WOMEN'S FOOTBALL STADIUM DESIGN GUIDANCE

FOR THE DELIVERY OF ELITE WOMEN'S FOOTBALL

2025

WSL FOOTBALL

Women's Football Stadium
Design Guidance

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INTRODUCTION

1.1 FOREWORD

The journey that the women's professional game has been on here in England over the past decade is one for the history books, and the future of women's football is incredibly bright.

We as a collective have come such a long way in recent years in the growth and development of our leagues, and that is down to the hard work of our incredible clubs and players.

We have seen main stadia sell-outs, primary grounds packed to the rafters on a weekly basis, and record crowds across both the Barclays Women's Super League (BWSL) and Women's Super League 2 (BWSL2).

Our stadiums are where all this magic happens – both on and off the pitch – and where memories for players, staff and fans alike are made.

Stadiums are not just a venue for the beautiful game, however – they are a crucial part of a match day experience, whether that be for our teams themselves, or supporters coming in through the turnstiles. Comfort, safety, and security are of paramount importance.

With that in mind, Women's Super League Football have developed this guidance for the delivery of elite women's football stadiums in England, to help our clubs – the heartbeat of our game – to deliver the best match day offering possible.

We hope this document provides support to the wider industry when working with clients to ensure stadiums are fit for purpose for the demands of the women's professional game.

We are all on this journey together, and if there is anything we can do as the league to support you, please do not hesitate to reach out.

Best wishes,

……..

NIKKI DOUCET
CEO, Women's Super League Football

1.2 WELCOME TO THE FIRST DESIGN GUIDELINES FOR WOMEN'S FOOTBALL STADIUMS

The English women's football scene has experienced significant growth in recent years, leading to a high demand for dedicated new or refurbished stadiums.

The Barclays Women's Super League (BWSL) and Barclays Women's Super League 2 (BWSL 2), governed by the Women's Super League Football, are England's top two tiers, with the BWSL as the world's most-followed women's professional league globally.

These Design Guidelines serve as a comprehensive resource for clubs, local authorities, architects, and organisations involved in stadium development. Women's football stadiums represent a new architectural typology, distinct from "traditional" football stadiums. They demand innovative designs that prioritise the specific needs of female players and one of the most diverse fan communities in the world of sport.

Developed by an interdisciplinary team, these guidelines offer recommendations across various budgets, incorporating best practices while recognising key differences from traditional stadiums. They provide tools for creating inclusive, adaptable, and sustainable facilities, focusing on design and construction rather than operational aspects. Extra detail has been included on topics where otherwise there is limited guidance.

Given the rapid evolution of women's football, stakeholders should stay informed on ongoing trials and regulatory changes, such as the relaxation of alcohol restrictions. These guidelines were shaped through extensive consultation, ensuring a broad range of perspectives in defining the future of the women's game.

1.3 HOW TO USE THIS GUIDE

The Design Guidelines for Women's Stadiums is an advisory document with no enforcement, but its recommendations should be implemented as much as possible to promote good practice in the design of inclusive stadiums.

1.3.1 Document structure

Each of the following 15 sections is divided into 3 parts:

1 ***What is different?***
This part sets out what makes venues for women's football unique and different to other football stadiums. It highlights the main considerations at the start of each section to make them easy to find.

2 ***New stadiums***
This part sets out general considerations for best practice for designing new stadiums, reinforcing the Women's Super League Football's vision for the highest standard of facilities. Much of this advice can be applied to the development of any stadium. This is therefore a valuable resource for advancing the quality of all football venues, not just those for women's football. When taking information from this document, consult with your wider design team and verify its applicability to your unique project circumstances.

3 ***Existing stadiums***
Many women's football stadiums will be adaptations of existing stadiums. These will have different challenges and may not be able to implement all the advice set out in the above two parts; however, this part sets out some important considerations to ensure the venue is still as effective as possible.

1.3.2 Other documents

This Guide should be read in conjunction with the following documents. It is the responsibility of any club to be aware of and comply with any regulations that are relevant to them. Any advice in this document is supplemental to any applicable regulations.

Documents:

- The League Handbook
- FA Handbook
- IFAB Laws of the Game
- Guide to Safety at Sports Grounds (The Green Guide) and all other relevant publications produced by the SGSA
- Accessible Stadia: Sports Grounds and Stadia Guide
- All applicable Building Regulations and British Standards
- UEFA Stadium Infrastructure Regulations
- UEFA Women's Champions League Regulations
- Any other relevant legislation

1.3.3 Wider reading

Section 17.0 lists further resources which may be valuable in developing a stadium project. Regulations and guidance from organisations such as FIFA and UEFA should be read where appropriate. Any clubs seeking to enter the UEFA Women's Champions League and other UEFA/FIFA competitions, should also read the latest rules, regulations, guidance, licence documentation or other materials published by UEFA relating to ground requirements.

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STADIUM *VISION*

The Women's Super League Football is founded on a vision and mission to transform women's football by building the most distinctive, competitive and entertaining women's football club competition in the world for the players and fans of today and tomorrow. Ensuring this ethos permeates the vision of the project is essential for ensuring success and futureproofing the scheme going forward.

At the outset of any project, it is essential to get the vision right for your project. The pace of change in the women's game is incredible but preparing for this also presents the biggest challenge to a new stadium.

Stadium projects are often complex and demand significant capital investment, with initial decisions having a profound impact on the success of the outcome. This section outlines key considerations for developing a business plan, understanding user groups and driving revenue.

2.1 WHAT IS DIFFERENT?

The objectives and key considerations for designing women's football stadiums differ from traditional men's football stadiums. Design should prioritise family-friendly facilities, enhanced safety, inclusivity, and equitable player facilities. These venues often double as community hubs, supporting grassroots events. Financial sustainability hinges on flexibility and tailored sponsorship strategies, while cultural factors influence inclusive amenities. The focus is on safety, inclusivity, and multifunctionality.

2.1.1 Project initiation and objectives

Domestically we have seen several clubs within the women's professional game change match venues in recent years as knowledge and understanding around the fans, participants and commercial obligations grow. The league has seen clubs access the larger men's stadiums on a more frequent basis, where they exist, but lessons have been learned through this approach which is driving the development of this document.

clubs must optimise existing facilities or invest in new developments to support long-term growth. Strategies should align with whether a club operates independently or alongside a men's team. Currently, most women's teams in England lack primary access to their stadiums, reinforcing the need for dedicated venues aligned with the League Stadium Strategy.

Developing women's football stadiums enhances team performance, attendance, scheduling, and economic impact, as demonstrated by Kansas City Current in the NWSL. Leveraging 365-day stadium activations,including community events and multi-purpose activities, offers a key opportunity to boost revenue and ensure financial sustainability.

2.1.2 Understanding all user groups

It is critical when designing a new stadium to firstly define the needs of all core venue user groups, paying heed to those unique needs relevant to women's football:

1 ***Participants:*** Players and technical teams including coaches, and match officials

2 ***Media Commercial and Broadcast***

3 ***Fans***

4 ***Venue Operations Staff*** (ground staff, safety, security and service etc.).

This document considers these user groups and the considerations that should be factored into any new or existing stadium development if women's football is to be played at the venue.

Ideally the starting point is to engage with each of these groups through discussion and research methodology, such as questionnaires, interviews and focus groups to establish their precise needs.

Beyond these groups there are many others to consider.

- BWSL and BWSL2 clubs
- The FA Women's National league clubs and authorities.
- The Football Supporters Association (FSA)
- The Professional Football Association (PFA)
- The League Managers Association
- Youth Sports Trust
- Grass roots clubs, leagues and groups

Insight and feedback from clubs across all leagues is key, not just the elite leagues to ensure the growth of the game is inclusive from grassroots upwards.

Women's football fans. Emirates Stadium.

2.1.3 Community engagement and consultation

Involvement of the wider community is crucial in designing a stadium that resonates with everyone. The metrics of surveys on the women's game shows high levels of engagement and a desire to be involved in the game's growth and development. Consultation throughout the project's development will be key with these user groups due to the pace of change within the women's game.

Engaging the community is hugely valuable in delivering a stadium that reflects the people that it is for. This encompasses:

- Residents to the area
- The fan, locally and internationally
- Fan disability groups
- Local sports groups, grassroots clubs and leagues
- Local community groups
- Local LGBTQ+ groups
- Local multi-faith groups
- Local authorities
- Local politicians
- All other people to be involved with the operation and use of the venue
- Statutory bodies such as Sport England, etc.
- County FA
- The Football Foundation

All members of the project team should adopt an ambitious vision and be creative in finding different avenues for input. Without engaging with users, you can't fully understand their unique needs or the best ways to address them.

Conducting consultations early in the design process can make it much easier to implement the feedback received and apply it to the design.

CASE STUDY

Brighton and Hove Albion
Dedicated BWSL stadium

BRIGHTON, UK

A purpose-built stadium for Brighton and Hove Albion's women's team was approved by the council in 2023. The team currently plays most of their home matches at Broadfield Stadium, as tenants of Crawley Town. This stadium is not considered to be in the right location for their needs.

The club are looking to set the standard for women's football, by building the first dedicated stadium in Europe. It will provide investment and support for their women's team and close the gender gap for the sport.

Brighton and Hove Albion men's teams have enjoyed great success since moving to their new stadium in Falmer and plan to give the same opportunities and support to the women's team. The new stadium will further grow the fanbase, while the better facilities and targeted food and beverage (F&B) offer will improve the fan experience.

2.1.4 Participants: Players and Technical Teams

Stadiums must be designed to support the safety, comfort, and professional needs of players, technical teams, and match officials. This includes features such as secure access routes and private, well-equipped changing and hygiene facilities. Medical and performance support spaces should be integrated to meet the specific needs of professional women's football.

Consideration should also be given to the size and demographic of squads, staff, and match officials, ensuring appropriate facilities and smooth match day operations. These groups should be consulted to understand their requirements, ensuring stadiums provide the necessary infrastructure for them to perform to their best. The design of these spaces is explored more in **Section 9.0**.

RICHARD PELHAM/WWW.PHOTOMEDIA

Players and match officials entering the pitch. Emirates Stadium.

2.1.5 Media Commercial and Broadcast

MEDIA

Media plays an essential role in building a club's brand and reaching new audiences, particularly with the rise of digital and social media. Staying ahead of trends and integrating the latest technology is essential to meet evolving demands. Stadiums should provide media staff with seamless access, accreditation, and facilities to ensure high-quality content production. As the game grows globally, content creators are becoming increasingly important alongside traditional media, requiring adaptable spaces to accommodate their needs. Additionally, as media rights and commercial partnerships become more complex, flexible infrastructure should be considered to support evolving content demands and technological advancements.

SPONSORSHIP

A purpose-built stadium will enhance the professionalism and legitimacy of women's football, attracting higher levels of sponsorship, media coverage and fan interest. With more families attending women's football, there are more opportunities for different fan zones to be created for sponsorship alongside the more traditional ones found in the men's game.

COMMERCIAL PARTNERS

Securing sponsorship is a crucial revenue source for football clubs. A new stadium can help to broaden this relationship and offer new assets to partners.

By understanding the respective needs of brands, relevant products and services can be incorporated into the stadium. For example, the sponsors may want a box, or they may prefer a dedicated fan zone to sponsor. Sponsor naming rights could be an option and design considerations for signage and branding into the fabric of the building should be accounted for - this is explored further in **section 13.2.8**. Some sponsors may want to engage with the local community and any interest from the sponsor to invest into facilities should be known.

Understanding this early on will ensure that the right facilities are designed rather than expensive retrofitting. It will also mean that revenues are maximised. This is explored further in the **section 2.2.2**.

BROADCAST

Quality, engaging coverage can set women's football apart and improve visibility to grow the fanbase. Modern broadcast models, from TV to streaming and social media, enable more dynamic storytelling, behind-the-scenes access, and player interviews. Even in smaller venues, smart production choices like focused camera angles, spidercams, crowd mics, and immersive video graphics can boost atmosphere. Strong and flexible coverage not only enhances the match day experience but also drives engagement, sponsorship, and long-term growth.

2.1.6 Fans

Women's football is more than a sport; it is a cultural movement shaped by a diverse and rapidly growing fanbase. With UEFA projecting 320 million fans globally within the next decade, these supporters are no longer a minority and differ significantly from men's football fans. Notably, 70% of women's football fans are new to the sport, forming their own unique experiences outside of traditional football culture.

Understanding demographics and fan behaviours is essential for creating the right facilities, experiences, and services to drive engagement and revenue. For instance, Gen Z fans prefer fast-paced content, while long-time supporters value tradition and uninterrupted match views. Premium and VIP offerings should also be tailored to evolving fan expectations. This is explored further in the business plan **section 2.2.2**.

Socioeconomic factors influence fan loyalty, particularly when clubs relocate to new stadiums, potentially disconnecting traditional supporters. Early and continuous fan engagement can help mitigate these challenges.

The profile of women's football fans differs significantly from men's football: Two Circle's data indicates that 30% are aged 18-35, compared to just 15% in the men's game, while 47% of women's football fans are female, a stark contrast to the 14% in men's football. Recognising these differences is key to cultivating and sustaining fan engagement.

Key drivers for the women's game are:

- Being welcoming and inclusive.
- Maintaining the strong relationship between players and fans.
- Relatability – ensuring fans feel connected to the game.
- Grounded relationship between fans, players, and the wider football authorities.
- Location of stadiums and training facilities are easily accessible.

The fanbase of the women's game in England can be broken down into three distinct types of fans:

1. ***Core fans***
2. ***Free fans***
3. ***Secondary fans***

Together, these fans contribute unique perspectives and levels of engagement, each adding to the sport's growth and inclusivity. Focus must be given to the importance of accessible content, community building, and maintaining a positive, inclusive fan culture across all segments.

JESS HOWLEY

Chelsea fans waiting for players' arrival

THREE TYPES OF FANS

CORE FAN

This group have been vital to the rise of women's football to date. As the champions and cheerleaders, they have fuelled fandom, leading to greater visibility and investment from media and sponsors.

Football is central to their lives, prioritising the women's game over the men's. They will follow club and country, and will also follow players from across the league. They spend money on their passion; travelling to games, paying for subscriptions and investing in merchandise.

They also cherish the sport's inclusive culture, aiming to preserve its positive and respectful environment as women's football grows. They want to expand the game and differentiate it from the men's game.

FREE FAN

The free fan is new to football. They have found something they like within the women's game, that didn't exist for them in the men's game. Their fandom is more casual. They're attracted by the big event experience, and will follow players over a club.

Typically introduced to women's football by a core fan, free fans may grow into more committed supporters over time as they learn more about the players and the competition. Football is one of several interests for free fans, unmarked by the traditions of men's fandom, and they approach it with openness and curiosity.

SECONDARY FAN

Although primarily focused on men's football, they have a growing, more casual interest in the women's game. They engage most when women's football doesn't conflict with their established viewing schedule, for example, men's international break weekends.

In many cases, secondary fans are driven to women's football by the safer, family-friendly environment. It is a more accessible way to introduce their children to the club that they love. These fans have deep-rooted routines around men's football, shaped by intergenerational loyalties, and prioritise club over national matches.

INCLUSIVITY

The women's game prides itself on being inclusive, a game for everyone to enjoy. As the game grows it is important to ensure this remains a central tenet and that there is no discrimination at any level and all have a say and feel welcome. This is explored further in **section 11.0** and **12.0**.

Key considerations:

Women over 40:
Often overlooked in sports, many have a deep-rooted love for football, whether through friendships or supporting children. To enhance their match day experience, stadiums should offer comfortable seating, high-quality food options, and initiatives that make attending alone or with friends enjoyable.

Younger fans aged 18 – 40 without children.
These fans seek the tribalism and camaraderie of football in a fun and engaging way. Stadiums should facilitate supporter expression, such as flag displays and dedicated sections, including separate away ends, to enhance the fan atmosphere.

Diverse fans:
Creating an inclusive match day experience requires welcoming facilities for historically underrepresented groups. Stadiums should include multi-faith/reflection rooms, safe spaces, and diverse food options that cater to religious and dietary needs.

LGBTQ+ fans:
While research on LGBTQ+ inclusion in sport has grown, more understanding is needed. Simple but effective changes, such as clear signage, all-gender toilets, and visibly inclusive policies, can create a more welcoming environment.

Disabled fans:
This includes both visible and hidden disabilities. To support all attendees, stadiums should provide accessible routes, spacious sensory rooms, and sensory support packages. These features help create a more inclusive and comfortable environment. For further guidance on accessible design, see **section 12.0**.

Lone fans:
These are becoming more common in football. They may be fans of the teams in play or support specific players only, regardless of the team. These fans should feel comfortable sitting in most areas of the stadium.

Families:
Families with children should be supported through facilities such as buggy parks, scooter storage, family-friendly toilets, baby feeding areas, dedicated family seating, and storage facilities. Children under 14 must be accompanied by a supervising adult for safeguarding, and tailored facilities should be provided to enhance their experience.

See **section 12.0** for more information.

EDDIE KEOGH - THE FA

LGBTQ+ fans are a major part of the fanbase.

OPPORTUNITIES TO DRIVE REVENUE

The purchasing behaviour of fans at women's football matches varies compared to the men's game and these should be considered when developing the options available.

Merchandise:
Merchandise is considered a significant revenue stream for teams and stadiums, with fans purchasing more at women's games. Female fans tend to buy merchandise not only for themselves but also for their families. A 2024 study by Visa revealed that women's football fans spend 71% more on sports merchandise and 41% more on entertainment than the general UK population.

Food and drink:
The women's game has a reputation for being more welcoming to different demographics and the food and drink should reflect this by having a diverse offering of menu choices. Special attention should be paid to offering healthy options for children and having plant-based options for lighter and healthier food options. Offer a diverse range of alcoholic beverages beyond beer, incorporating seasonal options such as summer-style cocktails and warmer drinks during colder months. Given that alcohol consumption among fans of the women's game is generally lower, it is important to also provide a selection of low and zero-alcohol alternatives, along with a wide variety of non-alcoholic beverages to cater to all preferences.

2.1.7 Venue Operations Staff

The better the environment people work in, the better the experience they will deliver. This is often forgotten in stadiums. By engaging with food service, stewarding, grounds people and other staff providers early on, stadiums can be designed into places where people want to work. With better design and facilitation of technology, work can be made more efficient.

Facilities that need to be considered include training areas, changing rooms, lockers and areas for staff refreshments and meals. Safety of the stadium staff should be considered when leaving the stadium late at night with good access to public transport and well-lit circulation routes and car parks. Early and late access to the stadium by public transport will support the use of stadiums and sports venues throughout the entire year, not just on match days, for instance, for concerts.

2.2 NEW STADIUMS

Stadiums are costly to build and operate, making a robust commercial strategy essential for long-term financial viability. A 365-day activation plan is crucial, as revenue from approximately 25 games per season is insufficient to sustain operations. Developers must define the stadium's purpose from the outset and implement a strategy to drive attendance while ensuring year-round utilisation.

Industry benchmarks for construction cost per seat and recent stadium build costs should be assessed to guide financial planning. Comparing these figures provides clarity on scope, budget, and feasibility. Additionally, analysing successful stadiums can offer insights into audience engagement and optimal facility usage.

2.2.1 Project vision and plan

A clear vision and brief of the objectives for building a stadium are fundamental to the business plan and the future success of the stadium.

- Ensuring correct procedures are in place for changes to project works can alleviate costly abortive work and delays in the timeline that can lead to client dissatisfaction.
- Football clubs are often subject to rapid change as they develop, which can have an adverse impact on the project plan. Defining several scenarios and how to respond to them can help the club maintain control of the process.
- Establishing how the stadium will generate revenue, both to fund the capital costs of building, as well as long term operational costs is critical to establish at the vision stage. Market research to understand the needs of all user groups and benchmarking are essential.

Joie Stadium start of 25-26 season

CHARLOTTE TATTERSALL

CASE STUDY

CPKC Stadium

KANSAS CITY, USA

Opened in 2024, CPKC Stadium is the world's first purpose-built venue for a professional women's sports team. Designed to host football matches and up to 170 corporate and music events annually, it reflects a player-centric, fan-focused vision with strong community engagement.

The 11,500-seat, eco-conscious stadium, built on a 75-acre site, includes 1,434 premium seats (13% of total capacity). Inclusivity is prioritised with enhanced facilities, including a higher proportion of women's toilets, all-gender restrooms, baby changing stations, nursing rooms, and sensory spaces. The stadium also caters to elite women athletes, incorporating appropriately designed lockers and specialised sports medicine areas.

To honour the legacy of American women's football, the venue features imagery of the '85ers, the first US women's national team, fostering a deep connection between fans and the sport's history.

JAY BIGGERSTAFF/GETTY IMAGES

A general view of the pitch during the first half between the Kansas City Current and Palmeiras at CPKC Stadium.

2.2.2 Business plan

HOW BIG SHOULD THE STADIUM BE?

First and foremost, no design decisions should be made until a robust business plan has been created to define how the stadium will be financed – not just the build, but the ongoing operational costs. This is explored further in **section 3.0**.

Important factors to consider when assessing size are:

Intended use
- Primary function – will it primarily host sport events?
- Multi-use potential – does it need to accommodate different event types, which might require flexible seating and different field of play configurations?
- What other non-match day activities will help to drive use and revenue?

Market research into club, local area, and region
- Socioeconomic factors
- Audience demand
- Current fanbase size – historical data
- Growth potential of fanbase
- Location, transport links and access to the stadium

Economic viability
- Cost benefit analysis – realistic size needed for the team and location
- Funding and financing – realistic affordability based on secured funding

Regulatory and safety standards
- Planning conditions and building regulations – consider the stadium's location, whether urban or rural. Urban locations, for example, may be more tightly constrained by rights of light considerations for adjacent buildings
- Safety protocols and regulations – determine relevant regulations for your site and use case, for example the tournaments clubs may wish to host at the stadium

Site constraints
- Available space
- Surrounding infrastructure including public transport systems

Community impact
- Noise or light pollution
- Traffic management

Environmental considerations
- Environmental sustainability including operational savings
- Impact assessment

Operational requirements
- Facilities and amenities
- Technology and media

Future expansion
- Scalability – design with potential for future expansion to accommodate growth or changes in usage
- Technological upgrades – ensure designs allow easy integration of future technological advancements

FUNDING SOURCES

The funding for any stadium development is a key early consideration in establishing the vision for the project.

Initial capital cost of construction and the ongoing operational costs – bear in mind that over the whole lifespan of a stadium, the operational costs quite often significantly outweigh the capital cost.

Franchise Model
The stadium franchise model, as used in the USA, is a system that could be explored. This involves professional sports teams operating within leagues that control stadium access, revenue distribution, and branding rights. This model is primarily shaped by the way major sports leagues, such as the NFL, MLS and NWSL, structure team ownership and stadium financing.

This model would require careful consideration and planning due to the differences between how the UK and USA leagues are governed and operated, whilst potentially offering clubs a route to stadium ownership. Benefits of the franchise model are league stability, revenue-sharing, and controlled growth.

Debt
Typically, most stadium developments are financed with some element of commercial debt.

Considerations:
- Debt normally needs to be serviced by incremental revenue in the game, over and above what the club is currently generating – this is usually achieved through premium experience sales, increased ticket revenue and what additional non-match day revenue a stadium can generate.
- Banks will require security.
- Typically, banks will want to ringfence certain revenues (e.g. a proportion of ticketing, or often, premium) to service their debt. They often suggest setting up a StadiumCo. to do this.
- Debt to cover the construction phase is more expensive than once the development is complete; the upfront income has been received, and the operation has started. Re-financing can be done at this point to take advantage of lower rates.

Other funding sources
- Sale of part of the site or lease to a commercial entity – e.g. shopping centre, hotel, restaurants.
- Grants/public sector loans.
- Long term premium/ membership programmes – e.g. debentures, 10-year seats, up front premium purchase.
- Sports governing bodies, FIFA, UEFA.

Multi uses
Incorporation of other uses is beneficial to both the viability and sustainability of the project. This helps to build a stronger business plan which in turn can lead to securing better funding. Allowing the stadium to be used by another club or for another sport will provide more utilisation to the site. This is a huge problem given the infrequency of their usage compared to the massive capital cost for building. Therefore, considering this from an early stage is vital in developing the business plan. This is explored further in **section 3.2.1**.

2.2.3

Revenue streams

1. TICKETING AND MEMBERSHIPS
2. PREMIUM EXPERIENCES, HOSPITALITY, AND BOXES
3. FOOD AND BEVERAGE (F&B) GA concourses and external fan zones
4. SPONSORSHIP AND PARTNERSHIPS
5. MERCHANDISE
6. BROADCASTING RIGHTS

1 TICKETING AND MEMBERSHIPS

Maximising ticket sales, season tickets, and memberships is crucial for a stadium's financial success, directly influencing its physical infrastructure. With the widespread adoption of digital ticketing, clubs must balance online sales with physical ticket offices to ensure accessibility and personalised service.

A well-structured membership and season ticket strategy drives long-term revenue. Offers should be tiered with strategic pricing and benefits, aligning with premium experiences. Additionally, event and non-event memberships can enhance revenue on low-attendance days, supporting a 365-day commercial strategy.

Linking memberships to loyalty programmes strengthens fan engagement, increases retention, and provides valuable data on preferences and behaviours. During the design phase, incorporating experiential elements expands the stadium's appeal, with venue strategists playing a vital role in tailoring offerings to the stadium's audience, ensuring sustainable revenue growth.

Examples of experimental elements offered:

- Family offers – stand/lounge with family friendly facilities and amenities. Also, attractive pricing - consider babies in arms being able to accompany ticket paying adults for free and how this will affect the seats being counted for, and how could it be done within safety regulations. Further to this, family membership options on non-event days can also form a compelling offer and is a newer trend seen on the high street
- Safe standing areas
- Fan bar – that can be accessed on non-match days
- Different types of fan zones – e.g. family zones, age restricted zones, away ends, louder stands, or quieter stands
- Facilities for fans with additional needs in addition to seating, sufficient toilets, vanity rooms, changing rooms, sensory room and handrails
- Multi-faith/reflection room and quiet spaces
- Tunnel clubs
- Pitch-side warm-ups
- Dressing room tours
- Dedicated areas for fans to engage with players safely
- Enhanced connectivity such as free WiFi
- Adventure experiences
- Stadium plaza activations

2 PREMIUM EXPERIENCES

Over the last two decades, consumer spending has shifted towards experiences, driving the evolution of corporate hospitality into premium experiences. Traditional formal offerings are being replaced by multi-experiential, social, and immersive products, catering to both sports fans and experience-seeking guests.

Stadiums must develop tailored products to attract this growing market. Demand is increasing for behind-the-scenes access, player engagement, and informal social experiences. While businesses remain key clients, their needs vary, from large corporations to small agencies and social groups, necessitating a diverse range of premium spaces.

To maximise revenue and audience reach, stadiums should offer tiered premium experiences rather than a one-size-fits-all approach. Understanding customer expectations is critical to designing a programme that appeals to a broad demographic while enhancing engagement and commercial success.

Principles of tiering

Tiering ensures a diverse range of experiences by aligning products with the right circumstances, location, and price point. A well-structured tiered offering caters to all audience segments, not just through varied food and drink but by providing distinct experiences at different times of day.

Key Considerations for Tiering:

- **GUEST VOLUME:** Higher-tier experiences should cater to fewer guests, ensuring exclusivity, while lower tiers accommodate larger volumes.
- **SPACE ALLOCATION:** Premium tiers offer more space per guest, ranging from 1-1.3m² at lower tiers to 2.5-3.2m² in exclusive areas.
- **FOOD & BEVERAGE:** The offering should reflect the tier, from fine dining to casual options, exceeding guest expectations. Innovative service styles, such as small plates or roving service, enhance the experience.
- **GUEST & OPERATIONAL JOURNEYS:** Seamless experiences require strategic facility placement (e.g. kitchens near dining areas, sufficient bar space for high-volume service). Mapping guest flows ensures comfort and efficiency.
- **SPACE FLEXIBILITY:** Higher-tier spaces tend to be less adaptable, requiring careful planning if intended for multiple uses.
- **SEAT LOCATION:** Premium experiences should feature the best stadium views, with halfway-line seating being the most desirable and highly monetised. Ideally, premium spaces should be positioned adjacent to these seats for direct access.

A well-planned tiering structure maximises revenue while enhancing guest satisfaction, ensuring an inclusive yet premium stadium experience.

Premium seat volumes

The precise number of seats that should be dedicated to premium will vary from club to club and be dependent on local demographics. Once again, it is critical to carry out local market research to understand the likely demographics and to understand what experiences guests want and what they are prepared to pay.

Sports and live entertainment are receiving considerable growth with many stadiums now successfully selling around 10% of their ticket inventory as premium and, if the offer is right, increasing this to as much as 20%.

The key is getting the right offer for the right demographics and this needs to be carefully considered as early as possible in the design of the stadium.

Premium product mix
No longer is it enough to just provide experiences that traditionally serve corporate needs, from boxes to large sit-down dining lounges. There is a growing trend toward more inclusive, dynamic, socially engaging environments.

With this in mind, and to meet these new demands we should look at a multitude of experiential spaces, which take inspiration from the local high streets, alongside those still looking for the exclusivity, privacy and luxury of boxes. Options to consider include:

- Traditional pubs to mixology bars
- Social lounges to sports bars
- Street food markets to gastro pubs
- Bistros to brasseries
- Fine dining restaurants to members' clubs
- Experiential boxes to corporate boxes
- Family friendly concepts

Social lounges, bars, and restaurants
- Aimed at fans who prioritise social interaction, networking, and a vibrant atmosphere. This includes younger fans, casual attendees, and groups who prefer a more flexible and social experience.
- These spaces should be developed with flexibility to different user groups and use cases.

Boxes
- Boxes can be popular with a certain guest type, offering a home from home, private space in the stadium. They can also be restrictive and expensive to fit out and to operate, requiring more staff.
- Boxes tend to be fitted out with fixed seating and layouts that prioritise comfort and luxury. This can mean that they are less adaptable to different types of events or experiences, for example non-event day use.
- Boxes will often be required for sponsors or long-term partners, wanting their own dedicated space in the stadium and they will often contribute to fit out costs.
- If they can be sold on a long-term basis, e.g. 5 years plus, they can be a great source of revenue and to secure financing.

Birmingham City FC hospitality

TOM POLAK - THE FA

CASE STUDY

Tottenham Experience
Tottenham Hotspur Stadium

LONDON, UK

Traditionally stadiums have offered a flat experience which does not consider the different demographics and their willingness to spend. Tottenham Hotspur recognised the need to give experiences for all demographics and harness their spending power by tiering their stadium offer into nine distinct tiers - from Michelin starred restaurants to communal bars.

3 GA CONCOURSES, F&B CONCESSIONS

The event day experience should be enhanced wherever possible to encourage longer stays before and after the game, boosting revenue from food, beverages, and merchandise for maximum commercial benefit.

Market research should be done to explore the experiences the stadium should offer to encourage target user groups to arrive earlier and stay later, this could include the F&B offering, entertainment, access to meet players and behind-the-scenes content. It is important to develop concepts and experiences that are right for your specific demographics, but also to look at the experiences and concepts offered successfully at other stadiums.

GA Concourses
General admission fans' demands are different to premium, but that doesn't mean they are not still discerning customers looking for an experience. The approach of "build it and they will come" does not ring true, especially where competition from the high street is high. Stadiums must offer diverse F&B options at varied price points, ensuring accessibility for all demographics. Tiered outlets enhance choice, extend dwell time, and increase revenue.

Integrating the local community strengthens non-match day stadium use. Initiatives such as farmers' markets or food trucks create additional revenue streams while fostering community engagement. Showcasing regional produce and talent, such as offering local speciality foods, enhances fan connection and venue appeal.

Concourse outlets should be tailored to fan needs, providing relevant options, including child-friendly meals and diverse dietary choices, ensuring a welcoming and inclusive experience for all visitors.

Key F&B considerations:

- Offering a variety of food outlets suitable for different budgets by tiering experiences.
- Assessing the local high street offering and using this as base for tiering and pricing the offer.
- The offering should be sourced locally and responsibly, and lower carbon food choices should be considered to be more sustainable. Using local food vendors to highlight local produce and the people who make it. This helps to drive the club brand experientially and creates revenue for local businesses bringing economic growth to the community.
- Consider healthy options, often overlooked in stadiums.
- The food offering must meet the needs of different demographics attending the stadium e.g. halal, vegan, gluten-free and child friendly offers.
- Consider non consumables that could be helpful to sell in grab and go units – e.g. single nappies, baby milk, incontinence pads.

CASE STUDY

CPKC Stadium KANSAS CITY, USA

Inclusivity in food and drink offered is at the forefront with all the stadium restaurants being peanut-free. There are increased offers of gluten-free options and food vendors are placed and grouped together on the concourse to avoid cross-contamination of food.

A premium experience lounge. Wembley Stadium.

4 SPONSORSHIP AND PARTNERSHIPS

Strategic partnerships with corporate sponsors, local businesses, and community organisations can offset key costs in running and operating a stadium.

Sponsors may provide financial backing or additionally equipment and services in exchange for brand visibility and association with the stadium, whether through naming rights, exclusive advertising, or special event hosting.

5 MERCHANDISE

Consider the location of the stadium store and pop-up units - on both gameday and non-match day, depending on the 365-day strategy.

If fan tours or similar activities are planned, these should start/ finish in the stadium store and these should be located and designed so that they can operate separately to the main stadium. See **section 11.2.6**. The stadium store location should be able to operate independently from the stadium, operating at times to maximise sales throughout the calendar year.

6 BROADCASTING RIGHTS

Broadcasting rights allow clubs to reach a global audience, connecting fans across continents who may otherwise never experience the game in person. The sale of television and streaming rights not only ensures that millions of viewers can watch matches live but also generates substantial income for clubs, often serving as one of their largest sources of revenue after match day earnings and sponsorships.

To optimise broadcasts, stadiums must provide advanced infrastructure, including high-definition cameras, state-of-the-art lighting, and superior audio systems. Clear crowd noise and commentary should be prioritised while minimising interference.

Enhance accessibility through multi-language feeds including sign language. Include interactive features, such as real-time stats and social media integration, increases audience engagement. With the rise of streaming platforms, clubs must ensure digital compatibility for seamless viewing across all devices.

2.3 EXISTING STADIUMS

It will often be the most financially practical option to reuse an existing stadium. Existing assets can considerably reduce initial capital costs. This is often the old stadium for the men's team, which can be useful for making use of an established cultural hub for a club. When assessing the reuse of an existing stadium, engaging with the fanbase and finding out the drivers for different fan groups is essential to keep the game accessible for all. However, it should be noted that the listed requirements may not be easily retrofitted into an existing fabric. Other factors such as refurbishment costs may affect how much of the existing facilities can be improved.

Retrofitting is costly and sometimes impossible due to constructional restraints. Portable solutions should be investigated as possible ways to improve fan facilities such as baby changing, baby feeding pods or sensory pods.

CASE STUDY

Eden Park

AUCKLAND, NEW ZEALAND

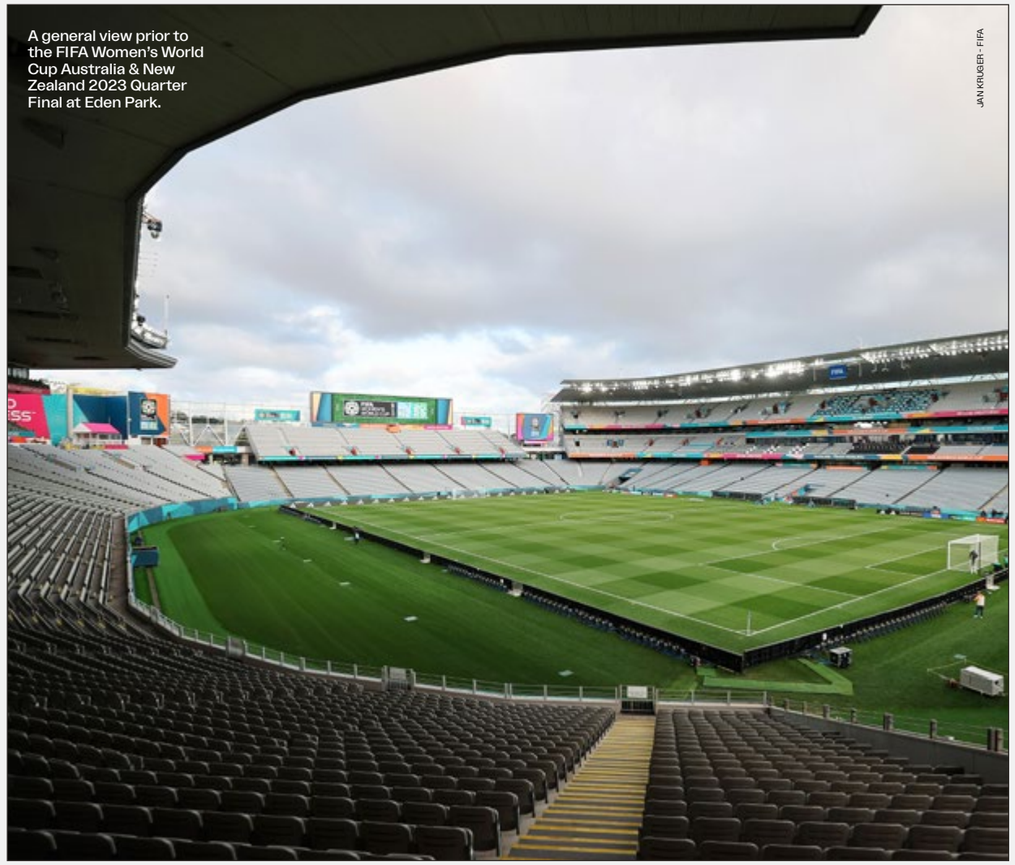
New Zealand's National Stadium, Eden Park in Auckland was initially refurbished for the women's Rugby World Cup in 2022, and went onto be used for the FIFA Women's World Cup. It was paramount to offer elite female players and game officials fit-for-purpose facilities to close the gender gap for future users.

The Accessible Facilities Project in Eden Park saw improvements for female players and female officials, such as inclusion of individual showers, privacy screens, cubicle toilets, baby change facilities, sanitary bins as standard, accessible bathrooms and gender-neutral changing rooms for both players and game officials.

2.3.1 Players and technical staff

Improving facilities for professional women players in existing stadiums requires thoughtful modifications to infrastructure, amenities, and services.

Players and game officials should be consulted to find out what are the needs versus wants and these should be prioritised in the decision-making process.



A general view prior to the FIFA Women's World Cup Australia & New Zealand 2023 Quarter Final at Eden Park.

JAN KRUGER - FIFA

STADIUM *SCOPE AND SIZE*

Designing a stadium is more than just meeting capacity requirements – it's about creating a space that reflects the club's identity, serves its community, and stands the test of time. This section is developed for clubs and their design teams to develop a clear project brief and scope for the project to ensure it meets the needs of the club.

While the League Handbook outlines minimum capacity requirements, the ideal stadium size will depend on a range of factors unique to each club (Refer to **Section 2.2.2**). Beyond capacity, it's equally important to determine the specific facilities the venue will offer, as these play a key role in shaping the overall footprint.

A stadium should not only meet the needs of today but also be adaptable for the future. This section provides guidance on designing a venue that supports multiple uses, accommodates growth, and remains a vibrant and valuable asset for years to come.

PROJECT DESIGN BRIEF

Stadium projects are highly complex, involving input from a wide range of stakeholders to define the initial Client Requirements. These requirements should reflect the stadium vision (see **section 2.0**) and must be translated into a comprehensive and quantifiable project design brief.

The brief consolidates input from stakeholders while considering site constraints, heritage factors, sustainability objectives, and the potential for multi-use functionality. This document is approved at the end of RIBA Stage 1 (see **section 7.2.1**) and serves as the primary reference for guiding the project's design and development.

3.1 *WHAT IS DIFFERENT?*

When determining the stadium scope and size there are considerations that are particularly relevant to women's football. The women's game is rapidly evolving, requiring stadiums to adapt. Initial fan attendance projections may grow unexpectedly, making early planning for expansion and flexibility essential to avoid costly refurbishments or rebuilding. Additionally, many women's football clubs operate in rented stadiums, adding complexity to futureproofing efforts.

A BWSL fixture at Old Trafford

3.1.1 Shared stadiums

Sharing a stadium with a men's team can unify a club and strengthen community ties. BWSL and BWSL2 clubs may also share venues, but careful planning is essential to meet both teams' needs and preserve identities.

- Try to keep a shared "hub" for clubs with the same brand to unify fans.
- Maintain distinct branding and match day experiences for women's teams.
- Manage the consistency of match day locations to boost loyalty and attendance.
- Balance flexibility with accessibility to support people going to matches regularly.

3.1.2 Adaptable pitches

Planning for multiple pitch uses enhances flexibility but requires careful management to maintain quality. The League Handbook limits the number of games a pitch can host per year, and clubs should check for additional restrictions from governing bodies. A suitably qualified ground staff should be included in consultation for determining the surface. When accommodating multiple sports and events, prioritise those with similar pitch requirements, such as rugby. However, consider that this can be more damaging to the turf. Manage event frequency to prevent excessive wear and map schedules to avoid conflicts.

clubs may want to invest in mechanically removable or stowable grass pitches, which preserve turf quality with the use of grow lights, though they require significant investment. Another option is dual interchangeable pitches for multiple teams, but this depends on scheduling and is also costly. Athletics tracks should be avoided, as they create distance between fans and the pitch, reducing the atmosphere.

3.1.3 Expansion considerations

Building a stadium a stand at a time, or at a clear split, can seem appealing. It allows you to phase the site, limiting complex interfaces and deliver on key facilities like premium and players areas in the main stand. However, this approach may result in a stadium that feels incomplete.

Prioritising the East and West stands is recommended, as these enhance the stadium's atmosphere and position fans in view of the main camera. The West stand can accommodate premium, media, and operations areas, while the East stand can serve general fans and other premium experiences. Ensuring all stands share a cohesive design for the roof, façade, and terrace is essential to avoid a disjointed appearance.

An alternative might be to build the shell of the stadium as it would be at the club's projected full capacity. Then the facilities and terraces could be built out for a reduced capacity initially and extended once demand allowed. This would incur higher initial investment but overall would be more cost efficient and deliver a cohesive design.

Future expansions must account for construction space, including material storage, site offices, worker facilities, and access for large delivery vehicles. Modular systems may enhance flexibility and practicality (see **section 7.2.3**).

Birmingham City Knighthead Park Fan Zone

LEWIS STONEY - THE FA

3.2 NEW STADIUMS

Constructing a new facility is often the ideal option as it allows you to align with the most up to date guidance and regulations to create the safest and most optimised design possible. You can tailor the capacity to your needs more closely and have more scope to incorporate multi-functionality and futureproofing into the proposal.

3.2.1 Multi-use stadiums

A traditional stadium may only be in use for 10% to 20% of its life if only open on match days. This is both hugely unsustainable and leads to an unproductive site. This can also create inactive "dead zones" in urban centres, making them less pedestrian-friendly. To address this, clubs should ensure their venues are active beyond event days, creating solutions that reflect local needs and enhance the stadium's reputation.

The initial cost of adding these facilities into the stadium design can be outweighed by the revenue generated through renting and sharing the facilities for others.

Ideas for alternate uses could include:

- Club museum
- Community hub
- Conferences & Exhibitions
- Coworking space
- Esports venue
- Healthcare facility
- Hotel
- Leisure centre
- Nursery
- Party space
- Play centre
- Retail park
- Sports facility
- Start-up incubator
- Education spaces

Investigate whether there are any local community leisure centres, sports clubs, local community groups, academies, or other such organisations to collaborate with. Creating commonalities of facilities, a "sports hub" for the community and advancing the idea that it is an integrated and welcoming local asset.

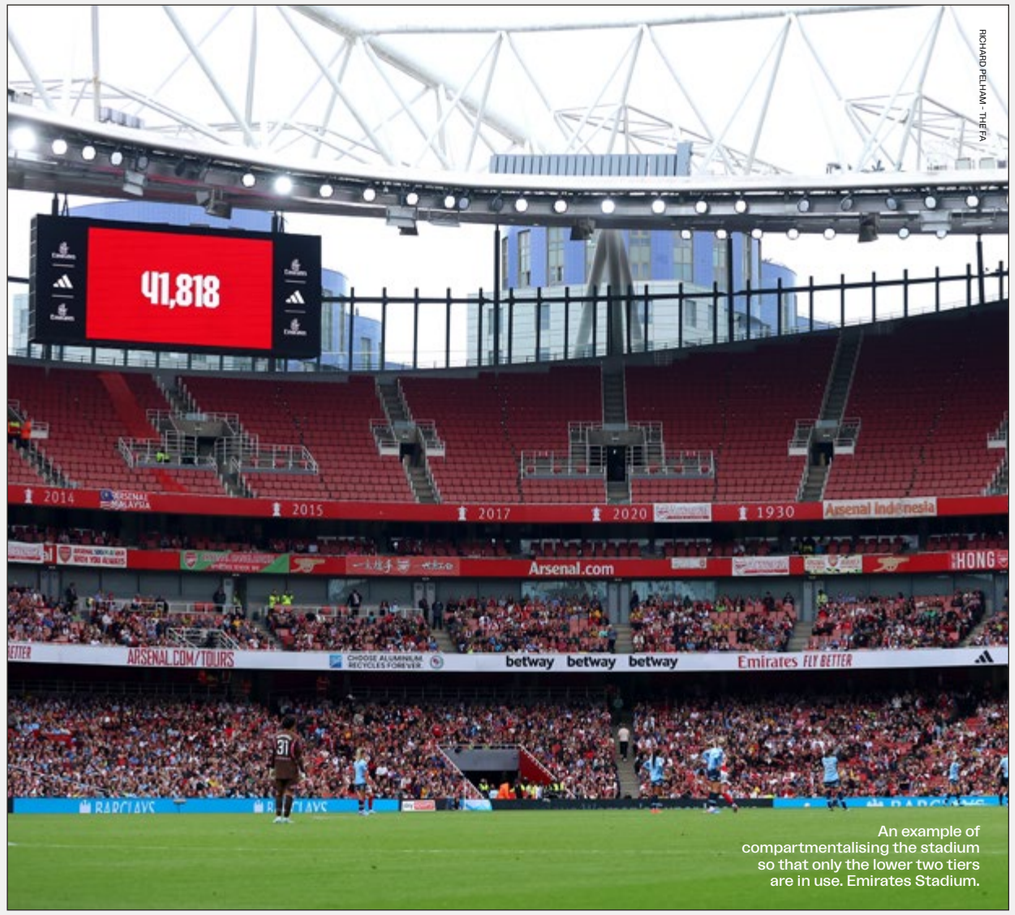
EMERGENCY SHELTERS

The stadium should be designed to also function as an emergency shelter, providing a safe, healthy, and secure environment, along with essential services, for individuals displaced from their homes due to natural or man-made disasters.

3.2.2 Sharing football facilities

Sharing a stadium with another team, such as a men's football club, reduces costs for construction, maintenance, and operations, making it more financially sustainable and appealing to investors. It also enables "double-header" events, maximising stadium use and boosting attendance and revenue while enhancing the fan experience.

However, scheduling conflicts and match volume must be carefully managed. Large stadiums can be operationally inefficient when under capacity, increasing staffing and energy costs. Compartmentalising sections can improve efficiency, while strategic planning helps maintain atmosphere, ensuring an engaging match day experience for both fans and players.



RICHARD PELHAM - THEFA

An example of compartmentalising the stadium so that only the lower two tiers are in use. Emirates Stadium.

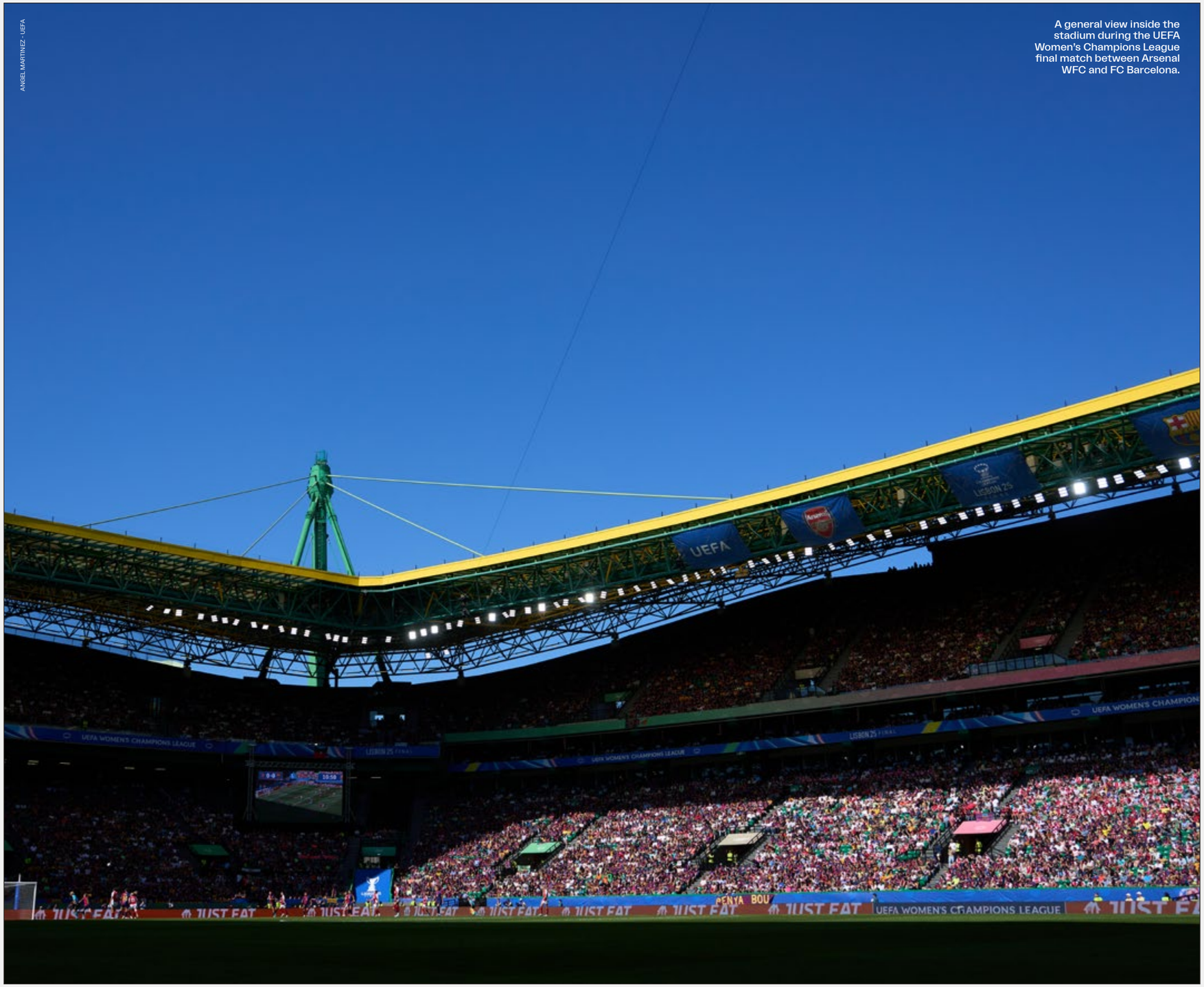
CASE STUDY

Estádio José Alvalade

LISBON, PORTUGAL

Home to Sporting Club Portugal men's team, the 50,095-seat stadium, completed in 2003, takes advantage of its prime location in the country's capital to provide a range of entertainment, commercial, and educational services that extend well beyond match days. These offerings make this a truly a vibrant, year-round venue. Furthermore, they boost social engagement with both fans and the wider Lisbon community. The services available include:

- Museum and guided tours.
- A large commercial covered car park with car wash services.
- An office block housing multiple tenants.
- A football training academy.
- Public informal running track and basketball informal court open 24/7, safe and well lit.
- A sports clinic.
- A shopping centre.
- 12 state-of-the-art cinema screens showcasing both mainstream and independent films.
- A supermarket.
- Several restaurants and cafes.
- A day care facility for elderly fans, complete with home-to-venue accessible transport services.
- An after-school club offering study support, sports activities, art lessons, language courses, psychotherapy, speech therapy, and more.
- A large health club with multiple gyms, a large swimming pool and a yoga terrace.
- A multipurpose sports arena with several gyms for activities such as gymnastics, esports, capoeira, table tennis and more.



ANGEL MARTINEZ - UEFA

A general view inside the stadium during the UEFA Women's Champions League final match between Arsenal WFC and FC Barcelona.

LARGER FOOTBALL EVENTS

Stadiums must accommodate a wide range of events throughout their lifespan, requiring careful planning and adaptability to meet varied demands.

- Define requirements for major events, such as the FIFA World Cup™, early in the project, at brief development, to account for specific regulations.
- Incorporate strategies for temporary expansions and overlays to enable seamless adaptation to different event needs.
- Design efficient ingress and egress routes for both crowds and vehicles to ensure safe and orderly evacuations for diverse scenarios.
- Prioritise flexibility in infrastructure to support varying event scales and types while maintaining compliance with safety standards.

A stadium in concert mode. Wembley Stadium.

EAMONN MCCORMACK - THE FA

3.2.3 Strategies for flexibility

The "Sport Grounds Safety Authority: Alternate uses of Sports Grounds" is a valuable resource when considering how multi-use can be incorporated into a venue in a safe way. Producing overlay designs for different stadium configurations to ensure their viability is crucial.

Stadiums often already have a range of assets that can contribute to their multi-use, such as:

- Extensive office spaces.
- Sporting facilities including changing areas and ground staff facilities.
- F&B concessions kiosks.
- Extensive lounge spaces.
- Conference rooms.
- Large areas of hardstanding prepared for pop-up installations.
- Large external screens.
- Fan zones.

All of these can be valuable on both match day and non match days and when building a stadium this factor should be considered when determining what to include. Furthermore, with minor alterations flexibility can be greatly increased. For example:

- Configure concessions to be double facing to serve the stadium internally as well as the public realm outside.
- Consider fan organisation, a key area which can be made flexible. This is explored more in **section 11.1.5**.
- Distribute accessible seating throughout the venue.
- Make your toilet facilities easy to change, from Male to Female to All-Gender, with adaptable signage and moveable partitions.
- Consider expanding the access and egress routes for people and vehicles.
- Allow dressing rooms to be usable for performers.
- Make the Media Working Room usable for community or education purposes, with strategised access.
- Make signage that can be easily hidden or replicable.
- Use LED lights in concourses and lounges where the colour can be easily and remotely changed to dress the building for a certain theme.

LIVE MUSIC

In addition to sporting events, multi-use stadiums frequently serve as music venues. These incur considerable challenges that must be evaluated from an early stage, including crowd management and structural integrity.

- Design egress to accommodate different event demands, ensuring safe and efficient crowd evacuation.
- Design stadium structure for music concerts, considering increased crowd movement and dancing.
- Provide robust temporary structures, such as sound booths and crush barriers, meeting the same safety standards as permanent installations.
- Coordinate stage and lighting grid heights, which may exceed the stadium roof.
- Plan backstage facilities for artists, crew, and equipment, including a loading dock.
- Integrate extensive ICT and sound infrastructure to support concert requirements.

3.3 EXISTING STADIUMS

Reusing an existing stadium can be a cost-effective and environmentally sustainable choice, leveraging its location and cultural significance. However, careful consideration is needed to address potential challenges:

- Utilise existing structures to reduce costs, simplify planning, and preserve cultural heritage.
- Recognise that an existing stadium will likely have been built to old regulations and guidance, as well as for a more male demographic in terms of, for example, toilet provision. Consequently, it may not be as safe or effective for attendees. Additionally, adapted older facilities will have inefficiencies and aging infrastructure which should be targeted for redevelopment.
- Emphasise environmental benefits, as reusing a stadium is often the most sustainable option, reducing the need for new construction.

SITE *CONSIDERATIONS*

Building on the vision and stadium scope outlined in previous chapters, this section guides clients through key factors that determine a site's suitability for stadium development. Choosing the right location is a critical step, and a comparative analysis can help evaluate each potential site against a range of considerations. Further insights into design considerations for the site masterplan can be found in **Section 5.0**.

4.1 WHAT IS DIFFERENT?

4.1.1 Location

Selecting the right location is vital to ensure accessibility, fan satisfaction, and community benefits. Proximity to transport links, urban areas, and other key venues must be carefully considered to support attendance and enhance the stadium's overall impact.

- Avoid isolated sites with limited transport options. While committed fans may be willing to travel long distances, accessibility remains a key barrier for many. Travel costs and journey times significantly influence attendance, particularly among newer or more casual supporters (FSA, Women's game Supporters Survey 2024).
- Consider the proximity of other major venues, such as men's football stadiums, to avoid operational conflicts. If overlaps can't be avoided, implementing mitigations such as good governance and collaboration will help minimise congestion and improve the overall match day experience.
- Incorporate sustainability in site selection to create positive social and environmental impacts, enhancing community use and integrating the stadium into its surrounding area.

CASE STUDY

Etihad Stadium and Joie Stadium

MANCHESTER, UK

Manchester City F.C. and Manchester City W.F.C. play at the Etihad Stadium and Joie Stadium respectively, two stadiums located just 300 metres apart. Separated by a main road but connected by a pedestrian bridge, these stadiums present unique logistical challenges when hosting simultaneous events. The nearby COOP Live Arena also compounds this.

While both stadiums have their own security protocols and crowd control measures, the potential impact on the city's public transportation, emergency services, and law enforcement during simultaneous events can be significant.

4.2 NEW STADIUMS

4.2.1 Site links to the wider urban centre

Ensuring seamless access to a stadium situated in an urban context requires careful planning to support fans, mitigate congestion, and promote sustainable transport options. These considerations are critical to the stadium's integration within its community and long-term success.

- Consult with local authorities about local public transport networks, pedestrian routes, and cycle lanes to assess whether they can accommodate increased use or be enhanced otherwise.
- Explore opportunities to share facilities with existing organisations to create efficiencies and integrate the stadium within the community.
- Consider proximity to international airports, hotels, and amenities, especially if the stadium is intended to host international events.

JAN KRUGER - GETTY

Emily van Egmond of Leicester City celebrates scoring against Liverpool

4.2.2 Natural conditions and topography

Stadiums should ideally be built on level or partially level sites. This minimises earthworks, reducing costs and environmental impact. If a completely level site is not feasible, the stadium design can be adapted to accommodate variations in terrain. Before construction, conduct geotechnical and geo-environmental surveys to evaluate soil properties and identify potential environmental hazards.

Brownfield sites or infill plots which has had previous commercial or industrial use are preferred over greenfield sites which are undeveloped or underused. The overarching environmental and social impact of the development would be reduced. Building on sites with existing ecological features and wildlife should be avoided.

Consider other factors like native species, trees, and potential archaeological finds. A flood risk assessment should be taken to evaluate potential risk. Discuss these with your project team (see **section 7.2.2**) to understand how to mitigate any risks.

4.2.3 Site perimeter and size

The site should be adequate to accommodate a stadium, and its construction works, as well as space for parking, fans circulation, an OB compound, and fan zones. Refer to the zonal planning strategy in the latest Green Guide.

For example, a stadium with a 20,000-seat capacity with no future expansion plans, and minimal parking requirements will occupy an area of approximately 5.5 hectares, assuming an optimal site shape and minimal limitations imposed by the sites relationship to Zone Ex. It is also important to include sufficient space for future expansion of the stadium if this aligns with the Stadium Vision strategy (See **section 2.0**).

4.2.4 Stadium orientation

Stadium pitches should be oriented north-south, but there is no universal standard. Site analysis is crucial to ensure optimal sunlight for the pitch.

Avoid broadcast interference from existing buildings such as shadows or sun glare from reflective façades. The ideal solution is based on specific site conditions, and limitations can be mitigated with artificial lighting.

4.2.5 General legal aspects and planning

LEGAL DUE DILIGENCE	Prior to acquiring a site, make sure you can legally build a stadium there. Check land ownership, zoning, building rights, ground conditions and the visual impact on nearby buildings.
OUTLINE PLANNING APPLICATION	To mitigate financial risk, it is recommended to submit an Outline Planning Application before finalising site acquisition. This allows you to submit a reduced amount of information, including a basic layout, to understand if the authorities are likely to approve your proposal, before spending money on extensive design work.
FULL PLANNING APPLICATION	Submit detailed drawings, reports, and surveys. Consult with the community, accessibility groups, sports organisations, and other relevant people (See **section 2.1.3** for more on this).
PLANNING PERMISSION AND CONDITIONS	After submitting the full application, the authorities may require additional research or information before you can build or use the stadium. These could be surveys, providing samples of materials, or making models. The design team and contractor will usually manage this process.

4.2.6 Green Belt sites

It is often the case that available sites with sufficient space, located towards the edge of cities are classified as Green Belt, with limitations on development. Stadiums fall within the exceptions for this as they are categorised as facilities for outdoor sport and recreation. However, consideration should be given to the sensitivity of these sites and the limitations this might imply on a proposed masterplan.

It is more challenging to secure planning approval on these sites. A reputable Planning Consultant should be employed to assist with this, and discussion should be had with the local authorities about what land they have available.

Developments must also achieve a net gain in biodiversity. Refer to **section 6.2.1** for more on this.

4.3 EXISTING STADIUMS

4.3.1 Site

In the case of existing stadiums, an analysis of the existing site area and footprint will be required. The ability to cater for a potential increase of the building's footprint, its access points and ensuring sufficient space for the construction works need to be assessed. Existing stadiums often occupy ideal locations within urban centres and will have a heritage that can be leant into.

4.3.2 Existing buildings

Each existing stadium is different, but the following general criteria should be considered when assessing its potential for refurbishment:

Potential expansion

- **ASSESS FUTURE NEEDS:** Consider if the stadium needs to expand in the future.
- **FLEXIBLE DESIGN:** Incorporate design elements to allow for future modifications.

Structural integrity

- **FOUNDATION ASSESSMENT:** Ensure the foundation is stable.
- **STRUCTURAL ANALYSIS:** Evaluate the building's structural integrity and mitigate any weaknesses.

Accessibility and inclusion

- **MEET REGULATIONS:** Existing stadiums may require additional facilities, such as wheelchair platforms, to meet current standards.
- **FAN EXPERIENCE:** Consider the needs of all fans, including families, older adults, and people with disabilities. Determine whether a terrace is too steep and therefore not comfortable for families for example.
- **STAFF AND PLAYER EXPERIENCE:** Adapt changing rooms and facilities for diverse teams and officials. Determine whether the changing rooms can be adapted for women's teams. Assess whether match officials can have separate changing rooms.

Media Commercial and Broadcasting

- **STAFF SPACE:** This should be sufficient for all media personnel and functions. Determine whether a media tribune can be included without causing considerable seat loss.
- **CAMERA ACCESS:** This should be sufficient for easy access. They should also wherever possible comply with relevant angle requirements from broadcasters.
- **PITCH ACCESS:** There should be sufficient space around the pitch for photographers.

Field of play

- **QUALITY:** Assess pitch quality and lighting needs.
- **CABLING:** Consider installing a cabling trench around the pitch.

Fan experience

- **SEATING:** Evaluate seat condition and consider increasing the spacing if it is under 520mm wide.
- **AMENITIES:** Ensure adequate food, beverage, and merchandise facilities. The food offerings may change, and concessions may need to be adjusted.
- **SANITARY:** Enhance the provision of women's, all-gender and accessible toilets to reflect the demographic. Refer to **sections 11.1.9** and **12.2.6.**
- **ATMOSPHERE:** Enhance the atmosphere with lighting, sound, and fan engagement initiatives.
- **CROWD MANAGEMENT:** Research historical data on crowd movement in and around the stadium and discuss any proposed changes with the local authorities at an early stage.
- **SECURITY:** Many stadiums have obsolete security technology. Consider upgrades such as CCTV cameras and access control systems.

Sustainability

- **ENERGY EFFICIENCY:** Replace any lights with LED lighting and switch to renewable energy sources. Increase insulation and reinforce air tightness across the building.
- **WATER CONSERVATION:** Implement water-saving measures like rainwater harvesting, low-flow faucets or waterless urinals.

Heritage

- **HERITAGE PRESERVATION:** If the stadium is a listed building, ensure that any modifications comply with heritage regulations.
- **HISTORICAL ELEMENTS:** even if the stadium is not listed, it might include many elements worth preserving or reusing.

Planning

- **PLANNING APPROVAL:** Note that any extensions, façade alterations and other relevant interventions require planning approval.

Building Services

- **UTILITIES:** Consider the impact on supplies of electricity, gas, water, drainage and other utilities.

Fans in the stand - Bristol City Stadium - Dolman Stand

SITE *MASTERPLAN*

The wider masterplan is the most dynamic and continuously active part of the site, serving as the stadium's outward-facing connection to the local community. Thoughtful design in this area not only enhances accessibility and movement but also shapes the overall experience of the venue.

This section supports design teams in developing a comprehensive site proposal, exploring various access and travel options as well as strategies to improve the way people interact with the space. Creative use of assets and landscaping can make the stadium more inviting and memorable, encouraging visitors, including those who may not be passionate about football, to return.

Additionally, overlay plays a crucial role in site development, ensuring the stadium can successfully accommodate a variety of event setups. See **Section 3.0**.

5.1 WHAT IS DIFFERENT?

Safe and welcoming facilities are core considerations for the masterplan for a women's football stadium:

5.1.1 Walking

Many fans, especially women, do not feel safe, welcome or comfortable being in the public realm. A UN Women UK survey conducted in 2021 found that 71% of women of all ages in the UK have experienced some form of sexual harassment in a public space. Many games are played throughout the winter and later in the day when it is much darker, creating safety concerns. Beyond meeting the needs of the latest Green Guide regarding safe ingress and egress, evaluate how the configuration of routes available might pose safety concerns to someone travelling alone. Measures can be taken to the design of a venue to improve the experience for visitors:

- Well-balanced, continuous lighting that supports safety, nature, and ecological needs.
- Active and passive measures, like active frontages, CCTV, and visible authorities.
- Mixed-use developments and avoidance of blank façades.
- Increasing visibility through space to create natural surveillance and clear wayfinding. Blind corners or narrow alleyways with limited exits are to be avoided. Ensure walkways are wide enough for families and larger groups to walk together.
- Access to nature, such as parks and water features to promote well-being.
- Seamless, safe connections between transport modes, especially in areas with poor lighting and limited access.
- Public spaces should be inclusive, and have seating, and shelter.
- Take measures to ensure space is well maintained and in good physical condition.

5.1.2 Accessible and family parking

Given the higher demographic of families and disabled people that are likely to attend an event, it is recommended to allocate an increased provision of Accessible and Family Parking bays. These should have extra space around them and be close to the entrance to the stadium and clearly demarcated, ideally with an appropriate symbol. Speak to your Highways consultant for more guidance. See also **section 12.2.1**.

Fan zone before a match. Joie Stadium.

HANNAH BUCKLEY

5.1.3 Fan zones

Fan zones are likely to be especially popular for women's football where it is more common for families and children to attend. They offer a great opportunity to turn a fixture into a more long-term day activity. Refer to **section 5.2.5**.

5.2 NEW STADIUMS

5.2.1 Creating active and safe sites

There are lots of opportunities within the wider site to create interest and unique experiences. For example, it is common for fans to want to welcome players' buses into the site. With smart adjustments to the levels and the creation of tiering, you can maximise the visibility of the bus to a larger crowd. Ensure player safety as a priority.

Create flexible, multi-use areas like plazas for markets, play spaces, and relaxation. Integrate security measures seamlessly, including fences, CCTV, and hostile vehicle mitigation, without compromising aesthetics. Use accessible street furniture with natural materials, ensuring at least 50% of seating includes armrests.

ONE KILOMETRE STRATEGY

Consider a "one kilometre strategy", evaluating the area within a kilometre of the stadium. Think about how the masterplan relates to and contributes to the sites beyond in terms of public realm and wider urban planning schemes.

Ensure there is a clear and safe passage to and from the stadium on match day and non-match day. Local businesses should be considered to ensure they are able to continue operation, and discussion should be had about how this can contribute to site operations.

5.2.2 Green infrastructure

Integrating natural elements and green infrastructure into the masterplan of a stadium not only enhances environmental sustainability but also promotes community well-being and addresses key practical concerns, such as drainage management.

- Introduce green spaces, tree planting, and other natural elements to improve air quality, support biodiversity, and enhance mental well-being.
- Consider community-focused initiatives, such as onsite vegetable gardens, to encourage local collaboration and engagement.
- Mitigate urban drainage challenges by incorporating efficient, strategically designed green infrastructure that can effectively address water management issues throughout the stadium's lifecycle.
- Work closely with design teams to optimise green infrastructure solutions, particularly on sites with spatial constraints, ensuring both effectiveness and seamless integration into the overall design.

5.2.3 Sports and exercise areas

Create sports and exercise areas to generate activity on site and promote well-being. Consider adding outdoor fitness areas with fixed exercise machines. Make use of the natural assets of the site to create scenic walking or cycling routes. There are also numerous examples of community pitches, such as 3G pitches, being installed around stadiums. Considering different ages and user groups can ensure that these aspects get the most use.

5.2.4 Transport

Events at stadiums have a radical impact on the transport needs for a site. The design should be sensitive to the local area and provide the facilities for safe access and egress for all relevant modes of transport. Develop congestion management strategies for both the construction phase and post-completion to foster positive community relations.

PUBLIC TRANSPORT

Stadiums should be strategically designed to prioritise public transport access, incorporating well-connected train, tram, and bus links. Consult with local authorities to enhance the provision and address gaps in public transport, especially for stadiums on urban peripheries, often linked to newer developments. Ideally aim to have a public transport link within 500m walking distance of all stadium entrances.

CYCLING

Cycling infrastructure including secure storage should be included and located in convenient, visible locations, close to the stadium, to promote this sustainable mode of transport. Investigate local pay-to-ride bike schemes to determine if you can have a "hub" installed at the stadium, to connect to a wider network. Make cycling routes through the site desirable and safe, reflecting on how they interact with pedestrian flows. Ensure that bike lanes are fully physically segregated from other vehicular routes and well lit. Cater to both fans and members of staff to ensure both have good facilities.

PARKING AND DROP OFF

Whilst public transport and cycling should be encouraged and facilitated as much as possible at the stadium, it is inevitable that many visitors will travel by car, especially from long distances and to more remote areas. There are several factors that may determine an appropriate car park provision. For example, a stadium in an urban centre with good public transport links will need far less.

Speak to your Transport Consultant (See **Section 18.0**) to get an accurate idea of how much of each type of parking to provide at your stadium. Further information on accessible parking can be found in **section 12.2.1**.

MOTORCYCLES

Parked motorcycles can be more vulnerable to theft and vandalism than cars. Consider locating motorcycle parking bays within a reasonable distance of the entrance, or otherwise in clear view of the facility. To accommodate most motorcycles, bays should be 1400 mm wide by 2100 mm long.

TAXIS

Ensure you have sufficient easily accessible and well signposted taxi and general drop off areas close to entrances to the stadium. You will often need to provide dedicated premium parking which should be close to the premium stand.

ELECTRONIC VEHICLES

Electronic vehicles are becoming a common occurrence and need to be catered for. Charging points are recommended given the duration fans are likely to spend at the stadium. Seek out partnerships with organisations to facilitate the installation and powering of these charging points. The use of electronic vehicles is likely to increase considerably so evaluate how to future proof against the need for additional installation. The location of charging points is crucial to evaluate given the potential for fire. Generally, where possible these should be external. Seek guidance from your BREEAM Assessor on provision and specification, if one is appointed to the project, or your Transport Consultant.

5.2.5 Fan zones

Fan zones enhance the match day experience by providing food, entertainment, and merchandise in an inviting and dynamic setting. Thoughtful design can help make these spaces accessible, cost-effective, and enjoyable for all visitors.

- Locate either outside or within the ticketed perimeter for flexibility and cost efficiency, avoiding the need for permanent stadium structures.
- Include F&B outlets, merchandise stalls, tables and seating areas that can be easily fixed.
- Add entertainment such as large screens to create a vibrant atmosphere. This should be the focal point.
- Ensure visibility and accessibility with clear signage and semi-transparent barriers to attract both ticketed and non-ticketed attendees.
- Design fan zones to be inviting and engaging, maintaining a lively atmosphere that encourages participation from fans and the broader community.
- Address seasonal comfort, particularly in colder months, by incorporating sheltered areas, heating solutions, or windbreaks.
- Cater to all age groups and ensure the fan zone has space dedicated to adults also, including smoking areas.

Inclusivity
To ensure fan zones are truly inclusive and meet the needs of all stadium user demographics, different zones can be created. Market research into the demographics of the locality of the stadium could be done to understand what drives different fans to games and what they would like to be included in a fan zone.

Planning considerations
When designing a fan zone, it is crucial to consider the following factors that could impact the success of your planning application:

- **CROWD MANAGEMENT:** Anticipate increased foot traffic during matches and ensure that the transport infrastructure can accommodate the influx of visitors. Some clubs may choose to restrict access to ticket holders to mitigate overcrowding.
- **NOISE AND LIGHT POLLUTION:** Carefully consider the orientation of giant screens and the stage to minimise noise and light disturbances in potential nearby residential areas.
- **ODOUR CONTROL:** If the fan zone is located near residential areas, conduct an odour assessment to evaluate the potential impact of food trucks. This assessment should consider the type and quantity of food being served.

Data and technical infrastructure
Features like selfie stations, social media activations and sound systems are also essential but often need to be integrated into the ground to maintain flexibility in the area.

Toilets
Provide permanent or semi-permanent toilet and baby changing facilities, as portable options are generally less desirable, especially for women supporters and children.

Food
Include food outlets and consider showcasing local food heroes or fan favourite foods.

Multi-use fan zone
Design fan zones for versatility, increasing use on match days and beyond. Incorporate overlays for various scenarios while minimising disruption to the local area, creating a space that enhances match day experiences and serves the community year-round. Abide by potential limitations on the usage of the site imposed by, for example, planning approvals.

Potential uses could include:

- **MARKETS:** Host makers, Christmas, or food markets.
- **AWAY GAMES:** Organise events for fans to watch away games together.
- **WATCH PARTIES:** Invite visitors to watch other events such as Eurovision, the Olympic Games, etc.
- **FAMILY-FRIENDLY ACTIVITIES:** Face painting or other interactive activities for children.
- **COMMUNITY EVENTS:** Use the space for fan forums, or conferences.
- **LIVE MUSIC:** Offer a venue for live music performances and DJs.
- **PHYSICAL ACTIVITY:** Consider incorporating space and facility for activities such as penalty shootout or children's play areas.
- **ANNUAL EVENTS:** Assess the calendar for local events that could be engaged.

CASE STUDY

Queen Elizabeth Olympic Park Consultation

LONDON, UK

To improve the area around London Stadium, a comprehensive consultation involving over 600 women and girls was conducted to understand the experience and the safety concerns in the area.

This led to the creation of the "Creating Places that Work for Women and Girls - Handbook for Local Authorities, Developers and Designers," published by the London Legacy Development Corporation (LLDC). This groundbreaking handbook, the first of its kind in the UK, aims to promote more equitable and inclusive urban spaces by prioritising the needs of women and girls. It also demonstrates how crucial consultations are to the success of any project, especially those with a significant impact in the community.

5.3 EXISTING STADIUMS

Existing stadiums can be especially susceptible to security issues in the wider masterplan. Evaluate the sightlines throughout the site and take measures to improve them. Improvements to lighting can be key to this as well as stewarding.

5.3.1 Converting existing parking to fan zones

Fan zones are often retrofitted over existing parking. The large impermeable footprint of a fan zone can also have a considerable impact on circulation around the site, leading to tight corridors and many turns. Conversions should not create any accessibility issues such as ramps. It is important to ensure infrastructure to the fan zone such as power and data connectivity.

Kids in a fan zone. Manchester City Academy Stadium.

MANCHESTER CITY - THEFA

SUSTAINABILITY

This section presents considerations that influence environmental sustainability which could be considered as part of the project initiation, design, construction and operation of the stadium. While the topic of sustainability encompasses the pillars of Environmental, Social and Economic, this section will primarily focus on the environmental performance element of the broader subject of sustainability. This section outlines the sustainability considerations believed to be at a 'baseline' level, and those which could be considered which are deemed 'aspirational'.

6.1 WHAT IS DIFFERENT?

Women's sport does not inherently require different standards with respect to sustainability. However, it is the aspiration of the Women's Super League Football and its clubs to go beyond 'business as usual' as it relates to sustainability. The potential for the women's game to lead is exemplified by a report in 2024 entitled "Women's Football and Climate Change: The Players' Perspective" where "A significant majority of the players express profound concern about the immediate impacts of climate change on their sport and the world at large, with two-thirds agreeing or strongly agreeing that climate change is affecting football and over 70% saying playing conditions are already affected by climate change".

There are many opportunities for consideration, to embed sustainability initiatives into the design, construction, and operation of the stadiums – with some slight nuances dependent upon whether the stadium is an existing facility or a new build. Ensure sustainable design from the outset: aspects such as the building shape and orientation need to be fully optimised before deciding on the energy strategy.

6.2 NEW STADIUMS

6.2.1 Site considerations

With a new build stadium, there is opportunity to ensure that sustainability is a key consideration in the site selection. Site selection is discussed in detail in **section 3.0**, considering the locality, connectivity and natural assets of the site can make a huge difference to delivering on environmental goals.

Permitting Requirements
Throughout England, local planning authorities often impose planning requirements on large new build developments, this includes:

BREEAM
The team should consider going beyond the mandatory requirement imposed by any planning policy, through the achievement of a higher certification rating where viable. For all projects the team should engage with a licenced BREEAM assessor as early as possible in the design process (no later than RIBA Stage 2 (see **section 7.2.1**)). This engagement will assist in the development of a clear certification strategy, which in turn will ensure that the project can secure as many time-dependent criteria as possible and incorporate sustainable design measures into the project from the outset.

Biodiversity Net Gain
Biodiversity Net Gain (BNG) is now required under a statutory planning framework in England. This requires all new developments seeking planning to demonstrate that the biodiversity net gain objective is met. Engaging with a qualified ecology consultant is recommended during RIBA Stage 1 (see **section 7.2.1**) to ensure this is given consideration from the outset. Going beyond this mandatory threshold, where viable, will enhance the external elements of the development, offering a wider benefit for the community and stadium users. There should also be ongoing monitoring management and maintenance of the site and habitats to ensure the gains are maintained.

6.2.2 Energy and Carbon

In line with the UK Government's goal to achieve Net Zero by 2050, careful consideration should be given to stadium design to ensure alignment with these targets. There should be a balance between the pathway to Net Zero, and the wider economic and social sustainability elements.

The construction impact of the development should be reduced as far as possible. It is recommended that a whole life carbon assessment be undertaken during RIBA Stage 2 (refer to **section 7.2.1**), and an optioneering process carried out to determine suitable materials and construction methods. Stage by stage assessments are recommended to assist in the design development.

Measures to consider include:

- Material suppliers.
- Use of locally sourced materials where possible.
- Use of materials with high recycled content.
- Use of materials with Environmental Product Declarations (EPDs).
- Use of lower-carbon alternative product / materials.
- Use of resilient materials, limiting maintenance and replacement costs.

Stadiums, in their nature, are energy intensive so design measures related to the reduction in operational energy usage will need to be considered from the outset, through fabric efficiency measures, and the building services strategy. Refer to **section 15.0** for more information on building services.

Going beyond business as usual, the following should be considered:

- All-electric design.
- Feasibility of on-site renewable energy systems.
- Off-site renewable energy generation /supply, as well as carbon offsetting.
- Electric vehicle (EV) charging capacity for grounds maintenance vehicles and potentially for onsite car parking spaces. Ensure these are external where possible and in line with a fire strategy.
- Smart building design, with the incorporation of sensors throughout occupied spaces, connected to the building management system.

Beyond FIFA's guidelines, there are no industry standards for stadium carbon emissions. FIFA recommends a maximum of 1,000kg CO_2e/m^2 for large stadiums and 750kg CO_2e/m^2 for medium-sized stadiums.

As low-carbon technologies continue to advance, these targets are likely to become more stringent. Refer to FIFA recommendations and local regulations at the start of your stadium project.

CASE STUDIES

Starlight Stadium

VICTORIA, CANADA

Completed in just five months in 2020, this 5,500-seat modular stadium was the world's first entirely built with a glued laminated timber, or glulam, structure. By including 4,060m³ of timber, the project avoided emitting an estimated 1,370 tonnes of carbon dioxide emissions that would have resulted from using conventional materials such as steel. The stadium also includes 18 skyboxes, concessions, a variety of services, and a beer garden designed for fans and families.

Oxford United Football Club Stadium

OXFORD, UK

This 16,000-seat stadium for the men's team, featuring a partial timber structure, a hotel, restaurants, and community spaces, will be the first in the country powered solely by electricity. Renewable energy, including 3,000m² of solar panels and air source heat pumps, will cut CO2 emissions by 80% annually. Committed to sustainability, the club has joined the UN Sports for Climate Action Framework. Currently in final design stages, it will be one of the greenest stadiums in the country.

Render of the new Oxford United Stadium

EDWIN KOOIMAN/GETTY IMAGES

6.2.3 Health and Wellbeing

Health and well-being are integrated throughout the BREEAM system (as well as many other benchmarking schemes). Where a benchmarking scheme is not being sought for the development, consideration could be given to the following strategies to enhance well-being throughout:

- Internal layouts, to maximise natural daylight and views for those occupants, i.e. meeting rooms, offices. catering areas, etc.
- Biophilic design measures, within the workspace areas, to enhance individuals' connection to nature.
- During design and procurement, consider the use of materials with low volatile organic compound (VOC) content and emissions evaluation, thus improving air quality within the occupied areas of the development.
- Ventilation strategy to balance high fresh air volumes throughout occupied spaces with energy reduction strategies.
- Provision of facilities including baby-changing facilities, family toilets etc.

6.2.4 Water Use

The most water intensive aspect of a stadium is typically the irrigation of the pitch. Alternative water sources such as rainwater harvesting, or greywater recycling should be considered, to offset the potable water demand. Landscaping will also require water and depending upon the capacity of the system could use the same source as the pitch, although water demand should be reduced as far as possible using native and / or adaptive species, and efficiency irrigation systems. For water used on the pitch the Head Grounds Manager should be consulted to ensure that the systems put in place are appropriate for the pitch.

Consideration should be given to the specification and installation of water efficient fixtures and fittings throughout the stadium, particularly thinking about which areas will have the biggest impact, balancing performance throughout. For example, it is expected that players will want showers post-match which offer user satisfaction in terms of flow rates. This water use can be balanced through low-flush WCs and urinals, and low-flow wash hand basin taps throughout the concourse areas of the stadium and elsewhere within the development.

Pitch irrigation

6.2.5 Waste management

During design, consider how the stadiums will be operated, to allow for appropriate waste management practices to be implemented. For example, composting of food waste, and standalone recycling bins throughout the concourse. To minimise single use plastics during operation, implement water refill stations throughout the venue, available to all user groups and in all stands. Clear signage should be provided, encouraging recycling by fans, and waste management practices should be visible to users. Grounds staff regularly handle hazardous waste and this needs careful management. For example, when washing down grounds maintenance equipment, it is important to consider the appropriate disposal of wastewater, as it is often unsuitable for discharge into standard drainage systems. Relevant legislation should be reviewed to ensure compliance.

CASE STUDY

Tottenham Hotspur and Gtech Community Stadiums

LONDON, UK

Common in Southern European stadiums, due to increased awareness of water management, these two stadiums also feature touchless, waterless urinals in GA male toilets. This simple measure can save an average of 2.5 litres of water per use.

6.2.6 Site circular economy opportunities

A circular economy is a system where materials are kept in use at their maximum value for as long as possible, minimising waste. This approach offers significant economic opportunities while helping to reduce environmental impacts by making the most of existing resources.

Stadiums, owing to their scale and unique designs, can require substantial quantities of embodied carbon. The design team should explore avenues for reusing existing structures and materials that would conventionally be demolished minimising the carbon emissions of the stadium construction. During site selection, look for opportunities such as local material supply chains.

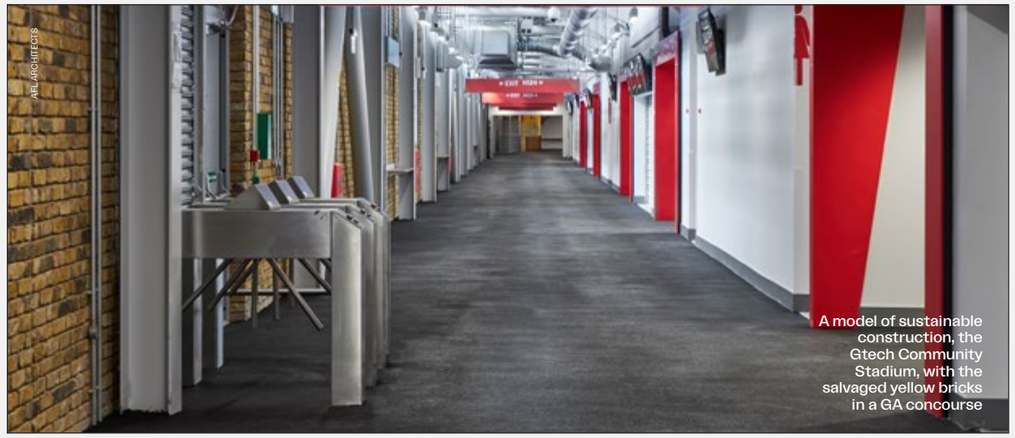
Key Circular Economy principles:

- Design for deconstruction.
- Off-site construction/use of pre-cast elements.
- Design for manufacture and assembly.
- Modularity – offering flexibility in design, construction and operation.

CASE STUDY

Gtech Community Stadium LONDON, UK

The Gtech Community Stadium in London stands as a model of sustainable construction. Built on the site of a former horse stable facility, the stadium reused salvaged bricks from the old structure, demonstrating a commitment to circular economy.



A model of sustainable construction, the Gtech Community Stadium, with the salvaged yellow bricks in a GA concourse

CLIMATE CHANGE

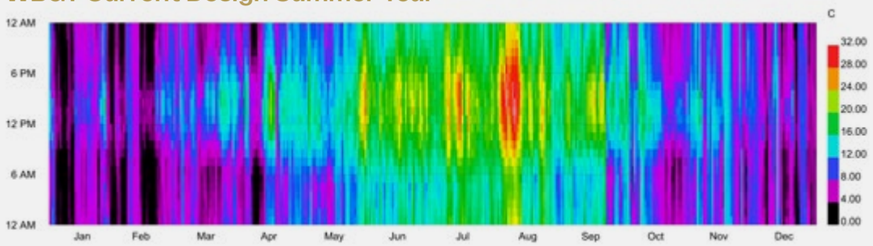
England has a climate which makes it well suited to playing sport. However, during the heatwave in 2022 we saw temperatures exceeding 40°C in London and future projections indicate that we will see hotter summers and wetter winters in the future.

The thermal environment is fundamental to player health and their ability to play sport. A human body which is under physical stress, such as during a high pace football game cannot thermoregulate in a high temperature and humid environment which in an extreme situation can put the player's health at risk. FIFA provide guidance on heat stress with additional cooling breaks introduced when the heat stress (measured in Wet Bulb Globe Temperature WBGT) exceeds 32°C. There are arguments that these guidelines do not go far enough and that a lower threshold of 28°C is recommended to truly future proof a stadium design.

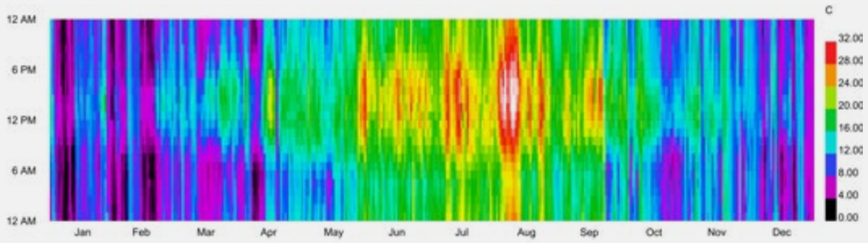
Key recommendations with respect to heat:

- For external spaces including playing surfaces, the provision of shade and allowance of air movement from wind are key aspects of design which can improve thermal stress for players. Computational modelling can be used to identify how the stadium environment will perform during future climates.
- Provision of spaces in the hospitality and medical treatment areas of the stadium to provide cool areas for heat vulnerable users to occupy freely to avoid overheating or to cool body temperatures down in the event of heat exhaustion.
- Overheating assessment within building ventilation design should be undertaken considering future temperatures based on CIBSE guidance.
- The design of stadia located in a dense urban location should reduce the impact on the urban heat island through material choice, permeability of the venue to wind, shading elements and increased vegetation.

WBGT Current Design Summer Year



WBGT Medium Scenario 2080



Projected heat stress temperatures under current and future climate scenarios for London. Mott MacDonald

The other challenge with respect to climate change is increased storm events leading to increased rainfall and a risk of flooding. This risk was realised for Wimbledon's Cherry Red Record's Stadium during the autumn of 2024 when significant flood damage took the pitch out of action for several months.

A flood risk assessment can be undertaken at the site selection phase and is a consideration for the selection of the stadium site. Once a site is selected, managing flood risk is a key aspect of the project masterplan and Sustainable Urban Drainage Systems (SuDS) presents a sustainable approach to flood management. The provision of SuDS can also improve the biodiversity for the site. More information about SuDS solutions can be obtained from the SuDS Manuel (C753F) from the Construction Industry Research and Information Association (CIRIA).

Increased frequency of storms also presents a risk on match day, with strong winds interrupting the flow of the game and wind driven rain impacting the experience for both players and fans. For windier sites a carefully designed stadium roof can mitigate wind and wind driven rain issues.

CASE STUDY

Climate Pledge Arena

SEATTLE, USA

Named after a global commitment to net-zero carbon by 2040, this arena claims to be the world's most sustainable. Home to the Seattle Kraken and various events, it boasts several sustainability accolades, including ILFI Zero Carbon certification, LEEDv4 Silver, and TRUE Platinum. Fully electric and powered by 100% renewable energy, it diverts over 90% of waste from landfills and provides free public transport to events, aiming for 25% guest participation. Its "rain to rink" system harvests 15,000 gallons of rainwater for NHL ice, alongside water-saving fixtures and stormwater retention.

6.3 *EXISTING STADIUMS*

6.3.1 Site considerations

Similar to new build opportunities, where an existing stadium is to be developed, consideration should be given to the strategies outlined above. Accessibility and locality should form part of the decision-making process and efforts should be taken to maximise the use of circular economy opportunities.

6.3.2 Benchmarking

Like new build stadiums, local authorities often set planning policy requiring a particular BREEAM rating is achieved for the refurbishment. Again, consider going beyond the mandatory requirement imposed by any planning policy, through attaining a higher certification rating where viable.

6.3.3 Energy and Carbon

Redeveloping an existing stadium offers opportunities to reduce environmental impact by reusing materials and improving energy efficiency.

- Conduct a detailed audit to assess the potential for material reuse and minimise the need for new construction materials.
- Perform a whole life carbon assessment during RIBA Stage 2 (see **section 7.2.1**) and carry out stage-by-stage evaluations throughout design development.
- Implement material and carbon reduction strategies from new build guidance where applicable.
- Replace outdated façades and transition to electric or heat pump energy systems to enhance operational efficiency.
- Weigh the carbon impact of retaining existing materials against the benefits of modern, energy-efficient systems during early-stage design.

6.3.4 Waste management

Overall waste generation should be reduced, compared to that of a new build construction. However, the principals and guidance noted for the new stadium design should still be considered for both construction and operational waste.

6.3.5 Water use

The opportunity for retrofitting water efficient technology might be limited – but should still be considered. Existing roof space and structural considerations will play a factor as to whether rainwater harvesting is viable for the venue. If this cannot be achieved, including a borehole could be a potential alternative.

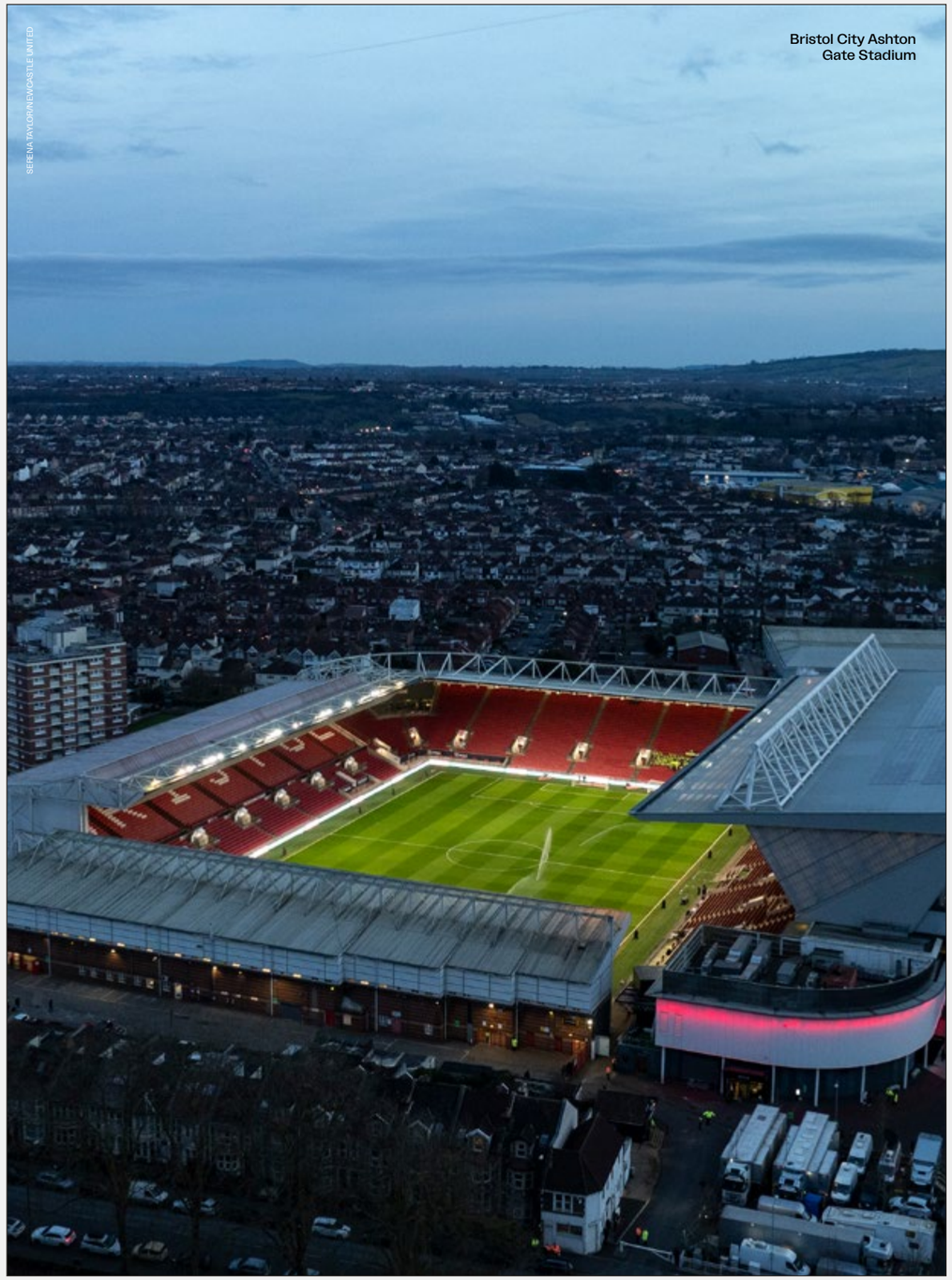
The retrofitting of water efficient sanitary ware throughout a stadium is a relatively simple task with a potential high reward. An audit of existing facilities should be carried out in the first instance, to determine current water usage and anticipated savings.

6.3.6 Health and Wellbeing

Dependent upon the form and layout of the existing stadium, there will likely be constraints to the incorporation of health and well-being design strategies. The strategies outlined in the new stadium design can be considered and incorporated where viable. The team will need to strike a balance between health and well-being strategies and energy and carbon impacts of their inclusion.

6.3.7 Climate Change

For an existing stadium there is often less flexibility in the stadium form. However, the key strategies set out for the new stadium design can be considered within the constraints of the existing venue.



Bristol City Ashton Gate Stadium

ARCHITECTURE AND *CONSTRUCTION*

This section is targeted towards the project design team. Achieving successful stadium project delivery, design ethos and construction considerations, are all explored.

This guidance sets out a bold vision for the design of the future women's stadiums, aiming to revolutionise traditional models, public perception, and impact on the sport's development. Drawing from ongoing discussions in this field, the advice is not prescriptive but encourages designers to approach the task with ambition and creativity. Along with all advice here it is critical that stadiums are developed to be environmentally conscious and sustainable, aging resiliently and retaining their quality throughout their lifecycle. For information on this, see **section 6.0**.

7.1 WHAT IS DIFFERENT?

7.1.1 Welcoming Architecture

Creating a safe and comfortable venue for fans is paramount, and the design should prioritise these aspects to enhance the overall experience. The design should be distinctive, architecturally significant, and reflective of the club / operator values, giving the ground an appearance and impression suitable for the highest echelons of the Women's game.

No longer should stadiums be developed as imposing fortresses. Instead, the focus should be on creating open and welcoming spaces for the community. This can be achieved through several ways including:

Human centred architecture

Consider the human scale of all spaces. By reflecting on the fan journey and breaking down the mass of the stadium, particularly in dense urban environments, we can create a more welcoming building. This approach can also foster stronger visual and functional connections with the surrounding community. Other important considerations include:

- Demarcate entrances and openings clearly to improve external flows.
- Create façade transparency / activated frontages, especially at ground level.
- Optimise pitch views to cater for the diversity of people's heights.
- Prioritise accessibility and inclusivity for everyone.
- Create internal visual links between spaces, for example different fan areas such as lounges and concourses.
- Ensure privacy in spaces such as all-gender toilets, players changing rooms etc.
- Make interior design exciting and flexible
- Thoughtfully design clear signage integrated with the interior design concept.
- Use video façades, subject to local context.
- Consider the different ergonomic qualities of the fans. For example, would rails help children to use gangways? Can a 500mm wide seat accommodate a diverse fanbase?

Ensuring comfort

- Include covered stands.
- Mitigate wind on the stands, while allowing pitch ventilation.
- Optimise daylight.
- Ensure thermal comfort. Consider that women tend to be more susceptible to the cold than men.
- Select natural materials and colours.
- Cover bag search areas.
- Provide informal seating areas, especially in concourses.
- Reduce floodlight glare on the fans.
- Significantly reduce waiting times, especially regarding the queue for women's toilets by providing an adequate number of facilities.
- Exceed minimal area advised for concourses. Additional tolerance in concourse areas will allow people to move more comfortably, especially those with children.
- Implement multi-sensory spaces. This can be in stands, concourses and lounges.

Sense of ownership

- Aim for an iconic building design that relates with its urban context.
- Use of dynamic and coloured lighting to "dress" the building.
- Make the building highly "sharable" on social media. Particularly in women's football, fans are highly proficient in sharing content on social media platforms. Guarantee that content shared by fans is interesting and of high quality by considering aspects such as lighting design, artistic selfie walls, video projections, interactive elements and games, quality sound and iconic interior design.
- Blur boundaries between front and back of house. For example, consider live kitchens in some lounges.
- Encourage local supplying of F&B.
- For clubs with a men's team, avoid simply replicating the design of the equivalent men's stadium. While drawing connections can help establish a unified identity for a club, it is important to distinguish the women's stadium to ensure it does not come across as a scaled-down version of the men's stadium.

Flexibility

Stadiums should be designed with adaptability in mind, recognizing the need to evolve over time. This forward-thinking approach should inform every stage of the design process, as further discussed in **section 3.0.**

- Incorporate future expansion strategies from the first stages of design if required.
- Optimise for the provision of multi-use spaces.
- Consider column free lounges and test with different layouts in these during the design.
- Ensure flexible and easily stored furniture.
- Calculate realistic storage areas.
- Specify high-quality and robust materials.
- Provide high-quality broadcast facilities designed to be easily adaptable to future technology.

The construction method to adopt should be considered alongside the Stadium Vision (See **Section 2.0**) to assess the likelihood of future adaptation. The women's game is growing at pace, and the following types of considerations are important:

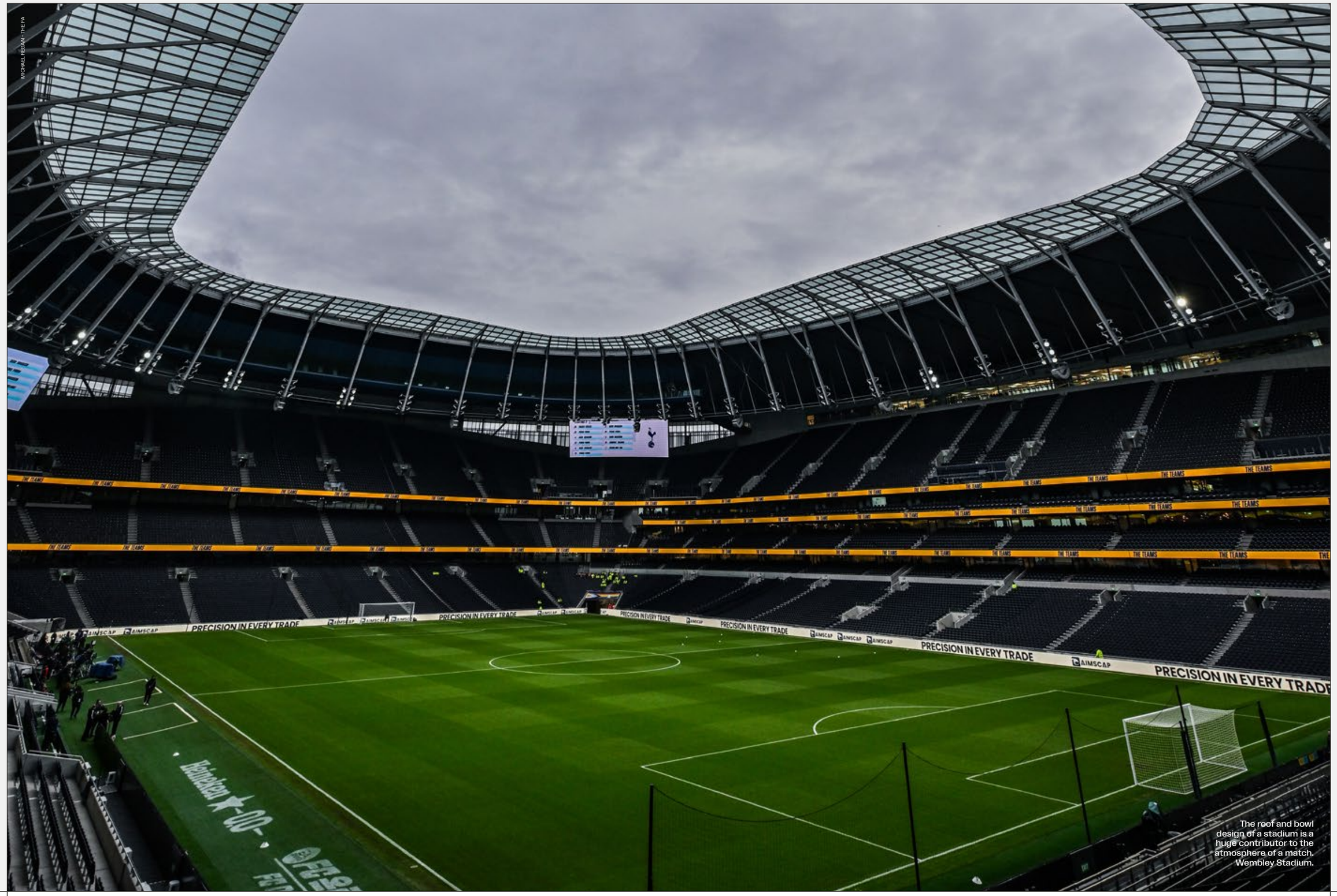
- Designing a stadium that could be moved or demounted. This could be advantageous, for example, in cases where land agreements necessitate the relocation of the structure.
- The ease with which a stadium can be expanded or reduced allowing stadiums to grow and evolve over time.

Roof design for a new fan experience

While both men's and women's football matches can have passionate crowds, the sound atmosphere can differ:

- Women's fans tend to sing with higher pitches.
- Hardcore fans may be less vocal in women's matches.
- Crowds are generally not segregated, leading to chants and songs being more dispersed around the bowl.
- Women's games frequently feature live DJ sets to enhance the atmosphere.

Stadium design should model these acoustic factors, particularly when shaping the roof and selecting materials. A retractable roof could offer flexibility for multi-purpose use, but its high capital cost and structural implications mean it should be evaluated early in the development process.



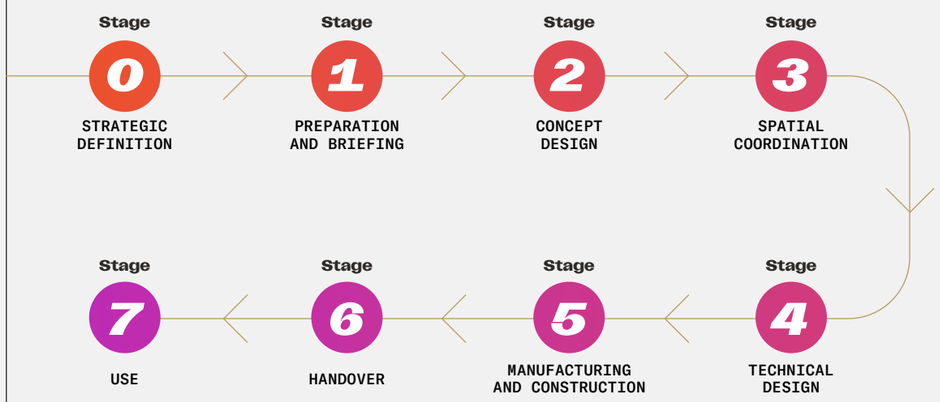
The roof and bowl design of a stadium is a huge contributor to the atmosphere of a match. Wembley Stadium.

7.2 NEW STADIUMS

7.2.1 Project sequence

New or existing stadium projects will go through a series of different stages and the RIBA Plan of Work is an ideal resource for understanding the key steps along the way. The RIBA Plan of Work will allow the organisation of the processes of briefing, designing, delivering, maintaining, operating and using a building in eight stages and gives a framework for setting out and procuring professional services and project management.

The eight stages of the RIBA Plan of Work



The duration of each design stage varies depending on the project, but due to their complexity, a stadium project typically takes 2 to 3 years to fully develop before construction begins.

The Inclusive Design Overlay to the RIBA Plan of Work can be helpful to guide on how inclusive design advice and principles should be embedded at every stage of a stadium project.

Refer also to the Smart Building Overlay from the RIBA Plan of Work to discuss smart building technology at each project stage. This will help to ensure project goals are met and defines how "smart" the stadium will be.

7.2.2 Project team

Projects for stadiums are much wider and more specialised than many other construction projects. Appointing the right team with clear responsibilities is essential to achieve the best outcome. The design team is usually lead by the architect with relevant experience in stadium design. In **section 17.0** a checklist is provided with the most common consultants that collaborate to design a stadium and a brief explanation of each role.

The project team should be working in a full BIM (Building Information Modelling) environment to promote project coordination, clash detection and ensure clear communication. A useful reference point for understanding this is the UK BIM Framework, the standards, guidance and resources which constitute the overarching approach to information management using BIM in the UK. The client should be made aware of the necessary ongoing commitment and benefits in maintaining and updating BIM records post-occupation.

Design teams should remain current with advancements in efficient and environmentally conscious construction practices. Integrating environmental design tools from the outset of projects ensures sustainability is embedded into the stadium's development. See more on this in **section 6.0**.

Wall mural.
Manchester City Academy Stadium.

7.2.3

Methods of construction

TRADITIONAL STADIUMS:

British stadiums typically combine traditional and modern construction techniques: reinforced concrete and steel are common structural choices for their strength and durability while precast concrete and modular construction usually accelerate building times and reduce costs. Timber is sometimes used, especially for smaller stadiums, given its aesthetic quality and potential improved environmental credentials.

PROS

DESIGN VERSATILITY: traditional construction allows for greater customisation and flexibility in design.

ESTABLISHED PRACTICES: traditional methods are well-established and have a proven track record.

LOCAL LABOUR: this method often relies on local labour, supporting the local economy.

CONS

TIME-CONSUMING: this method can delay the programme.

RISK OF DELAYS: projects are more susceptible to weather-related delays and other unforeseen challenges.

HIGHER COSTS: it can be more expensive.

ENVIRONMENTAL IMPACT: can have a greater environmental impact due to higher waste generation and energy consumption.

MORE DIFFICULT TO DISMANTLE: a traditional stadium, if not designed with disassembly in mind, may be more challenging to dismantle at the end of its life.

MODULAR STADIUMS:

This is a building method where sections of the stadium are built off-site in a controlled factory environment and then transported to the site for assembly.

PROS

SPEED: it can significantly reduce construction time compared to traditional methods.

QUALITY CONTROL: building components can be manufactured in a controlled environment, ensuring high quality and consistency.

COST-EFFECTIVENESS: modular construction can often be cheaper than traditional methods due to reduced labour costs and waste.

SUSTAINABILITY: it can be more sustainable than traditional methods, as it often involves less waste and energy consumption during the construction process.

SUITABLE FOR TEMPORARY SCHEMES: for example, in cases where land agreements necessitate the relocation of the structure.

EASE OF EXPANSION: allows stadiums to grow and evolve over time.

CONS

DESIGN LIMITATIONS: may impose certain design limitations, as the system largely relies on a standard set of components.

LARGER FOOTPRINT: generally, requires an increased footprint compared to traditional methods due to reduced structural spans and limits to flexibility.

PUBLIC PERCEPTION: some people may have concerns about the aesthetics or quality of modular construction.

TRANSPORTATION: transporting large modular sections to the stadium site can be challenging and expensive, especially for remote locations.

EARLY CONTRACTOR INPUT: early involvement of a modular contractor is advised to understand its implications in the design.

7.2.4 Interior design

A new women's stadium should include an exciting and flexible interior design which should reflect the commitment to creating an inclusive, flexible, welcoming, and vibrant environment. Consider innovating by anticipating the fan journey and creating unexpected visual links, iconic elements or materials. The following recommendations outline key aspects to consider in the stadium project:

Universal design:
Ensure that all areas of the stadium are accessible to everyone, including individuals with disabilities.

Eco-friendly materials:
Use sustainable building materials and finishes that reduce the stadium's carbon footprint.

Flexibility:
Use materials and systems that are easily demountable and replaceable.

Contemporary design:
Incorporate modern architectural elements that reflect the dynamism and energy of women's football. Use materials that are both resilient and aesthetically pleasing.

Artwork:
Feature artwork, murals, and installations celebrating the history and achievements of the team, as well as community and cultural themes.

"Neutral" or themed interior design:
Consider going for a more neutral "look and feel" if spaces are to cater for flexible uses or, for example, be shared with another team or used for conferences. Video displays and lighting can help create different atmospheres. You should also explore ways to provide a unique offer for specific demographics by adapting different aspects of the stadium to create more variety. To balance these aspects a decision should be made from an early stage.

Subdivided layouts:
Consider creating different areas and niches in the same open plan spaces, mainly in large lounges, to create seclusion and variety.

7.2.5 Roof design

The roof is a complex and crucial part of any stadium and should take into consideration any future expansion plans when designing to ensure built-in flexibility. Other key considerations include:

Rain noise:
Opt for a cladding material that minimises the noise caused by rain drops.

Floodlight clearance:
Ensure the roof allows sufficient height for floodlights to avoid towers if possible.

Shadow:
If allowing for floodlight clearance is not possible, confirm your proposed roof will not cast shadows on the pitch.

Natural light:
It is recommended to include transparent elements in the roof design to maximise sunlight. However, the design should be crafted to optimise the structure so that there are almost no structure shadows on the pitch, which might confuse the players and have a negative effect on broadcast.

Pitch impact:
The roof directly influences natural light, rainfall exposure, and ventilation, factors critical to pitch health. While mitigation strategies exist, they can be costly and may conflict with maintenance budgets or pitch quality expectations. Early consultation with the Head Grounds Manager is essential, and the design must align with the selected pitch surface type (Refer to **section 8.0**).

LED grow lighting:
If solar studies indicate a need for LED grow lights, note that they provide light but not heat, potentially requiring pitch heating.

Built-in flexibility:
Consider an easy maintenance access strategy and design your roof to support extra weight. This will make the roof able to accommodate future lighting or broadcast equipment. Consider the potential need for giant screens for events or concerts. See **section 16.2.2.**

Concert compatibility:
Check if the roof level will allow for large concert stages and respective tower grids.

Roof walks and the stadium tour:
Including access to the roof as part of the tour is growing in popularity, offering a unique view of the stadium. Prepare the roof structure for this and consider including features to enhance the experience, such as a zipline.

7.2.6 Balanced acoustics

Acoustics play a crucial role in enhancing the fan experience, requiring careful roof design to balance external noise (e.g., rain) with clear game sounds and crowd engagement. Key factors include:

SOUND PROPAGATION AND REVERBERATION:

Stadium Shape:
360-degree bowls with covered stands contain sound more effectively, enhancing atmosphere.

Material Selection:
Concrete and metal reflect sound, while softer materials absorb it. Timber structures can improve sound quality.

Reverberation time:
The ideal reverberation time enhances the atmosphere without excessive echo. While it varies by factors, stadiums, especially open-air venues, generally benefit from shorter reverberation times to minimize echo and improve speech clarity for announcements and commentary.

Audience density:
A full stadium can better absorb sound, reducing reverberation time.

SOUND SYSTEM DESIGN:

Distributed Sound Systems:
Ensure even sound coverage throughout the stadium by integrating sound equipment into the 3D model to prevent sightline obstructions with giant screens, highballs, or focal points.

Sound Clarity:
Prioritise clear, intelligible audio for announcements and commentary.

Noise Levels:
Monitor sound levels to prevent discomfort or hearing damage, especially for children and babies. Avoid areas where noise concentrates and disrupts fans.

Music Integration:
Live DJ sets and pop music are integral to women's football events. Stadiums hosting concerts should ensure the design supports a diverse range of live music performances.

CASE STUDY

Tottenham Hotspur Stadium

LONDON, UK

The roof that covers all the stands is curved, which helps to concentrate sound towards the pitch and stands, creating a loud and intense atmosphere. With this feature and careful detailed design to avoid sound leakages, the sound is contained within the bowl as much as possible. The fans are close to the pitch and the bowl's stepped terraces are relatively steep, up to 35 degrees, the maximum terrace gradient recommended by the latest Green Guide.

7.2.7 Public realm & landscape

The stadium's public realm should be accessible, safe, and functional, benefiting both visitors and the local community while promoting activity and engagement beyond match days. See **section 5.0** for more detail.

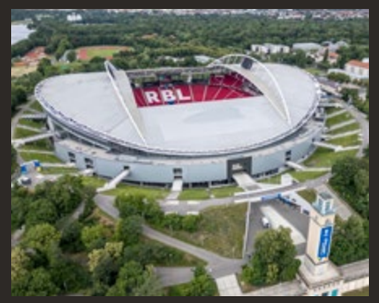
Brighton Women's BWSL fixture at the Amex

CASE STUDY

Red Bull Arena

GERMANY

RB Leipzig successfully transformed part of its stadium campus into a free outdoor training venue with 16 different informal sports facilities. These were designed in collaboration with professional athletic trainers and local youth from various sports backgrounds, including calisthenics, CrossFit, and sports science. The campus now attracts daily visitors for training and leisure, offering a space tailored to their needs.



7.3 *EXISTING STADIUMS*

When refurbishing an existing stadium attention should be given to all aspects mentioned above. The existing building may impose significant constraints on the design, but it also presents unique opportunities to create a distinctive and functional venue. Key design considerations for existing stadiums:

Historical Significance:
Assess heritage value and identify protected elements that must be preserved.

Contextual Integration:
Ensure the design complements the local environment, enhancing the urban experience.

Branding & Identity:
Consider rebranding opportunities through updates to façades, interiors, colours, or name, aligning with the club's vision.

Adaptive Reuse:
Repurpose existing spaces for community facilities, retail areas, or multi-purpose use.

Flexibility:
Design for future adaptability, accommodating attendance growth or new amenities through modular and flexible spaces.

Circular Economy:
Minimise waste by recycling and reusing materials, from architectural components to furniture and kitchen appliances, reducing environmental impact.

THE *PITCH*

The pitch is central to stadium functionality, requiring thoughtful design for safety, performance. This chapter covers essential aspects for achieving this, including surface properties, safety considerations, surrounding infrastructure, and adaptability for multi-use.

8.1 WHAT IS DIFFERENT?

8.1.1 Pitch type preference

There are many types of playing surface that could be installed but female players in England are cited as preferring natural or hybrid playing surfaces, as identified in the league playing survey.

8.2 NEW AND EXISTING STADIUMS

8.2.1 The pitch

The pitch area is defined as the extent of area used as the playing surface for a game, including the overruns. Regulations for pitch requirements are set out in the League Handbook and the Laws of the Game. These documents specify aspects such as minimum area, slope, line marking, and grass properties. This document provides further advice to ensure optimal pitch performance.

The area immediately adjacent to the pitch should be safe for players and match officials. This includes, but is not limited to, securely installing additional high-quality green artificial turf around the field of play temporarily if necessary. Ideally this should be the same surface material as the pitch. The crowd should be as close as possible to the touchline while ensuring the safety and free movement of players, match officials, stewards and pitch media staff.

The overall pitch size should be 120m by 80m and for stadiums likely to host major events or high-profile matches, where greater media presence is expected, it may be advisable to extend the pitch dimensions to 125m by 85m.

Goals should be made from aluminium or a similar material, be round or elliptical and not pose any danger to players. Pitch furniture should align with current regulations. If the pitch is to have multiple uses, consider how these may impact on the pitch area for different sports.

8.2.2 Pitch surface

Regulations for the pitch surface are set out in the League Handbook which state that it must be grass in the WSL. However, the choice of grass will depend on the needs and resources of each project, and there are three main types to choose from:

1. ***100% natural grass***
2. ***Hybrid pitches*** (synthetic fibres are added to the natural grass for the purposes of reinforcement)
3. ***100% synthetic grass*** (artificial)

Designing a pitch requires adapting to local climate and stadium conditions to ensure year-round playability and sustainability.

- Refer to the Performance Quality Standard to align to current pitch requirements and testing processes.
- Consult with your Pitch Designer and Earthworks & Drainage Consultant (See **section 17**) to understand the specific conditions and requirements your project requires.
- The underlying geology will determine the sub-base's characteristics, its drainage properties, and any water-table concerns that need to be addressed in the design. Once these aspects are considered, the pitch profile can be established.
- Consider levels and gradients, drainage, heating, frost protection, and the selection of grass seed, which will differ depending on the region. Areas with higher rainfall will necessitate a more thorough analysis of the gradients.
- Design for adequate light, ventilation, and sub-base stability to support turf health and performance.
- Consider microclimate effects from roof and stand positioning, using passive ventilation and translucency to optimise air movement and light.
- Account for the impacts of climate change. Although England does not experience weather events as extreme as other regions, severe storms and droughts still occur, and climate change is expected to increase their frequency.
- Evaluate artificial pitches for resilience in extreme weather and multi-use adaptability.
- Prioritise regular maintenance to prevent turf deterioration and reduce costly interventions.
- Where possible, avoid features or equipment that require extensive or costly maintenance.
- Plan for pitch watering facilities including, ideally, an automated under-soil pitch irrigation system.
- Consider future changes to the pitch surface, such as required upgrades, or improvements in technology. This may incur the need for additional space.

RICHARD PEHAM - THE FA

The pitch.
Emirates Stadium.

8.2.3 Playing area

The playing area is defined as the rectangular region bound by line marking in which the game is played on. Key design factors include ensuring the safety and unobstructed view of the field for both players and fans, providing adequate drainage and maintenance systems to keep the pitch in optimal condition.

No lines other than football ones should be visible on the field of play to maintain clarity and focus on the game. Additionally, no permanent object should be located less than 21 metres above the field of play to avoid any potential disruptions to the 12 metres high balls or distractions for players and officials.

8.2.4 Pitch equipment and access

It is crucial to ensure adequate access to the pitch for emergency vehicles and equipment, such as fire engines. Additionally, access must be provided for vehicles and equipment used in the day-to-day maintenance of the stadium, including trucks, mowers, mechanical ventilation systems, and grow lights. This equipment must also have sheltered storage, including for during an event. It is recommended to have at least one larger access point, preferably located at one of the corners of the pitch, to facilitate these needs.

A groundskeeper maintaining the pitch. Ashton Gate.

RYAN HISCOTT - THE FA

8.2.5 Grounds Management Team facilities

The grounds management team facilities should ideally be located within the stadium, as close as possible to the FoP and the pitch heating boiler and pumps, if required. If this proximity is not possible, there must be vehicle access from the groundskeeper facilities to the pitch. Any maintenance access to the pitch should be at least 2.7 metres high and 3 metres wide to accommodate emergency access, large tractors and grow lights if necessary. The design should also allow for future expansion to accommodate more staff or new equipment.

The design of the groundskeeper facilities will depend on the pitch type, its maintenance plan, and the number of staff. These facilities will include, at a minimum, the following:

- **VEHICLES AREA:** secure, covered parking for tractors, mowers, and forklifts.
- **STORAGE:** space for materials such as seeds and sand, a general storage area, dedicated space for pitch equipment, ventilated storage for chemicals and fuels, and a waste room for grass cuttings.
- **WORKSHOP:** a repair area with workbench, tool storage, and a washdown sink.
- **OFFICE:** a space for at least one person.
- **LAUNDRY:** a small room for washing and drying clothes.
- **BREAKROOM:** a space for staff meetings, rest, and meals, including a kitchenette and lockers.
- **ALL-GENDER DRESSING ROOMS AND TOILETS:** these should include lockers, private showers, and an accessible toilet / shower.
- **MACHINERY CLEANING:** provide an area for cleaning of machinery. Consider the drainage of this area as the waste water may be hazardous.

Grounds staff should be appropriately trained to use a range of equipment and, where appropriate, qualified to a recognised level such as the Performance Quality Standard or Grounds Management Framework.

Grow lights.

HANNAH BUCKLEY

PARTICIPANTS

PLAYERS AND TECHNICAL TEAMS

By ensuring the safety and comfort of the players and technical staff you enable them to perform at their best and this enhances the overall game experience for everyone. This section examines the key spaces that support them and how these areas interconnect.

These spaces include the players' tunnel, technical area, changing facilities, warm-up areas, meeting rooms, and ancillary spaces. To maintain efficiency and privacy, circulation in these areas should be kept separate from premium experience routes. Additionally, as they need to integrate with many media facilities (see **Section 10**), they should ideally be housed within the same stand, preferably the west stand.

Medical spaces must be comfortable and clean, with sufficient storage for all medical provision. Engagement with club medical and performance leads will be imperative in the design of a new stadium.

The professional game adheres to doping control regimes and stadiums should be designed according to the doping control regulations specified in the League Handbooks.

9.1 WHAT IS DIFFERENT?

Dressing rooms should be designed to accommodate squads which can be up to 26 players, as well as substantial numbers of support staff. Ensure all facilities cater for any gender and provide privacy to anyone that requires it. Urinals should be avoided.

9.1.1 Players' dressing rooms, privacy and vanity areas

Ideally eleven showers should be provided, and these should be private cubicle showers with a bench with hooks, shelves and a dry area to allow privacy.

There should be at least five toilet cubicles with ceiling to floor partitions. A bidet or toilet shower should also be provided in at least one of the toilet cubicles for personal hygiene and to help manage menstrual cups and other menstrual products.

Sinks should have counters and ideally an additional small shelf above the sink for dry products. There should be a communal vanity area with enough space for several players to gather and use hairdryers, amend their appearance and organise their belongings. This area should have good front facing lighting, power outlets and three long wall-mounted mirrors. These large vanity areas will be useful for other events such as concerts. Ensuring a high-quality interior design that promotes comfort, functionality, and cohesive branding is essential in the dressing room. Lighting solutions should also meet broadcast requirements to guarantee optimal visibility and presentation on screen.

Furniture should be designed with inclusivity in mind. For example, ensure that shelves are not too high for the average player to reach.

9.1.2 Players' Lounge

The players should be provided with a lounge space to gather and relax. This usually contains comfortable seating, television screens and other leisure activities. However, within women's football there is also a greater demand for workspaces for working, digital content creation and studying. These should include desks, chairs and data and power outlets and quality lighting.

Players should be enabled to perform at their best. St Helens Stadium.

JESS HORNBY - THE FA

9.1.3 Safe access routes

Fans often want to interact with the players at the end of the game as they leave the pitch. However, as the women's game has become more popular this has created safety and accessibility issues. It remains hugely important to facilitate the unique relationship that fans have with players in women's football and in **Section 11.1.6** we offer suggestions for how to create positive and well managed interactions. Planning dedicated access routes and parking for team coaches and officials' vehicles is necessary to maintain stringent security controls. Exclusive parking areas should provide direct access to the dressing rooms. Spaces for two buses, three minivans and seven cars is advisable.

Fan and player interaction.
HANNAH BUCKLEY

9.1.4 Family room

This is a dedicated room, usually situated in the premium area of the stadium, for the families of players and officials to go in privacy and comfort throughout a match day. This should have sofa seating, tables, secure storage and a facility for buffet dining. It is recommended to include a small amount of children's play equipment. However, this should not clutter the space or be fixed, so that the room can remain multi-use. It should have nearby baby changing facilities.

9.1.5 Baby feeding room

Players and officials should be given facilities to feed their babies in private. This should be a dedicated room in the participant area. Further guidance on how to design baby feeding rooms can be found in **section 12.2.8**.

9.1.6 Multi-faith / Reflection Room

Consider including a small, dedicated space for players and officials to use for the purpose of prayer or reflection. For more information on the design of these spaces refer to **section 12.2.5**.

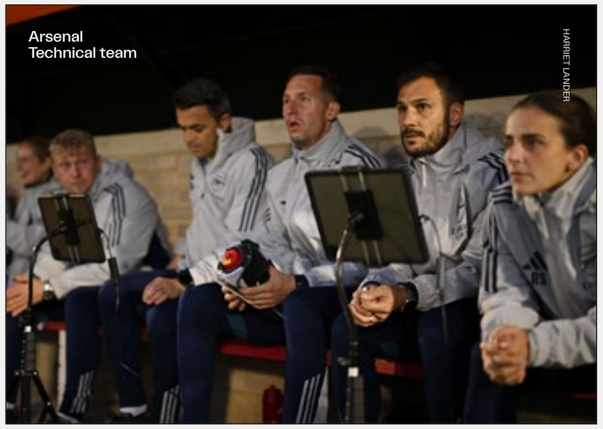
9.2 NEW STADIUMS

9.2.1 Technical area

Trainers' and substitutes' areas, also called the dugout, should be designed to accommodate team needs while integrating with the stadium layout and maintaining accessibility.

- Consult with your players and technical teams to determine the ideal capacity and provide seating for at least 24 individuals per club, symmetrically positioned on either side of the players' tunnel, at least 4 metres from the touchline. Consider recessing this area and ensure that rows have sufficient legroom - this often requires merging two standard terrace rows. Provide 2 access points to each team's seating area.
- Locate in the west stand where possible, or in the east stand if expansion and segregation from the public are feasible.
- The cover may be an enclosure around their seating. If so, avoid using plexiglass for this as it turns opaque with condensation. The cover could also be the roof of the stadium, but the roof should be extended as much as possible to provide protection.
- Include a covered desk for the fourth official, ideally between the team's seating areas.
- Ensure the design considers future capacity needs. This is a common area that requires extending so consideration should be given to how to achieve this from the inception of the project.
- Minimise impact on fan views and ensure a C-Value of over C-90 for visibility and comfort for players and technical teams.

Good example of a technical area under or with arsenal team


Arsenal Technical team
HARRIET LANDER

Players leaving the players' tunnel. Joie Stadium.

MATT MCNULTY - UEFA

9.2.2 Players' tunnel

The tunnel should be wide enough to allow both teams to walk out side by side, ensuring comfort and safety. As a key broadcast area, the tunnel should be designed as a visually dramatic backdrop.

This space should have a minimum width of 5 metre and include flash interview areas. (See **section 10.1.1**). Ideally, the tunnel should be free of steps, with any changes in level addressed through gently sloping ramps. The tunnel should feature non-slip flooring that can be walked on with studded boots. Storage and high-level cable trays should be installed along the walls to support broadcast operations.

9.2.3 Pitch-side toilet

An accessible toilet should be located near the player tunnel to avoid players having to walk to the dressing room during a match.

9.2.4 Players' dressing rooms (general)

The stadium should feature at least two dressing rooms of similar size and quality, positioned on opposite sides of the players' tunnel. Ensuring the dressing rooms are of comparable size provides flexibility to host other events at the venue, such as the UEFA European Women's Champions league subject to additional requirements.

Each dressing room should consist of three main areas:

1. ***Dry area:*** for changing and refreshments
2. ***Semi wet area:*** for toilets and vanity spaces
3. ***Wet area:*** for showers and recovery areas

Further considerations:

- Provide each player with a lockable locker featuring USB or USB-C power outlets, internal lighting, a padded cantilevered bench, and an LED-lit jersey hook.
- Include ideally 24-26 changing positions arranged in a U-shape for clear visibility of a presentation area. Consult with your players and technical teams to determine the ideal capacity.
- Consider space for team staff including physios, doctor, kit manager and sports therapists. This allows everyone to be briefed in the same room.
- Equip the presentation area with a TV screen, clock, tactical board, speakers, and a central laundry table.
- Install double doors with kick plates to allow easy movement of equipment, laundry, stretchers, and food.
- Use non-slip, shock-absorbing flooring for safety and comfort in all dressing rooms.
- Ensure the entrance door is lockable.
- Provide general storage and a refrigerator.

London City Lionesses

CASE STUDY

Etihad Stadium MANCHESTER, UK

The dressing rooms for Manchester City F.C. have an optimal circular layout with personal and secure lockers for all players, for both teams. The shape and finishes create a bold statement to align with the club's image. Advanced preparation and recovery tech and warm-up areas are included to keep players in the best condition possible.

9.2.5 Players' medical areas

Medical treatment room
This should be within easy reach of the pitch.

Players' dressing room medical facilities
Ideally the treatment area of the players dressing room should be adjoining the main dressing room but with the ability to separate the two areas with, for example, a double door or movable wall, to provide additional privacy if needed. The players' dressing room medical facilities will typically include treatment tables.

Doping control room
This room should include a waiting room, observation room and toilets.

Ambulance access
Directly accessible to the players and technical team area with a route out of the stadium that is kept permanently clear. The ambulance should be able to access the FoP.

Defibrillators
All venues should have a defibrillator on site that is powered and well maintained. Refer to the latest Green Guide for more information on this.

Recovery areas
It is recommended that the recovery areas be designed to accommodate a variety of recovery equipment, such as cryotherapy chambers and contrast therapy tanks. These modular units can be easily replaced to keep pace with the latest recovery technologies. Inflatable ice baths are also a flexible option. Built-in wet facilities like pools are not recommended. This space should be well drained.

9.2.6 Under 18s

Under 18s players should have a separate dressing room adjacent to the main dressing room. It should have a capacity of at least 2, with a bench with hooks. This should have a sub room with a separate shower, toilet cubicle and a hand wash basin.

9.2.7 Coaches' dressing room

Adjacent to each players dressing room, a separate space should be provided for the coaches to change, with lockers that are lockable and with individual power supplies. It should ideally have a counter space and space for at least four people.

Water therapy pools.
Gtech Community Stadium

AFL ARCHITECTS

9.2.8 Warm-up areas

Whenever possible, provide a spacious indoor area for players from the home team to warm up, with direct access from the dressing room. This space could serve as a gym or exercise area with a soft surface or as a training zone with artificial turf.

Additionally, a warm-up area for substitutes of each team, and match officials, is recommended near the touchline behind the first assistant referee. This area should feature grass or securely fixed artificial turf that matches the field surface. If space is limited, consider locating it behind one of the goals or behind the advertising boards, if present. The areas for each team should have the same surface and be the same size, each ideally measuring 4m x 20m or 3m x 25m to accommodate five substitutes and a fitness coach per team, all at the same time.

9.2.9 Match officials' dressing rooms

There should be four separated individual dressing rooms with a bench with hooks, locker, shower, toilet, mirror and wash hand basin with a small counter, accessed via a communal room which may have a table and chairs. This should be able to be segregated from the players area and be as close to the pitch as possible.

Match officials.
Hayes Lane Stadium.

PATRICK MAGUIRE - THE FA

9.2.10 Match Managers

Match Managers balance expectations for broadcast and match officials, coordinating the different parties. They should have a dedicated room which should be near the players' tunnel. It should have a desk with power and a printer.

9.2.11 Ball kids' dressing rooms and holding area

Generally, there are approximately 5-8 ball kids per game. There should be two separate changing areas with benches with hooks, showers, sinks and toilets. There should also be a communal space with secure storage for ball kids to gather before a match.

9.2.12 Club mascot dressing room

There should be a changing area with secure storage, benches with hooks, showers, sinks and toilets.

CASE STUDY

Joie Stadium

MANCHESTER, UK

This stadium includes 4 fully independent changing rooms, each equipped with showers and toilets for match officials, all accessible from a shared breakout and meeting room. This arrangement ensures individuals of different genders can change safely and comfortably in a secure environment.

9.2.13 Football technology

The development of technology to support the match officials is constantly evolving as technology improves. All stadiums should seek to understand the competitions latest position on its use and what is required to deliver current and future technology such as floodlight standards, numbers of cameras and resources. This may include features such as additional rooms or car parking spaces for vehicles to deliver video assistant refereeing (VAR) or Goal Line Technology (GLT). Design teams should consult with the client and accredited installers to understand the specific project requirements and the impact on the design.

Technology for match officials

9.2.14 Stadium office

This is a neutral space for stadium management, in or adjacent to the players tunnel, and observers to meet and coordinate the event. They may also balance the needs of media and match officials so proximity to the media area is valuable. It should have space for four people, with a TV screen, desk, a printer and chairs. It can be used as a critical office.

9.2.15 Optimised flow

All doors in these areas should be wide enough to accommodate equipment such as pallets, stretchers, and laundry trolleys. Install door kick plates and wall protectors to mitigate damage.

9.3 *EXISTING STADIUMS*

When refurbishing an existing stadium attention should be given to all aspects mentioned above.

9.3.1 Player access and facilities

Existing stadiums may have challenges with the route for players and technical staff to reach their facilities. This can be managed with appropriate stewarding to ensure safety.

If a warm-up area cannot be provided, ensure there is space and facility available on the pitch before a game.

When converting a dressing room, remove any urinals to provide more provision of toilets and ensure to keep any counter space.

9.3.2 Temporary modular units

Where there is not sufficient space to incorporate certain facilities, consider the use of temporary modular units. Situate these as close to the player and technical facilities areas as possible to ensure sufficient space provision.

MEDIA, COMMERCIAL *AND BROADCAST FACILITIES*

Delivering high quality broadcasting is an increasingly important driver for the success of women's football and the expansion of the fanbase.

1

Media consists of press members who report on matches for media organisations.

2

Commercial involves sponsorship, advertising, and revenue-generating activities.

3

Broadcast refers to the capture and distribution of TV content.

Stadium broadcast and media areas are defined by the technical services that enable their operation. However, the routes taken by players, media, and broadcasters through these areas also determines their layout and spatial requirements. Generally, therefore, all media and player facilities should be located within the same stand, ideally the west stand. Player journeys tend to be as follows:

- After a match, players move from the pitch to a flash interview at the edge of the pitch or in the players' tunnel.
- They proceed to their dressing rooms.
- Some players may go to the TV studio for in-depth discussions.
- Players may pass through the mixed zone to interact with journalists and media.
- They may also attend the Press Conference room.

All spaces should have direct, private, and interconnected access. Media personnel usually access the stadium via a dedicated entrance where they are accredited, near the players' facilities and the OB Compound. This dedicated entrance should have a reception area with a screen to receive information on the media set up on arrival.

Regulations on broadcasting can be found in the League Handbook.

Flash Interview position.
Joie Stadium.

MATT MCNULTY - THE FA

10.1 WHAT IS DIFFERENT?

The media and broadcasting approach differs for the women's game in several ways. Key aspects include the prevalence of content creators, as well as the effect of the differing relationship between players and fans. It is also more common to have flash interviews on the pitch instead of the players' tunnel.

10.1.1 Flash interview area

Flash interview areas can either be pitch presentation positions or located inside the players' tunnel. Each area should have 5-8 positions. Nearby there should be secure storage and accessible toilet facilities to accommodate both radio and TV interviews. Each space should be 2.0m x 2.5m and should have adequate cabled connectivity. Additionally, there should be sufficient room for advertising and sponsor screens behind the interviewees. The area should be configured to avoid any obstructions or interference by passers-by.

If a pitch presentation position is used the advertising and sponsor screens need to be portable. These are key to have cabled connectivity to them and space to store equipment during the game so equipment can be put away and put back up quickly during halftime and fulltime.

In the players' tunnel a ceiling grid with good quality lighting is essential for optimal broadcast quality. Interview boards can be across a corner or flat against the wall. If space is constrained, having them over a corner is a more efficient use of space.

10.1.2 Content creators

Given the increasing presence of content creators at matches, who often gain access to media areas through agreements with the club, it is important to enable them. Consider creating a space for them to interact with players, potentially after the mixed zone and segregated from other media personnel.

10.2 NEW STADIUMS

It is highly preferable to avoid the need for staff to enter through one entrance to access the media facilities and then need to exit and re-enter the stadium to get to another area, as often happens for photographers. There should be direct internal access throughout the stadium, unless site constraints prohibit it.

All television outside broadcast (OB) vans and production and technical facilities for media organisations should be in the OB Compound.

Staff will have a dedicated media working area that connects to the flash interview zone, studios, and press and conference rooms. There should also be dedicated private access to the media tribune within the stadium, where seats are allocated to different groups. Additionally, there are various camera and interview positions around the stadium bowl for capturing the event.

Design for the segmentation of the stadium, allowing only a portion of the venue to be operational, so that staff can stay in their work room, for an hour and a half after the match to complete their work.

Disabled access and facilities need to be incorporated in all media areas.

It must be ensured that staff and their equipment are safe. Cabling should be facilitated throughout media areas and the bowl, in a way that prevents any safety hazards. Some media representatives prefer wireless solutions, but cabling continues to be prevalent given its reliability. Consider high level cable trays or ducting.

10.2.1 Stadium bowl infrastructure

Differing clubs may have hugely different facilities in their stadium bowl which may make achieving certain camera standards challenging. Nonetheless the Women's Super League Football aims to deliver a world class standard of broadcasting, which is critical to expanding the fanbase. The following describes an ideal industry standard set up.

Ensure access routes throughout the bowl are sufficient to allow for easy installation and removal of equipment. It is advised to pursue a plug-and-play "pre-cable" strategy to avoid the need to run cables throughout the bowl on the day of an event. This will improve safety and efficiency. To do this concealed ducting should be included, around the outside of the perimeter barrier and between different areas of the media such as the tribune and players' tunnel.

10.2.2 Perimeter barrier and advertising boards

Advertising significantly contributes to stadium revenue, and the optimal placement of hoardings within the main bowl area is crucial. The League Handbook set out regulations for commercial advertising.

Advertising boards and perimeter barriers should be factored into the visibility assessment for the seating to ensure they do not obstruct the view of fans and cameras. Typically, they are free-standing and positioned around the perimeter of the pitch. Their exact placement varies depending on the event and venue, determined by the view from the main central TV camera, team benches, match officials, substitutes' warm-up areas, and other camera locations. The League Handbook advises on the height. Allow tolerance for structure. Data and power should be provided through a buried technical trench around the pitch.

Photographers often sit behind these boards, particularly near the goal lines, so sightlines in the front row may want to be set higher to accommodate this. Ideally there should be 2m of operational space behind advertising boards for pitch side operations involving ball kids.

Where perimeter barriers are directly adjacent to seating this often leads to front barrier of a maximum 800mm height above the first row, to mitigate issues with sightlines. There can also be issues with staff needing these areas near to the pitch to perform their roles.

Alternate advertising board set-ups

You may want to consider alternate configurations for advertising boards. This could include:

- Having taller boards, where the terrace is made steeper to ensure sightlines remain good.
- Arranging boards in two rows so that, from the perspective of the main camera, they look like one taller board.
- Having further displays on the reverse of the board facing fans, for more advertising or match information.
- Having boards on upper stadium tiers. Consider the impact on sightlines for the first rows of these tiers.

Runoffs

To avoid significantly raising the front row of the seating terrace, the edge of the field of play may be sloped to accommodate the boards. This should include an initial level run-off for player safety and ensure no compromise to playing activities such as corners and throw-ins. Any slope should not exceed 5°. The stadium should include storage areas for the boards if other events are to be considered in the same venue.

Pitch drainage

Pitches are often covered with a pitch protection tent. During rain this often leads to runoff rainwater damaging the advertising boards at the edge of the pitch. Solutions for covering the pitch should ensure drainage avoids the advertising boards.

An example of plug-and-play power outlets in a stadium bowl. Gtech Community Stadium.

10.2.3 Photographers

Photographers are positioned throughout the bowl to capture the action on and off the pitch. They should be provided with space to sit that does not obstruct fans or pose a danger to players. They should also be provided with an area to store equipment during a game such as in the media room.

Photographers should be considered when calculating the sightlines of fans.

10.2.4 Camera positions

Camera placements must be coordinated with the BWSL broadcaster to ensure they align with their requirements. TV cameras should be positioned on elevated platforms to guarantee an unobstructed view, preventing any interference from fans. This may necessitate reducing some seating capacity. Where possible camera positions should be wheelchair accessible. They should be accessible with a service lift for moving equipment, or a hoist. This should have a loading area directly outside. If the gantry is positioned over fans, a mesh “catch net” barrier should be installed to avoid any items falling on fans in front. This barrier can be part of the front wall of the gantry and fold down when in use. The gantry should feature an anti-slip floor and be segregated from fans for safety. Consider that it is becoming increasingly common for some cameras to be fixed in position without a camera operator. This will affect how they are designed, requiring protection from fans, fixing and access.

Camera pods are a pair of metal tubes fixed at an equal distance apart to the front of the camera position to support a camera mount. These should be used for broadcast cameras on the main gantry, 18 yard and high behind positions. For behind goal cameras it is beneficial to be on a seated camera position that swivels or as a camera pit in the ground. In this instance the camera is then on a tripod.

Main gantry

The main camera gantry should be at a height above the pitch which guarantees an optimum and unobstructed view of the entire field of play and its immediate surrounding area. Broadcasters should be brought in from the initiation of the project to determine the optimum viewing angle. It should be positioned on the west stand to mitigate glare, or sun studies should be completed to ensure this is not an issue. It should be, at least, 10m by 3m. This provides space for:

- 3 Cameras
- The commentary team (4 seats and two tables)
- 2 club analyst positions

The gantry should be level and free of vibration. Ideally, it should also be visually integrated with the rest of the stand to maintain aesthetic coherence.

Camera locations

There are several other potential camera positions located throughout the bowl, to provide full coverage and close ups of key areas, which are covered in the League Handbook. Here we provide further advice. Generally, all camera positions should have a space of at least 2m wide x 2m deep.

Consider a reverse angle-camera platform centrally located in the opposite stand, to accommodate at least one camera.

Other potential cameras may include;

- Behind goal cameras along the 6 and/or 18-yard lines
- Corner reverse – positioned higher on the stands
- Aerial cabled cameras
- Corner cameras – higher than pitch level
- Cameras covering key areas such as players tunnel/Team arrivals/ walk outs/crowd
- Interview cameras
- Spidercam
- Other broadcasting cameras

Camera gantry.
Kingston Park.

HANNAH BUCKLEY

10.2.5 Media tribune

The media tribune should offer various seating configurations to meet the needs of the written press, radio or TV commentators, photographers, and observers. Ideally, the tribune should be positioned between the two 18-yard lines of the pitch, providing optimal views of both the pitch and the stadium bowl. TV Commentators must be located on the same side as the gantry.

The seating should include a mix of seats with and without desks. The media seating should be clustered together. It is acceptable for general fans and media to share gangways.

The media tribune should be directly accessible from the media workroom, either via a dedicated vomitory, or through dedicated lifts or staircases, if on different levels. If direct access is not possible, it should be as close as possible. Additionally, the media tribune should provide access to the press conference room.

Commentary positions
There should be at least one commentary position (4 persons), usually on the camera gantry, equipped with a table, power outlets, data connection, and sufficient space for equipment. A commentary position should seat four people: a commentator, co-commentator, pundit and technical engineer.

Observer seats
There should be at least twenty-five seats for observers near the technical area, with pitch-side access to allow teams to move quickly and easily between the pitch and their seats.

10.2.6 Media working area

The media working area is a back-of-house space designated for the written press, photographers, and other media members, equipped with all the essential technological support required for smooth and comprehensive media coverage.

It does not require natural light, though it is encouraged where possible. It should accommodate a minimum of 30 people. Sometimes in larger venues, photographers have their own separate room.

The media working area should be located as close as possible to the media tribune and should include lockers, desks, data and power outlets and an area for food and drink. Ideally it should feature dedicated toilets and concessions and there should be access to a make-up/dressing room. There should be screens on the walls for staff to receive information on the event.

An example of a commentary position with adjustable seats and integrated screens. Gtech Community Stadium.

AFL ARCHITECTS

10.2.7 Press conference room

A dedicated, fully functional media conference room or auditorium is essential for hosting pre- and post-match press conferences with players and coaches. These spaces should accommodate 30 to 70 attendees, including two wheelchair positions at the front.

Seating should be staggered to improve visibility while maintaining flexibility. Prioritise high-quality acoustics and lighting, with a preference for natural light complemented by blackout blinds for versatility.

Include an elevated platform at the rear for at least five cameras, alongside a technical control room with a view of the stage. This room should feature sound-absorbing materials and carpeted floors to enhance sound quality. In larger venues hosting international matches, soundproofed interpreting booths are needed for accommodating foreign media.

To maximise utility, design the space to be multipurpose. Beyond media use, it should support team meetings, steward briefings, corporate events, seminars, training sessions, and live broadcasts, offering additional revenue opportunities. Ensure the room is strategically located for easy access, reducing the need to open large parts of the stadium for use.

Press Conference Room.
Wembley Stadium.

LYNNE CAMERON - THE FA

10.2.8 Studios

Stadiums should include two types of studios:

1

Presentation Studios:
Positioned with a pitch-side view, these studios feature large floor-to-ceiling windows offering clear views of the crowd and game. The room should be sound insulated. Direct connection to the players' area is not required.

2

TV Studios:
Intended for interviews with players, coaches, and match officials, these studios should be near the players' area with direct access to the OB compound for easy media use.

Venues should ideally provide several small studios equipped for live broadcasts, featuring editing facilities, ample power, data connections, and sufficient outlets. Ensure they are near toilet facilities for convenience.

Studios must be acoustically treated and shielded from sound pollution. Dedicated corridor access is recommended, with proximity to dressing rooms and the mixed zone. Each studio should accommodate up to 15 people, including interviewers, camera operators, and support staff. A minimum usable area of 5m x 5m and a 3m ceiling height is required to allow for lighting rigging. Avoid false ceilings.

Walls should be painted black to minimise reflective light, and carpeted flooring is advisable to reduce noise.

10.2.9 Mixed zone

The mixed zone, linking players' dressing rooms to the stadium exit, should facilitate seamless player-media interactions. Located near the press conference room, it typically features a snaking path with demountable rope barriers, accommodating around 20 media representatives.

Ensure sufficient lighting for interviews, secure storage lockers with power outlets, and high-level cable trays for safe cable management. Include sponsor and advertising backdrops to maintain a professional appearance.

OB Compound

HANNAH BUCKLEY

10.2.10 OB compound

The OB compound is a secure area essential for media operations during events, housing machinery and vehicles that connect to the stadium's infrastructure. To ensure effective broadcasting, careful consideration must be given to the compound's size, access, and the turning circles required for large vehicles. clubs may need to allocate up to 1,500m² to meet their specific broadcasting requirements.

Vehicles typically required include:

- **PRODUCTION TRUCK:** handles audio and video production.
- **TENDER TRUCK:** a lorry transporting all necessary production equipment.
- **SCANNER/SNG TRUCK:** used for satellite uplinking, although fibre optic connections are increasingly replacing these, depending on the stadium's broadband infrastructure.

A clear line of sight to the southern horizon is necessary for satellite uplinking. If the compound cannot provide this, the club must allocate a nearby alternative area for this purpose.

Additional considerations include:

- **TOILETS:** permanent or portable facilities should be within or near the compound.
- **WASTE MANAGEMENT:** accessible bins for waste and recycling must be available as needed.
- **PARKING:** dedicated parking for broadcast personnel, separate from general parking, to prevent disruptions from fans and ensure safety for staff and equipment.
- **LIGHTING:** the space should be lit to allow people to work at night.

10.3 EXISTING STADIUMS

When refurbishing a stadium, consider all relevant aspects above.

- If segmentation isn't possible to keep parts open for media after a match, ensure staff can still work safely and comfortably.
- Roof construction may limit camera angles. Consult broadcasters for solutions.
- OB Compounds are often located in existing parking areas, these should not reduce critical parking, and cabling hazards and security must be addressed.
- Building new camera platforms often requires a tower; design it for safe access and to match the stadium's appearance. Where a service lift cannot be installed, a winch system can be an alternative.

10.3.1 Protecting advertising boards

If the pitch drainage cannot direct water away from the advertising boards, as described in **section 8.2.2**, for example in retrofit situations, the advertising boards should be raised by a maximum of 100mm to allow rainwater to run below. Ensure to evaluate the impact this has on C-Values. See **section 11.1.2** for more information on this.

GRAHAM CHADWICK - THE FA

Mary Earps of Manchester United being interviewed at the end of the FA Women's Super League match between Leicester City and Manchester United.

CASE STUDY

Gtech Community Stadium

BRENTFORD, LONDON

The Gtech Community Stadium, with its 17,250 capacity, features one of the largest TV gantries in the UK, spanning over 400m². Designed to exceed Premier League standards, it reflects the evolving demands of broadcast technology. The gantry includes:

- Two TV studios
- An accessible toilet
- A staff break area
- A 165m-long external platform for camera positions and commentary teams
- A lift and stairs provide direct access to the OB compound, ensuring seamless media operations.

Since opening in 2020, the stadium has proven its adaptability, meeting new Premier League standards and successfully hosting the UEFA Women's Euro 2022. Enhancements, such as additional media positions and improved access for fixed cameras, highlight its forward-thinking design and suitability for high-profile events.

NAOMI BAKER - THE FA

Gtech Community Stadium. London.

FAN *FACILITIES*

Fans are essential to a stadium's energy and atmosphere. To support them, strategies should focus on making the stadium more inviting, encouraging people to arrive early and stay longer. This boosts the stadium's vibrancy, improves the fan experience, and creates additional revenue opportunities through concessions, merchandise, and other offerings. Following on from **section 2.1** this looks deeper into design considerations for fan facilities.

11.1 WHAT IS DIFFERENT?

11.1.1 Fan entrances

Flow rates at women's football games often differ due to the increased presence of families and children. Fans tend to arrive earlier, resulting in a more gradual flow rather than a last-minute surge.

Turnstiles, the most common entry control system for sports venues, come in various types to manage crowd flow and ensure security. A well-designed system is critical for both.

Stay updated on new access technologies, such as digital ticket gates. Tailor entry solutions to your venue's demographics and access patterns, consulting a pedestrian flow expert (see **Section 17.0**) for guidance.

FAMILY AND ACCESSIBLE TURNSTILES	To accommodate families and those with additional needs, consider implementing wider family turnstiles that allow them to pass through comfortably. These are also beneficial for pregnant individuals. Allowing multiple people to enter on a single ticket can prevent the separation of family members. It is important to assess how this might impact the standard flow rate and strategy for counting attendees. Ensure that early exit doors or turnstiles are provided also. **See section 12.2.1**.
BAG CHECK	It is advisable to enhance the provision of bag check facilities. Fans at women's football games tend to bring more bags, especially given the prevalence of families attending. These should be located prior to the turnstiles and be covered. It is recommended to provide additional bag storage for fans to use to avoid needing to carry belongings around the venue or clutter up seating areas. This is especially needed if there are size limits on bags you can take in.
BAG CHECK	Provide covered buggy parking areas near stadium entrances, outside the stadium's secure line. This can offer added convenience for families, ensuring that their belongings are safely stored while they enjoy the event.

Fans at an Arsenal W.F.C. match. Emirates Stadium.

RICHARD PELHAM - THE FA

11.1.2 Enhanced viewing for a diverse crowd

A high-quality viewing experience is crucial for a diverse audience because it will accommodate a wider range of fans including children and women, who tend to be shorter. It will also offer greater flexibility in future seating arrangements if required. The quality of fan sightlines to the field of play is usually expressed as a "C-value".

Although the latest Green Guide recommends that the minimum C-value is 90mm, it is recommended to ensure constant C-values above 100mm in women's stadiums to cater for as many fans as possible. The concept of "C-Value" is explained in detail below.

Fan queues. Joie Stadum.

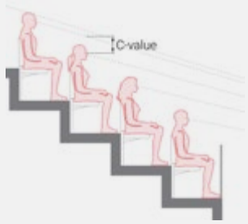
MATT MCNULTY - THE FA

C-VALUE

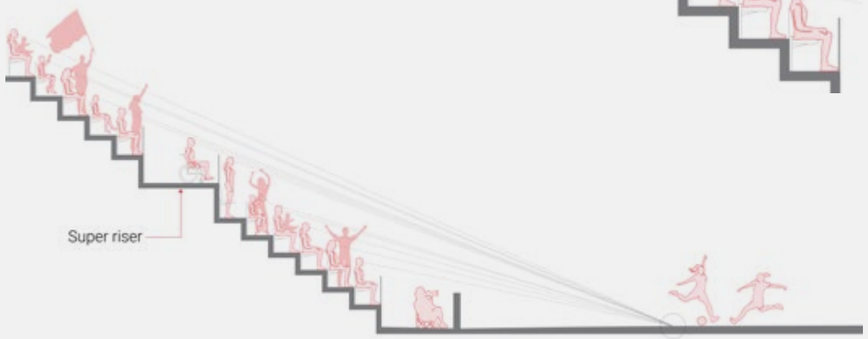
A "sightline" refers to a hypothetical line measured from the nearest touchline to the eye position of a fan at any seat, over the top of the heads of the spectators immediately in front. The distance between that line and the spectator's eyes immediately in front is called "C-value". This dimension is usually measured in millimetres, and a detailed calculation process is included in the latest Green Guide.

It is worth noting that sightlines bare similar properties to sound lines: the less interrupted the view, the better the fans can hear the game and vice versa. A clear line of sight to the pitch enhances the overall fan experience, allowing them to fully immerse themselves in the atmosphere and cheer on their team.

C-value dimension



Fans sightlines



11.1.3 Seating Quality

Seating should be spaced at wider intervals, with a minimum of 500mm and ideally 520mm measured between seats centres, as industry standard dimensions no longer align with modern body shapes and sizes, especially for women. Consider increasing your row depth to, at least, 800mm also. This will allow guardians and children to pass by more easily. It will also create a more comfortable experience and accommodate a broader range of fans.

Ensure that the slope of the terrace is evaluated with respect to safety. Whilst the latest Green Guide sets out a maximum steepness, this may not be safe for some fans, such as pregnant people and small children. This should be balanced with keeping fans close to the pitch, delivering a quality atmosphere and ensuring good sightlines. Consider installing P-rails to stepped terraces, to assist with safety and comfort.

Standing in conventional terraced standing accommodation. Joie Stadium.

11.1.4 Standing areas

Like traditional stadiums, safe standing accommodation is also popular among women's football fans, including families with children. It should be incorporated into a venue, dependant on the unique preferences of your audience. Often located behind the goals, they offer a more dynamic match day experience. Design considerations include:

- Adhere to the safety criteria outlined in the latest Green Guide.
- Carefully position standing areas to avoid obstructing views for fans seated in adjacent areas.
- Consider a roof to mitigate the impact of wet weather.
- Use stepped terraces, not viewing slopes.
- Design crush barriers and rails to the minimum regulated dimensions to mitigate sightline obstructions and be ergonomically suitable for smaller children. Additionally, they should incorporate horizontal elements to prevent smaller children from falling into the rows in front.
- Although the safe standing seat systems can offer high flexibility between seating and standing accommodation, take special consideration regarding the seat backs and terrace steps height to ensure that children have unobstructed views to the pitch.

Standing in conventional terraced standing accommodation, while not preferred, is also common to women's stadiums.

11.1.5 Fan organisation

Women's football differs significantly from men's football due to its non-segregated, inclusive atmosphere, with fans enjoying a shared event. Having areas designated for home and away and segregated accesses is still valuable. Fans of the same club and season ticket holders can sit together which contributes to the atmosphere of a game.

Home and away areas should ideally be behind opposite goals within the seating bowl and separated by ticketing rather than physical barriers. A mixed area between them enables fans to mingle, reducing the need for site compartmentalisation and simplifying access and facilities.

As women's football grows, clubs may choose to implement segregation, or security forces might impose it. Therefore, considering fan segregation during the brief development stage is crucial for futureproofing the venue without compromising current fan mix we see today.

Fans at a match. Brisbane Road.

WELCOMING AWAY FANS

It is important to ensure that the stadium is a welcoming environment for away fans, helping them feel included and valued as part of the event.

Provide welcoming signage and clear directions. Additionally, incorporating adaptable features such as coloured lighting that can be set to match the away team's colours on match day for certain areas of the stadium. Ensure facilities for away fans are equitable to those for home supporters in both space and quality.

11.1.6 Fan and player interactions

It is more common in women's football for fans to have close interactions with players. This is further discussed in **section 9.1.2**. This can cause issues and often leads to fans who might not be as physically strong or vocal missing out on these interactions. To facilitate the interaction with fans consider having an area just before the players exit, so that they can have this interaction after the game. In **section 10.0** we advise segmenting the stadium to be able to keep certain areas open for longer after the match. This area should be included within this. However, ensure that security is carefully managed to guarantee the safety of players and staff.

As the popularity of the game develops this may become increasingly impractical and you should reflect on your unique circumstances. There may be alternatives such as facilitating the welcome of the player bus discussed in **section 5.2.1**. You can also consider providing this as a premium experience, such as access to post match interviews and autographs. Provide direct access from the players' area to the premium area. Developing something that is unique enhances the success of this kind of offer. Consider including areas with backdrops for selfie opportunities for fans with club players.

11.1.7 Catering to all demographics

It is particularly noteworthy that middle aged women and older people generally lack tailored facilities. Often, different ticket offers, and activities can make them feel more welcome. Accessibility and comfort can also contribute to attracting this demographic.

11.1.8 Discussions and forums

There has also been considerable interest in fan forums and talks, such as live podcasts. These could be put on earlier in the day and make use of other facilities within the stadium, such as the Press Conference Room (See **section 10.2.7**). Equally premium lounges or bar areas could be developed to allow easy conversion into a roundtable discussion format.

There is a huge variety of people who like to attend a women's football match. Kingston Park.

GEORGE WOOD - THE FA

11.1.9

Fan centred toilet provision

Toilets are one of the main facilities in a stadium and receive a considerable amount of discussion among fans. The points below offer guidance that looks beyond the traditional provision and aims to address the considerable audience differences.

Refer to BS 6465-1:2006 and BS 6465-2:2017 for advice on how best to plan toilet facilities.

Toilet ratio
In facilities for men's football the ratio of male to female toilets has been increased to reflect the average attendance of the match – usually a ratio of male:female 80:20 has been used, for the last 40 years at least. However, this has led to huge queuing times for women's toilets and does not reflect the attendance data for men's or women's football currently.

To reflect the demographics in women's stadiums, it is advised to include the following ratios in new or existing women's football stadiums:

- **FEMALE TOILETS:** 50%
- **MALE TOILETS:** 50%
- **ALL-GENDER TOILETS:** 5%
- **FAMILY TOILETS:** 5% subject to consultation. To be included in the overall male and female provision with a facility included in each stand.
- **ACCESSIBLE TOILETS:** as per regulations and not included in any of the groups above.

The total number of toilets recommended exceeds the standard requirement by 10% to accommodate potential variations in gender identity or expression among fans.

Male / female adjustable toilets
To accommodate varying demographics, consider an adjustable toilet block design. This allows you to adjust the ratio of male to female cubicles based on the specific event or demographic future trends. For example, certain rock concerts attract more male visitors than female. The toilet block swing can be done in two ways:

- **SIGNAGE:** Temporarily change the signage on toilet blocks to match the expected gender ratio of the event.
- **MOVABLE PARTITIONS:** Install movable walls or doors to divide existing toilet blocks into smaller sections, each with its own washbasins, hand dryers, etc. This is particularly effective in long spaces with dual access points.

All-gender toilets
There is a considerable group of users, such as non-binary people, who would prefer to have access to all-gender toilets. These toilets can be accessed by anyone, regardless of their gender. To ensure a high level of privacy and comfort for users, rely on floor-to-ceiling cubicles and avoid urinals.

Family toilets
Family toilets are becoming increasingly common in European public spaces like shopping centres, train stations, and stadiums. They provide a space for families with young children and pregnant people regardless of gender.

More information on family toilets can be found in **section 12.2.7**.

Queuing and activity time
Toilet facility use varies between people, with women typically spending more time in queues and within the facilities. This is due to factors such as physiological differences, better hygiene practices, menstrual cycles, and more restrictive clothing. Research, such as that recently conducted by Public Health Wales, indicates that women often spend 20 seconds more washing their hands compared to men. Additionally, women tend to form more organised and linear queues, which usually extend into concourse areas.

On average, men spend around one minute in the toilet, while women spend approximately one and a half minutes, excluding queuing time.

Design considerations
A toilet block is a group of toilets and washbasins designed for user convenience. The layout should follow a logical sequence, prioritising flow and functionality:

- **QUEUE AREAS AND SIGNAGE:** Plan for peak-time queues without disrupting fan circulation, concessions, or escape routes, especially for female toilets. Clear signage and a floor plan displaying the layout and ambulant facilities can save time by familiarising users with the layout.
- **INGRESS AND EGRESS:** Balance privacy with efficiency. Doors can limit noise and odours but may hinder flow. Ideally, each block should have one ingress and one egress for optimal flow.
- **VENDING MACHINES:** Place hygiene product vending machines near entrances in all-gender and female toilets so that they are easy to find. Place nappy vending machines in family toilets. Ensure they don't obstruct user flow and allocate space, power, and data during design.
- **CUBICLES / URINALS AREA:** Keep these out of sight from the concourse. Use simple layouts and install occupancy sensors with coloured lights to indicate availability. These are especially helpful in women's stadiums with more cubicles. Data from sensors can aid future planning.
- **HAND WASH AND DRYING:** Separate basins and hand dryers to minimise delays but keep them nearby to prevent water dripping across the floor.
- **VANITY AREA:** Include a small dry counter with a wall mirror for makeup or similar activities, particularly in female toilet blocks.
- **FULL-SIZE MIRROR:** Install one shatterproof, full-size mirror near the exit, ensuring it doesn't impede flow.

Other considerations:
- Each toilet block (male, female, all-gender and family toilet blocks) should have at least one ambulant and one oversized cubicle, depending on the total number of cubicles. This cubicle must comply with current building regulations and should also include a shelf for colostomy bags.
- Regardless of the provision of a family toilet block, all male toilet facilities should include one lowered urinal and one lowered hand dryer.
- It is recommended to use anti-vandal, wall-hung, rimless toilet pans to ensure safety and facilitate cleaning operations.
- It is also highly advisable to ensure that toilet signage is flexible, allowing adjustments based on demand.
- To optimise flow, all GA toilet blocks, excluding accessible toilets, should not have entrance doors. However, viewing angles into the toilets must be carefully managed.
- Refer to **section 12.0** for more information on accessible toilets.

CASE STUDIES

St Helens Stadium

ST. HELENS, UK

The St Helens Stadium was originally constructed for St Helens R.F.C. and later became hosts to the Liverpool F.C. Women's team as well. Due to the attendance profile for rugby matches, the ground was built with toilets at a ratio of roughly 50:50, male to female.

As a result, they rarely have substantial queues for either sport. However, they still occasionally bring in supplementary temporary toilets for events with attendance close to full capacity.

Best Denki Stadium

FUKUOKA, JAPAN

Toilet blocks in this stadium include a clear layout plan next to the entrance, outside the toilet, which relies primarily on symbols to indicate different types of cubicles. During peak times, this is extremely useful for understanding the space before entering, thereby improving user flow.

Liverpool F.C. Women's shared facility. St Helens Stadium.

11.2 NEW STADIUMS

11.2.1 GA fans' seating and standing terraces

All fans need to have the ability to watch the game comfortably with an unobstructed view of the pitch regardless of their age, gender or other characteristics. The design of the stadium bowl is key to shaping the fan experience, impacting visibility, atmosphere, and connection to the action. Safety is crucial, requiring clear and easy emergency exits. Consult with specialists and local authorities to ensure compliance.

All seats should have backs, be automatically foldable, include seat and row numbering systems, and provide a minimum clearway of 400mm. They should be securely fixed in place, vandal-proof, and free from any sharp edges. Additionally, ensure that the seats are recyclable and made from recycled or industry waste materials.

11.2.2 GA Concourse design considerations

Concourses are often untapped opportunities. Rather than untreated, grey corridors, every interior space should be desirable to encourage people to stay for longer. Increasing dwell time will increase revenues.

The design of the outlet and its efficiency, the offer, and the environment of the concourse – all have a role to play and must be considered.

CUSTOMER FLOWS

It is important to look at the concourse, access points and flow of people to determine the optimum number of outlets in any one space. Alongside pressure points, be mindful that fans are unwilling to travel too far from their seat location.

CONCOURSE SIZE

The amount of space per person in the concourse has a direct correlation with the revenue opportunity. It should accommodate at least 50% to 60% of the capacity of the viewing area, with an average density of no more than 2 people per square metre, allowing space for eating, drinking, and using devices. In areas near bars and food counters, a higher density of up to 4 people per square metre may be acceptable for short periods.

CONCOURSE QUADRANTS

The concourses should be designed so that all fans have access to all available offers. By splitting the concourse into quadrants and replicating each one, all offers are available to all fans. This ensures fans do not miss an offer due to it not being available in their area of the stadium. The same principle should apply to other facilities such as toilets.

CONCESSIONS LAYOUT

There is a variety of different concession layout and sizes which can be designed into new and potentially existing stadiums:

Type	Module/ EPOS Width	Front Counter Depth	Middle Counter Depth	Back Counter Depth	Width Between Counter
3-counter kitchen	1.4m	700mm – 1050mm	1400mm – 1550mm	800mm – 900mm	1100mm – 1200mm
2-counter kitchen	1.4m	700mm – 1050mm	N/A	800mm – 900mm	1100mm – 1200mm
Bar	1-1.4m	850mm – 1000mm	N/A	750mm – 900mm	1100mm – 1200mm
Island Bar	1-1.4m	850mm – 1000mm	N/A	750mm – 900mm (varies if serving on both sides)	1100mm – 1200mm

Concourse design should consider the choice of products and tiering the outlets to ensure they cater to everyone at different moments and for different occasions, at different price points.

Well-designed outlets can ensure operational efficiency, decrease transaction times which in turn maximises revenues. It is also critical to ensure safety in the concourse and obstruction to escape routes must be avoided. The below suggestions should be fixed down, not loose. Also ensure that installations meet the fire rating requirements for the area. Consult with your Fire Engineer to ensure safety. Key considerations include:

- To increase operational efficiency outlets should take a modular design approach.
- This works by each server acting as a single unit with access to full offer and EPOS. This allows them to operate independently and forms the modules that become the outlet.
- The amount of counter length available dictates the number of EPOS and modules.
- Suggested counter length is 1-1.4m for 1 EPOS to serve 100 people.
- The more counter length available the greater the percentage of people that can be served.
- Outlets should have storage adjacent or proximity for easy re-stocking during events.

OTHER CONCOURSE IDEAS TO CONSIDER:

- Drainage should be on floors to support hygiene and cleaning routines.
- Soft-play areas for young children with additional space for older children with beanbags and lounge chairs (something now more commonly found in airports, including their lounges).
- Fun football activity areas – e.g. penalty shootouts, table football.
- Player meet-and-greet areas.
- Comfortable and informal seating areas such as terraces for example.
- Accessible water fountains should be available throughout the concourse area.
- Drink shelves.
- Design for natural light as much as possible.
- Include planting.
- Selfie walls.
- Activities for children such as drawing walls.
- Integrate the signage within the interior design.
- Flexibility for other uses such as exhibitions and markets.
- Consider an "outdoor pedestrian street" concept with special attention to the human scale, visual links to other parts of the building such as gyms, Club shop and restaurants.

It should be noted that inclusion of the above also presents potential 365 opportunities, so should be carefully considered.

AUTONOMOUS CONCESSIONS

Autonomous concessions offer the fans an experience that uses frictionless retail technology to operate with very limited human assistance. This technology is being deployed in an increasing number of sports stadiums and arenas globally, including Wembley Stadium.

Customers make purchases at these concessions and stores without needing to check out - using sensors and cameras to automatically charge them as they leave. Individuals or groups can easily purchase a more tailored selection of food, drinks, and merchandise without waiting in long lines. Stadiums using frictionless technologies have reported over 60% increase in customer throughput and more than double the total transactions per game in some outlets compared to the previous season. For women's football, this means a considerably better fan experience, higher F&B and merchandising concession sales and the ability to attract more fans.

Frictionless retail has the potential to play a key role in increasing the sport's popularity and generating additional revenue, while depending on less staff.

People queuing at a food and beverage concession unit. Brisbane Road.

PAUL HARDING - THE FA

11.2.3 Premium experiences

The design of premium areas should be developed to create a heightened and unique experience for fans. Key considerations include:

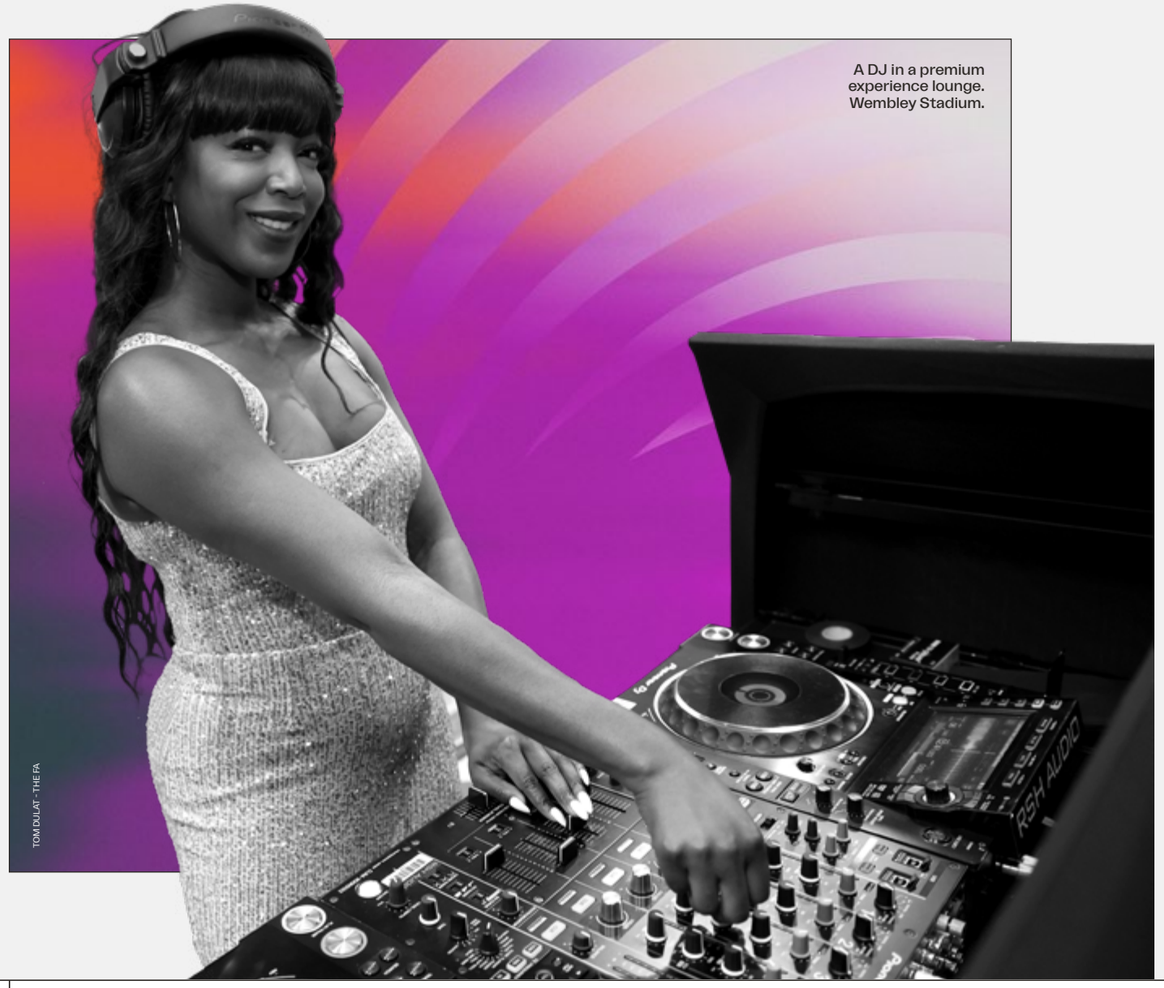
- **LOOK AND FEEL:** The design of the space, the quality of material finishes are integral to the experience.
- **PREMIUM SEATS:** These should measure minimum 520 mm, padded to some degree and have cupholders.
- **PROXIMITY:** Spaces in other locations can also work very successfully. Ideally the journey to seats should be as direct as possible, with pitch views being desirable. Spaces without pitch views can work with the addition of experiential elements.
- **PARKING:** This should be close to the point of entry to the stadium to guarantee easy access.
- **DEDICATED ENTRANCE:** This provides an additional experience for guests. It could be combined with the player entrance for added exclusivity.
- **SANITARY FACILITIES:** Premium spaces should have their own sanitary facilities dedicated for their use only, with 50:50:10 ratio for men:women:all-gender, as well as accessible toilets.
- **EXCLUSIVE EXPERIENCES:** Consider having live music and tailored merchandising.
- **ACCESSIBILITY:** Wheelchair access should be included for all product tiers.
- **365 ACTIVATION:** If there is desire to activate a space 365 days it is important it can function as a standalone space and does not require the whole stadium to open.

SOCIAL LOUNGES, BARS, AND RESTAURANTS

These areas are often designed with flexibility in mind, featuring modular furniture, open layouts, and distinct zones to accommodate diverse events and crowd sizes. These areas should prioritise fan engagement through features such as live music, social media integration, and appearances by players or coaches, fostering a sense of connection even when fans are away from their seats.

Family-friendly spaces are crucial, offering safe environments for children to play while allowing adults to enjoy the match undisturbed. Concepts like this, inspired by examples such as the 100 Club at Lord's, enhance inclusivity and appeal.

Tunnel clubs, offering views of the players' tunnel, could align with current trends and club-specific needs. Additionally, adaptable areas, such as boxes with retractable walls, can serve as family lounges, sensory rooms, or versatile spaces for match day and non-match day use, maximising functionality and enhancing the overall stadium experience.



A DJ in a premium experience lounge. Wembley Stadium.

TOM DULAT - THE FA

CASE STUDY

Gtech Community Stadium

LONDON, UK

This stadium includes flexible box spaces to accommodate various uses: retractable walls allow for the creation of more intimate spaces or larger social areas, seamlessly integrating with adjacent lounges. The interior design prioritises flexibility, with light and easily stored furniture, and fixed credenzas with water points and fridges that blend seamlessly into the walls when not in use.

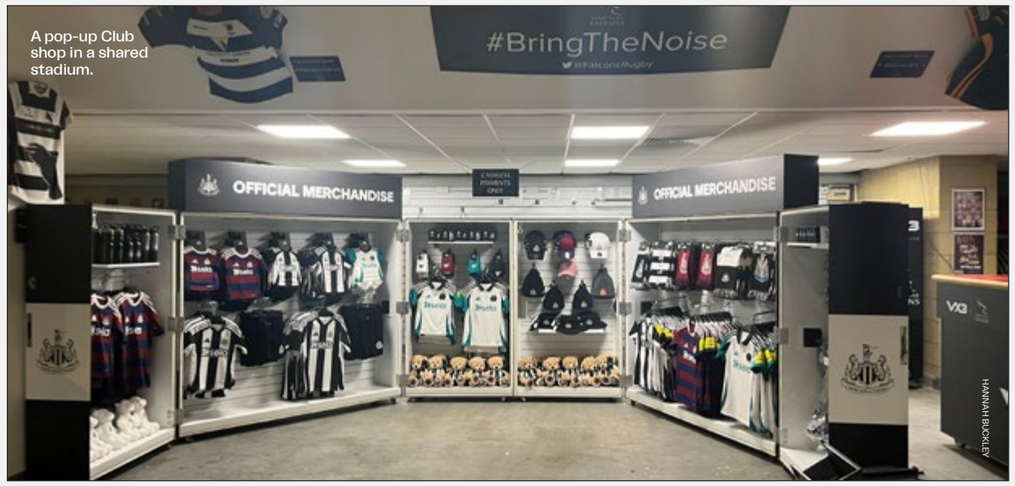
Examples of moveable walls in a premium experience box. Gtech Community Stadium.

AFL ARCHITECTS

11.2.4 Sponsorship and partnerships

Consideration should be given during the design phase to spaces that sponsors could brand, design and activate, particularly if this can assist with build and fit out costs. The sponsor and the space or activation should be well matched to create a space that has authenticity and does not feel like a mis-matched branding exercise. Areas for consideration:

- Sponsor branded box/lounge
- Exterior branding/signage/graphics
- Digital technology
- Stadium seating
- Fan zone branding
- Carpets/floor decals
- Exterior wrap
- Artwork



A pop-up Club shop in a shared stadium.

CASE STUDY

CPKC Stadium KANSAS CITY, USA

The stadium successfully secured a naming rights sponsor whilst still under construction. The NWSL KC Currents have a 10-year agreement with the railway giant CPKC for the name of the stadium along with the adjoining plaza.

11.2.5 Merchandise

On game-days pop-up merchandise stands are easily scattered to locations around the stadiums from the concourse to premium lounges. On the concourse they can be combined with hawking to encourage merchandise purchases.

Consider the location of stadium store and pop-up units - on both gameday and non-match day, depending on 365 activations. This should also be agreed to avoid any impact on escape routes.

CLUB SHOP

The club shop layout and design need to strategically engage fans, creating a seamless and exciting shopping experience that drives purchases.

There are various tactics which can be employed to drive up purchases such as:

- Create clear pathways with eye-level shelving adjacent, to guide fans to shop in different zones based on category.
- Add mirrors where fans can try on hats, scarves, etc., and take selfies for more interactive experiences.
- Set up screens showing game related content to keep the store feeling like part of the stadium experience.
- Maximise brand recognition by using teams' colours in the décor.
- Layouts and designs should resonate with trends in shopping behaviour and need to be re-evaluated periodically to support this.

11.2.6 Fan tour

Fan tours are a popular feature in traditional stadiums, and they could also be a valuable revenue source in women's football stadiums. Considerations for a successful tour should be incorporated from the beginning of the project:

- **ACCESSIBILITY & INCLUSIVITY:** ensure routes accommodate all visitors.
- **WEATHER PROTECTION:** plan sheltered pathways.
- **FAMILY-FRIENDLY DESIGN:** provide pram and locker storage; ensure child safety, especially for rooftop access.
- **EXCLUSIVE INSIGHTS:** highlight women's team facilities, media areas, and all-gender changing rooms which demonstrate the sport's inclusivity.
- **WOMEN'S FOOTBALL HERITAGE:** include displays on the growth of women's football and consider a "Wall of Fame" to celebrate milestones in the club's and league's history.
- **BRANDED SPACES:** offer visitors a taste of premium experiences such as lounges or hospitality suites.
- **DESIGN & SUSTAINABILITY:** highlight architectural features and eco-friendly practices such as sustainable materials, recycling, carbon reduction, biophilic elements, and waste reduction.

- **INSPIRING CAREERS:** Offer a glimpse into the vision, design, and climate responsiveness of the stadium, showcasing the work of architects, engineers, and builders, especially women, to shape future talent and challenge industry stereotypes. For example, only 25% of girls aged 16-19 years would consider a career in engineering compared to 52% of boys of the same age, and many cannot envision themselves on a construction site.

11.2.7 Signage

A successful signage strategy is essential for a safe and smooth user experience and should be integrated into the design project from the early stages, as it impacts various coordinated aspects. Signage must be accessible and understandable by everyone, regardless of language or disabilities, including colour blindness. It should primarily use symbols and numbers, avoiding complex text, and be closely aligned with the information displayed on event tickets.

Make sure all facilities are clearly signposted in a way that aligns with any online resources. Directional signs should be placed at regular intervals along access routes. The signs should be easy to read, containing key information such as distance indicators. Additionally, all lifts designated for evacuation should be clearly marked with appropriate signage on every level.

Signs should be positioned at a high level, perpendicular to the fan flow, and visible from a distance. Low level signage with braille is also important for people with visual impairments. An integrated strategy should implement four main types of signage, in compliance with current regulations:

Wayfinding signage
Wayfinding signage is a visual aid that helps people navigate unfamiliar spaces. In stadiums, it should guide visitors from the stadium precinct to their seats, considering all aspects of this journey such as:

- Include signs at local transport hubs and on local roads.
- Provide signage in stadium stands to indicate the different sectors of the stadium.
- Indicate numeric or alphanumeric signs at entrance gates that, arranged anticlockwise around the stadium, as this aligns with the standard reading direction in England.
- Employ numbering of stadium levels, seating blocks, rows and seats to give a precise indication where a fan is located.
- When numbering, include gaps of more than five numbers between rows of seats separated by gangways to mitigate issues with later renumbering due to minor adjustments.

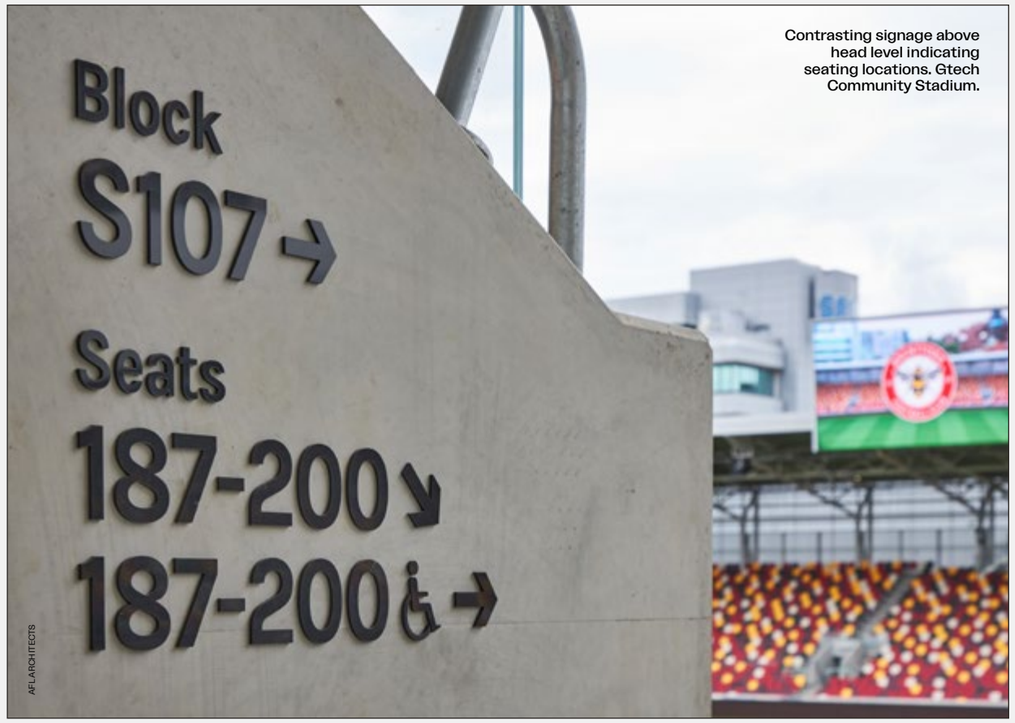
Information signage
Information signage, part of wayfinding, provides detailed information not usually sought by crowds, such as lost-and-found facilities, waste and recycling points, and upcoming events.

Statutory and safety signage
Statutory and safety signage ensures the safety of all stadium users, using universal symbols and colours. It should be resilient to power outages, especially for illuminated emergency exit signs.

Commercial display
Commercial display signage relates to sponsor messages inside and outside the stadium. This type of signage tends to be more temporary and can range from small to large-scale displays, such as stadium roofs and façades. For example, stadium roof advertisements are common near airports, and façade logos might change with new naming rights. Temporary overlays, like those for UEFA European Women's Championship events, can also "dress" the stadium façades.

Of all signage types, commercial display signage usually has the greatest impact on the overall stadium design coordination and should not be visually confused with other types of signage.

For information on advertising boards, see **section 10.2.2.**



Contrasting signage above head level indicating seating locations. Gtech Community Stadium.

11.2.8 Fans first aid rooms

These should be in opposite corners of the stadium. If there is an area of a stadium that cannot access any of the first aid rooms, like a segregated stand for example, ensure to include a satellite first aid room in that area also.

11.2.9 Police Room

Provide a designated small office space equipped with a desk and chairs, to facilitate the management of sensitive situations. This space may be used by police, stewards, and safeguarding staff as needed.

11.2.10 Other facilities

Aside from facilities to enable enjoyment of the game, a venue needs to appeal to attendees who may not be as focused on football. With consideration this can be a day out activity with significant variety and appeal. The League Handbook sets out the required match day experiences, such as refreshment and music. Physical measures such as space allocation and foundation reinforcement can enable the inclusion of, for example, stages for music, around the site, and in the fan zone. See **section 5.2.5** for more detail on fan zones.

11.3 *EXISTING STADIUMS*

11.3.1 Adapting existing terraces

When adapting an existing terrace, you will often want to increase the C-value of a tier. However, this will cause an increase in the steepness and overall height. You may wish to consider over-profiling the stand to avoid demolition. This involves building a new terrace over the existing, avoiding the need to demolish. It will, however, increase the additional height further. Refer to the latest Green Guide for more information on this.

11.3.2 Converting seated to standing terraces

Converting a seated stand to a standing terrace can potentially increase capacity, provided the concourses, toilets, and concessions are adequate to serve the larger crowd. This often requires expanding these facilities to accommodate the increased capacity. It is also important to evaluate the impact this has on C-Values.

11.3.3 Standing terraces crush barriers

Traditional U-shaped crush barriers are in place in many existing stadiums and may not adequately protect smaller children. Consider adding a secondary rail at half the height of the primary barrier to enhance safety.

11.3.4 Adapting for F&B outlets

If it is not possible to refurbish the F&B outlets within the existing stadium, consider making use of pop-ups, mobile outlets or autonomous concessions to vary and expand the F&B offering. Re-purposing empty spaces and re-thinking furniture placement is a cost effective and simple way to support concourse operations.

CASE STUDY

St Andrew's Stadium BIRMINGHAM, UK

Birmingham City Football Club made amendments to their terrace in 2024 to improve the quality of seating and views for the hospitality. To do this they over-profiled the existing stand using a pre-cast concrete solution. The project was built in weeks with no impact on the game seasons.

ACCESSIBILITY *AND INCLUSION*

In 2021/22, the UK Government estimated that:

- 16 million people in the UK had a disability, making up 24% of the population.
- This figure has grown from 19% in 2010/11 .
- Around 70-80% of disabilities are not immediately visible and include conditions such as visual impairment, dementia, diabetes, neurodiversity (including autism spectrum disorder), multiple sclerosis, PTSD, and Parkinson's disease.

Football is a sport for everyone, and the Women's Super League Football is committed to making stadiums accessible and welcoming to all. By doing so, we can introduce a more diverse audience to the sport, helping to grow the fan base and strengthen communities.

Stadiums should be more than just venues for matches, they should also be places that celebrate diversity and inclusion. By fostering a welcoming environment, we ensure that everyone, regardless of age, gender, sexual orientation, religion, or ability, feels valued and can enjoy the excitement of live women's football.

Simple adaptations in stadium facilities can make a big difference for people with hidden disabilities, allowing them to use them without having to justify their needs.

Following on from discussion of inclusivity in **section 2.0**, the following subsections explore a variety of topics such as ingress and egress, accessible seating, and other accessible facilities with a view to ensuring all design aspects of the stadium are meeting the needs of everyone who attends.

It's also important to remember that stadiums serve more than just football fans. They might host concerts, conferences, events, players, and staff, all of whom benefit from well-designed, accessible facilities.

For further guidance on accessibility, refer to Accessible Stadia: Sports Grounds and Stadia Guide.

DISABILITY AND ACCESSIBILITY

Under the Equality Act 2010, a person is considered disabled if they have a physical or mental impairment that substantially and long-term affects their ability to perform daily activities.

This definition is a legal one, and disabilities are often determined in a medical model, whereas the Social Model of Disability, developed by disabled people, views disability as societal barriers rather than individual impairments. Venues do not need to determine if a fan is disabled but must understand disability and make the venue accessible and welcoming.

This guidance follows the Social Model to improve accessibility in stadium design, though operational adaptations are usually also necessary.

REGULATIONS AND LAWS

Part 3 of the Equality Act 2010 deals with discrimination against people in the provision of services based on specific protected characteristics. The Accessible Stadia: Sports Grounds and Stadia Guide outlines the legal implications for stadiums, it includes definitions of discrimination, unfavourable treatment and reasonable adjustments.

All sports venues, new and existing, must comply with the Equality Act.

Stadiums should be accessible spaces comfortable for everyone who visits them. Birmingham City FC.

MARC ATKINS - THE FA

12.1 WHAT IS DIFFERENT?

12.1.1 Catering to families

A large proportion of the audience at BWSL and BWSL2 games consists of children and teenagers, significantly more than the roughly 10% in Premier League matches. Many men's football stadiums have a "Family Zone", but the Women's Super League Football aims for the entire stadium to be welcoming to families. They are a growing demographic in women's football, with 17.9% of respondents to the FSA Women's game Supporters Survey 2024 reporting they attend games with family members. Fans are also less likely to encounter intimidating crowds or poor behaviour. Despite this inclusive atmosphere, various family-oriented facilities are still essential in the stadium, such as baby feeding rooms and family toilets.

Navigating crowded concourses and waiting in long lines can be particularly challenging with young children. The time available to respond to "I need the toilet" can be very short. It is important to ensure that stadiums offer 360-degree access around the bowl, allowing easy access to facilities from any area.

Stadiums should also provide family-friendly food and beverage options, allergy-sensitive choices, external pram storage, and activities and merchandise throughout. However, it's important not to overemphasise family-focused features to the point that other visitors feel excluded.

12.1.2 Family toilet considerations

Family toilets provide a safe, inclusive space for guardians with children of a different gender who are too young to use toilets alone but too old to accompany a guardian into the opposite-gender facility. They also allow guardians to use the toilet without leaving their children unattended.

12.1.3 Baby changing facilities strategy

Family toilets should be the primary location for baby changing facilities, ensuring full accessibility. By concentrating baby changing facilities in family toilets, which are all-gender by nature, you can optimise space and ensure accessibility for all visitors. Avoid placing baby changing facilities in:

- **ACCESSIBLE TOILETS:** changing a baby can take time and may block access for others, especially during 15-minute intervals.
- **BABY FEEDING ROOMS:** these areas prioritise hygiene and safety however it is valuable to have the two facilities nearby.
- **ADULT TOILETS:** by avoiding baby changing facilities in the toilet blocks, you'll optimise the fan flow and the required room areas.

Families are common to women's football. Leigh Sports Village.

JESS HORNBY - THE FA

12.2 NEW STADIUMS

12.2.1 Accessible ingress and egress

To create an accessible venue, you must understand the entire journey of disabled fans and other disabled visitors on match and non-match days.

GETTING TO THE VENUE

Ensure your venue is accessible for all visitors, especially those with disabilities. Evaluate accessibility from nearby stations or stops and collaborate with partners to maximise accessibility. This is crucial for venues with very little or no parking.

Ensure all surfaces are accessible for wheelchair users and those with walking difficulties. The route to the venue should avoiding loose materials such as gravel. Provide external shelters and rest points, such as benches, along long paths and at drop-off and pick-up points.

ACCESSIBLE CAR PARKING

Stadiums with parking must provide equivalent facilities for disabled fans, as required by the Equality Act. Accessible parking spaces should meet demand, which varies by event, making exact numbers challenging to determine. Accessible parking spaces should also be provided for venue staff.

Refer to Accessible Stadia for provision. Consultation with local disabled supporter groups and disability organisations is essential to ensure it is sufficient.

If parking is off-site, ensure accessibility through connections like drop-off bays and accessible shuttle services. Long distances can create barriers for those with ambulant disabilities or manual wheelchair users.

For further details, see **section 5.2.2**.

ACCESSIBLE PARKING DESIGN

Accessible parking should comply with Approved Document M and BS8300, providing enough space for disabled people to safely exit vehicles.

With the rise of electric vehicles, especially among disabled fans, charging facilities should be available. More details on electric car provision can be found in **section 5.2.4.**

Special care should be taken when placing chargers in accessible spaces to ensure they're usable by individuals in wheelchairs, ideally in consistent locations, or with steward assistance if needed.

JULIAN FINNEY - THE FA

Wheelchair users should be catered to throughout a stadium. Hayes Lane.

12.2.2 Accessible seating

Once a fan has navigated the stadium, they need to comfortably experience the event. This section covers wheelchair positions, easy access seats, ambulant seats, wider seats, and seats with adjacent space for assistance dogs. It also includes recommendations for partially sighted and blind fans, as well as fans with impaired hearing. For detailed information on provision of seats and wheelchair position requirements refer to Accessible Stadia.

Users and seat types

Accessible seating is intended for anyone with a physical or mental impairment, whether long-term or short-term. This includes people with temporary injuries, pregnant people and some elderly people.

To accommodate the various needs of visitors and provide them with choice, several different types of accessible seating are available.

AMENITY SEATING:
These seats are designed for disabled fans who do not have specific seating requirements but would benefit from easier access, such as aisle seats or those with minimal steps. They are also suitable for disabled individuals who travel to a match in a wheelchair or mobility scooter but prefer to transfer to a standard seat. Seat width centres should be least 520mm (measured from the centre of one seat to the centre of the adjacent seat).

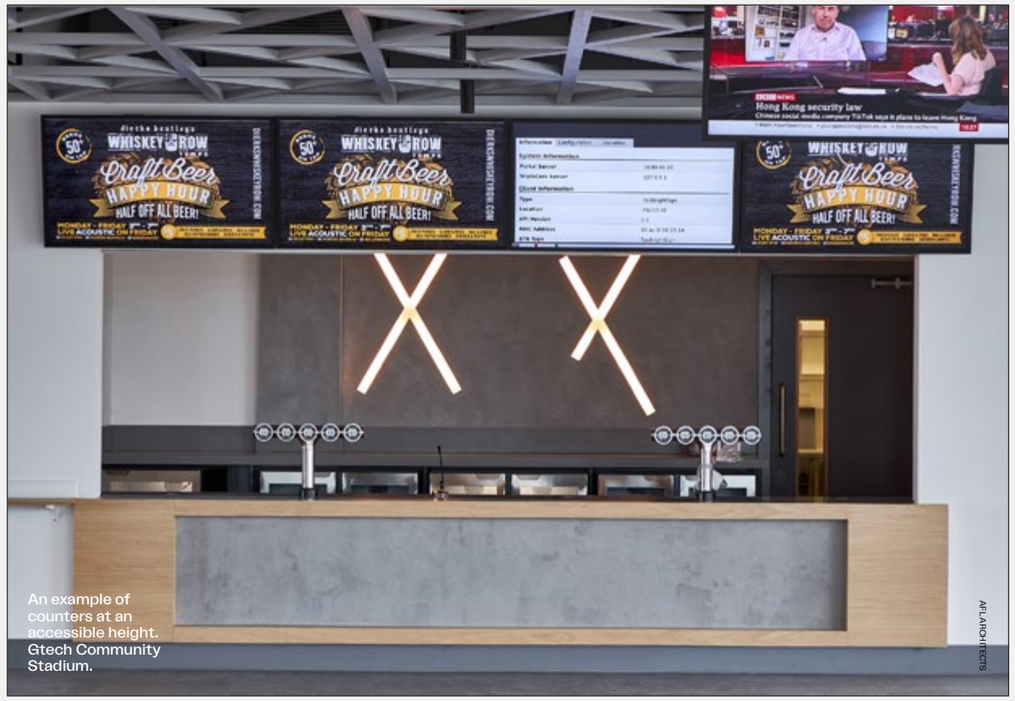
ACCESSIBLE ENTRANCES

Facilities throughout a stadium should be created to be fully accessible by visitors using a wheelchair, wherever possible.

- **ENTRANCES:** All should be level, with at least one family and one accessible turnstile.
- **WHEELCHAIR SPACE:** Recommend a 1600mm diameter turning area for larger electric wheelchairs.
- **ELECTRIC SCOOTERS:** Usually parked outside the stadium perimeter.
- **EMERGENCY EGRESS:** Avoid platform lifts; ensure easy access to refuge points for safe evacuation.

ACCESSIBLE CONCESSIONS AND BARS

In this context, service counters are surfaces over which fans are provided with goods or services. Examples include (but are not limited to) reception desks, F&B and merchandising points of sale. You should keep all service counters accessible at a height of 850mm throughout to avoid queues for wheelchair users. These counters will also naturally facilitate use by children. Staff can have raised touchscreens / keyboards to avoid these being at a low level.



AFL ARCHITECTS

An example of counters at an accessible height. Gtech Community Stadium.

EASY ACCESS AMENITY SEATING:
These seats are designed for those unable to bend their legs or those using a walking aid or crutches. Design considerations include:

- **SEAT WIDTH:** At least 520mm (measured from the centre of one seat to the centre of the adjacent seat).
- Refer to Accessible Stadia for detail on row depths and features.

BARIATRIC SEATING.
These seats, also known as extra-width seats, are intended for guests who may be obese or require more seated space and legroom for other reasons, as well as a seat with a higher load-carrying capacity. Provision for this type of seating is subject to consultation. Design considerations include:

- **SEAT WIDTH:** Equal to two standard seats.
- **LEGROOM:** At least 760 mm of legroom in front of the seat.
- **LOAD CAPACITY:** Minimum load-carrying capacity of 250 kg.

Wheelchair positions
Stadiums must offer wheelchair users equal access to seating across all tiers, ensuring they can sit with family and friends. Design should exceed minimum legal standards, prioritising comfort, sightlines, and ease of movement.

- **SEATING DIMENSIONS:** Minimum 900mm wide x 1500mm deep with an adjacent 520mm-wide companion seat.
- **CIRCULATION SPACE:** At least 1800mm behind wheelchair positions for easy movement.
- **STEP-FREE ACCESS:** Level entry from the concourse or via a passenger lift.
- **OPTIMAL SIGHTLINES:** Viewing platforms in front of vomitories or at the back of tiers for clear views over standing spectators.
- **FLEXIBLE SEATING:** Adaptable layouts to match demand and avoid overprovision.

ALEX LIVESEY - THE FA

Wheelchair platform. St George's Park.

AFL ARCHITECTS

A continuous wheelchair platform going around a seating bowl at a high level. Gtech Community Stadium.

Mobility scooters
In addition to wheelchair and electric wheelchair users, mobility scooter users are becoming more common. Mobility scooters are larger, but the users can usually walk a short distance. Therefore, provide a fireproof parking area for the mobility scooters outside the stadium. As an alternative, scooter users may be seated on a wheelchair platform, but their route from stadium entrance to the platform must be fire protected.

Location
Stadiums should provide amenity and easy access seats in convenient locations, such as row ends, allowing fans to reach their seats without passing others. These seats should be near a vomitory for quick access to concourse facilities and available across GA and premium areas, ensuring fans can sit with their team's supporters.

- **SEAT DISTRIBUTION:** No more than 15% of wheelchair positions and 25% of easy access seats should be at ground level.
- **WEATHER PROTECTION:** Seating should be positioned to minimise exposure to wind and adverse conditions.
- **SIGHTLINE CONSIDERATIONS:** If ground-level wheelchair positions are necessary, assess potential obstructions from stewards and media to ensure clear views.
- **LIFT ACCESSIBILITY:** Lifts serving accessible seating should have easily reachable buttons, removing the need for steward assistance.

Quality of viewing spaces
Accessible seating, like all other seating within a venue, should be designed to ensure a good quality view, requiring a C-value of at least 100mm.

Fans in wheelchairs should have a clear sightline to all touchlines of the pitch, unobstructed by another fan standing in front or to the side. This is crucial because individuals with limited mobility may not be able to stand easily or for long periods. To achieve this, an increased height riser, or "super riser," is often necessary.

A wheelchair user's eye level is measured as the vertical distance from the centre of their wheels. An average eye level of 1250 mm is generally used, while the assumed height of a person standing in front is 1800 mm.

Example of a stand with optimised sightlines and a mid-tier super riser

Flexible wheelchair positions
Ensure that moveable flexible seating is available to allow wheelchair users to sit together and with their companions. Additional wheelchair spaces can be created by removing seats, but these must be in pairs and adjacent to fixed seating for companions.

Accommodating wheelchair users should always be the priority, but when viewing areas are not needed by fans with disabilities, it is acceptable to install drop-in or folding seats for non-disabled fans. These seats must not be loose and should have designated storage. For every two wheelchair positions, three additional chairs can be installed. Refer to Accessible Stadia to understand the proportion of positions that can have this.

CASE STUDY

Volksparkstadion HAMBURG, GERMANY

The flexible seating platforms at this stadium in Hamburg feature sliding seats for companions. This design enables easy adaptation of seating arrangements to meet the specific needs of wheelchair users and their companions.

12.2.3 Assistance dogs

Assistance dogs (and other animals) are becoming more popular among people with physical and mental disabilities. These highly trained animals provide support to people with mobility, visual, and hearing impairments, as well as those living with seizure disorders, diabetes, PTSD, depression, and autism.

Assistance dogs are not pets and they should be welcomed in all stadiums. Owners, who often require accessible seating, can accommodate their dogs in the extra legroom provided by these seats. Additionally, owners should have access to designated dog relief areas within the stadium perimeter. These areas should meet the following criteria:

- Be fully accessible and clean.
- Have a minimum enclosed space of 12m^2 with robust drainage, and a boundary fence or wall at least 1.2m high. It is recommended not to install a roof over this space.
- The station's pavement should include hard surface and soft surface, preferably grass.
- Fresh water for the dogs should be readily available.

12.2.4 Sensory rooms

A stadium sensory room is a quiet, calming area for spectators with sensory challenges, such as autism or ADHD, and other individuals sensitive to sensory stimuli. These rooms exist to incorporate spectators who may be overwhelmed by a stadium's typical noise, light, and crowd but still want to enjoy the full experience of a women's football match. They are typically used by children and young adults with these needs, accompanied by their guardians but can be beneficial for people of all ages.

A welcoming stadium is sensitive to the needs of neurodivergent people and can provide facilities and support. The sensory room can also be utilised on non-match days and for community events, especially those involving children and young adults. To operate a sensory room, the stadium must consider safeguarding and health and safety policies, including applicable risk assessments.

It is notable that recent research from the University of Cambridge demonstrates that autistic individuals are more likely to be LGBTQ+ than non-autistic individuals. With women's football attracting a more diverse and inclusive group of supporters, there will also be a higher percentage of neurodivergent people, and the provision of sensory rooms becomes more essential than in older stadiums.

Location
Sensory rooms should be in the GA area or easily accessed by GA fans, away from noisy sections of the stadium. Secure route to the room should be considered. The room must have an unobstructed view of the pitch, be fully accessible, including wheelchair access and parking for double buggies. Proximity to family toilets and an accessible toilet is crucial.

Capacity
Any visitor to a sensory room should have the ability to be accompanied by one guardian, to avoid having

to be alone. Consult with your design team to determine the area required for a set capacity.

The ideal maximum occupancy of a sensory room is 10 people, with 10 guardians, plus stewards. This allows you to provide all the necessary facilities in a sensory room without letting it get too large. If a sensory room's capacity exceeds 12 people, with 12 guardians, it is advisable to create two separate spaces. This helps minimise disruption and noise, maintaining the room's calm and comfortable atmosphere. Additionally, this approach allows you to customise the spaces to meet the needs of different users, such as older individuals.

Spatial arrangement

The following describes an optimal sensory room. It should be divided into five main areas:

1. Free Play & Storage
2. Calming Space
3. Dark Space
4. Event Viewing Area
5. External Seating

Equipment

- Provide a shoe rack for footwear storage, a steward's chair, and climate/equipment controls.
- Include lockers, coat hooks, and mirrors for convenience.
- Offer flexible seating options with loose chairs or beanbags.
- Designate space for parking a double buggy.
- If space allows, include fixed external stadium seats and optional high seating for sightlines to the pitch.
- Install a TV screen for event coverage and information.
- Ensure sound insulation and adjustable roller blinds to manage light and maintain a calming atmosphere.

HENRY BROWNE - THE FA

A young person using ear defenders due to the loud noise at a football event. Brisbane Road.

View to the pitch

The sensory room should avoid floor-to-ceiling glass, as it can cause vertigo. Instead, a low-level upstand or an opaque film on the sound proofed windows can reduce this effect while keeping sightlines to the pitch clear. To manage glare and privacy, applying anti-glare treatments on the glazing helps, and using adjustable blinds allows stewards to tailor light levels to the needs of visitors as well.

Finishes and colour scheme

The space should be thoughtfully designed to promote a calm and comfortable atmosphere.

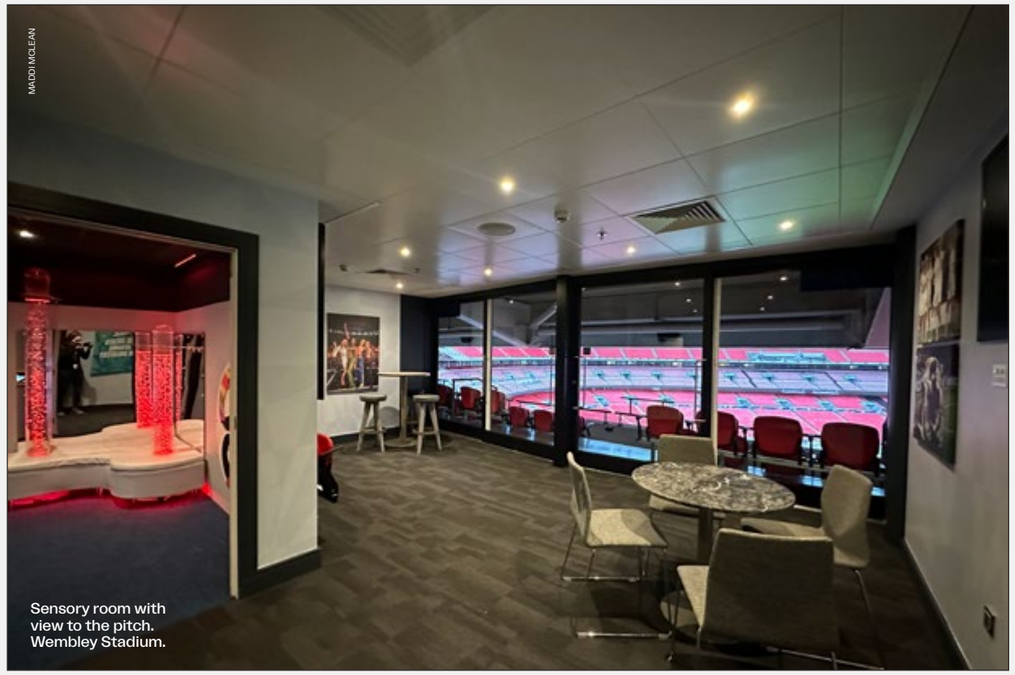
- Use a variety of textured finishes and surfaces with tactile properties, such as synthetic grass near windows overlooking the pitch.
- Ensure materials are sustainable, durable, easy to clean, hard-wearing, and impact resistant.
- Select neutral, calming colours for finishes and furniture to minimise overstimulation.
- Incorporate limited accents in team colours, avoiding bright or vibrant shades like red.

Light, sound and temperature

Managing light, sound, and temperature is key to preventing overstimulation. Adjustable controls can tailor the environment, with lighting kept soft and even. The room should block most noise while allowing some sound through, using double glazing or mechanical window openings to maintain a connection to the event.

Safety

To prevent injury, door handles should be padded, ideally covering the entire door surface. Hinges on swing doors should be equipped with finger guards. Additionally, it is recommended to install padded wall surfaces, especially around sharp corners or columns. Any equipment in the room should be free of sharp edges.


MADDI MCLEAN

Sensory room with view to the pitch. Wembley Stadium.

CASE STUDY

CPKC Stadium

KANSAS CITY, USA

The stadium is home to sensory rooms on the Northwest and Southeast concourses. These are available to fans with audio or visual sensitivities. In addition, they offer sensory kits for fans to self-regulate their own experience in their chosen seats. Sensory warnings are announced for loud noises, such as low-flying aircrafts, pyrotechnics and the sponsor's train horn which sounds after goals.

12.2.5 Multi-faith / reflection rooms

While there are no specific regulations in England for multi-faith/reflection rooms, it is important to provide at least one space in the GA area that accommodates different faiths as well as non-religious reflection, creating an inclusive environment for fans, visitors, staff, and players. A flexible, multi-use room that serves various needs ensures inclusivity for all.

Design considerations

- Allow 1.5m² per person, with a minimum room size of 25m², based on local consultations. Situate the room away from noisy areas or places where alcohol is served. Muslims pray in the direction of the Qibla which should be marked discreetly, for example, on the ceiling with a small arrow, out of reach. Toilets should not be positioned in this direction relative to the room, as it would cause offence.
- The room should permit separation by gender (male and female only) and faith when space allows, using ceiling-to-floor curtains or screens, preferably with acoustic properties. It should be free of fixed religious symbols to maintain neutrality. Include at least two chairs with armrests for those unable to kneel.
- Aesthetics are crucial: the room should be neutral yet evoke a tranquil atmosphere. Prioritise natural light where possible, supplemented by dimmable, soft lighting. If windows are included, they should be frosted or have blinds to reduce distractions.
- Flooring should be carpeted with a 10mm underlay for comfort, and wall finishes should be warm and neutral in colour, with no artwork, patterns, or religious symbols.
- Provide ablution facilities in an adjoining room, separated by gender, and include a shoe rack, a bench, and hot/cold water taps. A water fountain or tap for bottle filling should be located near the entrance, separated from ablution areas.
- Consider installing an enclosed notice board for announcements like prayer times, ensuring signage is concise to maintain the room's serene appearance.

12.2.6 Accessible toilets

The requirements for accessible toilets are outlined in Approved Document M, BS 8300a, and the Accessible Stadia: Sports Grounds and Stadia Guide. Therefore, detailed design specifications are not included here.

However, it is important to note that an accessible toilet should be located within 40 metres of any amenity or easy access seating, and all accessible toilets should be on the same level as the seating to avoid the need for lift access during intervals. It is also recommended to include a shelf for colostomy bags and a coat hook in at least one cubicle per non-accessible toilet block which is easily identifiable.

Changing Places Toilets

Changing Places toilets are additional to standard accessible toilets and requirements for them are set out in Approved Document M. For best practices, consult the latest guide from the Changing Places Consortium and the Accessible Stadia: Sports Grounds and Stadia Guide. A changing places toilet is a specialised facility designed for individuals with limited mobility who require specialised equipment to assist them in using the toilet or changing continence pads. It combines features of an accessible toilet with additional amenities like a height-adjustable bench and a ceiling track hoist system. A hand-held shower unit may also be included, though its operational implications should be carefully considered.

Facilities should be within 40 metres of accessible seating, with at least one near the sensory room.

Community access

Consider external access for non-venue attendees and coordinate with building management for security and register the facility with Changing Places Organisation/Finder Apps. Consult your Disabled Supporters Association or establish one with guidance from Level Playing Field.

Design considerations

For layout and equipment advice, refer to:

- **CHANGING PLACES:** The Practical Guide
- **APPROVED DOCUMENT M**
- **ACCESSIBLE STADIA:** Sports Grounds and Stadia Guide

Including a hand-held shower unit is recommended but optional (with required adaptation to floor and wall finishes). If providing multiple facilities, consider including a shower in only some or offering larger facilities for flexibility.

Area requirements

Minimum requirement	Optimal	
12 m²	14 m² Without a shower	16+m² With showering facility

12.2.7 Family toilets

There are currently no regulations in England mandating family toilets. However, to create a family-friendly environment, it is advisable for stadiums to include at least one per stand. The experience of using a public toilet differs significantly between adults and children, not only in terms of ergonomics but also privacy and queuing.

Allocate 5% of total toilet provision to family toilets.

Users

Family Toilets are to be designed for families with children aged 0-12, pregnant people, and guardians with wheelchairs or prams, regardless of gender.

Design considerations

The layout should be divided into four main areas:

- Entrance.
- Wash hand basins and drying area.
- Cubicles area, including an accessible family cubicle.
- An accessible baby changing station.

Design all areas, except for non-accessible cubicles, to accommodate wheelchair users. Avoid having entrance doors to facilitate easier movement for families. Ensure extra care that sightlines from concourse areas into the cubicle areas are protected to maintain privacy and safety. The height of the cubicles should be like those in adult restrooms, and urinals should not be included in these facilities.

The family toilet should ideally include at least:

- One accessible toilet cubicle with adult and toddler toilets, plus a washbasin (additional to overall accessible sanitary provision).
- Toddler cubicles with space for assistance from guardians and age-appropriate toilets.
- One adult toilet cubicle with a wall mounted corner baby chair.
- One ambulant adult toilet cubicle with a mounted corner baby chair.
- One oversized cubicle.
- Wall-mounted baby changing facility and nappy disposal.
- Adult and child-sized washbasins, soap dispensers and hand dryers. Many small children fear loud hand dryers, these should be silent or consider having a paper towel dispenser as an option.
- Fixed mirrors at different heights.

Finishes

Family toilets should be welcoming, safe, and easy to maintain, with colourful, child-friendly designs and durable materials.

- Slip-Resistant Flooring: PTV 36 (wet) with a 30 LRV contrast to walls for depth perception.
- Child-Friendly Fixtures: Lower taps with easy-to-use handles and pre-set water temperature.
- Hygiene & Safety: Impact-resistant mirrors and sanitary appliances.
- Calming Atmosphere: Colours and natural light can create a soothing environment.

12.2.8 Baby feeding room

Breastfeeding and bottle feeding should be allowed throughout your stadium, but some visitors might prefer a more private space. Providing a dedicated feeding room will enable more families to enjoy match days with the necessary conditions for feeding their infants.

This designated space can be used by breastfeeding mothers, guardians with bottle-feeding babies, or new mothers expressing milk. Ensure full accessibility and avoid using the term “baby breastfeeding room” as not all guardians breastfeed.

Design considerations

- Generally, at least one baby feeding room should be included and this should be in the Family Zone, where one exists.
- The baby feeding room should be spacious enough to accommodate a guardian in a wheelchair or to park a double pram. The door should open outwards.
- This space should have a solid door with a lock. Avoid including a vision panel on the door. The door should also have a lock indicator.
- It should not be located within a toilet block. For hygiene reasons, discourage nappy changing in this space.

Equipment

The baby feeding room should include:

- A comfortable, padded, adjustable armchair with back support and a washable surface (e.g. vinyl), paired with a footstool.
- A small table beside the chair for holding bottles, breast pump equipment, breastfeeding accessories, etc., designed with rounded edges for safety.
- An accessible counter featuring a deep sink with a soap dispenser and standard faucet (not motion-sensing) to facilitate cleaning of bottles and breast pumps. The tap should dispense drinkable water, clearly marked with proper signage.
- An optional bottle warmer for sterilising breast pump parts and warming bottles, to be installed after a thorough risk assessment.
- A paper towel dispenser and a waste bin.
- Two clothes hooks installed at heights of 1600 mm and 1200 mm.
- A single power outlet positioned next to the low table, for breast pumps.

Finishes

- The room should be a relaxing space with soft colours and gentle lighting. Ensure it is heated and comfortable. Where possible, incorporate natural lighting. Artificial lighting should be soft and preferably dimmable.
- All materials should be durable, sustainable, and easily washable. Consider a tiled backsplash behind the sink and no exposed ceilings.
- Use pastel colours to create a calm, non-contrasting atmosphere. Avoid using very bright or dark colours, such as red and orange, as they might overstimulate young babies.
- It should be quiet, with sound-dampening finishes on the ceiling and walls. If the room is adjacent to noisy areas, provide wall insulation to minimise sound transmission.

12.3 EXISTING STADIUMS

Existing venues should be assessed against the accessibility and inclusion principles outlined in this document. Many English stadiums, including those for football, cricket, and rugby, have successfully modernised their facilities to improve accessibility and inclusivity and can offer a portfolio of potential solutions.

It is crucial to engage an architect with extensive experience in upgrading stadiums for accessibility and inclusivity. Many design challenges require detailed 3D modelling and careful coordination with the existing infrastructure and various stakeholders.

12.3.1 Increasing the provision and quality of wheelchair positions

In existing venues where additional wheelchair positions are needed, a super riser can be created using a lightweight steel frame platform. Using suitable glass in the balustrades is advised as it reduces disruption to the view.

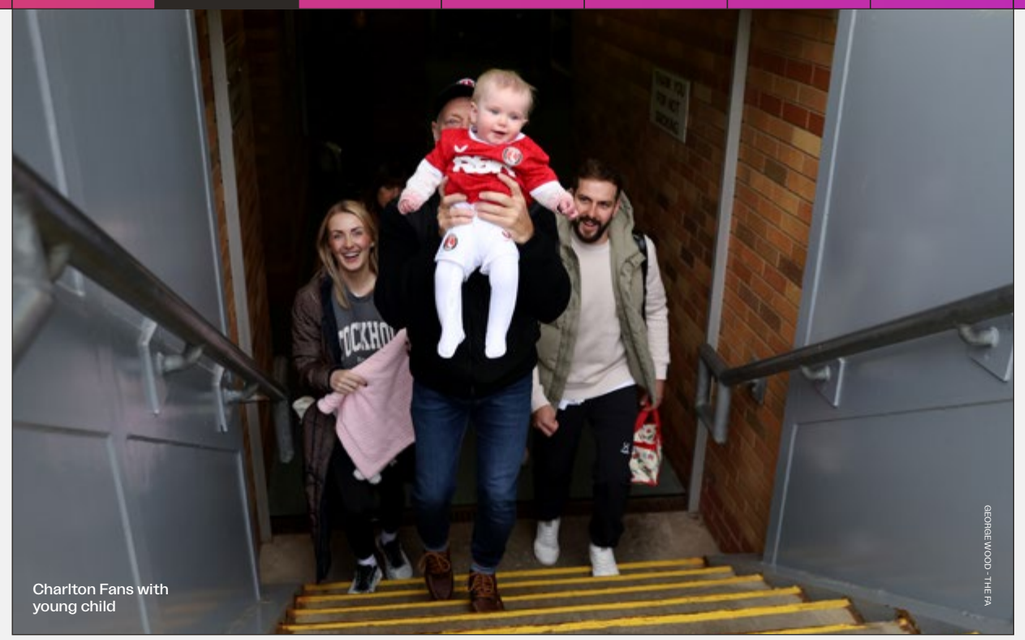
Vertical access through a venue should ideally be managed with a conventional lift, and access should be level wherever possible. However, in retrofit situations, it might be unavoidable to use a vertical platform lift, enclosed platform lift, or stairlift to enable access to the platform.

These lifts can pose management challenges, requiring stewarding and slowing movement from the seating terrace to the concourse. Additionally, they can become damaged during adverse weather conditions if exposed.

CASE STUDY

Bet365 Stadium STOKE-ON-TRENT, UK

To accommodate the increasing demand for wheelchair spaces, additional platforms were recently installed. This allows wheelchair users to be seated with their companions, and additional companions can be seated nearby on stools. This solution ensures that groups can stay together without restricting wheelchair users to a single companion.



Charlton Fans with young child

GEORGE WOOD - THE FA

12.3.2 Adding a sensory room

It is very common for sensory rooms to be adapted from existing spaces within stadiums such as premium boxes, but these must remain accessible from the general admission area and as much as possible achieve the design considerations set in **section 12.2.4**. Alternately this may be a modular pod, but it must have as many of the properties listed above as possible.

12.3.3 Adding a baby feeding room

It is recommended to include a modular pod for baby feeding where one cannot be included within the existing fabric of the building.

12.3.4 Adding family toilets

Family toilets are an easy addition to an existing venue – consider remodelling an existing adult's toilet block, keeping the water supply and drainage points in the same locations if possible.

SAFETY

While violence and threats are rare in women's games, all stadiums should prioritise the well-being and safety of their fans. Like in traditional stadiums, focus on areas like the VOC (Venue Operations Centre), first aid facilities, video surveillance, emergency lighting, and steward facilities.

13.1 WHAT IS DIFFERENT?

13.1.1 Safer pedestrian access

A safer walkway to and from the venue is paramount for women and girls, which make up most of the fanbase. Please refer to **section 5.1.1** for more detail.

13.1.2 Safeguarding

Keeping people safe is a core expectation in any event taking place within a stadium to ensure an enjoyable experience for everyone involved.

Given the diverse fanbase, robust safeguarding measures are essential to protect children (under 18s) and at-risk adults from harm. While club safeguarding policies cover operational aspects of match days, stadium design should enable children and vulnerable groups to thrive. Consulting these groups ensures their needs are reflected in creating spaces that feel safe. For example, safe changing areas should be provided for children involved as mascots or ball kids to ensure positive experiences.

Existing venues can adopt this consultative approach to review current facilities and identify gaps in safeguarding provision. Staff with safeguarding responsibilities can also help determine space requirements for managing concerns effectively.

- The high number of child spectators requires clear signage, such as pictograms, to assist if children become separated from their families. Well-managed exits further enhance safety.
- Designs should include private areas for discreet safeguarding responses on match days, enabling effective and sensitive activation of safeguarding procedures while maintaining privacy.

Safeguarding is a collective responsibility and must be integral to all aspects of stadium design and event delivery to ensure a safe and inclusive environment.

13.2 NEW AND EXISTING STADIUMS

13.2.1 Venue operations centre (VOC)

The stadium should include an area where safety can be monitored and controlled. This area should function independently in case of emergencies. Consult with relevant teams, such as police and emergency services on the design, which should include, at least:

- A VOC room with an area sufficient for at least 15 people, with a wide view over the bowl and FoP.
- A crisis meeting room.
- A male toilet with one WC, one urinal and one wash hand basin.
- A female toilet with two WCs and two wash hand basins.
- An accessible toilet nearby.
- A brew area for the staff.
- An adjacent room for the Public Address (PA) system, sound insulated and with a view to the main VOC room (internal glass window).
- A lobby connecting all these rooms.

13.2.2 Fire safety

Refer to the latest Green Guide for more information and consult the Local Authority's Safety Advisory Group (SAG).

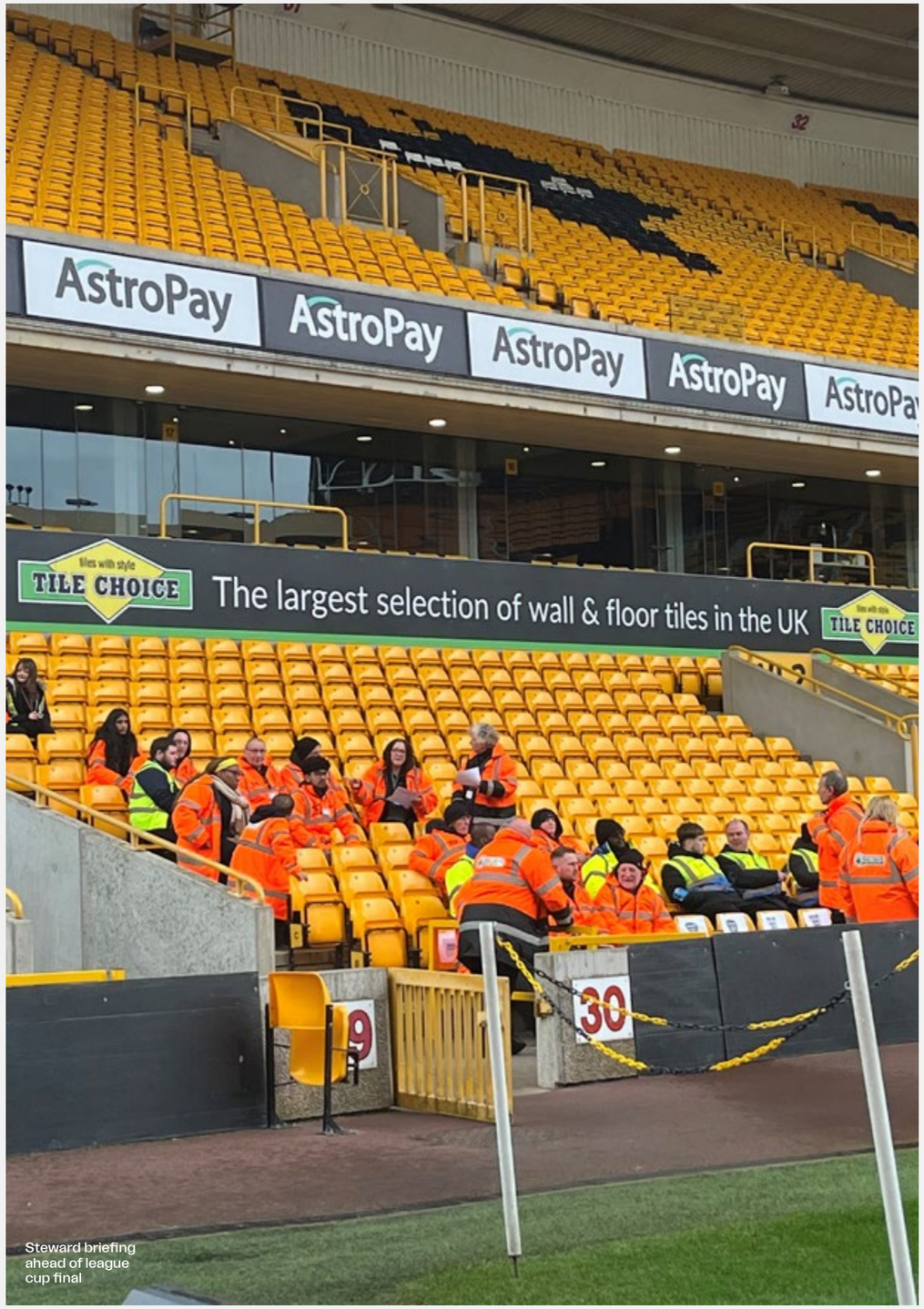
A fire strategy should be defined by your Fire Safety Engineer at the early stages of the project as it has a significant impact on the overall design and construction costs.

It is important that this consultant is experienced in stadium projects due their complexity and that the strategy relies, wherever possible, on passive elements (e.g. compliant escape routes, clear signage, non-flammable materials, etc). The fire strategy should be supported by a comprehensive analysis of pedestrian movement and crowd modelling. These assessments will help identify potential bottlenecks or inefficiencies in specific areas under various event scenarios. Understanding fan behaviour and movement patterns will inform the design and contribute to future emergency evacuation planning.

13.2.3 Stewards' facilities

Stewards are the public face of the stadium and require dedicated facilities. These should include:

- **BRIEFING ROOM:** a space for pre-match and post-match briefings, which can also be used as a media conference room. This room can double up as a conference room or another function room in the venue.
- **RECEPTION AREA:** a designated area with a counter, pigeonholes storage units, and lockers for personal belongings. This area can also serve as a breakout room.
- **EQUIPMENT ROOM:** a secure space for storing coats and other equipment. The room should have a non slip floor and good drainage because coats may be wet after a match.
- **DRESSING ROOMS:** 3-5 individual all-gender changing booths with benches, a full-length mirror and coat hooks. One of the booths should be fully accessible.
- **LAUNDRY ROOM:** ideally, a laundry room for washing and drying coats.
- **TOILETS:** access to clean and accessible toilets. These can be GA toilets if they are nearby.



Steward briefing ahead of league cup final

SUPPORT *FACILITIES*

This section outlines further considerations for designing support facilities that cater to the specific needs of users of stadiums. The unique demographics of fans and staff can influence traditional habits and rituals, consequently impacting the design of stadium support facilities. Note that Ground Management Team facilities are discussed in **section 8.2.5**.

14.1 WHAT IS DIFFERENT?

14.1.1 Alcohol consumption

Alcohol consumption is typically lower at women's matches, however during the development of this document, WSL Football is testing the relaxation of a competition rule to give fans the choice to drink alcohol in the bowl and in view of the pitch to improve the match day experience. Check with your catering consultant at an early stage of the project if alcohol will be distributed through a centralised system or if concession-based kegs storage is more suitable. Ensure levelled access for deliveries for both options. Whilst consumption is currently lower, it may be advisable to install the infrastructure for higher consumption to future proof, as it is harder to increase capacity than decrease.

14.1.2 Perimenopause and menopause in the workplace

The World Health Organization defines menopause as the "end of reproductive years" for women and notes that perimenopause can last several years, affecting physical, emotional, mental, and social well-being.

In the UK, around one-third of women (13 million) are perimenopausal or menopausal 2023 data. Menopause typically occurs at age 51, but perimenopause can begin up to ten years earlier. During this time, 75% of women experience symptoms such as hot flashes, cramps, insomnia, joint pain, headaches, changes in hearing sensitivity, and more.

This means nearly 20% of a stadium workforce may be experiencing menopause or perimenopause symptoms, a figure set to grow as this group represents one of the fastest-growing demographics in the workforce.

Creating a supportive work environment is vital for all employees, especially those facing menopause, perimenopause, female-specific conditions like endometriosis, or new mothers expressing milk. While general office design applies, additional considerations are necessary for women.

- **SMALL WELL-BEING ROOM:** Dedicated to individuals experiencing hot flashes, period cramps or other conditions. This facility will allow its users to have privacy and adjust the temperature, allowing women to better deal with hot flashes, and other symptoms. Include a table, chairs and comfortable sofas. It can be used as a breakout room but should not double up as a meeting room.
- **ADJUSTABLE LIGHTING (GENERAL OFFICE AREA):** Install adjustable lighting that allows employees to control the brightness and colour temperature of the light.
- **NOISE REDUCTION (GENERAL OFFICE AREA):** Create a quiet and peaceful working environment by incorporating acoustic panels, carpets, and soft furnishings. This will help with focus and tinnitus, another frequent menopause symptom.

14.1.3 Managing waste for different audiences

When designing a waste management strategy for a women's football stadium, it is essential to consider the specific needs and demographics of the audience:

- **WASTE BINS:** ensure waste bins are accessible to children and people with disabilities. Use colour-coded symbols and clearly labelled bins to facilitate waste segregation.
- **FEMININE WASTE DISPOSAL:** provide appropriate dedicated sanitary bins for feminine hygiene products in female, all-gender and accessible toilets. Securely mount the bins to prevent vandalism, but ensure they are easily accessible for waste collection.
- **NAPPY BINS:** the quantity of changing stations will be higher in a women's stadium because there should be one in every toilet block. Nappy bins should be provided in accessible toilets and adult changing places spaces to.
- **COMPOSTING:** In line with the sustainability strategy consider a composting programme on site and include the compost in your landscape maintenance strategy.

14.1.4 All-gender staff dressing rooms and toilets

As many stadium staff work on a temporary basis, it can be difficult to determine a fixed male-to-female ratio for dressing room or toilet facilities. To ensure inclusivity and accommodate all staff, it is recommended that they be designed as "all-gender" spaces, focusing mainly on comfort, safety and privacy.

Consult with your gender champion on whether male and female dressing rooms could also be required given changes in legislation or your specific staff demographics.

14.2 NEW STADIUMS

14.2.1 Ticket office / fan support

While most tickets are sold online, a small ticket office and fan support facility should be included to assist those still buying tickets on match days and to assist fans that might need ticketing technical support. Key design considerations include:

- Open only on match or event days.
- Place in a visible area facing a public space and near an accessible toilet.
- Ensure counters are fully accessible, including for the staff.
- Use a glass wall and counter with a cash transfer tray to separate staff and the public.
- Install a good audio system and internal video screens for specific information.
- Design counters to accommodate handbags and backpacks.
- Including a heating and a cooling system.
- Include a small back office for 1 person with a safe.
- Allow flexibility for this space to also serve as a merchandise kiosk given reduced demand in the future for on-site ticket facilities.

14.2.2 Staff entrance, dressing rooms and breakout rooms

Staff should have a dedicated entrance with a reception and access control. The following aspects should be considered.

Dressing rooms:

- **DRY AREA:** Secure lockers and benches.
- **WET AREA:** Individual floor-to-ceiling shower cubicles with hooks and benches.
- **TOILET AREA:** Individual floor-to-ceiling cubicles, hand washing basins, counter, and full-size mirrors.

Breakout Room:

- Brew area.
- Tables, chairs, and sofas.

14.2.3 Office areas

Stadium offices should be designed to foster staff creativity, motivation, and well-being. Assess your staff needs and prioritise natural light, biophilic elements, and inclusive spaces in the design.

Design considerations:

- **LOCATION:** Centralise office areas in one stand for better resource management and non-match day access. South-facing offices should optimise natural light while mitigating glare with blinds or brise soleils.
- **SIZE:** Design offices to accommodate current and future staff needs.
- **FLOWS:** Ensure office staff flows remain separate from fan flows to enable match day operations.
- **ADJACENCIES:** Place offices near essential facilities like toilets (including accessible ones), a multi-faith / reflection room, brew room, and baby feeding room and the well-being room.
- **LAYOUT:** Use a broken-plan layout with open areas, collaborative lounges, quiet zones, storage rooms, meeting rooms, and breakout areas for rest and food.
- **NATURAL LIGHT:** Maximise light with large windows, ensuring desks are within 15 metres of a window to reduce reliance on artificial lighting.
- **FLEXIBLE WORKSPACES:** Include hot-desking, co-working areas, modular furniture, and acoustic dividers.
- **INTERIOR DESIGN:** Use acoustic panels, carpets, soft furnishings, and club-branded colours to create a positive, noise-reduced work environment, complemented by inspiring artwork.
- **SHOWERS:** Provide a direct route to staff dressing rooms for cyclists, avoiding the need to cross the office in cycling gear.

14.2.4 Logistics

To ensure efficient operations, the building should be designed for seamless distribution of goods and waste, accessible from all stands. Estimate daily delivery trips, including vehicle sizes and designate a safe, large and preferably covered delivery zone near key areas such as main kitchens, main storage areas and waste compound.

Plan for future flexibility in the internal distribution system and minimise environmental impact by avoiding traffic congestion, noise, and pollution. Segregate pedestrian traffic from delivery vehicle flows as much as possible and consider the following principles for internal distribution / collection:

Ground level: use concourses or service corridors for goods distribution. Having interconnecting concourses between stands at all levels will support operations.

Upper levels: install at least two goods lifts in the west stand. In other stands 2 passenger lifts should be provided, with one able to double up as a goods lift.

Accessibility: ensure lifts, doors, and corridors are robust and can accommodate large items like UK pallets, goods and food trolleys, cleaning trolleys/vehicles and large pieces of furniture.

14.2.5 Waste management and storage

Stadium waste management is the systematic process of gathering, handling, processing, and disposing of wastes generated in a stadium from events, games, and day-to-day operations. Stadiums are high-occupancy structures that generate huge volumes of wastes, including food packaging, drink containers, packaging materials, and various forms of organic wastes from foods and beverages. Stadium waste management is essential to reduce the effects on the environment, maintain sustainability, and support a good fan experience with clean and safe zones.

Develop a comprehensive waste management plan with your waste consultant, aligned with industry standards like BS5906:2005. This plan should include waste projections which will inform the design. Prioritise a zero-waste-to-landfill philosophy and separate waste on-site for recycling and composting. The waste generation should be estimated for match days and non-match days to determine storage needs such as room areas for the number of assessed Eurobins.

Plan for specialist waste streams, including electronics, paper, bulky waste, medical waste, feminine sanitary waste and hazardous material waste from grounds maintenance operations.

Waste mitigation strategies:

- Engage staff and visitors in waste reduction and recycling efforts.
- Separate food waste for composting.
- Install water fountains to reduce plastic bottle use. See **section 11.2.2**.
- Strategically place recycling bins with clear signage throughout the stadium, including its perimeter. Position them near general waste bins for convenience and to encourage organised recycling. Separate bins might lead to people using the closest one instead of the correct one.
- Require suppliers to use recyclable or compostable materials.
- Use smart sensors on the bins to optimise waste collection.
- Consider implementing reverse vending machines for rewards.

Waste Storage:

- Bins should be placed regularly along concourses and at bar areas, either as wall-mounted sack holders or discreetly integrated into the design. Consult your security advisor on whether to use opaque bins preferably, or visible transparent bin bags, ensuring the strategy maintains a tidy concourse without relying on transparent bins. Provide enclosed, hidden yet accessible waste storage on each floor, with filtered ventilation, cooling systems and odour control. Outside event hours, all containers should be moved to a central waste storage facility. Include cold storage for food waste.
- Allow for a large vehicle to access the main waste storage area.
- Provide drainage and hose down facilities to facilitate the cleansing of all waste storage rooms.
- Ensure access roads for waste vehicles have a minimum clear width of 3.5m and a gradient not exceeding 1:12.
- All circulation areas and doors in the waste storage area should have a minimum width of 1.9m. If ramps are necessary, they should have a maximum gradient of 1:14.
- Line walls with a robust, impermeable material with a smooth, washable finish. The floor should be robust.
- Allow a minimum clear headroom of 2.8m for euro bin compactor operations.

HANNAH BUCKLEY

Reusable cup depositing bins, recycling bins and general waste bins.

14.2.6 Kitchens and staff canteen

The F&B strategy should be defined with your catering consultant. This strategy will be based on the fan's preferences and future flexibility, and will input on the design of the kitchens and concessions.

Main and satellite kitchens

Efficient stadium kitchen operations are essential to meet the diverse food service needs of fans, particularly the increased numbers of families and children, ensuring quick service and quality food across large crowds.

- **MAIN KITCHENS:** Act as central hubs for bulk food preparation. They can handle a wide array of food item preparation, including premium or specialty items, preparation for food stands including automated systems, restaurants, or premium suites within the stadium. They supply satellite kitchens and concession stands while adhering to strict food safety standards. Maintain temperature control during transportation from the main to satellite kitchens and avoid cross-contamination.

The main kitchen at Gtech Community Stadium.

AFLARCHITECTS

- **SATELLITE KITCHENS:** Strategically located near lounges, boxes, or concessions, these smaller kitchens prepare focused menus to reduce load on the main kitchen, improve service efficiency, and minimise wait times.
- **LOGISTICS AND COORDINATION:** Maintain consistent stock levels in satellite kitchens and concession stands to handle peak demand, ensuring seamless operations across the stadium.
- **TECHNOLOGY AND SUSTAINABILITY:** Design to include POS-linked systems to monitor inventory, predict food demand with analytics, and streamline operations. Prioritise energy-efficient appliances for sustainable kitchen practices.

Staff canteen

- **LOCATION:** Next to the main kitchen for streamlined operations.
- **FLEXIBILITY:** Mix of social areas with large tables and quieter zones with soft seating.
- **DIETARY NEEDS:** Dedicated area with microwaves and washing-up facilities for staff bringing their own food.
- **AESTHETIC DESIGN:** Different from workplaces with colours, plants, and artwork to help staff disconnect from work.
- **MULTI-USE SPACE:** Access to the front of house (FoH) to double as a function room for non-match day events. Ensure natural light and sound treatment to these spaces.

14.2.7 DJ booth

Women's games excel at entertainment and a live DJ before a match is one of the most appreciated features. DJ booths are relatively easy to install anywhere but it is recommended to find a highly visible location so that the DJ can interact with the fans in the bowl. Follow these recommendations to guarantee a successful facility and interaction:

- Consider a central location in the east stand for visibility from all stands and the main broadcast cameras.
- If placing the booth in the bowl, it will require a depth of at least 2 rows, naturally creating a visually interesting super riser. This "volume" can then be visually treated / branded as required.
- Confirm that any potential super riser will not create obstructed views for the fans.
- Provide power, data, and coordinate with stadium lighting for dramatic effects.
- Ensure the DJ's safety from the crowd.

DJ booth over the players tunnel at Joie Stadium.

THE FA

14.2.8 Storage

Most stadiums struggle with the available storage space, which demonstrates that there is not usually a robust storage strategy included in projects.

- **STORAGE NEEDS:** Identify items to be stored early, e.g., sports equipment, furniture, supplies, food, beverages, merchandise, waste, and lost & found.
- **CAPACITY ESTIMATION:** Determine required storage space based on volume and usage frequency.
- **CENTRALISED STORAGE:** Consider a shared area for commonly used items.
- **DEPARTMENTAL STORAGE:** Allocate specific storage for each department, including concessions and cleaner cupboards near toilets and premium lounges.
- **STORAGE SYSTEMS:** Define required systems (pallet racks, shelving, bins) and ensure temperature-controlled storage for food and beverages.

14.3 *EXISTING STADIUMS*

14.3.1 Kitchens

Existing stadiums may not have sufficient space to accommodate a full independent commercial kitchen. In such cases, the F&B strategy might rely on outsourcing food which will be finalised in the stadium in a smaller kitchen.

Kitchen operations can also be enhanced by:

- Re-organise and streamline existing kitchens for more efficient results.
- Simplify the menu offering for optimised delivery.
- Look into the possibility of investing in technology to assist with stock control, data analytics, etc.
- Manage staffing efficiently with appropriately trained staff members and offer further training.
- Improve customer flows with pop-up stalls, signage and pre-ordering.
- Reduce waste with thoughtful planning of food preparations.

Storage systems, the Gtech Community Stadium. Credit: AFL-Architects

BUILDING *SERVICES*

This section covers key engineering considerations for stadiums design including mechanical, power and public health which incorporates heating, ventilation, cooling as primary energy-consuming systems, in addition to sanitary installations including water and drainage.

15.1 WHAT IS DIFFERENT?

While building services are generally the same for women's stadiums there are considerations that can be made in terms of the design of office and other spaces for different users.

Other considerations are around the sustainability aspirations for the venue as discussed in **section 6.0.**

15.2 NEW STADIUMS

15.2.1 Regulatory compliance

Within the UK, the Building Regulations that are applicable to systems contained within a stadium include:

- **APPROVED DOCUMENT F:** Ventilation (ADF).
- **APPROVED DOCUMENT G:** Sanitation, hot water safety and water efficiency (ADG).
- **APPROVED DOCUMENT L2:** Conservation of Fuel and Power, Volume 2 (Buildings Other than Dwellings) (ADL2).
- **APPROVED CODE OF PRACTICE L8:** Legionnaires' disease, the control of legionella bacteria in water systems (ACOP L8).

The UEFA Stadium and Infrastructure Regulations are a comprehensive set of guidelines governing stadium content and operation. The key engineering aspects of the regulations which should be considered for a new stadium are:

- **FIELD OF PLAY UNDERSOIL HEATING:** UEFA stipulate that Category 3 and 4 stadiums must be equipped with pitch heating and/or pitch cover (depending on the location and climatic conditions). In the UK it is likely to be a requirement for match continuation in the coldest winter months.
- **PRIMARY POWER SUPPLY:** Stadiums must have a reliable primary power supply to support all essential functions, including lighting, security systems, and broadcasting equipment.
- **SECONDARY/BACK UP POWER SUPPLY:** An independent backup power supply system is mandatory. This system must be capable of taking over immediately if the primary power supply fails, ensuring that the match can continue without interruption. Examples of backup supplies are: UPS systems, Generators, Battery storage or a second primary supply from a different power grid.

It is important to fully establish the Regulations and Legislation that applies to each specific location and development type, prior to commencing stakeholder engagement and development strategy.

15.2.2 Mechanical

Heating and cooling should be provided for office and other spaces, while stadium bowls typically do not require active climate control in England. These systems must be tailored to occupancy patterns, activity types, and energy efficiency goals.

Maximise heat recovery opportunities in ventilation and wastewater systems, aligning with Building Regulations. Ensure adequate ventilation for internal spaces, balancing air quality and energy efficiency to promote well-being. See **section 6.2**.

Key design considerations:

- Implement trace heating for pipework in unheated spaces and resilient systems for temperature control in critical areas like IT server rooms and control rooms.
- Assess the need for a sprinkler system based on the stadium fire strategy and potential compliance with specific building insurer requirements.
- Install dry or wet risers to provide fire hose connection points throughout the building, depending on the fire strategy.
- Use a centralised control system to optimise building operations, minimise energy consumption, and reduce carbon emissions.
- Design for high space utilisation, ensuring zoning allows isolated control of different areas to match usage patterns, supporting financial and environmental sustainability.

15.2.3 Power

It is recommended that care is taken during the stadium design phase to split loads and allocate them by function to General, Event Continuation/Technical and Life Safety.

An example of the grouping of electrical loads with which items require back up supplies would be as below:

Electrical supply grouping	Primary	Back up
Non-essential	✓	
Event essential	✓	✓
Life safety essential	✓	✓

Examples of what could be included in each allocation are:

Non-essential

Power to:
- Food services.
- General support areas.
- Locker/changing rooms.
- Concourse and other public areas.
- Pitch perimeter.

Lighting and Power to:
- Concessions, bars and kiosks.
- Retail / merchandise.
- Central air conditioning, heating and ventilation.
- Architectural Features.

Event essential
- General lighting to public areas such as concourses, boxes and toilets.
- Normal lighting and nominated power supplies to medical suites/first aid.

- Stadium pitch lighting.
- Power supplies to F&B Concessions shutters (if required via local battery to close).
- Percentage of external lighting (nominally 20%).
- Vertical transportation for VIPs and passengers (excluding goods).
- Food cooling (Determine the extent in conjunction with the caterer).
- Water services public health.
- Stadium pitch lighting (part).
- Stadium facilities, security, police control rooms, press services, telephones, nominated power supplies and process cooling.
- Lighting and general power to OB/ concert generator compound.

Life Safety Essential

- Vertical transportation for the use of a firefighters and designated evacuation lifts.
- Smoke ventilation systems.
- Wet riser pumping equipment.
- Emergency and exit lighting (including a percentage of pitch lighting, 10-20%, and external lighting).
- Public address system for voice evacuation.
- Fire alarm systems.
- Emergency telephones.
- CCTV and security devices.

15.2.4 Public Health

Key public health considerations are as follows:

- Above and below-ground drainage systems to efficiently convey waste to the local sewer, to maintain high sanitary conditions.
- Potable cold water and domestic hot water for consumption by occupants on site.
- Sufficient storage to cope with the peak usage.
- Systems to achieve adequate water flow rates within the stadium to all outlets, noting that there will be high simultaneous demands at key times on a match day.
- A review of local area water network pressure may be needed to check that sufficient flow and pressure is available to provide the calculated water demand associated with a development. Increases in demand on a network can only be established in liaison with the local network operator. These increases often lead to the need for network reinforcement which may incur a high capital cost.

Potable cold water for top-up of pitch irrigation system: A typical peak consumption of a football pitch in London is around 50m^3 per day, and during peak summer this may be required daily for 2-3 weeks to maintain pitch health. The **section 6.2.4** presents several strategies to reduce the potable water requirement for the pitch.

Domestic hot water systems must incorporate features to avoid occurrence of legionella in full compliance with ACOP L8.

The strategy for stadium operation on non-match days needs careful consideration as usage will be significantly below peak match day demand, and therefore cold and hot water storage will be more than demand. There will be regular maintenance activities associated with this that need to be budgeted.

15.3 EXISTING STADIUMS

In general, the considerations for a new build stadium also apply to an existing venue. In England there are different regulatory requirements for building refurbishment and alterations. The specific regulations will depend upon the significance of proposed changes and performance of the alterations.

A key consideration is that demand on local infrastructure (including power and water) can be significantly increased by refurbishment projects, especially where the scale of an asset is being increased. Careful consideration of what additional load this adds to local infrastructure must be undertaken at the earliest stage possible, so that the magnitude of potential infrastructure reinforcement costs can be fully understood.

Newcastle United Fans at St James' Park

MARK NAPIER

TECHNICAL *SYSTEMS*

The pace of change in media technology is unrelenting. Understanding the requirements of comfort, modern broadcast media and information technology within a new or existing venue development is challenging, particularly when planning long term returns on investment, and assessing these against the initial capital expenditure.

16.1 WHAT IS DIFFERENT?

While the underlying technology infrastructure in the women's professional game remains similar to that of stadiums in general, there are opportunities to use the technology in a more inclusive and accessible manner.

16.1.1 Sports Lighting

The lighting requirements for the field of play are identified in the League Handbook. Its standards are now driven by broadcast and technology demands. The design brief should factor in all competition obligations to ensure they are future proofed.

This section covers only the functional field of play lighting, not additional feature lighting within the bowl or show lighting for fan experience. However, it should be noted that the provision for future additional feature or show lighting should be considered when upgrading lighting or creating new to allow for infrastructure (containment for electrical and communications services). Control systems for dynamic use of sports lighting should be considered where appropriate, including capacity to control additional future luminaires. This could include, dynamic colour changing luminaires, moving head projector luminaires and integration with digital advertising screens.

16.2 NEW STADIUMS

In the early stages of the design of new stadiums, the focus is on establishing the infrastructure to allow suitable technology to be deployed as an overlay. Given the relatively short replacement lifecycle of most technology endpoints or devices, it is the underlying infrastructure that needs to be designed for at least a 20-year road map to support future services, that we may not currently envisage.

Digital Infrastructure underpins all technology systems, and the routes and pathways determined in early design will often be there for the life of the venue. The infrastructure needs to be optimised to meet the initial requirements, and flexible enough to accommodate future expansion, incorporating routes from the site boundary to incoming telecommunications facilities that are designed with the space required for expansion. The trend towards smaller distribution points spread more evenly across the floor plan, and closer to the end devices and users, needs to be balanced against the increasing trend for higher power network switches that provide Power over Ethernet (PoE). This includes energy efficient LED lighting that can be powered and controlled from the Communications Room switches, bringing significant energy savings. The high cost of property per square metre is understood, however getting the infrastructure and the 'right-sized' communications rooms will enable long term efficiencies in the operation of the facilities.

Floodlights at Leigh Sports Village.

MORGAN HARLOW - THE FA

16.2.1 Advertising and media partnerships

Revenue from media advertising is significant, and venue design should provide opportunities to optimise this. This need not mean upfront capital expenditure in the latest display technology, provided the infrastructure is in place to bring in the right equipment as needed, or in partnership with media agencies.

16.2.2 Giant screens

Giant screens that provide live video, scoreboards, and advertising, can be designed, and installed as part of the initial capital project, giving the club or venue operator the opportunity to sell and retain a larger proportion of the advertising revenue. An alternative approach is to outsource the physical hardware and installation to a supplier and a revenue sharing agreement can be agreed.

Even if not initially installed, plan for it from the project's start. Similarly, with Perimeter Ribbon displays, provided the infrastructure is in place, temporary overlays can be installed to suit individual event requirements.

The key elements in early-stage design for Large Format Screens and Scoreboards (giant screens) include:

A giant screen showing the score, match time and attendance. St Mary's Stadium.

HARRIET LANDER - THE FA

STRUCTURAL SUPPORT

This is to be included in the structural engineering design, particularly where screens are to be installed within the roof structure. Floor-mounted screens often require foundations and ducting.

SERVICE STRATEGY

Front servicing from ground level requires mobile elevated work platforms and increases the complexity and safety hazards from working at height. Front serviced LED screens are typically only recommended for low level indoor applications such as in the press conference room, digital signage, or other applications where no rear access is available.

Rear Service Screens typically have a multi-level gantry to the rear of the screen that allows the modules to be accessed individually. This is the recommended service strategy for screens at height as the gantry can be enclosed and limits the requirement for working at height, rope access or mobile elevated work platforms.

SIGHTLINES AND VIEWING ANGLES

A clear unobstructed view from as many seats as possible is required, and the view from behind the screen may also need to be considered, where screens are suspended from the roof structure. Consider the east stand or its corners. Viewing angles are optimal within 120 degrees, and it is common for screens to be installed on opposite ends of the stadium. Determine screen size based on location and viewing range and coordinate placement to avoid floodlight glare and obstruction of existing or future camera angles.

ASPECT RATIO

Standard High Definition (HD) video has an aspect ratio (horizontal to vertical) of 16:9. Typically stadium bowl screens will use a wider aspect ratio to incorporate scoring or advertising while maintaining a full video frame.

LED Screens may also be used in other areas of the stadium:

- Perimeter LED Ribbon Advertising Boards.
- Façade Signage.
- Press Conference Backdrop.
- Conference Facilities.
- Entrance Atrium Displays.
- Wayfinding and Digital Signage.
- Fan Zones.

Connection between the video processing equipment in the Comms Rooms and the stadium displays is provided as part of the passive IT Infrastructure, with control possible from the Event Control Room.

16.2.3 Event production

Where venues incorporate easy access for production equipment and provide the necessary power and data infrastructure this improves revenue generating opportunities through non-match day events. Good planning also improves the turnaround time between events.

16.2.4 Field of play – events

Vehicle access through a pitch access tunnel via the seating stands is required, particularly for load in of staging where crane access is required for events with large truss roofs with ground supported towers.

For hosting non-match day events i.e. music concerts, implementing a pitch access tunnel via, at least, one of the stands is required. This is crucial where, for example, a crane is required for the loading of stage equipment for events with large truss roofs with ground supported towers.

The ability to get a truck backstage greatly enhances the speed of load-in and load-out and will make the venue attractive to promoters and production companies.

16.2.5 Public address system

All stadiums require a high-quality PA system to broadcast messages to the bowl area, concourses, restrooms, and other public areas. Besides conveying general match-related information, the PA system plays a crucial role in the security strategy during emergencies. The PA system enables the relay of clear and concise instructions to the crowd if evacuation is necessary. Therefore, it should be located near the Venue Operation Centre and be protected against power failures.

16.2.6 Sports Lighting

For new stadiums, the roof configuration should be designed with the lighting requirements in mind to ensure that the luminaire locations are suitable for:

- Horizontal illuminance requirements.
- Vertical illuminance requirements.
- Other criteria such as uniformity and glare.
- Easy access maintenance.

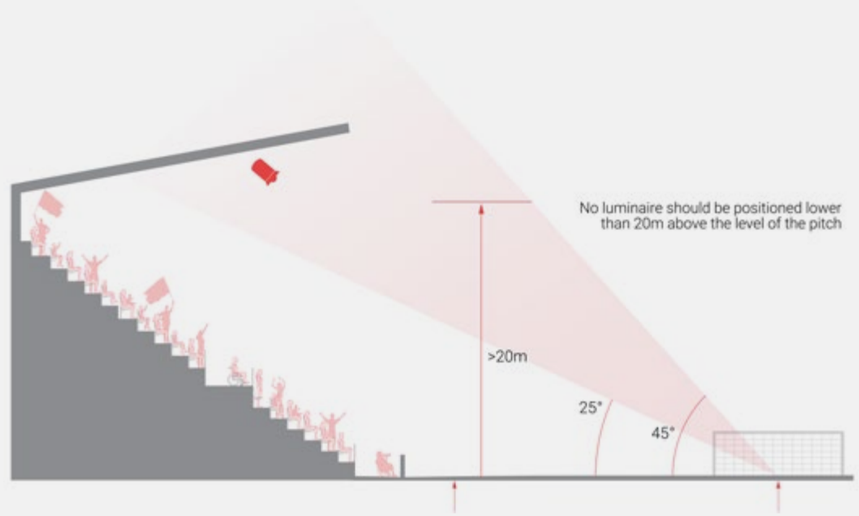
The lighting criteria will drive luminaire placement; however, the general principals below (based on the current UEFA Guidance) can be used as a starting point.

The optimum luminaire height (for control of glare and for meeting horizontal and vertical illuminance requirements) is usually determined by angles from the pitch centre. These angles ensure that both horizontal and vertical illuminance requirements can be met without excessive numbers of luminaires.

Typically, the criteria will be met with a row of luminaires along the leading roof edges on both sides of the pitch. In some cases, the roof height may not be tall enough to accommodate this. In this instance, free standing floodlights should be considered. These should not affect the pitch view for anyone within the stadium bowl. Where floodlighting is built as part of the roof structure but raised above it, it should be designed to be visually integrated with the rest of the roof.

Sports lighting luminaires should at the least include DMX control for feature/show lighting flexibility. In addition, allow for containment and infrastructure (at roof level and pitch level, e.g. services trench) for cabling to future feature/show lighting.

Ideal luminaire position section



16.3 EXISTING STADIUMS

Due to the lifespan of media technology being far shorter than the lifetime of a venue, the elements described above for a new venue are equally applicable to refurbishment of an existing venue. For a stadium refurbishment or expansion, the focus is on establishing the infrastructure to allow suitable technology to be deployed as an overlay.

This section sets out content on the topic of sports lighting (or field of play lighting). This is the lighting used to illuminate the field of play for the players activities, the broadcasters, and the fans.

16.3.1 Sports lighting

The lighting requirements for existing stadiums are the same (with plenty of existing guidance documents, such as from UEFA regarding positioning of luminaires, rows and towers to achieve the lighting requirements), however there will be additional considerations relating to the restrictions of working with existing infrastructure.

These include:

Integration with existing lighting

- Depending on the age and technology, the new lighting could be best installed in addition to the existing, or as a new system to replace all existing lighting.

Roof configuration

- Review the placements, extent and height of the existing roof for suitability of adding new or additional luminaires.
- Is the structure of existing/ new roof sound and of sufficient capacity for additional weight?
- How are luminaires to be installed and maintained? Ideally, the luminaires would be placed under the leading edge on the side of a gantry for maintenance.

Floodlight towers

- Where roof mounted luminaires are not feasible, floodlight towers could be considered, however placement of these will need to be carefully considered to achieve all lighting requirements (particularly vertical illuminance and uniformity requirements). Where stadiums do not have a continuous roof, with luminaires contained within, the spill of light to surrounding areas is also greater.

Provision for feature/show lighting

- As with new stadiums, allow for flexibility for field of play lighting to be incorporated into a potential future installation of feature/show lighting.

Power availability

- For BWSL2 the new power requirement for suitable floodlighting could be in the order of 700-750kW.
- For BWSL, this could in the order of 850-950kW.
- Depending on the amount of existing floodlighting, this increased electrical demand may require upgrades to electrical distribution and incoming electrical supply. In the short term there may be options for using generator(s) power to supply floodlighting.

Planning restrictions

- Review impact of additional lighting (environmental spill light).
- If considering generators, review impact of noise.

Meadow Park; A stadia used by Arsenal Women

APPENDICES

17.1 DESIGN TEAM CHECKLIST

The design team listed below is for guidance only. Each stadium project is unique and may require input from different groups of consultants. Some of the roles can be done by the same person and others might already be included in the client team.

BUSINESS CASE / MANAGEMENT

ASSET MANAGER: Manages the stadium as a long-term asset, focusing on its value appreciation, asset lifecycle, and return on investment.

BUDGET ANALYST: Monitors the project budget, ensuring that spending stays within allocated limits, and adjusts projections as needed.

CAPITAL MARKETS SPECIALIST: Focuses on debt financing and structuring stadium bonds, managing relationships with financial institutions to secure capital.

COMMUNITY LIAISON OR STAKEHOLDER ENGAGEMENT MANAGER: Ensures that the financial aspects align with community goals and handles the financial relationships with local government entities.

COMPLIANCE OFFICER: Ensures that all financial practices comply with local, state, and federal laws, including tax, financing, and regulatory requirements.

COST ESTIMATOR: Calculates the total costs for the project, including construction, materials, and operational costs, and helps manage expenses throughout the project.

ECONOMIC IMPACT ANALYST: Evaluates and reports on the stadium's potential economic impact on the local community, including job creation, tourism, and business growth.

FACILITY MANAGEMENT BUDGET ANALYST: Manages the stadium's long-term operational budget, evaluating the costs of maintenance, utilities, and staffing.

FINANCIAL ANALYST: Develops detailed financial models, forecasts costs and revenues, and performs cost-benefit analysis to determine the project's profitability.

FINANCIAL PERFORMANCE ANALYST: Continuously assesses the stadium's financial performance, identifying ways to improve revenue and profitability through adjustments in pricing, services, and offerings.

GRANT AND FUNDING SPECIALIST: Identifies and applies for public and private grants, subsidies, and other financial incentives to offset project costs.

INSURANCE SPECIALIST: Secures necessary insurance coverage for the construction phase and stadium operations, protecting against potential liabilities and losses.

INVESTMENT ADVISOR: Identifies potential funding sources, advises on financing strategies (bonds, loans, equity), and structures investment deals to attract investors.

INVESTOR RELATIONS MANAGER: Manages communications with investors, preparing reports and updates to maintain investor confidence and transparency.

LEGAL ADVISOR: Provides expertise on contracts, property acquisitions, funding agreements, and sponsorship contracts, protecting the project's legal interests.

MARKETING AND BRANDING SPECIALIST: Creates and executes marketing campaigns to attract fans, sponsors, and event organisers to the stadium, boosting long-term revenue.

NAMING RIGHTS AND PARTNERSHIPS MANAGER: Negotiates naming rights for the stadium, a significant revenue source, and manages long-term partnership agreements with brands.

OPERATIONS FINANCIAL CONTROLLER: Manages ongoing financial operations and monitors spending, keeping track of revenue and costs as the stadium becomes operational.

PREMIUM SEATING AND PREMIUM PRODUCTS SALES MANAGER: Focuses on selling luxury suites, VIP packages, and Premium products/services to maximise revenue from premium offerings.

REVENUE CYCLE MANAGER: Monitors and enhances the revenue cycle, ensuring steady income from various streams and implementing improvements as needed.

REVENUE MODEL STRATEGIST: Designs a business model that outlines revenue streams, including ticket sales, concessions, merchandise, events, and sponsorships.

RISK MANAGER: Identifies and mitigates financial risks associated with the stadium project, including construction delays, budget overruns, and market risks.

SPONSORSHIP MANAGER: Secures and manages corporate sponsorships, including naming rights, to generate revenue and enhance financial stability.

SUPPLY CHAIN AND PROCUREMENT MANAGER: Negotiates contracts with vendors, manages procurement processes, and ensures cost-effective sourcing of materials and services.

TAX ADVISOR: Assesses tax implications, evaluates tax incentives, and advises on structuring the project to optimise tax savings.

TICKET SALES MANAGER: Develops strategies to maximise ticket sales, including season tickets, premium seats, and other special offerings.

VENUE STRATEGIST: Develops the overall strategic plan and vision for a venue, such as a stadium, ensuring alignment with the organisation's goals, meets market demands, and operates as a profitable, engaging, and sustainable destination.

DESIGN

ACCESSIBILITY CONSULTANT: Ensures the stadium design complies with accessibility standards, making spaces usable for people with disabilities. Quite often this role is included in the architect's project scope.

ACOUSTIC CONSULTANT: Designs solutions to control sound within and around the stadium, optimising acoustics for comfort and functionality. Their input is particularly relevant for the bowl atmosphere and public safety address systems as well as ensuring that sound doesn't present a nuisance for surrounding residents. An acoustics assessment may be required as a part of the planning or EIA submission.

ARBORICULTURAL CONSULTANT: Delivers tree condition surveys, providing risk assessment, advice and the corresponding comprehensive arboricultural reports in relation to trees on site.

ARCHITECT / LEAD DESIGNER: Guides the project and design team through the design, planning and construction process. They develop the design for the project, maximising light and space, adding functionality and achieving the best return on investment. They also tend to perform the role of lead designer, managing the rest of the design team to ensure a coordinated proposal. Given the unique challenges they pose, prior experience in stadiums is highly recommended.

AUDIO VISUALS (AV) CONSULTANT: Designs and advises on the stadium's audio and visual systems, including sound, video, and projection equipment.

BRANDING CONSULTANT: Ensures the stadium's visual and experiential aspects align with the club's identity, creating a cohesive brand experience across architecture, signage, and fan experience.

BREEAM ASSESSOR: Evaluates and certifies the environmental performance and sustainability of a building or development project against BREEAM standards.

BUILDING REGULATIONS PRINCIPAL DESIGNER (BRPD): Manages and monitors all design work during the design stage of the project to ensure that the design is compliant with the building regulations.

CATERING CONSULTANT: Provides expertise on kitchen design, food and drinks service operations, and catering logistics. Usually designs all stadium's catering related BoH spaces.

CDM PRINCIPAL DESIGNER (CDMPD): Ensures compliance with the CDM regulations (Construction, Design and Management Regulations) and is responsible for planning, managing and monitoring the pre-construction phase and coordinating matters relating to health and safety.

CIVIL ENGINEER: Designs and oversees the construction of infrastructure such as roads, pavements, bridges, and utilities, ensuring their structural integrity and functionality.

CLIENT: The client is the individual, club or organisation that commissions the stadium project and provides the vision, requirements, and funding. The client should participate in the relevant design team meetings to input in real time and accelerate the decision-making process.

COMMUNICATION & CONSULTATION STRATEGY CONSULTANT: Develops strategies for effective communication to the fans, local residents and other stakeholders throughout the project.

CONTRACTOR: They are responsible for executing the stadium's construction work according to the design plans, within budget, and on schedule. In some forms of contract, they are also responsible for the design of the project. There is almost always a Principal Contractor who then appoints several Subcontractors to fulfil different specialist parts of the construction. Each contractor must also ensure that the work they perform meets the relevant regulatory requirements (under CDM and the Building Regulations).

EARTHWORKS & DRAINAGE CONSULTANT: This involves managing soil quality, earthworks, and drainage systems to prepare the site for construction and ensure its long-term stability.

EIA CONSULTANT: Working with the planning consultant, coordinates the various assessments required for an Environmental Impact Assessment if one is required for the stadium.

FIRE SAFETY ENGINEER: Plans and evaluates fire safety measures, including prevention, detection, and egress strategies. Given the unique challenges they pose, prior experience in stadiums is recommended.

GENDER CHAMPION: This role will involve researching, informing, and monitoring the implementation of gender-informed design principles in both the building and the masterplan. The Gender Champion could be a member of the architect's design team if they have sufficient experience.

HERITAGE CONSULTANT: Provides guidance on construction projects in historic buildings or settings to ensure the conservation of sites with significant cultural or historical importance.

HIGHWAYS CONSULTANT: Designs and plans road infrastructure, ensuring safe and efficient access to and from the site.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) CONSULTANT: Plans and implements technology infrastructure, including networks, telecommunications, and data systems.

INTERIOR DESIGNER: Enhances the functionality and aesthetics of indoor spaces by selecting colour schemes, furniture, lighting, and materials in line with the branding guidelines.

LANDSCAPE AND ECOLOGY CONSULTANT: Designs the outdoor spaces, incorporating ecological considerations to enhance environmental sustainability and aesthetic appeal.

LIGHTING CONSULTANT: Plans and designs lighting systems to enhance functionality, aesthetics, and energy efficiency within the project.

MEP ENGINEER: Designs the Mechanical, Electrical, and Public Health systems, ensuring they are efficient, safe, and integrated with the stadium's design.

PEDESTRIAN FLOW CONSULTANT: Analyses and designs movement patterns to ensure efficient and safe pedestrian movement within a space, including vertical circulation, half-time modelling and post-match egress.

PLANNING CONSULTANT: Helps clients and project teams to navigate the complex planning system, ensuring compliance with regulations and maximising the chances of approval for projects such as development, redevelopment, or change of use.

PROJECT MANAGER: The project manager oversees the project's progress, coordinates team efforts, and ensures that the project meets its goals on time and within budget.

PITCH DESIGNER: Responsible for creating and specifying the design, layout, and technical aspects of sports playing surfaces, ensuring they meet regulatory standards and performance requirements.

PUBLIC RIGHT OF WAY CONSULTANT: Manages public access issues if required, ensuring that the project does not infringe on established public rights of way.

QUANTITY / COST SURVEYOR: Estimates and manages construction costs, prepares tender documents, and ensures financial control throughout the project. It is highly recommended that the QS is present in all design meetings allowing them to advise and develop a deep knowledge of the project decisions - this greatly accelerates project progress.

SECURITY AND COUNTER TERRORISM CONSULTANT: Advises on security vulnerabilities, recommending protective measures, and ensures compliance with safety standards to safeguard personnel, infrastructure, and assets against potential attacks or breaches.

STRUCTURAL ENGINEER: Ensures that the building's structure can withstand loads and forces including people, equipment, wind and gravity. The structural engineer will design the primary and secondary structural elements. Given the unique challenges they pose, prior experience in stadiums is recommended.

SUSTAINABILITY CONSULTANT: Takes a holistic view of the project with respect to the environmental performance of the stadium. This will include whole life carbon, circular economy, biodiversity net gain, health and well-being and the ability of the venue to adapt to a future climate. The sustainability consultant will coordinate assessments to meet benchmarking ratings such as BREEAM as required by the client or to meet regulatory requirements.

TOWN PLANNING CONSULTANT: Advises on regulatory compliance, planning permissions, and local zoning laws to ensure the project aligns with municipal regulations.

TRANSPORT CONSULTANT: Responsibility for contributing advice and information on traffic engineering aspects of the design.

WASTE MANAGEMENT CONSULTANT: Develops strategies for effective waste collection, disposal, and recycling.

WIND CONSULTANT: Undertakes assessments of the wind environment in and around the stadium with respect to wind impacts on pedestrians as well as the wind loads onto structural and façade systems.

VENUE OPERATOR: A person or organisation that operates, manages, or controls a sports venue. This role is usually within the client's team but can also be outsourced. Their input and experience are vital to the success of the future building operations.

VERTICAL TRANSPORTATION CONSULTANT: Optimises vertical transportation systems in the project, such as lifts and escalators, and ensures they are safe, efficient and compliant with regulations.

WAYFINDING AND SIGNAGE CONSULTANT: Designs systems to help people navigate spaces easily and efficiently, ensuring that information is clear and accessible.

17.2 GLOSSARY

365 STRATEGY: Utilising stadiums and sports venues throughout the entire year, not just on match days.

360 BOWL: A stadium bowl where the terrace is continuous all the way around the pitch.

ALL-GENDER: Facilities which are not separated by gender or sex.

AMENITY SEATING: Seats designed for disabled fans without specific seating needs, offering easier access and more comfort.

BIM: "Building Information Management" is a way of working together, a process for creating and managing all the information on a construction project. In large scale projects, such as stadiums, this includes large complex 3D models which include systems data and promotes detailed coordination, clash detection, cost control and quality of construction information.

BIODIVERSITY NET GAIN (BNG): A statutory planning requirement ensuring developments deliver at least a 10% increase in biodiversity value.

BOH: Back Of House. It refers to the non-public areas of a stadium, such as plant areas, kitchens, storage rooms, and staff areas.

BREEAM: The Building Research Establishment Environmental Assessment Method is a sustainability assessment system for buildings.

BRISE SOLEIL: Is a type of solar shading system that uses a series of horizontal or vertical blades to control the amount of sunlight and solar heat that enters a building.

BWSL2: Barclays Women's Super League 2

BWSL: Barclays Women's Super League.

C-VALUE: A sightline is a hypothetical line measured from the nearest touchline to the eye position of a fan at any seat, over the top of the heads of the spectators immediately in front. The distance between that line and the spectator's eyes immediately in front is called "C-value".

CIRCULAR ECONOMY: Refers to a system where components are kept in use at their maximum value for as long as possible to minimise waste.

CLEARWAY (SEATWAY): Row depth measured with tip-up seats in their tipped-up position. If seats have armrests, it is measured from the foremost projection of the armrest.

CLUB: Football Club.

COLOSTOMY SHELF: A shelf in toilet facilities to assist individuals with colostomy bags.

CONCESSIONS: A designated area where food, beverages, and/or merchandise are sold to fans.

DOUBLE-HEADER: An event where multiple matches, for example a women's and men's football game, are scheduled in succession at the same venue.

EPOS: Electronic Point Of Sale.

EV: Vehicle powered by electricity.

EURO BIN: Also known as Tote Bins, refer to a metal receptacle constructed in accordance with BS EN 840- 2:2004 and used widely in the catering industry.

FAN ZONE: Designated areas offering food, entertainment, and merchandise outside or within the stadium perimeter.

FOH: Front Of House. It refers to the public-facing areas of a stadiums, such as concourses, restaurants, bars, lounges, where fans interact with staff.

FSA: Football Supporters' Association.

F&B: Food and Beverage. It refers to the operations dealing with food and drink.

GLT: Goal-line technology is a technical means of instantly determining whether the whole of the ball has crossed the goal line, assisting match officials in making informed and fair decisions.

GREEN BELT: The Green Belt is a UK government planning policy intended to prevent urban sprawl by keeping land permanently open around urban areas and limiting the types of development that can achieve planning approval. Designated green belt zones are formalised in local plans.

HIGH BALL: Is a ball that is kicked high into the air, often used to bypass the midfield or defence to a hypothetical dimension of 12 metres above the centre of the pitch and at least 5 metres above the far goal or touchline, as defined by FIFA.

MARQUEE GAMES: Strategically chosen matches that take place in stadiums with a larger capacity than normal and are promoted with higher marketing efforts.

LEGROOM: The part of the seating row depth between the foremost projection of one seat and the back of the seat in front of it.

LGBTQ+: An acronym for lesbian, gay, bisexual, transgender and queer people that also encompasses all sexualities and gender identities which are not heterosexual or cisgender, such as questioning, intersex, asexual and more.

LRV: "Light Reflectance Value" is a measure of visible and usable light that is reflected from a surface when illuminated by a light source. Please refer to "Approved Document M Volume 2: Buildings other than Dwellings" for full LRV contrast requirements.

MEP: Mechanical, Electrical and Plumbing services.

MIXED ZONE: A controlled designated area in the stadium where several players interact simultaneously with the media after a game or event. The specific layout and design of a mixed zone can vary depending on the size and complexity of the stadium.

OB COMPOUND: Outside Broadcast compound.

ONS: Office for National Statistics.

OVERLAY: Temporary structures and designs added to a stadium for specific events or functions, such as large tournaments or concerts.

PA: Public Address electronic system, comprising microphones, amplifiers, loudspeakers, and related equipment.

PITCH PROFILE: The vertical layers of soil, gravel, sub-base, grass etc. that make up the construction of the pitch.

PTV: Pendulum test value describes the method of testing the slip resistance of a tile using a pendulum device.

REFUGE POINT: A safe space for wheelchair users to wait during an emergency evacuation.

RESPONSIBILITIES MATRIX: This document outlines the responsibilities for each design element at each stage of the process, specifying the required level of detail. It may also include the contractual relationships between the project participants.

SGSA: The Sports Grounds Safety Authority.

SOCIAL MODEL OF DISABILITY: An understanding developed by disabled people that describes people as being disabled by barriers in society, not by their impairment or difference.

SAFE STANDING: A specifically configured area of terrace seating, set out by the SGSA, able to facilitate standing in a safe way.

TOILET SWING: The ability to adjust toilet ratios for male and female fans based on event demographics.

TRADITIONAL STADIUM: Existing stadiums, mainly used by male football teams.

UNIVERSAL DESIGN: Design principles ensuring accessibility and usability for all individuals, regardless of ability or disability.

VAR: Video Assistant Referee technology.

VOC: Venue Operations Centre.

WBGT: WetBulb Globe Temperature is a measure of the heat stress in direct sunlight, which takes into account: temperature, humidity, wind speed, sun angle and cloud cover (solar radiation).

WSL FOOTBALL: Women's Super League Football.

ZONE EX: Is the area immediately outside the stadium perimeter. This zone plays a crucial role in the overall stadium experience, as it connects the stadium to the surrounding community. It is also known as "the last mile".

17.3 ADDITIONAL RESOURCES

17.3.1 UK government legislation and reports

APPROVED CODE OF PRACTICE L8: Legionnaires' disease, the control of legionella bacteria in water systems (ACOP L8).

APPROVED DOCUMENT F: Ventilation (ADF).

APPROVED DOCUMENT G: Sanitation, hot water safety and water efficiency (ADG).

APPROVED DOCUMENT L2: Conservation of Fuel and Power, Volume 2 (Buildings Other than Dwellings) (ADL2).

APPROVED DOCUMENT M VOLUME 2: Buildings other than Dwellings.

BUILDING FOR EQUALITY: Disability and the Built Environment.

Equality Act 2010.

17.3.2 Relevant British and international standards

BS 6465-1:2006+A1:2009 Sanitary installations - Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances.

BS 5906:2005 Waste Management in Buildings: A Code of Practice for methods of storage, collection, segregation for recycling and recovery of waste from residential and non-residential buildings.

BSI BS83000 Part 1 Design of an accessible and inclusive built environment – External environment. Code of practice.

BSI BS8300-2 Design of an accessible and inclusive built environment Part 2: Buildings – Code of practice.

BS EN 13200-1:2012 Spectator facilities Part 1: General characteristics for spectator viewing area.

ISO 14001 - Environmental management systems.

ISO 45001 - Occupational Health and Safety Management Systems for Construction.

PAS 6463:2022 Design for the mind – Neurodiversity and the built environment – Guide.

17.3.3 Sports Ground Safety Authority

Sport Grounds Safety Authority: Guide to Safety at Sports Grounds (Green Guide).

Sport Grounds Safety Authority: Alternate uses of Sports Grounds.

17.3.4 Sport England

Sport England's Accessible and Inclusive Sports Facilities.

17.3.5 English Football League

EFL Regulations.

17.3.6 UEFA

UEFA Stadium Infrastructure Regulations.

UEFA Women's Champions League Regulatons.

UEFA Accessibility Guidelines.

UEFA Guide to Quality Stadiums.

UEFA Stadium Lighting Guide.

17.3.7 FIFA

FIFA Football Stadiums Guidelines.

17.3.8 Football Supporters Association

FSA Women's game Supporters Survey 2024.

17.3.9 Royal Institute of British Architects

RIBA Plan of Work.

17.3.10 Premier League

Premier League Handbook.

17.3.11 Women's Super League Football

The League handbook inclusive of all league regulations.

17.3.12 Football Association

FA Handbook.

17.3.13 International Football Association Board

IFAB Laws of the Game.

17.3.14 Football Foundation/Level Playing Field

Accessible Stadia: Sports Grounds and Stadia Guide Accessible venues.

17.3.15 Further Literature

Amazon (2024) Amazon's Just Walk Out technology rolls out to more stadiums and universities—see the full list of new stores

American Red Cross (2011) Non-Traditional Shelter Case Studies

Bovens, L. (2020) The gender-neutral bathroom: a new frame and some nudges.

Climate Pledge Arena, Sustainability

Criado Perez, C. (2019) Invisible Women: Exposing Data Bias in a World Designed for Men

FGR Media (2024) FGR and Nijhuis extend partnership

FIFPRO World Players' Union (2021) Extreme Weather in Football

Flaig, J. (2018) Only a quarter of girls aged 16 to 19 would ever consider an engineering career

Football Supporter's Association (2024) Women's game Supporters Survey 2024

Francis-Devine, B. & Hutton, G. (2024) Women and the UK economy. The House of Commons Library

Frank, S. & Steets, S. (2010) Stadium Worlds - Football, Space and the Built Environment

Fulham Lillies and the Fulham Supporters' Trust (2023) You're Not Welcome Anymore Why It's Important To Help Parents Continue To Access Football With Young Children

Ghent University (2017) No more queueing at the ladies' room

House of Commons Women and Equalities Committee (2022) Menopause and the workplace

IAVM Life Safety Council (2010) Mega-Shelter Planning Guide: A Resource and Best Practices Reference Guide

Institute of mechanical Engineers (2024) Engineering better sports venues: Designing for athletes, spectators, and the environment

James-Taylor, A. & Atkins, J. & Gribbin, T. (2024) Women's Football And Climate Change - The Players' Perspective – Report

London Legacy Development Corporation (2024) Creating places that work for Women and Girls - Handbook for Local Authorities, Developers and Designers

Moore, R. (2021) Soy of the Rovers: the vegan football Club kickstarting a green revolution Soy of the Rovers: the vegan football Club kickstarting a green revolution | Forest Green Rovers | The Guardian

Newcomb, T. (2022) Seahawks Set For Largest Just Walk Out Tech Expansion In Sports

Peddy, C. (2024) Wimbledon pump 100,000 litres of water from ground
The Society of Light and Lighting (2017) SLL Lighting Guide

Pfizer. Cold Wars: Why Women Feel The Chill More

Taylor, K. & Leslie-Walker, A. (2024) 'We shouldn't have to ask': exploring the realities of minority ethnic women football spectators

Trivandi Academy (2024) Game Changers: How Women-Specific Football Venues Can Elevate Fan Experience in the UK

UEFA Women's Football (2022) The Business Case For Women's Football

UK BIM Framework

UN Women (2021) Prevalence and reporting of sexual harassment in UK public spaces. APPG

Weir, E. Allison, C. & Baron-Cohen, S. (2021) The sexual health, orientation, and activity of autistic adolescents and adults. Autism Research

Wood. C (2023) Two Circles Fan Insight Series

World Health Organisation (2024) Menopause

All links above were accessed between June and November 2024.

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18.1.1 Key contributors

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18.1.2 Consultations

Chelsea FC
European Stadium and Safety Management Association
FIFA
Football Foundation
Football Supporters Association
Girls on the Ball
Glasgow City FC
Grounds Management Association
Homes Miller
KSS Group
League Managers Association
Leigh Sports Village
Level Playing Field
Manchester City W.F.C.
OBI Sports Agronomists
PGMOL
Premier League
Professional Footballers' Association
Professional Game Match Officials Limited
Sport England
Sports Grounds Safety Authority
The FA
St Helens Stadium
United Kingdom Football Policing Unit
Well HQ
Women in Football
Women's Sport Trust

18.1.3 Photo Credits

The Women's Super League Football

WSL
FOOTBALL