

Winning on and off the field

Enhance spectator
experiences, regenerate
local communities,
maximise revenue streams



A good sports venue is all about the people...

who plan, design and build it,

who own and operate it,

but most of all who use it
– the players and fans.

Creating a platform for success

A good sports venue is simple to create, operate and adapt, appropriately functional, cost-effective over its lifecycle, and respects its environment and the community it sits within.

It maximises long-term revenue-generating opportunities, providing income streams that can be reinvested to promote success on the pitch and develop grassroots sports.

It triggers urban regeneration, helping to improve lives and livelihoods.

And it provides amazing experiences for players and spectators alike.

To create new venues or reinvent existing ones that can do all this calls for innovation and forward planning.

It involves approaching problems from a fresh perspective and thinking beyond conventional discipline boundaries to help sports clubs, investors and operators turn their ambitious visions into reality.

Exciting and dynamic spaces, constructed in the most technically and financially efficient way, also require close collaboration with owners and contractors, and detailed understanding of the needs of fans and user groups.

What makes a good stadium great?

Every sports and entertainment venue has a role to fulfil – for training, playing, learning, winning medals... for enjoying life.

Each venue is special and has its own technical, commercial and social requirements.

But the human experience of the players, fans and surrounding community has a significant bearing on the venue's performance. Success can be measured by outcomes achieved, but the difference between a good venue and a great one is often the human spirit it embodies.

This is our philosophy and it shapes the way we work with our clients to deliver truly great stadiums.



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One team, one goal

Whatever your ambitions, needs and challenges, and no matter where you are, we'll align the right combination of sector knowledge and expertise.

At Mott MacDonald, we work as one team centred around a single goal – to deliver results for our clients – you. We're joined up across all sectors and geographies, giving you access to an exceptional breadth and depth of sports and events expertise and experience.

We can offer fully integrated cross-disciplinary advisory services throughout the venue lifecycle, or services for a single aspect of the project to suit your needs.

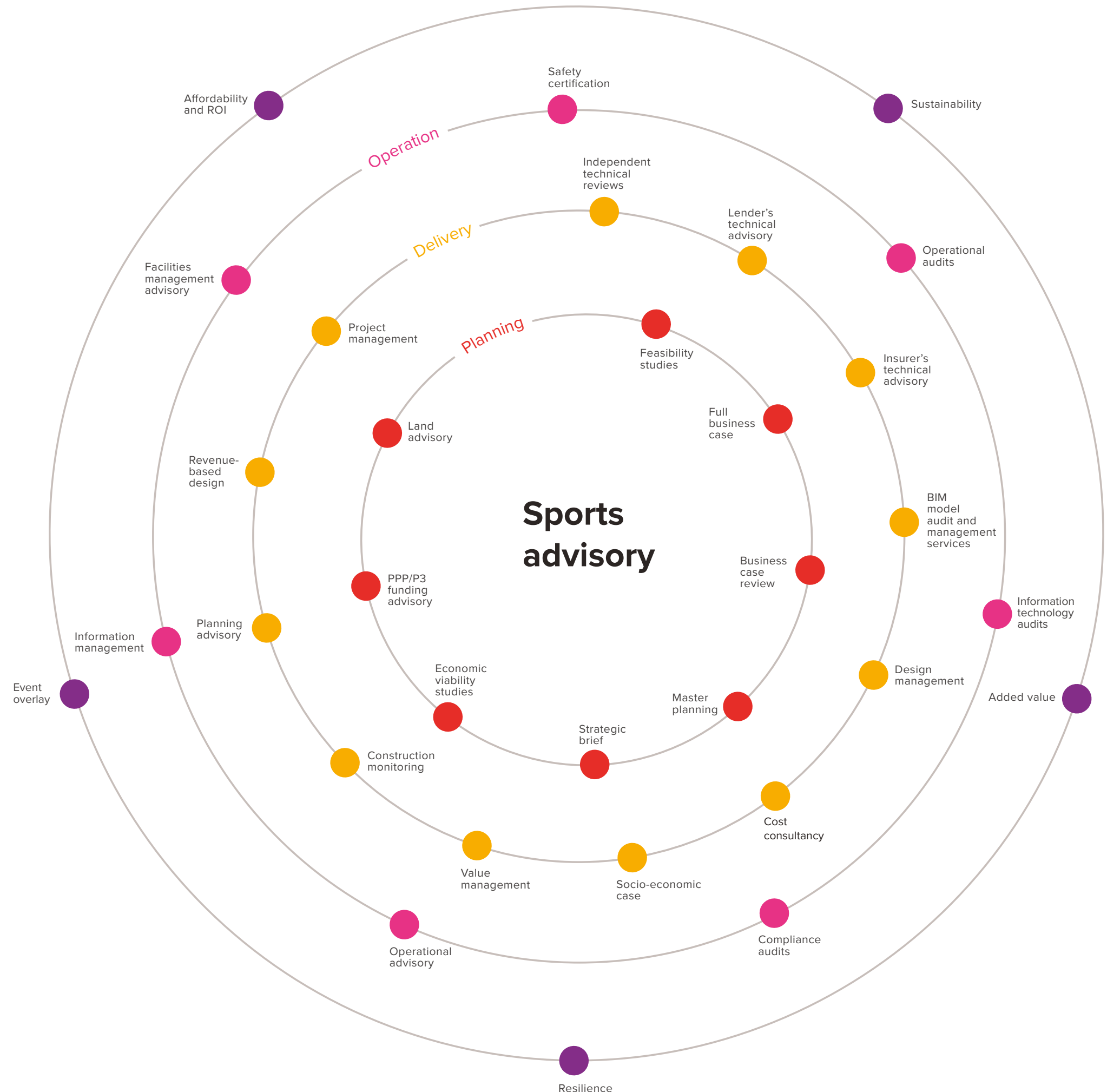
We are always looking for opportunities to think across boundaries, and around problems, for the benefit of clients and end users.

Proven track record

Our advisory services are founded in decades of technical and commercial delivery of a wide range of sporting venues around the world.

This means that our advice is always pragmatic and technically complete, and you can rely on us at any stage of a project to find a tangible means of enhancing performance in commercial, sporting or community dimensions.

It is our detailed understanding of all phases, from planning to operation, that enables us to give the best-informed advice. This makes us a trusted partner that can stay at your side – adding value and helping to deliver – from start to finish of the entire project lifecycle.



10 reasons why you should choose us to be your sports advisory partner

1.

World class

Our pedigree in sport goes back more than 75 years. In-depth knowledge and experience, along with technical skills covering all aspects of design and development, make us the ideal partner to advise on the planning, delivery and operation of world-class sports venues.

2.

Fresh thinking

As an employee-owned management, engineering and development consultancy, we have the independence of mind and freedom to see and do things differently. We constantly stretch our thinking to seek out innovative solutions. You can rely on us to offer a fresh perspective to any challenge.

4.

Increased revenues

Maximising existing and new build assets through our revenue-based design approach provides access to new or enhanced revenue streams that can finance success on the field or grassroots development.

3.

Social and economic benefits

A successful sports venue will directly inject investment into an area and indirectly improve a city through the strengthening of tourism and its identity. Our financial and socio-economic modelling will increase understanding of the wider, beneficial community impacts and how to achieve them.

5.

Unforgettable fan experiences

We take the time to really understand the needs of fans and how we can not only meet but exceed the expectations of each part of the club's fan base. We create stadiums where the play is unforgettable and the atmosphere is unbeatable.

8.

Efficient transport planning

The commercial and reputational success of any venue depends on the safe, efficient movement of spectators. We find the best ways to connect venues and get people to their destinations on time, ensuring positive travel experiences for all.

7.

Better environmental performance

We will work with you to save energy, cut carbon and use fewer resources throughout the project lifecycle. Our environmental responsibility does not stop at project handover and we provide our customers with the skills and support they need to achieve the highest possible standards of environmental management into operation and maintenance.

6.

New investment, higher returns

As the world's leading technical advisor on public private partnerships (PPP/P3), we know how to unlock investment to get projects off the ground. We are able to maximise returns for investors through our detailed understanding of the technical and commercial factors affecting the sports and events sector.

9.

Improved safety and compliance

We can help you to keep visitors and spectators safe and keep within the law. Our specialists can guide you on how to comply with FIFA, UEFA, EPL, IAAF and other sports standards on spectator safety and comfort, and we know the national and international guidance for licensing purposes that is required for sports venues hosting business and cultural events.

10.

Lasting legacy

We provide specialist knowledge in the design, reuse and adaptation of existing venues, legacy planning and sustainability, contributing to long-term success. We collaborate with clients from the earliest phases of a project to create cutting-edge designs that are tailored to their specific requirements and will provide optimum whole-life financial, environmental and social performance.



How we can help you to plan and finance your sports development project:

- Full business case
- Business case reviews
- Economic viability studies
- PPP/P3 advisory services
- Due diligence
- Financial audits
- Increased revenues
- Land advisory services

Successful projects start with sound planning

Holistic approach and visionary thinking will deliver best value and best returns.

Making the business case

Planning for success at the earliest stage creates the roadmap to a viable and sustainable sports development.

Due diligence of appropriate financing structures, technical constraints and consumer trends is essential in determining a robust business case before embarking on design.

Every project is unique – each client's ambitions need to be balanced with local market demand, the type and frequency of events, and opportunities for using the facility for non-sports events and generating additional revenue.

Keeping an open mind and investigating all alternatives will identify innovative solutions. Cost and socio-economic modelling tools can aid decision making by providing clear evidence of positive economic and community impacts of different design options.

Undertaking whole-life cost analysis will generate significant benefits later in the project lifecycle, cutting waste and redundancy in the delivery process and in the building itself.

Sport as an urban catalyst

The construction or refurbishment of major sports venues is often a catalyst for regeneration of the surrounding area's infrastructure and living and work spaces.

Calculating the direct and indirect impacts on jobs and gross value added will support the business case for developments, and enhance proposals to realise economic and social benefits.

Effective public consultations will secure stakeholder buy-in and support the delivery of radical urban transformation programmes.

In an era of constrained finances, unlocking new sources of investment – such as public private partnerships – will be increasingly important to get projects off the ground, be they new builds or the refurbishment of existing stadiums.

The role of a stadium in society

If we were to imagine the impact that removing, say, the leading football clubs from a city would have, and we replaced these stadiums with greener buildings boasting excellent sustainability ratings, such as offices, would this benefit the city and its residents?

The benefits that stadiums bring to a city reach far beyond their environmental footprints. They help to shape the very way that people perceive and feel about living and working in a city, or visiting it.

The global success of home clubs and teams rubs off on the local population and a city's brand – delivering tourism, business benefits, improved transportation, job opportunities and a 'feel good' factor.

Yet the lenses we use to scrutinise and measure the sustainability of these building types ignore the majority of these benefits and focus more on the single pillar of environmental performance.

We have developed a new tool that helps to assess and balance the potential legacy impacts of a major sports venue across the four key pillars of sustainability – environmental, socio-economic, cultural and financial – when planning and delivering a venue.

By taking a more holistic view on the sustainability of sports developments, we believe it will help to mobilise stakeholders in delivering the legacy outcomes a city targets.



Project
London 2012 Olympic
Stadium Transformation

Location
London, UK

Client
Olympic Park Legacy Company

Expertise
Technical advisory and
construction supervision services

Lasting legacy of London 2012 Olympics

The reconfiguration of the Olympic Stadium in London to maximise its potential has been key to securing a lasting, sustainable legacy for the 2012 Olympics.

We were involved at all stages of the project, from feasibility studies to site supervision throughout the construction phase. We reviewed all services including civil, structural, mechanical and electrical, public health and fire, wrote the technical design brief, and established a challenge team to propose alternative designs that were more economical.

Our remit was extended to include the role of Category III checker of the roof in legacy mode. The new roof is a gravity-stressed cable net structure that provides coverage of approximately 46,500m², which is far greater than the 25,000m² provided by the original roof, necessitating strengthening works to accommodate the additional loads.

This task involved reviewing the structural design philosophy, producing independent structural analysis models, calculating applied roof loads, and checking all structural elements (including connection forces) and the adequacy of foundation remedial works.

Our review of the proposed roof design added significant value to the project by reducing the weight of steelwork, achieving a saving of £30M. The London Stadium, as it is now called, is home to Premier League club West Ham United, but remains a world-class venue for athletics.

£30M

The amount of money saved
by our alternative roof design



Football club’s goal is a new home

Project
Brentford Community Stadium

Location
Brentford, London, UK

Client
Brentford FC

Expertise
Value engineering, technical advisory, cost consultancy, civil and structural engineering



Brentford FC has been based at its Griffin Park venue for over 100 years. The current stadium capacity is just 12,500 when the average in the English Football League Championship is nearly 28,000, and the facilities are tired with no opportunity to expand corporate revenue options or update amenities to attract new fans.

A move to a new 20,000-seat, modern stadium close to its current home will not only guarantee the club’s future but also allow it to increase the local impact of its youth and community work. Funding the construction will be 910 flats around the new stadium and 75 family homes on its soon to be vacated current site.

The initial plans involved not just residential property but retail, a hotel and a leisure centre, but this generated insufficient revenue given the additional capital expenditure required. We took

the scheme back to first principals by focusing on the cost of the new stadium, identifying the funding gap and then overlaying development options that would bring in surplus revenue.

We established that the focus should be on residential property and that an extra parcel of land would push the proposals into better financial shape as well as providing an extra access route to the stadium for fans. Latest calculations have allowed the reintroduction of a 160-bed hotel.

The new stadium offers more than a new home for Brentford FC and increased revenues for the club. It will also be home to a professional rugby team, cement the club’s role in the community, and is at the heart of plans to regenerate the area, including much-needed new homes.

Roughriders break in new stadium

Project
Mosaic Stadium

Location
Regina, Saskatchewan, Canada

Client
City of Regina

Expertise
PPP/P3 advisory, engineering, cost consultancy and architectural services

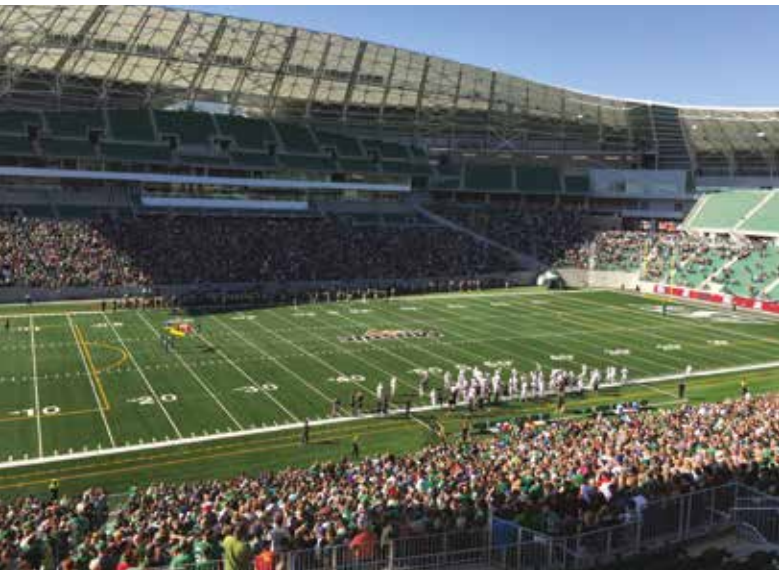
As the owner’s architect and engineer, we strengthened the business case for a new sports stadium for the Saskatchewan Roughriders with a concept design for a stadium that will extend the football playing season by two months each year.

Following extensive stakeholder consultation, we produced the concept design drawings and detailed specifications containing the technical requirements, which involved procuring the design and build contractor under a P3 procurement model. Subsequently we had an ongoing compliance and monitoring role.

One of the primary objects of the design was to ameliorate climatic conditions using the geometric form of the stadium to reduce wind-chill in the winter, and provide cooling airflow in the summer. We undertook the detailed modelling in-house and used this to inform the basis for the design.

By dramatically improving spectator comfort, the design will allow the stadium to be used for an extra month at each end of the current playing season.

It also allows for provision of a retractable roof in the future, which would enable year-round use for sports and non-sports events, increasing revenue-generating opportunities.



Managing costs to achieve best value for money

Effective cost management is key to the design and delivery of complex sports development projects.

Working collaboratively

We believe the chief role of the cost consultant should be to cost manage, not cost report.

The cost management team needs to work collaboratively and concurrently with the rest of the design team disciplines, cost managing the process and helping to guide the developing design to ensure the overall development and individual elements remain affordable and within the budget specified.

This is how we work and we have a long history of providing cost management advice and successfully delivering sports venues across the world, giving our team a unique insight into the key success factors for any stadium project.

This enables us to make a significant contribution during the early project stages, prior to any design work being undertaken.

Meeting objectives

Our unique understanding of these complex buildings allows us to assess the cost of different options with limited design information, and identify the solution that will deliver best value for money when measured against a client’s objectives.

As a project progresses, we help to identify and tailor a procurement strategy that aligns with a client’s cost, quality, programme and risk requirements.

Throughout we continue to control costs and provide the right level of information – at the right time, to the right people – to ensure informed business decisions can be made, leading to ultimate project success.



www.albionimages.com

Our review leaves stadium in credit

Project

American Express Community Stadium

Location

Brighton, UK

Client

The Community Stadium Limited

Expertise

Cost consultancy, employer’s agent services

Brighton & Hove Albion FC’s stadium had been in the planning for several years when the club asked us to provide an independent review of the scheme’s economic viability.

Our review pinpointed where the club’s capital budgeting and design were not aligned, and identified opportunities for removing excess cost through value engineering.

We were subsequently appointed to provide full cost consultancy and employer’s agent services, helping to turn the club’s vision for a 22,000 all-

seater, multi-purpose community stadium into reality. We also created and adopted a procurement strategy that allowed the club to modify the original corporate hospitality facilities during construction in response to increasing demand.

The sweeping architectural form of the American Express Community Stadium – simply called the Amex by football fans – was inspired by its location in the South Downs, an Area of Outstanding Natural Beauty. It was designed by architects KSS to allow for easy expansion within its

established envelope and since opening its capacity has been increased to more than 30,000.

As well as providing modern high-quality facilities for sporting events and concerts, the stadium incorporates the club’s offices, a retail outlet, naturally lit exhibition halls, a community education hub and learning spaces for two local colleges.

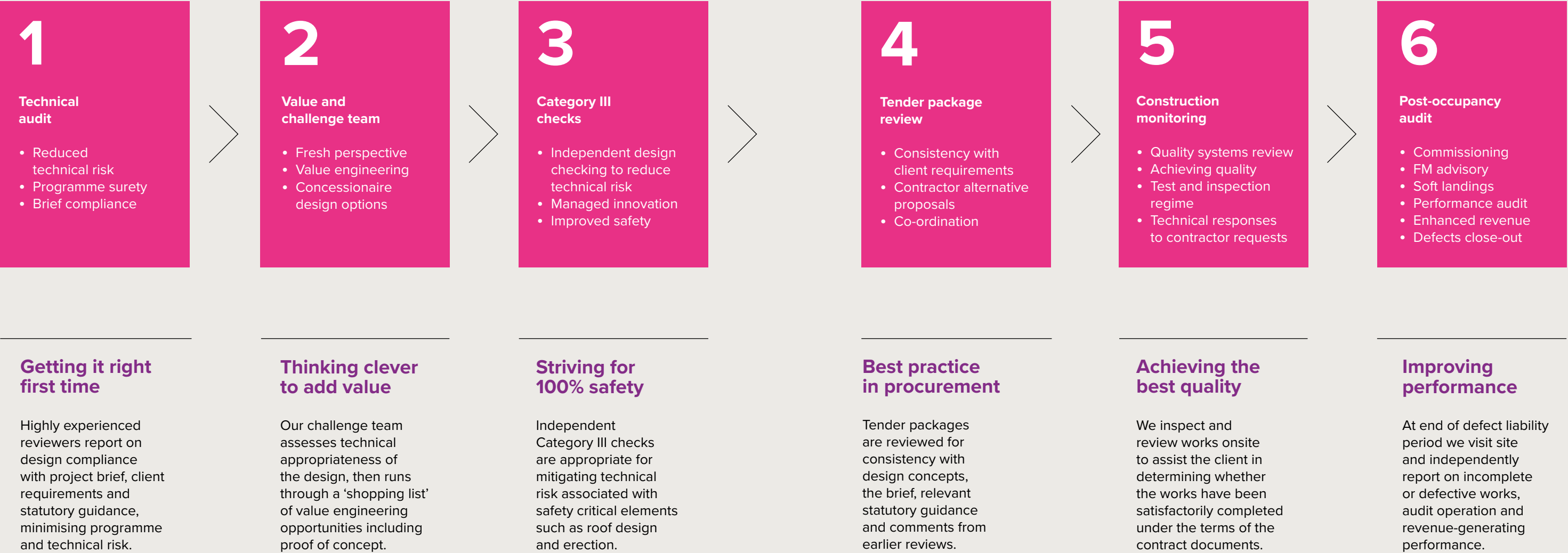
The wider development has equipped the stadium with superb transport links including an onsite mainline rail station and park and ride facilities.

The right advice at every step

Our approach to technical advisory is based on applying effective review management at every project stage to minimise risk, while adding value through innovative design.

“Highly proactive and motivated to make the project a lasting success. Your invaluable experience and pragmatic advice informed major decisions and contributed to significant efficiencies.”

Greg Smith
Project sponsor, London 2012 Olympic Legacy Transformation



How we can help you to bid for and host a sporting event:

- Bid book writing
- Event feasibility studies
- Event business case and cost modelling
- Major event strategies
- Master planning
- Overlay design and management
- Transportation strategy and demand modelling
- Delivery partner roles
- Legacy transformation
- Venue operational advisory



Host cities are healthier cities

Hosting sporting events helps to regenerate communities and improve health outcomes.

Well-documented benefits

Hosting sports events, from flagship events such as the Olympic and Paralympic Games to lower-profile competitions and tournaments, has the potential to generate a wide range of well-documented benefits for the host city or community.

Events, both large and small, attract a steady flow of visitors, generate local and international publicity, boost the local economy, strengthen community spirit, and reinforce image and reputation.

Sport itself delivers benefits for the whole community – healthier lifestyles, improved wellbeing – and hosting events can lead to higher levels of interest and participation in sports and physical activity.

One of the legacies of events should be modern new leisure facilities open to all, increasing accessibility, and elite training facilities that promote sporting attainment at the highest level.

Global marketplace

If cities aspire to be players in the national or international event marketplace, they will increase their chances of success if they put in place the appropriate resources and sports infrastructure.

The issues around hosting major events are diverse and complex. Their effective delivery requires the involvement of a multiplicity of agencies and stakeholders, all of which have different objectives.

Preparing and implementing a major event strategy recognises these realities, providing mechanisms for resourcing event organisations, attracting volunteers, and harnessing the private sector by encouraging its understanding of the benefits it will gain.

A major event strategy will also be more effective if there is a clear understanding of the need for both a partnership approach and governmental leadership.

A key outcome of a strategy is a process or set of guidelines to help inform which events to prioritise as, all too often, decisions about which events to bid for are not made strategically but in response to short-term pressures.

If analysis is undertaken, in many cases it only measures whether the event will be good for the city economically. Such forecasts attract media attention but have often been shown to be exaggerated and are rarely subjected to post-event scrutiny.

When considering bidding for or creating an event, the first question decision makers should ask themselves is: “Will this event deliver our legacy objectives?”

Legacy-driven approach

This kind of analysis requires a strategic legacy-driven approach and a process for evaluating potential events, and the collaboration of all the various agencies which will be involved in the bidding and hosting process.

Criteria can then be established for each of the goals of the city and its partners and potential events assessed against them, allowing events to be compared, and proposals strengthened prior to bid submission.

The use of such a methodology ensures that the city will be bidding for events that best meet its overall goals and objectives – the right events for the right reasons.

Renewing communities through sport

Project
Paris 2024 Olympic Bid/
French Leisure Sector

Location
France

Client
France National Olympic
Committee/Various
local authorities

Expertise
Feasibility studies, design
and technical reviews, master
planning, procurement,
facilities management

The winning bid by Paris to host the 2024 Olympics was supported by our work on several developments for which sustainability, urban regeneration and legacy planning were all top priorities.

One of the pavilions for badminton and volleyball matches at Le Bourget will later be converted into a sports hall dedicated to disability sport.

The development to build a velodrome at Saint-Quentin incorporates student accommodation while a major arena at Tremblay-en-France, designed to host basketball and handball matches and seat up to 8000 spectators, forms part of a project that includes offices, housing and shopping malls.

In the last five years we have worked closely with local authorities in Paris and across France to deliver more than 100 leisure infrastructure projects with an average capital expenditure of €10M to €15M.

Our planning of how these venues can interact and join together, to provide initial introductions to sport through to elite training as part of an overarching masterplan, will heighten positive impacts on communities.



At the hub of the community

Project
Hebburn Community Hub

Location
Newcastle, UK

Client
Willmott Dixon/South
Tyneside Council

Expertise
Detailed civil and structural
design and engineering

The two-storey 5800 sq m Hebburn Community Hub provides a 25m swimming pool, a learning pool for inexperienced swimmers, a fitness suite, a sports hall and dance studios, along with a library, meeting rooms, event spaces and public sector customer services.

The site’s central location provided the opportunity to re-establish a sense of place, revitalise the town centre and improve circulation. By uniting various public services in a single building, the project makes efficient use of its plot and encourages social interaction.

The structural design involved construction of a steel frame with precast concrete upper floors acting compositely with the steel frame. The swimming pools are constructed of water-retaining reinforced concrete. The building is clad with a timber structural insulated panel system.

The civil design included assessment and stabilisation of the shallow mine workings which extend beneath the pool footprint, a surface water attenuation system, and the diversion of existing public sewers.

Offsite fabrication reduced costs and construction time, as well as reducing the waste generated and the environmental impact of the works. The project was completed in just 20 months.

Hat-trick at Euro 2016

Acting as lender’s technical advisor, we monitored the design and construction of three of the four new stadiums built for Euro 2016, the world’s second biggest football tournament.

Our teams provided due diligence and independent reviews of business plans, helping to bring each project to a successful commercial and financial close, on budget and on schedule.

We continue to monitor the operational and sustainability performance of all three stadiums: Parc Olympique Lyonnais in Lyons, Allianz Riviera Stadium in Nice and Matmut Atlantique in Bordeaux.

The €400M 59,000-seater Parc Olympique Lyonnais, since renamed the Groupama Stadium, is France’s first fully privately financed stadium.

We were involved in this project, alongside Olympique Lyonnais and their lenders, from the very beginning and played an instrumental role in making the deal bankable and securing the necessary financing.

Euro 2016 featured 51 games played at 10 locations and broke all records in terms of attendance (2.4M) and revenue (€1.93bn).

2.4M

The number of spectators who attended Euro 2016

Project
Euro 2016

Location
France

Client
Foncière du Montout, City of Nice/Métropole Nice Côte d’Azur, City of Bordeaux

Expertise
Lenders’ technical advisory services, business plan review, construction supervision, operation monitoring



© Groupama Stadium/Populous/Intens-Cité/S. Guiochon

Delivering change through innovative design

Challenging convention and breaking new ground to achieve the objectives of clients.

Value-based technical reviews

Effective, economic and sustainable design is paramount to achieving the best financial, environmental and operational performance of sports and entertainment developments.

The independent audit of designs and costings prior to construction will help to mitigate project overspend and risks associated with innovative solutions. We have developed a risk-based approach to identifying and minimising the budgetary, technical and quality risks associated with delivering these complex building types.

It allows access to accurate benchmarked data and technical advisors with relevant experience, and provides an opportunity to add value to the design in terms of material cost reduction, programme saving and surety of delivery, improving safety and minimising operational and maintenance costs.

In addition to reviewing proposed designs, we also offer a challenge team service that rapidly investigates alternative delivery solutions that will deliver significant cost or time savings and/or add further value through operational enhancements.

This team is independent of the design team and can be used to examine alternative designs to meet potential concessionaire requirements, increase revenue generated or other value-adding outcomes without delaying progress of the overall project team. We can deliver these challenge team designs quickly by drawing on our extensive design and delivery experience of sports venues.

Design management

An open, inclusive approach to project and contract management will keep stakeholders informed, providing early warning of any issues and promoting a collaborative ethos to solving problems. Robust tender and contract documentation will help to manage scheduling, cost, quality and risk.

We drive the whole project delivery process, taking care of everything including commercial management, project controls, audits, programming, planning, risk advice and quality management. Our services are backed by robust data and innovative management tools and systems – all geared to giving our clients the support they need from inception to operation.

How we can help you to design and deliver your sports development project:

- Technical audits
- Value management
- Venue rationalisation studies
- Insurance construction risk
- Independent technical design reviews
- Building information modelling and management services
- Construction monitoring
- Project management
- Cost reporting
- Fabrication review
- Temporary works advisory
- 4D BIM construction modelling

The development of efficient operational, crowd safety and facilities management plans and procedures will support the transition from construction to operation, helping to meet the expectations of user groups, event owners and regulators.

Our technical roots in venue design allow us to proactively manage design issues as they arise, helping to guide and direct the design team towards the most appropriate outcomes for the client and project.

Digital design

Building information modelling (BIM) can be used to unlock significant material savings in the design and delivery process, and realise efficiencies in performance and operation, reducing the whole-life costs of assets.

BIM will optimise spectator comfort, energy efficiency and ease of maintenance – and demonstrate that designs work, allowing departures from codes that would conventionally limit the design. This enables architects to ‘open up’ a venue, creating world-class facilities, unique spaces and iconic structures.

Designs with built-in flexibility add value by accommodating variable fields of play for multi-sports venues and overlay designs for concerts, exhibitions and other events, enhancing the revenue generated and legacy of projects.

We have designed some of the world’s biggest and most complex sports facilities and buildings using BIM. We know what can be achieved – and will bring that experience to your sports development project.





95%

Time saved to produce load schedules

Going for gold in efficiency

Project

Major international multisports event

Location

Queensland, Australia

Client

Confidential

Expertise

BIM co-ordination, event overlay design, transportation design

A major international multisports event in Queensland, Australia, saw 6500 athletes and officials from 71 countries compete at 18 sports venues over 11 days.

As part of our engagement with the client, we provided a full-time BIM co-ordinator to oversee processes and identify new efficiencies. One focus was to overhaul the production of building services load schedules, which are used to estimate the amount of power that will be needed for an installation.

We devised a bespoke solution using AutoDesk Dynamo, a visual scripting language, to load information from an Excel spreadsheet onto an overlay design model and carry out the necessary calculations to produce load schedule summaries.

With traditional load schedules, the value is lost as soon as the design changes or new engineering information is received. However, our bespoke solution provided an agile and powerful tool to keep load data current as the model was updated. This automated process reduced the time it took to produce load schedules by more than 95% compared to traditional methods.

Taking into account the 18 venues and the continuous updates to designs between planning and the end of the event, our work cut several hundred working hours from the schedule, allowing public money to go further, while helping to deliver an efficient and successful event.



Gain an edge through revenue-based design

Work with us to identify opportunities to generate new revenue streams.

Safeguarding against sporting performance

A modern stadium needs to be more than a cathedral for sports fans. It must offer more choice to potential customers by attracting supplementary sports and entertainment events, increasing customer spend which ultimately improves the operating profit of the stadium. Additional revenues from improved fan experiences will also help to reduce the impact of sporting performance on the stadium business plan.

With revenue-based design, you can reinvent your stadium, cover the investment costs and secure new sustainable income streams to improve success on the field of play, while providing an improved fan experience.

Schemes to introduce corporate lounges, sponsored zones, hospitality boxes, naming rights, façade wraps and catering and retail concessions can create significant additional revenue and breathe new life into ageing venues.

The fan experience economy

We have an industry-leading approach to revenue-based design and begin by defining potential enhancements to a stadium that will match the vision of the club or owner and offer attractive returns to investors and developers.

Next, using our in-house benchmark database, we assess the technical viability of upgrades against consumer demand and potential payback periods to create a strategic business plan.

Then we prepare a detailed business case that strikes the optimum balance between revenue, operation and capital costs against community and elite sport requirements, ensuring the scale, affordability and delivery of a project will be 'right first time'.

Investors fund the work and recover their costs from the extra revenue generated over, typically, three to four years. After that revenues will progressively go to the club to reinvest in players, facilities and grassroots sport.

Retrofitted solutions

Our team of revenue specialists can deliver solutions that can be retrofitted to an existing stadium to improve fan engagement, the diversity of experiences offered and revenue achieved. We are used to working around event fixtures and the day-to-day operational requirements of a stadium to deliver a major step change to a club's facilities without impact on the operational success of the club.

New venues

Revenue-based design can be employed at the outset of new venues to identify ways of enhancing match day and non-match day revenue-generating opportunities.

It can test a shopping list of options against a quick outline design; costing and establishing what works and what is too expensive before even moving to the feasibility stage. Through market analytics and research we arrive at the optimum development brief that will not only capture the hearts and imagination of your established fan base but widen your appeal to new groups of fans.

Project
Wembley Stadium

Location
London, UK

Client
Wembley National Stadium Limited (WNSL)

Expertise
Technical advisory, structural design, geotechnical, MEP design, fire engineering, acoustics, cost consultancy

Iconic stadium’s hospitality is the best bar none

90,000
Capacity of the new stadium

The initial brief for the new Wembley stadium was simply to replicate the existing stadium but upgraded to modern-day standards. This would have only delivered similar revenues to the existing stadium.

Instead we investigated revenue-generating design facilities that could be incorporated into the stadium to deliver significant additional income streams compared to the old stadium.

The cost of a less ambitious new stadium would have been £200M. Following our advice, the FA opted to spend £452M but with an eye on future revenues that would not only pay off the construction costs but provide long-term revenue for English football.

Now celebrating its 10th year in operation, the new 90,000-seater Wembley is much larger than the old with a footprint almost twice the size to provide world-leading hospitality and facilities. The stadium has 34 bars, eight restaurants and 688 food and drink service points with up to 10,500 seated meals served at any one event.

The new pitch is 4m lower than the previous pitch as well as being enhanced by technology which combines synthetic grass with the real Wembley grass to strengthen the surface. This system provides a consistently high-quality playing surface and enables the venue to host rugby, American football, boxing and music events.

We reviewed the design of an enhanced stage pocket, comprising seating which can be lifted hydraulically to increase the stage area, enabling Wembley to be converted from a concert venue to a Champions League football stadium within three days.

Wembley is one of the most economically successful stadiums in the world as well as being a firm favourite with fans – and we continue to advise on ways the stadium can generate even more revenues.

688
Number of food and drink service points



Smart stadiums

Improving fan experience and revenue through technology.

Digital innovations

A visit to a stadium is no longer solely to enjoy the experience of live sports, and stadium owners must compete with fans' living rooms in providing the best game-day experience. New technology and digital innovations, and the smartphone in the pocket of each fan, have generated the opportunity for an interactive and unforgettable fan experience.

Any fan attending a live game will be missing out on other live sport running concurrently, therefore, the interactive stadium experience must offer the opportunities to access and enjoy this at the same time.

Augmented and virtual reality has opened the floodgates for technological interventions, and the fans are demanding change in their match-day experience, looking to personalise the way they digitally interact with the event and transform the way they enjoy their day out.

In short, technology is redefining the fan experience and is an important tool in maximising the revenue of a stadium. With each refurbishment, intervention or new build, clubs and stadium owners and operators must take the opportunity to create a platform which supports the future of interactive stadiums.

Ticketing

Seen as the first interaction with the customer, ticketing transactions have come a long way in recent years with virtual reality, laser scanning and in-app technologies allowing fans to access the view from their seats long before setting foot in the stadium, providing the opportunity to 'try before you buy'.

Once purchased, a ticket can then be used to buy food and beverage, and even merchandise, all of which can be prepared in advance and delivered to the fan's seat. Access technology linked with biometric fingerprint readers provides stadium operators increased security without delays to fans when entering grounds. It also helps to counter ticket fraud and supports logistical and operational activities.

Apps

Wayfinding apps allow fans to plan their visits in advance; especially helpful when attending tournament events. These are useful in assisting spectators to find the best route to the stadium and parking near the venue,

and easily locate the nearest toilets and food and beverage offerings – even identifying those with the shortest queues.

'E-wallet' apps allow cashless in-seat ordering of food and beverage, offering loyalty and reward points, and can be sponsored by major credit card providers.

Apps also enable fans in the stadium to watch instant HD replays and exclusive content. Players wearing chest-cameras is one way to offer exciting and innovative views of the action to those in the stands.

Connectivity

Due to the use of 'second screens' by fans, it is imperative to enable

uninterrupted high-speed Wi-Fi connectivity within the stadium. Not only does this improve the fan experience, it allows the multitude of digital innovations to be enjoyed and unlocked by the consumer, ensuring interaction with stadium content. A well-connected customer will be willing and able to spend more money on food, beverage, merchandise and upgrades.

E-sports

Benefits of e-sports include sportsmanship and teamwork, and it attracts fans of all ages and abilities. Parents are increasingly supporting its positive learning environment as well as the aspect of fun and entertainment it brings.





It is not surprising then that on attending a live sporting event, fans expect to see an e-sports environment supported through the provision of gaming arenas offering live tournaments. And stadiums are now the arenas of choice for large-scale, one-off tournaments.

E-sports offer a similar revenue model to traditional sports in that the most skilled players attract the most viewers, creating sponsorship opportunities, and increased brand value. The attraction of e-sports to the ‘non-traditional’ sports fan must also be noted, and by catering to the requirements of the e-sports fan, a stadium will diversify its customer base. To support the provision of e-sports, stadium operators need to ensure there is correct provision of infrastructure to enable a live gaming environment.

Advertising
Interactive HDTV and LED video content around the stadium can include sponsored content. This may include food and beverage campaigns, betting, and targeted brand marketing. Utilising data mining and linking this to the customer demographics around the stadium can create powerful advertising and increased sales. Digital advertising through mobile phone apps is rapidly growing in stature and digital marketing rights inside the stadium is establishing itself as a strong revenue stream.

We can improve your stadium’s operations through digital strategies and audits of:

- Large format display screens
- Public address systems
- Security cameras
- Access control and turnstiles
- Emergency services radio networks
- Wi-Fi
- IPTV and digital signage
- Technology investment plans

Digital facelift

A decade after installation, viewing quality provided by the original large format video screens within Wembley Stadium was deteriorating markedly. WNSL wanted to provide fans with a visual experience worthy of the venue. Advances in technology and growing revenue potential from hosting NFL American football offered the means for doing so. We provided WNSL with technical advice during the feasibility and tender evaluation stages, then monitored installation of the upgraded screens. These included two 15HD pixel layout LED video displays and a 360° middle tier ribbon board totalling 850m² of display and 2.7M pixels. The ICT upgrades also included the installation of over 1000m² of freeform LED stick elements on the northern façade, and LED lighting of the stadium’s famous arch. These enable interactive digital event branding and additional advertising opportunities. The upgrade will pay back the investment required in less than five years through sponsorship and media content deals.

Project
Wembley Stadium
Location
London, UK
Client
Wembley National Stadium Limited (WNSL)
Expertise
Technical monitoring

Raising revenue through the roof

We have delivered advisory services at Twickenham Stadium since completion of the original build in the 1990s. Our inherent understanding of the stadium structure unlocked the business case for upgrading the large format video screens. Located at the back of the top tier, the existing screens lowered the stadium’s capacity by 500, reducing sales revenue. Suspending screens from the tip of the stadium’s cantilever roof would release valuable space – but to do so required understanding of existing and proposed roof structures and the necessary strengthening, along with a robust installation methodology. Our monitoring role ensured that actual roof performance matched predicted performance as the weight of the relocated screens was added.

Project
Twickenham Stadium
Location
London, UK
Client
Rugby Football Union (RFU)
Expertise
Technical monitoring



Better facilities management means higher revenues

Our venue enhancement audits will reveal hidden opportunities to increase revenue generation at sports facilities.

Catering and hospitality audits

A major component of an improved fan experience is delivered through providing a desirable mix of catering options across a range of outlets and environments. Our advisors have extensive experience of working with clubs and stadium operators to analyse fan demand and then designing food and beverage interventions to improve choice, speed of delivery and revenue generated.

Sports lighting audits

Our specialists have conducted lighting audits and developed concept lighting designs for many international sports venues. We can review existing lighting levels and confirm compliance with national/international standards, and present options for upgrade or replacement as required by broadcasters or rights holders.

Fire engineering

Compliance with fire engineering codes of practice is a common approach for the determination of occupancy and use of accommodation within a stadium. It also

presents an opportunity to assess whether existing spaces could be analysed differently to increase capacity, change use or allow new products within currently restricted spaces. We have utilised this approach to improve premium product diversity, respond to demands for food and beverage in general access spaces, and identify spaces such as store rooms that could be converted into useable spaces.

Acoustics for atmosphere

A stadium’s acoustic performance can be monitored and assessed and then modified by our experts to enhance crowd ‘roar’ or communication on the field. We can also provide acoustic-related advice to support the diversification of venues by holding concerts to provide new revenue streams.

Crowd modelling

We don’t just employ crowd modelling to improve the safety and efficiency of stadium designs. We use it to identify areas of the concourse that are underutilised and therefore provide opportunities to locate/relocate concessions or other revenue-generating products.

Focal point of regeneration

The First Direct Arena was designed from the outset to provide spectators with the best possible arena experience.

Located in the heart of Leeds city centre, the 13,000 capacity multipurpose entertainment venue hosts live music, comedy, entertainment shows and sporting events.

The flexible ‘theatre style’ configuration is able to accommodate diverse events and variable occupancy levels while also enhancing the arena experience, maximising revenue-generating opportunities. Spectators and performers alike enjoy a more intimate atmosphere with reduced viewing distances inside the venue – rear seats are only 70m from the centre stage.

Designed by Populous, the arena has become a focal point of regeneration and attained a BREEAM Very Good rating, making it one of the UK’s most sustainable venues.

Project
First Direct Arena

Location
Leeds, UK

Client
Leeds City Council

Expertise
Technical advisory services,
site supervision



First Direct Arena
was voted Best New Venue in the World
at the 2014 Stadium Business Awards.



Safety above all

Keep spectators safe and secure and keep within the law.



Safety certification

The safety of spectators is the number one priority of every stadium owner and operator. Compliance with local authority safety certification permits use of your venue, but the requirements can sometimes be onerous.

Safety barrier performance and monitoring of safety critical structural elements is a fundamental part of stadium safety. For more than 30 years we have advised and supported clubs and stadium owners around the world on commissioning, inspections, maintenance, and obtaining and maintaining safety certificates.

We utilise this experience to help our clients develop cost-effective, risk-based strategies to satisfy local authority requirements and keep their assets in operation – without compromising on safety.

Competition compliance

Hosting and operating at the highest level have become increasingly demanding for stadium

owners and operators. The top leagues and federations have signed lucrative broadcast and rights deals that impose exacting requirements with respect to camera positions and lighting levels for HDTV and other developing technologies.

Having provided technical services for upgrades to several top-flight football stadiums in the UK, we have developed an extensive understanding of the requirements of the Premier League and broadcasters. We can provide feasibility and costing advice at an early stage so that the extent of upgrades can be planned and delivered in a cost-effective manner.

Our specialists can also guide you on how to comply with FIFA, UEFA, EPL, IAAF and other sports standards on spectator safety and comfort as well as compliance with the Guide to Safety at Sports Grounds (Green Guide), the world’s leading guidance for the safety of spectators at sports grounds.

Soccer stadium inspections score on safety



Project
Goodison Park

Location
Liverpool, UK

Client
Everton FC

Expertise
Stadium inspection, barrier testing

Goodison Park, home to Everton FC, is one of England’s most famous football grounds and we have helped keep it a safe and secure venue for more than 40 years.

We have carried out annual structural inspections of all stands at the ground in accordance with the Guide to Safety at Sports Grounds.

Our engineers inspect load-bearing elements and components of frames, floors, walls, roofs and stairs, and in particular those critical to structural safety and robustness. This work includes inspections of spectator protection and control barriers, associated risk assessments and load-bearing tests.

We have also provided engineering services in support of alterations and refurbishments including recladding works, amendments to hospitality facilities and the upgrade of lighting facilities.

The consistency of our inspections allows observations to be monitored over a number of years, informing maintenance plans and directing investment to where it is needed most. We have added further value by developing a bespoke database to enable us to submit clear reports and recommendations to our client.

Opening opportunities with connected thinking.

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