and supporting structure, which take the weight of 19 separate steel frame buildings that house the rides. Our facade engineers worked on the glass funnel at the centre of the iconic, ‘Rosso Corsa’, triform roof and our structural and services engineers designed the coaster foundations, buildings, integrated services, (including underground services), control cabling and high voltage design and surrounding infrastructure.

SYD ENERGI ARENA (SE) ARENA
The new SE Arena is home to nine time Danish ice hockey champions (latest in 2015) Vojens Ishockey Klub. The new modern low energy consumption stadium more than doubled its capacity to 5,000 seats, enabling more spectators to experience the intense atmosphere of an ice hockey game. Ramboll delivered the construction design, acoustics and fire engineering services for the project.

MOLINEUX STADIUM REDEVELOPMENT
Molineux Stadium is home to Wolverhampton Wanderers Football Club, whose 1994 stadium is now undergoing a major phased masterplan redevelopment. The new stadium will feature an iconic cable stayed roof structure and will have its four independent stands rebuilt. The new double tier seating will be positioned closer to the pitch and wrap around the corners to maximise space. Ramboll provided the structural design for the stadium, which incorporates rigorous phasing analysis to ensure programme efficiency. The stand cullis stand, opened in 2011. The construction was phased to minimise seat loss during the playing season.
ABOUT RAMBOLL

Ramboll is a leading engineering, design and consultancy company founded in Denmark in 1945.

The company employs 13,000 across 300 offices in 35 countries with experts in the Nordics, North America, the UK, Continental Europe, Middle East and India, supplemented by a significant representation in Asia, Australia, South America and Sub-Saharan Africa.


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