Site Specific Flood Risk Assessment

The development site is located in Thongsbridge, Holmfirth next to the River Holme, and its tributary – Hagg Dike, lies slightly to the north.

The site address is Thongsbridge Tennis and Fitness Club, Miry Lane, Thongsbridge, Holmfirth HD9 7RY.

A plan of the site is shown as Appendix one, based on the current Flood risk for Planning map. This Flood Risk Assessment has been produced on the basis that parts of the site area to be developed fall within Flood Zones 2 and 3, as shown on this plan.

Sequential Test

A sequential test compares the proposed site for development with other available sites, to show which has the lowest flood risk.

In the case of this application, there are a number of elements to it – although the main proposal is for a covered sports court, other elements include the re-siting of a portable building and car parking, both of which are more vulnerable to flooding than the court/canopy structure itself. Various possible layouts have been considered and can be seen as appendices to the Design and Access Statement.

The submitted proposal take the most vulnerable element (the fitness studio – housed in a portable building) that currently sits within flood zone 3, and moves it well clear of either zones 2 or 3.

The covered court features large openings along its sides and as such will provide little impedance to water entering or leaving, so although it is approximately 2/3 within flood zone 3 (the remainder in zone 2) it is the most 'flood compatible' element of the scheme and represents a significant improvement over the status quo.

Areas available for car parking are largely unchanged from the current situation, other than becoming more structured. The surfacing is to be a reinforced gravel, so will remain at least as free draining as the current situation and the increased tree planting across the area will increase rates of evapotranspiration, while remaining well-spaced enough to allow flood waters through. Finished ground levels will largely be within 100mm of current levels throughout.

While it would clearly have been possible, in theory, to locate all elements of this application in other parts of the applicant's site this would only have been possible by removing existing facilities, such as existing tennis courts, or looking at more extreme solutions such as cutting into the surrounding hillsides, which has been explored, but ruled out on practicality and cost grounds. On balance the proposed arrangement is considered the best and most viable option.

Exception test

The exception test shows how flood risk on the proposed site will be managed and that the sustainability benefits of the development to the community outweigh the flood risk.

An exception test is required if the development is:

- highly vulnerable and in flood zone 2
- essential infrastructure in flood zone 3a or 3b
- more vulnerable in flood zone 3a

Flood Risk Vulnerability Classification

According to official government guidance, the use of land for *outdoor sports and recreation* is considered to be 'water compatible development' and the use of land for *car parks* is considered to be 'less vulnerable'. On that basis this assessment is based on the higher classification of 'less vulnerable'. When considering allowances for climate change that gives a value of

National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK (www.gov.uk)

Based on the above vulnerability classifications, the proposed development is exempt from the requirement for a formal exception test.

Having said that, details of the club's flood management procedure are set out in the attached document, and detail the procedures to be followed in the event of flooding, or an automated warning from the Environment Agency.

Details of the benefit to the local community are set out in the Design and Access Statement.

Assessment of flood risk

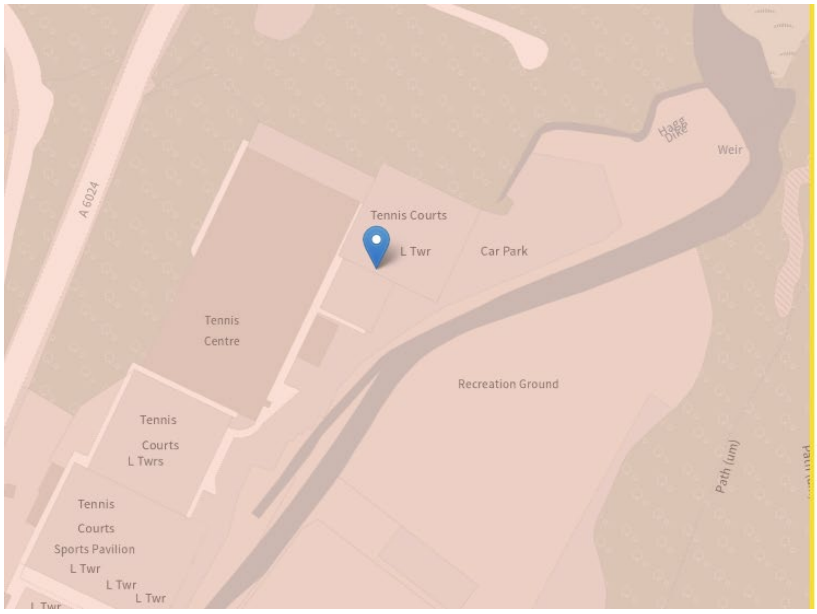
In the event of a flood, the most likely source would be from rising river levels. The site is situated immediately north of the River Holme, which is likely to be the main threat. The Long Term Flood Risk from rivers or the sea, according to Environment Agency information is 'Medium' (between 1 and 3.3%, each year).

This proposal is to develop three padel courts, two of which would be covered by a canopy. Padel courts have sides which are a welded steel mesh, which would be completely free flowing in terms of water. In the event of a severe flood, these courts would fill with water, but would also drain quickly once water levels receded. The area they are proposed to go in is currently hard surfaced (asphalt) having formerly been a car parking area, occupied by a modular portable building or tennis courts. The portable building is to be moved from a location in zones 2+3 to well outside either, representing a significant improvement on the current situation. While it is slightly elevated, with theoretically, some limited water storage capacity beneath it, the open nature of the proposed Padel Courts offers better flood water storage and the nature of the construction means they are vastly less susceptible to damage (they are essentially outdoor sports facilities, although two of the three would have a canopy over to make playing in poor weather more attractive).

Managing the Flood Risk

The accompanying flood procedure for the Club's facility generally details how flood risk is managed, including being signed up to automatic warnings from the Environment Agency and how the neighbouring cricket pitch will flood before water levels become critical for any facilities associated the tennis club. The whole club will be closed prior to flooding causing any issues on their site, allowing time for any users to vacate the premises and within plenty of time for cars to be safely removed. It is worth noting that the car parking, although closer to the river, is not on an area that is significantly lower, so all evacuation procedures would be put in place well before water levels pose a risk to club users accessing their vehicles. The area allocated for parking is already used for this purpose, and the proposals are to improve the efficiency of how people park with marked spaces, while visually softening it and improving drainage through permeable surfacing and planted areas.

The assessment of flood risk is based on the 1 in 100- year river flood, plus an allowance for climate change. Based on the higher vulnerability classification of the elements in the proposal being 'less vulnerable', guidance states that the central allowance should be used.



Aire and Calder Management Catchment peak river flow allowances

	Central	Higher	Upper
2020s	11%	15%	24%
2050s	13%	18%	31%
2080s	23%	31%	51%

This map contains information generated by UK Centre for Ecology and Hydrology using UK Climate projections.

Given the nature of the proposed development, and how the elements contained within it would either have negligible impact on flooding, or improve on the current situation, detailed calculations are not considered proportionate and have not been included in this assessment. Even allowing for climate change related increases, the site would still behave in the same way, and as detailed in the attached documents from the club, their procedures would allow for a safe evacuation of the area in exactly the same manner. The physical infrastructure of the proposed facilities themselves is not the primary concern in a flooding event and would largely be unaffected by inundation with water.

Other sources of Flooding

While rising river levels are the primary threat, there is a much lower risk of flooding from reservoirs – with a number located upstream of the site. The likelihood is extremely low however and it is expected in the event of any of these bursting water would still impact this site via the river channels in a similar way.

Surface water flood risk is officially considered 'very low' (less than 0.1% chance in any given year. The location and topogrpahy of the site lends itself to allowing water to drain from it well. The area to include an open sided canopy is currently impermeable hard standing, so this feature will not increase on site surface water flood risk.

Conclusion

This Flood Risk Assessment document is to support the proposed development of sports facilities, and supporting infrastructure, on an area that falls partly within Flood Zones 2 and 3.

The development would take a site that currently includes similar sports facilities, car parking and a modular temporary building, all partly within zones 2 and 3. The building would be moved to an area approximately 30 outside of either zone, significantly improving this element, over the current situation.

The proposed Padel Courts themselves feature open mesh side panels that would allow water to flow freely in and out of them, and are designed and built as outdoor sports facilities, so flooding would have very limited impact on them, and movement of flood waters would not be impeded.

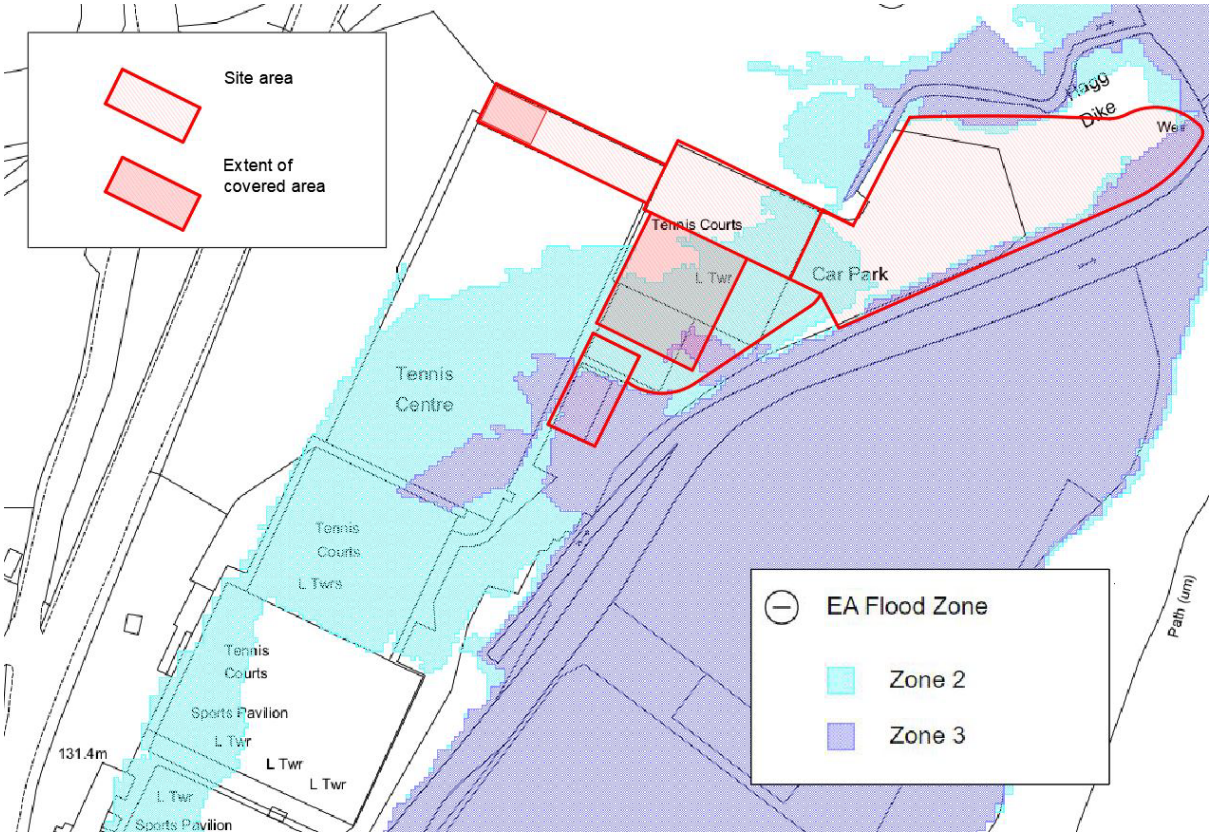
The area proposed for car parking is already used as a car park, albeit less formally. While the proposals are to set this out with marked bays, the surface would be permeable, and the overall area and finished levels would remain very similar, having negligible impact on water flows and decreasing run off due to vegetated areas and tree planting.

The canopy covering two of the proposed courts would discharge water to an area that is currently fully hard-surfaced and impermeable, via the existing surface water drainage. Net discharge would not be increased, and the provision of permeable surfacing and planted areas would actually decrease the load placed existing surface water drainage, which is believed to discharge to the River Holme. There would be no increase to floods risk further downstream as a result of the proposals

Although some minor surfacing works to the parking area lie within 8m of the River Holme, it is thought that these would not require a permit from the EA, under exemption 28: Improvement works for existing tracks and paths (FRA28), and would be notified as required prior to works taking place.

Overall the impacts of the proposal would improve the current situation relating to flood risk, by allowing for increased water storage, moving more vulnerable elements of the existing site and decreasing surface water run off rates. The facilities themselves are compatible with flooding and ancillary areas such as car parking would only be in use when the main facility is open. A procedure would be in place to evacuate the site well in advance of any flooding and is linked to automated warnings from the EA.

Appendix 1 – Location Map



Appendix 2 – TTFC Flood Risk Assessment and Procedure

Flood risk assessment
(for a tennis club in a flood zone area risk 2 & 3)

THONGSBRIDGE
Tennis & Fitness

1. Information and Background

Thongsbridge Tennis & Fitness Limited (TTFC) is situated next to the River Holme in the village of Thongsbridge near Holmfirth. The club has nine outdoor courts and four indoor courts.

The River Holme last flooded onto the car park of the TTFC site on the 30th July 2002. Initially, the river flowed over the football pitch on the opposite side of the river, because the river bank there is lower than the TTFC car parking areas. The 2002 rise in water level occurred due to a tree having fallen into the river several hundred metres downstream causing water to back up. No floodwater entered the clubhouse or the club's indoor tennis courts. Subsequently the river burst its banks on the field between Honley and Berry Brow and water at TTFC receded without any damage.

2. Site Analysis and Warning

The club buildings are no more than fifty metres away from the river and the club is at risk of flooding mainly from the river Holme. However, the football pitch and cricket club side would flood first, providing ample warning to TTFC.

3. Flood Probability & Severity

As previously mentioned the car park at the club last flooded twenty two years ago in July 2002 and predictions are the flood risk will increase over the coming years. TTFC has reduced its exposure to severe flooding by the mitigation measures below.

4. Vulnerability Assessment

The main infrastructure at risk from flood damage are four indoor tennis courts and the main club house consisting of the cafe, bar, office, kitchen, shop, toilet facilities and gym. Flooding to this area could cause major damage to the club's infrastructure and assets. Appropriate insurance covers all indoor areas and equipment (documents attached). Damage to outdoor courts may require cleaning of the courts and fencing but would be mainly superficial. The club have in place member volunteers to carry out outdoor cleaning if required.

5. Risk Characterisation

The club stands on a flood plain in zones 2 and 3. Although the club buildings have never been flooded there is a continued risk of flooding. The riverbank on the opposite side to TTFC is approximately 2ft lower and therefore the extensive land area on that side will flood first. This will give the club's management ample warning and allow them to monitor the rising waters.

6. Mitigation Measures

In 2004 a "bund" was formed adjacent to the car park along the banks of the river. This substantial three metre wide earth mound will contain rising water but will not stop it if a flood reaches an extraordinary height of several metres.

Any new development will require council planning permission and would be built with relevant materials with flood risks in mind.

Elevating structures could be an option. Emergency response plans and communications strategies are in place. If the field on the opposite side of the club begins to flood the club will be evacuated and closed and all members and staff will be informed via email or verbally if attending the club at the time.

7. Community Engagement

A flood evacuation team has been formed consisting of the General Manager, Operations Manager, Groundsman and Director of development. There are no residents living on the site.

8. Monitoring & Adaptation

In the event a flood risk alert is identified, the team will monitor water levels, weather forecasts and conditions. The team will also meet to review flood risk and consider climate change, land use and any change in infrastructure.

9. Insurance & Financial Preparedness

The clubhouse, indoor tennis courts and the gym are insured by the National Farmers Union insurance company and this is reviewed and renewed annually. The outdoor courts are not insured for flood damage, however damage to this area would be mainly superficial and could be cleaned up by club members and staff as mentioned previously.

10. Regulatory Compliance

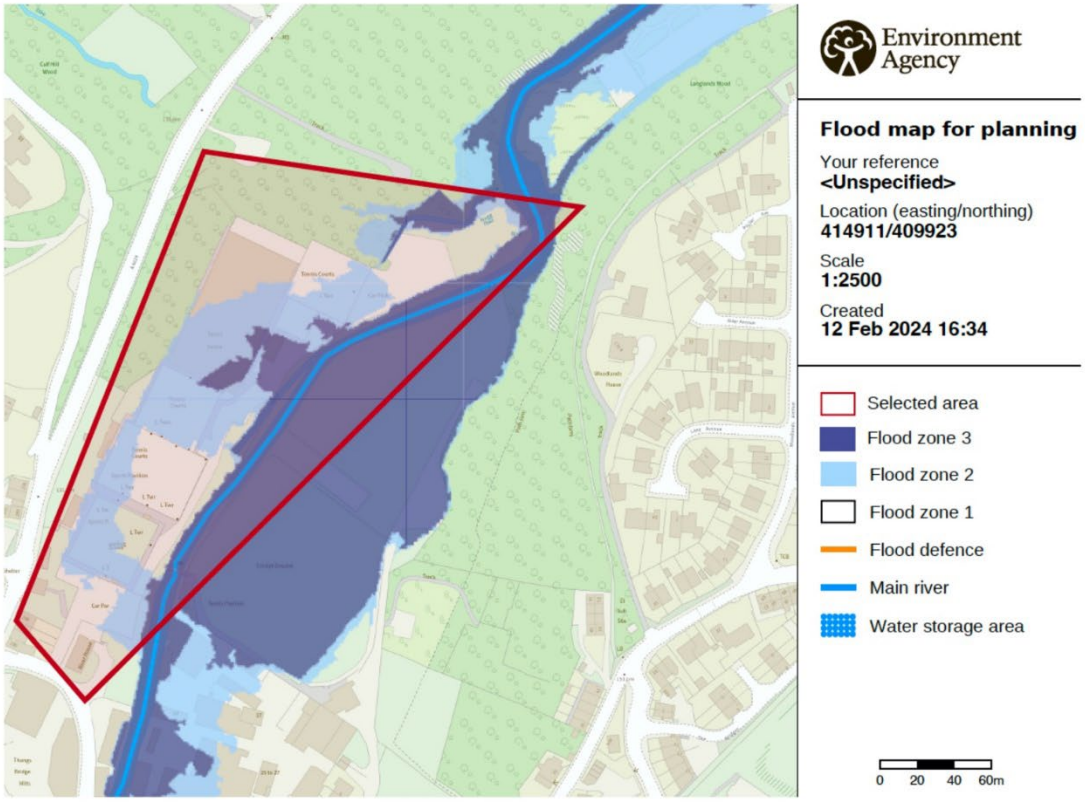
The club will ensure that any future development or renovation projects adhere to local flood plain regulations and building codes.

Flood risk assessment
(for a tennis club in a flood zone area risk 2 & 3)

THONGSBRIDGE
Tennis & Fitness

10. Environment Agency Flood Map for Planning

The Thongsbridge Tennis & Fitness Limited (TTFC) site is shown on the map with areas in both flood zone 2 and 3 .



Property at Thongsbridge Tennis Club

Indoor tennis building, steelportal frame with steel cladding & concrete floor 4 courts

Covered for the following perils	Fire, Aircraft, Explosion, Storm and Flood, Earthquake, Escape of Water, Impact, Riot and Malicious Persons, Theft, Accidental Damage, Subsidence
Basis of cover	Day One Reinstatement
Sum insured #	£2,304,658 *
Declared value	£2,004,051 *

Portacabin, fitness room

Covered for the following perils	Fire, Aircraft, Explosion, Storm and Flood, Earthquake, Escape of Water, Impact, Riot and Malicious Persons, Theft, Accidental Damage
Basis of cover	Day One Reinstatement
Sum insured #	£65,709 *
Declared value	£57,139 *

Fencing not included in courtconstruction

Covered for the following perils	Fire, Aircraft, Explosion, Earthquake, Impact, Riot and Malicious Persons
Basis of cover	Day One Reinstatement
Sum insured #	£241,330 *
Declared value	£209,853 *

Outdoor all weather courts including fencing & lighting

Covered for the following perils	Fire, Aircraft, Explosion, Earthquake, Impact, Riot and Malicious Persons
Basis of cover	Day One Reinstatement
Sum insured #	£318,045 *
Declared value	£276,561 *

Pavilion, timber framed & clad single storey building withpitched roof covered with mineeral felt

Covered for the following perils	Fire, Aircraft, Explosion, Storm and Flood, Earthquake, Escape of Water, Impact, Riot and Malicious Persons, Theft, Accidental Damage, Subsidence
Basis of cover	Day One Reinstatement
Sum insured #	£193,382 *
Declared value	£168,159 *

Asphalt court & practice wall

Covered for the following perils	Fire, Aircraft, Explosion, Earthquake, Impact, Riot and Malicious Persons
Basis of cover	Day One Reinstatement
Sum insured #	£12,782 *
Declared value	£11,115 *

Steel Container used for storage

Covered for the following perils	Fire, Aircraft, Explosion, Storm and Flood, Earthquake, Escape of Water, Impact, Riot and Malicious Persons, Theft, Accidental Damage
Basis of cover	Day One Reinstatement
Sum insured #	£2,500 *
Declared value	£2,174 *

Marquee with tennis court

Covered for the following perils	Fire, Aircraft, Explosion, Storm and Flood, Earthquake, Escape of Water, Impact, Riot and Malicious Persons, Theft, Accidental Damage
Basis of cover	Day One Reinstatement
Sum insured #	£9,907 *
Declared value	£8,615 *

CONTENTS
General Contents

Appendix 3 – Existing Site - Topographical Survey

Grid : OS National Grid.

Datum - OS Level Datum.
Using the OS GPS Network and applying OSGM02 National Geoid Model to obtain local area corrections.

Direction of North

Drawing Layout Key:

Key:

BIN	BIN	MANHOLE (RECTANGULAR)	MH
BOLLARD	BOL	MANHOLE (TRIANGULAR)	MH
BUS STOP	BUS	MARKER POST	MKR
CABLE TV COVER	CATV	GULLY	RG/GULLY
CABLE TV SUPPLY	CTV	RODDING EYE	RE
COLUMN	COL	SIGN POST	SIGN
EARTHING POINT	ER	TELECOM COVER	TC
ELECTRICITY COVER	ELEC	TELEGRAPH POLE	TP
ELECTRICITY POLE	EP	THRESHOLD LEVEL	THL
FIRE HYDRANT	FH	TRAFFIC LIGHT	TL
GAS VALVE	GAS	TRIAL PIT	PIT
GATE		WASH OUT	WO
INSPECTION COVER (CIRCULAR)	IC	WATER METER	WM
INSPECTION COVER	IC	WATER STOP COCK	SC
KERB OUTLET	KO	WATER STOP VALVE	SV
LAMP POST	LP	TEL: TELECOMS COVER	
MANHOLE (CIRCULAR)	MH	TOW: TOP OF WALL LEVEL	
		TOF: TOP OF FENCE LEVEL	
Building Line		TOH: TOP OF HEDGE LEVEL	
Wall		THL: THRESHOLD LEVEL	
Concrete		PAR: PARAPET LEVEL	
Paving		EAVES: EAVES LEVEL	
Kerb		RIDGE: RIDGE LEVEL	
Footpath		Overhead Cables	
		Top of Bank	
		Bottom of Bank	

Station Listing

Station	Easting	Northing	Level
S1	414873.886	409925.227	122.250
S2	414913.307	409966.506	121.817

Rev	Description	Date	By

Thongsbridge Tennis & Fitness Club

Thongsbridge Tennis & Fitness Club
Miry Ln, Thongsbridge, Holmfirth HD9 7RY

2D Topographical Survey

Silkstone Surveys

Land & Measured Building Surveyors
7, Hall Annex, Thorncliffe Park, Chapeltown, Sheffield, S35 2PH
mail@silkstoneenvironmental.co.uk
Tel : 0114 2573487 www.silkstoneenvironmental.co.uk

Project No.	21286	Dwg No.	21286_2DT	Ø	
Date:	12/21	Drawn:	SA	Chkd:	SC	Scale:	1:200	A0