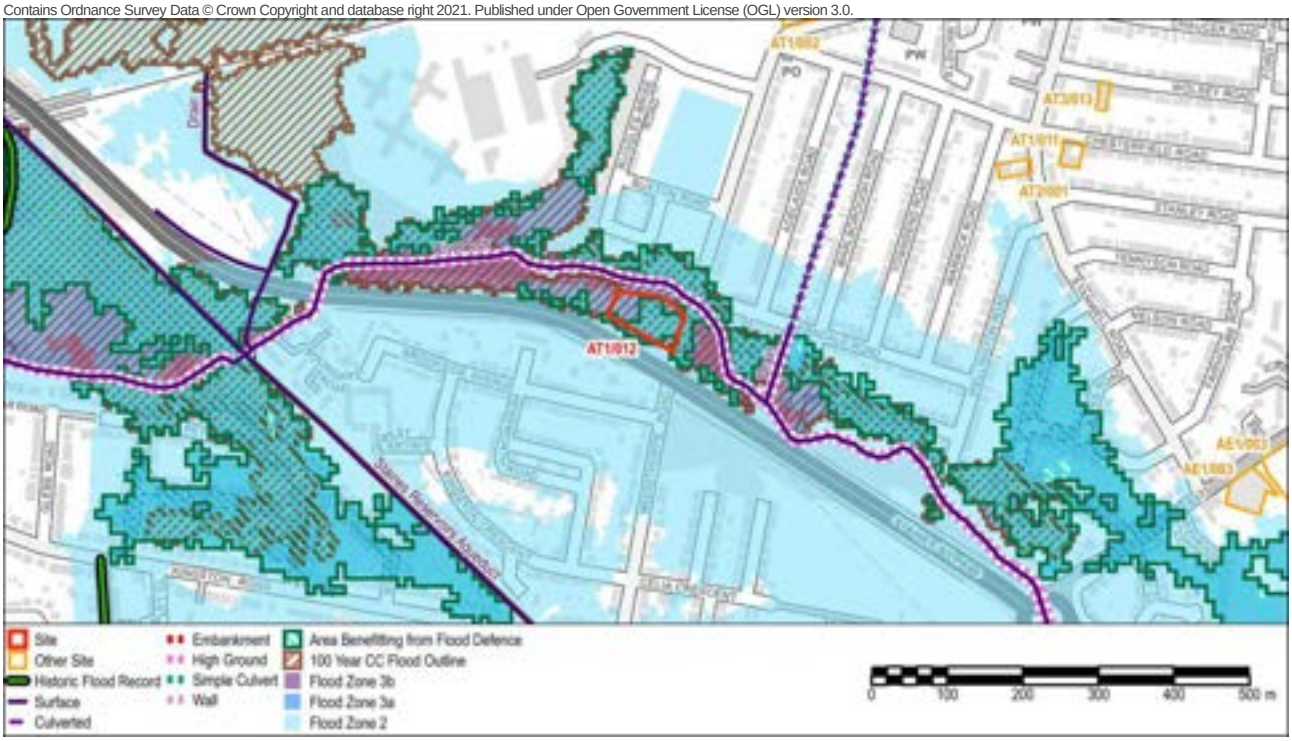
AT1/012: Ashford Community Centre, Woodthorpe Road

Site ID:	AT1/012	**Area (ha):**	0.47
Proposed Use:	Local Community F2(b): 300sqm Community Centre (approx.) Residential (C3)	**Vulnerability Classification:**	Less Vulnerable and More Vulnerable

Flood Zones and Historic Flooding

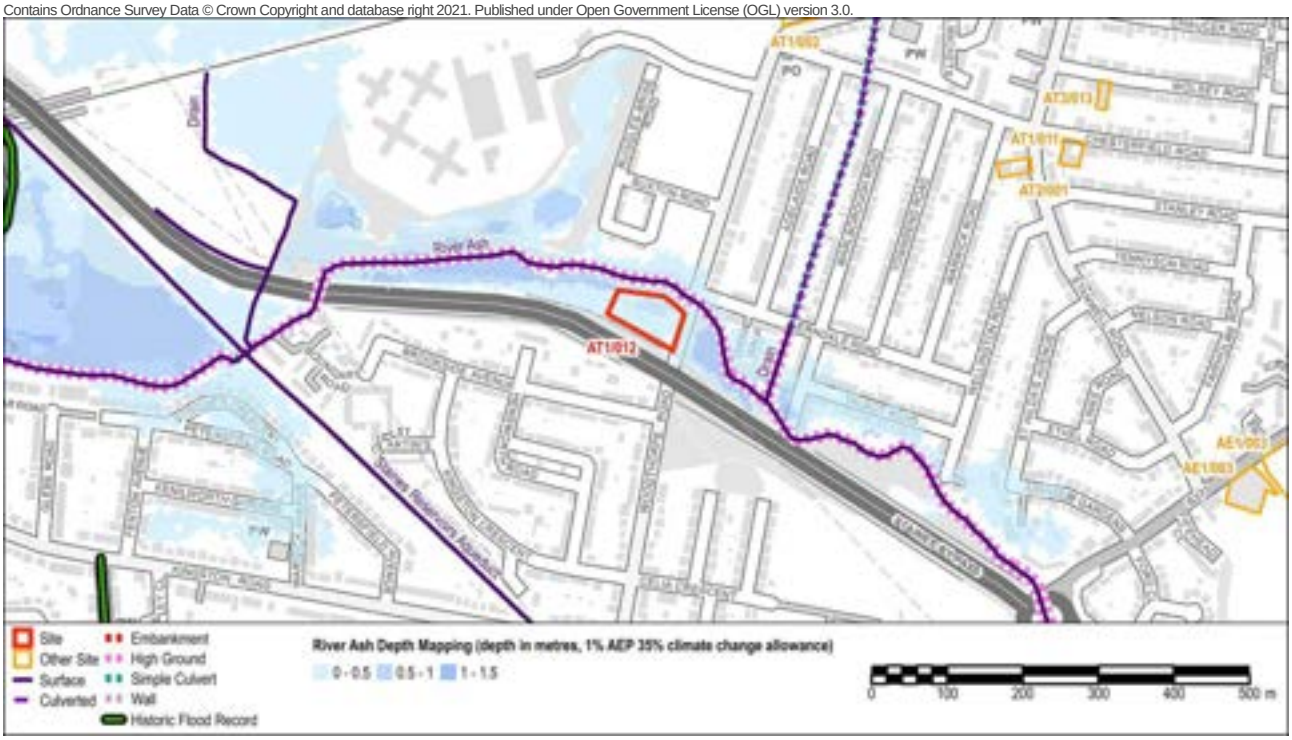
Flood Zone 1 (<0.1% AEP): 0%	**Flood Zone 2 (0.1% AEP):** 4%	**Flood Zone 3 (1% AEP):** 96%	**Flood Zone 3b (5% AEP):** 0%	**Area Benefiting from Defences:** 57%



Flood Zones and Flood Records

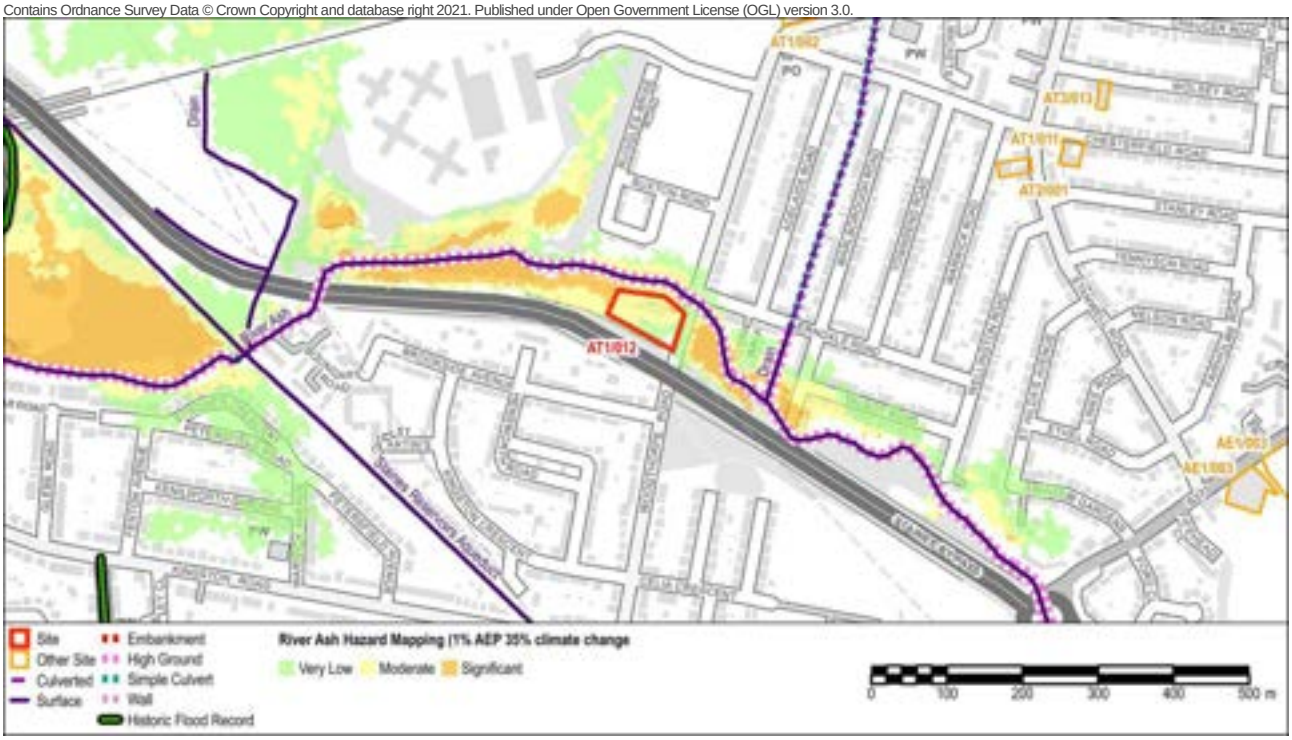
Flood Warning Area	River Ash at Ashford and Staines, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947, 06FebruaryWinter2014, 06Winter13-14
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 0; External property flooding 0; Section 19 Flood Investigation incident 0; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding



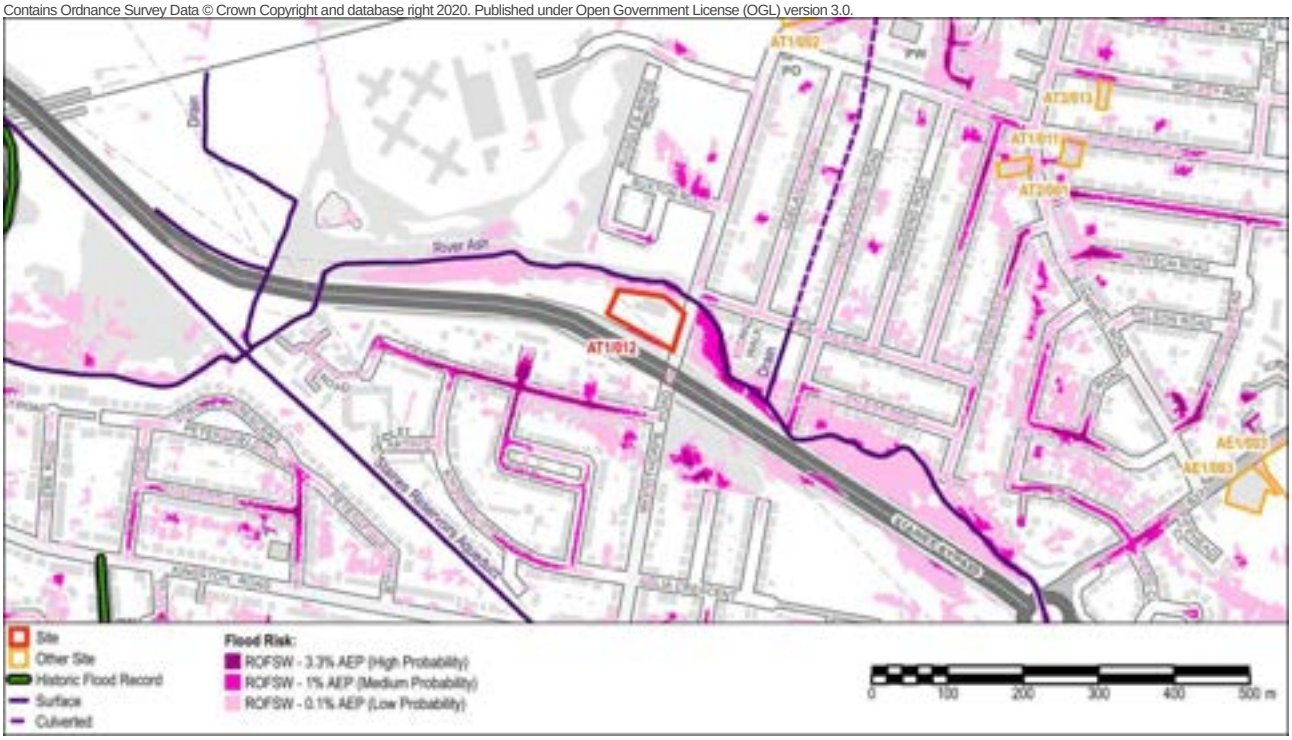
River Ash Maximum Flood Depth 1% AEP plus 35% climate change

AT1/012: Ashford Community Centre, Woodthorpe Road



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Low



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	>=75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Unproductive, Secondary A		

Other Sources	
Risk of flooding from reservoirs	There are several reservoirs in the local area including Stains Reservoirs, King George VI Reservoir, Queen Mary Reservoir, Wraysbury Reservoir, Queen Mother Reservoir. The Long Term Flood Risk Map shows that this site could be at risk of flooding in the event of a breach of one of these reservoirs.
Summary	

AT1/012: Ashford Community Centre, Woodthorpe Road

The River Ash flows west to east across the northern edge of the site. The majority of the site (96%) is defined as Flood Zone 3 High probability of flooding from rivers. Approximately half of the site (57%) is shown to benefit from the presence of flood defences during a 1% AEP flood event on the River Ash.
Modelling outputs for the River Ash for the 1% AEP event including a 35% increase in peak river flows as a result of climate change, indicate flood depths across the majority of the site of 0-0.5m, increasing in the north of the site up to 1m. The hazard rating is 'Low; and 'Moderate', meaning 'Danger for Some', e.g., the elderly or young children.
There are records of flooding within 500m of the site and anecdotal records of flooding on the site itself.
The Risk of Flooding from Surface Water mapping identifies the risk to be Low.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, suggests that there is potential for groundwater flooding at surface in the local area.

Site Specific Recommendations

Residential development is defined as More Vulnerable and is only permitted in Flood Zone 3 where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

- There is built development on the existing site. In order to ensure that future development does not increase the risk of flooding, the built footprint of new development of the site should not exceed that of the existing building and where possible should be reduced. Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including climate change) to an area at low risk of flooding is likely to be achievable south along Woodthorpe Road.
- The site is located within the Flood Warning Areas for the River Ash (River Ash at Ashford and Staines) and the River Thames (River Thames at Staines and Egham). Flood Warning and Evacuation Plans would need to be developed for occupants of the site to set out the response in the event of a flooding warning.
- Development proposals for the site should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

RL1/011: Land at Staines and Laleham Sports Club, Worple Road, TW18 1HR

Site ID:	RL1/011	Area (ha):	6.03
Proposed Use:	Residential and Sports Club	Vulnerability Classification:	More Vulnerable

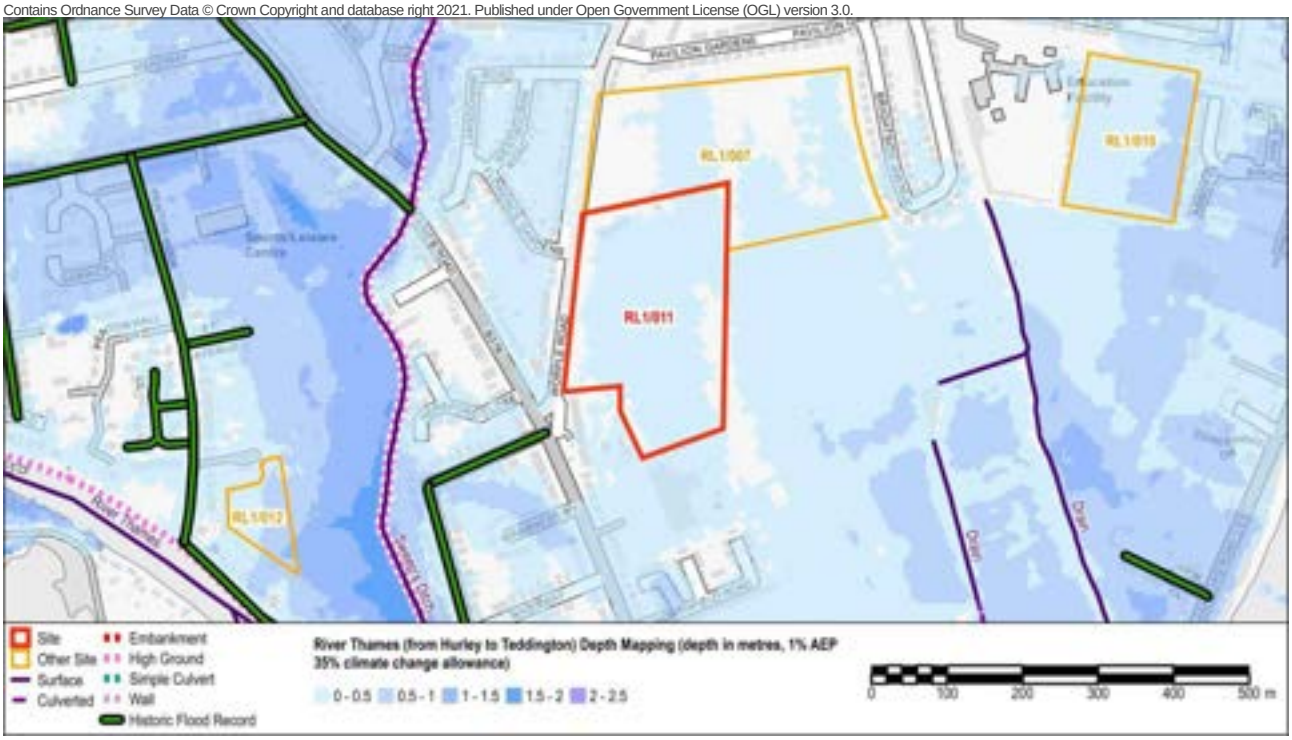
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 16%	Flood Zone 2 (0.1% AEP): 73%	Flood Zone 3 (1% AEP): 11%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

Flood Zones and Flood Records

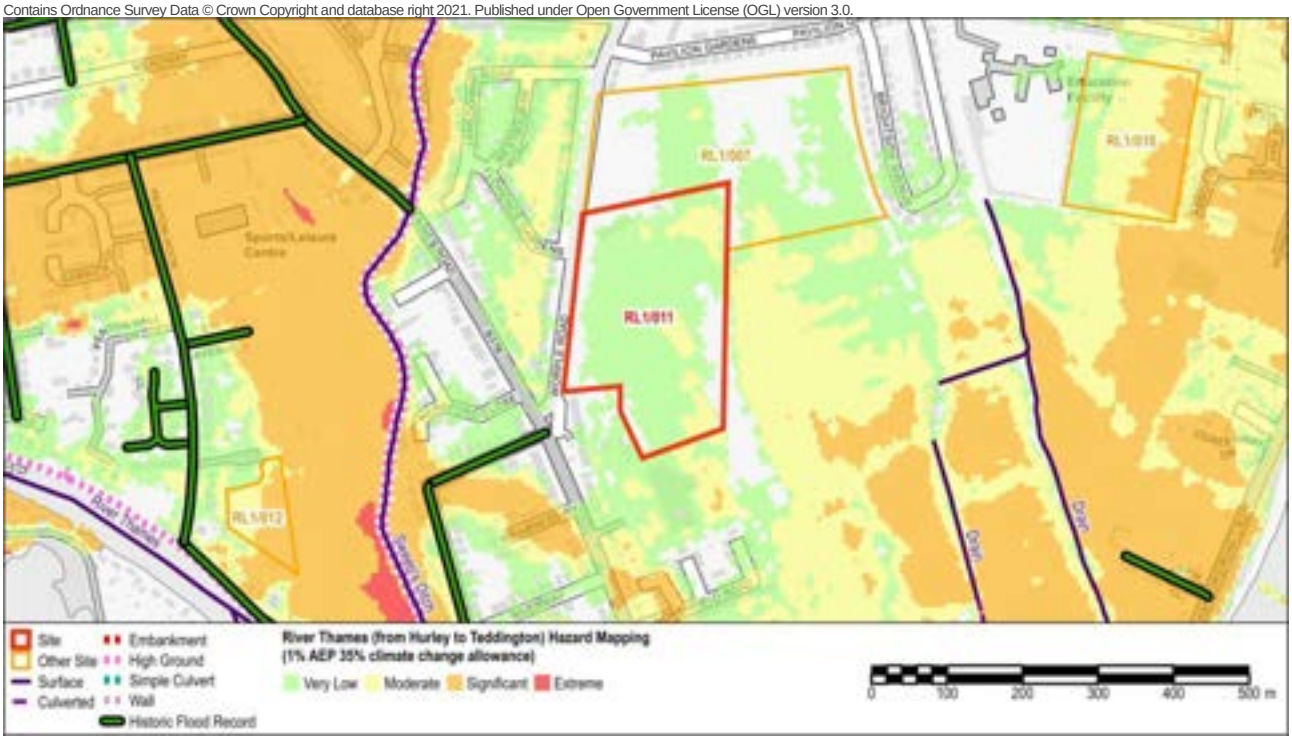
Flood Warning Area	River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	None
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 18; External property flooding 8; Section 19 Flood Investigation incident 42; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal 2; External 15

River Flooding



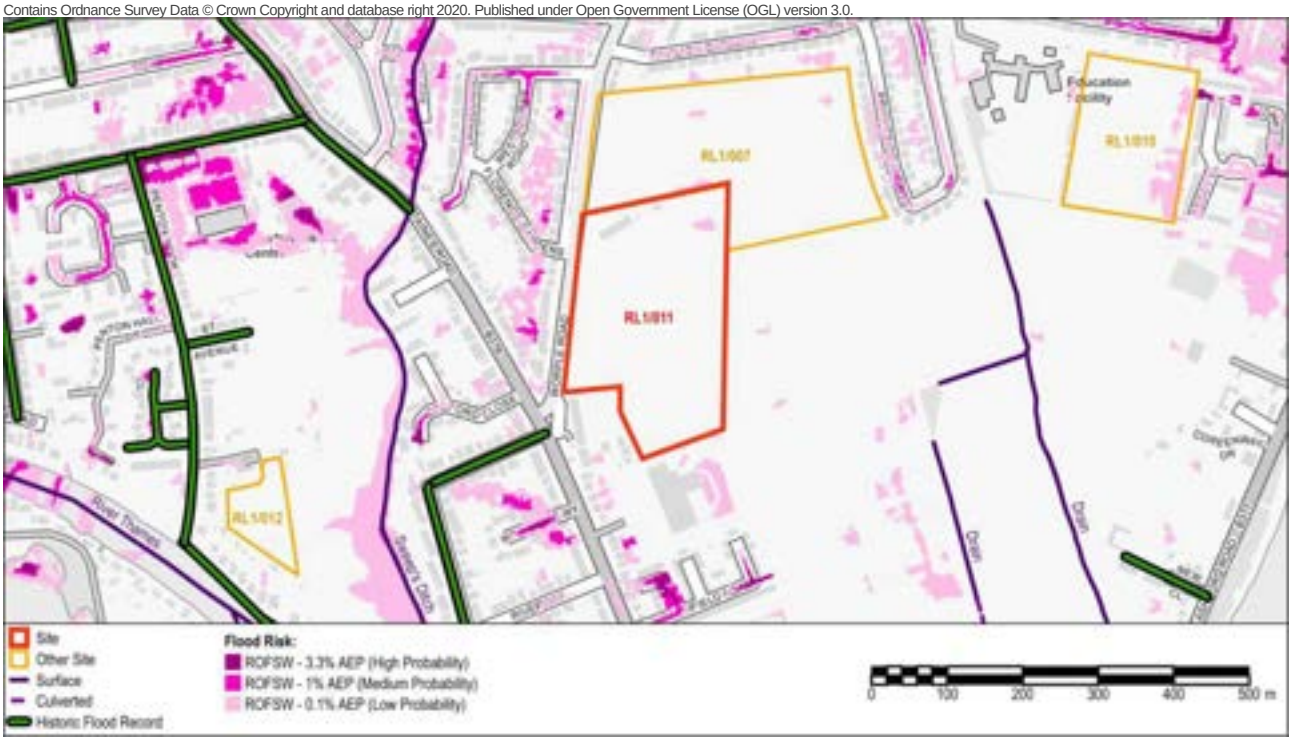
River Thames Maximum Flood Depth 1% AEP plus 35% climate change

RL1/011: Land at Staines and Laleham Sports Club, Worple Road, TW18 1HR



River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Low



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel

Areas Susceptible to Groundwater Flooding	>75%
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.
Aquifer Designation	Secondary A, Unproductive, Secondary A

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the Queen Mary Reservoir.

Summary

Sweep's Ditch flows south approximately 200m west of the south. It joins the River Thames 1km south of the site. The majority of the site (73%) is defined as Flood Zone 2, 11% is defined as Flood Zone 3 and 16% is defined as Flood Zone 1. The area does not benefit from flood defences.

RL1/011: Land at Staines and Laleham Sports Club, Worple Road, TW18 1HR

Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicates flood depths of 0-0.5m. The hazard rating is Very Low with some areas of Moderate (Danger for Some) towards the east.
The Risk of Flooding from Surface Water Map does not indicate that the site is at notable risk of surface water flooding. There are localised areas of flooding in proximity to the site.
Broadscale mapping suggests that the site is susceptible to groundwater flooding.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

It is proposed to redevelop the site for an improved sports club and residential development. It is noted that Site RL1/007 immediately to the north is also identified for residential development.

Given that part of this site is defined as Flood Zone 3, and it is proposed to include More Vulnerable residential development, it will need to satisfy the requirements of the Exception Test, i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

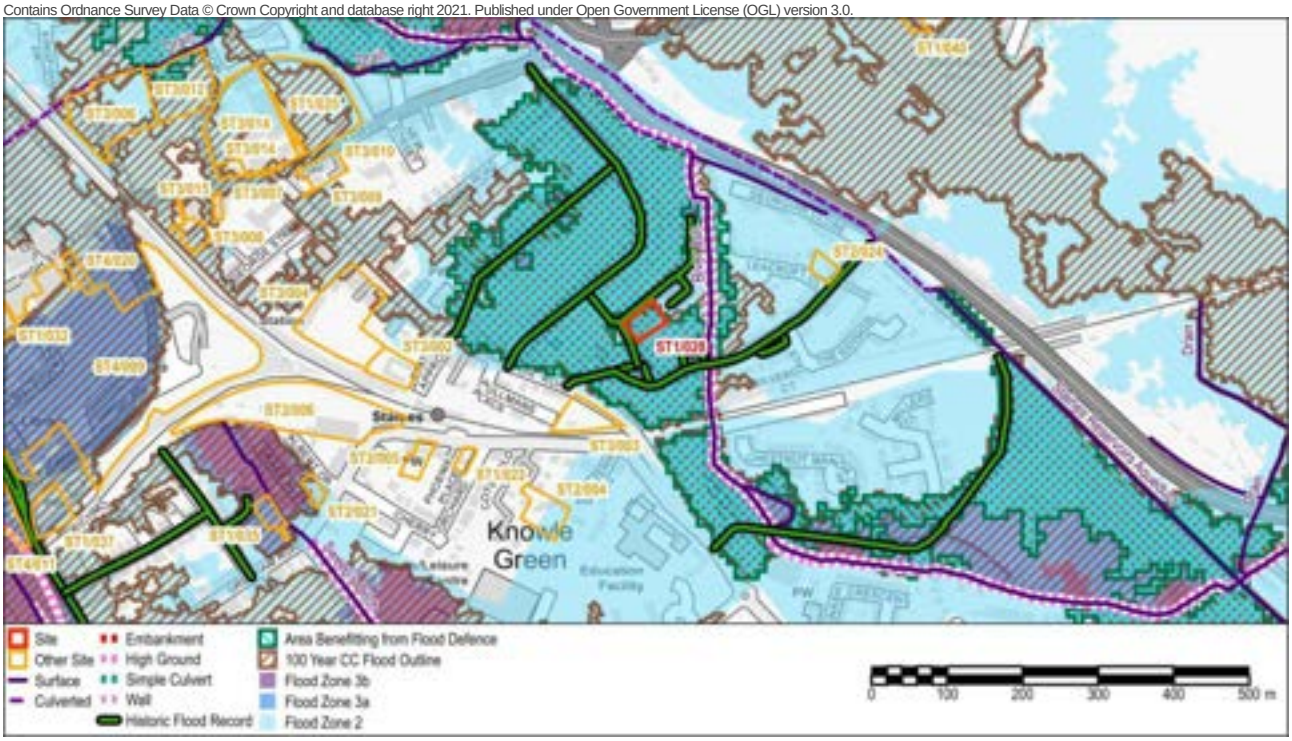
- Residential development should be steered towards those areas at lower risk of river flooding around the north and west of the site.
- Development of the site must ensure that the risk of flooding to surrounding areas is not increased, and where possible is reduced. Therefore, any increase in building footprint within the design flood extent (1% AEP including climate change) will need to be compensated on a level for level and volume for volume basis within the site. Given that part of the site is not currently within the design flood extent this is likely to be achievable. If Sites RL1/011 and RL1/007 are considered collectively, there may be more scope to successfully manage the risk of river flooding across the wider area, ensuring that the storage capacity of the floodplain is retained.
- Finished floor levels for residential accommodation must be above the design flood event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) is available for the site, along Worple Road north to Kingston Road, and then east to the A308. It is noted that the area of Flood Zone 1 adjacent to the site is a ‘dry island’ and parts of the egress route are located in Flood Zone 2.
- Development proposals for the site should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST1/028: Leacroft Centre, Leacroft, TW18 4PB

Site ID:	ST1/028	Area (ha):	0.15
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

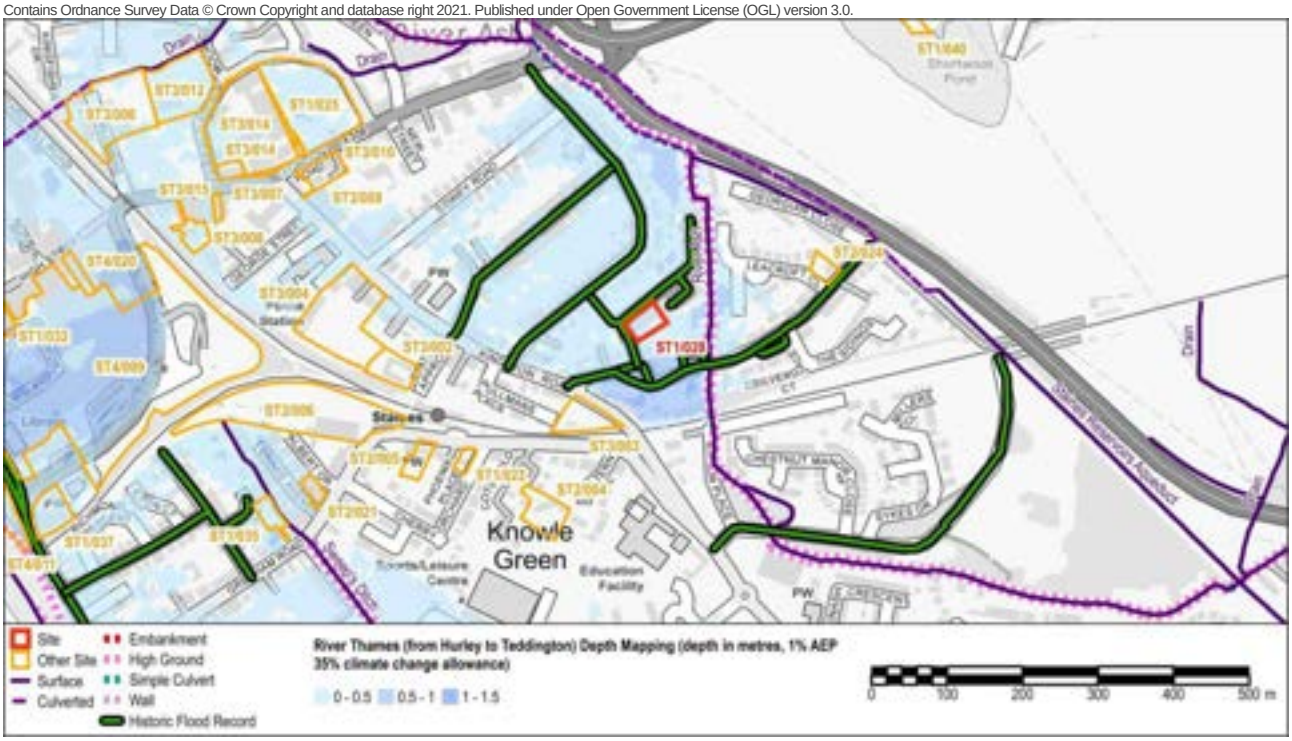
Flood Zone 1 (<0.1% AEP): 0%	Flood Zone 2 (0.1% AEP): 16%	Flood Zone 3 (1% AEP): 84%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 93%



Flood Zones and Flood Records

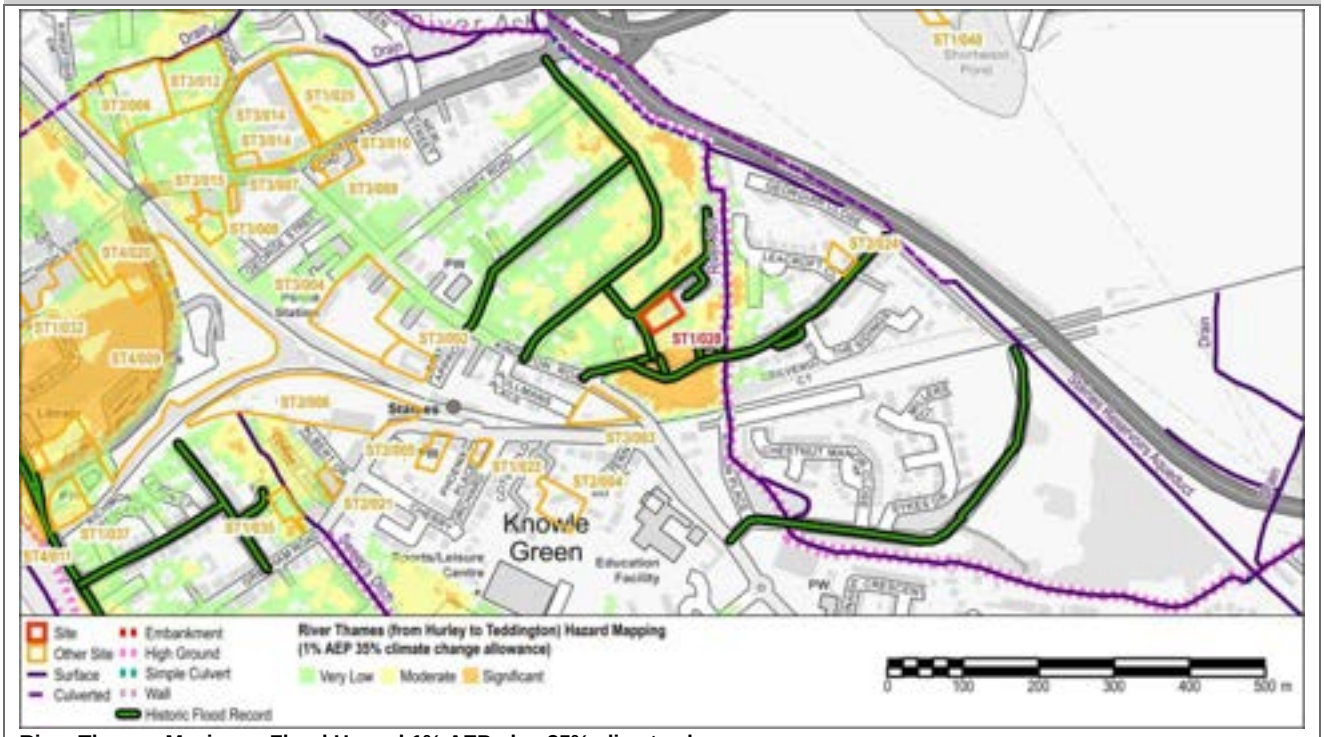
Flood Warning Area	River Ash at Ashford and Staines, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 30; External property flooding 0; Section 19 Flood Investigation incident 26; Surrey County Council Wetspots 1
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

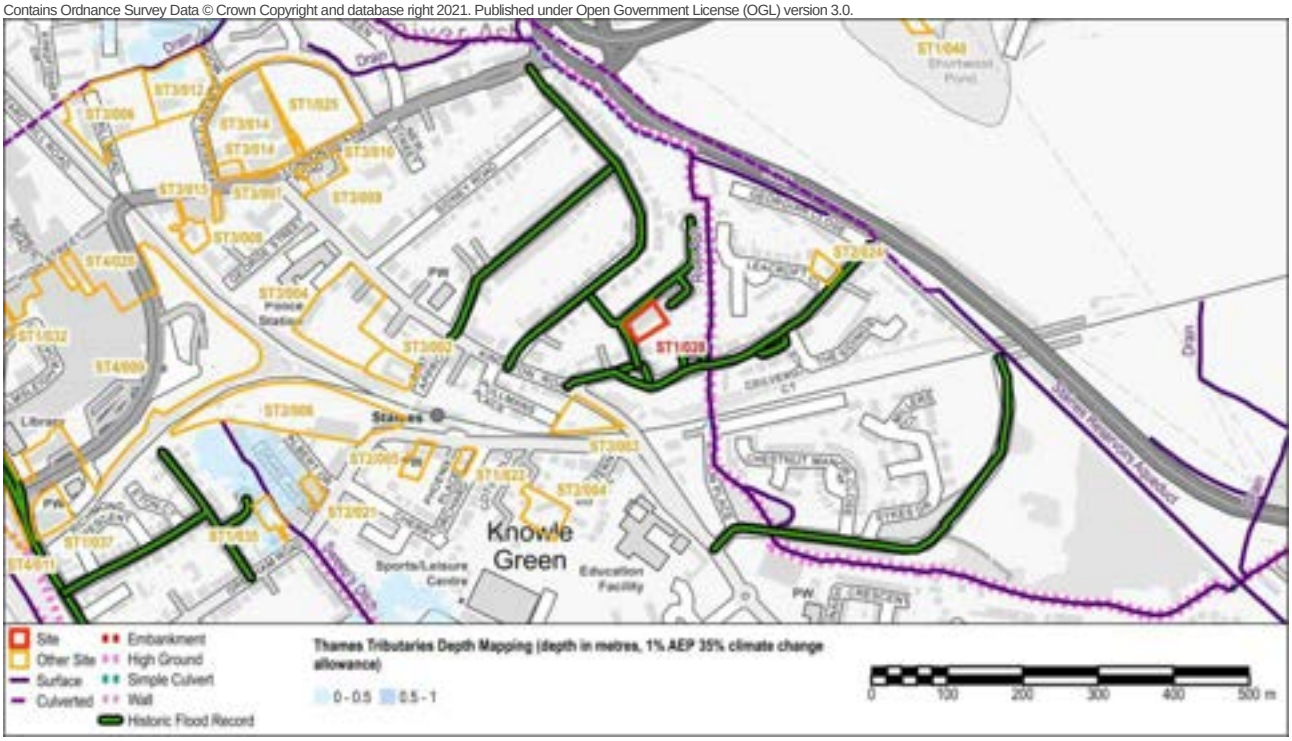


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST1/028: Leacroft Centre, Leacroft, TW18 4PB

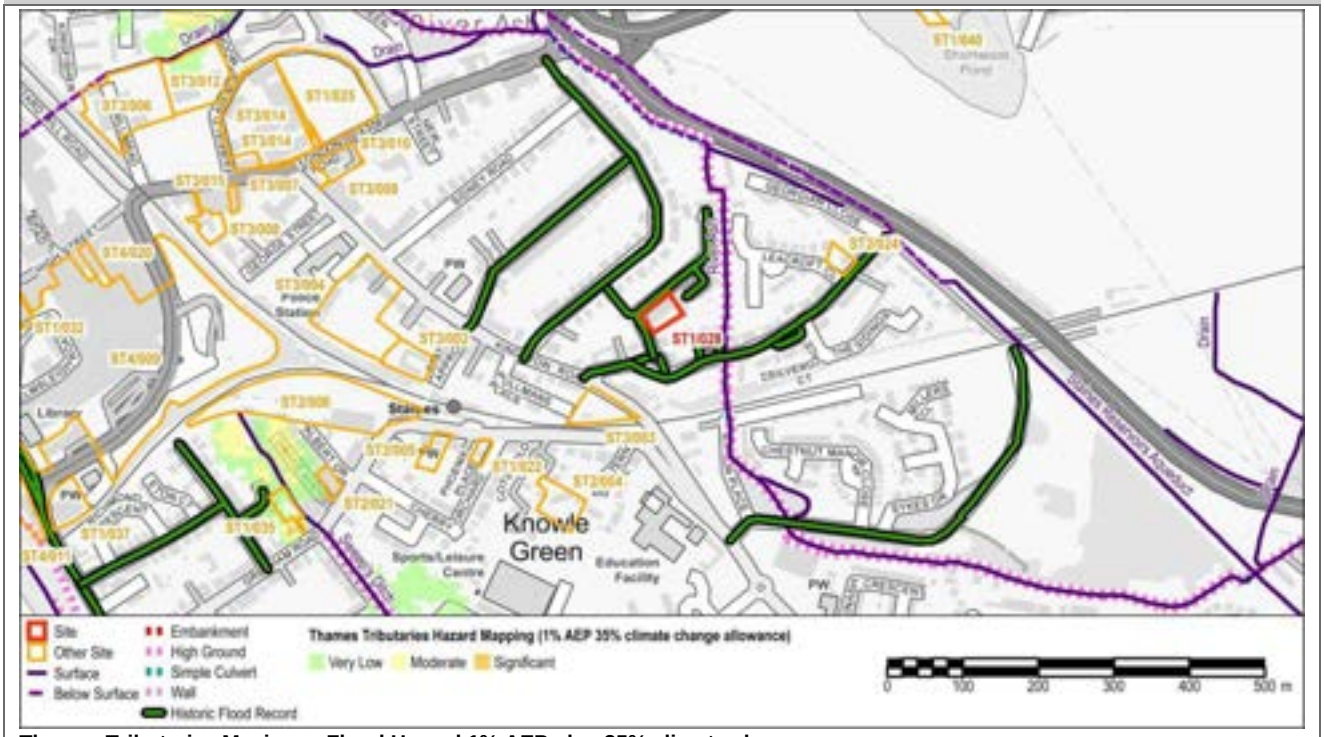


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

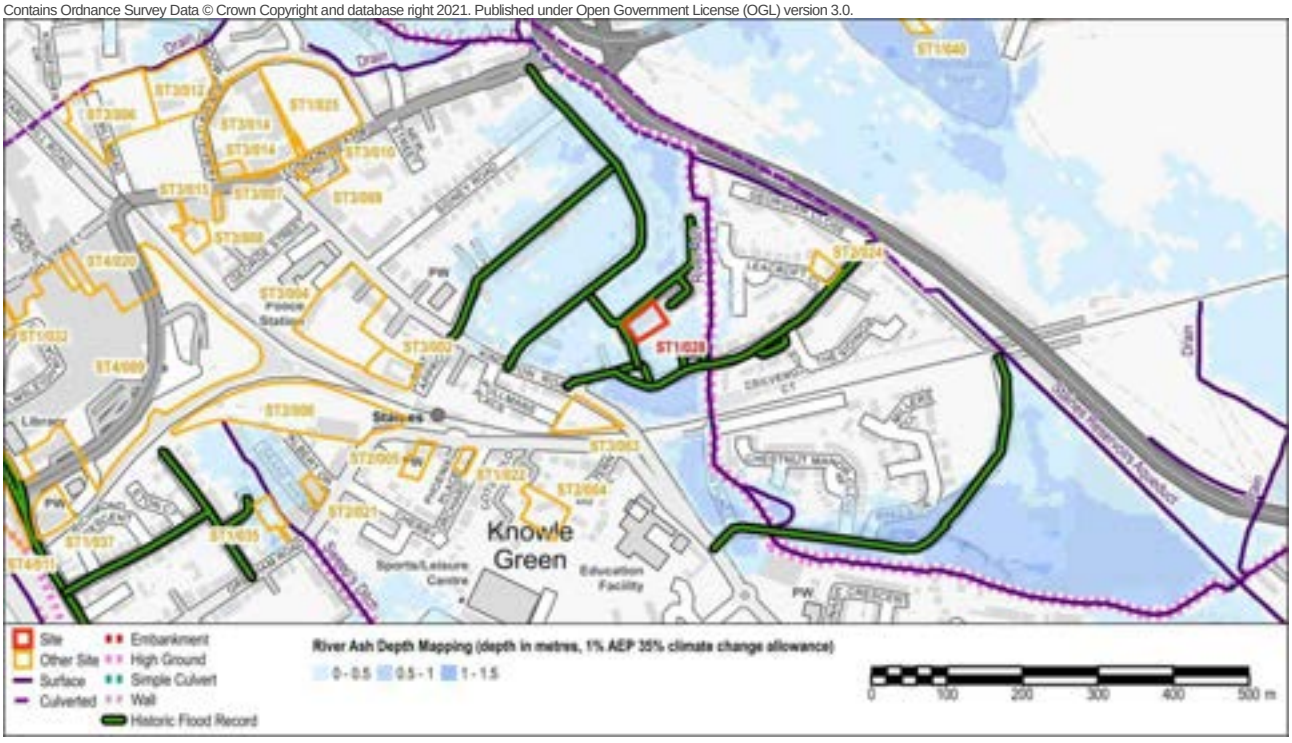


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST1/028: Leacroft Centre, Leacroft, TW18 4PB

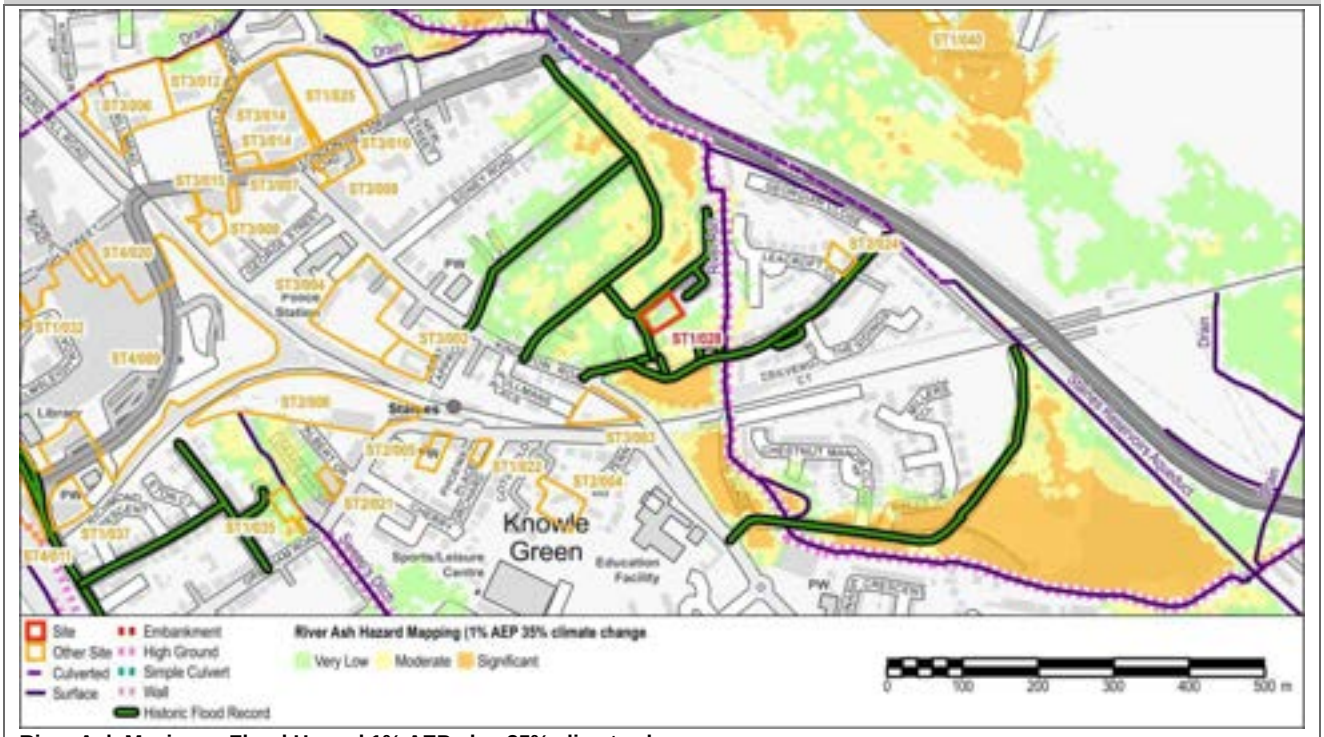


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

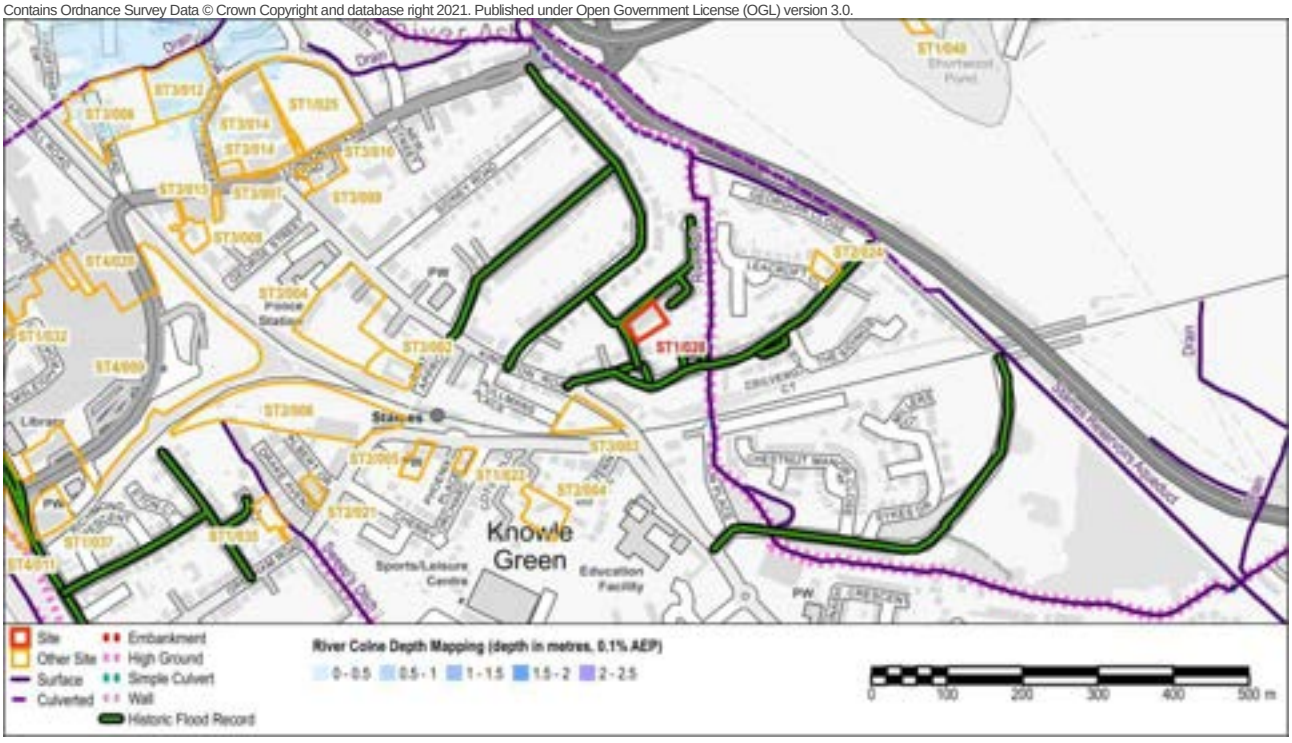


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST1/028: Leacroft Centre, Leacroft, TW18 4PB



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

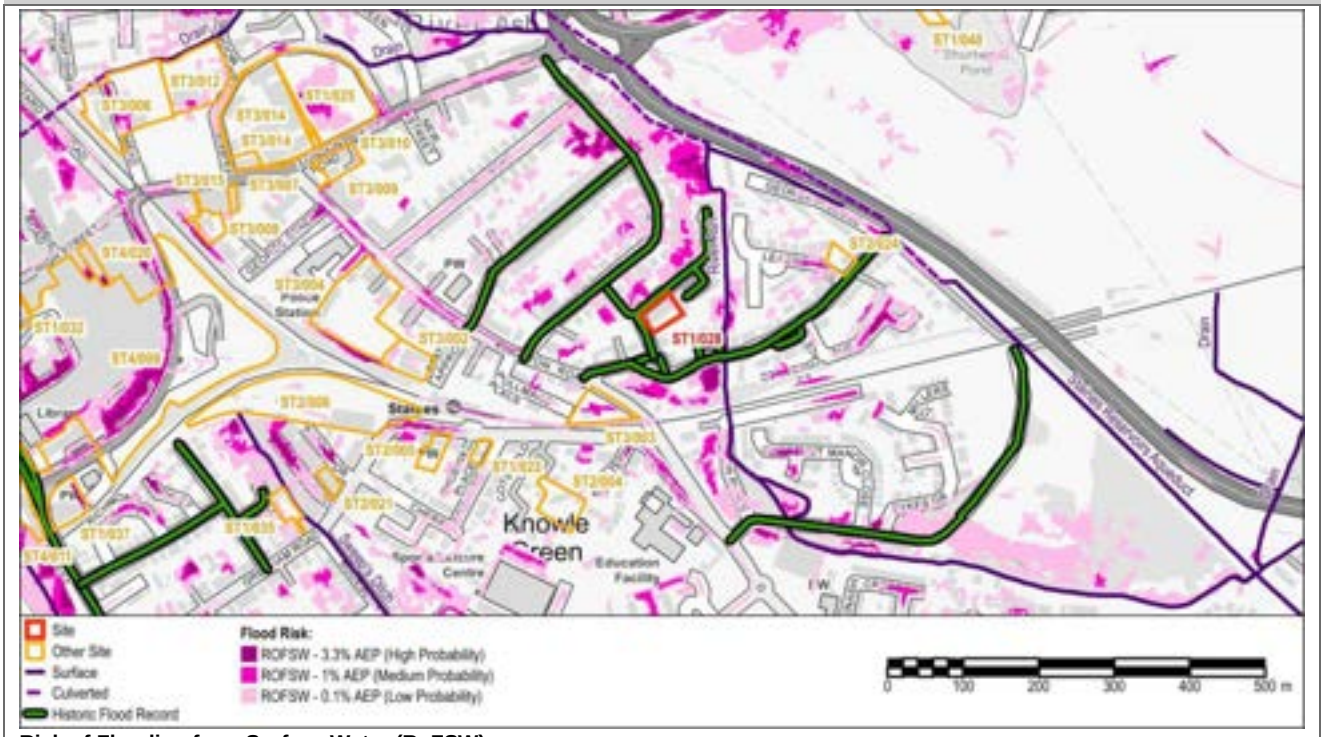


River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding

Risk of Flooding from Surface Water (RoFSW)	Medium

ST1/028: Leacroft Centre, Leacroft, TW18 4PB



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	25% to 50%		
BGS Susceptibility to Groundwater Flooding	Not considered to be prone to groundwater flooding.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Ash flows south approximately 50m to the east of the site. The channel has high ground on either side. The River Thames is located approximately 1km to the south west of the site. The majority of the site (84%) is defined as Flood Zone 3 High probability of river flooding. The remainder (16%) is defined as Flood Zone 2 Medium probability. The site is shown to benefit from the presence of defences.
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flow as a result of climate change indicates flood depths up to 0.5m on the site, with a corresponding hazard rating of Moderate (Danger for Some).
Modelling outputs for the River Ash for the 1% AEP event including 35% allowance for climate change indicates flood depths of up to 0.5m on the site, with a corresponding hazard rating of Low.
The Risk of Surface Water Map shows the potential risk of surface water ponding in proximity to the site, especially along Raleigh Crescent to the north of the site, which is supported by records of flooding in the area. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.

Site Specific Recommendations

Residential development is defined as More Vulnerable and is only permitted in Flood Zone 3 where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

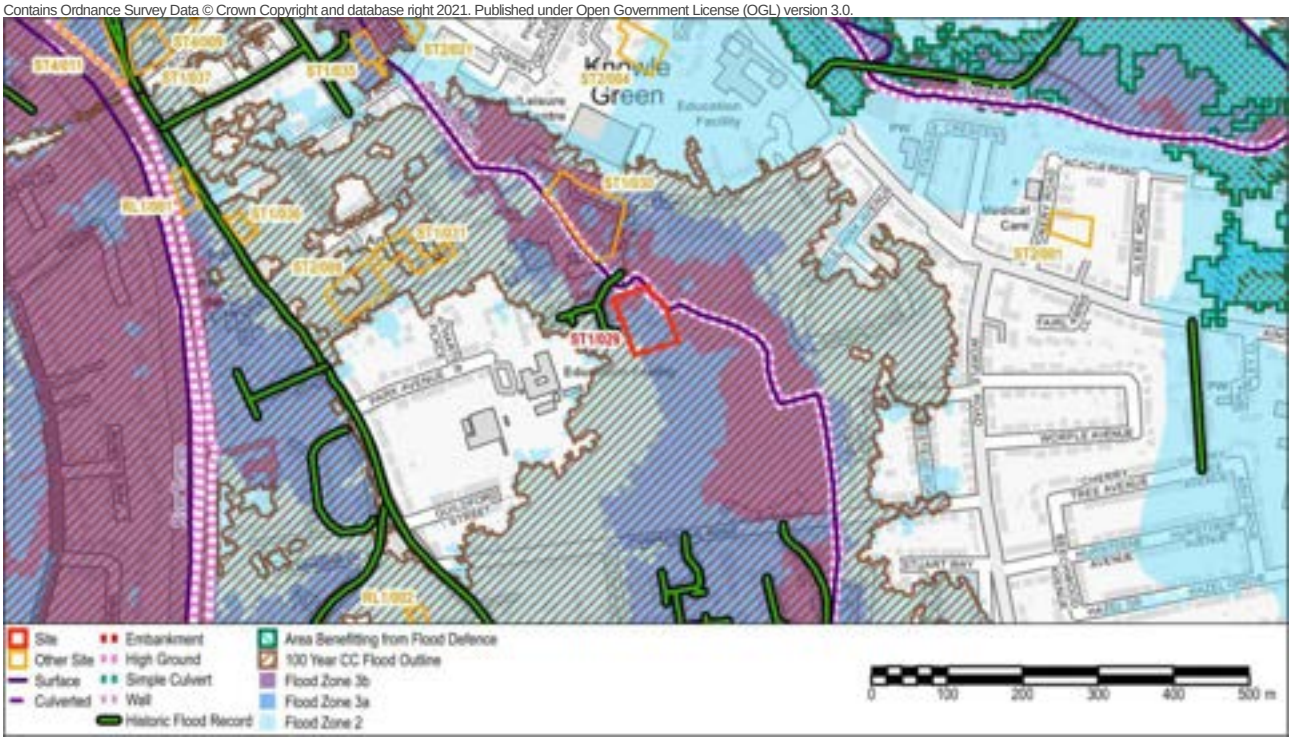
- There is built development on the existing site. In order to ensure that future development does not increase the risk of flooding, the built footprint of new development of the site should not exceed that of the existing building and where possible should be reduced. Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including climate change) to an area at low risk of flooding is likely to be achievable to the north of the site.
- The site is located within the Flood Warning Area for the Thames and Ash and Flood Warning and Evacuation Plans would need to be developed for occupants of the site to set out the response in the event of flooding.
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST1/029: Surrey CC Buildings, Burges Way, TW18

Site ID:	ST1/029	Area (ha):	0.47
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

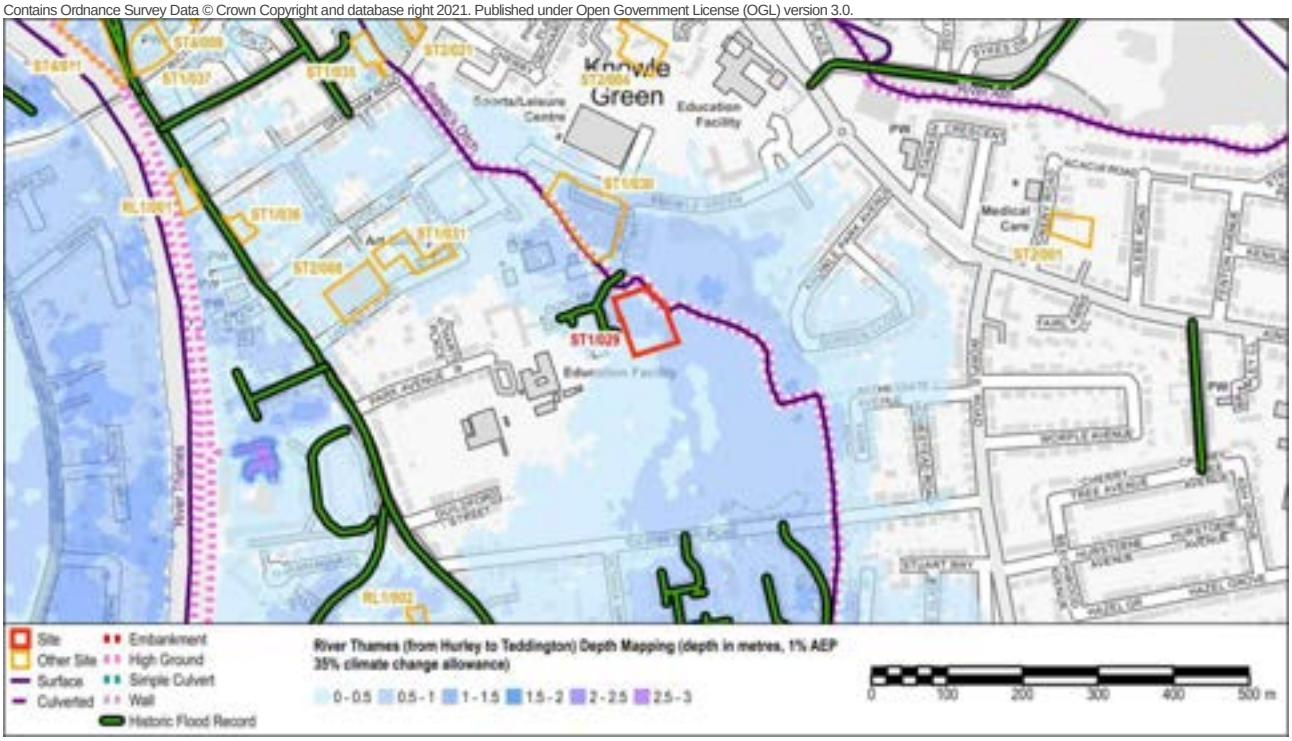
Flood Zone 1 (<0.1% AEP): 0%	Flood Zone 2 (0.1% AEP): 6%	Flood Zone 3 (1% AEP): 76%	Flood Zone 3b (5% AEP): 18%	Area Benefiting from Defences: 0%



Flood Zones and Flood Records

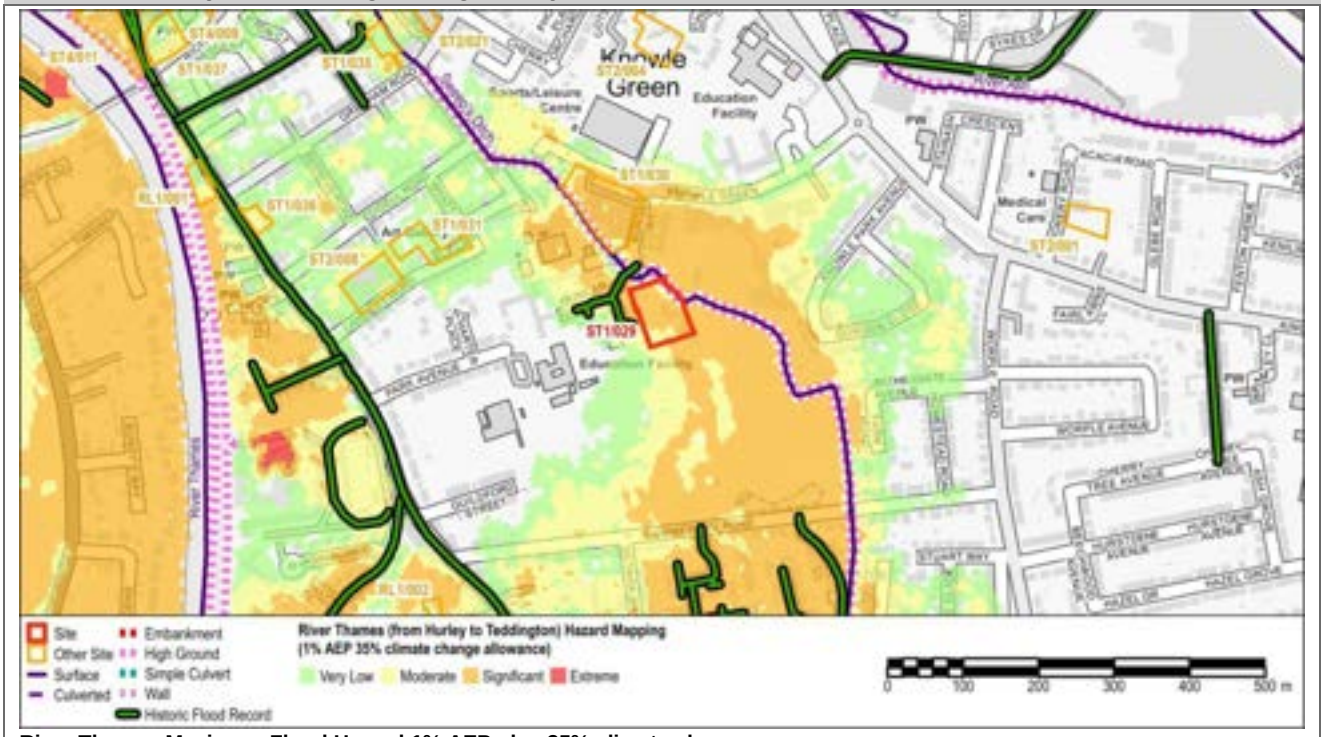
Flood Warning Area	River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 42; External property flooding 8; Section 19 Flood Investigation incident 54; Surrey County Council Wetspots 3
Sewer flooding records within the post code area in which the site is located:	Internal 2; External 15

River Flooding

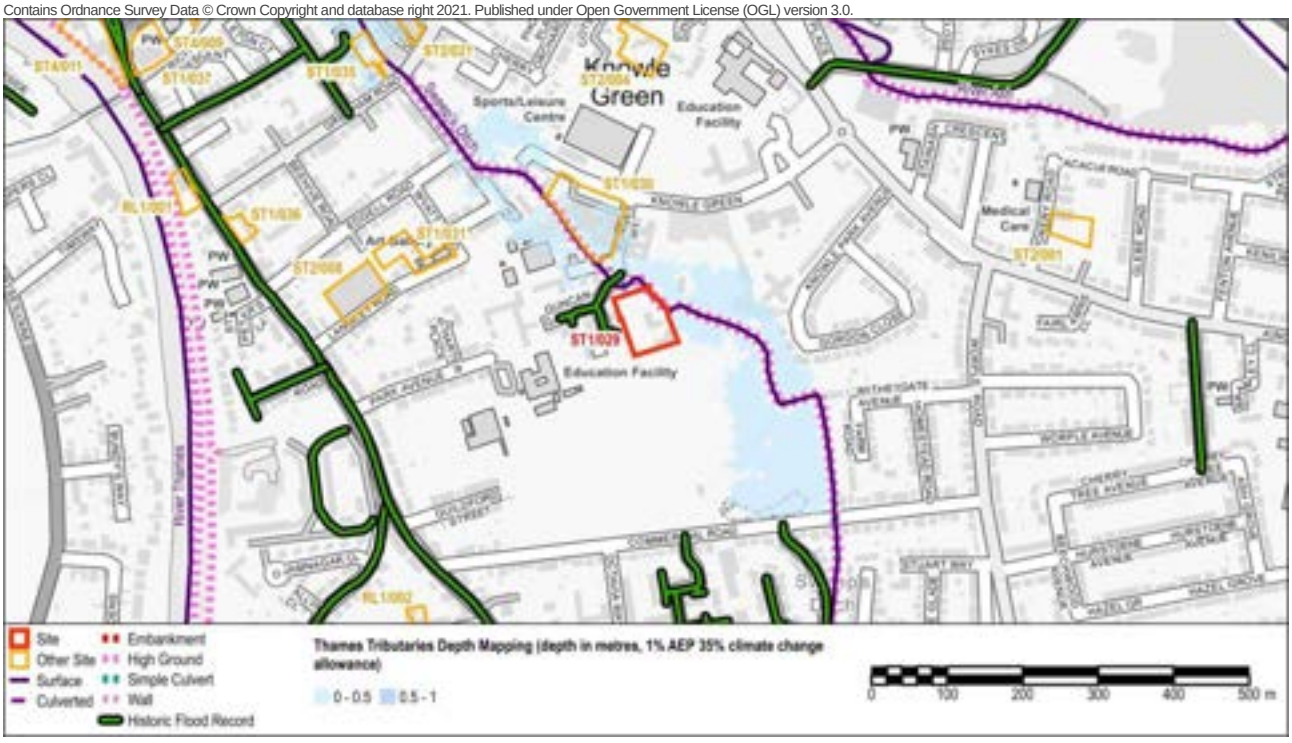


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST1/029: Surrey CC Buildings, Burges Way, TW18



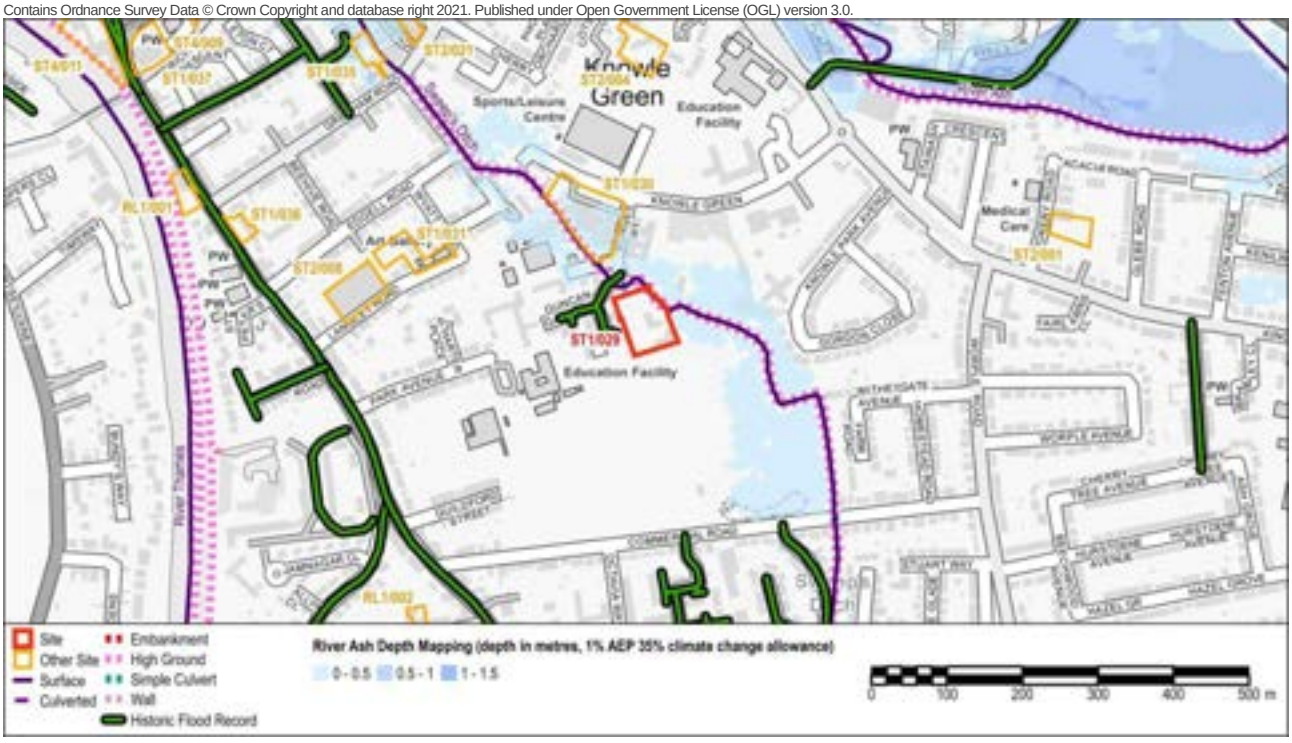
River Thames Maximum Flood Hazard 1% AEP plus 35% climate change



Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST1/029: Surrey CC Buildings, Burges Way, TW18

Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

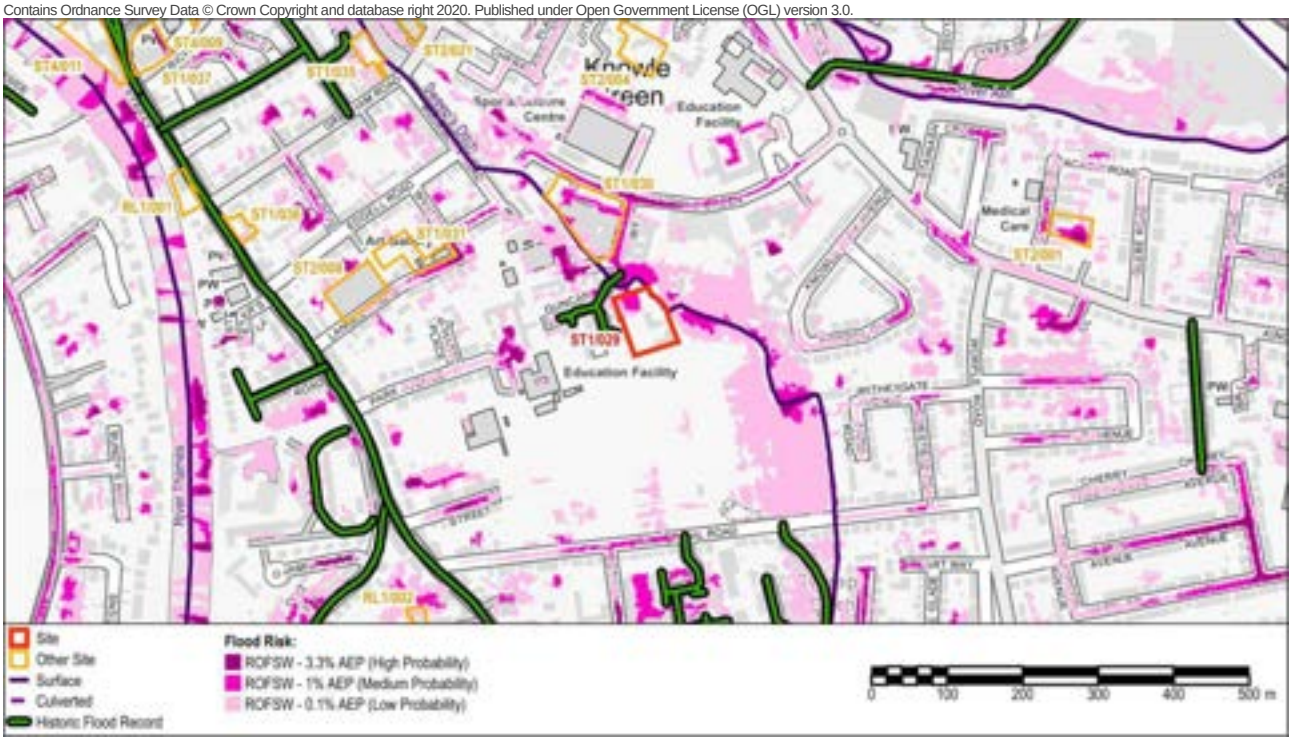


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST1/029: Surrey CC Buildings, Burges Way, TW18

River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

Sweep's Ditch, a tributary of the River Thames, flows along the north eastern edge of the site. The River Thames flows south approximately 580m to the west of the site. The majority of the site (77%) is defined as Flood Zone 3a High probability of river flooding,

ST1/029: Surrey CC Buildings, Burges Way, TW18

18% is defined as Flood Zone 3b Functional Floodplain, and 5% is defined as Flood Zone 2 Medium probability of river flooding. The site does not benefit from the presence of flood defences.
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicate flood depths of 0-1m on the site. This increases to up to 1.5m in the east. The hazard rating is Moderate to Significant (Danger for Most).
The area to the north, east and southeast of the site is shown to be at risk of flooding from the River Ash and Thames tributaries, but the site itself is not at risk from these sources during the 1% AEP including 35% climate change allowance.
The Risk of Flooding from Surface Water Map shows that the site is at Low to Medium risk of flooding in the north. SCC has identified internal flooding further downstream on the Sweep's Ditch.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

Development is not permitted in areas of Flood Zone 3b Functional Floodplain. This part of the site should be retained as floodplain and steps taken to restore the land to provide a more natural floodplain for the Sweep's Ditch.

More Vulnerable development is only permitted in the areas of Flood Zone 3 on this site where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

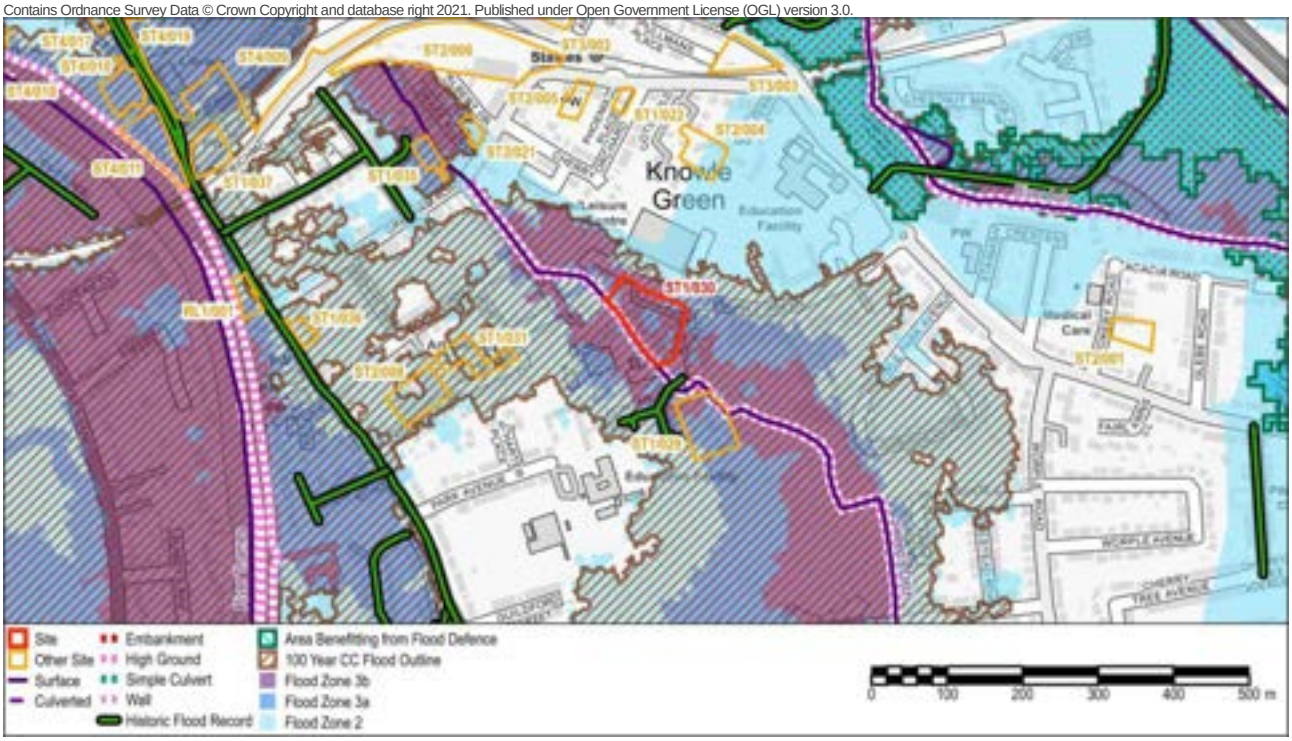
- There is built development on the existing site. In order to ensure that future development does not increase the risk of flooding, the built footprint of new development should not exceed that of the existing development, and where possible this should be reduced.
- Given the modelled flood depths on the site of up ~1m, opportunities should be explored for development with lower vulnerability uses located at ground level, and residential accommodation at higher levels. Flood resilience measures should be implemented for ground floor uses which are more likely to experience flooding. Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- The main access route for this site along Burges Way is shown to be have a hazard rating of Significant (Danger for Most) and is therefore not an appropriate safe access/egress route once floodwaters have advanced. Alternative safe access/egress must be provided for occupants of the site, which may be achievable west from the site along Park Avenue, the B376 and then east onto Gresham Road.
- A Flood Warning and Evacuation Plan should be prepared for occupants of the site to determine the course of action in the event of a flood warning being issued, and flooding occurring. The site is located in the Flood Warnings Areas for River Thames at Staines and Egham.
- Development proposals for the site should seek to restrict surface water runoff rates to greenfield rates or less; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing. SCC has identified internal flooding further downstream along Sweep's Ditch. Reducing surface water runoff to the Sweep's Ditch will help reduce the risk to properties downstream.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation

ST1/030: Fairways Day Centre, Knowle Green, TW18 1AJ

Site ID:	ST1/030	Area (ha):	0.66
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

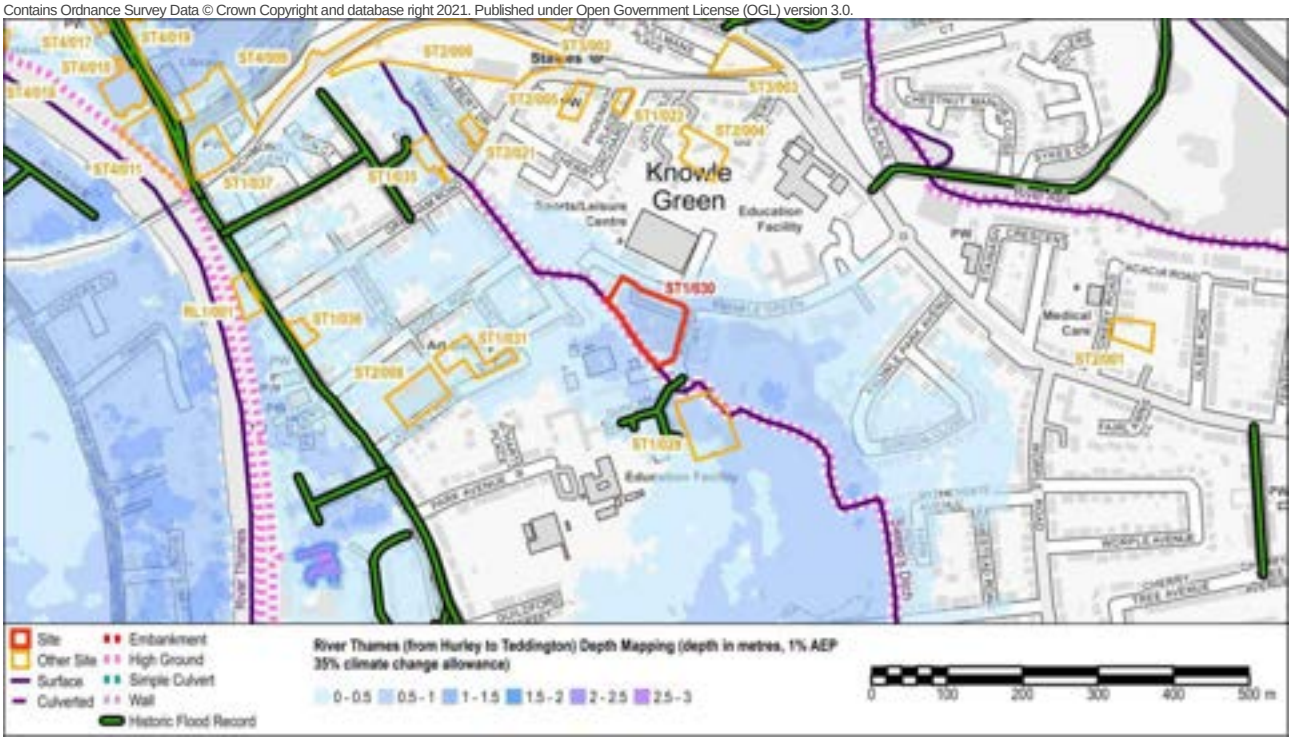
Flood Zone 1 (<0.1% AEP): 0%	Flood Zone 2 (0.1% AEP): 2%	Flood Zone 3 (1% AEP): 25%	Flood Zone 3b (5% AEP): 73%	Area Benefiting from Defences: 0%



Flood Zones and Flood Records

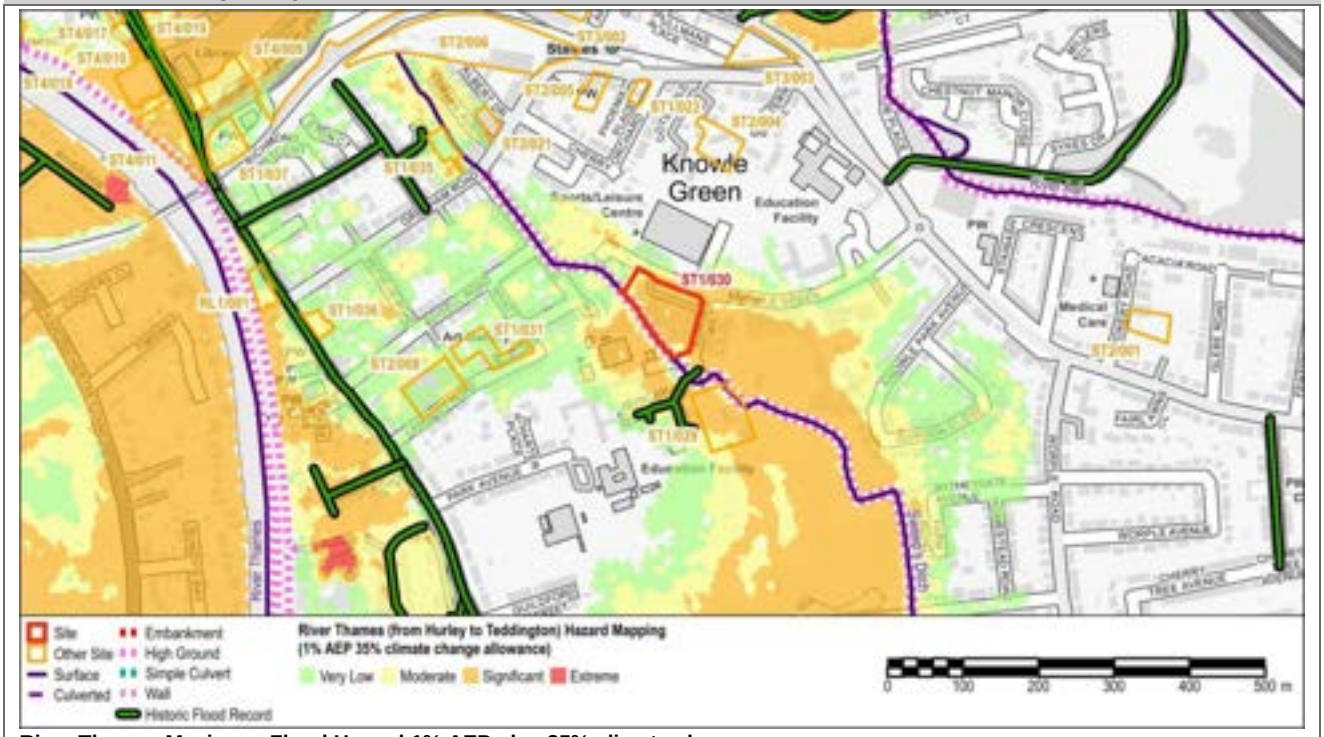
Flood Warning Area	River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947, EA06Winter13-14
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 66; External property flooding 2; Section 19 Flood Investigation incident 62; Surrey County Council Wetspots 4
Sewer flooding records within the post code area in which the site is located:	Internal 2; External 15

River Flooding

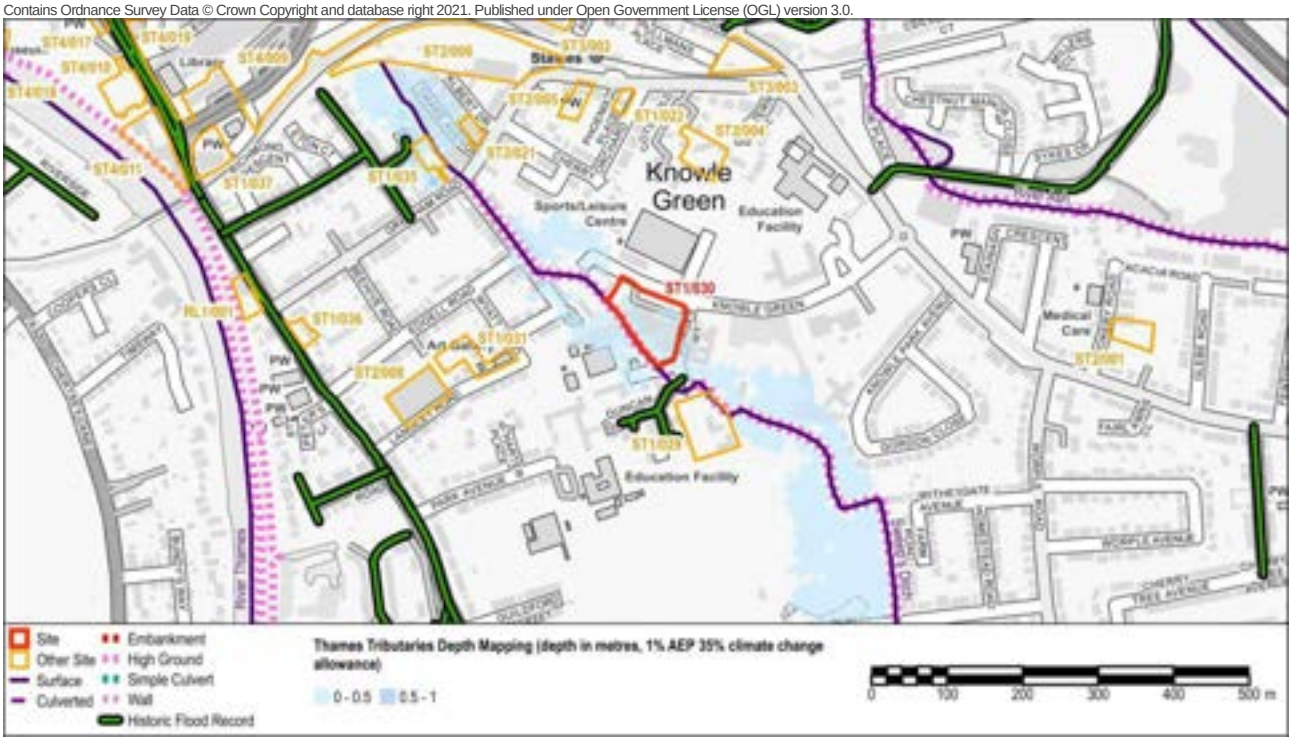


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST1/030: Fairways Day Centre, Knowle Green, TW18 1AJ



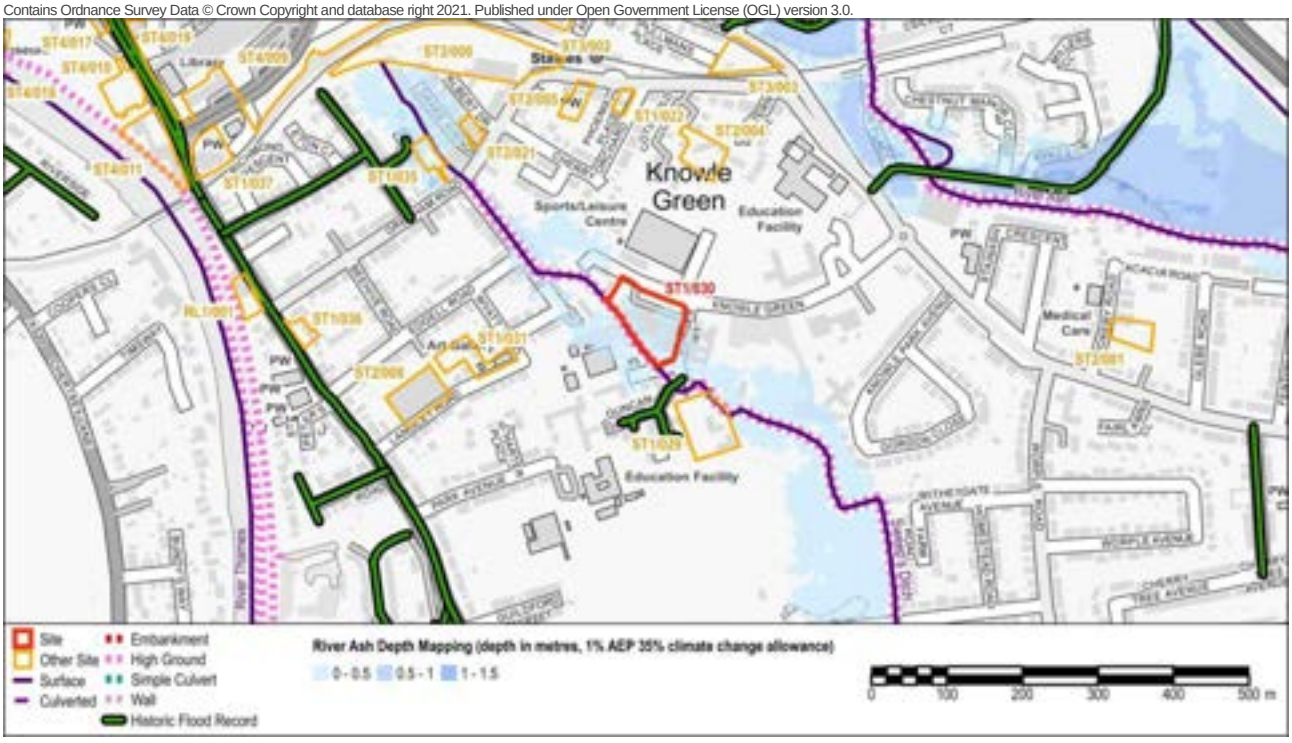
River Thames Maximum Flood Hazard 1% AEP plus 35% climate change



Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

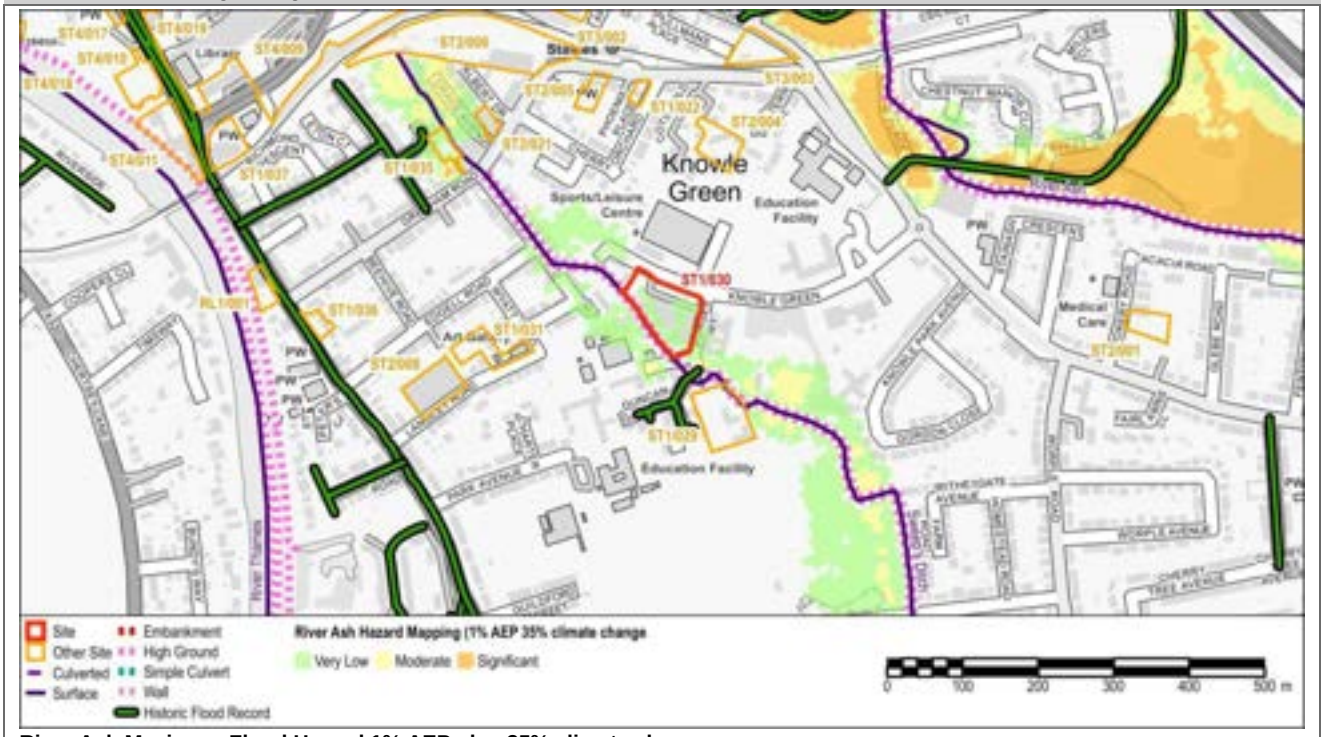
ST1/030: Fairways Day Centre, Knowle Green, TW18 1AJ

Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change



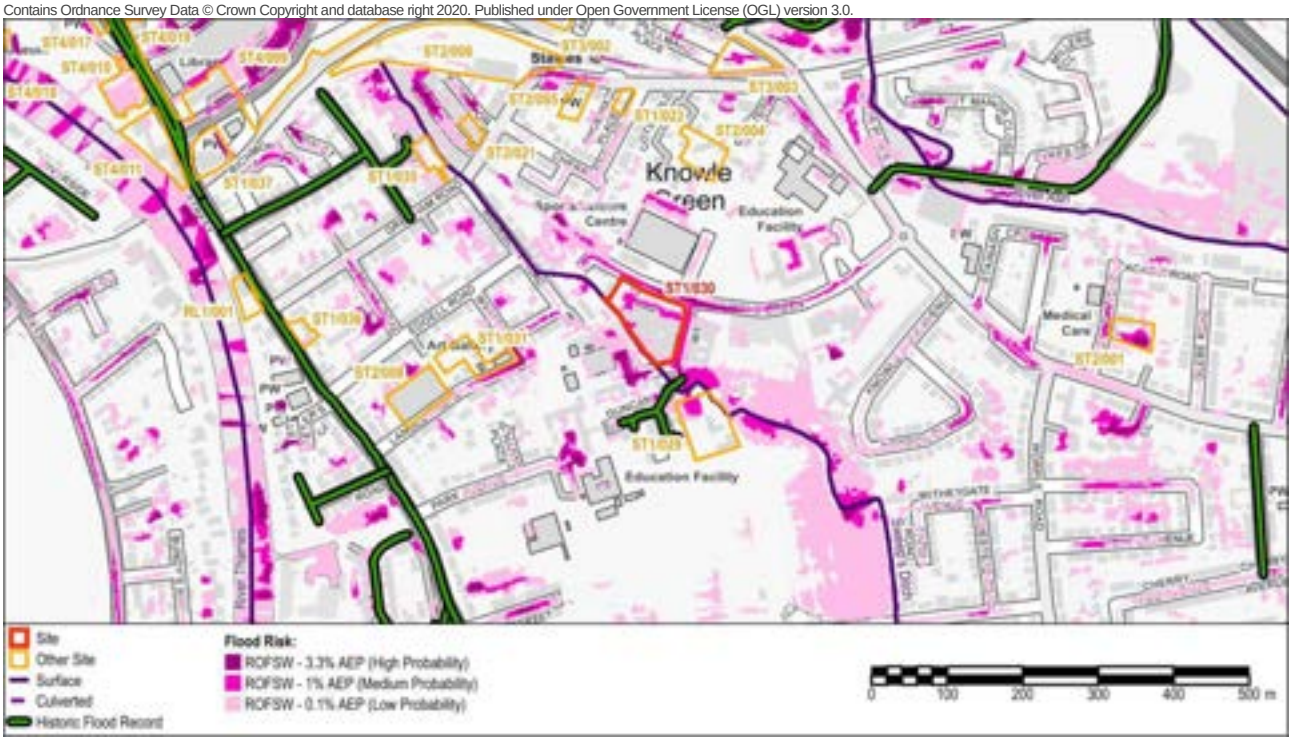
River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST1/030: Fairways Day Centre, Knowle Green, TW18 1AJ



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	25% to 50%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

Sweep's Ditch flows along the western boundary of the site. The River Thames flows south approximately 580m to the west of the site. The majority of the site (73%) is defined as Flood Zone 3b with the remaining defined as Flood Zone 3a (25%) and Flood Zone 2 (2%). The site does not benefit from flood defences.

ST1/030: Fairways Day Centre, Knowle Green, TW18 1AJ

Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicates flood depths of 0.5-1m. The hazard rating for the site is Significant (Danger for Most).
The site is also shown to be at risk of flooding from the Thames Tributaries and River Ash, with flood depths of 0-0.5m and a corresponding hazard rating of Low.
The Risk of Flooding from Surface Water Map shows the site to be at Low to Medium risk of flooding in the north, south and east of the site. SCC has identified internal flooding further downstream along Sweep's Ditch.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

The majority of this site is located in the flood extent for the 5% AEP (1 in 20 year) event.

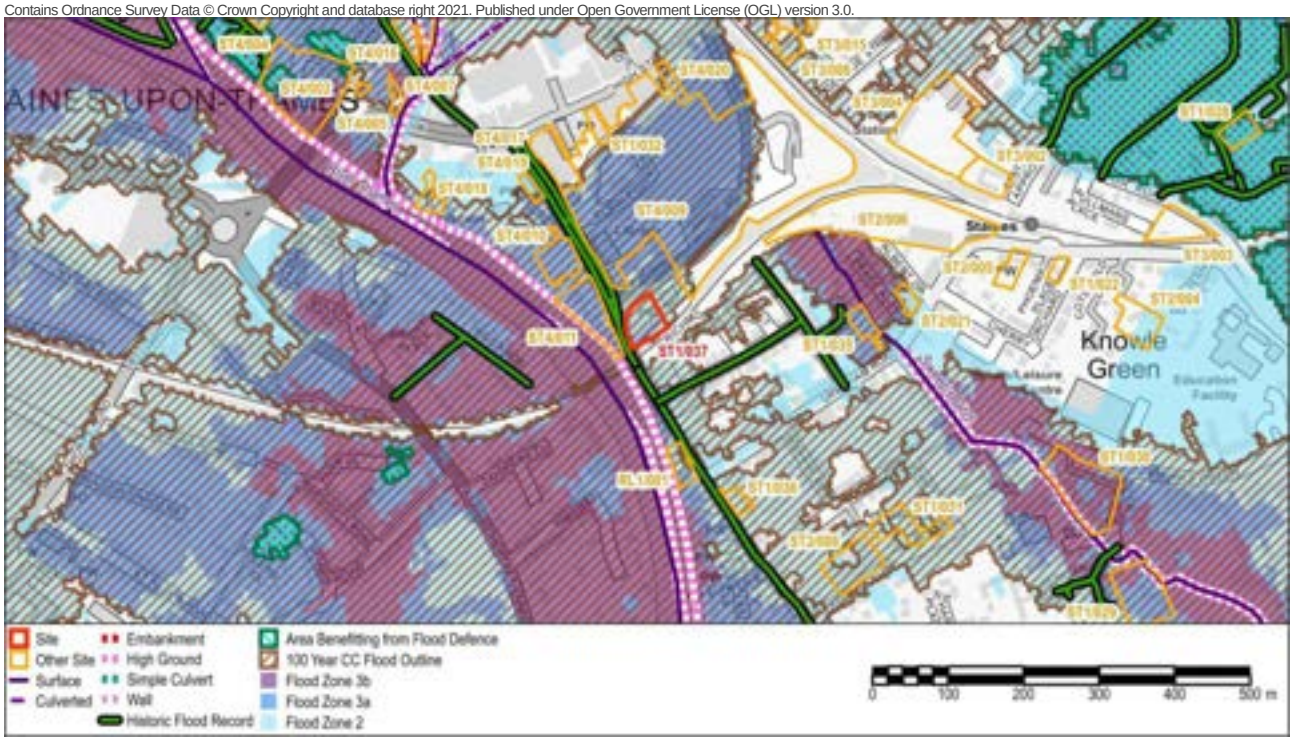
Policy E2 states that within the 1 in 20 year (5% AEP) extent, existing infrastructure or solid buildings that resist water ingress are not included within the definition of Flood Zone 3b Functional Floodplain and the associated planning requirements do not apply. However, Policy E2 does not permit redevelopment that will increase the vulnerability classification of the development and the number of occupants on the site. It is therefore considered that redevelopment of this site to include residential uses is unlikely to be appropriate.

ST1/037: Thameside House, South Street, TW18 4PR

Site ID:	ST1/037	Area (ha):	0.24
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

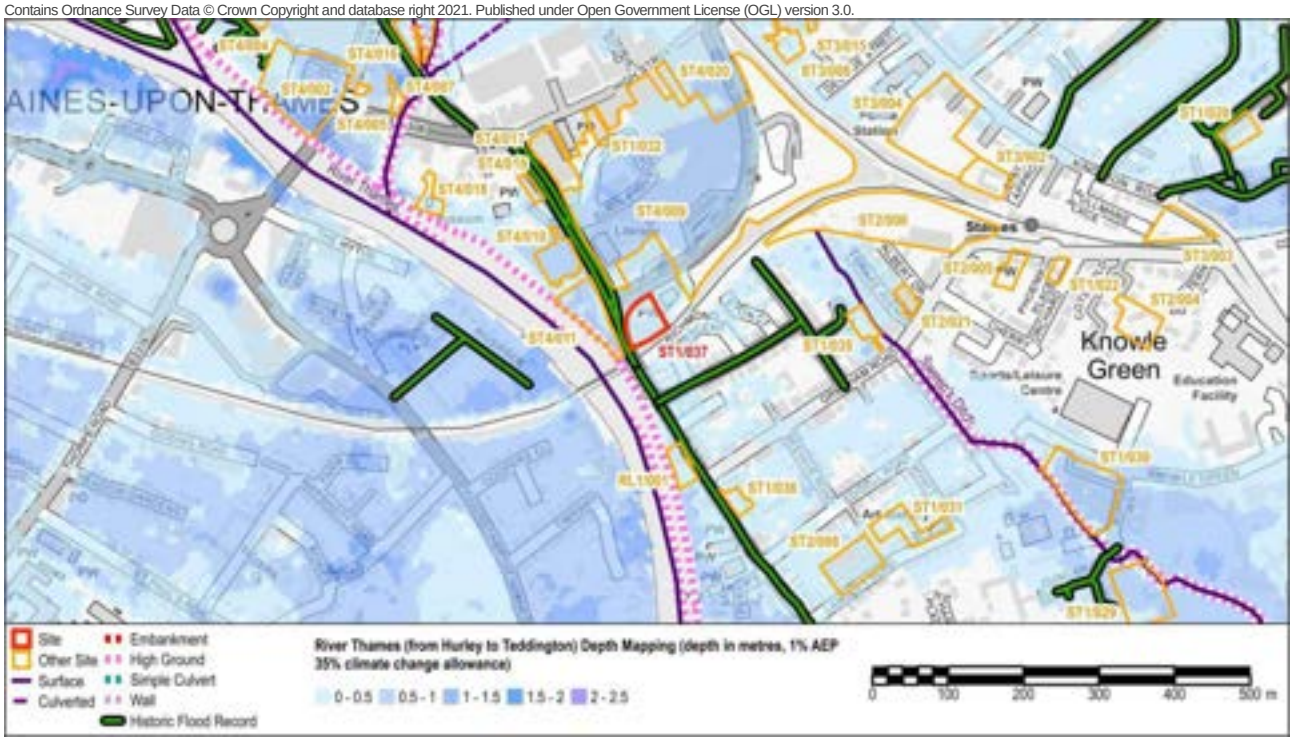
Flood Zone 1 (<0.1% AEP): 1%	Flood Zone 2 (0.1% AEP): 75%	Flood Zone 3 (1% AEP): 24%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%



Flood Zones and Flood Records

Flood Warning Area	River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	None
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 30; External property flooding 2; Section 19 Flood Investigation incident 28; Surrey County Council Wetspots 0
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

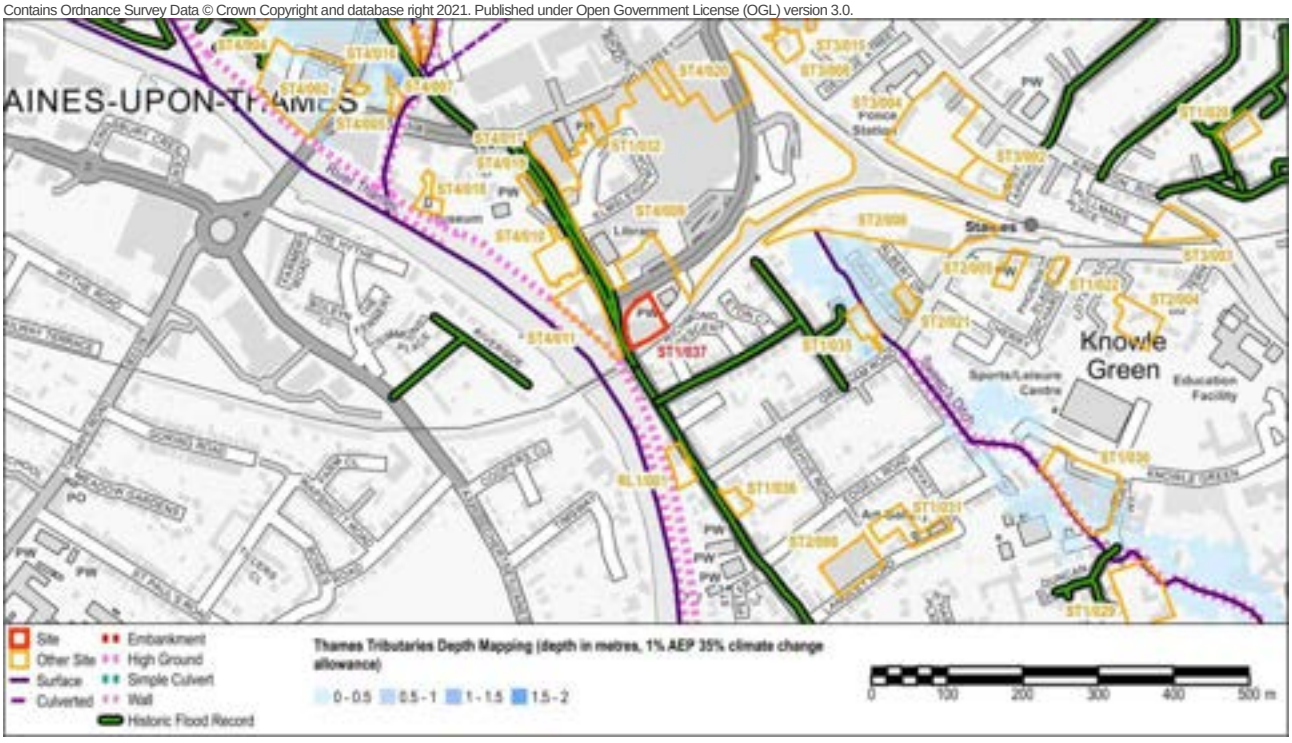
River Flooding



River Thames Maximum Flood Depth 1% AEP plus 35% climate change

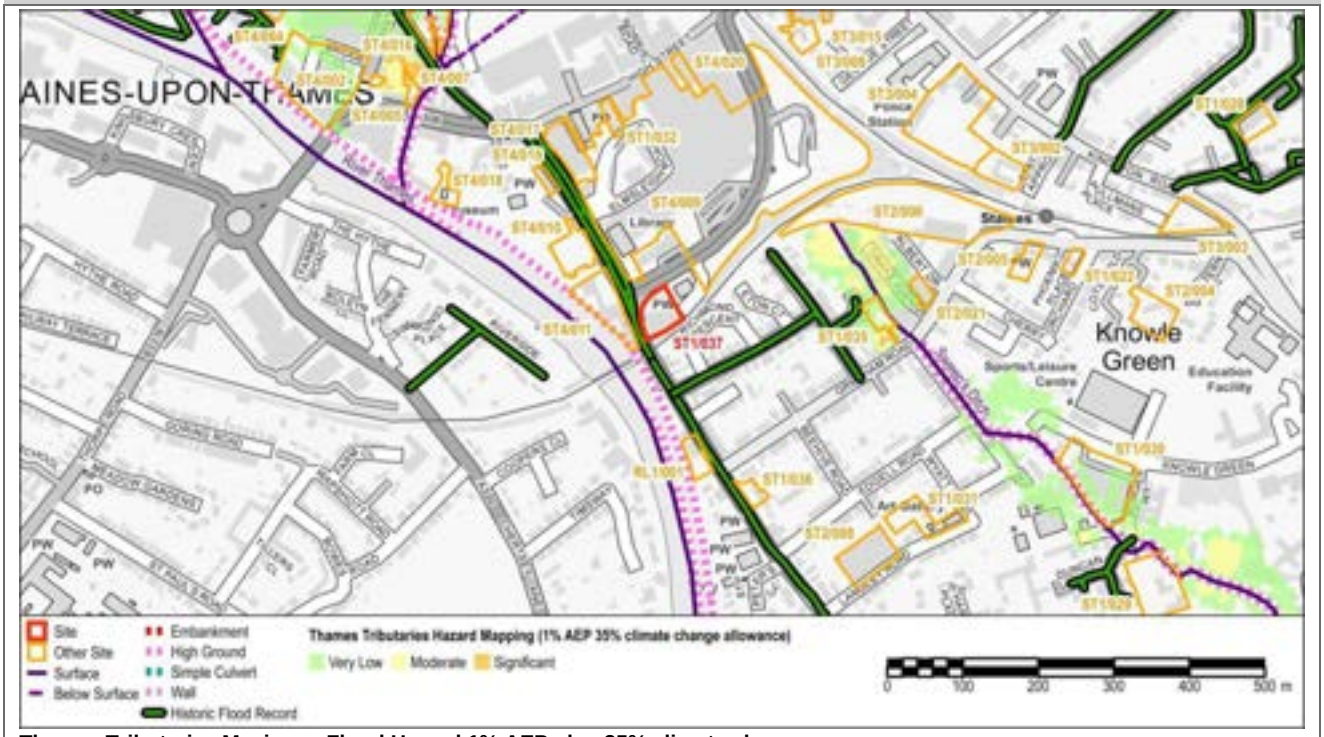
ST1/037: Thameside House, South Street, TW18 4PR

River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

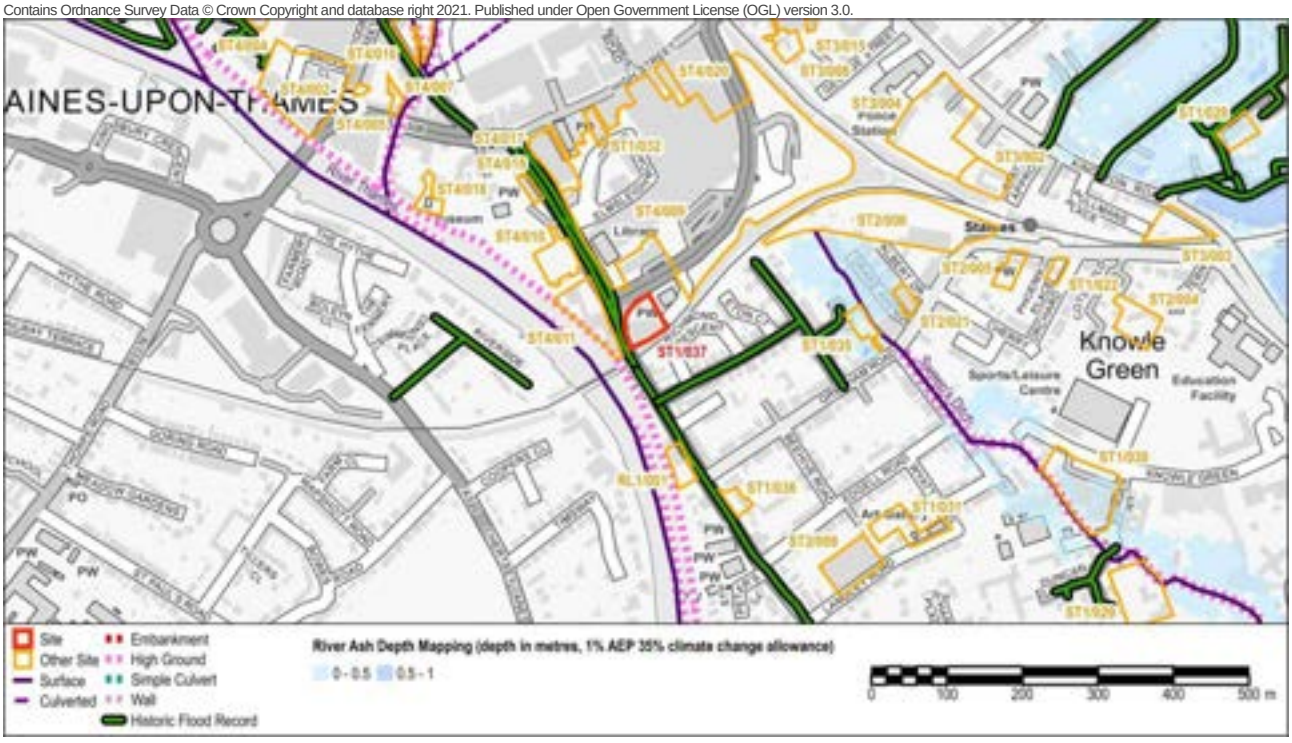


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST1/037: Thameside House, South Street, TW18 4PR

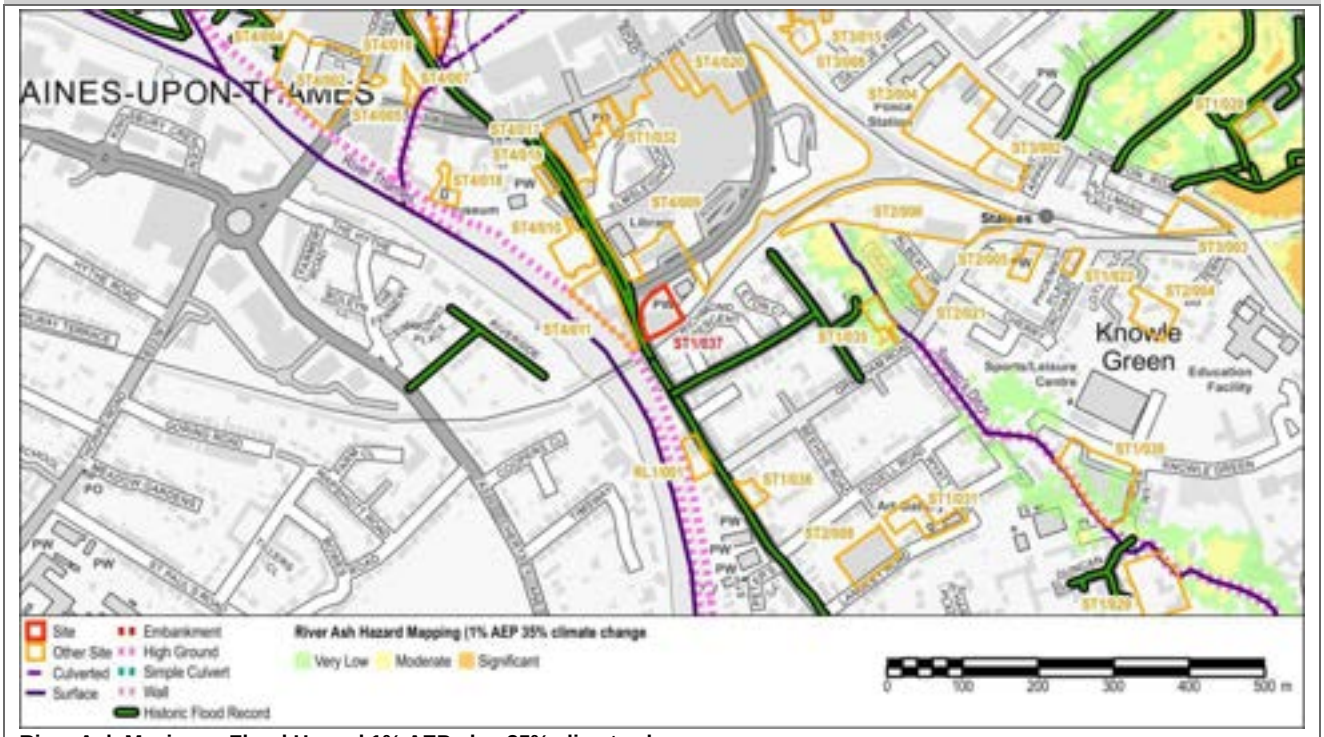


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

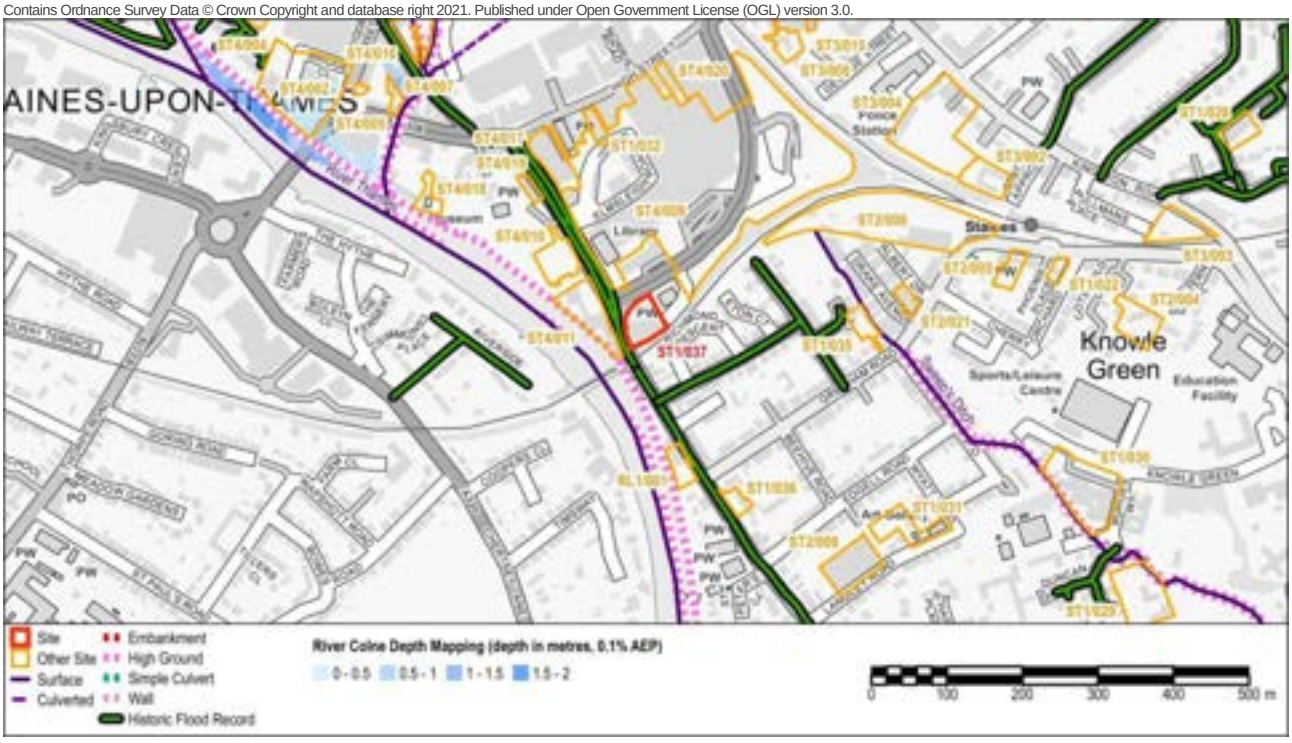


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST1/037: Thameside House, South Street, TW18 4PR



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding

Risk of Flooding from Surface Water (RoFSW)	Low

ST1/037: Thameside House, South Street, TW18 4PR

Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south east approximately 40m to the west of the site. The majority of the site (75%) is defined as Flood Zone 2, 24% is defined as Flood Zone 3. The site does not benefit from flood defences.
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicates flood depths of 0-0.5m. The hazard rating is Low in the north west to Moderate (Danger for Some) in the south east.
The Risk of Flooding from Surface Water Map does not indicate the site to be at particular risk, however the site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

Residential development is defined as More Vulnerable and is only permitted on the site where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

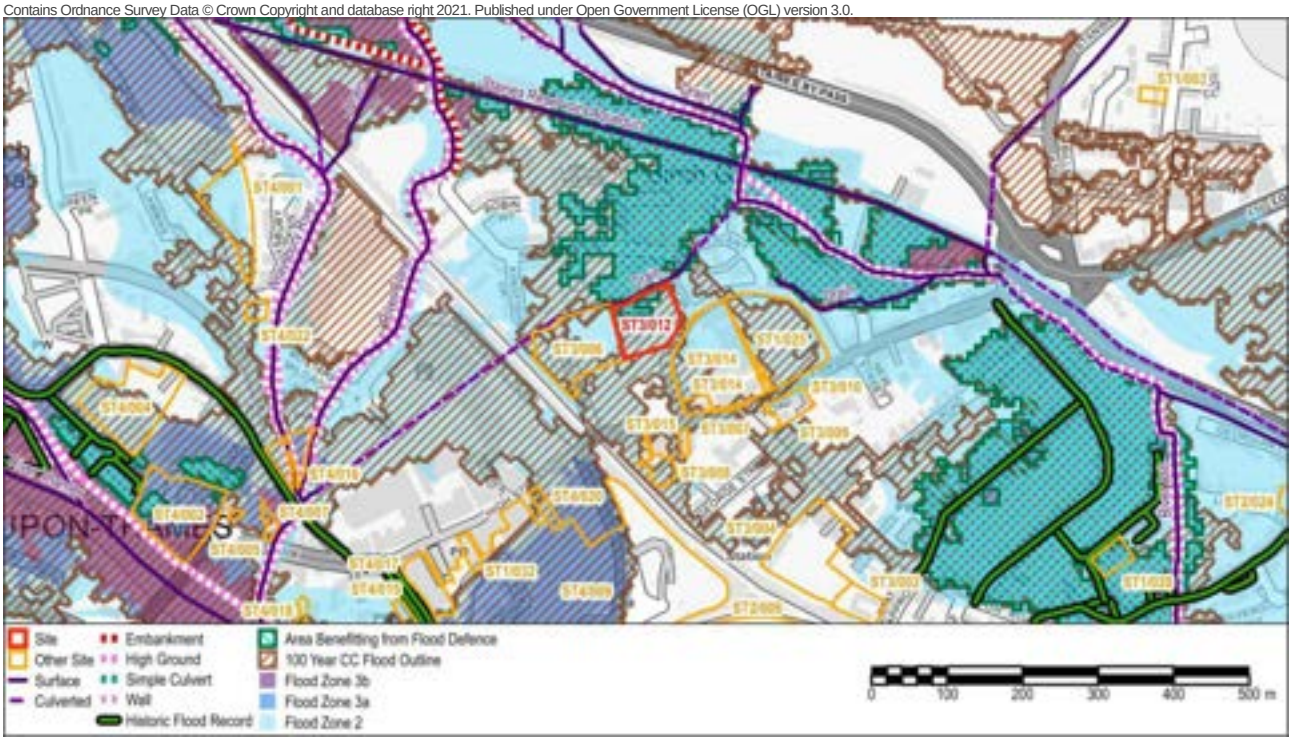
- The entire site is at risk of flooding during the design flood event (1% AEP including climate change). In order to ensure that future development does not increase the risk of flooding to the surrounding areas, the built footprint of the new development should not exceed that of the existing building and where possible should be reduced.
- Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may not be achievable from the site. The route along South Street and north on to the High Street goes underneath the railway line and is at risk of flooding. Provision of an improved route out of this area could improve the safety of future development in this area. Places of safe refuge should be designed into the development, above the design event (1% AEP including climate change).
- The site is located within the Flood Warning Area for the Thames and Flood Warning and Evacuation Plans would need to be developed for occupants of the site to set out the response in the event of flooding.
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST3/012: Staines Telephone Exchange, Fairfield Avenue, TW18 4AB

Site ID:	ST3/012	**Area (ha):**	0.59
Proposed Use:	Residential	**Vulnerability Classification:**	More Vulnerable

Flood Zones and Historic Flooding

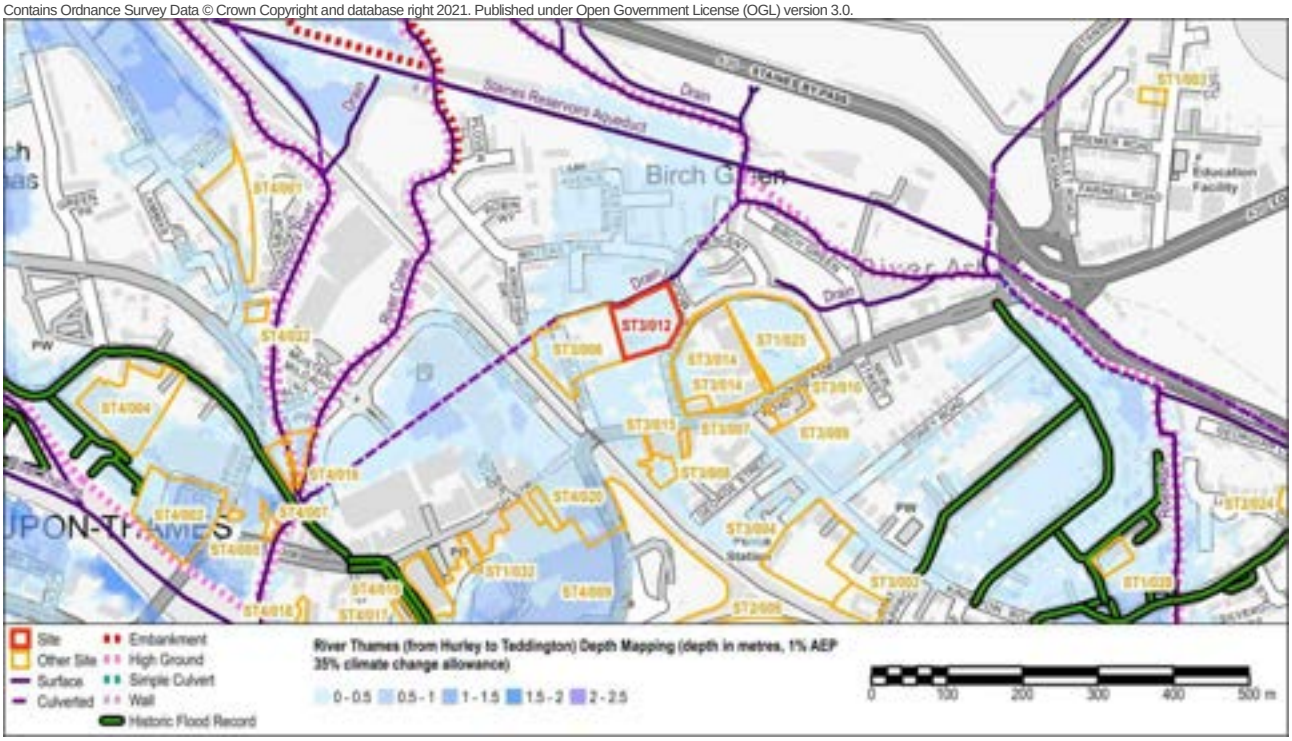
Flood Zone 1 (<0.1% AEP): 0%	**Flood Zone 2 (0.1% AEP):** 80%	**Flood Zone 3 (1% AEP):** 20%	**Flood Zone 3b (5% AEP):** 0%	**Area Benefiting from Defences:** 14%



Flood Zones and Flood Records

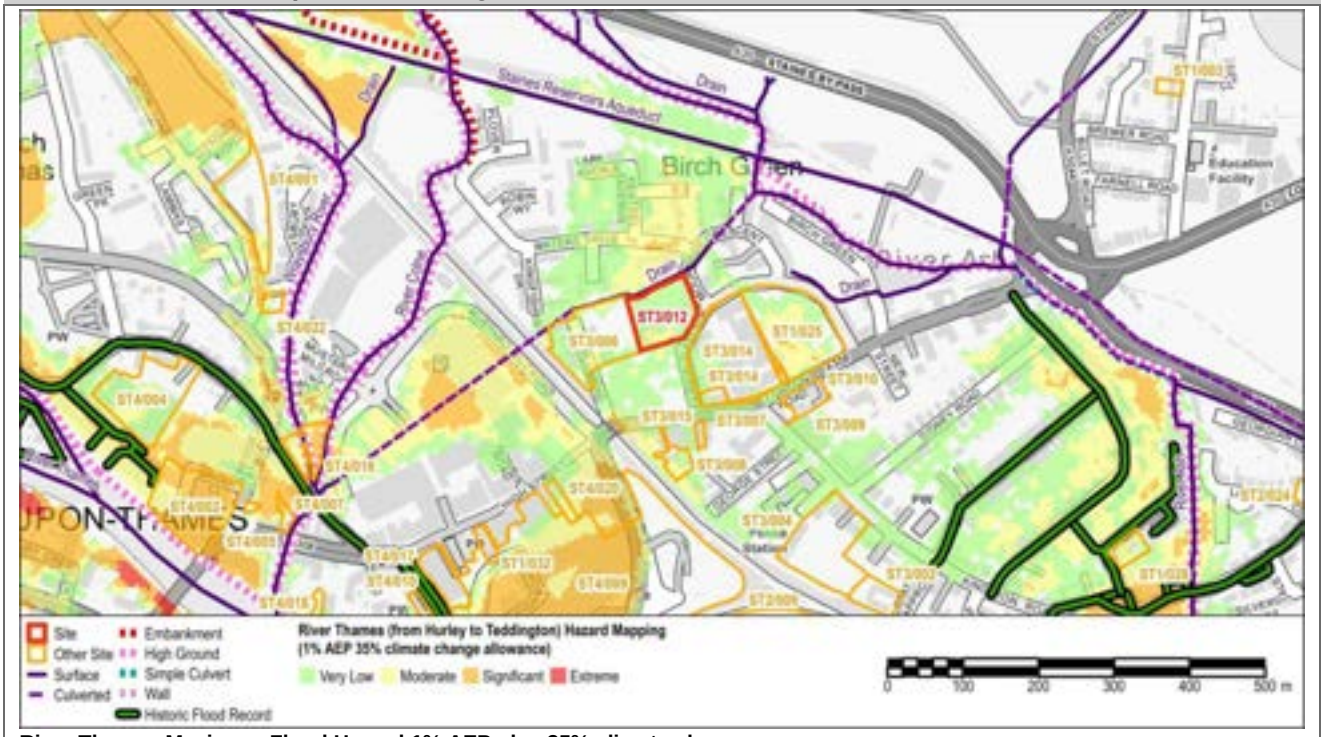
Flood Warning Area	River Ash at Ashford and Staines, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 8; External property flooding 0; Section 19 Flood Investigation incident 20; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

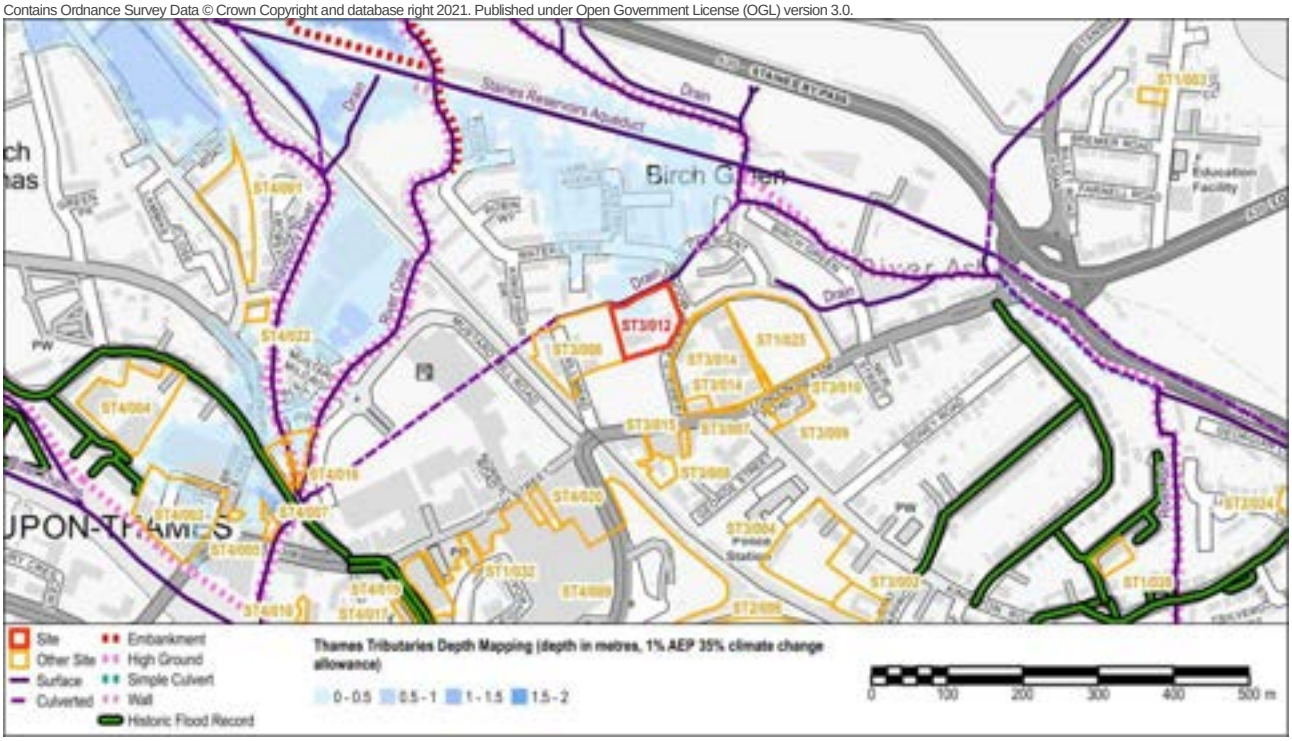


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST3/012: Staines Telephone Exchange, Fairfield Avenue, TW18 4AB

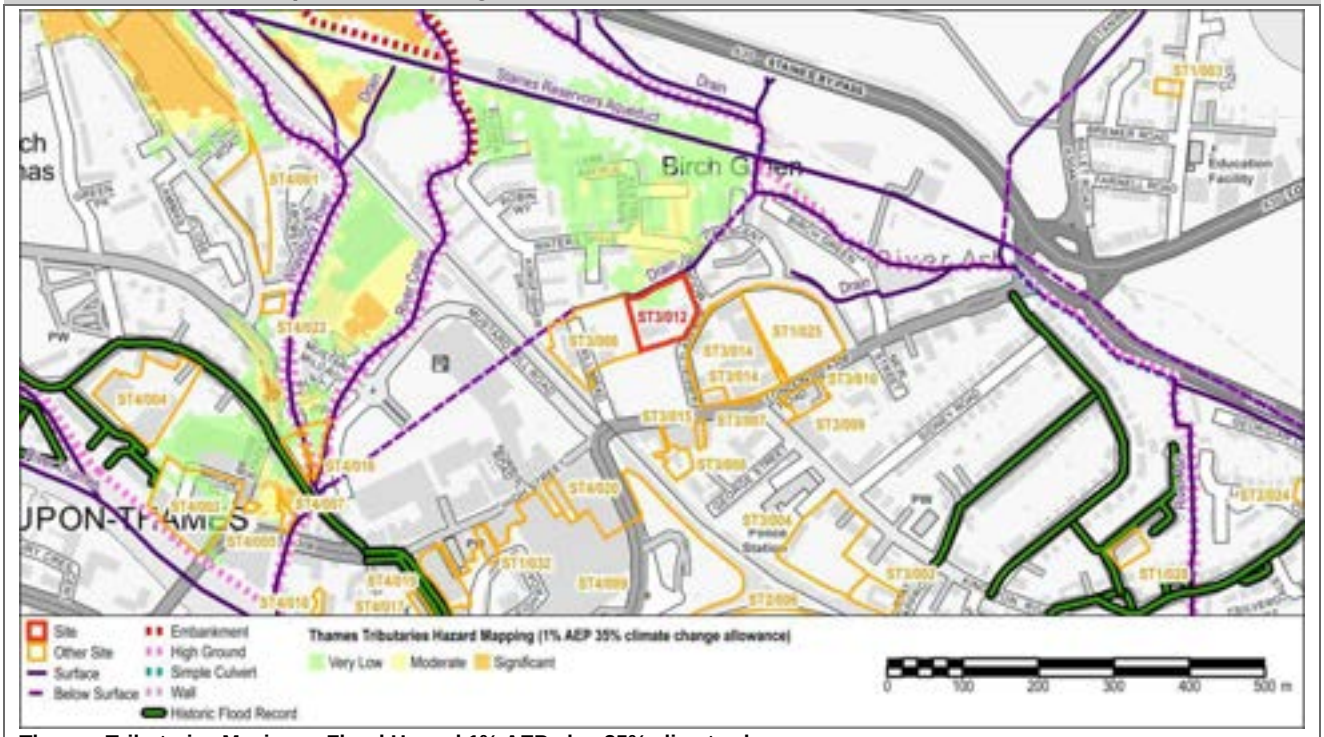


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

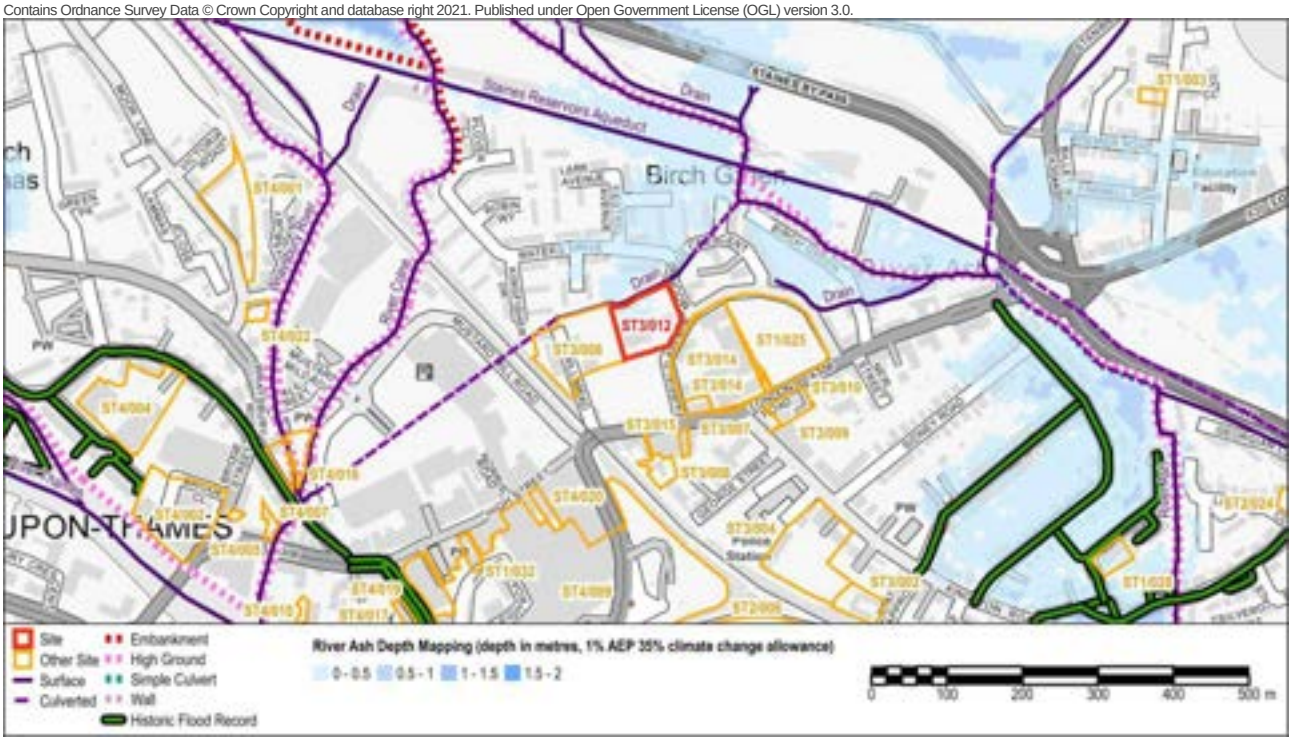


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST3/012: Staines Telephone Exchange, Fairfield Avenue, TW18 4AB



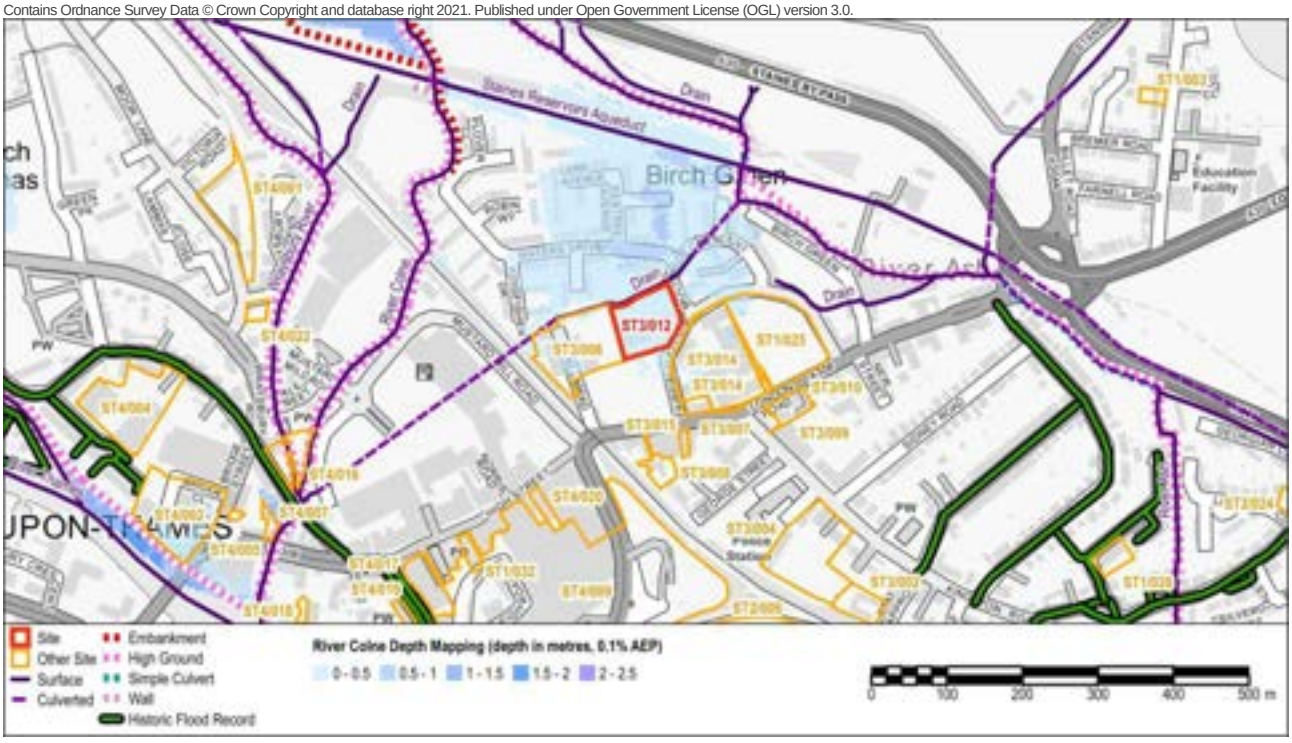
Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change



River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST3/012: Staines Telephone Exchange, Fairfield Avenue, TW18 4AB

River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

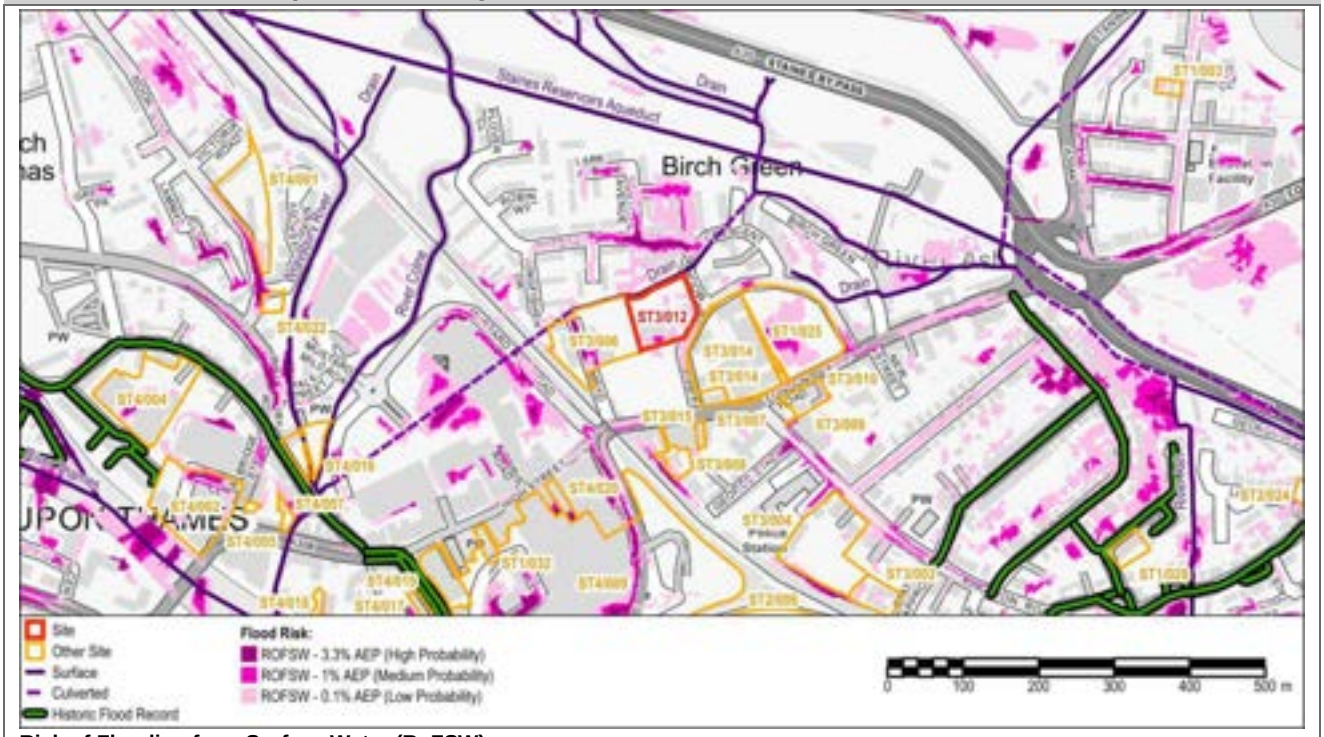


River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding

Risk of Flooding from Surface Water (RoFSW)	Medium

ST3/012: Staines Telephone Exchange, Fairfield Avenue, TW18 4AB



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Not considered to be prone to groundwater flooding.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south east approximately 600m west of the site. A culverted drain passes along the northern edge of the site. The majority of the site (80%) is located in Flood Zone 2 Medium probability of flooding from rivers, with 20% in Flood Zone 3a High probability.
Modelling outputs for the River Thames show that the whole site is at risk of flooding during the design flood event (1% AEP including 35% climate change allowance). Flood depths of 0.5m are modelled, with a corresponding hazard rating of Low and Moderate (Danger for Some) along the southern edge of the site.
The site is also shown to be at risk from the Thames tributaries and the River Ash. The northern edge of the site is shown to flood to depths of 0.5m with a Low hazard rating.
The Risk of Flooding from Surface Water map shows that the site and the area to the north are susceptible to surface water flooding. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.

Site Specific Recommendations

As part of the site is defined as Flood Zone 3a, proposals for residential development is only permitted on the site where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

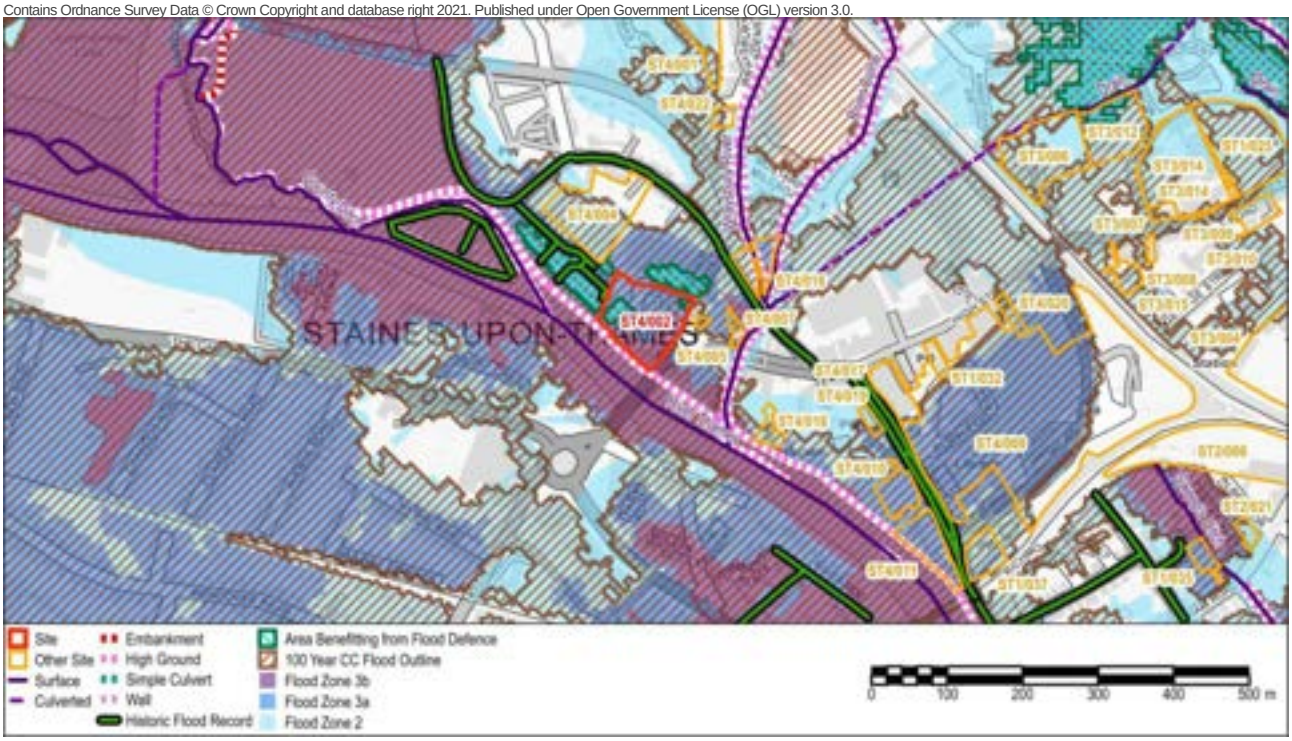
- The entire site is at risk of flooding during the design flood event (1% AEP including climate change). In order to ensure that future development does not increase the risk of flooding to the surrounding areas, the built footprint of the new development should not exceed that of the existing building and where possible should be reduced.
- Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may be achievable from the site along Fairfield Avenue and onto London Road. Places of safe refuge should be designed into the development, above the design event (1% AEP including climate change).
- The site is located within the Flood Warning Area for the River Thames and River Ash and Flood Warning and Evacuation Plans would need to be developed for occupants of the site to set out the response in the event of a flood warning, or a flooding event.
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.

ST4/002: Car Park, Hanover House and Sea Cadet Building, Bridge Street, TW18 4TG

Site ID:	ST4/002	**Area (ha):**	0.92
Proposed Use:	Residential and Hotel	**Vulnerability Classification:**	More Vulnerable

Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 1%	**Flood Zone 2 (0.1% AEP):** 1%	**Flood Zone 3 (1% AEP):** 67%	**Flood Zone 3b (5% AEP):** 31%	**Area Benefiting from Defences:** 11%

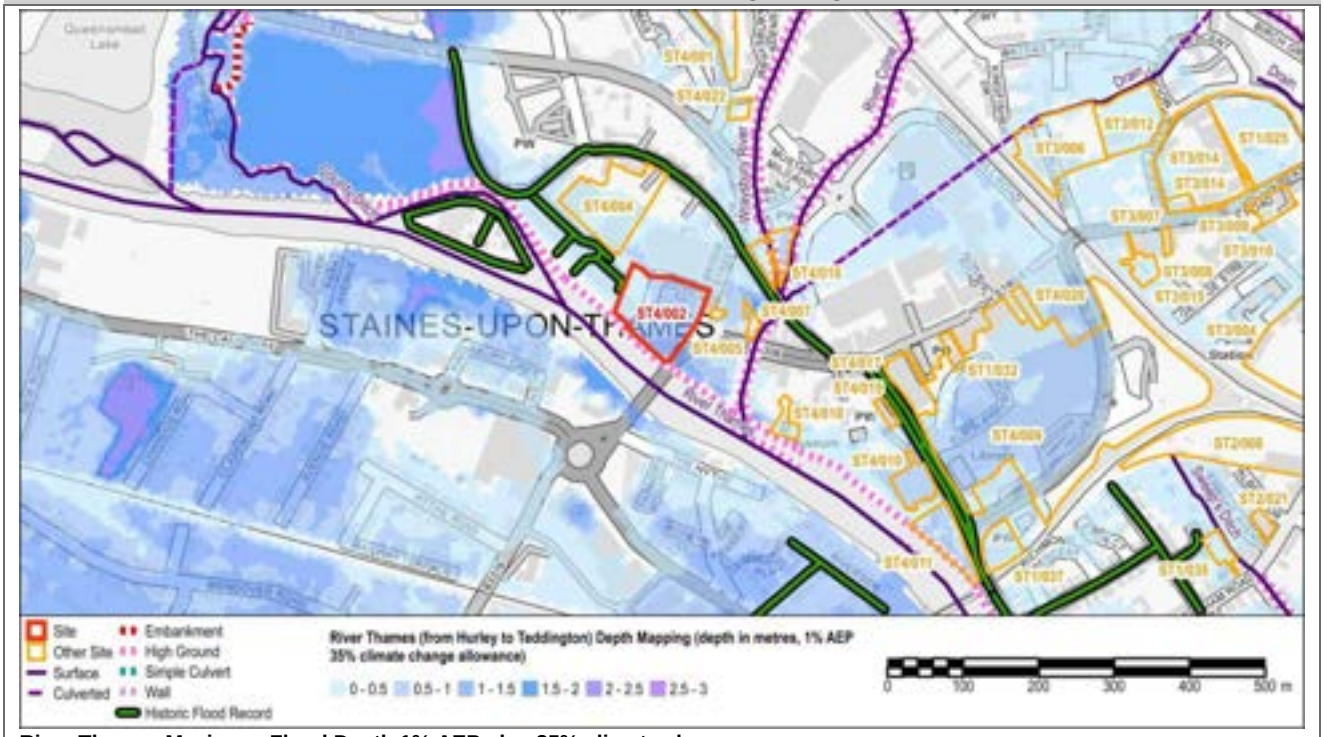


Flood Zones and Flood Records

Flood Warning Area	Properties closest to the River Thames between Runnymede Pleasure Grounds, Staines and Penton Hook, River Colne and Frays River at West Drayton and Stanwell Moor, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06DecemberWinter2000, 06JanuaryNewYear2003, 06MarchSpring1947, EA06Winter13-14
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 6; External property flooding 0; Section 19 Flood Investigation incident 16; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

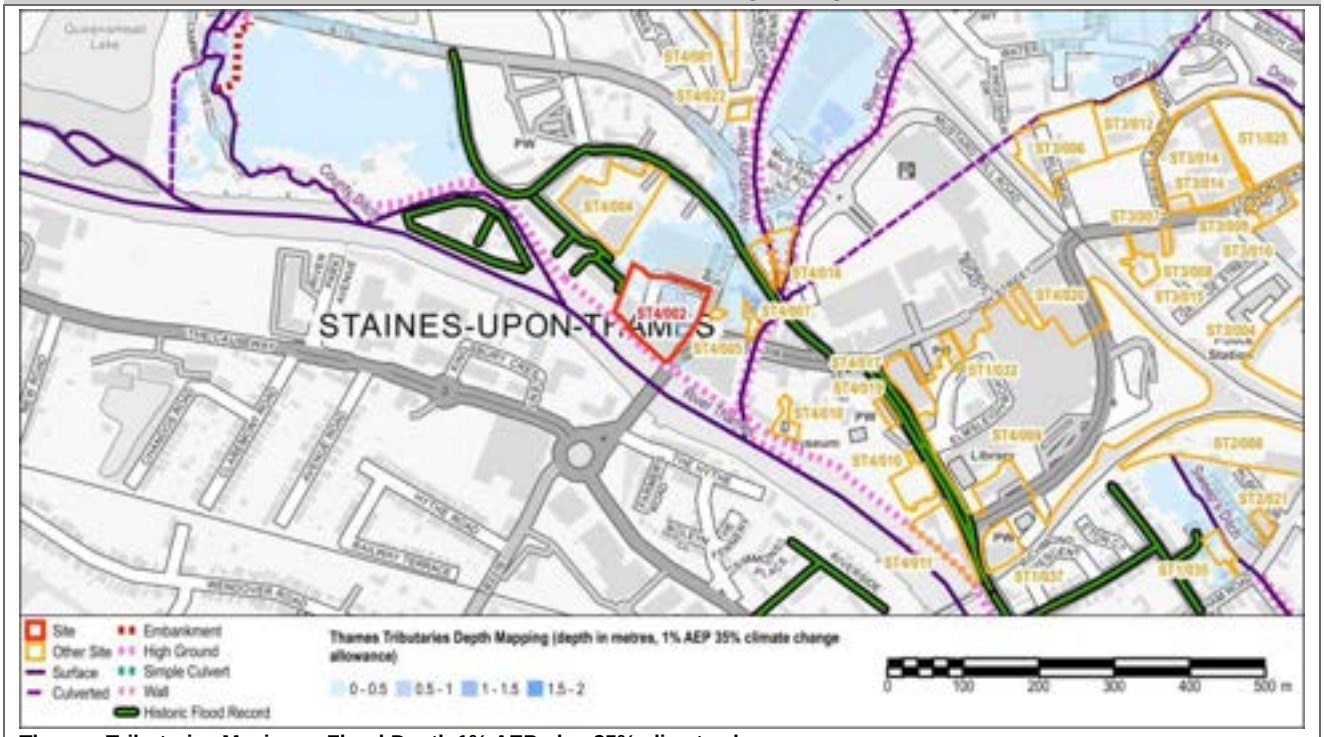
ST4/002: Car Park, Hanover House and Sea Cadet Building, Bridge Street, TW18 4TG



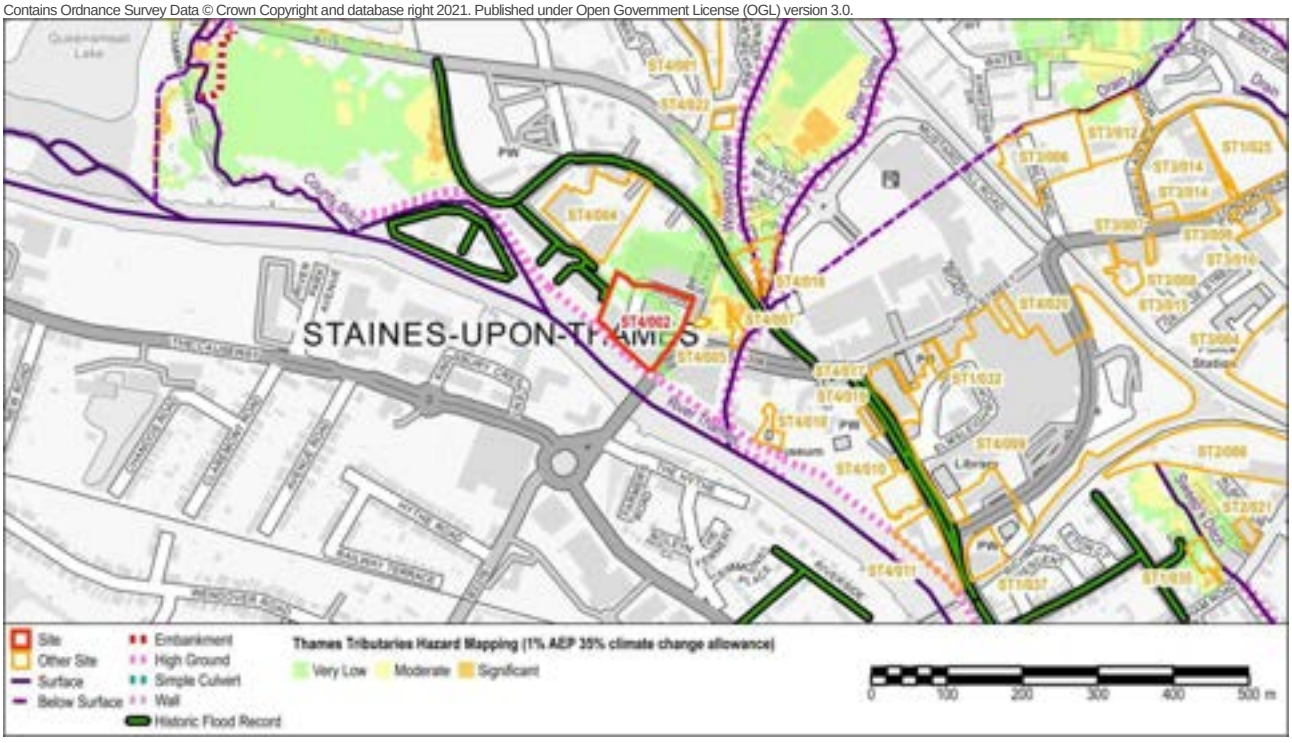
River Thames Maximum Flood Depth 1% AEP plus 35% climate change

River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

ST4/002: Car Park, Hanover House and Sea Cadet Building, Bridge Street, TW18 4TG

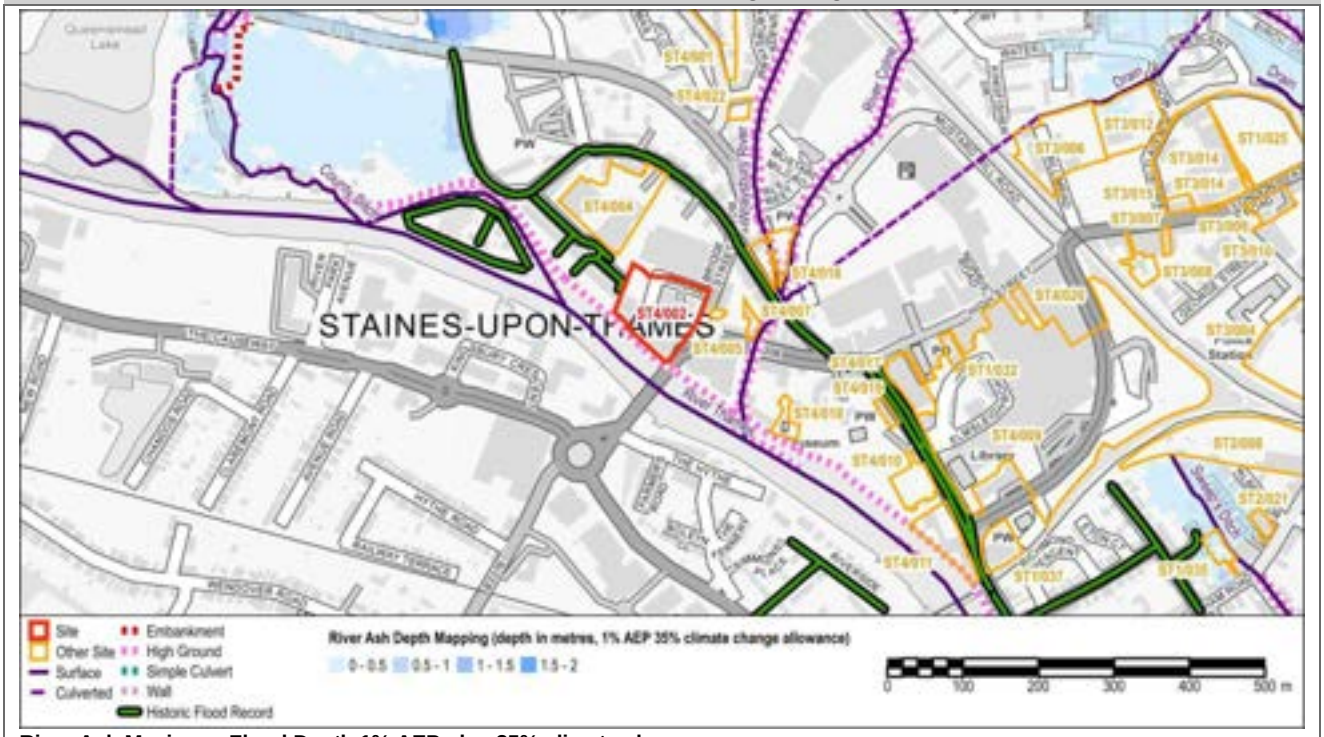


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

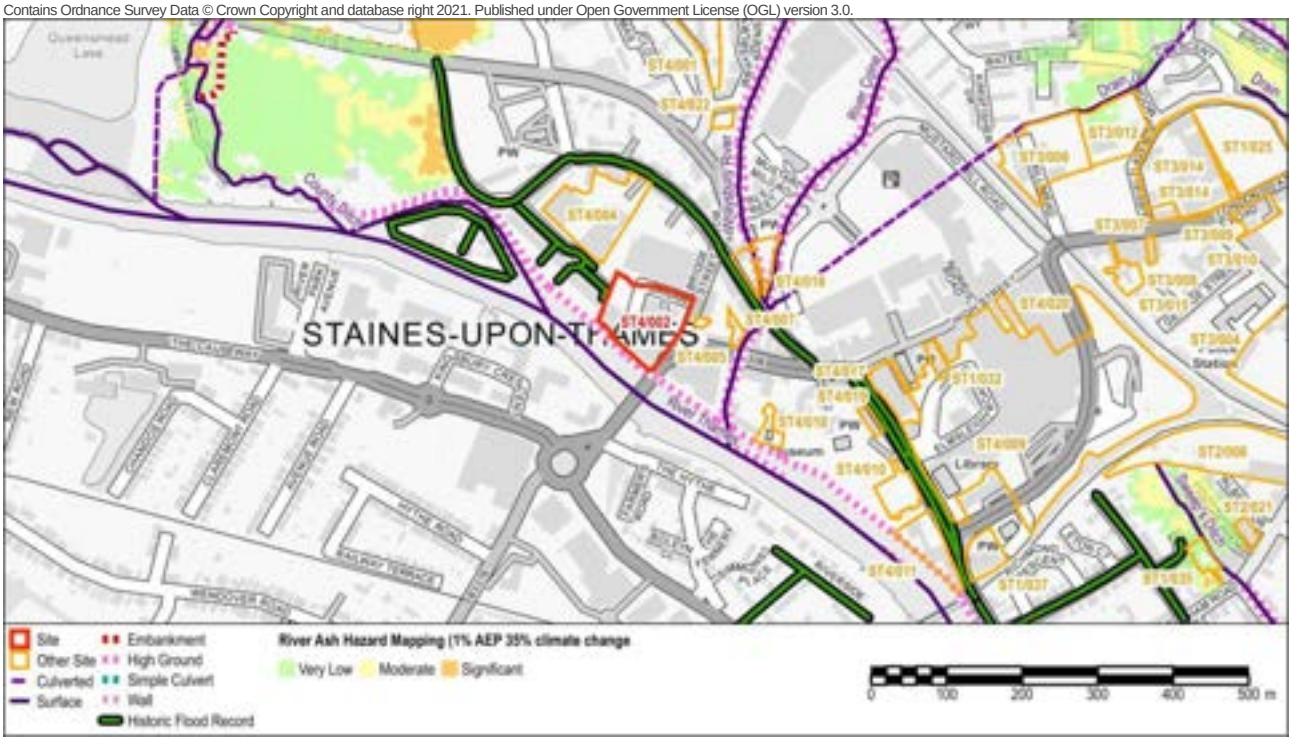


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

ST4/002: Car Park, Hanover House and Sea Cadet Building, Bridge Street, TW18 4TG

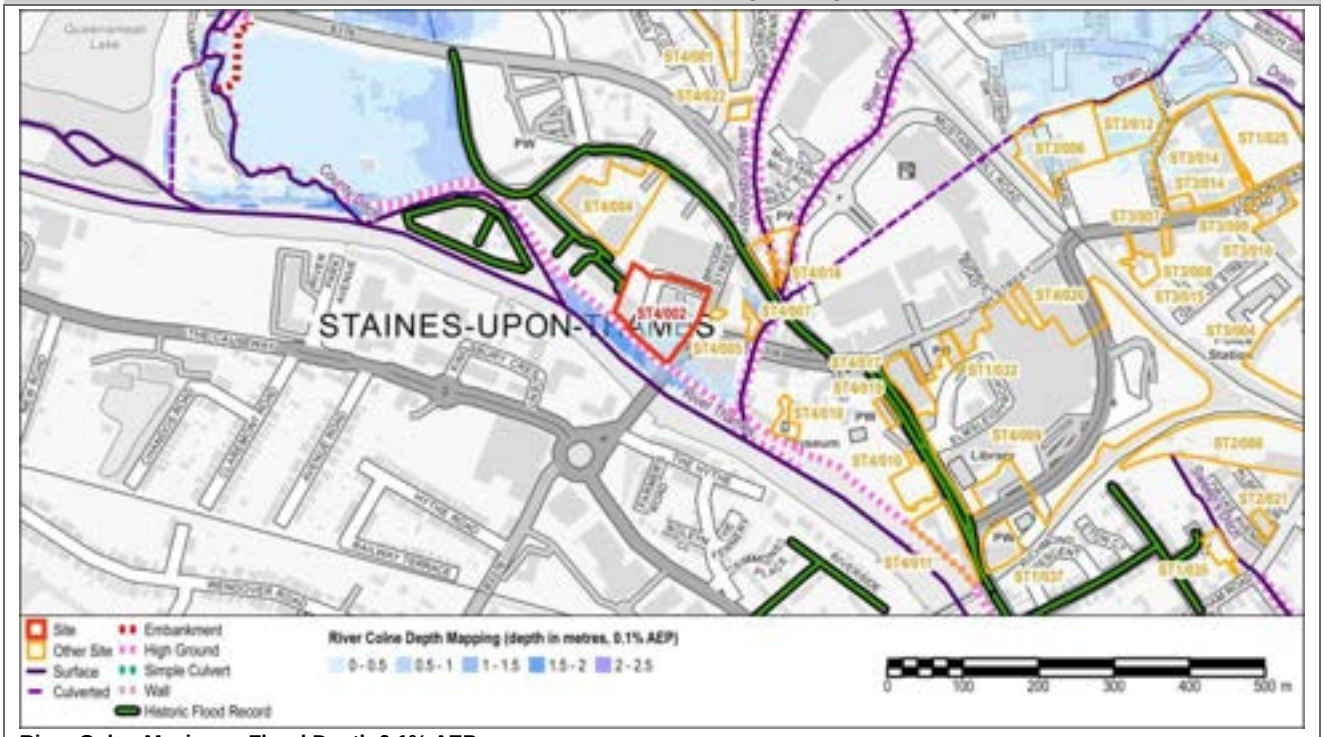


River Ash Maximum Flood Depth 1% AEP plus 35% climate change



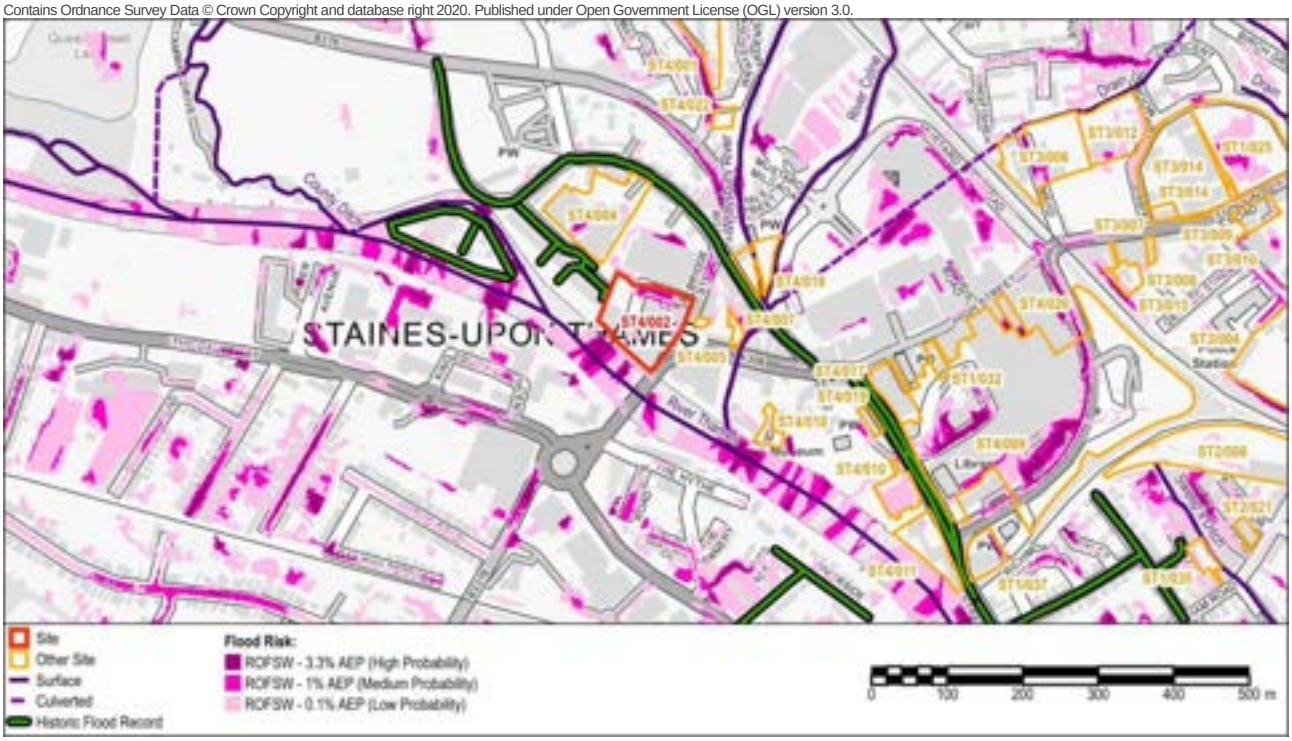
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

ST4/002: Car Park, Hanover House and Sea Cadet Building, Bridge Street, TW18 4TG



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the Wraysbury Reservoir or King George VI Reservoir.

Summary

The River Thames flows along the south of the site. The majority of the site (67%) is defined as Flood Zone 3 High probability of flooding from rivers. 31% of the site is defined as Flood Zone 3b Functional Floodplain. 11% of the site is shown to benefit from the presence of flood defences during the 1% AEP event.

ST4/002: Car Park, Hanover House and Sea Cadet Building, Bridge Street, TW18 4TG

Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change, indicates flood depths on the site of 0-2m. The hazard rating is Moderate to Significant, meaning 'danger for most'.
The site is also at risk of flooding from the Thames tributaries to a lesser extent, with hazard rating of Low across the site.
The Risk of Flooding from Surface Water Map shows areas to the south and east to be at Low risk, with areas in the north Medium to High.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

Development is not permitted in areas of Flood Zone 3b Functional Floodplain. This part of the site should be retained as floodplain and steps taken to restore the land to provide a more natural edge of the River Thames.

More Vulnerable development is only permitted in the areas of Flood Zone 3 on this site where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

- Development of the northern part of the site may be possible. Development must not decrease the available floodplain storage and therefore the design should enable the free flow of floodwater at ground floor level.
- Hotel accommodation or residential accommodation can be located at first floor level. Finished floor levels should be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may be achievable along Clarence Road. A place of safe refuge should also be provided within the development, above the design event (1% AEP including climate change).
- The site is located within the Flood Warning Area for the Thames and Colne and a Flood Warning and Evacuation Plan would need to be developed for occupants of the site to set out the response in the event of flooding.
- Development proposals for the site should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST4/009: The Elmsleigh Centre and adjoining land, South Street, TW18 4QF

Site ID:	ST4/009	**Area (ha):**	6.34
Proposed Use:	Residential and Retail	**Vulnerability Classification:**	More Vulnerable

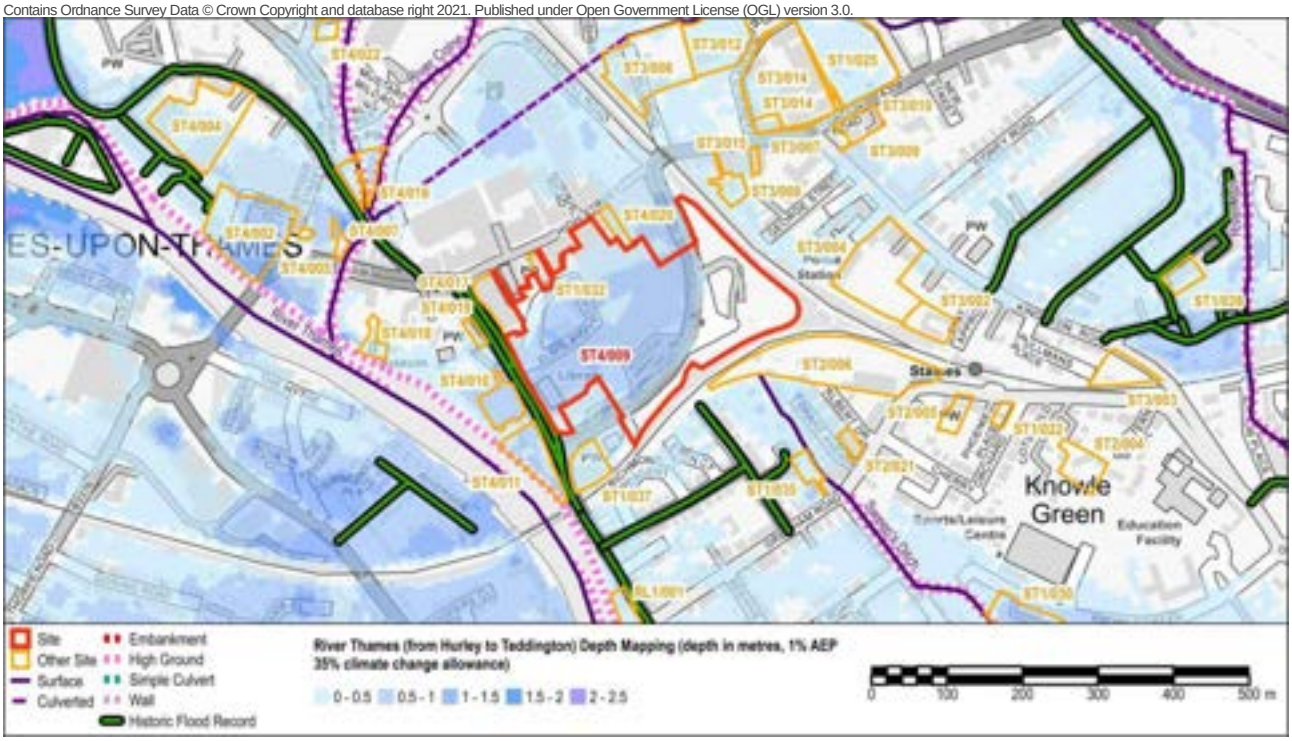
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 33%	**Flood Zone 2 (0.1% AEP):** 8%	**Flood Zone 3 (1% AEP):** 59%	**Flood Zone 3b (5% AEP):** 0%	**Area Benefiting from Defences:** 0%

Flood Zones and Flood Records

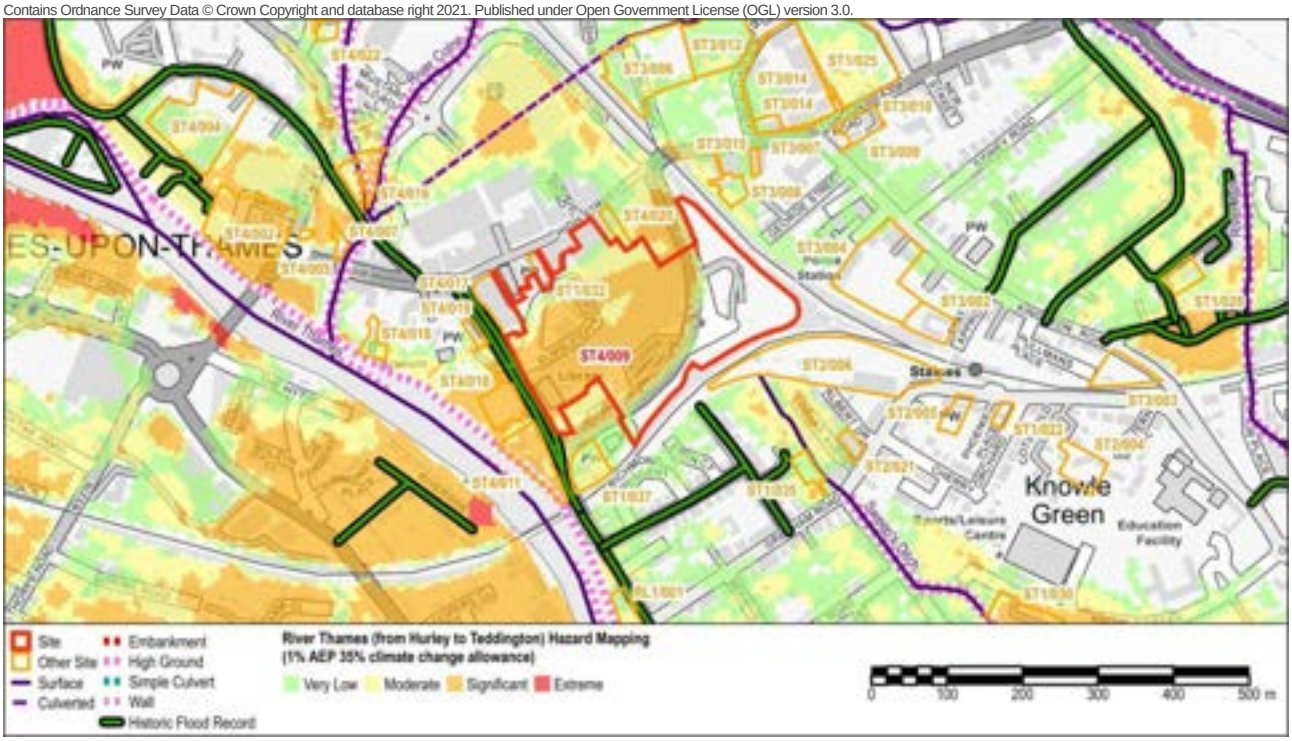
Flood Warning Area	River Colne and Frays River at West Drayton and Stanwell Moor, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 38; External property flooding 0; Section 19 Flood Investigation incident 50; Surrey County Council Wetspots 3
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

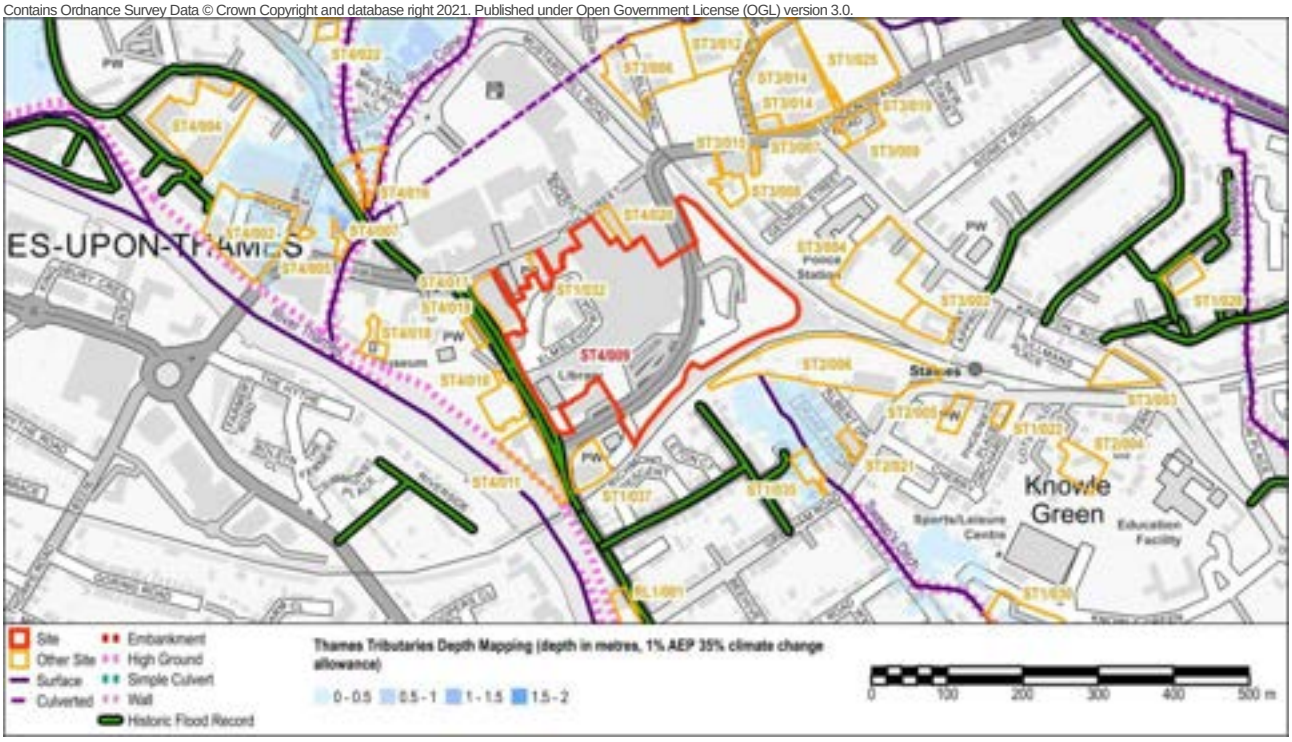


ST4/009: The Elmsleigh Centre and adjoining land, South Street, TW18 4QF

River Thames Maximum Flood Depth 1% AEP plus 35% climate change



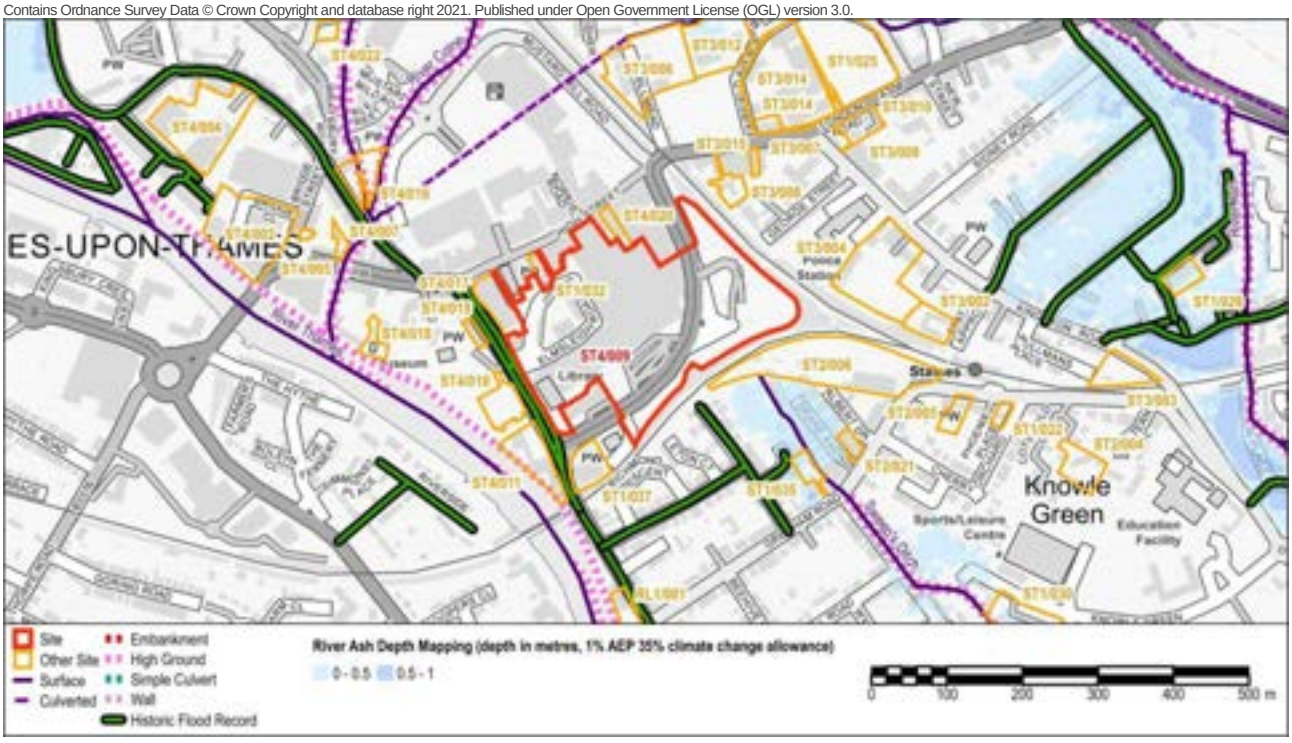
River Thames Maximum Flood Hazard 1% AEP plus 35% climate change



Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

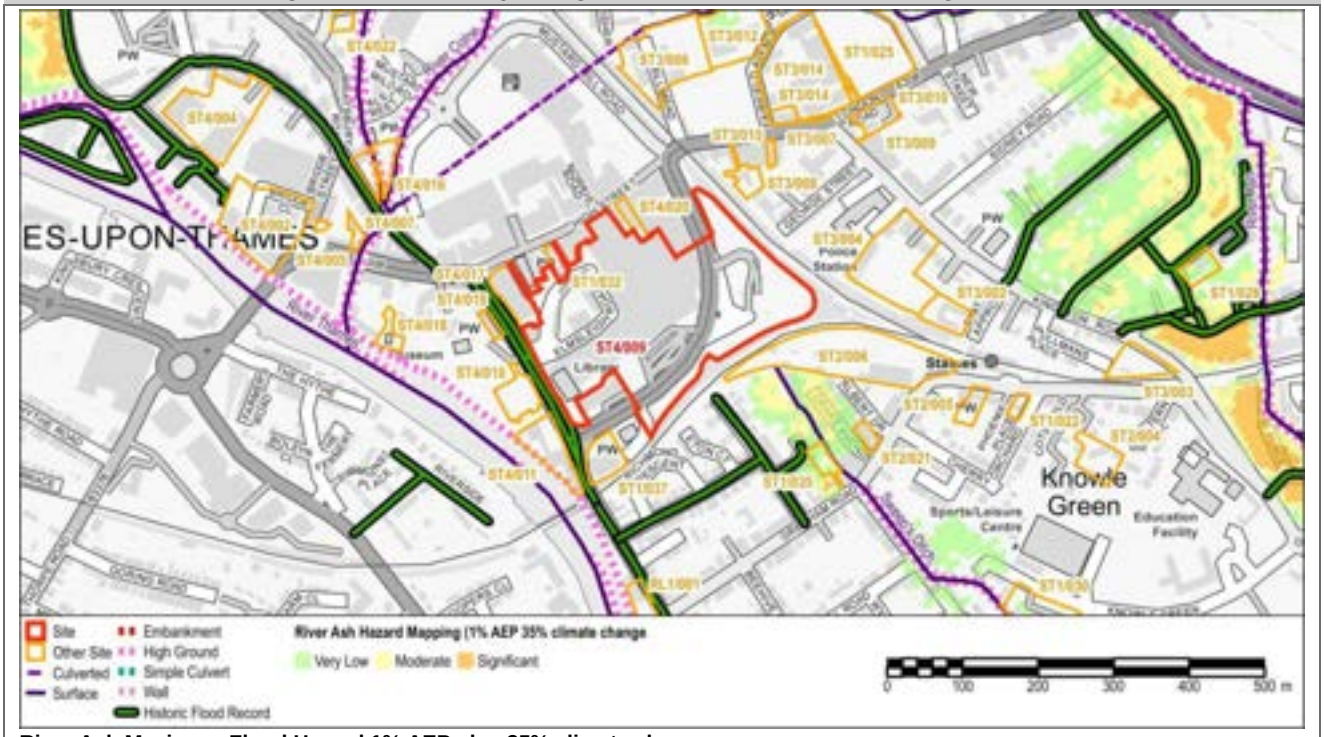
ST4/009: The Elmsleigh Centre and adjoining land, South Street, TW18 4QF

Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

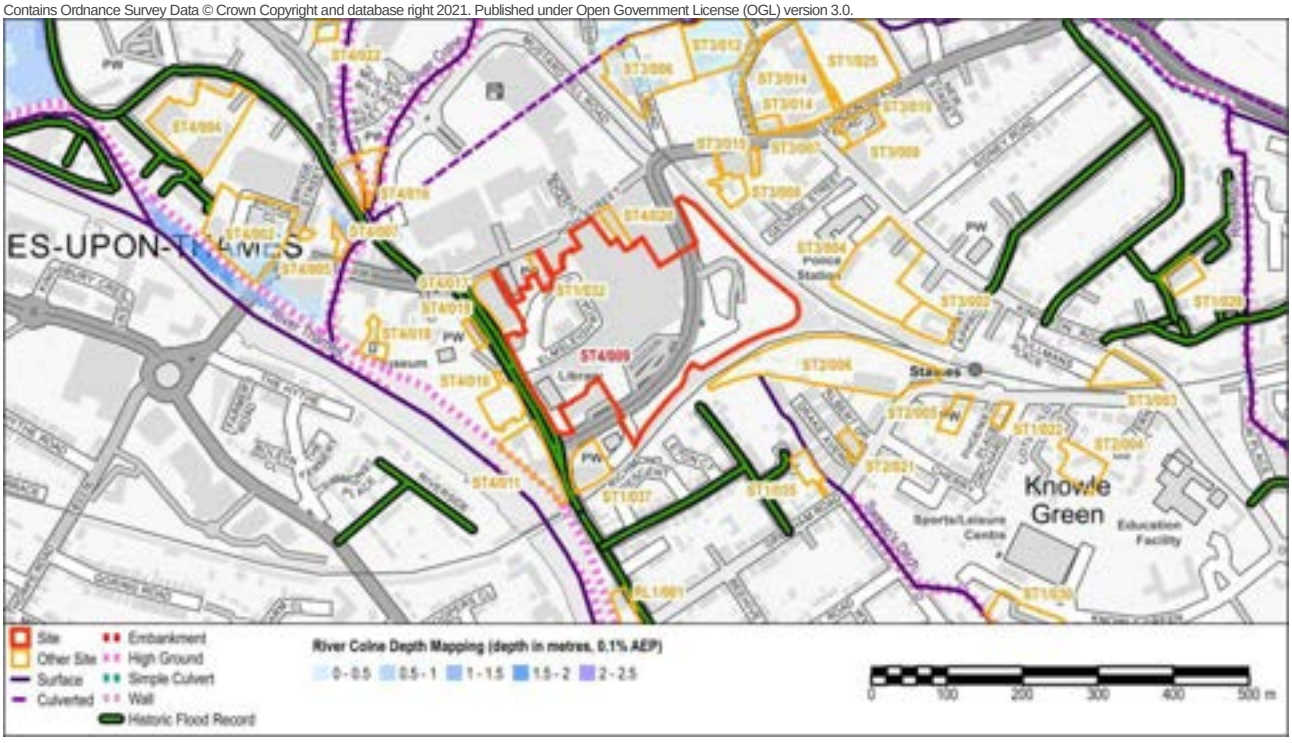


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST4/009: The Elmsleigh Centre and adjoining land, South Street, TW18 4QF



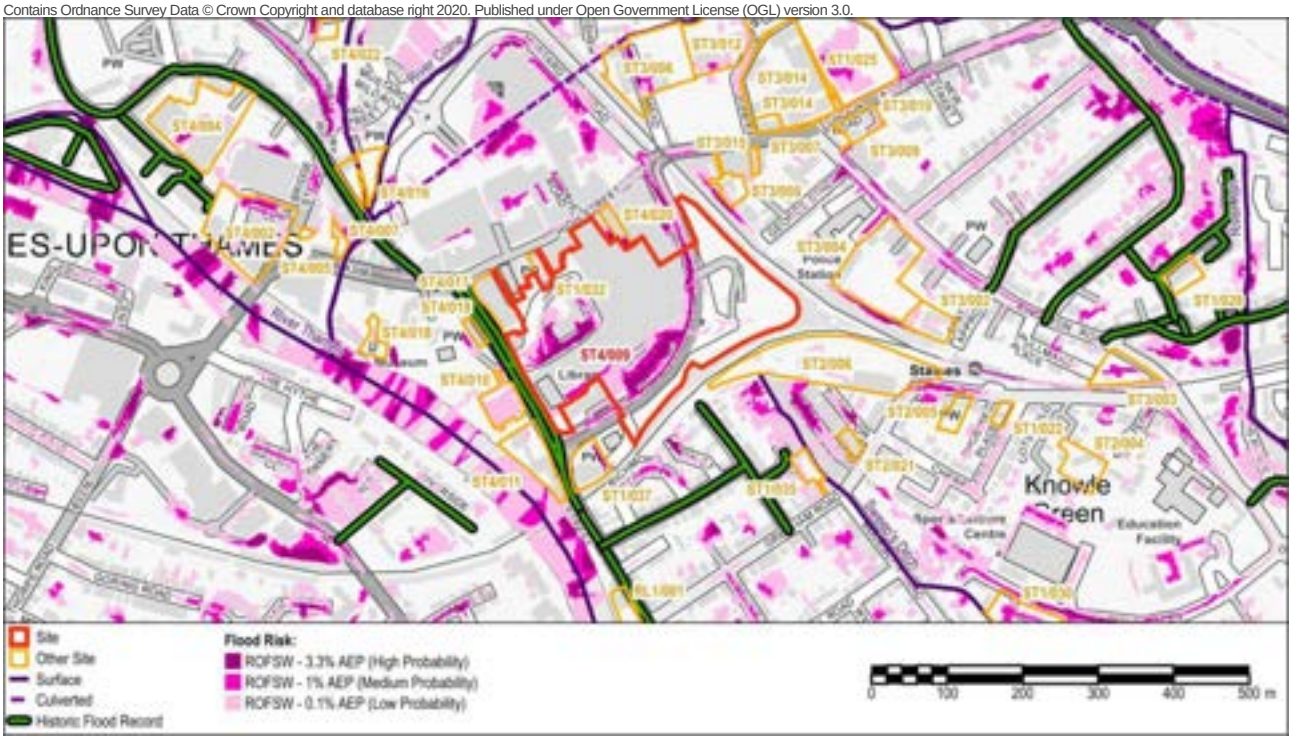
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium / High

ST4/009: The Elmsleigh Centre and adjoining land, South Street, TW18 4QF



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand, Sand And Gravel
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south east approximately 100m to the south west of the site. Sweep's Ditch flows south to the south east of the site. The majority of the site (59%) is defined as Flood Zone 3 High probability of river flooding, 33% is defined as Flood Zone 1 Low probability, and 8% is defined as Flood Zone 2 Medium probability. This site does not benefit from the presence of flood defences during the 1% AEP event.
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicates flood depths of 0-1m. The hazard rating in the centre of the site reaches Significant, Danger for Most.
The Risk of Flooding from Surface Water dataset shows a flow path through the centre of the site where the risk is Medium - High. There are numerous records of flooding in proximity to the site.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

The proposed use for this site is retail and residential. Retail uses are defined as Less Vulnerable and are permitted on the site.

Residential development is defined as More Vulnerable and is only permitted in the areas of Flood Zone 3 on this site where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

- Development of greater vulnerability (i.e. residential development) should be steered towards the north of the site in areas of Flood Zone 1 in accordance with the sequential approach.
- Development within the design flood extent (1% AEP including climate change) must not decrease the available floodplain storage and therefore the design should enable the free flow of floodwater at ground floor level.
- Residential accommodation could be located at first floor level with retail uses below. Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Finished floor levels for retail uses do not need to be set above the design flood level, but steps should be taken to ensure that the development is appropriately flood resistant and resilient.
- Any increase in built footprint in the design flood extent (1% AEP including climate change) would need to be compensated for, on a level for level and volume for volume basis within the rest of the site. Given that part of the site is not currently within the design flood extent this is likely to be achievable.
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may not be achievable from the site. The route along South Street and north on to the High Street goes underneath the railway line and is at risk of flooding. Provision of an improved route out of this area could improve the feasibility of future development in this area. Places of safe refuge should be designed into the development, above the design event (1% AEP including climate change).
- The site is located within the Flood Warning Area for the Thames and Colne and Flood Warning and Evacuation Plans would need to be developed for occupants of the site to set out the response in the event of flooding.

ST4/009: The Elmsleigh Centre and adjoining land, South Street, TW18 4QF

- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area and along Sweep's Ditch. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST4/010: Riverside Surface Carpark, Thames Street, TW18 4UD

Site ID:	ST4/010	**Area (ha):**	0.25
Proposed Use:	Residential	**Vulnerability Classification:**	More Vulnerable

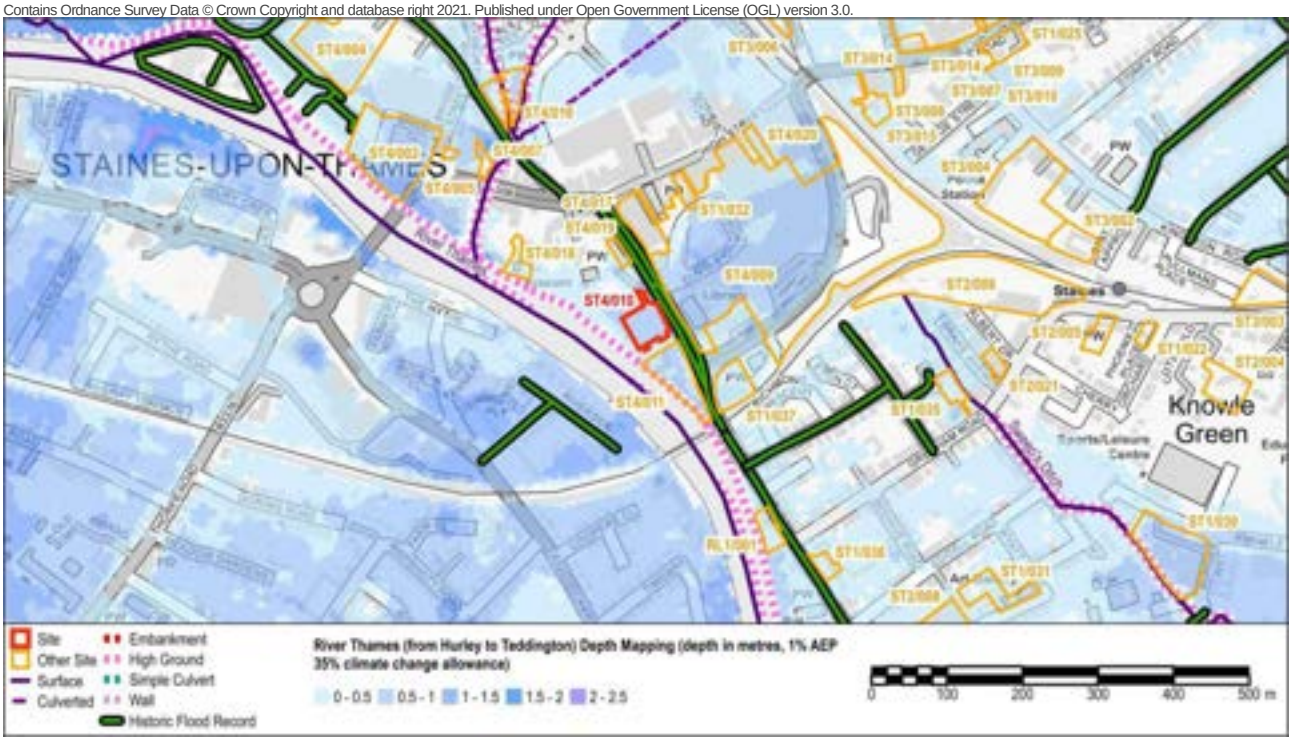
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 0%	**Flood Zone 2 (0.1% AEP):** 0%	**Flood Zone 3 (1% AEP):** 100%	**Flood Zone 3b (5% AEP):** 0%	**Area Benefiting from Defences:** 0%

Flood Zones and Flood Records

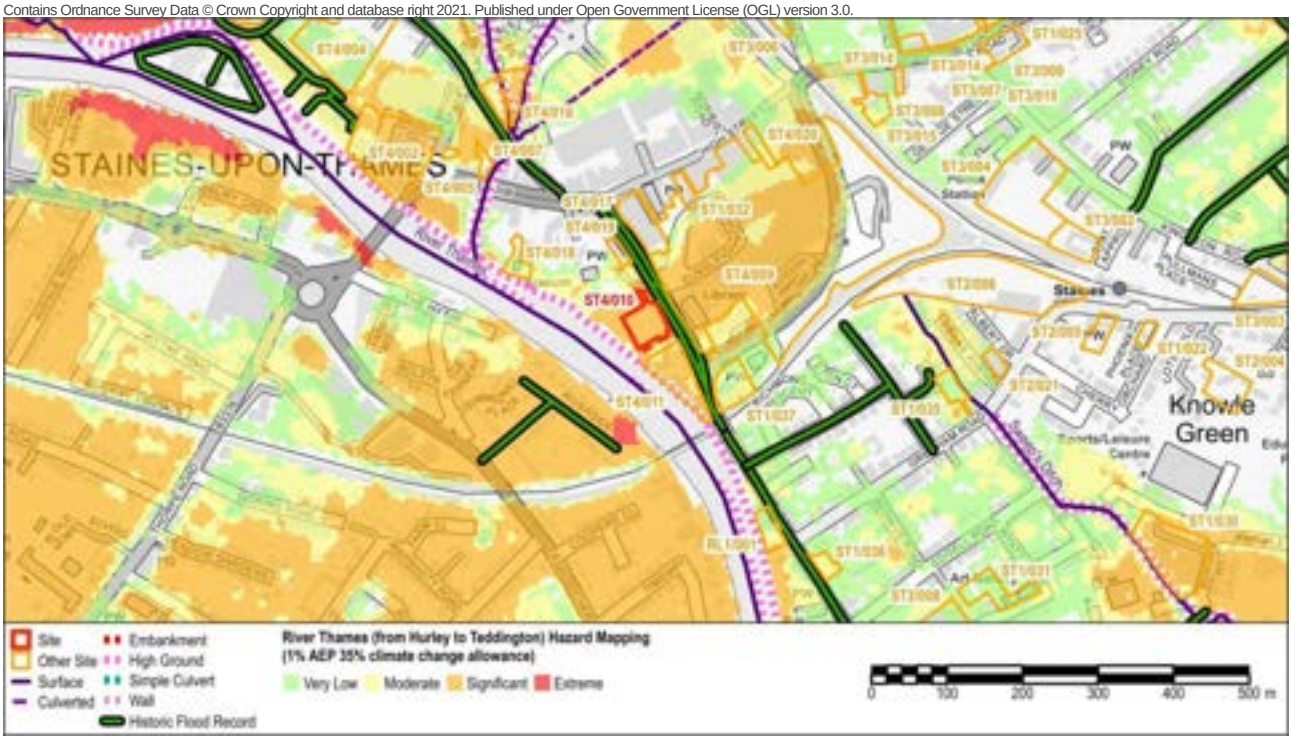
Flood Warning Area	Properties closest to the River Thames between Runnymede Pleasure Grounds, Staines and Penton Hook, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 22; External property flooding 0; Section 19 Flood Investigation incident 26; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

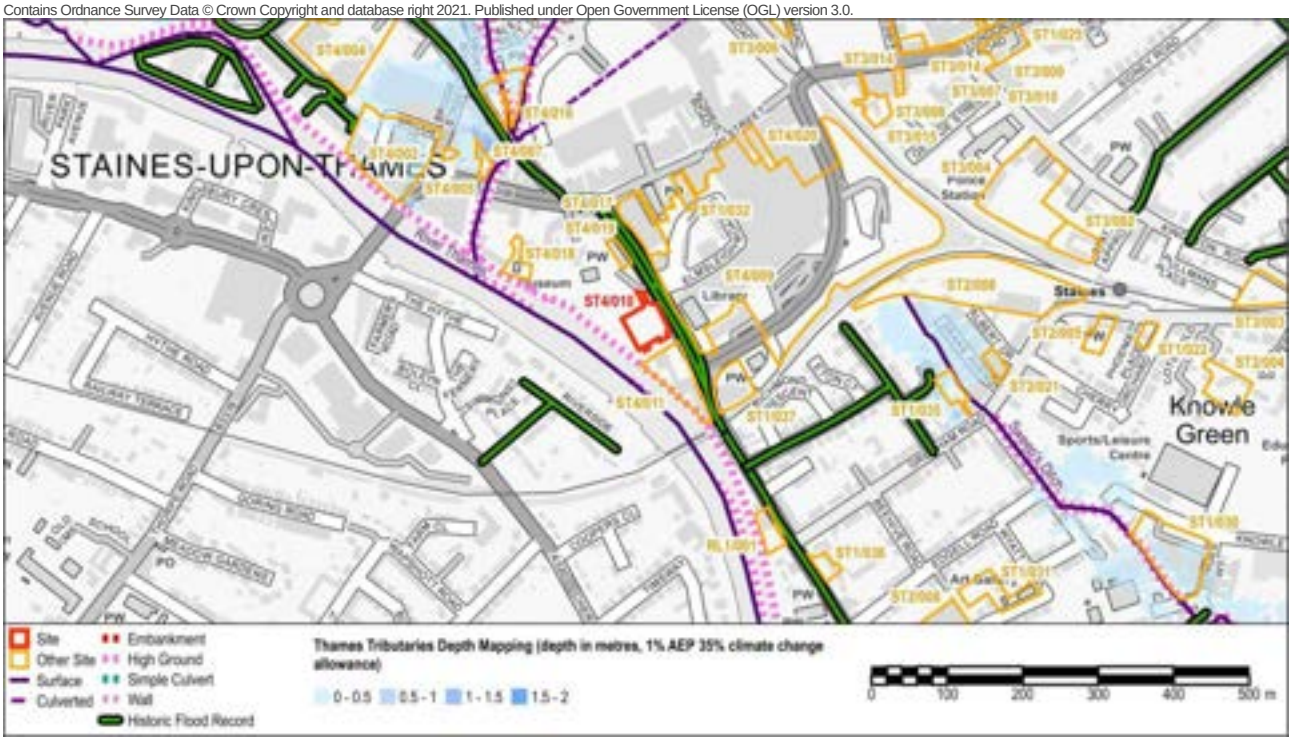


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST4/010: Riverside Surface Carpark, Thames Street, TW18 4UD

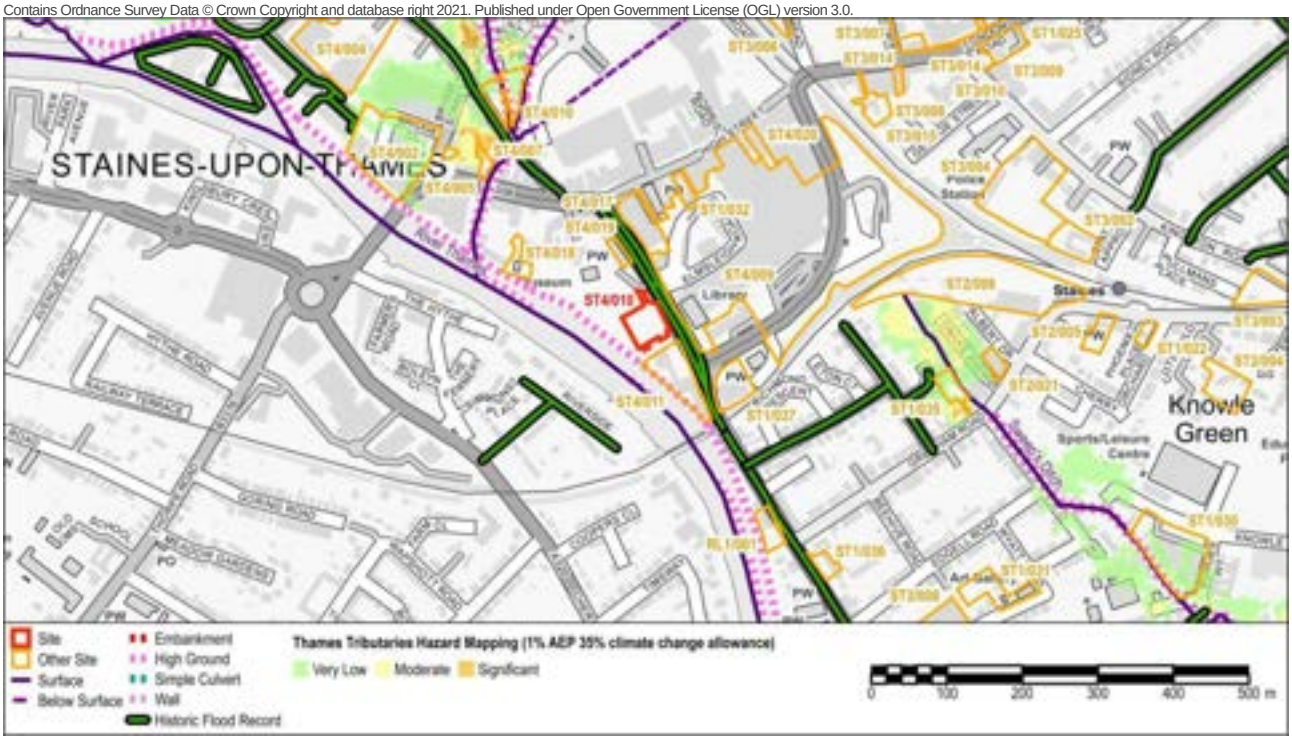


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

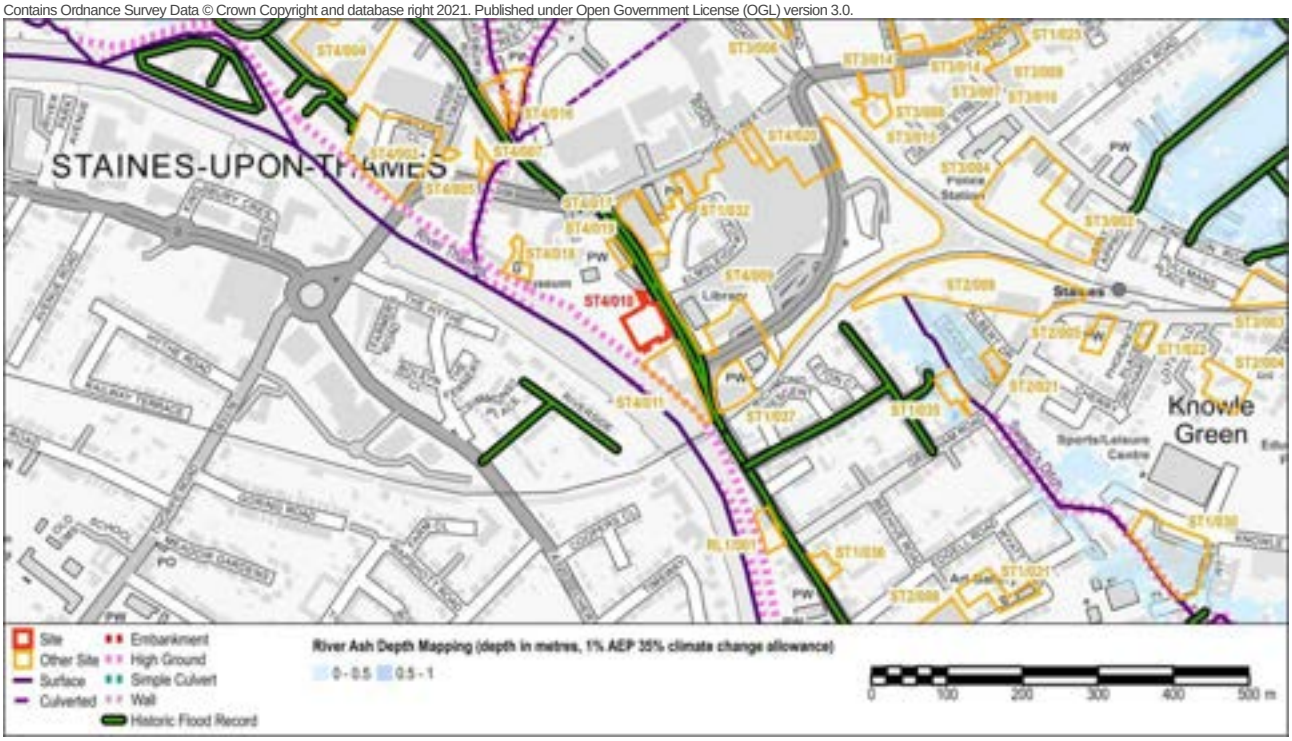


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST4/010: Riverside Surface Carpark, Thames Street, TW18 4UD

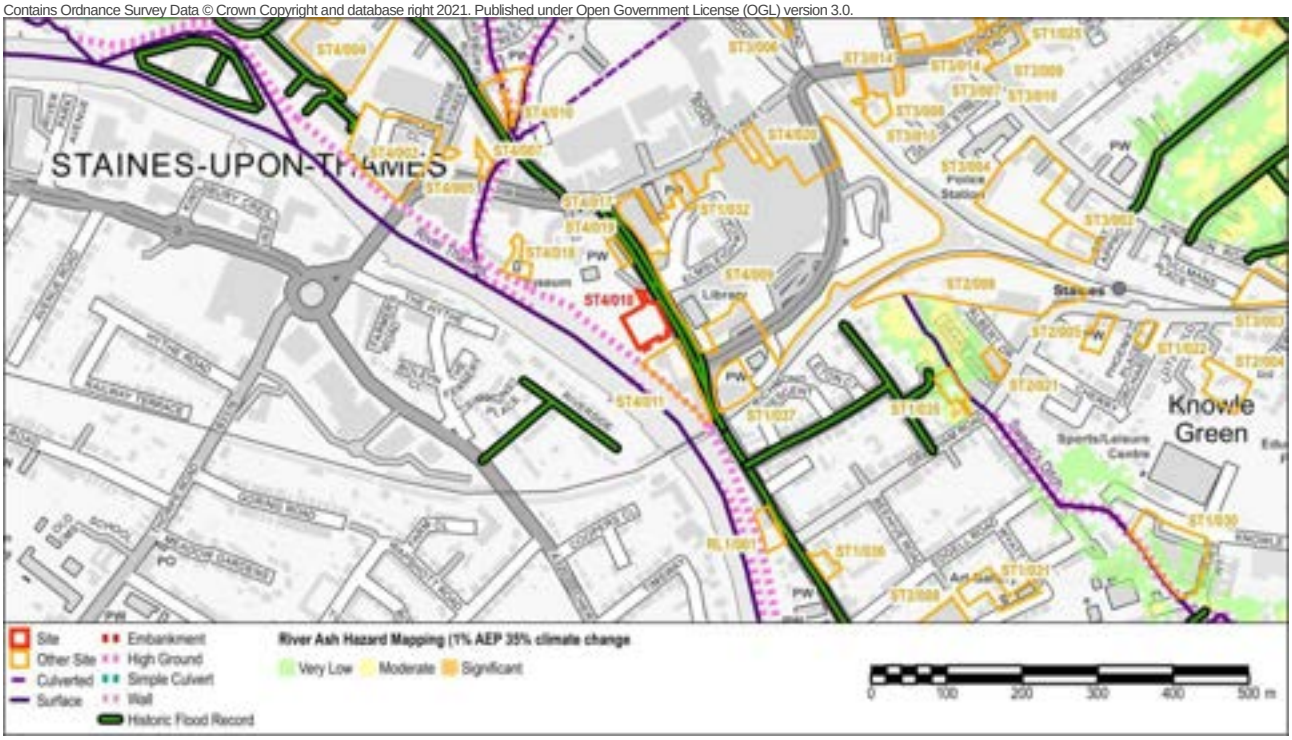


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

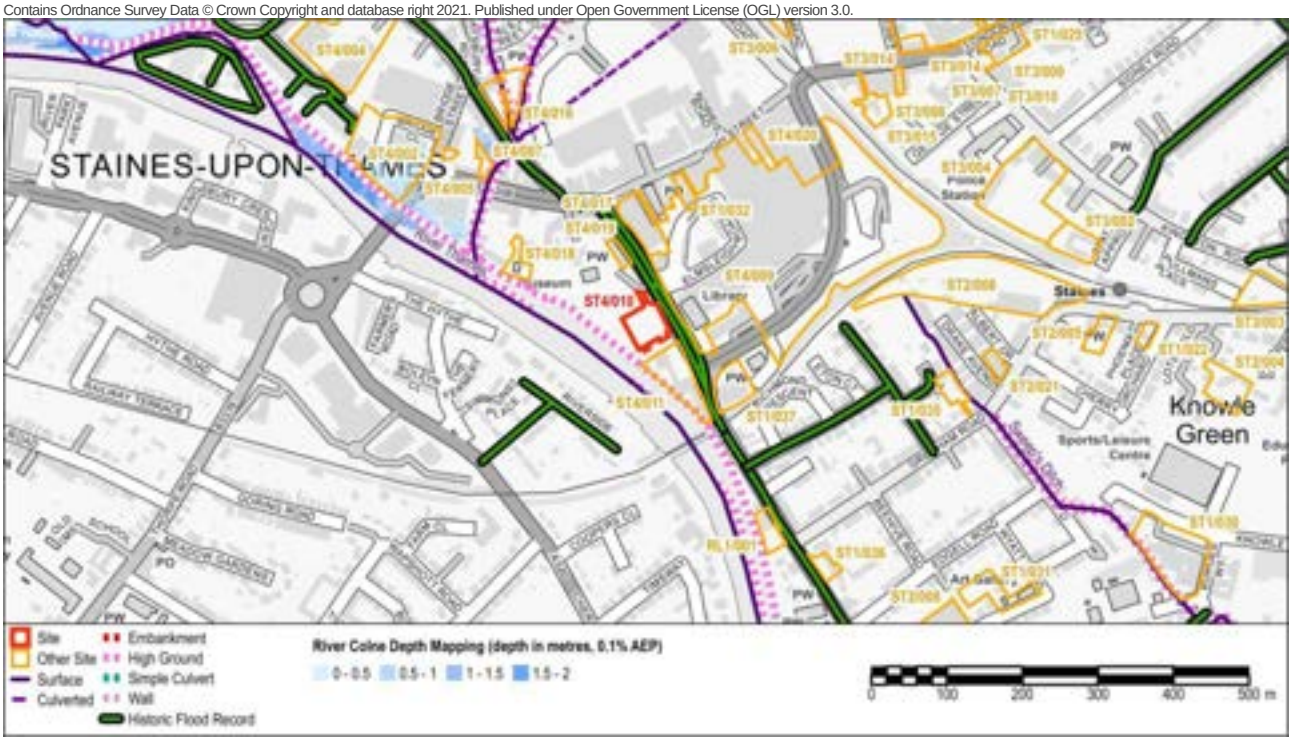


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST4/010: Riverside Surface Carpark, Thames Street, TW18 4UD



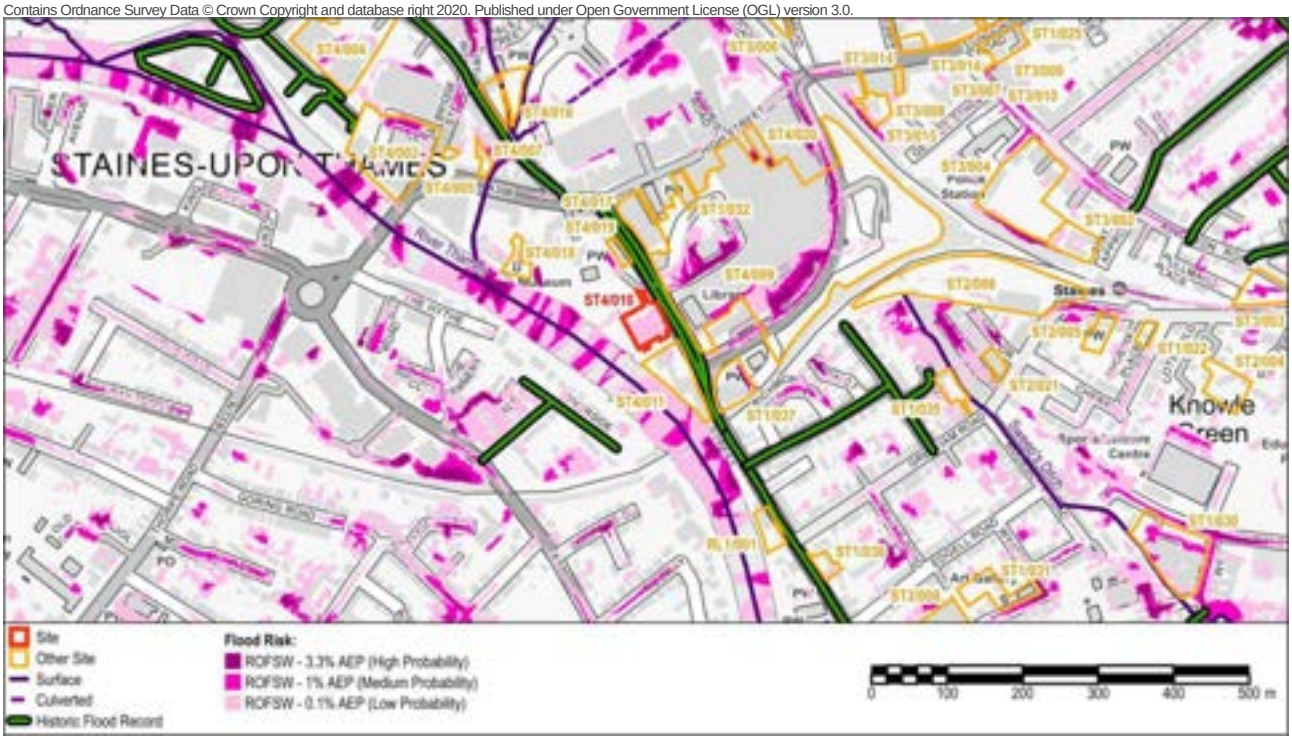
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Low

ST4/010: Riverside Surface Carpark, Thames Street, TW18 4UD



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand

Areas Susceptible to Groundwater Flooding	>75%
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.
Aquifer Designation	Secondary A, Secondary A

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south east approximately 30m to the south west of the site. The entire site is defined as Flood Zone 3 High probability of flooding. The site does not benefit from any flood defences during the 1% AEP event.
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicates flood depths of 0.5-1m. The hazard rating is Significant (Danger for Most).
The Risk of Flooding from Surface Water Map shows the majority of the site is at low probability. There are numerous records of flooding in proximity to the site. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

Residential development is defined as More Vulnerable and is only permitted in Flood Zone 3 where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

- The existing site is a car park and therefore provides flood storage in the event of flooding from the River Thames. In order to ensure that future development does not increase the risk of flooding, the ground floor level will need to remain open to enable the flow of floodwater and maintain the existing flood storage volume during the design event (1% AEP including climate change). It may be possible to provide residential units with undercroft parking. Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Development should be set back from the edge of the River Thames to enable access for riverside maintenance and to provide a buffer zone for biodiversity benefits along the river edge.
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including climate change) to an area at low risk of flooding may not be achievable for the site. Provision of an improved route out of this area could improve the feasibility of future development in this area. Places of safe refuge should be designed into the development, above the design event (1% AEP including climate change).
- The site is located within the Flood Warning Area for the Thames and Colne and Flood Warning and Evacuation Plans would need to be developed for occupants of the site to set out the response in the event of flooding.
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST4/011: Thames Lodge, Thames Street, TW18 4SJ

Site ID:	ST4/011	**Area (ha):**	0.36
Proposed Use:	Residential	**Vulnerability Classification:**	More Vulnerable

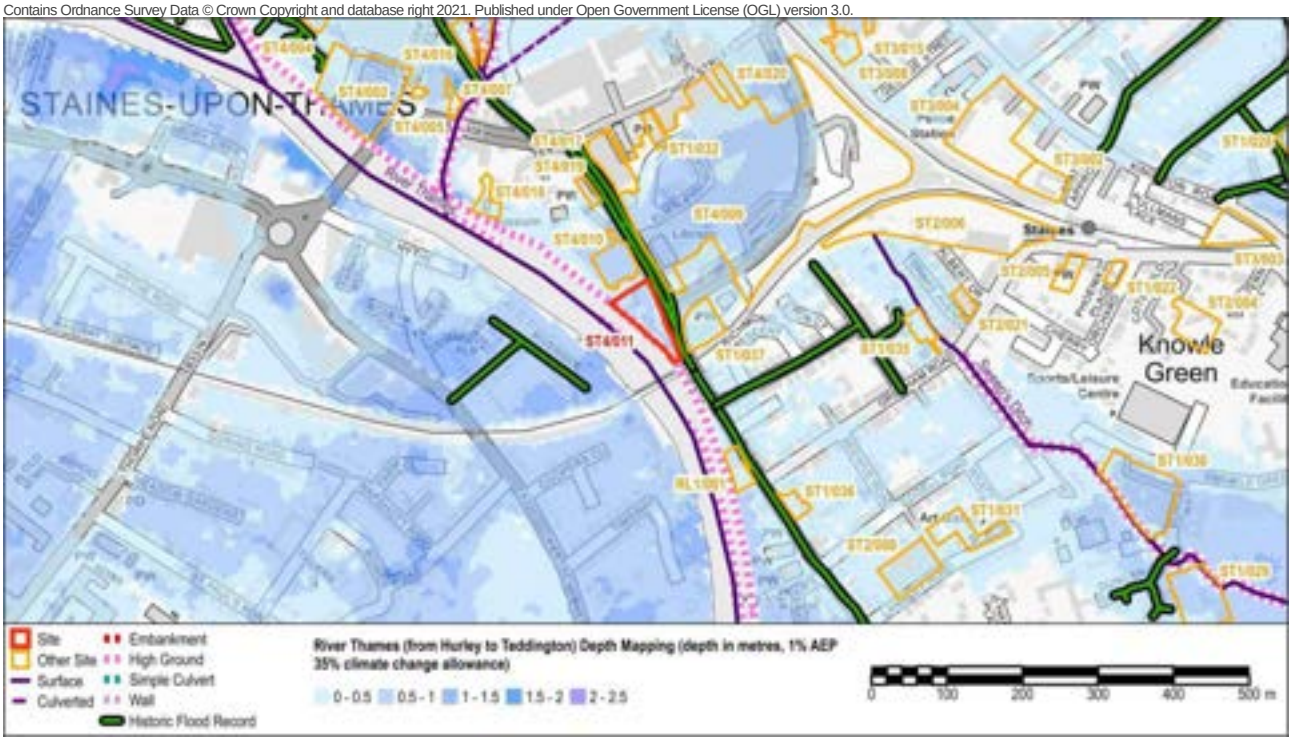
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 0%	**Flood Zone 2 (0.1% AEP):** 5%	**Flood Zone 3 (1% AEP):** 78%	**Flood Zone 3b (5% AEP):** 17%	**Area Benefiting from Defences:** 0%

Flood Zones and Flood Records

Flood Warning Area	Properties closest to the River Thames between Runnymede Pleasure Grounds, Staines and Penton Hook, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06DecemberWinter2000, 06JanuaryNewYear2003, 06MarchSpring1947, EA06Winter13-14
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 32; External property flooding 2; Section 19 Flood Investigation incident 30; Surrey County Council Wetspots 1
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

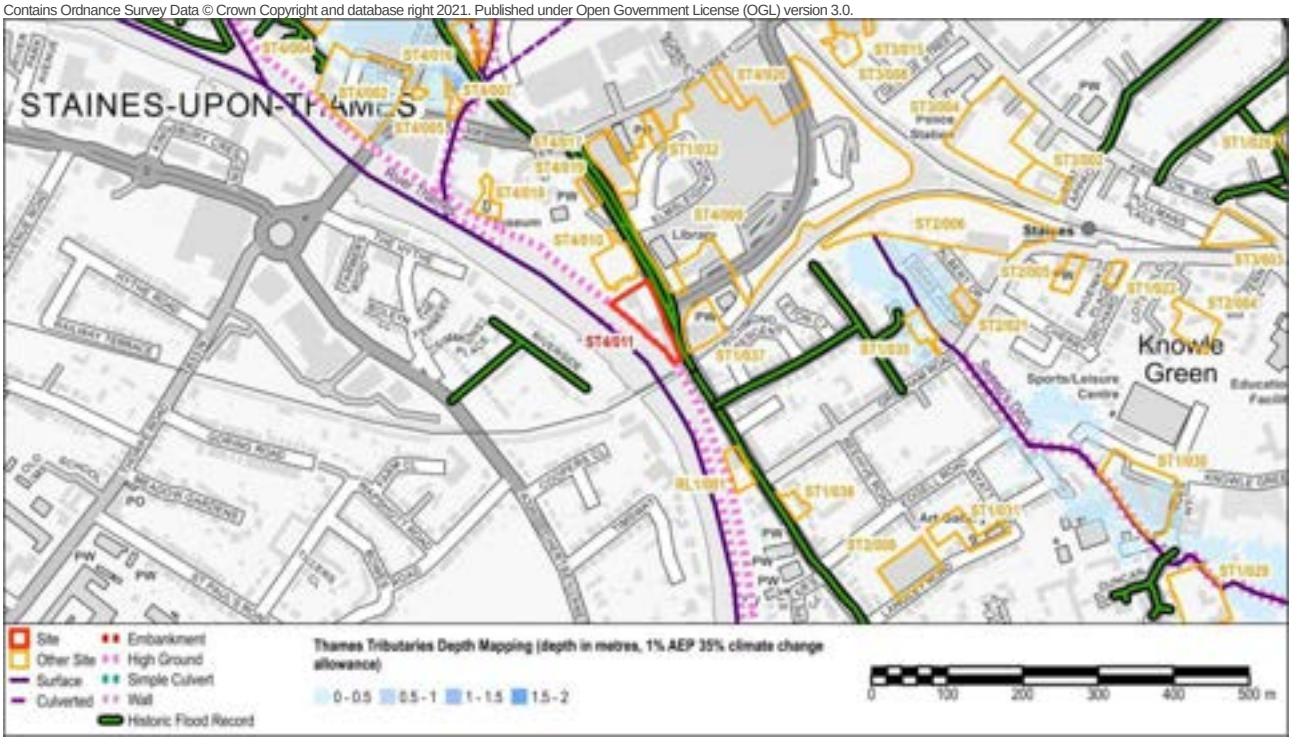
River Flooding



River Thames Maximum Flood Depth 1% AEP plus 35% climate change

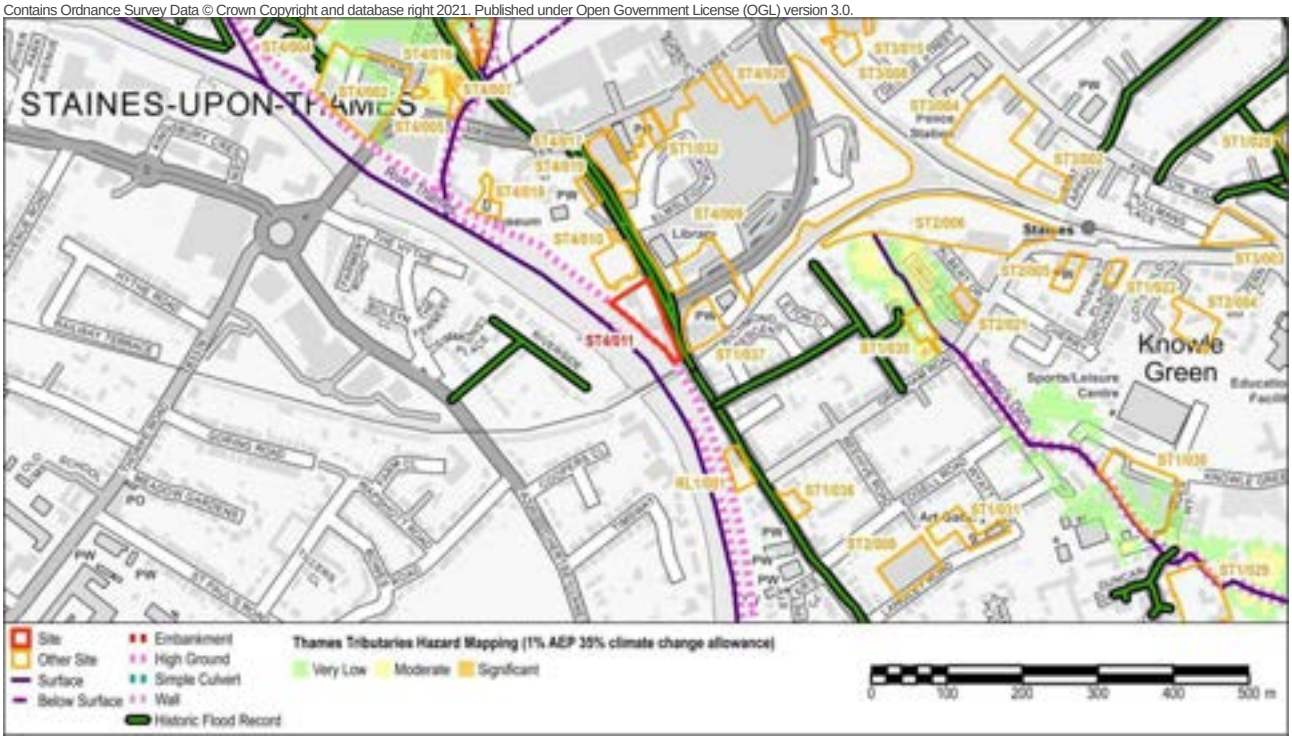
ST4/011: Thames Lodge, Thames Street, TW18 4SJ

River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

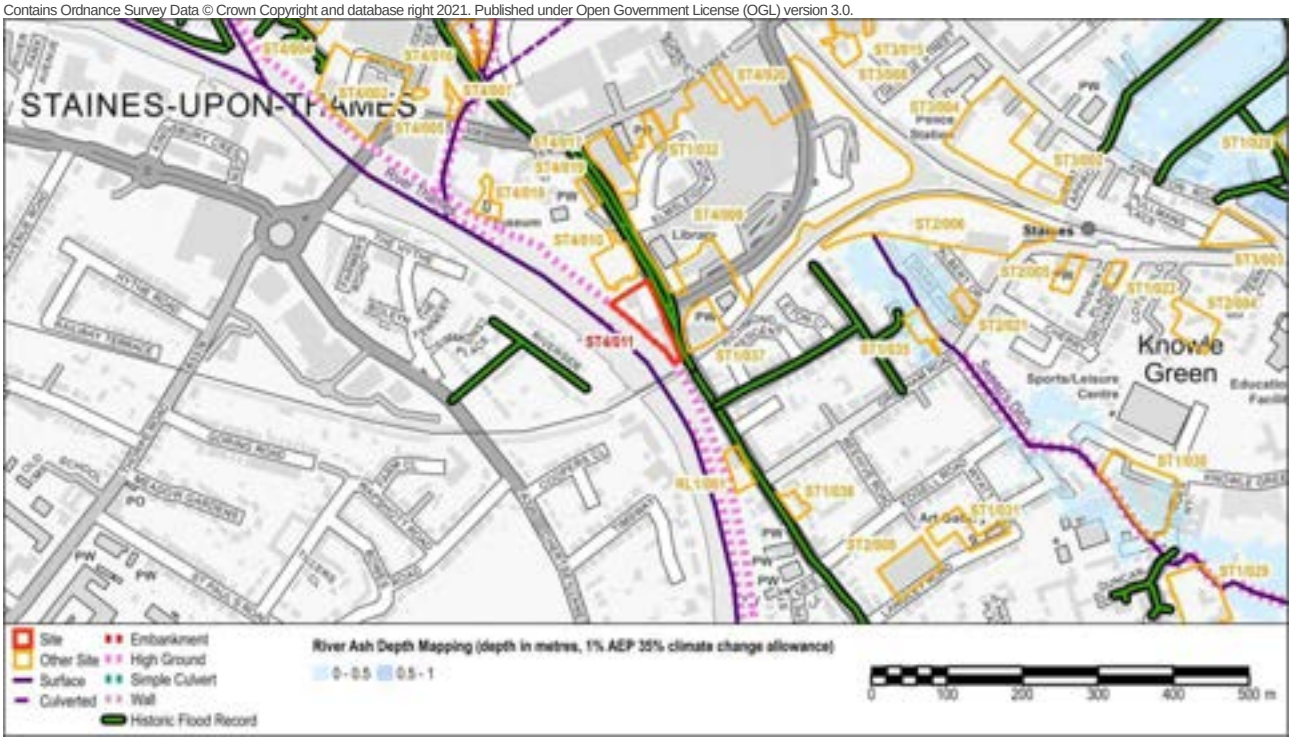


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST4/011: Thames Lodge, Thames Street, TW18 4SJ

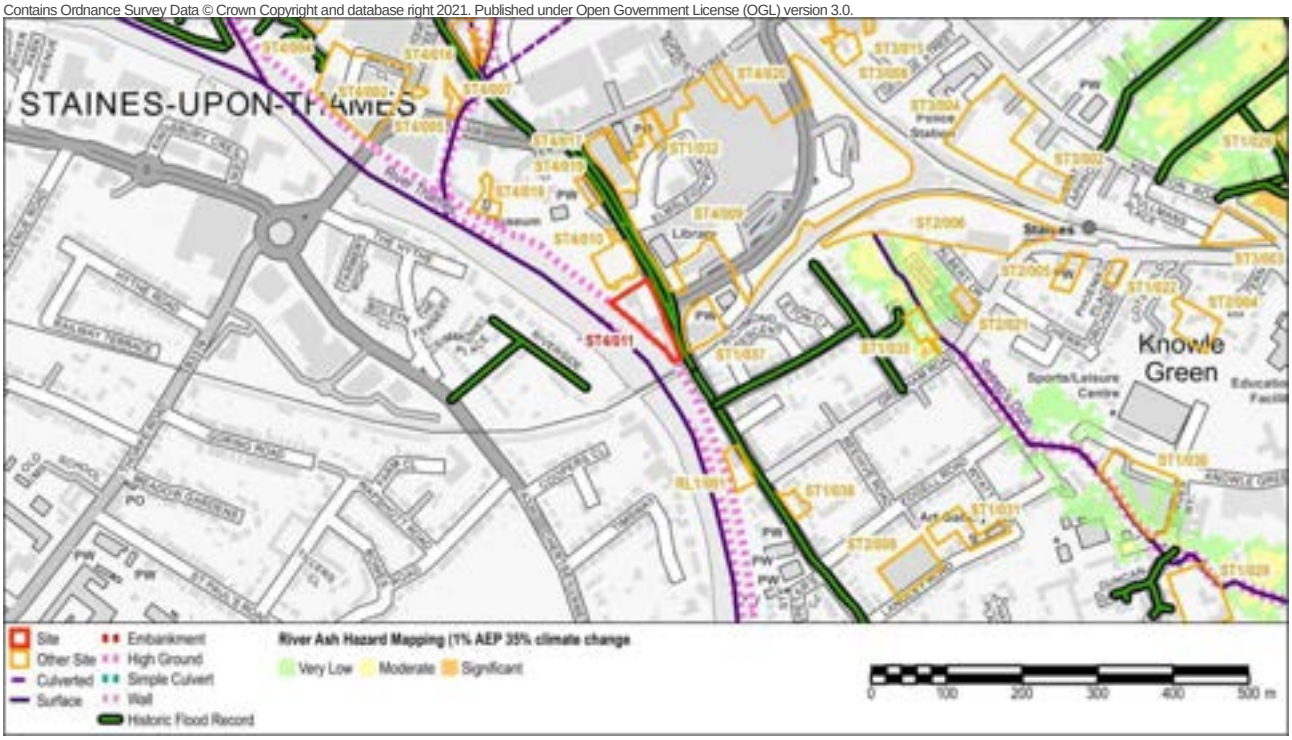


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

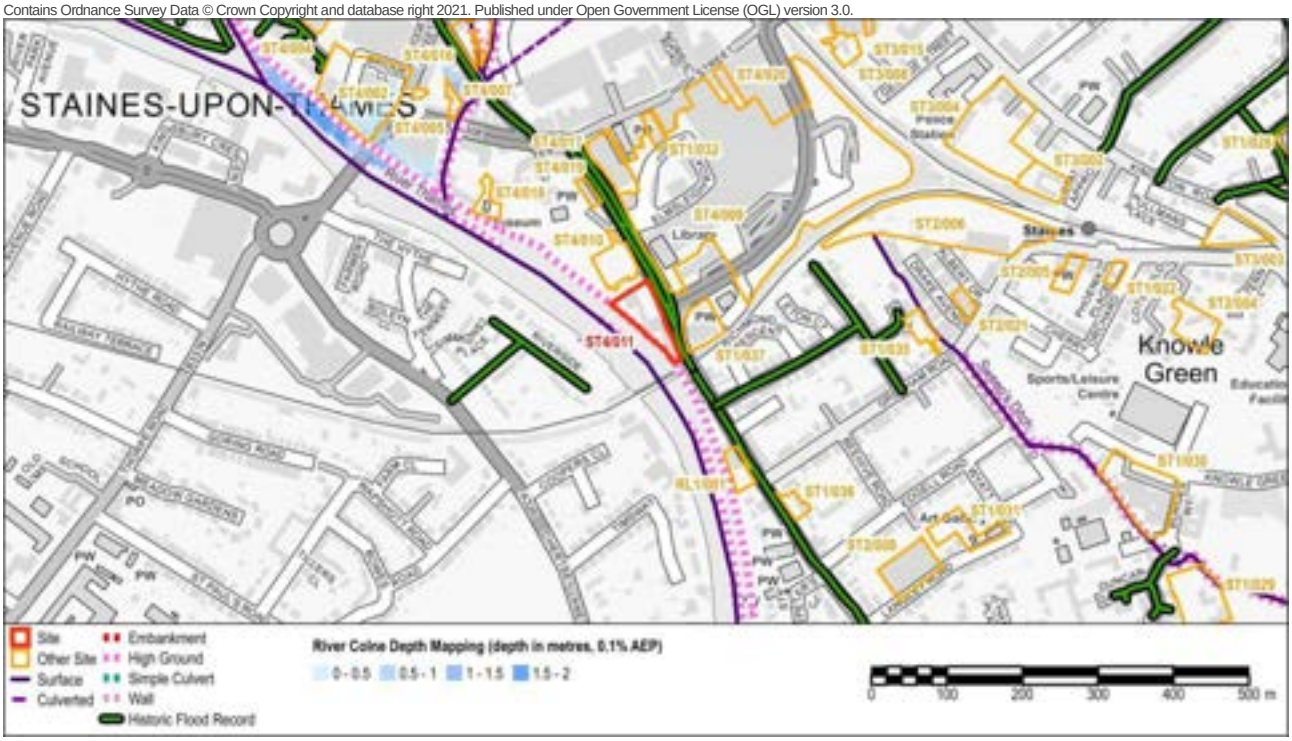


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST4/011: Thames Lodge, Thames Street, TW18 4SJ



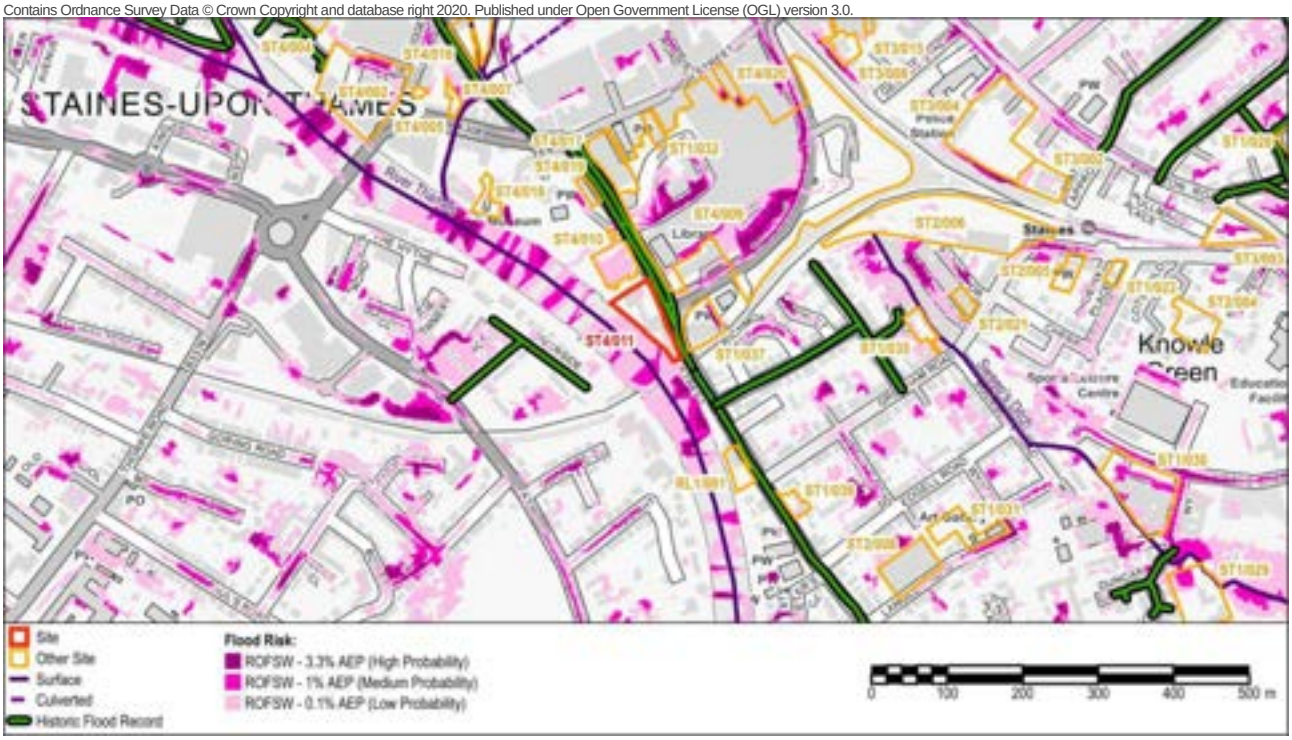
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium

ST4/011: Thames Lodge, Thames Street, TW18 4SJ



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south along the western edge of the site. The majority of the site (78%) is defined as Flood Zone 3 High probability of flooding. The remaining 17% adjacent to the River Thames lies within Flood Zone 3b Functional Floodplain. The site is not shown to benefit from flood defences.
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicate flood depths on the site of 0-1.5m. The hazard rating is Moderate to Significant meaning 'danger for some' and 'danger for most'.
There are numerous records of flooding from surface water in proximity to the site and the site has been affected by flooding from the Thames in 2000, 2003, 2013-2014. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, suggests that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

Development is not permitted in areas of Flood Zone 3b Functional Floodplain. This part of the site should be retained as floodplain and steps taken to restore the land to provide a more natural edge of the River Thames.

More Vulnerable development is only permitted in the areas of Flood Zone 3 on this site where it can be demonstrated that the Exception Test is satisfied i.e. (1) that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and (2) that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The following recommendations are made for this site:

- Development of the northern part of the site away from the River Thames may be possible. Development must not decrease the available floodplain storage and therefore the design should enable the free flow of floodwater at ground floor level.
- Residential accommodation can be located at first floor level. Finished floor levels should be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may be achievable along South Street. Places of safe refuge should also be designed into the development, above the design event (1% AEP including climate change).
- The site is located within the Flood Warning Area for the Thames and a Flood Warning and Evacuation Plan would need to be developed for occupants of the site to set out the response in the event of flooding.
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

SH1/015: Shepperton Youth Centre, Laleham Road, TW17 8EJ

Site ID:	SH1/015	**Area (ha):**	0.31
Proposed Use:	Residential / Hostel	**Vulnerability Classification:**	More Vulnerable

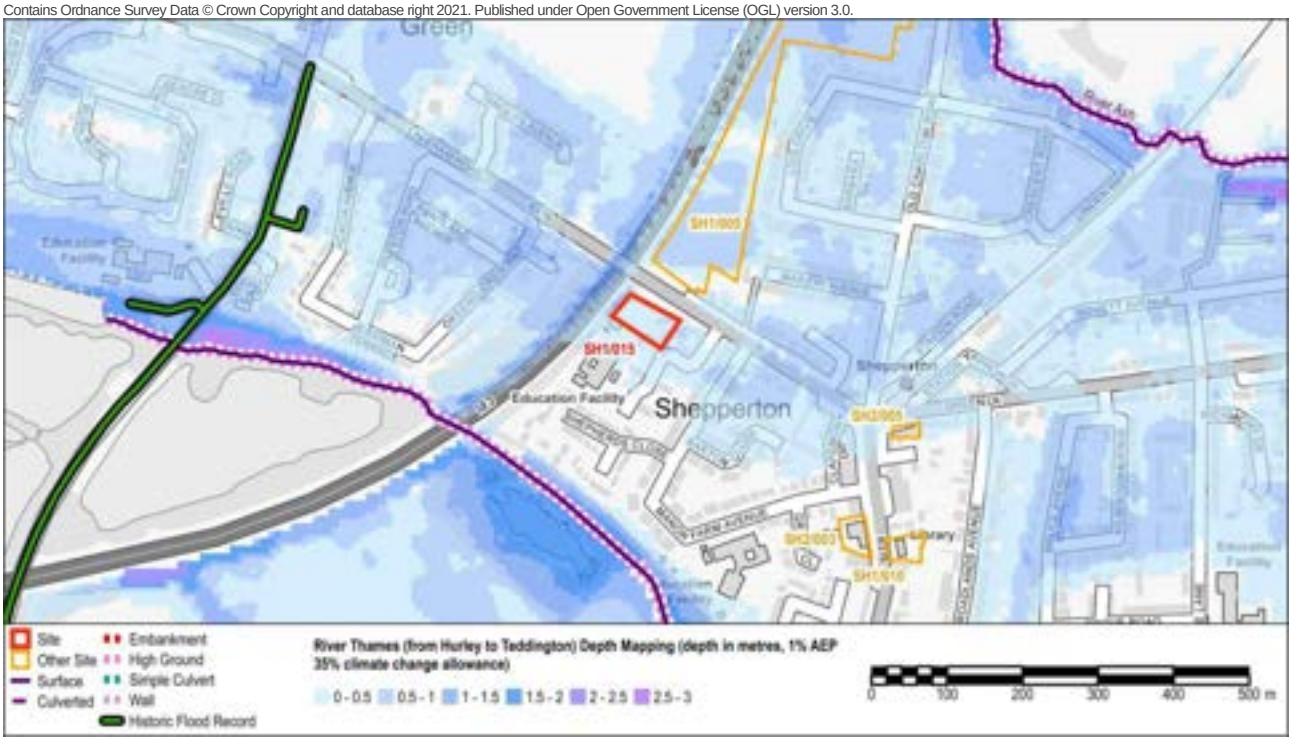
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 0%	**Flood Zone 2 (0.1% AEP):** 100%	**Flood Zone 3 (1% AEP):** 0%	**Flood Zone 3b (5% AEP):** 0%	**Area Benefiting from Defences:** 0%

Flood Zones and Flood Records

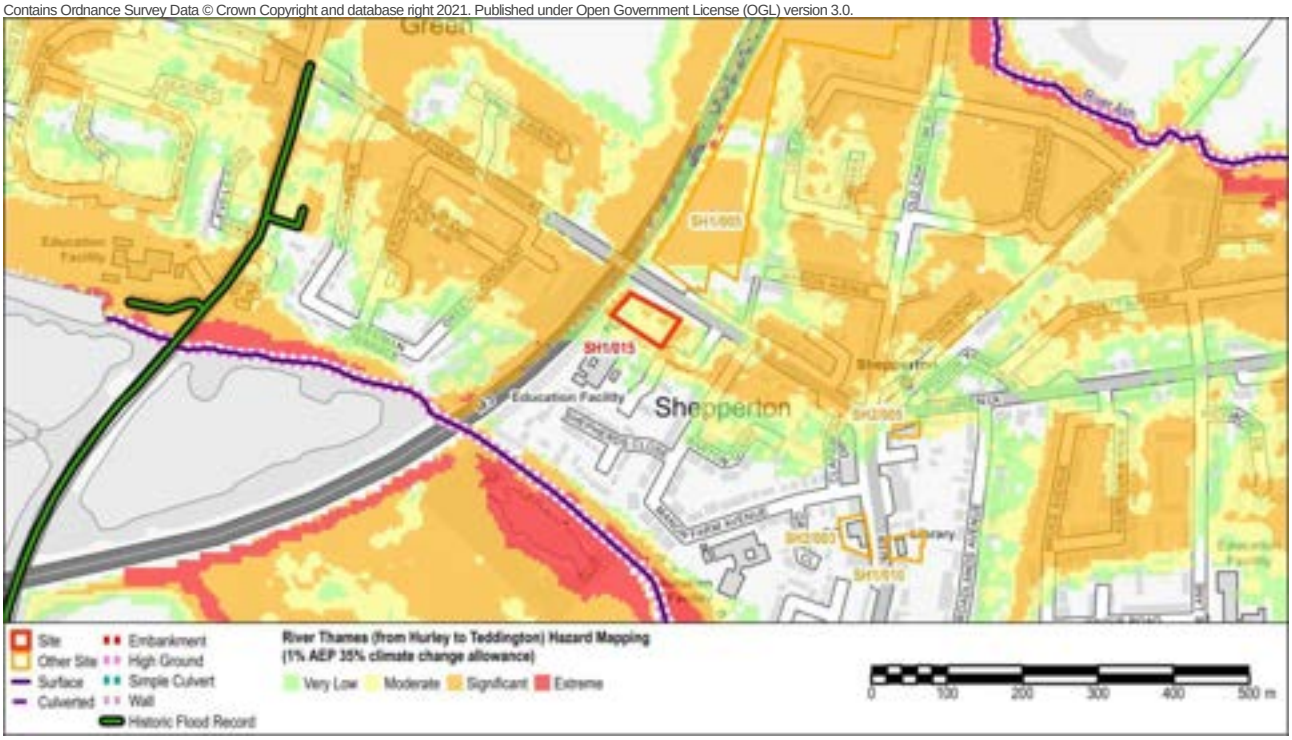
Flood Warning Area	River Thames at Shepperton and Lower Halliford, River Thames at Shepperton Green
Recorded River Flooding Outlines in which the site is located:	None
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 0; External property flooding 0; Section 19 Flood Investigation incident 4; Surrey County Council Wetspots 3
Sewer flooding records within the post code area in which the site is located:	Internal 0; External 3

River Flooding

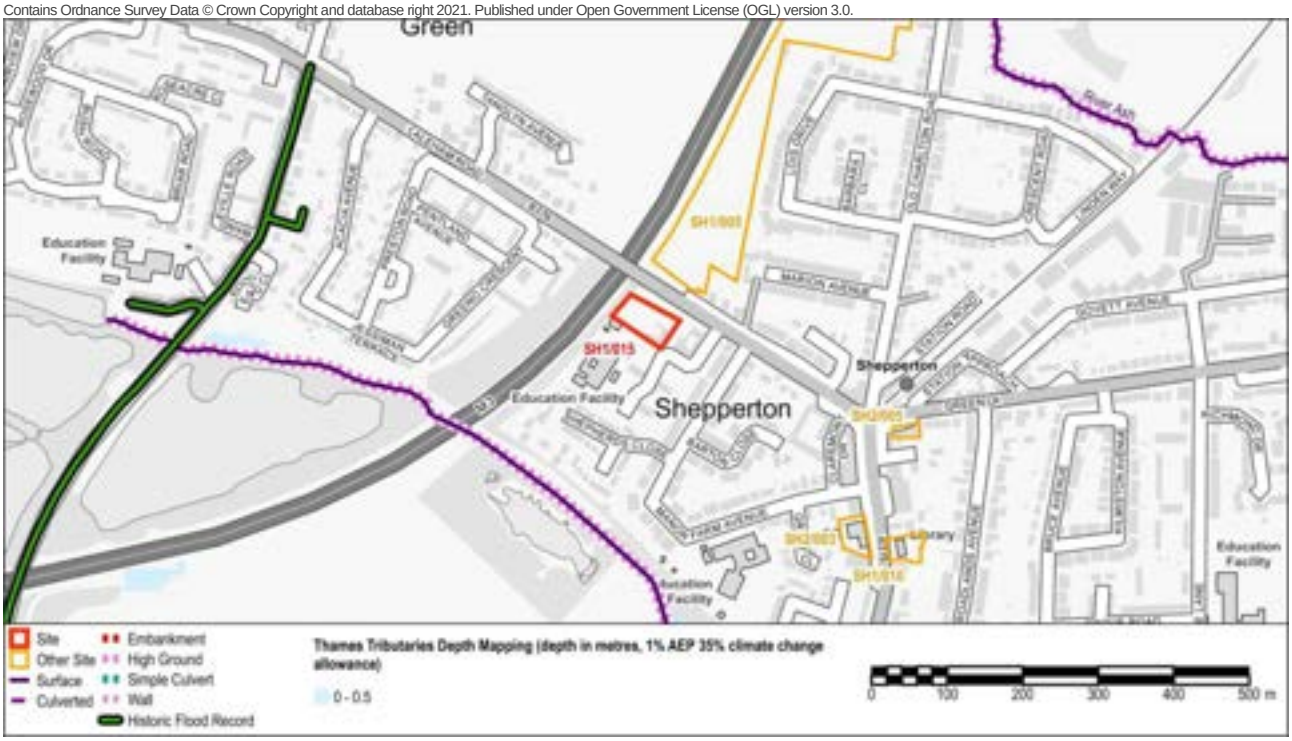


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

SH1/015: Shepperton Youth Centre, Laleham Road, TW17 8EJ

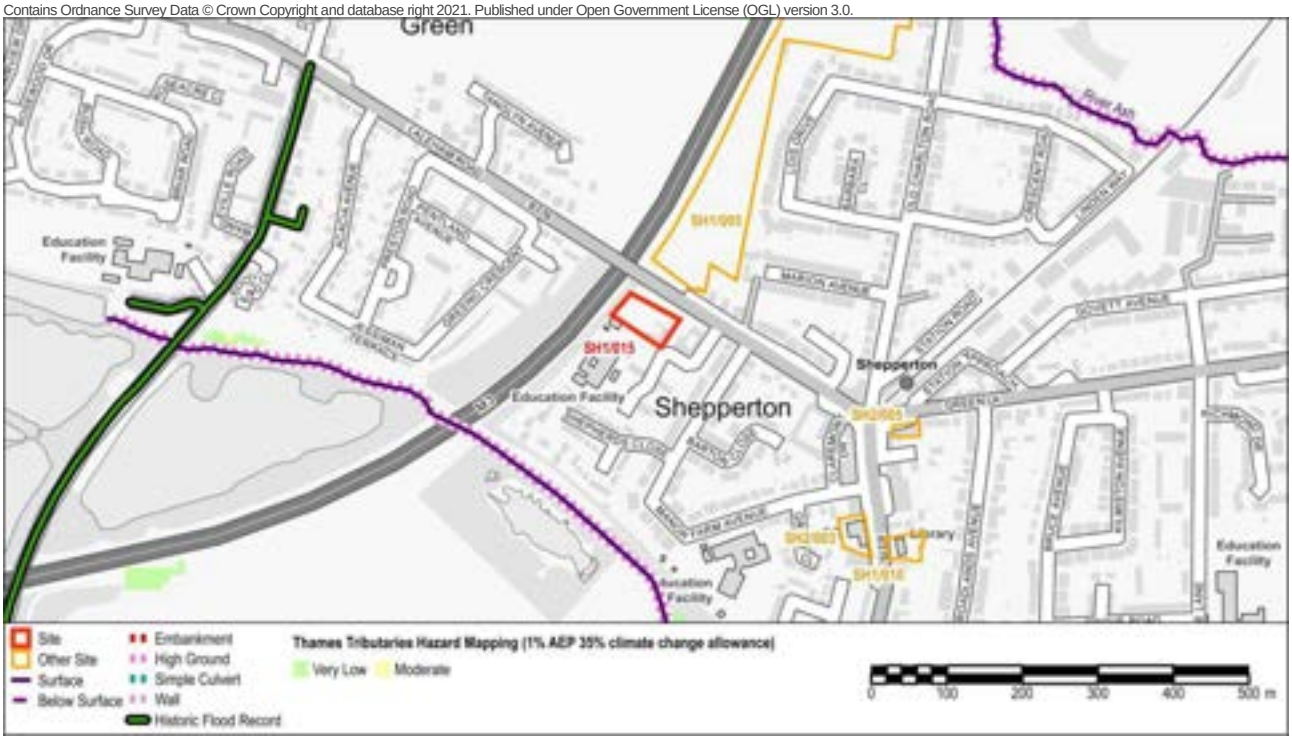


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

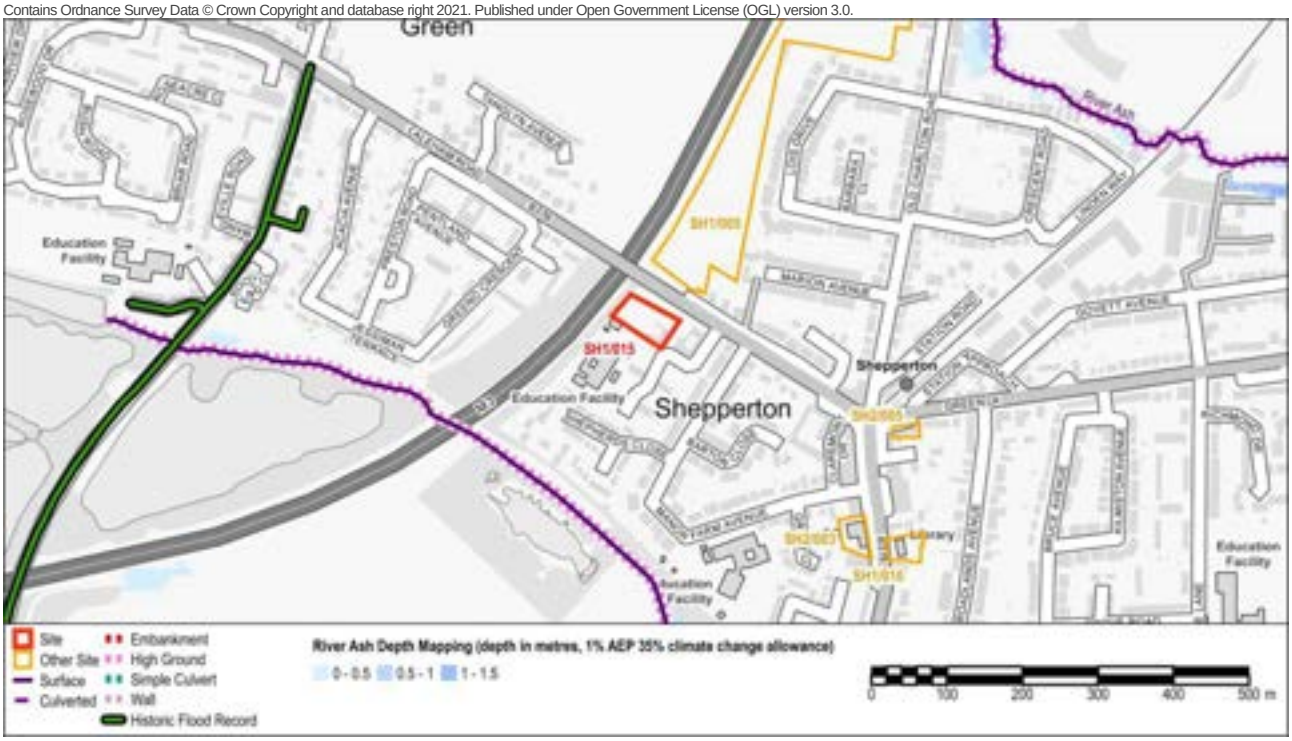


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

SH1/015: Shepperton Youth Centre, Laleham Road, TW17 8EJ

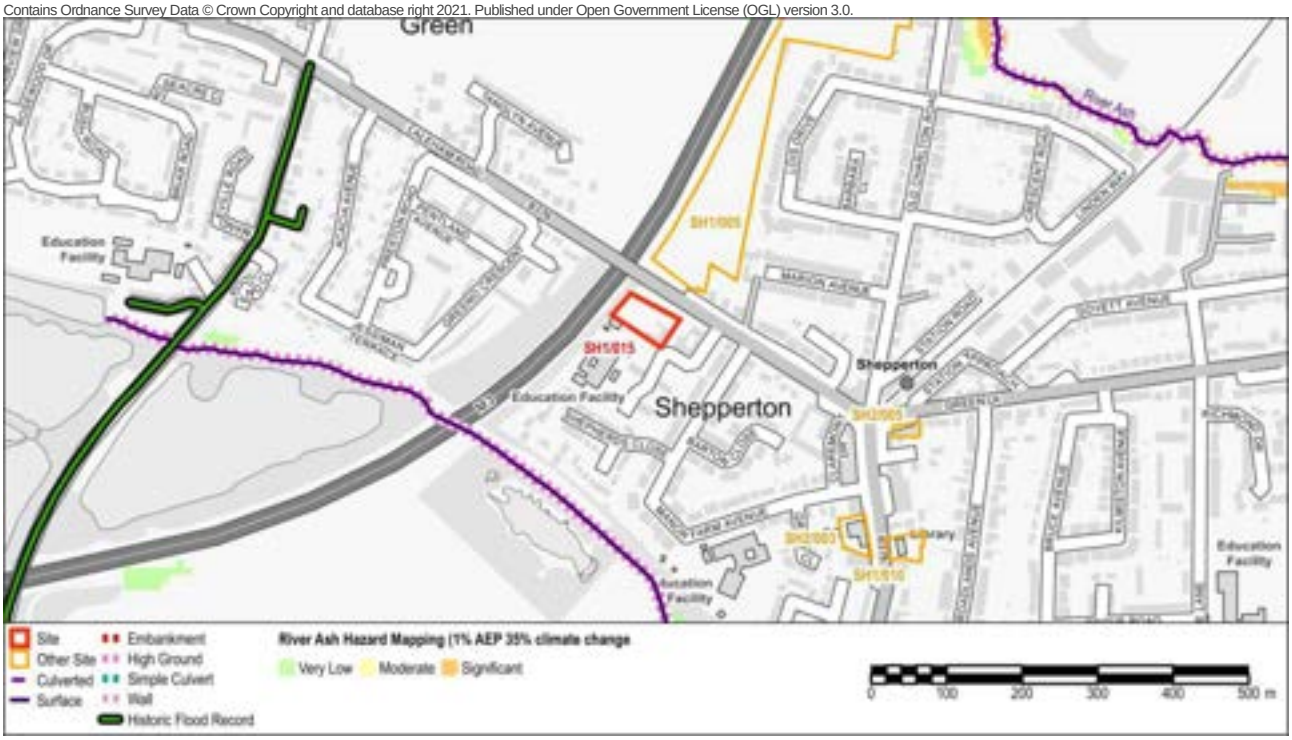


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change



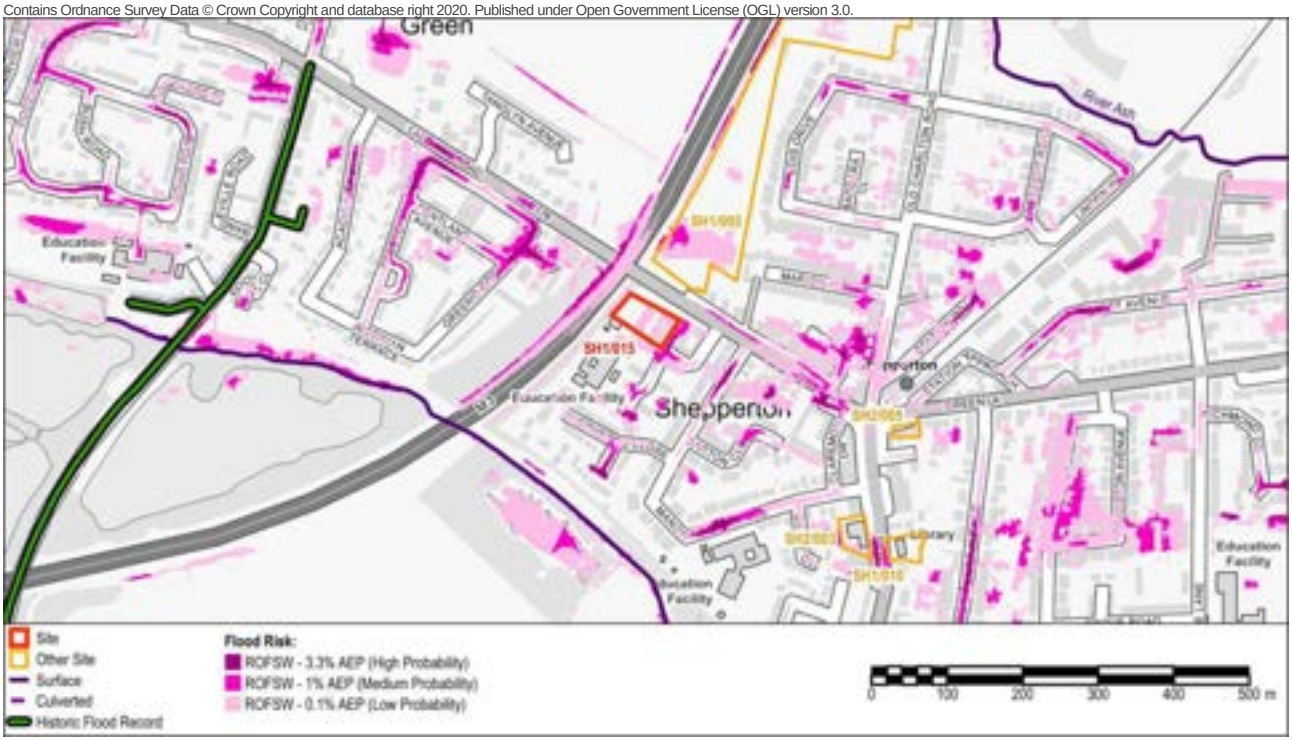
River Ash Maximum Flood Depth 1% AEP plus 35% climate change

SH1/015: Shepperton Youth Centre, Laleham Road, TW17 8EJ



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Bracklesham Group And Barton Group (Undifferentiated) - Sand, Silt And Clay, Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel

Areas Susceptible to Groundwater Flooding	<25%
BGS Susceptibility to Groundwater Flooding	Limited potential for groundwater flooding to occur.
Aquifer Designation	Unproductive, Secondary A

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the Queen Mary Reservoir.

SH1/015: Shepperton Youth Centre, Laleham Road, TW17 8EJ

Summary

The River Thames is located approximately 1.2km south of the site and the River Ash is located 700m north of the site. The site is located in Flood Zone Medium probability of river flooding.
Modelling outputs for the River Thames show that during the 1% AEP flood event including a 35% increase in peak river flow as a result of climate change, flood depths reach 0-0.5m, with a corresponding hazard rating of Moderate (Danger for Some) and Significant (Danger for Most).
The Risk of Flooding from Surface Water mapping identifies the potential for surface water to pond on the site and in the local area.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be limited potential for groundwater flooding to occur in this area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zone 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given that the site and access to the site are at risk of flooding during the 1% AEP event including climate change, the following recommendations are made:

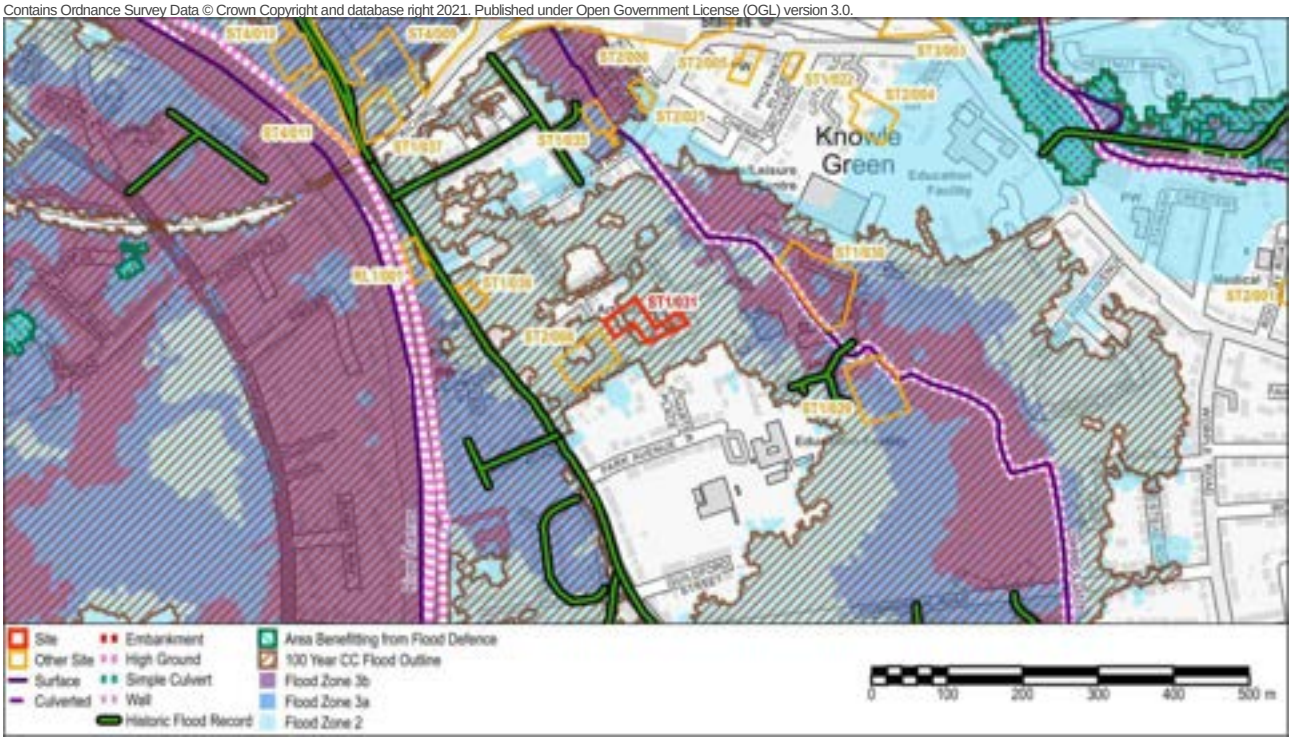
- Development of the site must ensure that the risk of flooding to surrounding areas is not increased, and where possible is reduced. Given that the entire site is located within the flood extent for the design flood (1% AEP including climate change), it will not be possible to provide floodplain compensation storage within the site for any increase in building footprint. As a result, the built footprint of the new development of the site should not exceed that of the existing development which may limit the number of units that can be delivered on the site. Alternatively, some of the proposed development units could be designed to enable the free flow and storage of floodwater at ground level, with development located at higher levels. This may be achieved through the provision of undercroft open space with residential development at first floor level and above. However, it must be demonstrated that this area will be available for flood storage and this would need to be communicated to future occupants.
- Finished floor levels for residential accommodation must be above the design flood event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may not be achievable for the site. This should be addressed as part of a Flood Warning and Evacuation Plan for the site. Places of safe refuge should be designed into the development, above the design event (1% AEP including climate change).
- Development proposals for the site should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.

ST1/031: Thameside Arts Centre, Wyatt Road, TW18 2AY

Site ID:	ST1/031	Area (ha):	0.26
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 0%	Flood Zone 2 (0.1% AEP): 100%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%



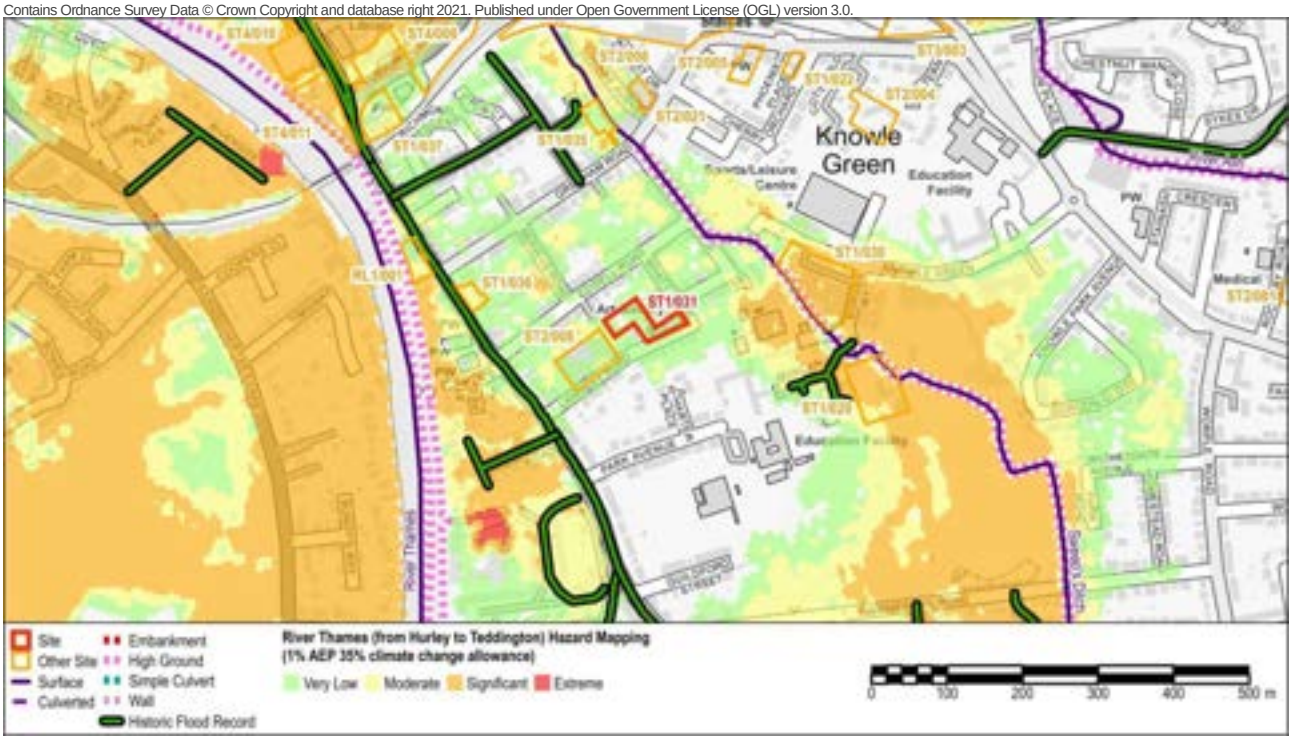
Flood Zones and Flood Records

Flood Warning Area	River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 34; External property flooding 2; Section 19 Flood Investigation incident 44; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal 2; External 9

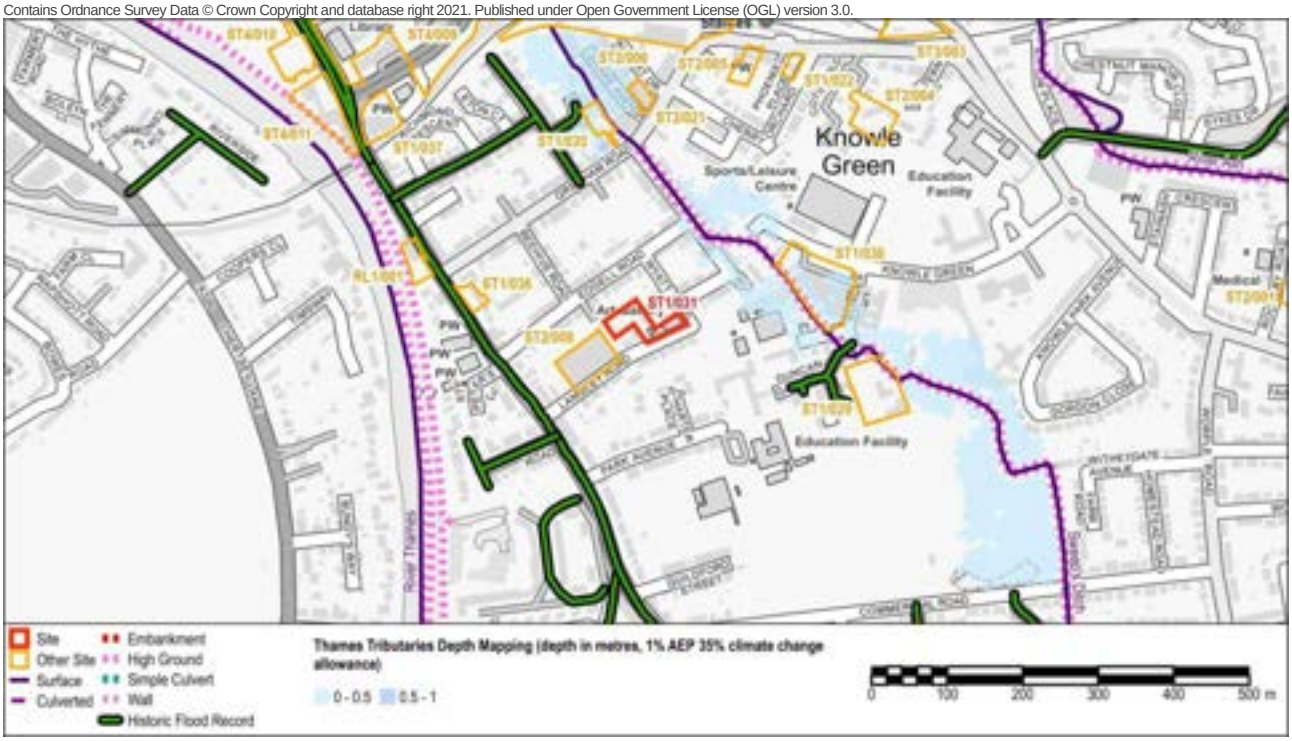
River Flooding

River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST1/031: Thameside Arts Centre, Wyatt Road, TW18 2AY

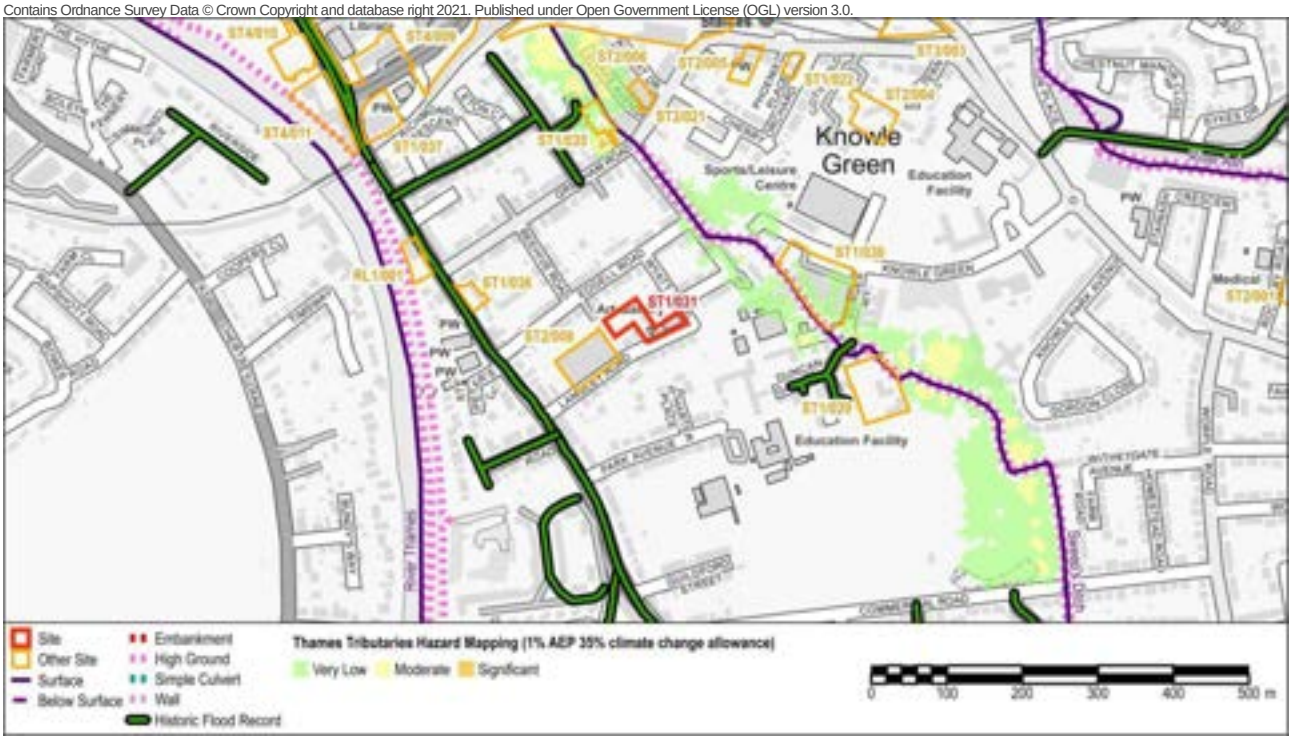


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

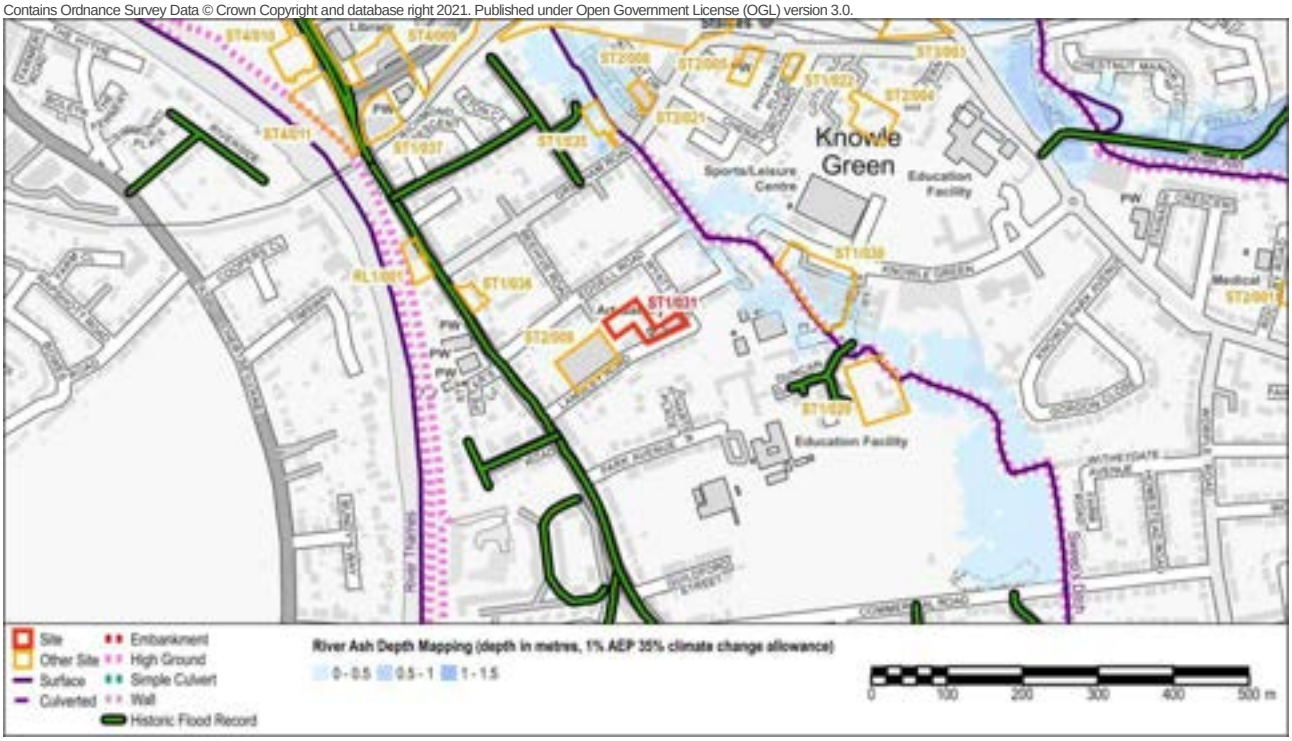


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST1/031: Thameside Arts Centre, Wyatt Road, TW18 2AY

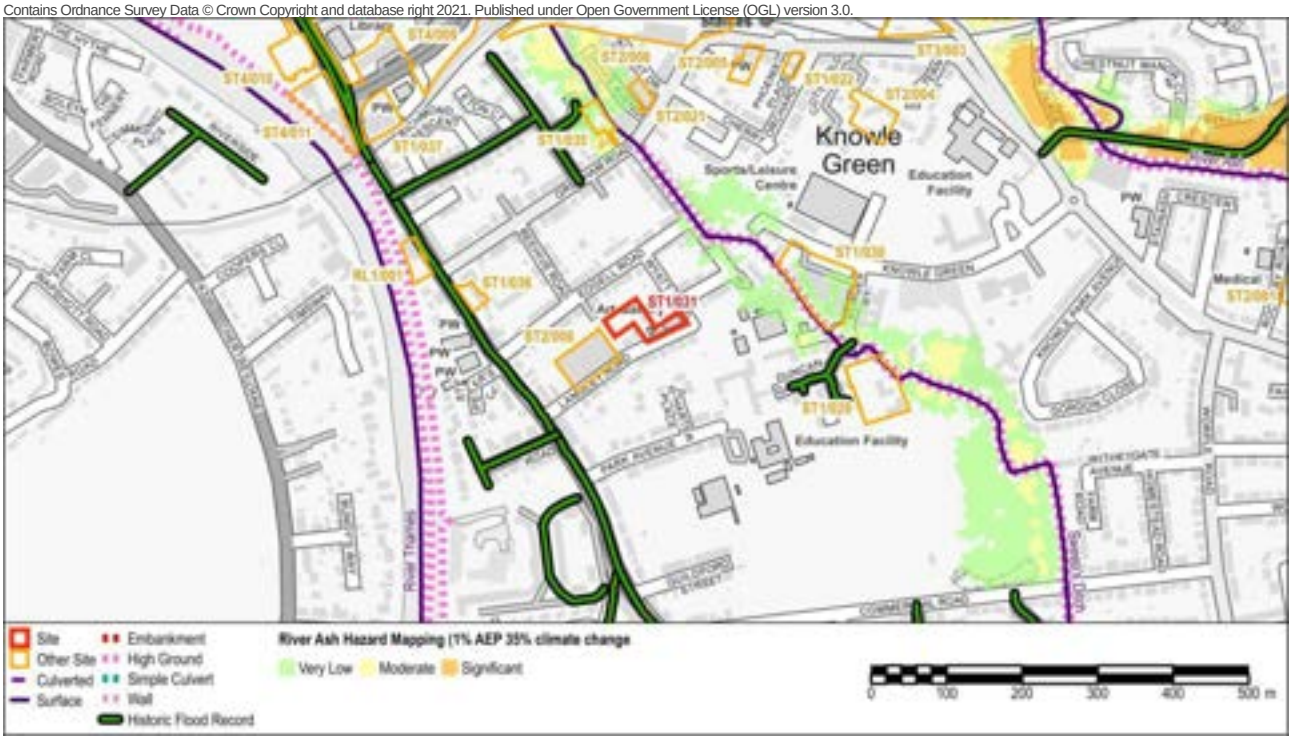


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change



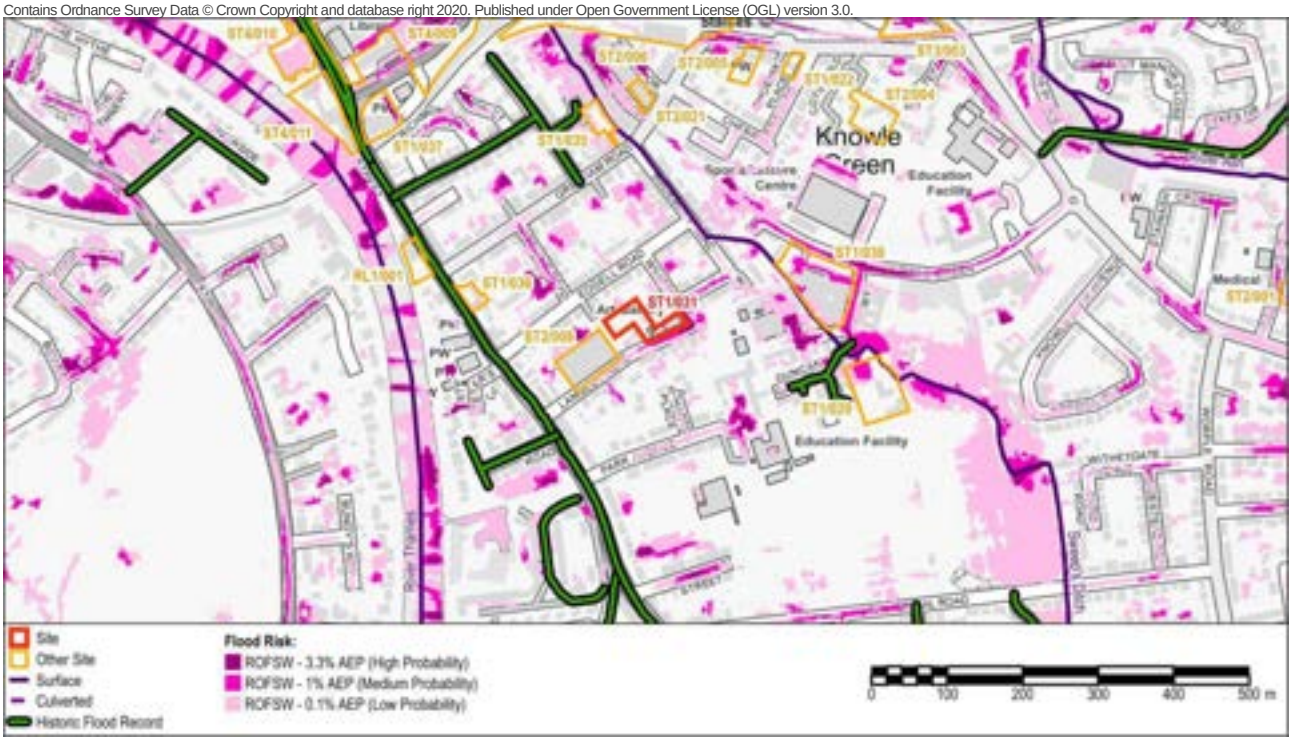
River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST1/031: Thameside Arts Centre, Wyatt Road, TW18 2AY



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Low



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel

Areas Susceptible to Groundwater Flooding	>75%
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.
Aquifer Designation	Secondary A, Secondary A

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south approximately 300m to the west of the site and Sweep's Ditch is 200m to the east of the site. The whole site is defined as Flood Zone 2, Medium probability of river flooding.

ST1/031: Thameside Arts Centre, Wyatt Road, TW18 2AY

Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicate flood depths on the site of 0-0.5m. The hazard rating is Low.
The site is not at risk of flooding from the Thames Tributaries or the River Ash for the 1% AEP event plus 35% climate change.
The Risk of Flooding from Surface Water Map shows that the local area is susceptible to some surface water ponding. There are records of flooding in proximity to the site.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, suggests that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zone 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given that the site and access to the site are at risk of flooding during the 1% AEP event including climate change, the following recommendations are made:

- Development of the site must ensure that the risk of flooding to surrounding areas is not increased, and where possible is reduced. Given that the entire site is located within the flood extent for the design flood (1% AEP including climate change), it will not be possible to provide floodplain compensation storage within the site for any increase in building footprint. As a result, the built footprint of the new development of the site should not exceed that of the existing development. This may limit the number of units that can be delivered on the site. Alternatively, some of the proposed development units could be designed to enable the free flow and storage of floodwater at ground level, with development located at higher levels. This may be achieved through the provision of undercroft open space with residential development at first floor level and above. However, it must be demonstrated that this area will be available for flood storage and this would need to be communicated to future occupants.
- Finished floor levels for residential accommodation must be above the design flood event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) is achievable for the site. Details should be provided as part of a Flood Warning and Evacuation Plan for the site. Places of safe refuge should also be designed into the development, above the design event (1% AEP including climate change).
- Development proposals for the site should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST3/004: 34-36 (OAST House) /Car park, Kingston Road, TW18 4LN

Site ID:	ST3/004	**Area (ha):**	0.92
Proposed Use:	Residential	**Vulnerability Classification:**	More Vulnerable

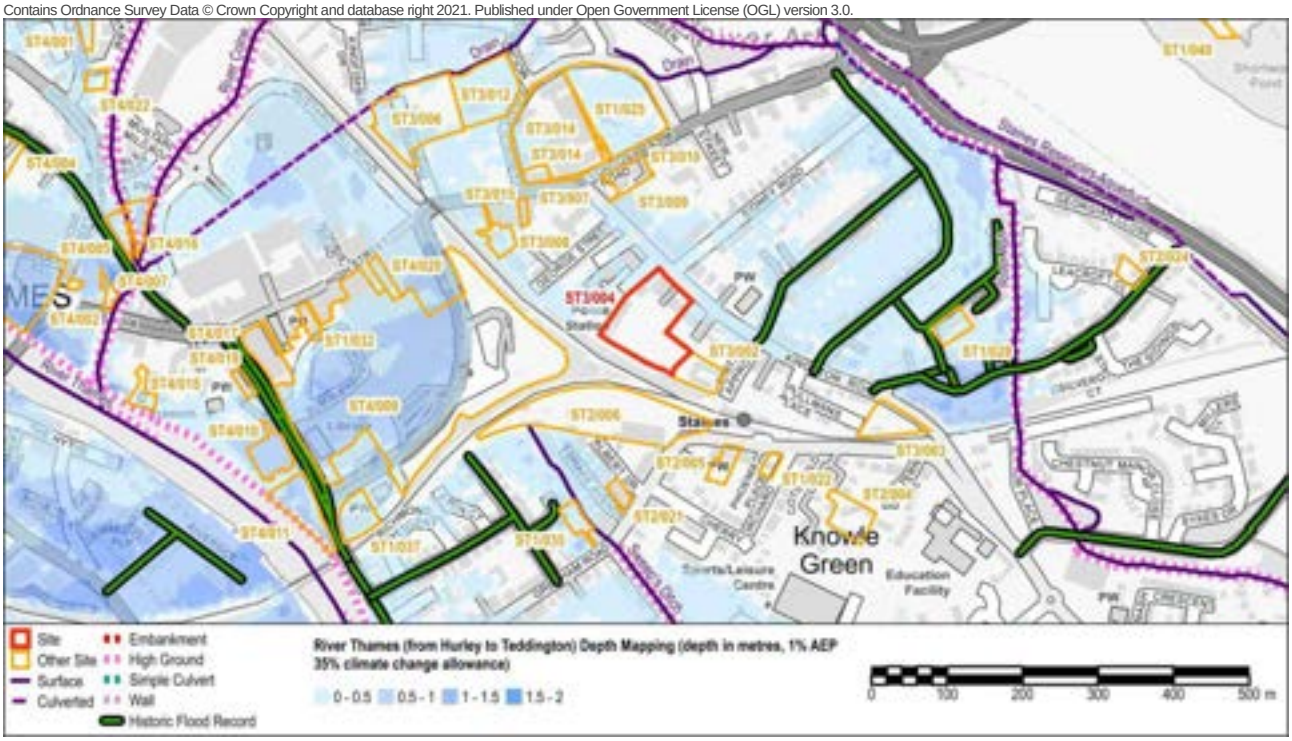
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 97%	**Flood Zone 2 (0.1% AEP):** 3%	**Flood Zone 3 (1% AEP):** 0%	**Flood Zone 3b (5% AEP):** 0%	**Area Benefiting from Defences:** 0%

Flood Zones and Flood Records

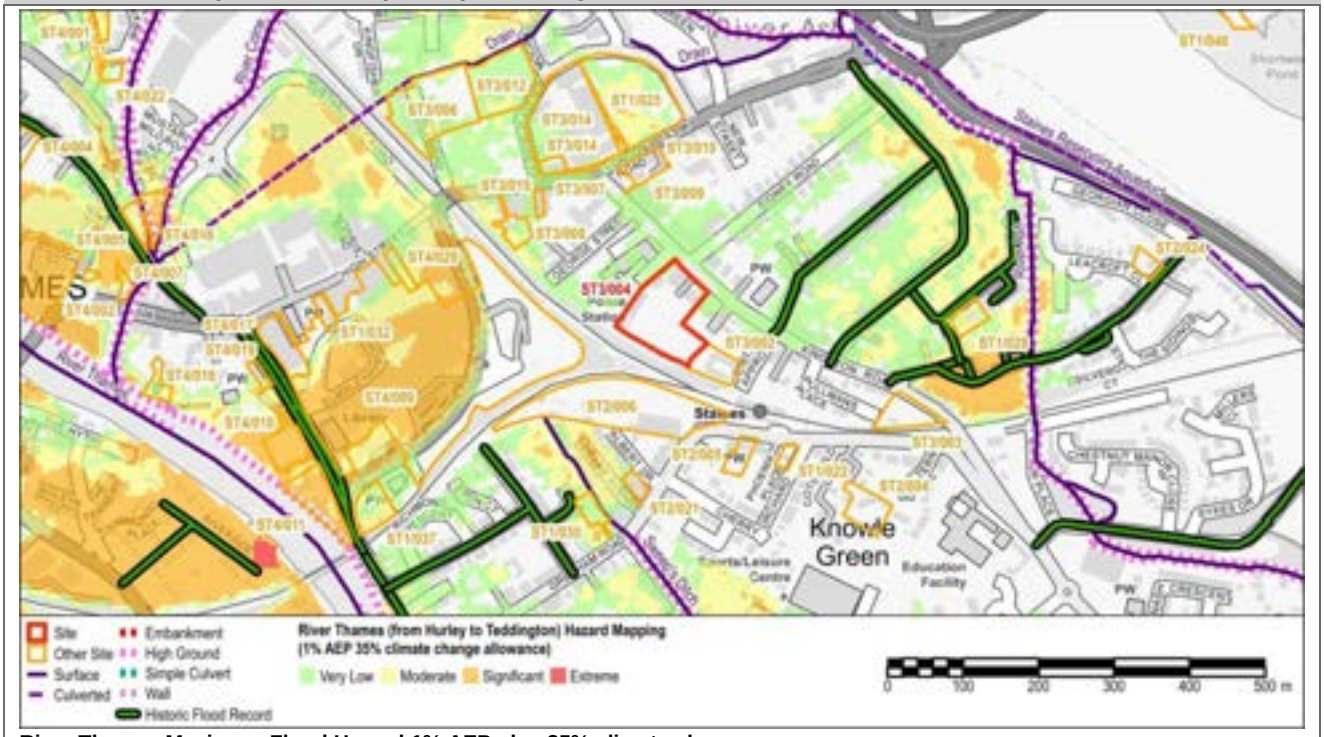
Flood Warning Area	River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	None
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 48; External property flooding 0; Section 19 Flood Investigation incident 42; Surrey County Council Wetspots 1
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

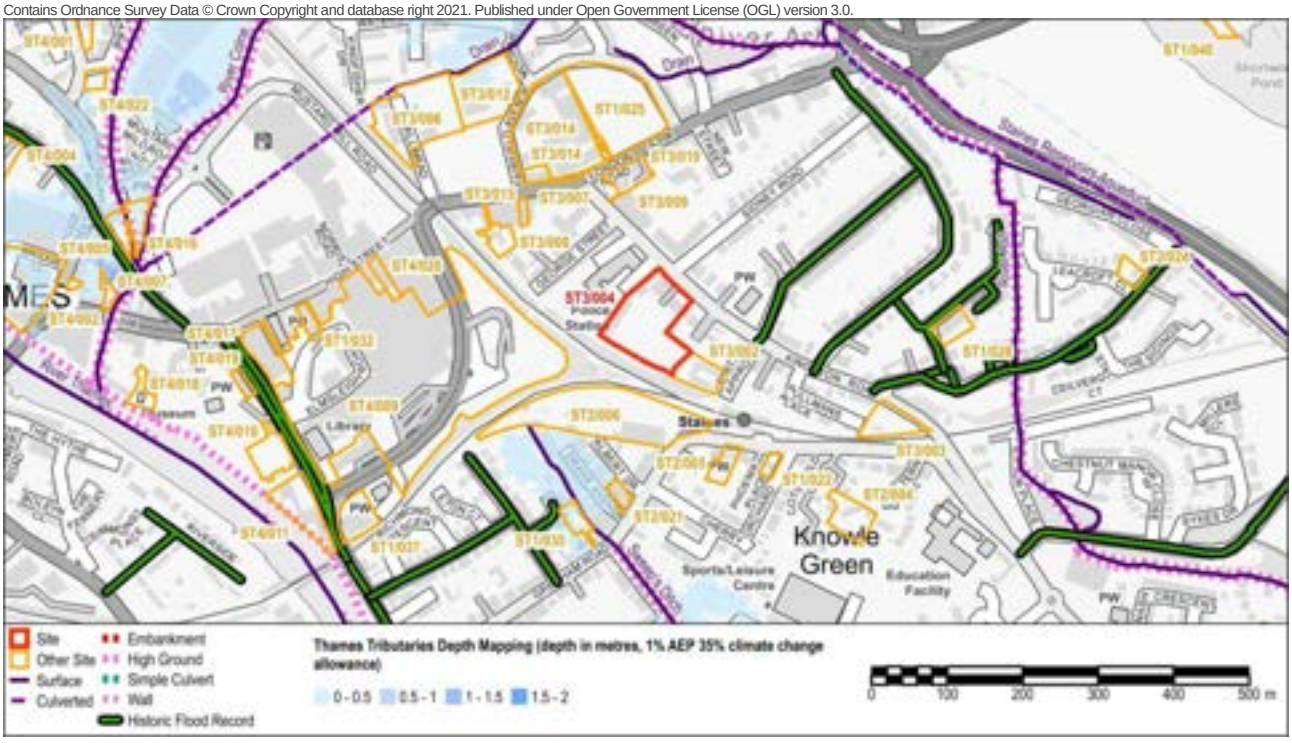


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST3/004: 34-36 (OAST House) /Car park, Kingston Road, TW18 4LN

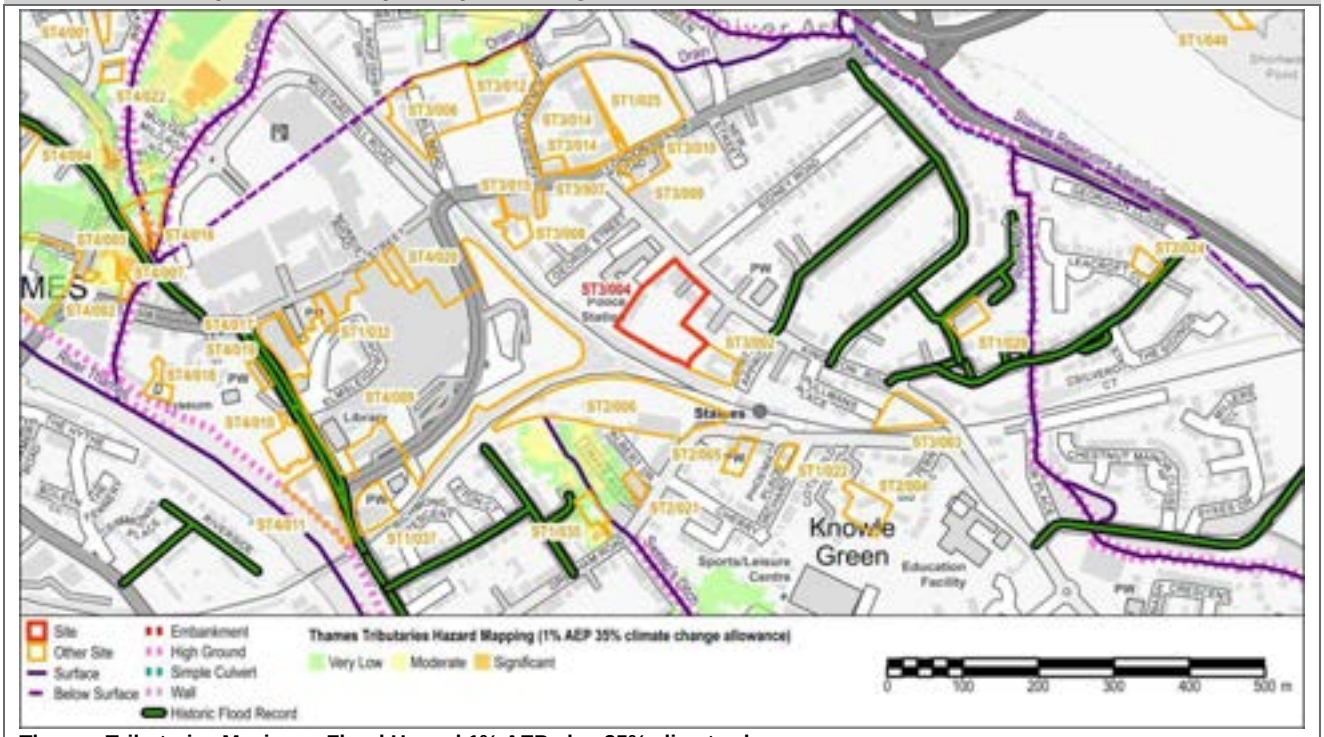


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

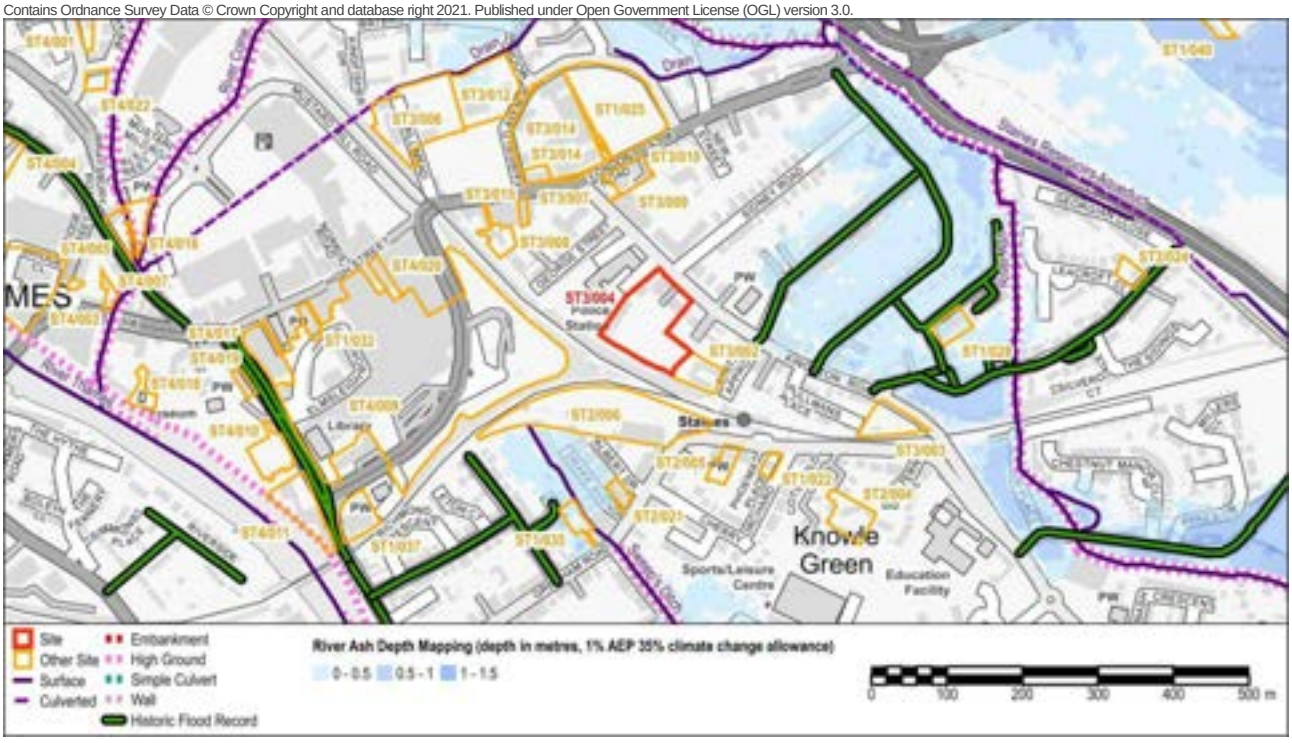


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST3/004: 34-36 (OAST House) /Car park, Kingston Road, TW18 4LN



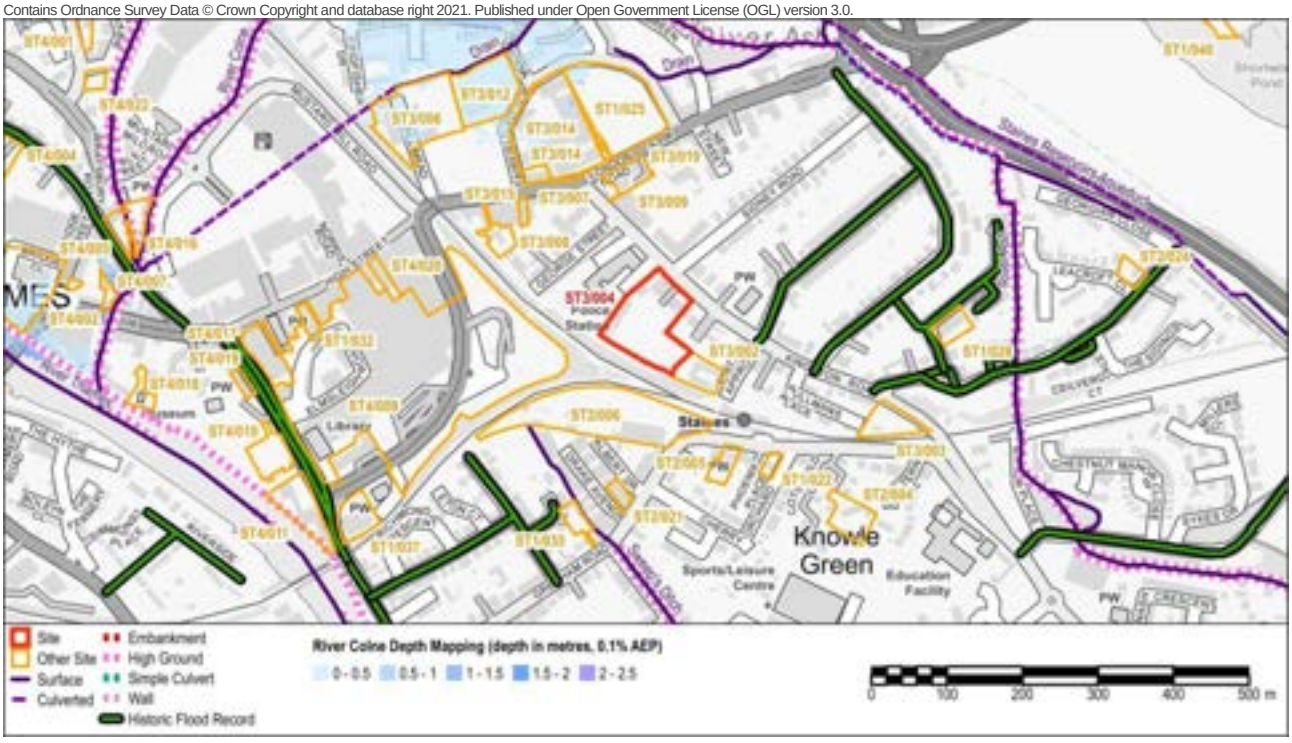
Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change



River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST3/004: 34-36 (OAST House) /Car park, Kingston Road, TW18 4LN

River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

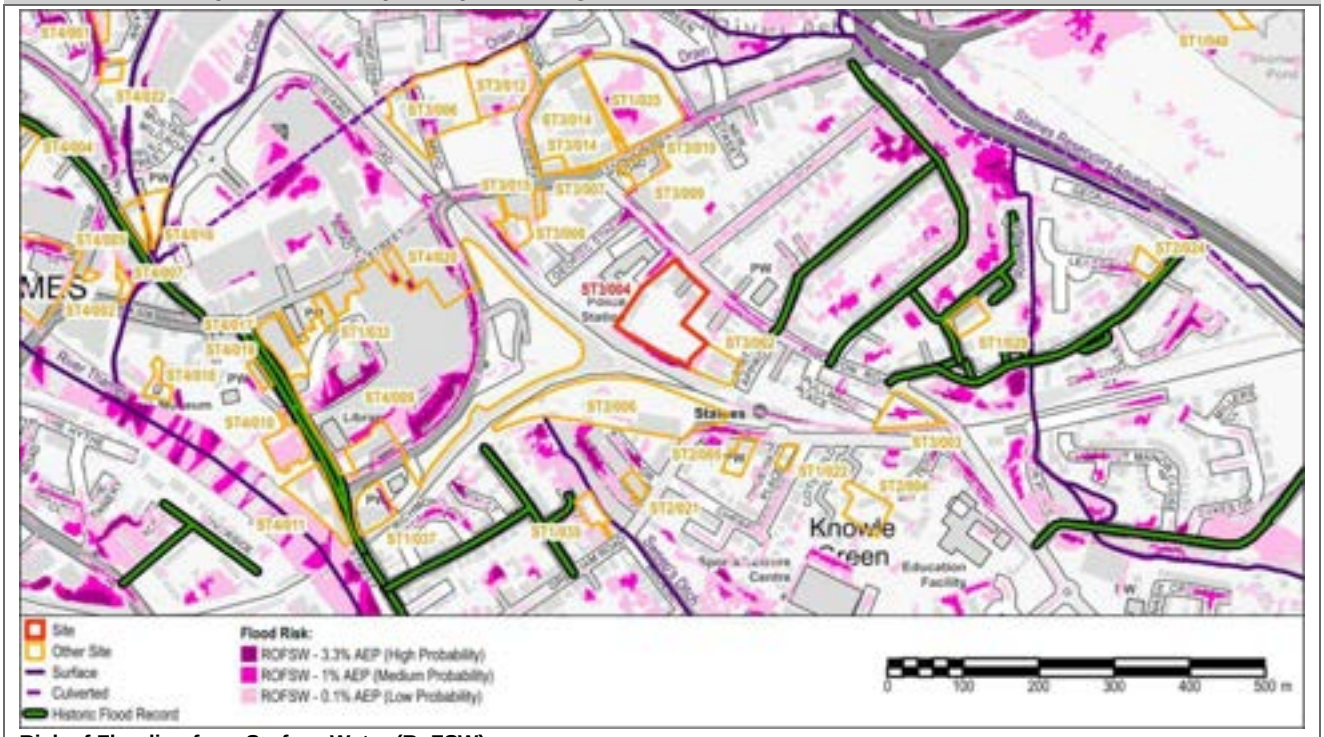


River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding

Risk of Flooding from Surface Water (RoFSW)	Medium

ST3/004: 34-36 (OAST House) /Car park, Kingston Road, TW18 4LN



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Not considered to be prone to groundwater flooding.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames is located 600m west of the site. The site is located primarily in Flood Zone 1 Low probability of river flooding (97%), and 3% of the site is defined as Flood Zone 2, Medium probability of river flooding.
Modelling outputs for the River Thames show that during the 1% AEP flood event including a 35% increase in peak river flow as a result of climate change, the fringe of the site and Kingston Road along the north eastern edge of the site are at risk of flooding. Flood depths of 0-0.5m are modelled to occur, with corresponding hazard rating of Low.
The Risk of Flooding from Surface Water mapping identifies the potential for overland flow along Kingston Road and adjacent to the railway line in the southern part of the site. There are numerous records of flooding from the River Thames and surface water within close proximity to the site. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zones 1 and 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given that parts of the site and access to the site are at risk of flooding during the 1% AEP event including climate change, the following recommendations are made:

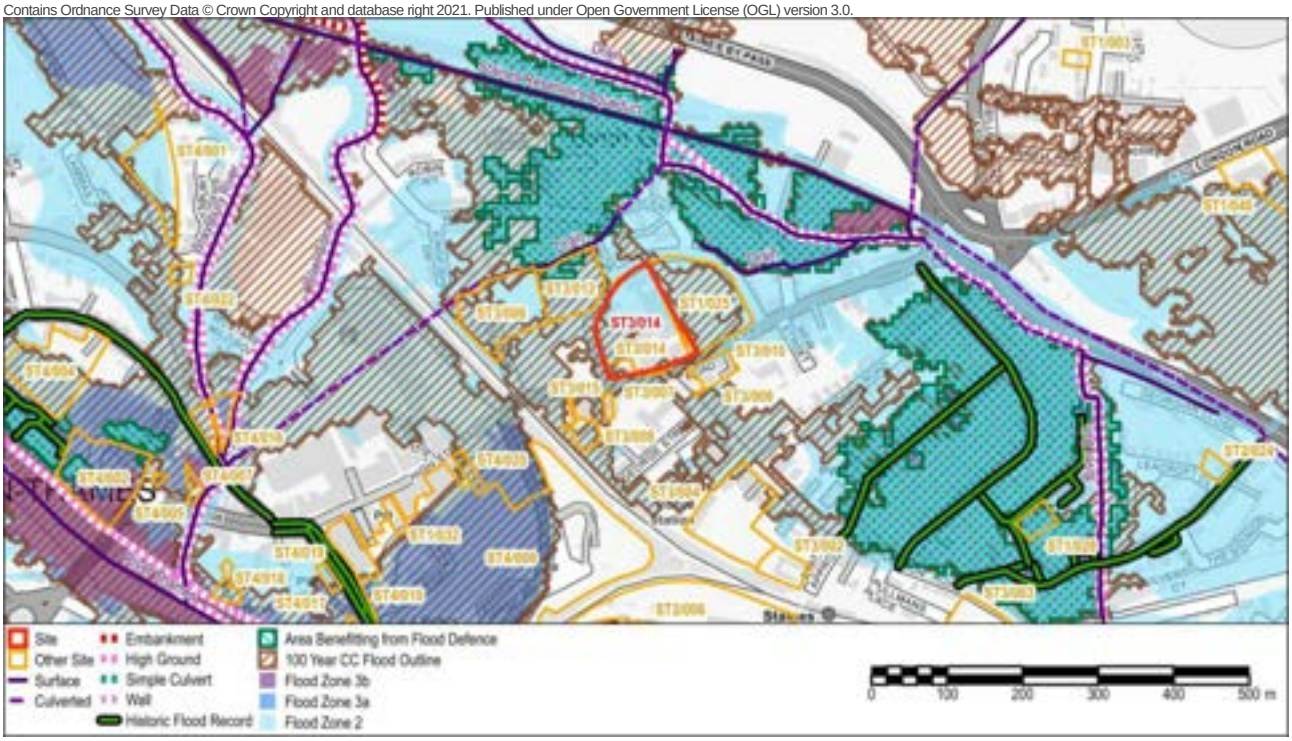
- Apply a sequential approach and steer residential development away from those areas at risk of flooding from the River Thames during the design event (1% AEP including climate change).
- Finished floor levels for residential accommodation must be above the design flood event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) is likely to be achievable north west along Kingston Road and then east along London Road.
- A Flood Warning and Evacuation Plan should be prepared for the site and places of safe refuge should also be designed into the development, above the design event (1% AEP including climate change).
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.

ST3/014: Birch House/London Road, Fairfield Avenue

Site ID:	ST3/014	Area (ha):	1.25
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

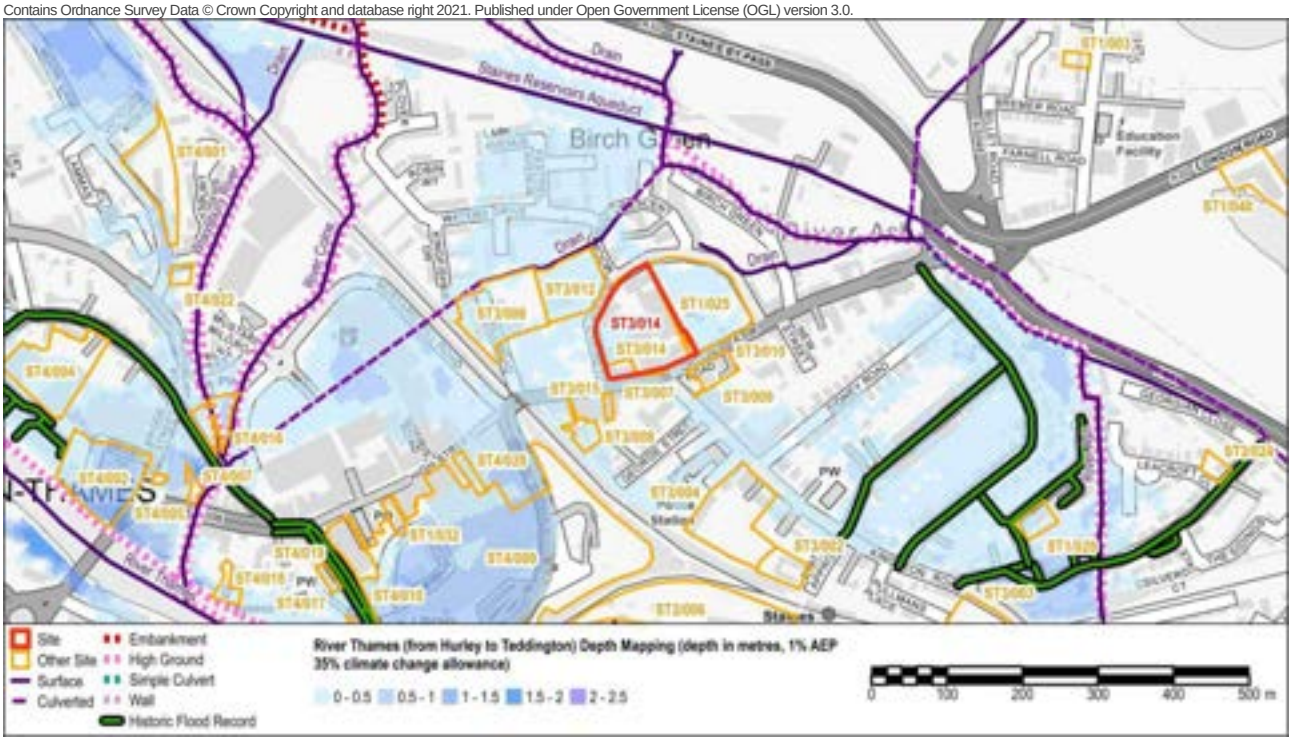
Flood Zone 1 (<0.1% AEP): 35%	Flood Zone 2 (0.1% AEP): 65%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%



Flood Zones and Flood Records

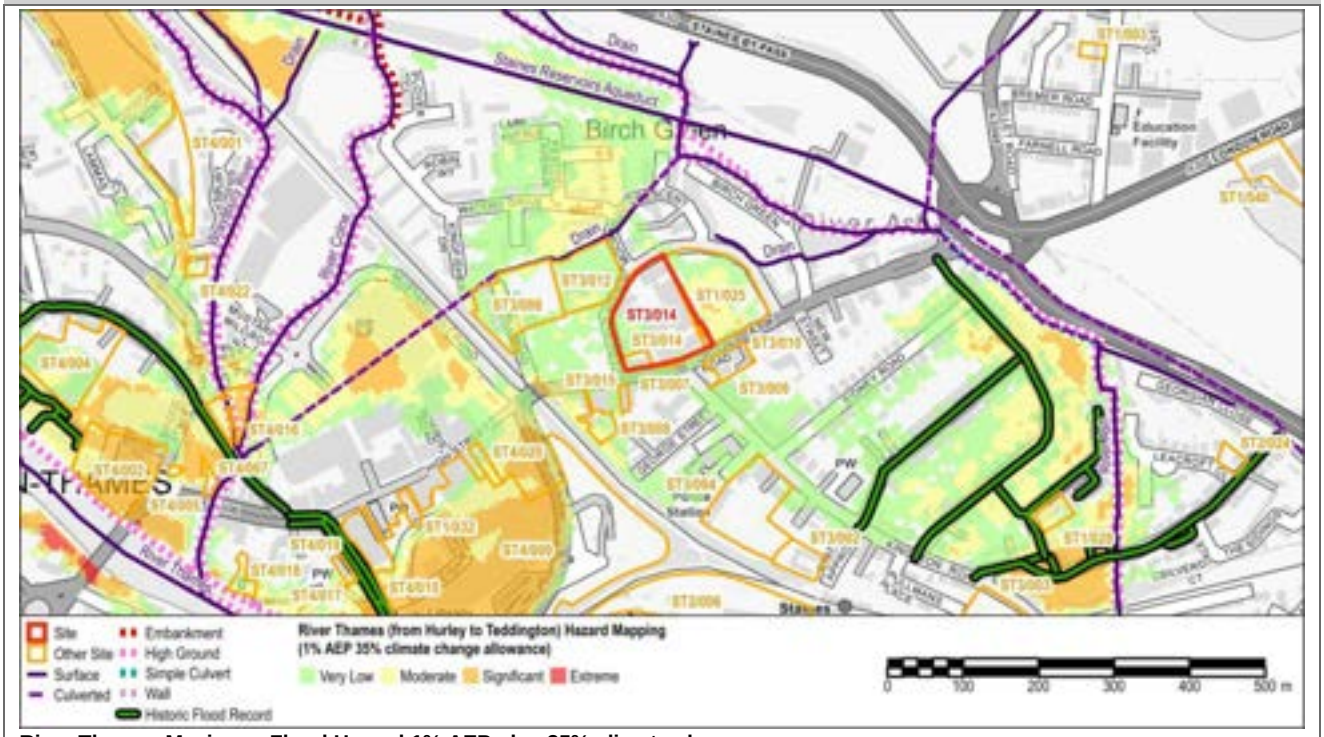
Flood Warning Area	River Ash at Ashford and Staines, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 26; External property flooding 0; Section 19 Flood Investigation incident 34; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

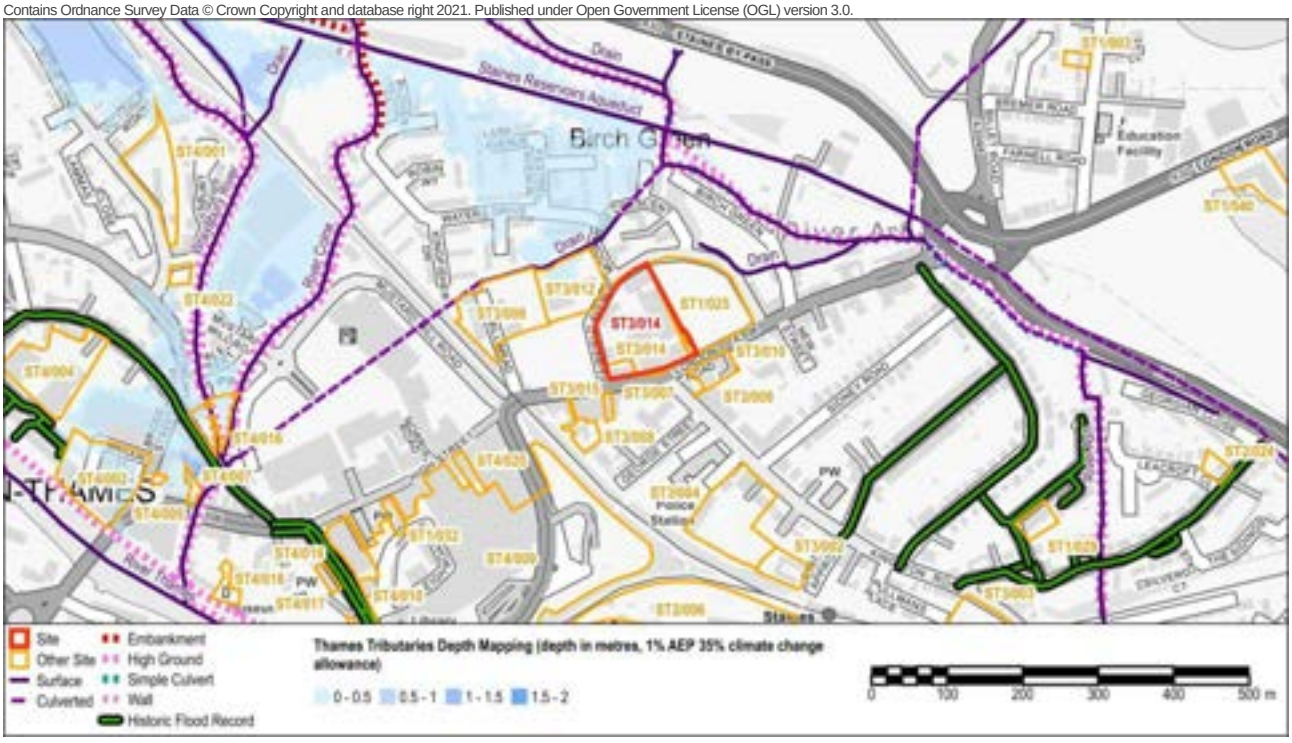


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST3/014: Birch House/London Road, Fairfield Avenue

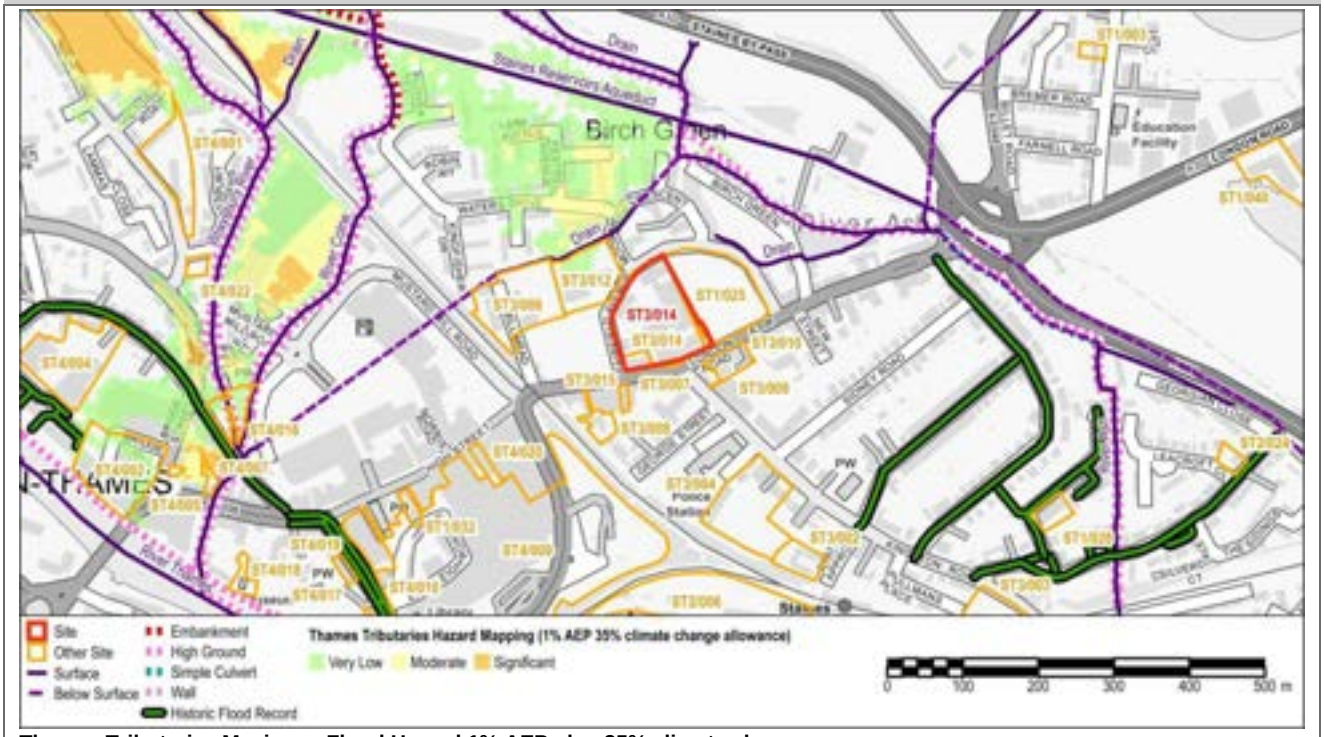


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

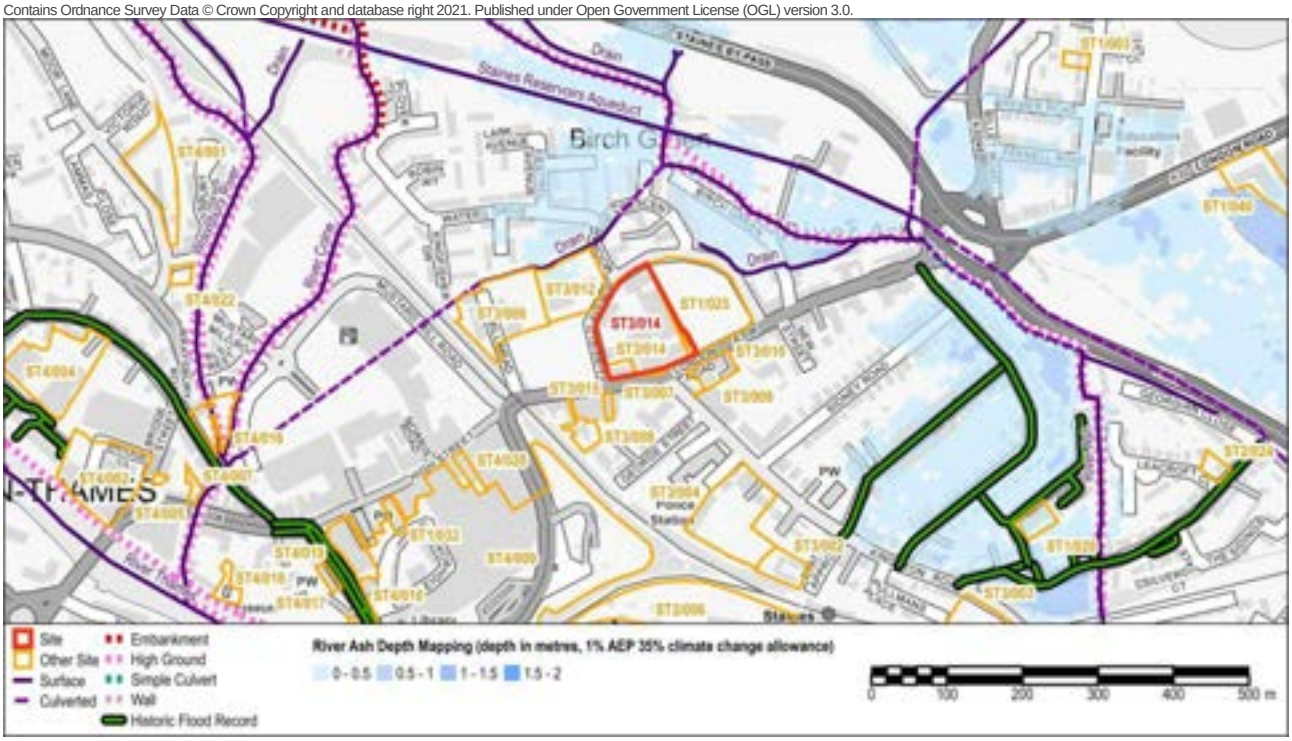


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST3/014: Birch House/London Road, Fairfield Avenue

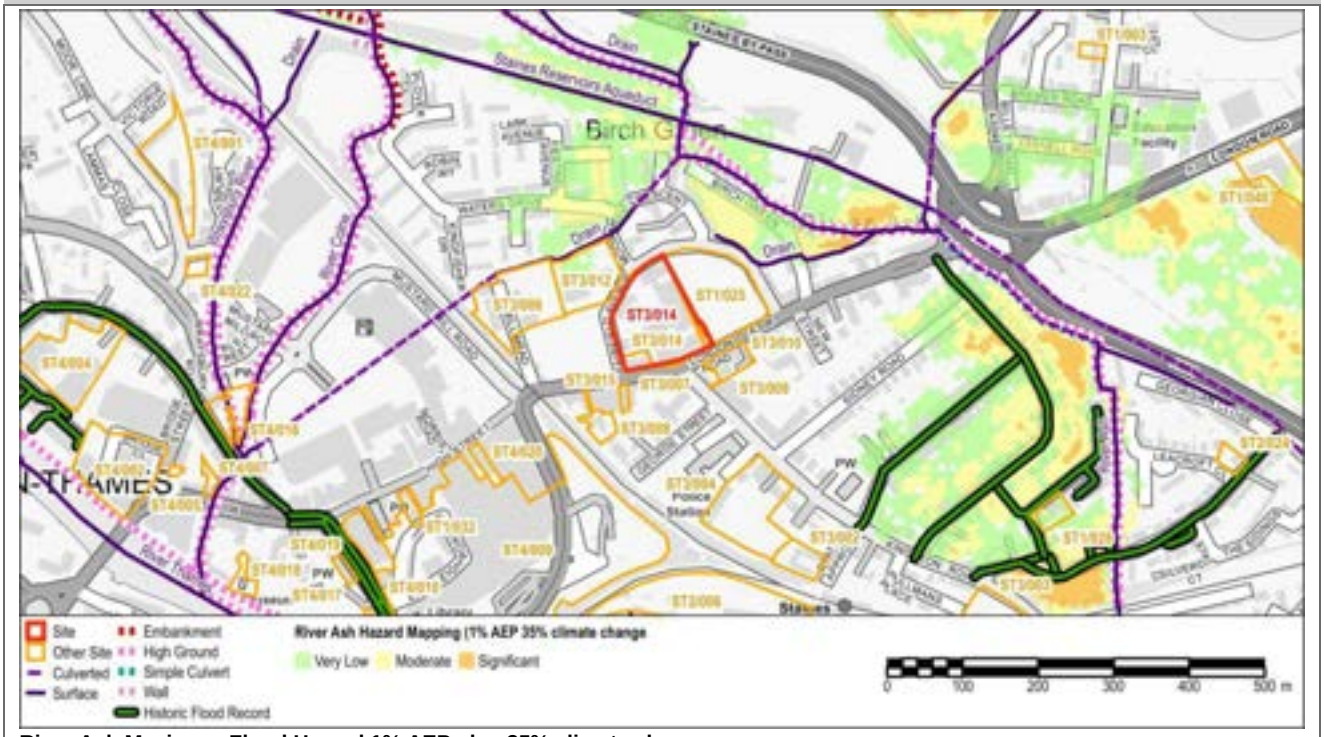


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

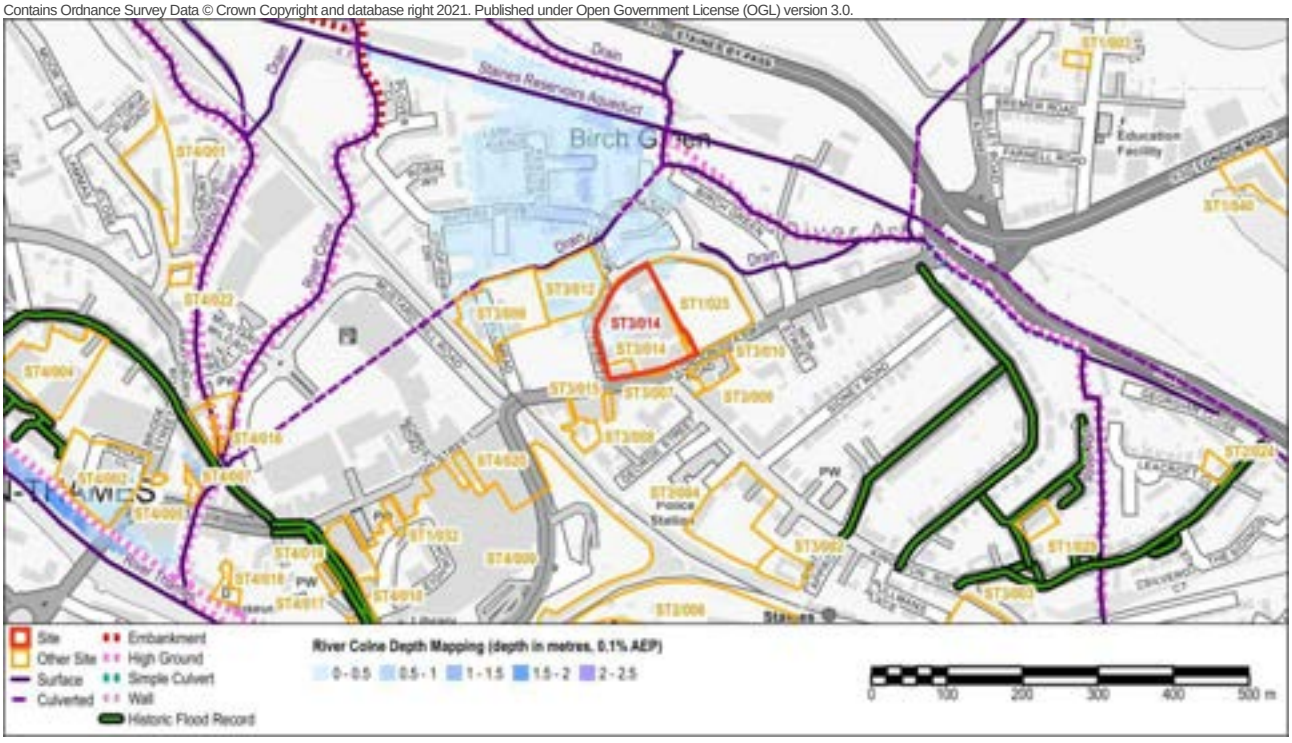


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST3/014: Birch House/London Road, Fairfield Avenue



River Ash Maximum Flood Hazard 1% AEP plus 35% climate change

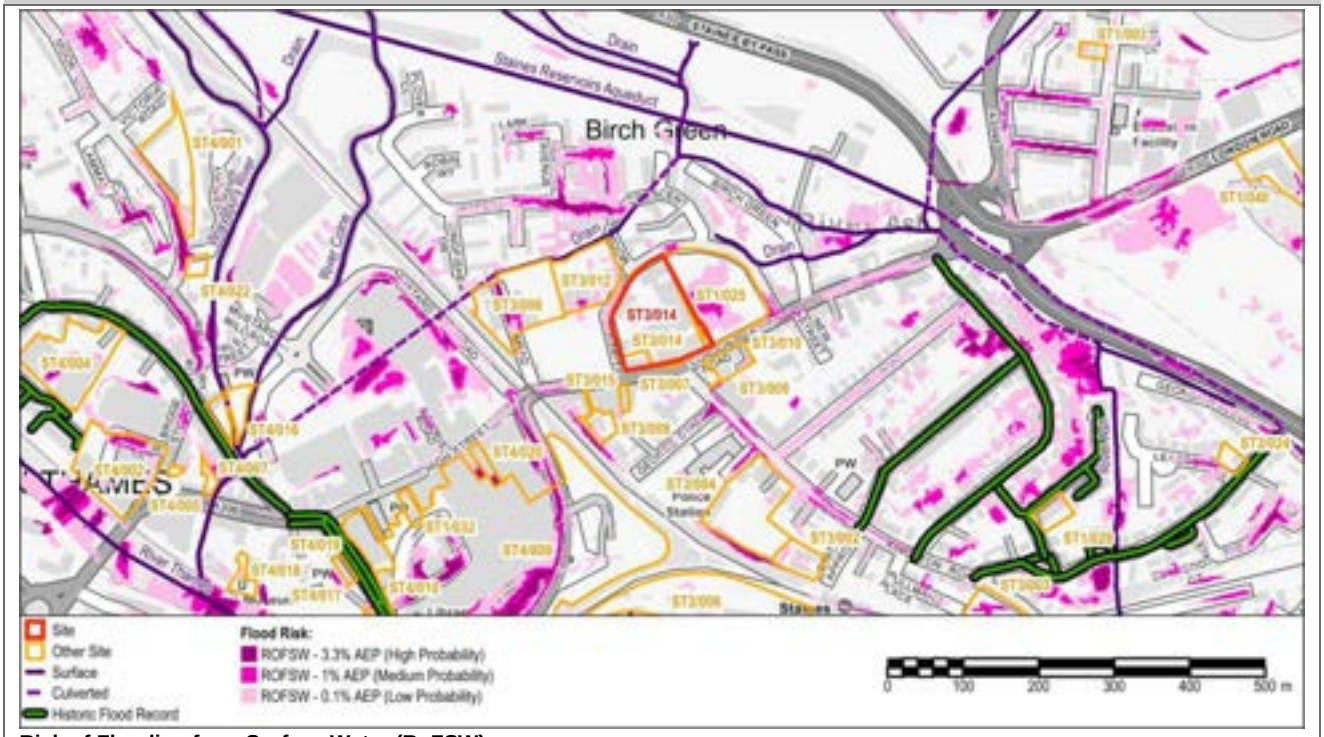


River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding

Risk of Flooding from Surface Water (RoFSW)	Medium

ST3/014: Birch House/London Road, Fairfield Avenue



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Sand And Gravel
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Not considered to be prone to groundwater flooding.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir, Staines Reservoir or the Wraysbury Reservoir.

Summary

The River Ash is located approximately 250m to the north east of the site, the River Colne is approximately 400m to the west, and flows south to join the River Thames 700m south west of the site. 65% of the site is located in Flood Zone 2 Medium probability of flooding from rivers, and 35% of the site is located in Flood Zone 1, Low probability. However, in the future, as a result of the impact of climate change, the western part of the site is shown to be at risk of flooding during the 1% AEP event including 35% increase in peak river flows.
During the 1% AEP modelled event including 35% climate change, flood depths of 0-0.5m are modelled to occur on the western part of the site, with a corresponding hazard rating of Low.
The Risk of Flooding from Surface Water Mapping indicates that the area local to the site is susceptible to surface water ponding. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zones 1 and 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given the risk of flooding to the site and surrounding area in the future as a result of climate change the following recommendations are made:

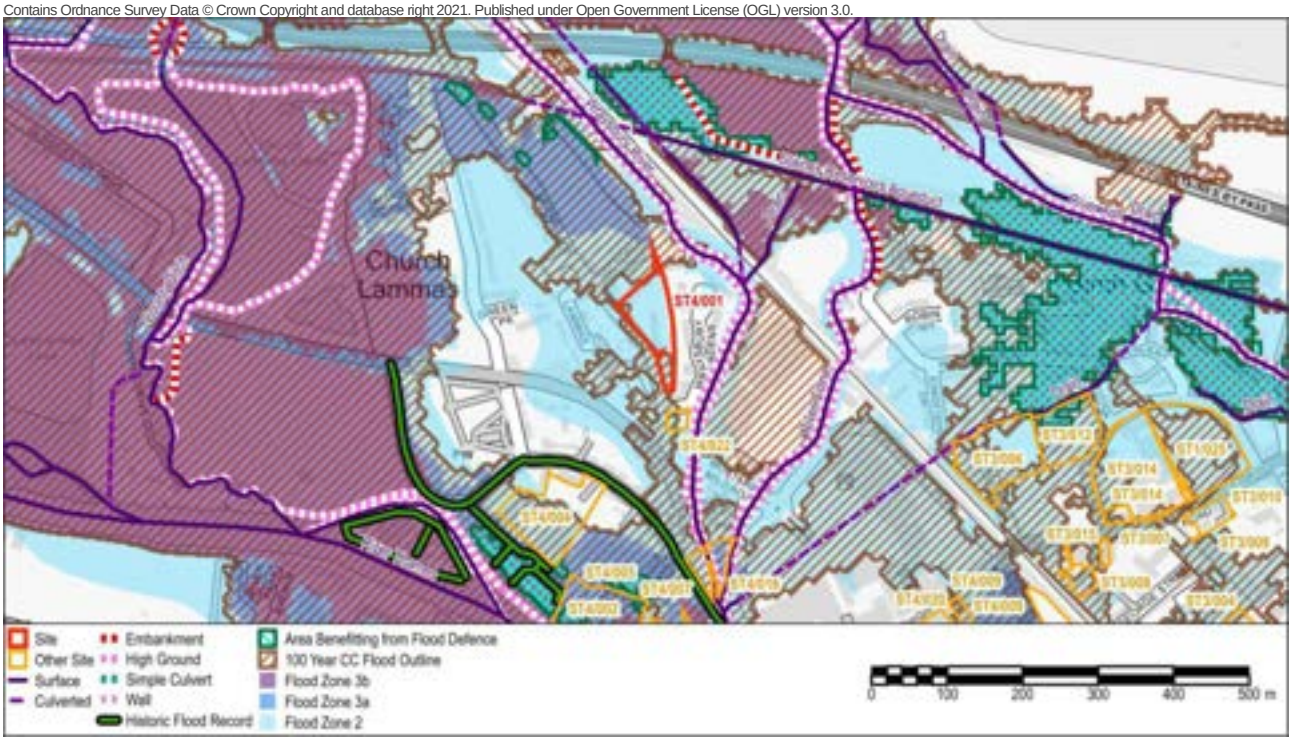
- Development should be steered away from the western part of the site which is shown to be at risk during the 1% AEP event including climate change. Any increase in built footprint in this location would need to be compensated for, on a level for level and volume for volume basis within the rest of the site. Given that part of the site is not currently within the design flood extent this is likely to be achievable.
- Finished floor levels for residential accommodation must be set above the design flood level (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) is achievable along London Road to the east.
- A Flood Warning and Evacuation Plan should be prepared for the site.
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.

ST4/001: Jewsons, Moor Lane, TW18 4YN

Site ID:	ST4/001	Area (ha):	0.58
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

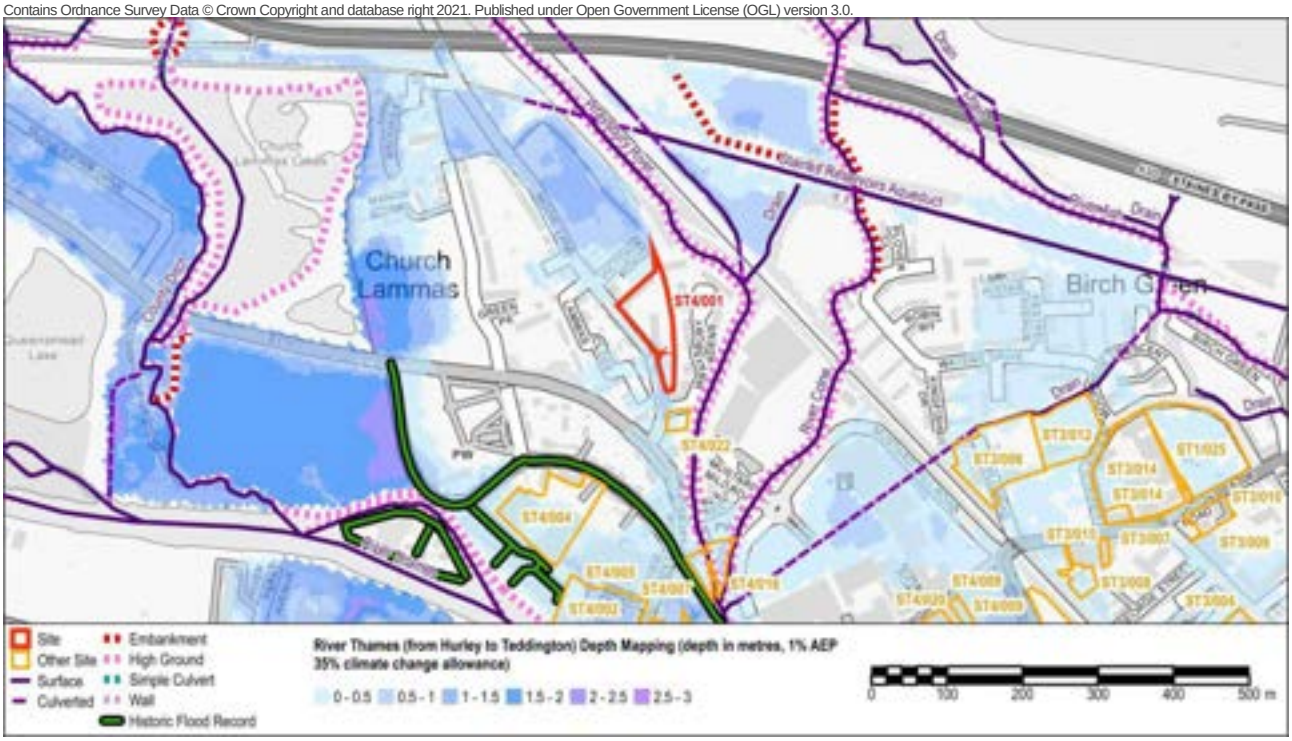
Flood Zone 1 (<0.1% AEP): 14%	Flood Zone 2 (0.1% AEP): 86%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%



Flood Zones and Flood Records

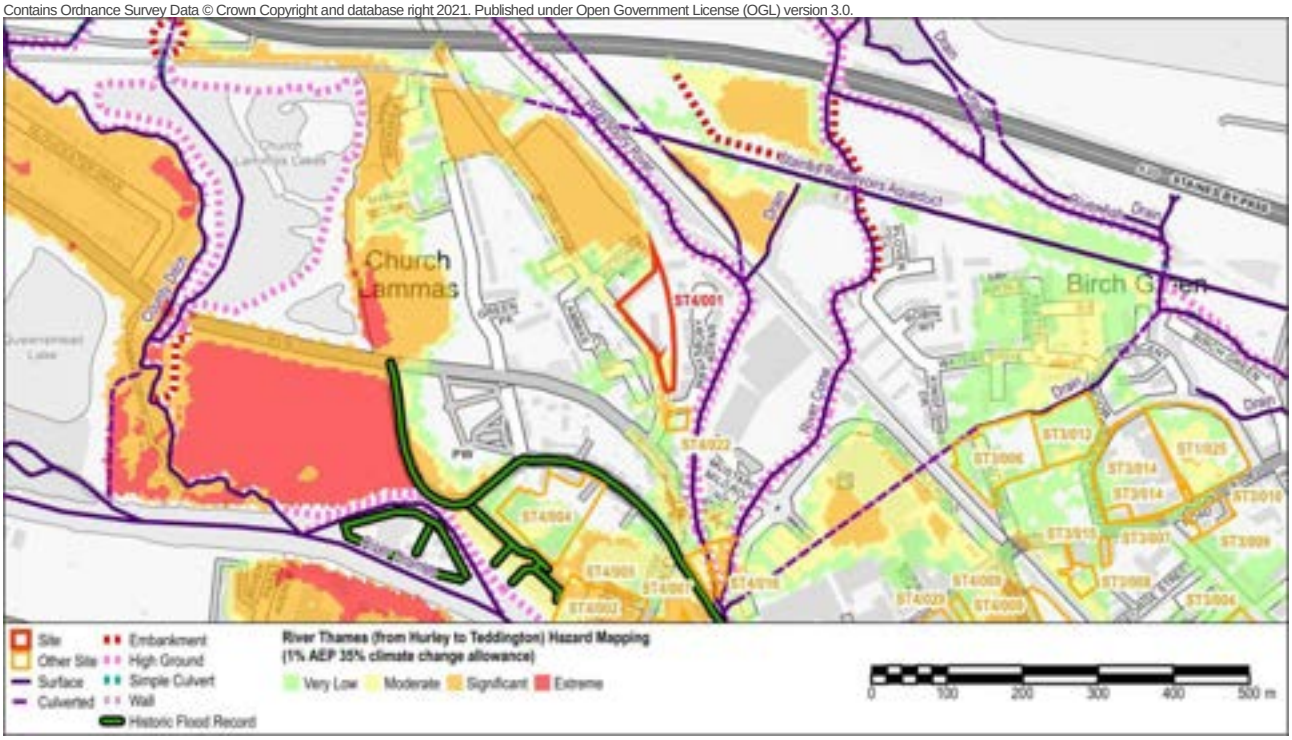
Flood Warning Area	River Colne and Frays River at West Drayton and Stanwell Moor, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 6; External property flooding 0; Section 19 Flood Investigation incident 12; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

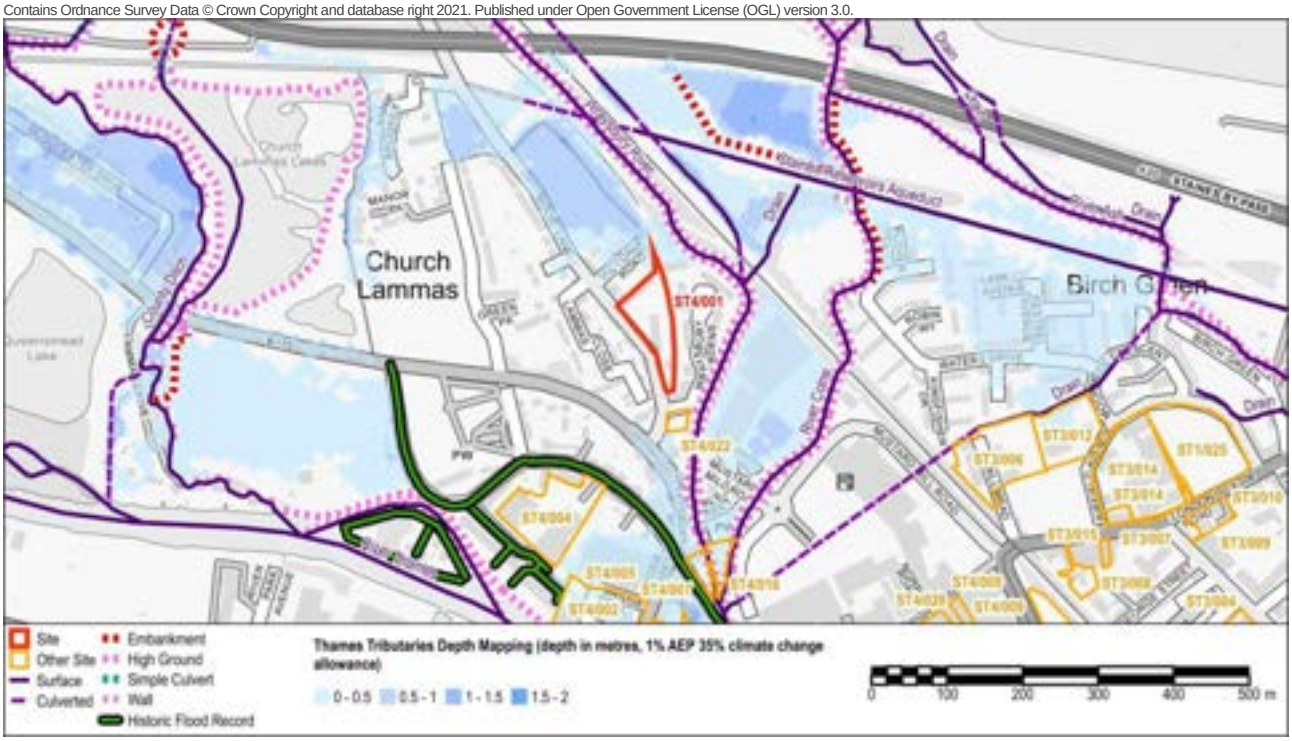


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST4/001: Jewsons, Moor Lane, TW18 4YN

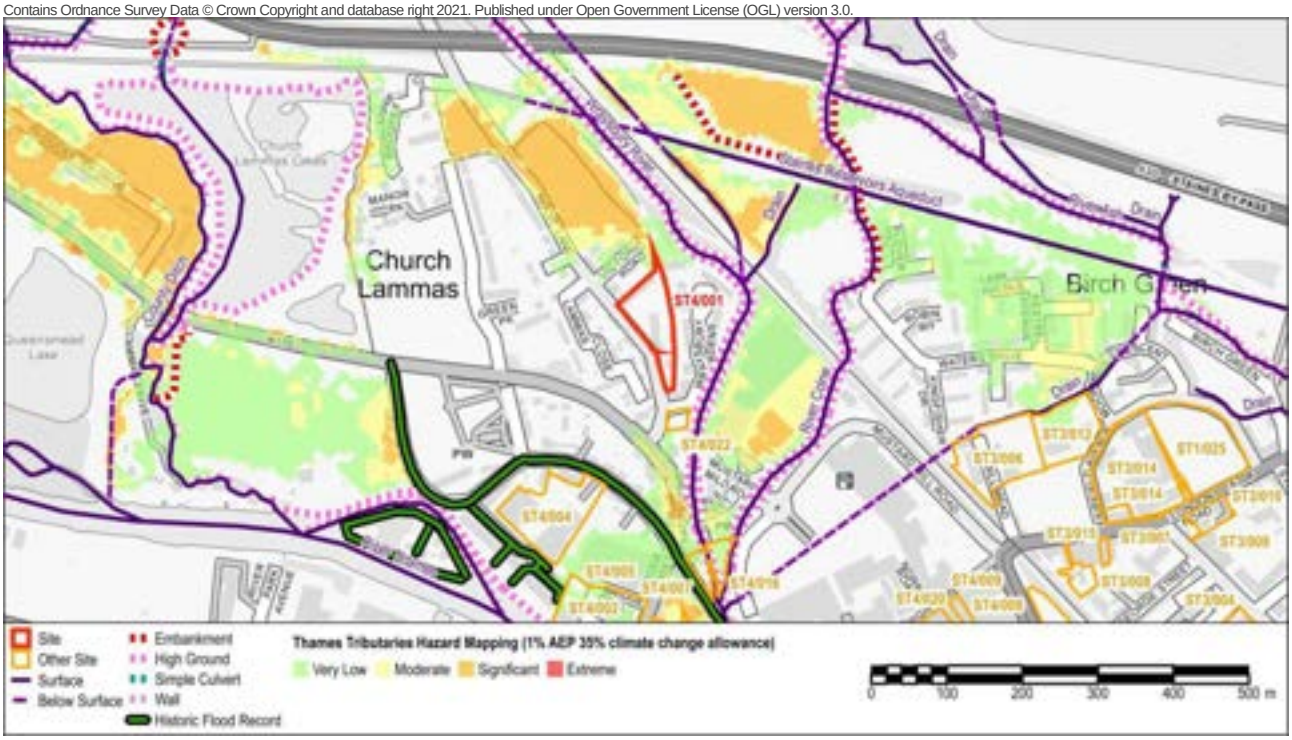


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

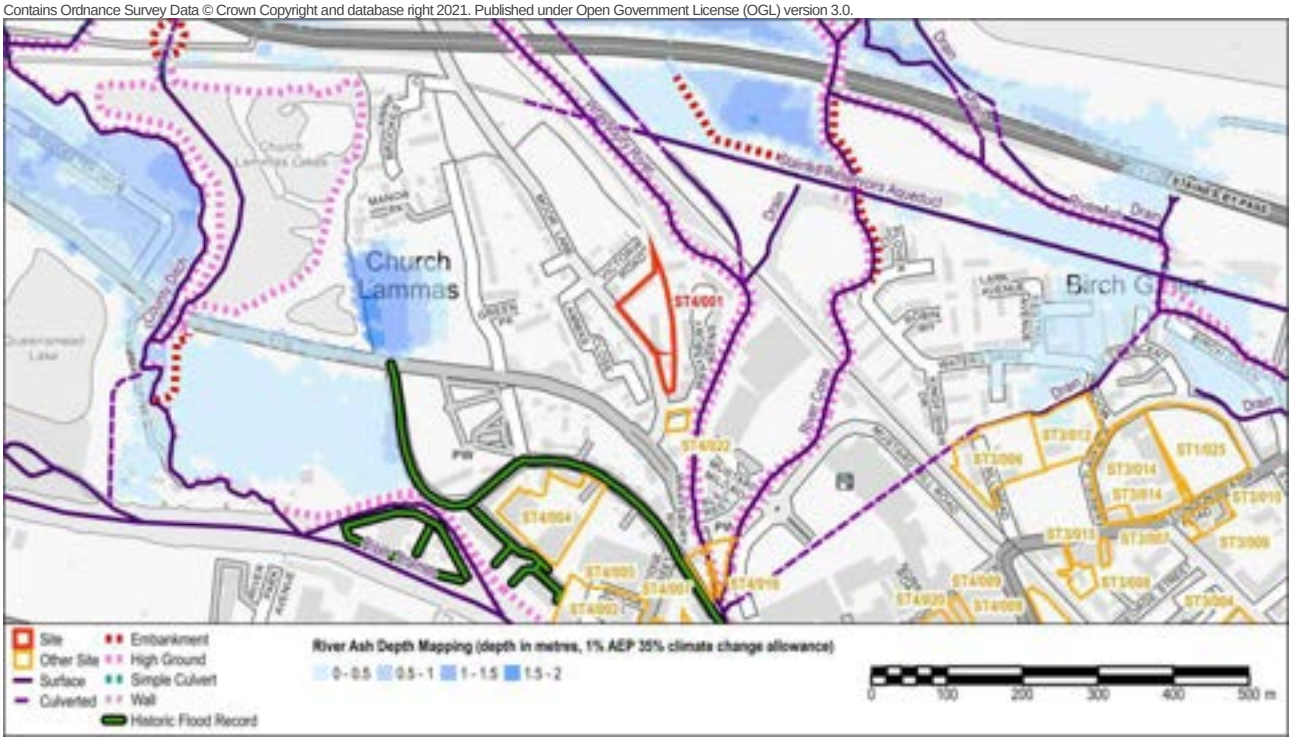


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST4/001: Jewsons, Moor Lane, TW18 4YN

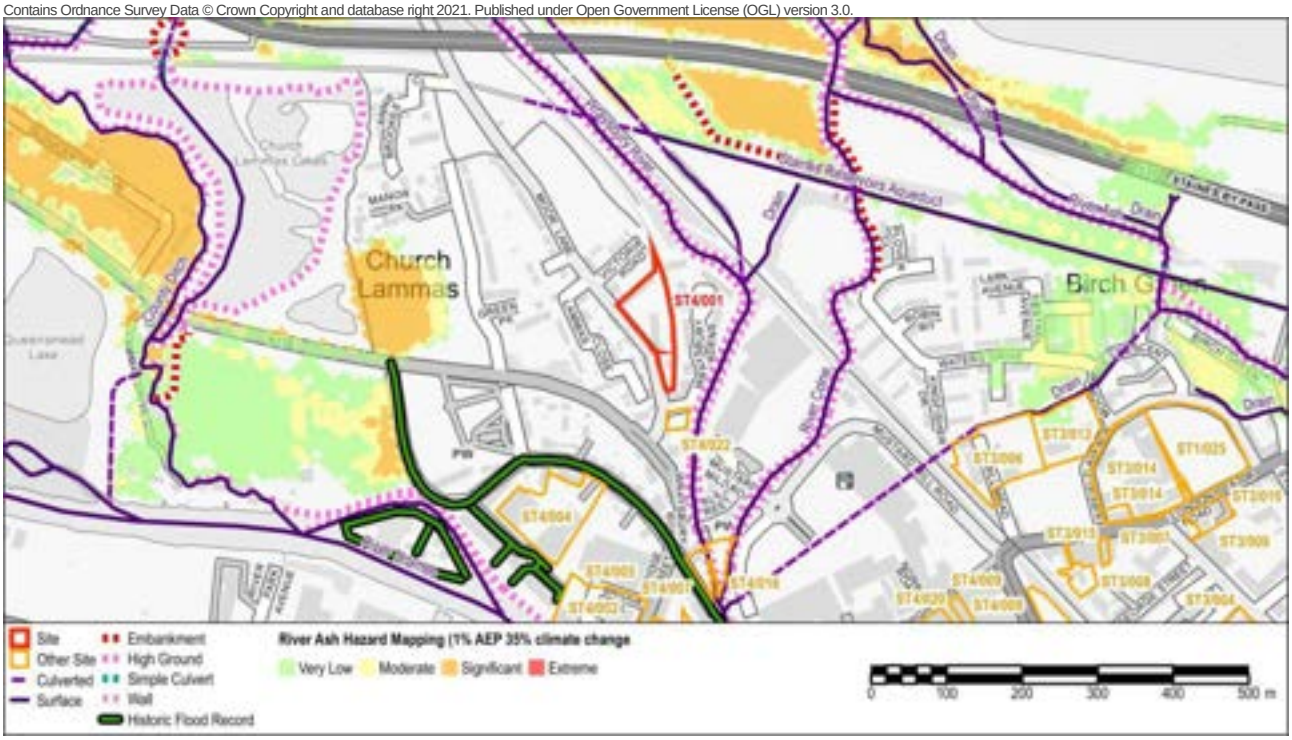


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

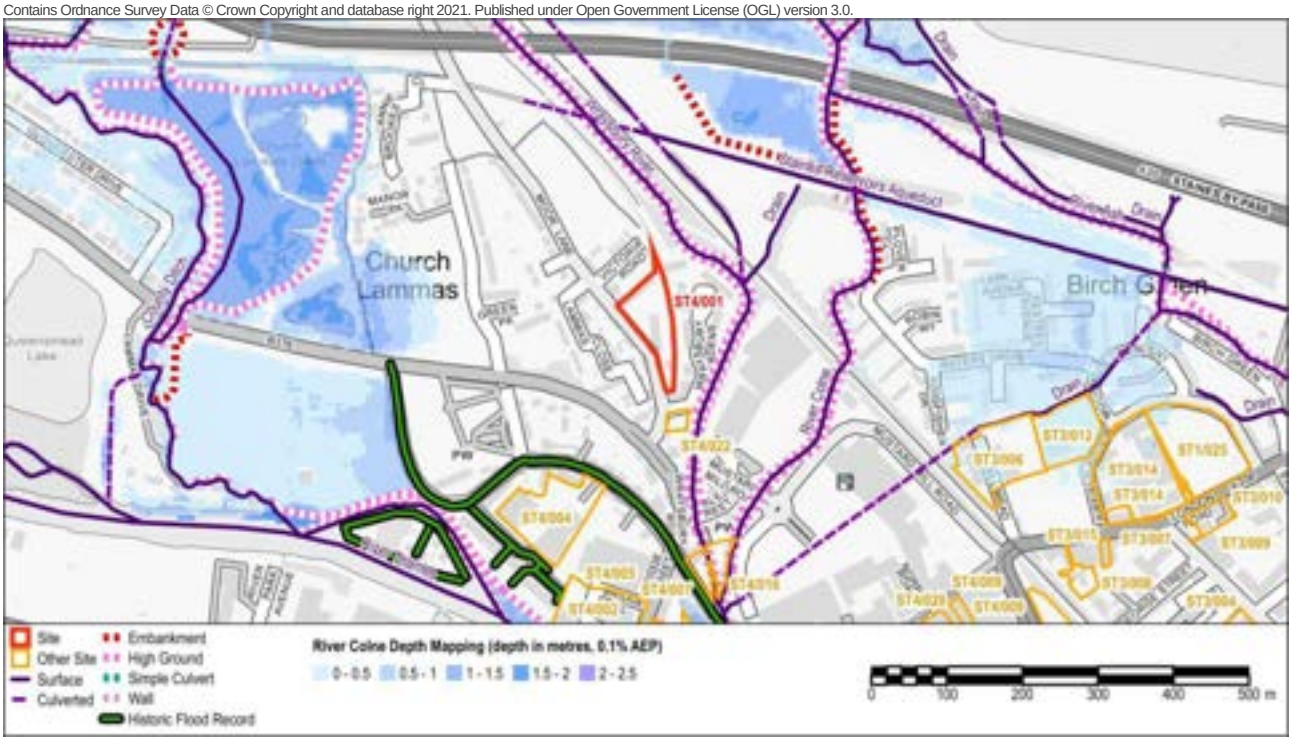


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST4/001: Jewsons, Moor Lane, TW18 4YN



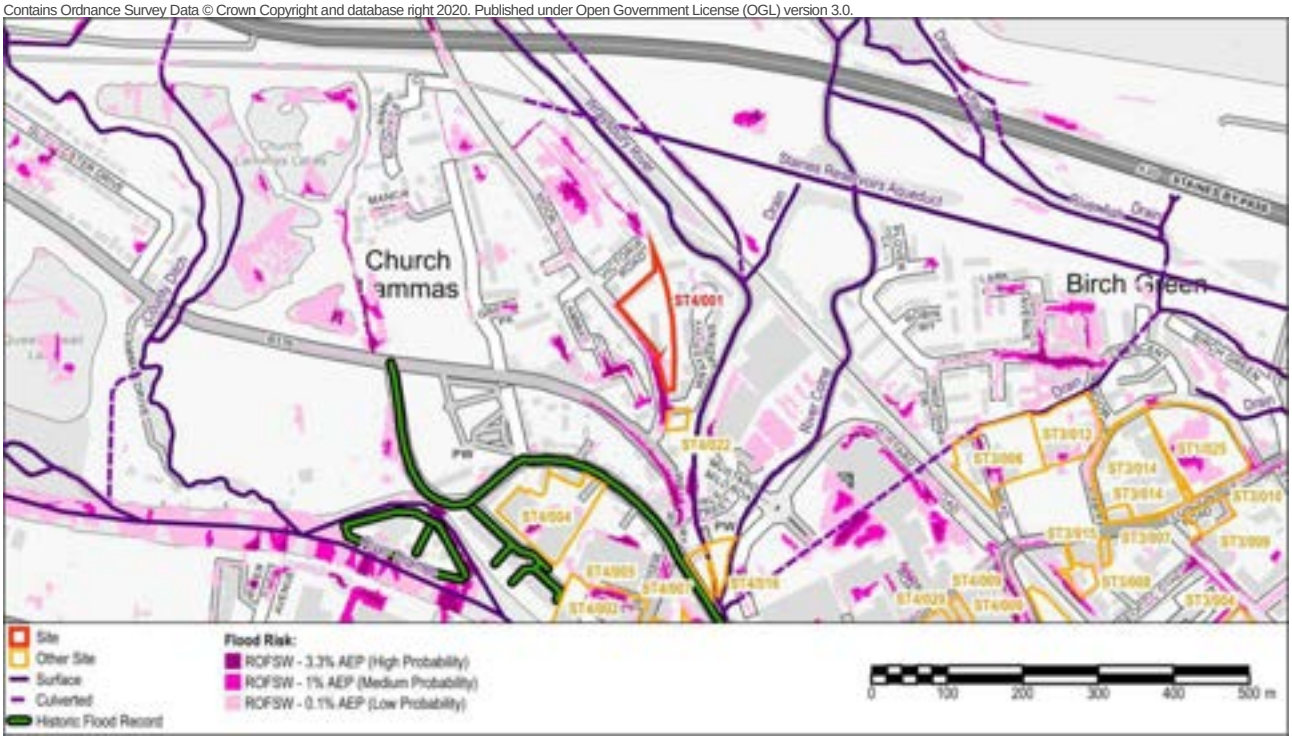
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Medium

ST4/001: Jewsons, Moor Lane, TW18 4YN



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of Wraysbury Reservoir.

Summary

The Wraysbury River flows south to the east of the site and joins the River Colne approximately 300m to the south of the site. The majority of the site (86%) is defined as Flood Zone 2 Medium probability of river flooding, and 14% as Flood Zone 1 Low probability. In the future, as a result of climate change, the southern edge of the site and the area surrounding the site will be at risk during the 1% AEP flood event. The wider area is at risk of flooding from the River Thames. The site is not shown to benefit from the presence of flood defences during the 1% AEP event.
Modelling outputs for the River Thames and the Thames tributaries for the 1% AEP event including a 35% increase in peak river flows as a result of climate change, indicate flood depths on the northern and southern fringes of the site of 0-0.5m, and a corresponding hazard rating of Low - Moderate (Danger for Some).
The site is not shown to be at risk from the River Colne or River Ash during the modelled design event (1% AEP including 35% climate change).
The Risk of Flooding from Surface Water map identifies the potential for surface water to pond on Moor Lane adjacent to the site. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, suggests that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zones 1 and 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given that parts of the site are at risk of flooding during the 1% AEP event including climate change, the following recommendations are made:

- Residential development should be steered towards those areas at lower risk of river flooding in the centre and east of the site.
- Development of the site must ensure that the risk of flooding to surrounding areas is not increased, and where possible is reduced. Therefore, any increase in building footprint within the design flood extent (1% AEP including climate change) will need to be compensated on a level for level and volume for volume basis within the site. Given that part of the site is not currently within the design flood extent this is likely to be achievable.
- Finished floor levels for residential accommodation must be above the design flood event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may be difficult to achieve due to the risk of flooding to the surrounding area. This should be addressed as part of a Flood Warning and Evacuation Plan for the site and places of safe refuge should also be designed into the development, above the design event (1% AEP including climate change).
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.

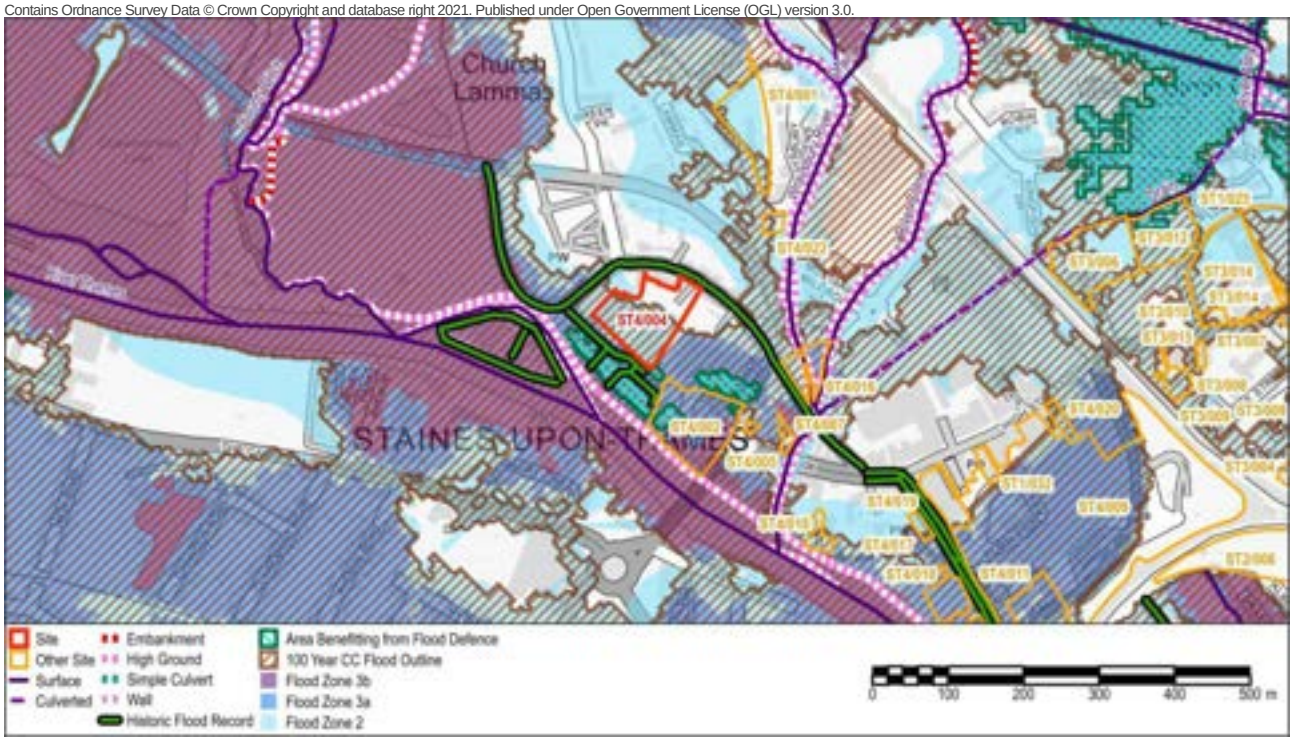
ST4/001: Jewsons, Moor Lane, TW18 4YN
• The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.

ST4/004: 96-104, Church Street, TW18 4DQ

Site ID:	ST4/004	Area (ha):	0.88
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

Flood Zones and Historic Flooding

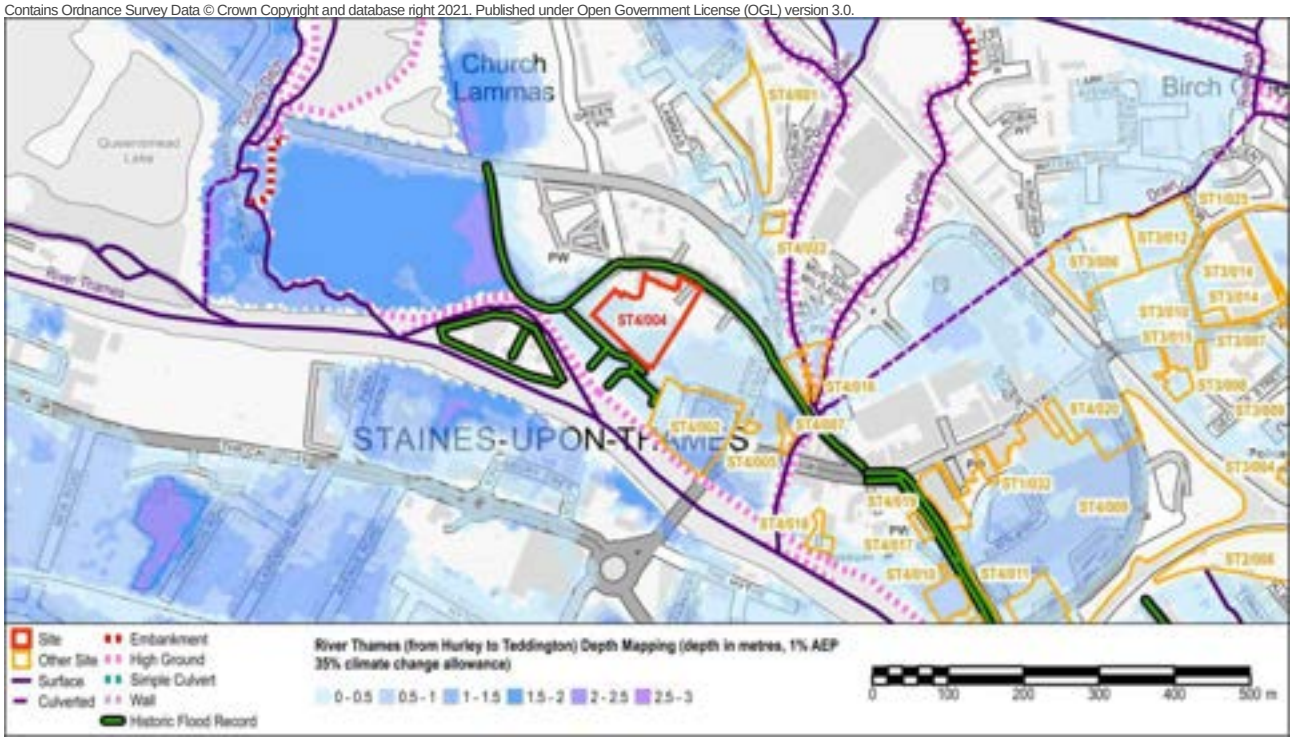
Flood Zone 1 (<0.1% AEP): 29%	Flood Zone 2 (0.1% AEP): 71%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%



Flood Zones and Flood Records

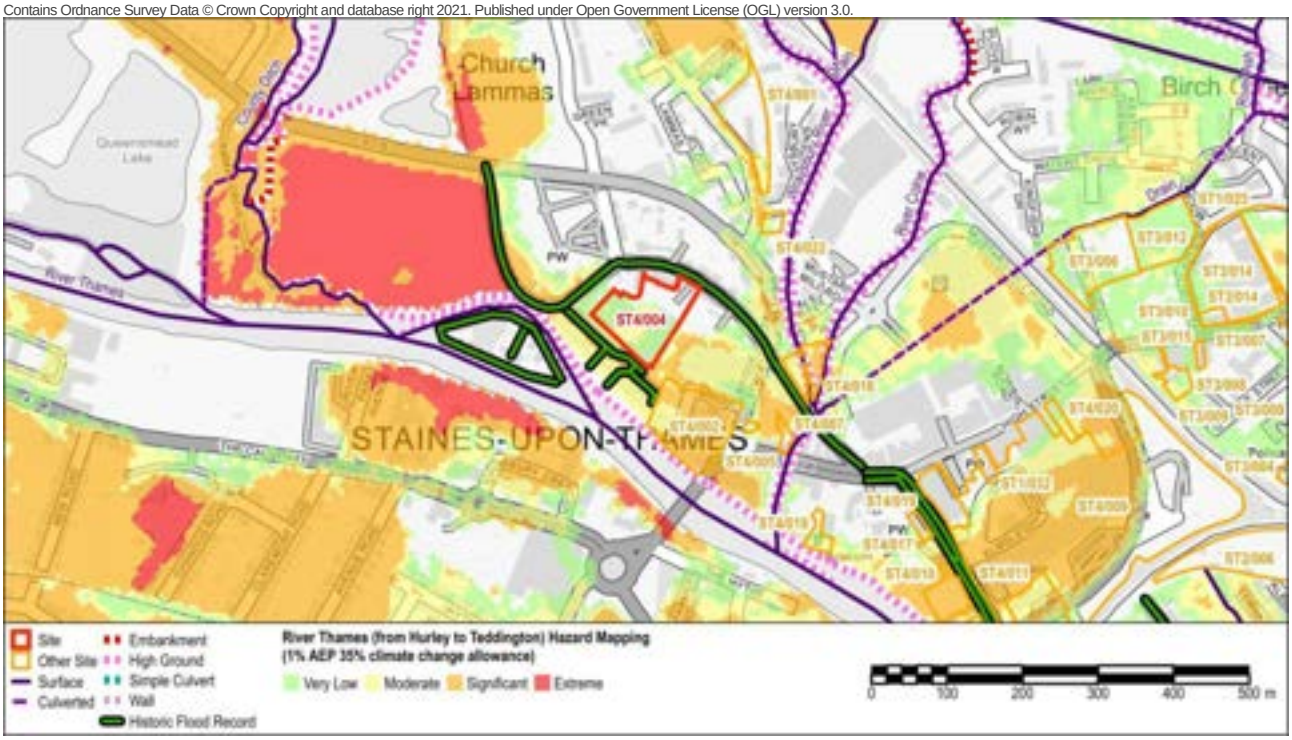
Flood Warning Area	River Colne and Frays River at West Drayton and Stanwell Moor, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 6; External property flooding 0; Section 19 Flood Investigation incident 14; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

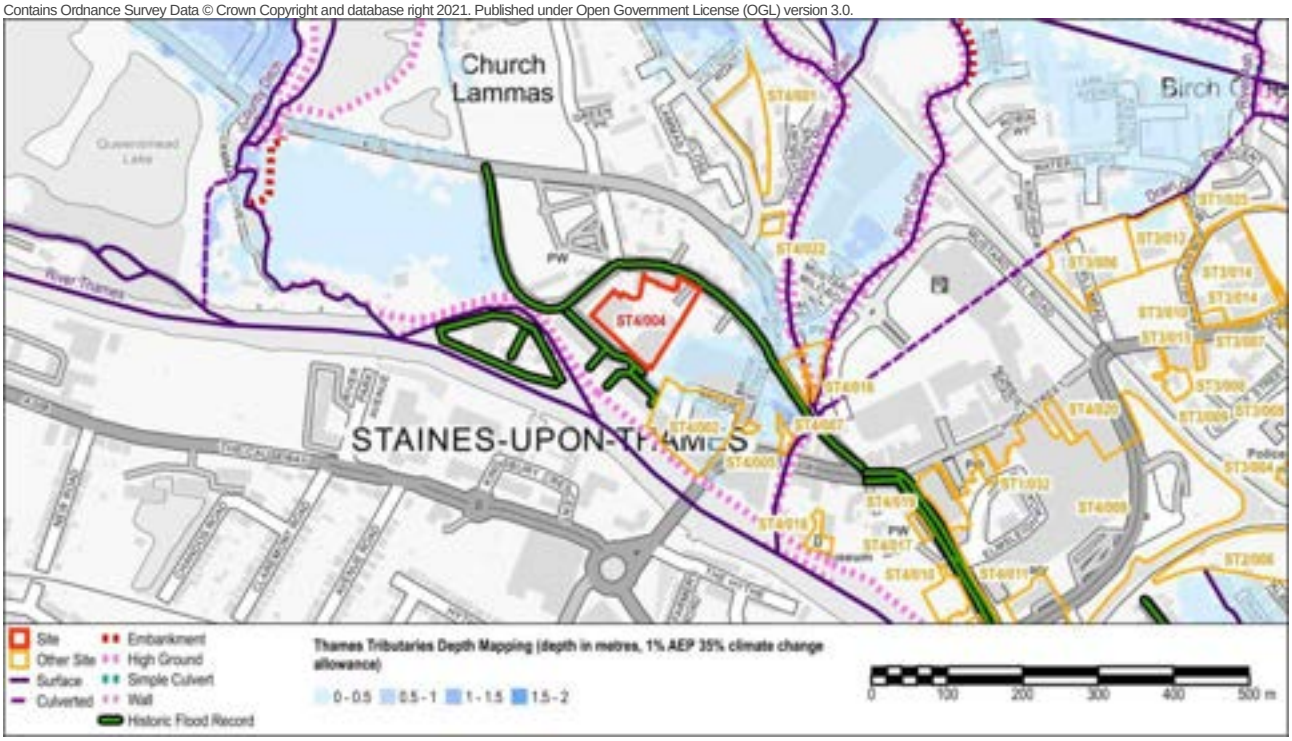


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST4/004: 96-104, Church Street, TW18 4DQ

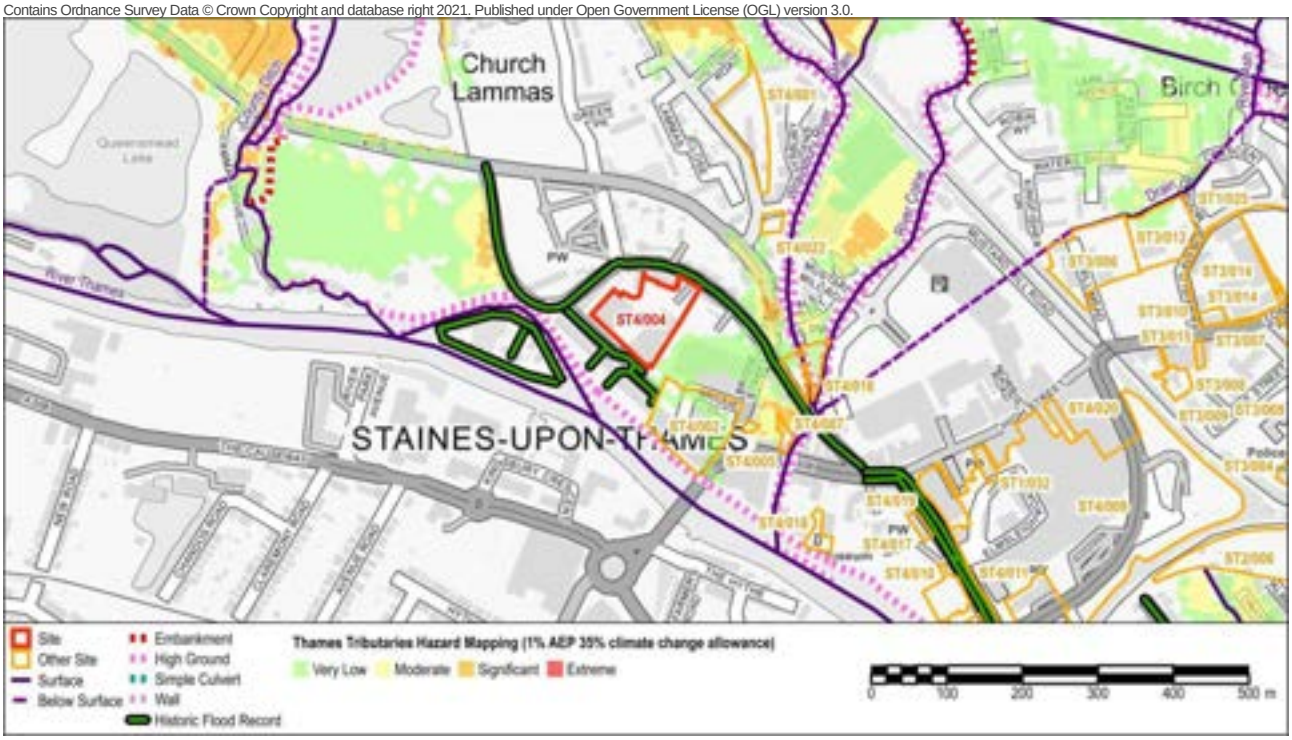


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

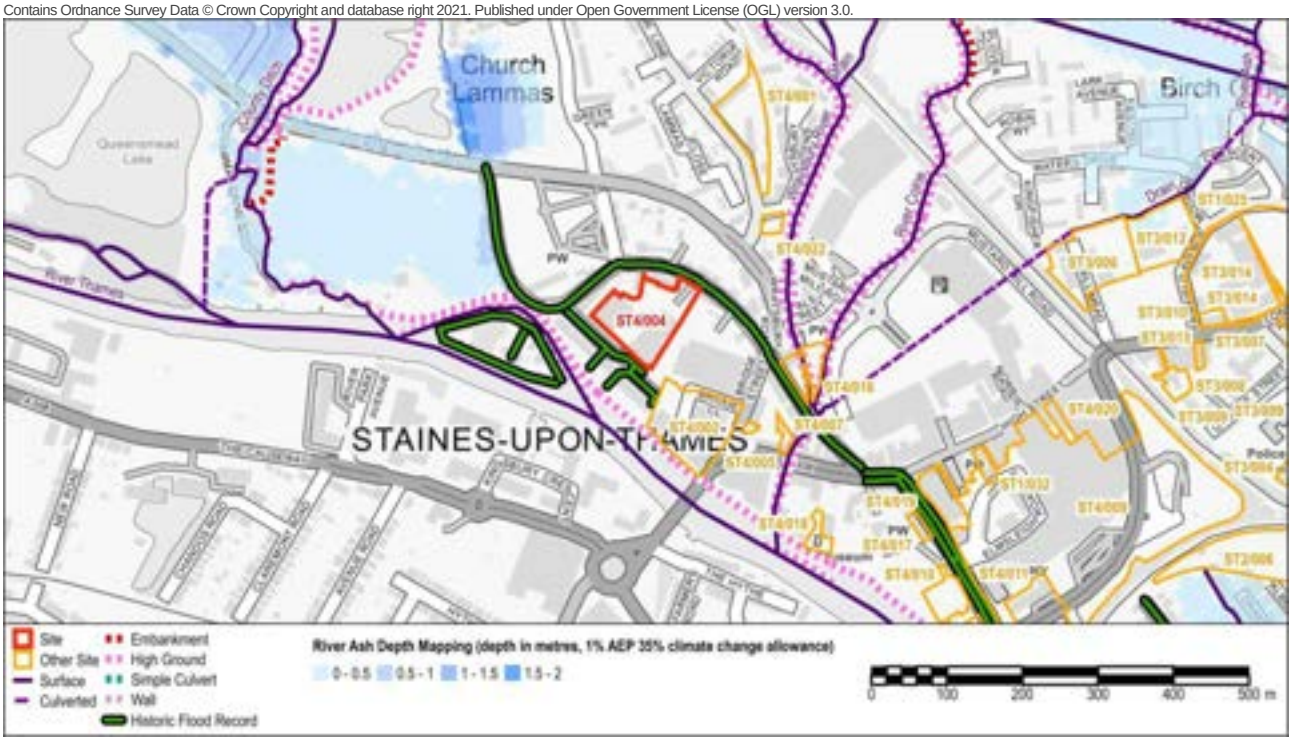


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST4/004: 96-104, Church Street, TW18 4DQ

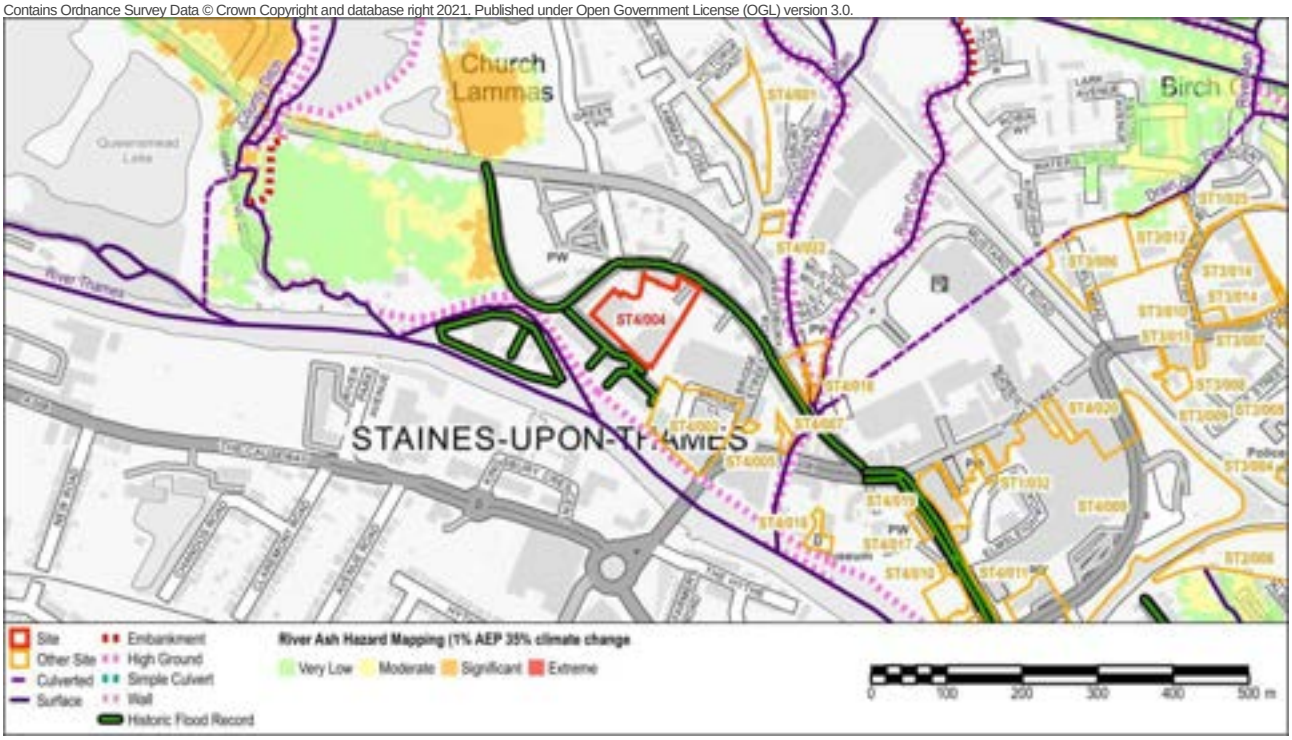


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

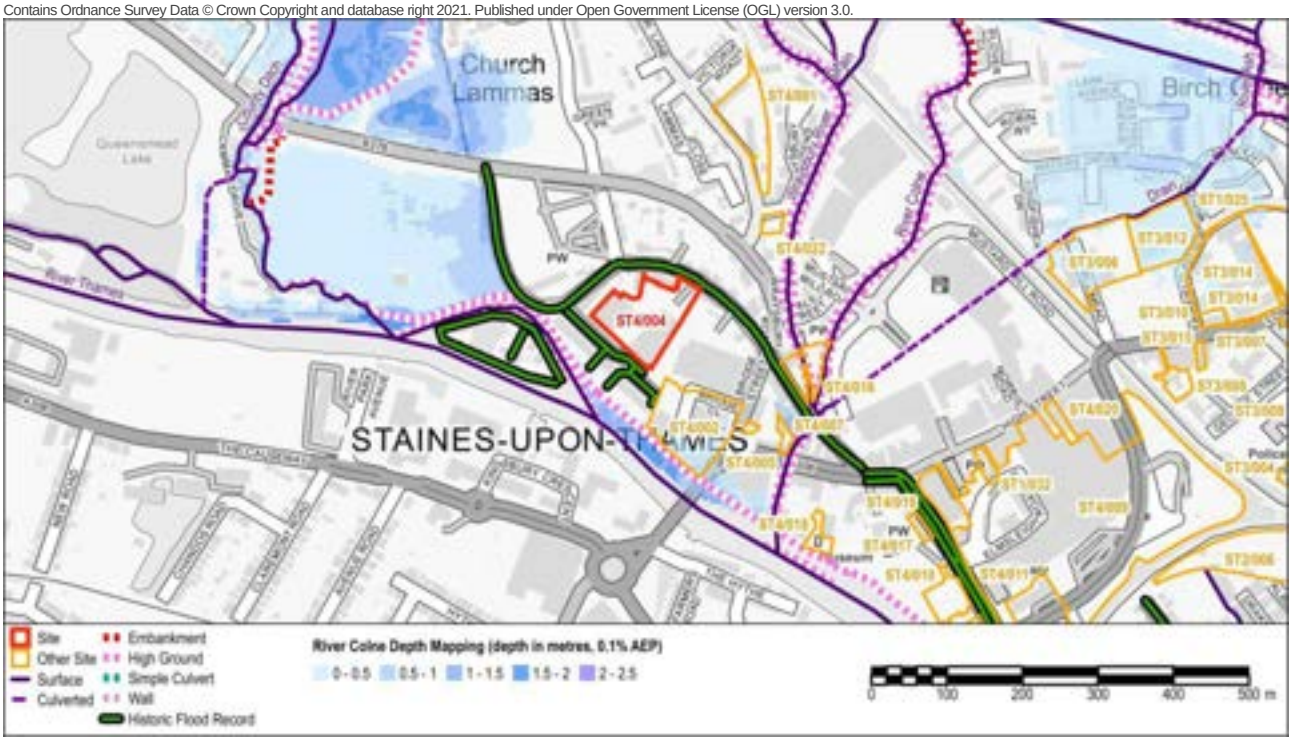


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST4/004: 96-104, Church Street, TW18 4DQ



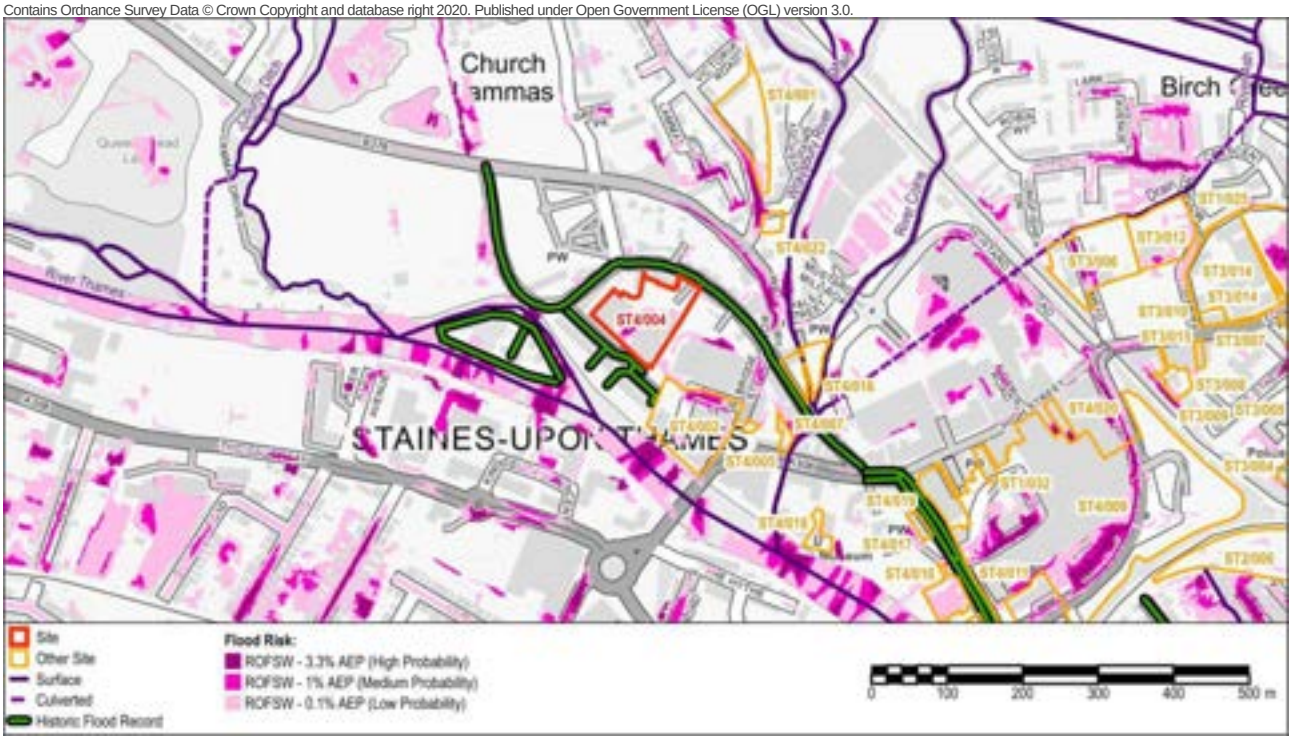
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	High

ST4/004: 96-104, Church Street, TW18 4DQ



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the Wraysbury Reservoir or King George VI Reservoir.

Summary

The River Thames flows south east to the south west of the site and the Wraysbury River and River Colne channels are located ~200-300m to the east of the site. The majority of the site (71%) is defined as Flood Zone 2 Medium probability of flooding from rivers, and 29% is defined as Flood Zone 1 .
Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicate flood depths on the southern half of the site of 0-0.5m. The hazard rating is Low to Moderate (Danger for Some).
The site is not shown to be at risk of flooding from the Thames Tributaries, the River Colne or the River Ash during a 1% AEP event plus 35% climate change.
The Risk of Flooding from Surface Water Map shows potential for surface water to pond on the site. The surrounding area is defined as a wetspot by Surrey County Council. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zones 1 and 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given that parts of the site and access to the site are at risk of flooding during the 1% AEP event including climate change, the following recommendations are made:

- Residential development should be steered towards those areas at lower risk of river flooding in the north of the site.
- Development of the site must ensure that the risk of flooding to surrounding areas is not increased, and where possible is reduced. Therefore, any increase in building footprint within the design flood extent (1% AEP including climate change) will need to be compensated on a level for level and volume for volume basis within the site. Given that part of the site is not currently within the design flood extent this is likely to be achievable.
- Finished floor levels for residential accommodation must be above the design flood event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may not be achievable from the site, given the risks of flooding to the surrounding area.
- A Flood Warning and Evacuation Plan should be prepared for the site and places of safe refuge should also be designed into the development, above the design event (1% AEP including climate change).
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation

ST4/019: Debenhams site, 35-45, High Street, TW18 4QU

Site ID:	ST4/019	Area (ha):	0.26
Proposed Use:	Residential	Vulnerability Classification:	More Vulnerable

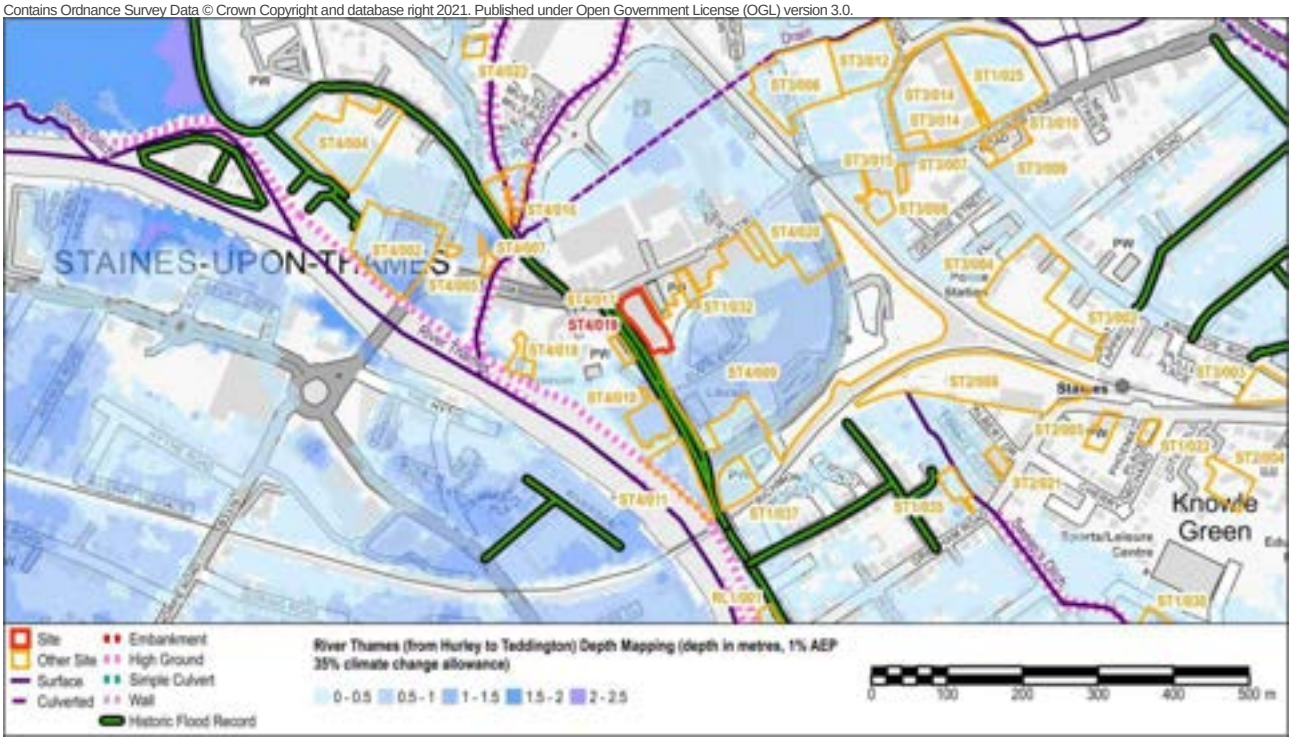
Flood Zones and Historic Flooding

Flood Zone 1 (<0.1% AEP): 87%	Flood Zone 2 (0.1% AEP): 13%	Flood Zone 3 (1% AEP): 0%	Flood Zone 3b (5% AEP): 0%	Area Benefiting from Defences: 0%

Flood Zones and Flood Records

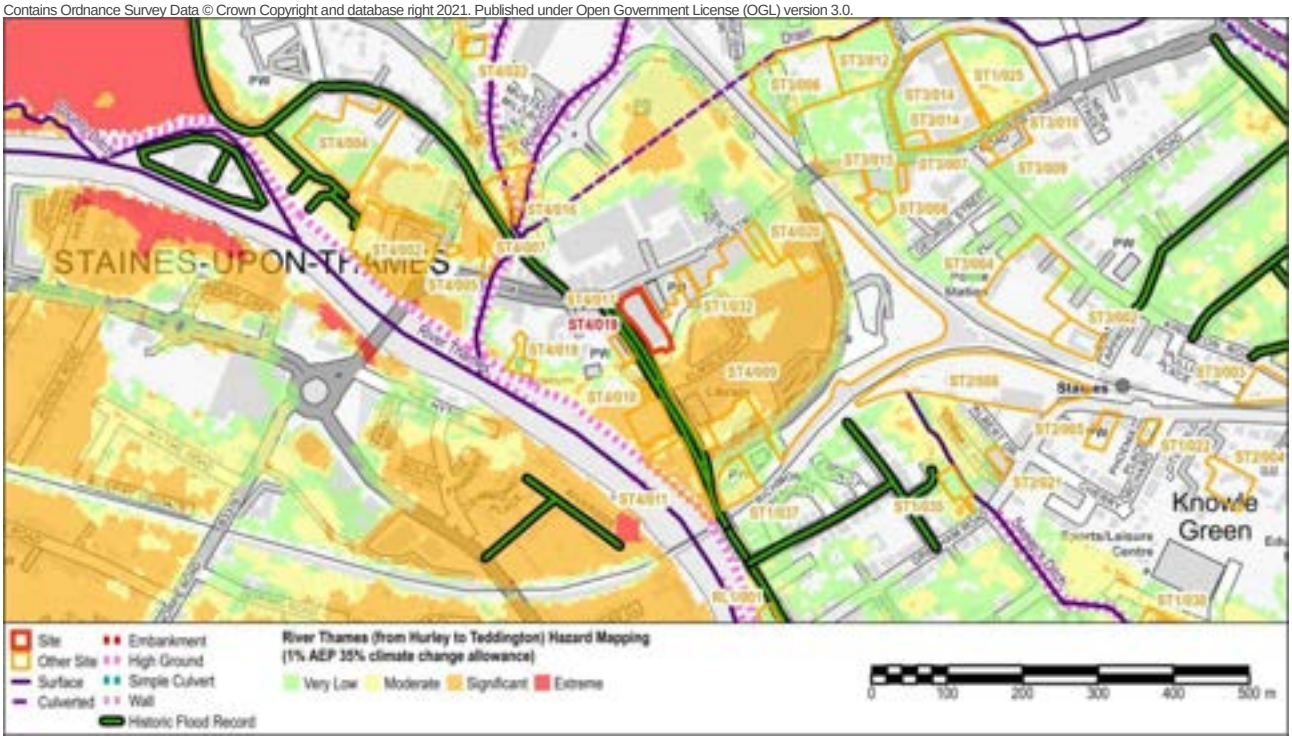
Flood Warning Area	River Colne and Frays River at West Drayton and Stanwell Moor, River Thames at Staines and Egham
Recorded River Flooding Outlines in which the site is located:	06MarchSpring1947
Road locations within 500m of the site, along which there have been reported incidents of flooding from surface water, groundwater or ordinary watercourses:	Internal property flooding 20; External property flooding 0; Section 19 Flood Investigation incident 28; Surrey County Council Wetspots 2
Sewer flooding records within the post code area in which the site is located:	Internal N/A; External N/A

River Flooding

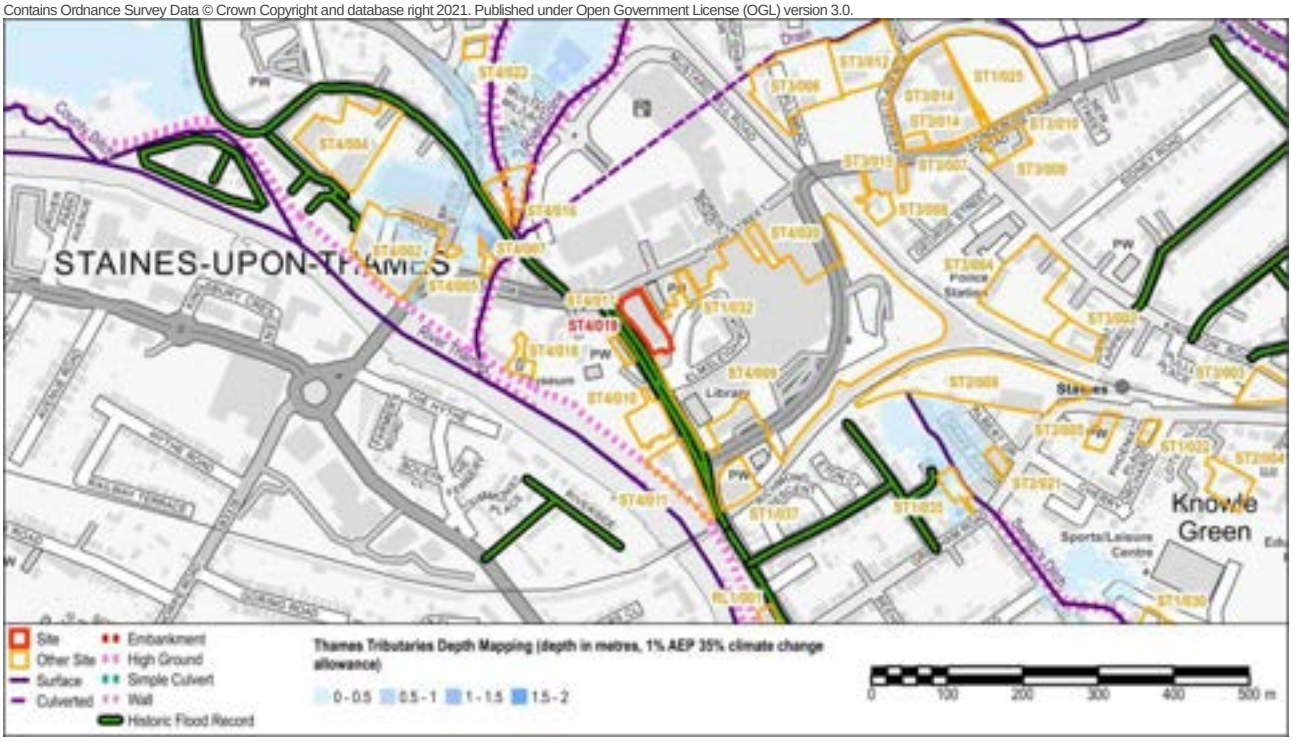


River Thames Maximum Flood Depth 1% AEP plus 35% climate change

ST4/019: Debenhams site, 35-45, High Street, TW18 4QU

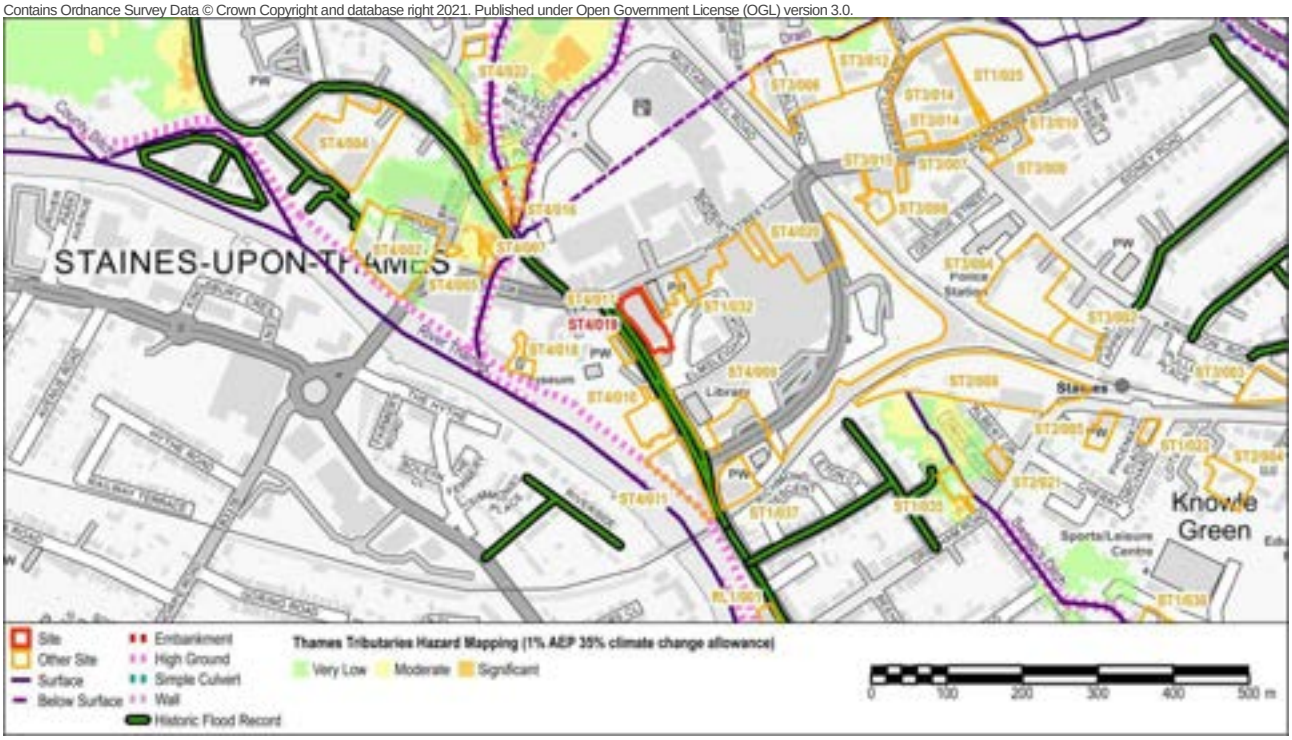


River Thames Maximum Flood Hazard 1% AEP plus 35% climate change

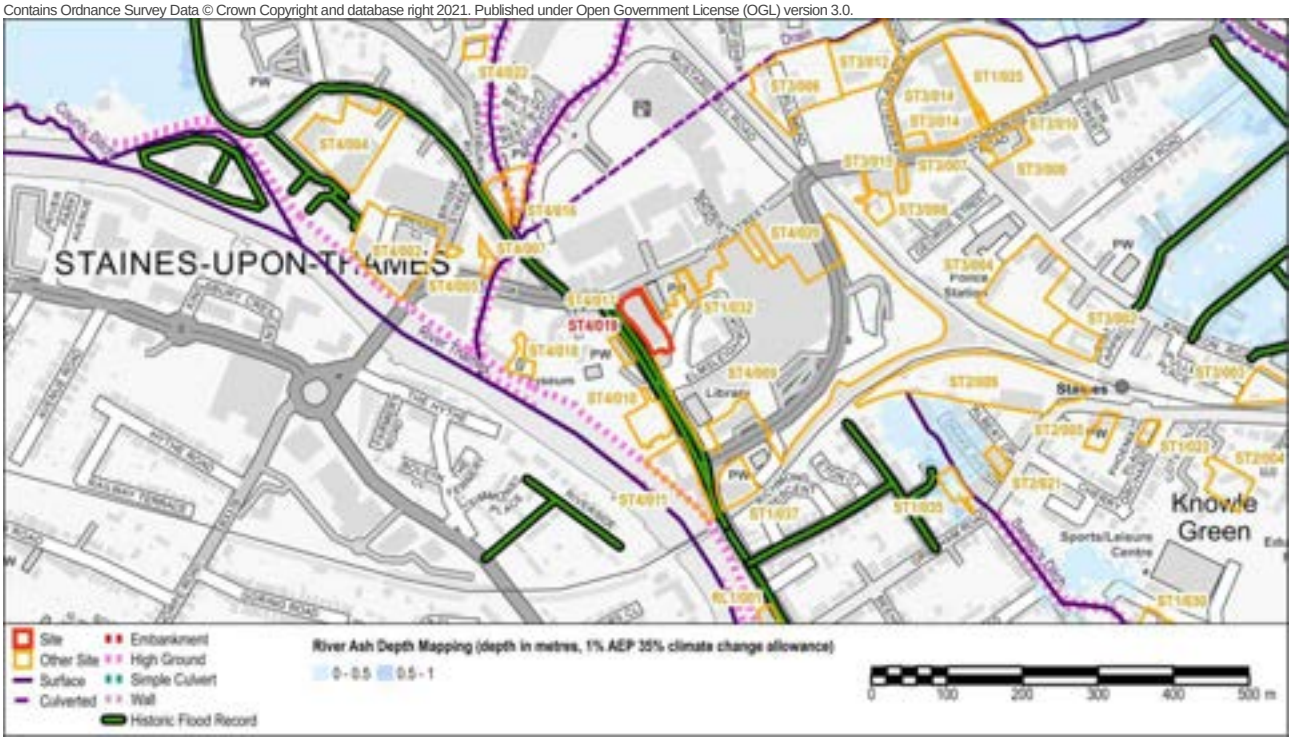


Thames Tributaries Maximum Flood Depth 1% AEP plus 35% climate change

ST4/019: Debenhams site, 35-45, High Street, TW18 4QU

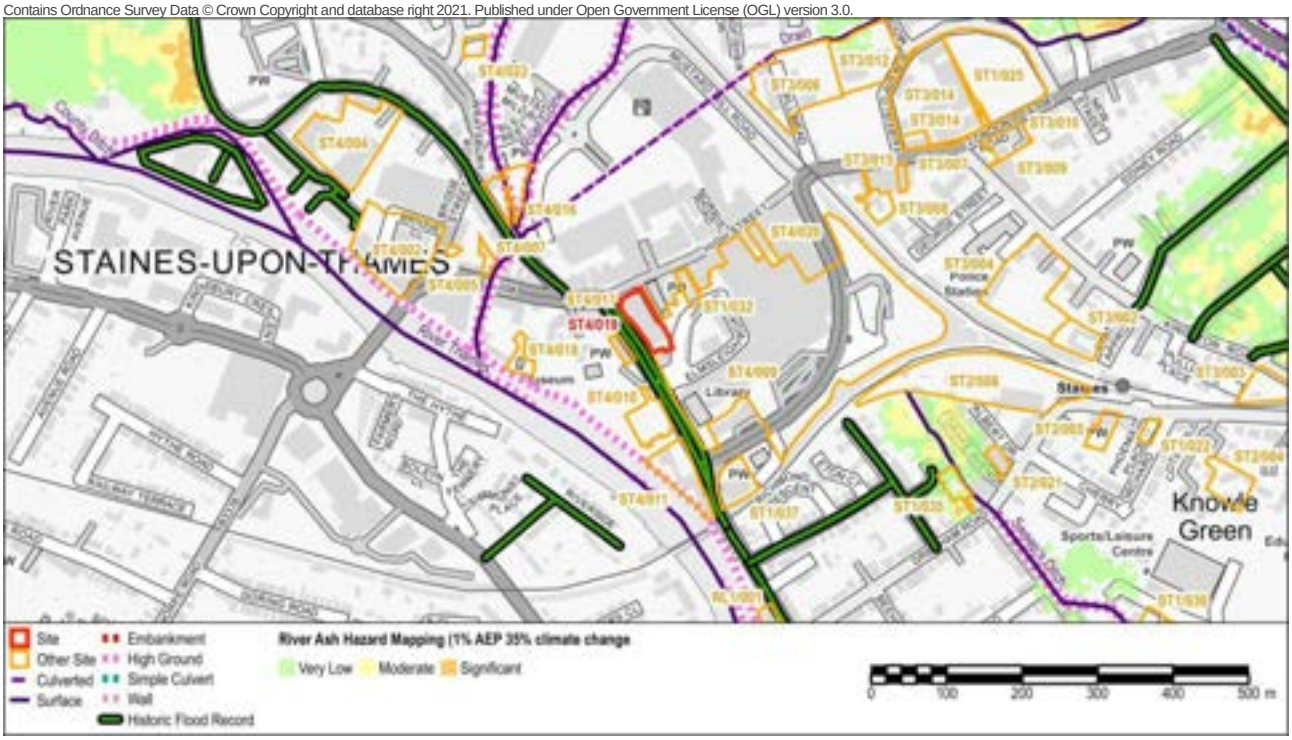


Thames Tributaries Maximum Flood Hazard 1% AEP plus 35% climate change

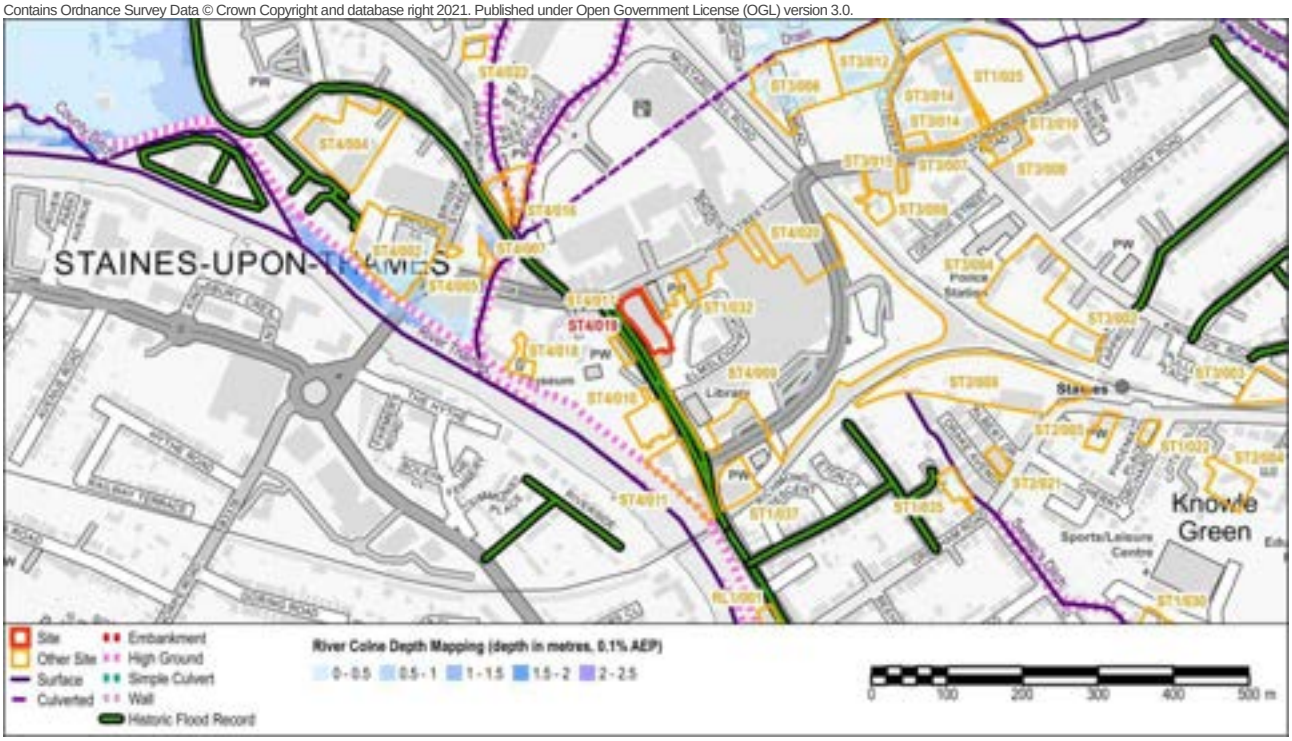


River Ash Maximum Flood Depth 1% AEP plus 35% climate change

ST4/019: Debenhams site, 35-45, High Street, TW18 4QU



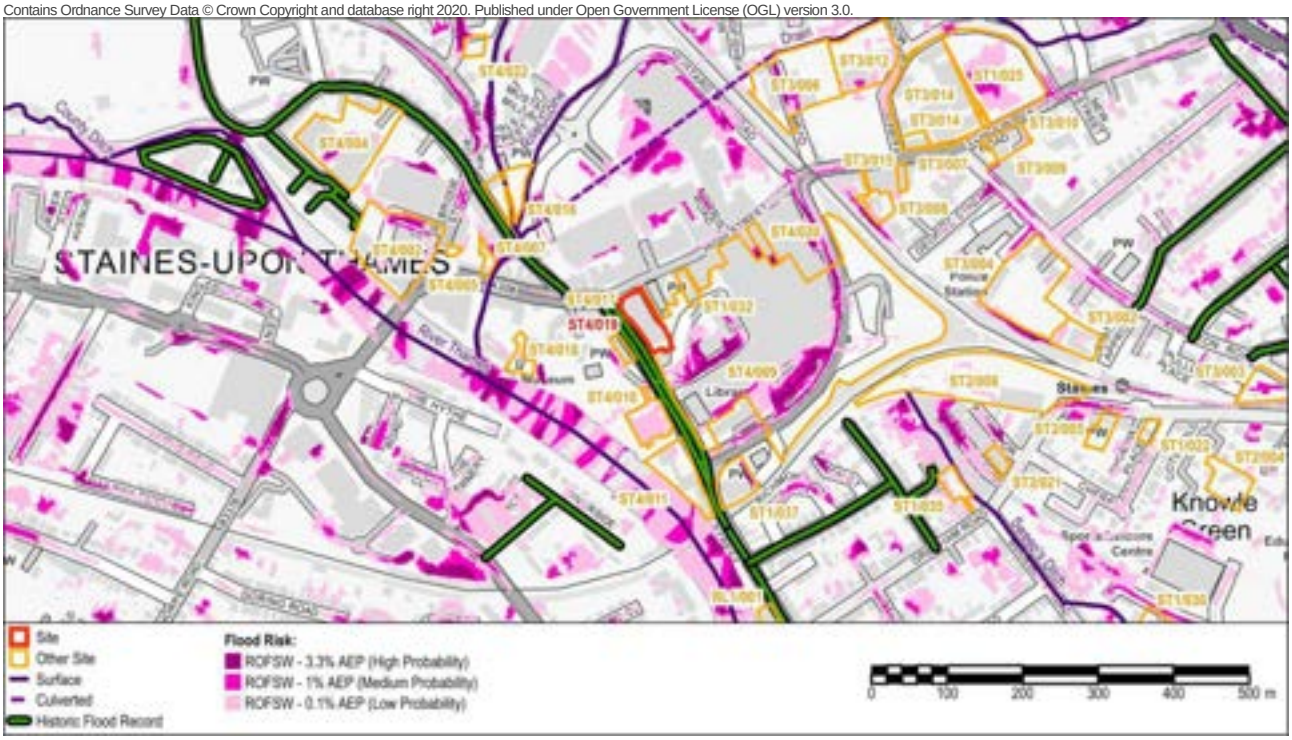
River Ash Maximum Flood Hazard 1% AEP plus 35% climate change



River Colne Maximum Flood Depth 0.1% AEP

Surface Water Flooding	
Risk of Flooding from Surface Water (RoFSW)	Low

ST4/019: Debenhams site, 35-45, High Street, TW18 4QU



Risk of Flooding from Surface Water (RoFSW)

Groundwater Flooding			
Bedrock Geology	Thames Group - Clay, Silt, Sand And Gravel	**Superficial Geology**	Clay, Silt And Sand
Areas Susceptible to Groundwater Flooding	>75%		
BGS Susceptibility to Groundwater Flooding	Potential for groundwater flooding to occur at surface.		
Aquifer Designation	Secondary A, Secondary A		

Other Sources	
Risk of flooding from reservoirs	The Long Term Flood Risk Map shows that this site could be at risk of flooding, in the event of a breach of the King George VI Reservoir or Staines Reservoir.

Summary

The River Thames flows south east approximately 170m to the south west of the site. The majority of the site (87%) is defined as Flood Zone 1, Low probability of flooding from rivers, and 13% is defined as Flood Zone 2 Medium probability.
The site is located in a dry island within the modelled floodplain. Modelling outputs for the River Thames for the 1% AEP event including a 35% increase in peak river flows as a result of climate change indicates that the site is not at risk of flooding, but the shopping area to the south (Elmsleigh Gardens) is at risk with hazard ratings of Significant (Danger for Most), and access to the site from the High Street and London Road is also at risk.
The Risk of Flooding from Surface Water Map identifies the potential for surface water to pond along the nearby roadways. There are records of flooding along the A308 adjacent to the site.
The BGS Susceptibility to Groundwater Flooding dataset, mapped in the Surrey CC LFRMS, indicates that there may be potential for groundwater flooding to occur at surface in this area. The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area.

Site Specific Recommendations

More Vulnerable development is permitted in Flood Zones 1 and 2, and the Exception Test is not required. A site specific FRA will be required to demonstrate that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Given the risk of flooding to the surrounding area the following recommendations are made:

- Apply a sequential approach and steer residential development away from those areas at risk of flooding from the River Thames during the design event (1% AEP including climate change).
- Safe access/egress (i.e. that is dry or Low hazard during the 1% AEP event including 35% climate change allowance) may not be achievable from the site, given the risks of flooding to the surrounding area. The route along High Street goes underneath the railway line and is at risk of flooding. Provision of an improved route out of this area could improve the safety of future development in this area.
- A Flood Warning and Evacuation Plan should be prepared for the site and places of safe refuge should also be designed into the development, above the design event (1% AEP including climate change).
- The site is located in a priority area identified by the Lead Local Flood Authority SCC due to the number of internal and external flooding records in the area. Runoff from the site will need to be reduced to greenfield or less where possible. Development proposals for the site should demonstrate sustainable approaches to the management of surface water making use of SuDS including green roofs, rainwater harvesting and other innovative technologies; and incorporate soft landscaping, planting and permeable surfacing.
- The risk of groundwater flooding and groundwater levels should be further assessed as part of a Site Investigation.