7.1 Stadium Design Concept

7.1.1 DESIGN CONCEPT

Stadia design has evolved rapidly in recent years, recognising the significance of these public buildings and their ability to define and enhance urban areas. The Club has revisited its stadium proposals to create what will be one of the finest stadia anywhere in the world for spectators, visitors and the wider community, creating a major new landmark for Tottenham and London.

• A dramatic design evolution – an asymmetrical design focussed towards the Southern ‘home end’ as the heartbeat of the new stadium.
• A tighter atmospheric stadium bowl with increased capacity - new capacity of net 61,000 with the largest single tier in the UK, the home southern stand, now increased to 17,000.
• A fully retractable pitch – to cater for NFL, concerts and a range of other events whilst protecting the integrity of the playing surface.
• Dedicated facilities for the NFL – to cater for their requirements without in any way impacting upon the facilities tailor designed for football.
• A sculpted appearance – wrapping and folding its way around the stadium before reaching the home end, where a glass façade arches upwards to reveal the magnificent single tier home stand.

7.1.2 THE FAN EXPERIENCE

Fan experience and stadium atmosphere has been the heart of the brief of the stadium.

• Net 61,000 seating capacity – the largest Club ground in London.
• A 17,000 seat single tier – the home southern stand - the largest in the UK.
• Exceptional spectator experience – with uninterrupted views for everyone, comfortable modern seating, generous leg-room and spectators closer to the pitch than at any other comparable ground in the UK.
• An inclusive experience for all – with superb facilities for supporters with disabilities and their companions and a range of viewing positions in every part of the ground. It will be the only stadium to allow for flexibility of seating which means that disabled fans can be seated with their families for certain matches.
• A major new gathering space for home fans – within a five-storey high space at the home end, to provide a new focus for home supporters before and after the match.
• A new five-storey atrium space within the Home End of the stadium – that will gather and focus the home support before and after the match.
• A new open food court hosted within the atrium at the Home End – as part of a significantly enhanced experience for every spectator on concourses and throughout, with a much wider choice of catering and retail options hosted in generous and welcoming concourse spaces.
• A new ‘Sky Walk’ – a visitor attraction for fans and the public alike, allowing people to climb the exterior of the building up to 40 metres high.
• A new covered service area – reducing noise and disruption for local residents.
7.2 Access and Egress

7.2.1 EXTERNAL CONCOURSE AREAS AND PODIUMS

General spectators will enter through allocated turnstiles at Level 01, ensuring that the raised external concourses to the north and south act as the main congregating points for fans activating these spaces on match day.

Hospitality guests arrive at the building through the principal west and east stands at street level.

Wheelchair users will have the option to use dedicated entrances at street level into the lift lobbies, or via the external concourse lifts and arrive at lower concourse level with other spectators.

Staff and media will access from street level to dedicated entrances in the north-west and south-east.

The southern podium will act as a large new public space which will have benefits on match day for the stadium for providing space for events and activities pre and post-match. On non-match days it would provide a place for the wider community to enjoy and use.

The north and south external concourses are accessed by the public via lifts and stairs, with each being served by a vehicular ramp to allow access for emergency and maintenance vehicles.

Spectator access and egress studies have been developed with Movement Strategies to simulate crowd flows and are based on net 61,000 capacity to ensure that a final evacuation strategy can be achieved.
7.2.2 MATCH DAY STAFF ACCESS AND ACCREDITATION

Catering and cleaning staff will enter the building from the northwest at Level 00. An accreditation area will be provided for match-day staff, with reception and office. This is located to be close to the staff facilities, uniforms and changing facilities.

A dedicated steward staff entry is located in the southeast at Level 00, with its own accreditation area, radio store, locker storage and jacket storage. This is located with proximity to the stadium maintenance suite, stadium control and main briefing room.

7.2.3 GENERAL ADMISSION ACCESS AND CONTROL

General admission to all concourses will be via full height automatic turnstiles located at level 01 from the north and south podiums. From the north access is to level 01, and allows the home fans free movement either to level 01 concourse or via the stairs to level 02, 04 or 05 concourses. To the south the entry is either directly to level 01 concourse or to an intermediate level above the food court to take the home fans up stairs into the south stand.

A total of 92 swipe card (or proximity readers) operated turnstiles giving a provision of 1 per 575 spectators well within the recommendation of the Green Guide loading rate of 660 spectators per hour. The turnstiles will be provided with sliding doors to secure the perimeter on non-match days.

Dedicated turnstiles will be provided in the north-east corner for away fans. An over provision of turnstiles in this area will support the varying capacity options described in section 7.5.

Dedicated swipe card (or proximity readers) operated entrances for wheelchair users and other spectators with disabilities will be provided adjacent to turnstile banks, along side the dedicated entrances from Level 00 and Level 01.

External stairs will comply with the recommendations of the Green Guide 5th Edition as to stair widths, crowd loading to barriers and protective guarding, and 895395 Part 1:2010 in respect of riser heights tread widths and maximum risers in a flight and will be reviewed by Haringey Building Control.
7.2.4 VERTICAL TRANSPORTATION

North Podium
2no 33 person external glazed lift car with partially glazed enclosure serving from L00 to podium.

South Podium
4no 33 person external glazed lift car with partially glazed enclosure serving from L00 to podium located in the south-west near the hotel, the south between the residential blocks and the southeast near the stewards entry.

VIP lifts West stand
2no 33 person dedicated lifts serving the Directors' suite and Platinum Club from Level B1 to Level 04.
3no 26 person lifts serving SkyLounge and Level 04 Suites from Level B1 to Level 09.
2no 26 person lifts serving L02 suites and Club and Level 03 Club from Level 00 to Level 03.
2 no escalators linking Level 00 to level 02.
2 no escalators linking Level 02 to level 03.
1 no escalator linking Level 03 to Level 04.

VIP lifts East stand
2no 26 person lifts serving SkyLounge and Level 04 Suites from Level B1 to Level 09.
2no 26 person lifts serving L02 suites and Club and Level 03 Club from Level 00 to Level 03.
1 no escalator linking Level 00 to Level 01.
1 no escalator linking Level 01 to Level 02.
1 no escalator linking Level 02 to Level 03.

VIP lifts North stand (Future fit out)
2no 21 person lifts Level B1 to Level 03.

GA accessible lifts / evacuation
4no 33 person lifts serving the south stand GA from Level 00 to Level 02.

GA accessible lifts / evacuation / goods
6no 33 person lifts serving all spectator levels Level B1 to Level 05 located in the main cores.

Dedicated goods lifts
2no 33 person goods lifts serving from Level B1 to Level 05 located in the northwest core and northeast core.
1no vehicular sized lift serving Level B1 to Level 03.

NOTE
33 person lift 2,500kg rated lift
26 person lift 2,000kg rated lift
21 person lift 1,800kg rated lift

All lifts in cores will be to fire fighting standards, and used for emergency evacuation. The 4 south stand lifts will also be used for evacuation purposes.
7.2.5 PERIMETER CORES

Six perimeter circulation cores will be spaced evenly around east, north and west perimeter and will carry out a number of key functions including the following:

- Provide vertical stair access and egress for general admission spectators
- Provide lift access for wheelchair users and the mobility impaired
- Provide back of house maintenance and goods lift access to all floor levels
- Provide partial support for the compression ring within the roof structure

Each core will comprise two general spectator scissor stairs either side of a central maintenance / escape stair and passenger / goods lift with vertical services risers. The overall arrangement will deal with the designed escape capacities in a compact space efficient manner.

South Stand Vertical Circulation

Vertical circulation to the South Stand will be via 4 passenger lifts and a series of open staircases to the concourses.
7.2.6 STADIUM EGRESS AND EMERGENCY EVACUATION

The egress and emergency evacuation strategy for the stadium has been designed to the recommendations of the ‘Guide to Safety at Sports Grounds’ (Green Guide) 5th Edition and BS5999:2008.

All calculations and strategies have been developed in conjunction with Buro Happold (FEDRA) and Movement Strategies.

The general admission spectators will use the same gangways, vomitories, stairs and lifts for normal egress as for emergency evacuation. Hospitality areas will use the same gangways and vomitories, however normal egress will follow a reciprocal path to the spectator on arrival but emergency egress will see the hospitality guests use the same stairs and lifts for egress as the general admission spectators, based on a phased emergency evacuation system.

Egress routes will be designed to ensure the Green Guide recommendation to maintain a smooth uninterrupted flow of spectators from the bowl with no narrowing of routes that might lead to bottle necking.

Egress calculations have been prepared on the basis of 61,461 spectators with an allowance for match day staffing and stewarding.

8 of the core lifts and all of the South Stand lifts will be used to evacuate spectators in wheelchairs and mobility impaired spectators.
The maximum travel distances within the stadium seating tiers, from a seat to a point of safety (e.g. a vomitory) is 30m where possible.

In the south stand there will be approximately 500 seats beyond the 30m distance.

Emergency evacuation – General Spectator seating
Evacuation of General Admission spectators seating to a point of relative safety and into a free flowing egress system is 8 minutes maximum.

Emergency evacuation – Hospitality club seating
Evacuation through hospitality areas to point of relative safety e.g., perimeter core stairs or protected corridors is 6 minutes maximum.

Emergency evacuation – Hospitality suite seating
Evacuation through hospitality areas to point of relative safety e.g., perimeter core stairs or protected corridors is 2.5 minutes maximum.

Spectator flow rates are as recommended by the Green Guide 5th Edition;
- 66 people/metre/minute stepped surfaces
- 82 people/metre/minute level surfaces

General Admission spectator concourses will be considered places of relative safety. High risk accommodation serving the concourses will be mitigated by either enclosing the space with fire rated construction or using sprinklers where possible to create more open concourse spaces.

Wheelchair and amenity seating user egress and emergency evacuation will be managed. The General Admission spectators will use the same routes and lifts as used for access. Those will be located around the concourses. The fire sterile concourse will be deemed a refuge. Those wheelchair and amenity spectators on the hospitality levels will share the same lifts as the General Admission users in the cores, and adequate refuges will be provided adjacent to the lift cores.
Level 00 Emergency Evacuation

As with Stadium Egress, the Emergency Evacuation system works on the basis that more spectators are moved towards the west of the stadium onto the High Road which has a greater egress and emergency evacuation capacity than Worcester Avenue to the east of the stadium.

Spectators exiting from the cores at Level 00 (street level) do so on a phased evacuation system in order that hospitality as well as General Admission spectators are within a relative place of safety (the main stair cores) as soon as possible in order that the 8 minute, 6 minute and 2.5 minute emergency egress times into a place of relative safety are met.

This equates to approximately 31% of the spectators within the stadium, the remaining 69% exit to street level via stairs and ramps from the two podiums at level 01 to the north and south of the stadium.
Level 01 Emergency Evacuation

To the south of the stadium the south stand and the southern portions of the lower east and west General Admission concourses exit directly onto the southern podium at Level 01. This equates to over 21,000 spectators who traverse the podium to stairs leading to street level (Level 00). The stair capacity based on flow rates within the Green Guide Edition 5 has the ability to cater for over 26,000 spectators helping to prevent build up at the head of stairs and to allow for a greater safety factor. To the north the north stand and northern portions of the lower east and west General Admission concourses exit directly onto the northern podium at level 01. This equates to over 19,000 spectators who traverse the podium to stairs and a ramp leading to street level (Level 00). The overall stair and ramp capacity is in excess of 22,000 allowing for a greater factor of safety and to help dissipate build ups at the head of stairs.
7.2.7 CAR ACCESS AND PARKING

Match day and non-match day parking is provided at Level 00 and at Level B1 and is accessed via entrances from the southeast from Worcester Avenue, and from the southwest from the High Road.

**Level 00**
- 248 standard spaces 2.5m x 5m spaces
- 29 accessible spaces 3.6m x 6.2m spaces
- 30 secured player parking spaces 2.4m x 2.5m

**Level B1**
- 448 standard spaces 2.5m x 5m spaces
- 61 accessible spaces 3.6m x 6.2m spaces

In addition to the accessible spaces a further 60 spaces will be allocated to blue badge holders.

A minimum of 3.3m clear headroom will be provided to the Level 00 internal service road, access points from the street and parking for police and ambulances. 2.3m clear headroom will be provided to access level B1 and parking.

7.2.8 SERVICE YARD VEHICLE ACCESS

Service vehicles will access the stadium service yard via the food store delivery area off Northumberland Park. The internal yard is designed to accommodate turning of articulated vehicles and the movement of waste removal vehicles from the compactors, and accommodate the change in levels required.

The service yard provides access to the stadium to the main internal service road, pitch access tunnel, loading dock and compactors. A minimum of 4.5m clear will be provided to the main entry point and through to the pitch access tunnel. The pitch access tunnel will incorporate moving section of terracing to allow large articulated vehicles to access the pitch, but will maintain 3.3m clear to facilitate pitch servicing and vehicles and emergency vehicles on a more regular basis.

Secondary loading areas will be provided for the Tottenham Experience and the hotel in the southwest corner adjacent to the parking.
7.3 OVERVIEW

The New Stadium Development, Northumberland Park has been designed to complement the needs of the existing community and provides opportunities for a new community, yet to be formed, to emerge. The development responds to London Plan Policy 7.1, delivering ‘a good quality environment in an active and supportive local community based on the principles of Lifetime Neighbourhoods’.

With good access to public transportation, the combination of the scheme’s layout, mix of tenures and access to local services including a health centre should enable people to live healthy, active lives and maximise opportunities for diversity, inclusion and cohesion.

The development will be an inclusive and accessible environment to meet the needs of all potential users. The proposed scheme will frame a new public square with the Stadium, the Tottenham Experience, an Extreme Sports centre, a hotel and serviced apartments, the residential units of Tottenham Towers and the ‘north-east’ building which will house a NHS centre.

The design takes account of the variety of people’s capabilities. An inclusive approach has been taken to ensure that the scheme is suitable for all users with a view to meeting London Plan Policy 7.2, that all new development in London achieves the highest standards of accessible and inclusive design.

The scheme is inclusive and incorporates sustainable design and construction principles, responding to LB Haringey’s (LH) Development Manager Policy DM1 ‘Delivering High Quality Design’ and supports Policy DM2 ‘Design Standards and Quality of Life’ securing a healthy and inclusive environment that incorporates the Commission for Architecture and the Built Environment’s (CABE) principles of inclusive design.

The scheme and its immediate surroundings will incorporate:

- Suitable means of access for all people from the entrance points
- Sufficiently wide routes allowing people to pass each other with a minimum of level changes
- Principal entrances and lobbies that are identifiable and accessible
- Independent horizontal and vertical movement that is convenient and ensures that people can make use of all relevant facilities

The new Stadium has been designed to be an inclusive experience for all – with support facilities for disabled supporters, and their companions and a range of viewing positions in every part of the ground. It will be the only stadium in the UK to allow for flexibility of seating which means that disabled fans can be seated with their families for certain matches.

From the perimeter there will be step-free routes to all Stadium facilities and seating, with lifts suitably sized for wheelchair and mobility scooter users. The provision of 259 wheelchair accessible viewing positions will meet or exceed ‘Accessible Stadia’; at least 1% of seating will be allocated as easy-access or amenities seating. Match-day audio description will provide informal commentary for blind or partially sighted fans, with some seating for users of the audio description service on the same side of the Arena to aid comprehension. Sanitary accommodation will cater for everyone and include facilities for ambulant disabled people, unisex wheelchair accessible WCs that will be provided on a ratio of at least 1:15. In addition, there will be a ‘Changing Places’ facility and wheelchair accessible baby-changing facilities.

The creation of a new public realm and community spaces will create easy to navigate routes and respond to the needs to ensure safety, security and accessibility for disabled people and will incorporate the objectives of LH Policy SP11 in that the public realm will be safe and easy to use.

The detailed design of the Tottenham Experience is to be developed. It will be comprised of retail, box offices, museum, cinema and Skywalk facilities as well as ancillary back of house spaces. The high-level inclusive design parameters that follow will be applied to that development. Improving the level of accessibility within the adjacent Grade 2 listed Warrington House will developed adopting the approaches set out in Historic England’s Easy ‘Access to Historic Buildings’.

The hotel and the serviced apartments have been designed to support London Plan Policies 4.5 and 7.2 ensuring that the premises will provide inclusive access for all sectors of the community including disabled and older people; at least 10% of the rooms will be accessible. An accessibility management plan will be established to ensure the facilities remain inclusive and accessible.

Tottenham Towers will have residential units that will all meet Lifetime Homes Standards; 10% of the units will meet, or be capable of being adapted to the GLA’s Housing SPG Annex 2 and Wheelchair Housing Design Guide. In light of the transition to the adoption of a national housing standard for Part M Category 2 M4(2) accessible and adaptable dwellings and Part M Category 3 M4(3) wheelchair user dwellings, there is nothing in the design of the proposed units that should preclude the adoption of those standards.

The NorthEast Building will house a NHS clinic; this shell and core building will incorporate features laid out in the inclusive design parameters below, such as step-free entrance, a lift adjacent to stairs and suitable sanitary accommodation conforming to the Approved Document M and BS 8300.

7.3.2 LEGISLATION, STATUTE AND GUIDANCE

Our approach is to design beyond the minimum standards set out in the building regulations, taking into account good practice guidance. Inclusive design issues have been reviewed in accordance with the objectives of the following:

- Building Regulations 2000 (England and Wales) and associated Approved Documents
- Equality Act 2010
- London Borough of Haringey Local Plan Strategic Policies 2013
- London Plan 2015
- National Planning and Policy Framework, 2012
- Planning and Compulsory Purchase Act 2004

Reference has been and will continue to be made to the following documents during design development:

- Accessible London, Supplementary Planning Guidance, GLA 2014
- Accessible Stadia, FAIF and FLA 2003
- BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people – Code of practice
- Building Regulation Approved Document K – Protection from falling, collision and impact 2013 (AD K)
- Building Regulation Approved Document M – Access to and use of Buildings 2004 incorporating 2010 and 2013 amendments (AD M)
- Interim Housing Draft, Supplementary Planning Guidance, GLA 2015
- Inclusive Mobility, DFT 2005
- Lifetime Home (LTH) Revised Criteria, Habinteg, July 2010
- Town Centres, Supplementary Planning Guidance, GLA 2014
- Wheelchair Accessible Housing, Best Practice Guide, GLA 2007

These standards have been applied where it is reasonable and practicable to do so. They are regarded as a minimum standard and opportunities to exceed have been explored.
Inclusive Design Parameters

The following high-level parameters outline a recommended approach when delivering an inclusive environment and in going beyond the minimum standards of the building regulations will be considered in design development and detailed design for the non-residential development.

7.3.3 ACCESS
• All doors will be clearly identifiable within their immediate environment
• Door widths and clearances will meet the provisions of AD M and AD M Table 2
• The force of operation of doors will not exceed 30N or the doors will be automated
• Ironmongery will meet the provisions of AD M or the guidance of BS 8300
• Where glazing is used within the façade and entrances; manifestations will be provided to meet the provisions of AD K or guidance of BS 8300.

7.3.4 CIRCULATION
• Internal stairs will be designed to accord with the provisions of AD K and AD M
• Stopped routes and associated handrails will be designed to meet the provisions of AD K and AD M
• Visually contrasting nosings will be included on all stopped routes, to meet the recommendations of BS 8300
• Passenger lifts will be specified to meet AD M, BS 8300 and BS EN81-70.

7.3.5 SANITARY ACCOMMODATION
All accommodation should be designed to be inclusive and to the same specification rather than wheelchair user accessible provision being designated to be ‘clinical’ or institutional. Designs will incorporate:
• Facilities that provide a choice of heights ensuring all sanitary ware is suitable for children, adults and people of short stature
• Baby changing/family facilities accessible to wheelchair users and not incorporated into unisex wheelchair accessible WCs
• Fixtures and fittings that will contrast visually from their backgrounds
• Enlarged and ambulant cubicles in separate sex accommodation in addition to ‘standard’ accommodation
• At least one unisex wheelchair accessible WC at each location where toilet accommodation is provided for the use of customers, employees or visitors
• ‘Handing’ to wheelchair accessible toilets will be provided when there is more than one wheelchair accessible WC serving a facility.

7.3.6 INTERNAL FINISHES, FIXTURES AND FITTINGS
• Surface materials will be firm, durable and slip resistant
• Particularly attention will be paid to visual contrast, lighting and materials for features such as walls, ceilings and floors
• In areas where clear communication is required particular attention will be paid to the reverberant nature of materials
• Fixtures and fittings, including ironmongery and controls will visually contrast with their surroundings, be usable by people with limited dexterity and reachable by those who are seated or standing
• Seating and resting places will be provided in the public realm at reasonable intervals. Seating is to include arms and backs and allow wheelchair users to sit alongside their companions
• Sound enhancement system will be included in reception desks/counters with appropriate signage to identify it to visitors

7.3.7 LIGHTING
• Lighting at changes of level in stairwells and above ramps and external steps will be provided to ensure they are safe to use and will not shadow risers, and will clearly illuminate treads and ramp surfaces.

7.3.8 COMMUNICATION AIDS AND INFORMATION SYSTEMS
Communication aids such as audio reinforcement systems and other sound reinforcement systems to assist hearing aid users, as well as the hard-of-hearing and deafened staff and visitors will be provided as appropriate. All audio reinforcement systems should be specified to ensure that:
• No other equipment or structure elements will cause interference
• There is no overspill between different systems.

7.3.9 SIGNAGE AND WAYFINDING STRATEGIES
An inclusive wayfinding and signage strategy will be developed, key considerations are:
• The strategy will be taken into account at all design stages to ensure sight lines, lighting, visual contrast and legibility are appropriate
• The wayfinding and signage strategy will ensure that information is not only text based, to ensure it is accessible to people with cognitive impairments and for people whose first language may not be English.

7.3.10 EMERGENCY EGRESS
Evacuation of disabled people is a combination of physical and management procedures plus a liaison between building managers and occupants. The evacuation strategy for disabled people will be developed in conjunction with the fire strategy and associate management policies with reference made to Approved Document B and the good practice recommendations within BS 9999:2008 and BS 9991:2011.