

TECHNICAL NOTE

Job Name: Wimbledon Greyhound Stadium Redevelopment
Job No: 21533/012
Note No: TN11
Date: 13th September 2013
Prepared By: Paul Jenkin
Subject: Flood Risk and Drainage

Item	Subject
1.	The proposals for the redevelopment of the stadium have been under consideration for some time. During this time the extent and depth of flooding predicted by the Environment Agency models has varied considerably. This is principally due to the complexity and uncertainty in data relating to the catchment of the River Wandle and its tributaries.
2.	<p>Existing Flood Risk</p> <p>The current Environment Agency model has evolved considerably over the years in terms of its complexity and its ability to predict flood levels within the channel and its floodplain. However, all of the estimates are ultimately predicated on a statistical evaluation of the river flow data which, in the area of the stadium, has been shown to be of limited reliability at high flows. It is thus possible to assign fairly high uncertainty to the design flood estimates.</p> <p>Any flood model should be calibrated against local flood level data and also the historic record of flooding. It is recognised that the Environment Agency do not have the resources to evaluate every location in detail and it thus falls on the potential developers of sites to undertake a more detailed evaluation of the local data and to make an assessment of flood risk in the round for consideration by the Local Planning Authority.</p> <p>The current flood levels provided by the Environment Agency show the site as lying entirely within the 1 in 100 year flood outline and partially within the 1 in 20 year flood outline.</p>

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3.	<p>Historic Flooding</p> <p>In considering the history of flooding one needs to differentiate between flooding from the river and flooding from the surface water drainage system.</p> <p>In terms of river flooding the benchmark event for this part of London is the 1968 event which is widely credited as having a return period of between 100 and 200 years and caused widespread flooding of this area, including the stadium site.</p> <p>Following the 1968 event extensive “improvements” were made to the south London river networks which has largely resulted in the highly canalised river network we now see.</p> <p>An extensive review by the developer and by London Borough of Merton through their SFRA has not highlighted any evidence that the stadium site has experienced river flooding since 1968. The absence of flooding over this 45 year period does not suggest that the site is free from flood risk entirely but it does suggest that it is not at risk from the frequent flooding predicted by the Environment Agency (i.e the 1 in 20 year flood).</p> <p>Based on the data it would be sensible to conclude that the site lies within the 1 in 100 year floodplain but not within the 1 in 20 year floodplain of the River Wandle.</p> <p>With respect to surface water flooding the site is in a relatively low lying urban area and as such would have a tendency to flood during extreme rainfall events. The flooding event of July 2007 which was an extreme rainfall event did cause flooding to the site, although anecdotally this was caused or exacerbated by failure of the surface water drainage pumps which serve the site.</p>
4.	<p>Flooding Policy</p> <p>The guidance within the NPPF places a considerable emphasis on flood risk but does recognise the need to balance these risks against other matters.</p> <p>Critically paragraph 100 states;</p> <p><i>“Inappropriate development in areas of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary making it safe without increasing risk elsewhere...”</i></p> <p>The text above can be considered as the overall objective and has two key elements, the direction of the location of development and the practical considerations to manage the risk.</p> <p>The direction of development away from these highest risk areas is accomplished through the Sequential Test where in paragraph 101;</p> <p><i>“The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with lower probability of flooding.”</i></p>



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	<p>The management of risk is accomplished through the Exception Test as set out in paragraph 102;</p> <p><i>“If, following the application of the Sequential Test, it is not possible, consistent with wider sustainability objectives, for the development to be located in zones with a lower probability of flooding, the Exception Test can be applied if appropriate. For the Exception Test to be passed:</i></p> <ul style="list-style-type: none"> • <i>It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk informed by the Strategic Flood Risk Assessment where one has been prepared; and</i> • <i>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere and where possible will reduce the flood risk overall.</i> <p><i>Both elements of the test will have to be passed for the development to be allocated or permitted.”</i></p> <p>It is the role of the London Borough of Merton (LBM) to decide whether the sequential test and the first part of the exception test have been passed. This is because both tests require a balanced view based on a wider appreciation of the drivers and constraints within the Borough.</p> <p>The Environment Agency would be consulted on the second part of the exception test as the statutory consultee for flood risk. However, it should be noted that issues of safety are now the remit of the Local Authority and in due course the assessment of surface water drainage proposals will also fall under the Lead Local Flood Authority (which in practice is likely to be LBM).</p>
5.	<p>The Sequential Test</p> <p>In considering whether a proposal passes the sequential test one needs to consider the availability of alternative sites for the use proposed. It is also important to consider the wider policy context regarding the site at a local and, in the case of London, a city wide scale.</p> <p><i>The Unique Opportunity</i></p> <p>The Stadium site is of strategic importance and was included within the London Plan for almost a decade. In addition, the site lies within South West London’s only Area for Intensification (Afi) within which developments should seek to optimise residential and non-residential output densities, provide necessary social and other infrastructure, contain a mix of uses, and contribute to or exceed the minimum guidelines for housing.</p>



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	<p>Within the Colliers Wood / South Wimbledon Area for Intensification (Afl), the adopted London Plan (2011) seeks to deliver “major opportunities for intensification”. This area has an indicative employment capacity of 500, with the minimum of 1,300 new homes sought. The Council’s adopted Core Strategy intends to provide a thriving and attractive District Centre at Colliers Wood. The Council intends to achieve this by encouraging a mix of unit sizes and an improved range of town centre uses within Colliers Wood centre, especially financial and business services, restaurants, cafés and community facilities, commensurate with its retail offer as a District Centre.</p> <p>It is intended for Colliers Wood and South Wimbledon Sub-Area to provide between 500 and 600 additional new homes throughout the plan period. Given the Borough wide shortage of housing and the fact that Colliers Wood / South Wimbledon is the only Afl in South West London, it is considered that this indicative target should be reviewed.</p> <p>Notwithstanding the above, the pre-submission Sites and Policies DPD only identifies one genuinely “major” brownfield site within the indicative Afl boundary (as set out at page 40 of the adopted Core Strategy) being promoted for housing. This site is the Wimbledon Greyhound Stadium (a significant 5.29 hectares in area).</p> <p>The site therefore represents a unique opportunity to realise its longstanding development potential. It is the largest brownfield site identified within the emerging Site and Policies DPD and the only one in the Afl considered to have the critical mass to deliver a football stadium and a genuine mix of housing, in addition to significant socio-economic improvements and public realm improvements (linked to the emerging green grid, in turn improving access to open space for new and existing nearby residents).</p> <p>In addition, since there is an overall shortfall in housing provision within Merton (and neighbouring Wandsworth), it can be argued that the site is sequentially appropriate and should be brought forward subject to meeting the Exception Test.</p>
6.	<p>Exception Test</p> <p>The first part of the test requires that there are additional community benefits. The first of these is that the existing use is not sustainable and that over the years the stadium has been falling into disrepair. If this trend continues as expected the site would ultimately become derelict and would present a major negative impact to the local community.</p> <p>The second key community benefit stems from the provision of new facilities associated with AFC Wimbledon. The relocation of a football stadium on the site will generate a significant number of full time and permanent jobs (pre and post construction) and generate millions of pounds of supplier spending per annum, much of which will be of benefit to the local area. Spending by home and away fans during visits to the new stadium will also generate significant spending per season for the local economy, boosting trade for local businesses (crucial in these tough economic times).</p>



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	<p>The scheme will also provide wider community benefits through a range of initiatives associated with the football club to include facilities and programmes of coaching and courses which promote sport to young people and the socially disadvantaged as an alternative to anti-social behaviour. Other proposed facilities for the community include the retail store, benefitting local residents.</p> <p>The provision of a football stadium for AFC Wimbledon will represent a return of the club to their historic home after over 20 years. The social benefits to the local community for generations to come should not be underestimated. Such a milestone scheme will help to facilitate LB Merton's aspiration for regeneration and transformational change. This will assist in achieving the step change in the perception of the area required to facilitate much needed inward investment, in turn leading to better homes, local amenities and safer, more attractive and connected environments.</p> <p>The second part of the test relates more to the practical flood risk issues. These would be dealt with within a detailed flood risk assessment but can be summarised as follows.</p> <p><i>Will the development be safe?</i></p> <p>The whole area proposed for residential development is to be raised above the 1 in 100 year plus climate change level. Thus dwellings, roads and opens spaces will all be safe during a flood. The routes away from the development would be flooded during a 1 in 100 year plus climate change event, although based on the duration of flooding indicated by the nearby flow gauging station the duration of flooding is likely to be less than 12 hours. As such a flood management plan would be implemented which either encouraged occupants to leave prior to a flood occurring or to remain on site for the relatively short duration of the flood. It should be noted that a 1 in 100 year plus climate change event is a relatively infrequent event and given the severity of flooding much of the South London area would be experiencing disruption.</p> <p>The retail element would also be above the 1 in 100 year plus climate change flood level and would be closed during a flood event. The football pitch would flood during an extreme event but any fixtures would be cancelled given the likely severity of the event and widespread travel disruption.</p> <p>Thus the residents of the residential dwellings would be safe and there would be no activity at the retail or leisure facilities. The proposals are safe.</p> <p><i>Will flood risk be increased?</i></p> <p>For the residential and retail components the proposed raising of ground levels would be achieved by raising the development on a podium and using the area below for parking. The Stadium has been designed to minimise the impact on flood storage by keeping the pitch as close to existing levels as possible and by either setting the levels of the facilities such that they are floodable or by raising them with voids beneath floor levels.</p>



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	<p>To avoid the loss of flood storage the areas which are not floodable (supports, cores, plant rooms etc) have been balanced against the area of the existing stadium which would be considered as non-floodable. By balancing these two volumes on a level for level basis there would be no net loss of floodplain storage.</p> <p><i>Can flood risk be reduced?</i></p> <p>The surface water drainage system would be redesigned to meet the requirements of the London Plan or the LLFA and this would result in a considerable reduction in run off from the site. This in turn provides a reduction in flood risk as a result of the development.</p> <p>Thus the proposals reduce and do not increase flood risk.</p> <p>Based on the above both elements of the Exception Test can be passed.</p>
7.	<p>Discussions with Environment Agency</p> <p>We have discussed the proposals in outline with the Environment Agency. The Environment Agency would rely on the results of their flood model and would consider the site to lie partly within the 1 in 20 year floodplain. In their letter to Future Merton dated 27 August 2013 the Environment Agency have restated their view that development should be avoided in the functional floodplain but recognise that given the urban nature of the Borough of Merton there would be a case for the Borough to re-examine the extent of flood zone 3b within their SFRA. Redevelopment would then be more consistent with the NPPF subject to passing the exception test.</p> <p>In consideration of the issues of flood risk within the exception test the EA would not consider the development to be safe from their perspective but recognise that it is the role of the emergency planners at LBM to consider whether a flood risk management plan is an appropriate means of ensuring the future safety of the occupants.</p> <p>Similarly the EA would consider that the surface water drainage strategy for the site should be agreed by LBM based on the requirements set out in the London Plan.</p> <p>On the issue of flood storage the EA require that both flood storage and flood conveyance are maintained. Our calculations show that both these are achievable and subject to agreeing the final results with the EA during planning there is no reason that an agreeable solution would not be found.</p>
8.	<p>Flood Risk Conclusions</p> <p>Based on historic data it is unlikely that the site is exposed to the frequency of flooding indicated by the Environment Agency flood modelling. The Environment Agency recognise that the site could be re-examined to allow its removal from flood</p>



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	<p>zone 3b and thus classifying the site as flood zone 3a.</p> <p>If one accepts the argument that there is an overall shortfall of housing and that the site lies in a zone where intensification of development is recommended then the sequential test is passed as there are insufficient lower risk sites to meet demand. In addition, there is no alternative available location within the Borough where a new football stadium could be located.</p> <p>Having accepted that the development of the site is appropriate it has been demonstrated that the proposals provide a wider community benefit, are safe and reduce flood risk. As such it is difficult to conclude that the proposals are not consistent with the objectives of NPPF as it relates to flood risk.</p>

