EMP1 - Faultlands

OSNGR: 436395,289266	Area: 26.42ha		Predominately Greenfield	
Flood Zone Coverage:	**FZ3b**	**FZ3a**	**FZ2**	**FZ1**
	0%	0%	1%	99%

Sources of flood risk:

• Primary flood risk is fluvial, resulting in overtopping of unnamed drain that flows along the northern site boundary. Additionally, flood risk is posed by Griff Brook, located close to the northern boundary and Coventry Canal which flows along the eastern site boundary.
• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

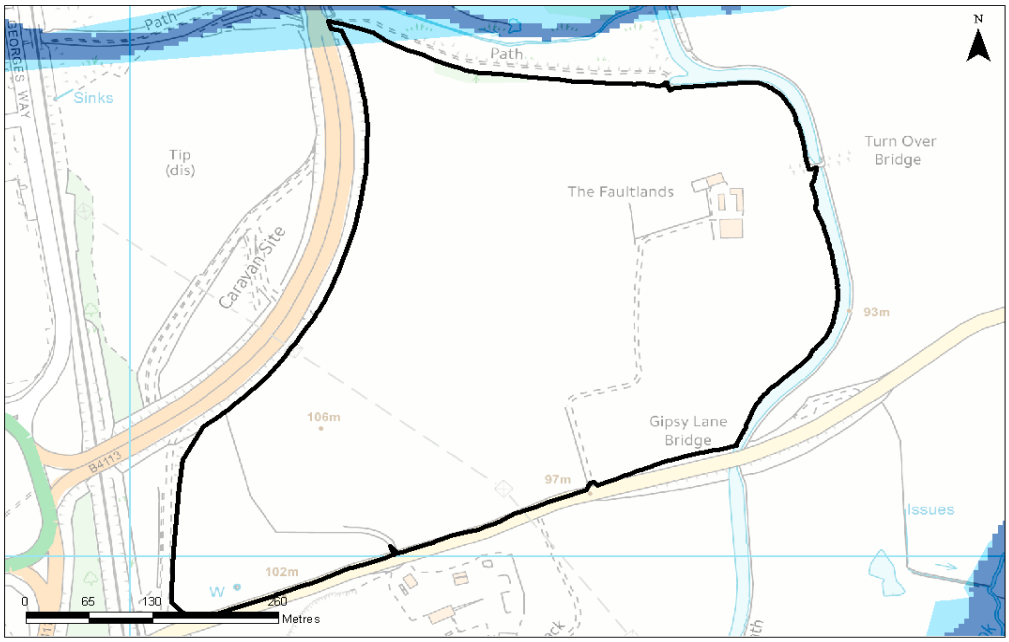
Exception Test Required?

Yes, for Highly vulnerable development in FZ2.

Requirements for passing the Exception Test:

• To pass Part 'b' of the Exception Test, a FRA should demonstrate that: the development will be safe, will avoid increasing flood risk elsewhere and will reduce flood risk overall.
• Preference should be given to locating development outside of flooded areas away from the northern site boundary. It should be possible to reduce flood risk at this development site by using sequential design to locate more vulnerable developments towards higher ground, through building design and by meeting drainage requirements. New developments being located outside of Flood Zone 2 and 3 needs to ensure that no increase in flood risk occurs. Some resilience measures may be required if buildings are situated in the flood risk area.
• Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.

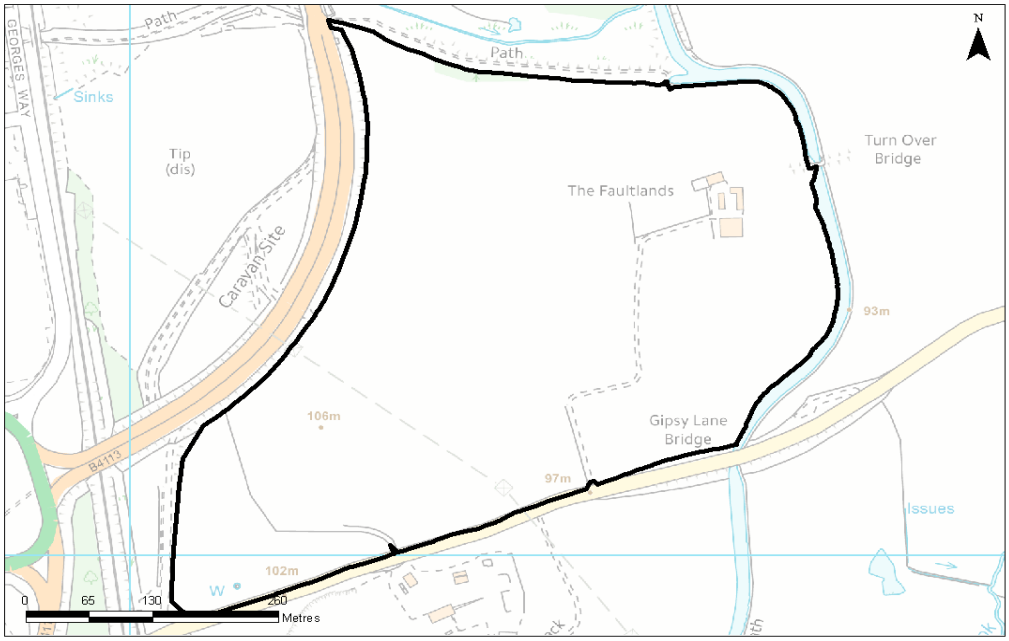
Flood Zone Map



Note: Indicative flood extents have been used to represent FZ3b in certain locations. For more information please refer to section 10 in the main report.

Potential development location
Council boundary
Flood Zone 3b
Indicative Extent of Flood Zone 3b
Flood Zone 3a
Flood Zone 2

Climate Change Map



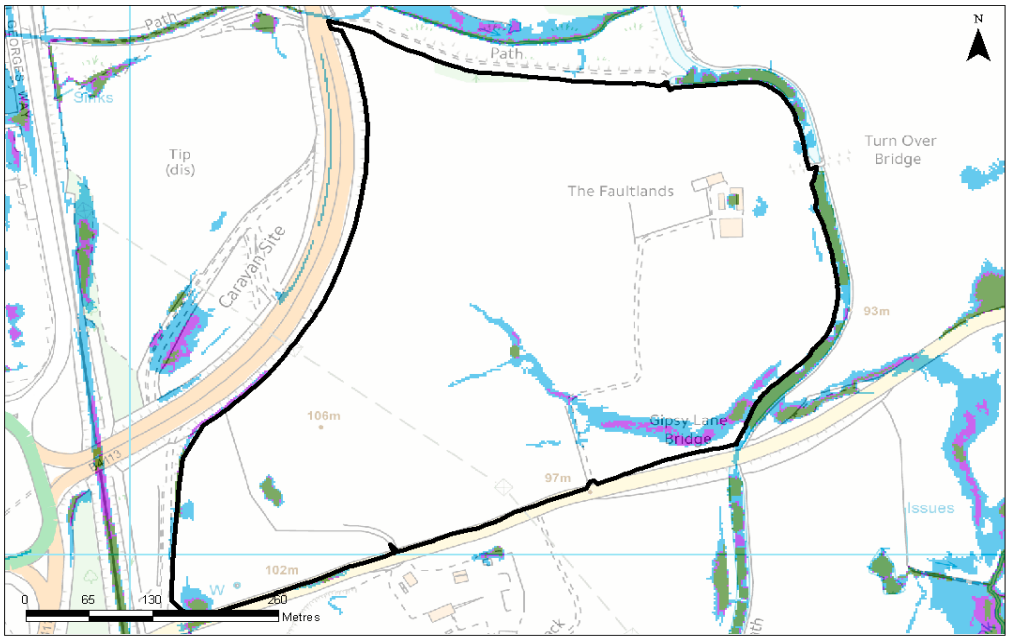
Potential development location

Council boundary

Flood Zone 3 with Climate Change

Indicative Extent of Flood Zone 3 with Climate Change

Surface Water Map



Potential development location

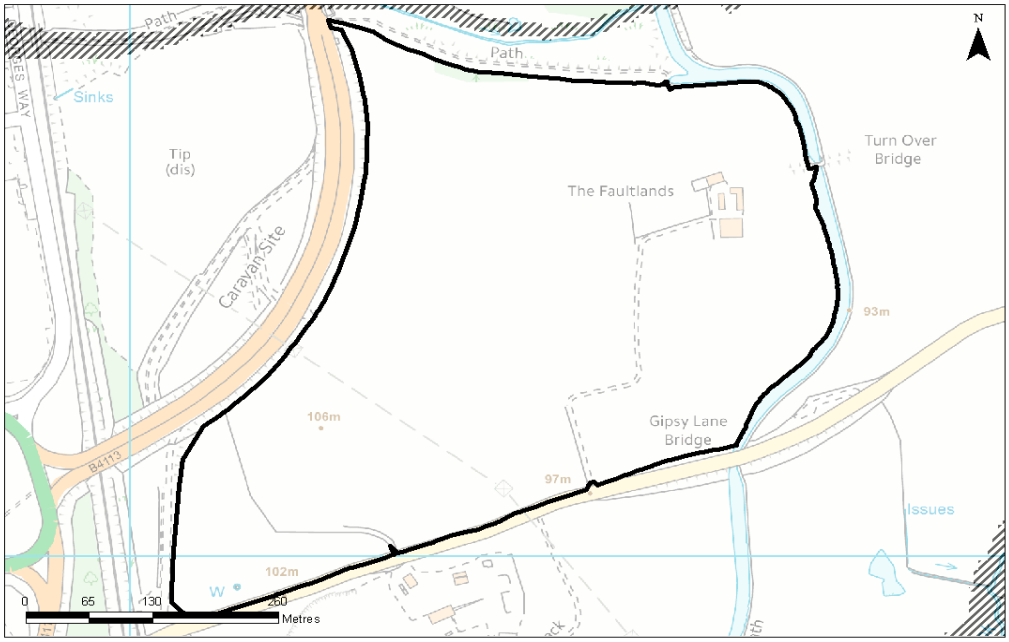
Council boundary

uFMfSW 30-year Extent

uFMfSW 100-year Extent

uFMfSW 1,000-year Extent

Depth Map - fluvial flooding (1 in 100-year event)

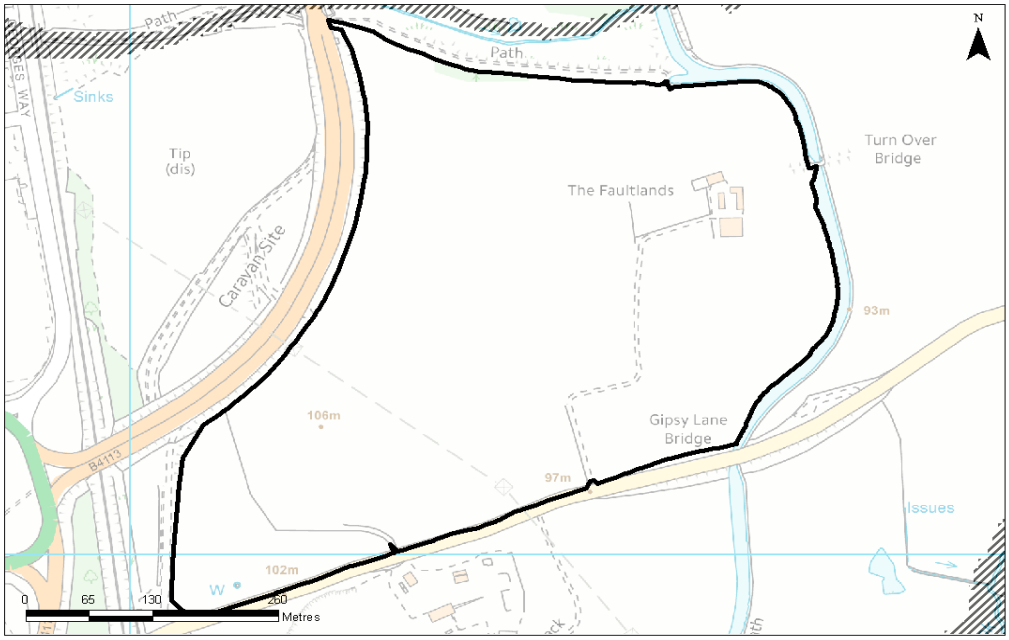


Potential development location
Council boundary

Depth (m)

- 0 - 0.10
- 0.10 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 2.50
- 2.50 - 3.00
- 3.00 - 3.50
- 3.50 - 4.00
- >4.00

Velocity Map - fluvial flooding (1 in 100-year event)

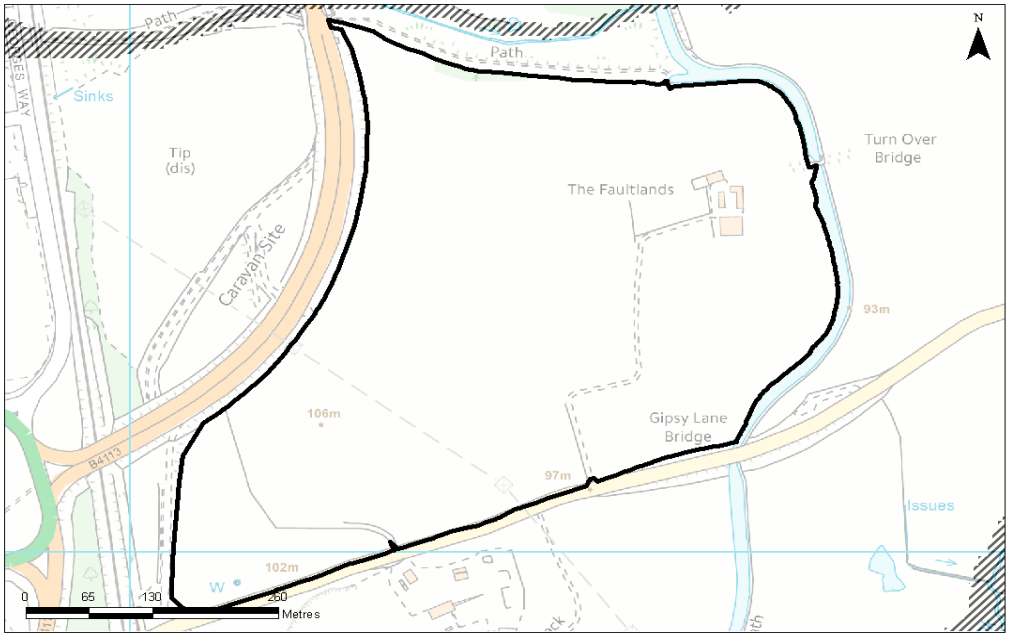


Potential development location
Council boundary

Velocity (m/s)

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

Hazard Map - fluvial flooding (1 in 100-year event)



Potential development location
Council boundary

Hazard Rating

Very low hazard - caution
Danger for some
Danger for most
Danger for all

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.
Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

• This site has areas within its boundary designated by the Environment Agency as being a landfill site. A thorough ground investigation will be required as part of a detailed FRA to determine the extent of the contamination and the impact this may have on SuDS. As such proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.

• The site is not located within any Environment Agency designated ground source protection zones.

Flood Defences:

There are no flood defences at this site.

Flood Warning:

There are currently no flood warning areas covering this site.

Climate Change:

• Increased storm intensities.
• Increased water levels in the unnamed watercourse, Griff Brook and Coventry Canal.

Flood Risk Implications for Development:

• Only a small proportion of the development site is affected by flood levels, therefore all development should be located within Flood Zone 1, unless appropriate in accordance with NPPF Planning Practice Guidance.
• Consideration of the peak flows on the Griff Brook, an unnamed drain and the Coventry Canal and its durations required when considering drainage.
• A site specific flood risk assessment will be required for any development in Flood Zone 2.
• The affect of climate change will need to be assessed as part of a detailed site specific SFRA.
• Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
• Developers should consider incorporating an eight metre buffer adjacent to the canal to allow access for maintenance and repair.
• Assessment for runoff should include allowance for climate change effects.
• New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
• Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
• Demonstration that development at this location can be made safe.
• New development must seek opportunities to reduce overall level of flood risk at the site for example by:
o Reducing volume and rate of runoff
o Relocating development to zones with lower flood risk
o Creating space for flooding.
• Consider using Flood Zone 2 as public open space

EMP2 - Pheonix Way Wilsons Lane

OSNGR: 434433,284611	Area: 18.26ha		Greenfield	
Flood Zone Coverage:	**FZ3b**	**FZ3a**	**FZ2**	**FZ1**
	7%	0%	1%	92%

Sources of flood risk:

• Primary flood risk fluvial from River Sowe, resulting from overtopping of the watercourse channel. River Sowe flows in a southerly direction along the south-western corner of the site.
• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

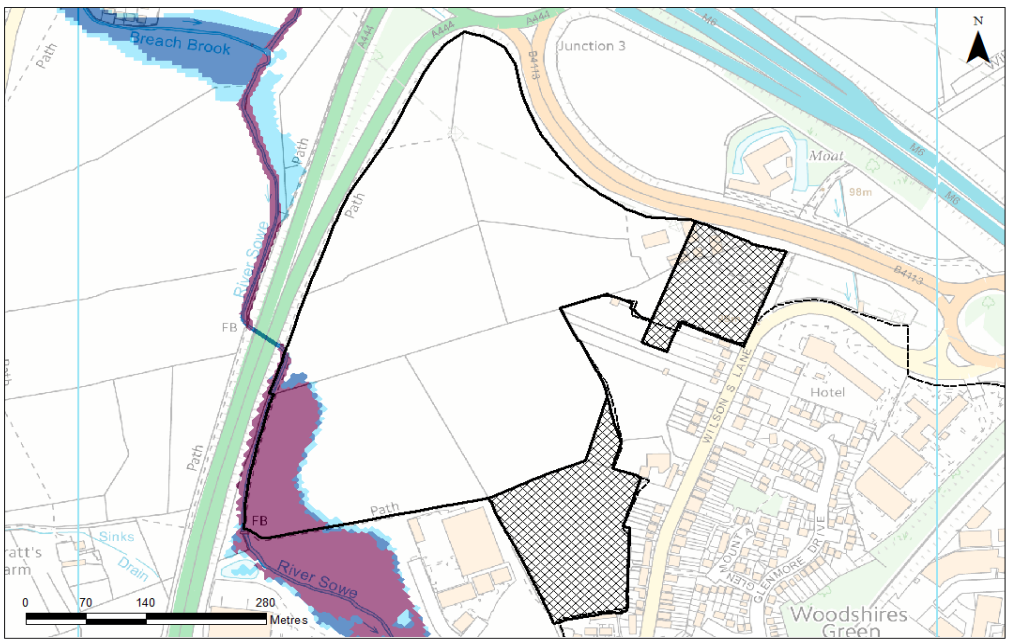
Exception Test Required?

Yes, for Essential infrastructure development in FZ3b, Essential infrastructure and More Vulnerable development in FZ3a and Highly Vulnerable development in FZ2.
Highly Vulnerable infrastructure should not be permitted within FZ3a. Highly Vulnerable, More Vulnerable and Less Vulnerable infrastructure should not be permitted within FZ3b.

NPPF Guidance:

• To pass Part 'b' of the Exception Test, a FRA should demonstrate that the development will be safe, will avoid increasing flood risk elsewhere and will reduce flood risk overall.
• Preference should be given to locating development outside the flooded areas, located adjacent to the River Sowe, which flows along the south westerly boundary of the development site. It should be possible to reduce flood risk at this location by using sequential design to locate more vulnerable development towards higher ground, through building design and by meeting drainage requirements. Some resilience measures may be required if buildings are situated in the flood risk area.
• Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.

Flood Zone Map

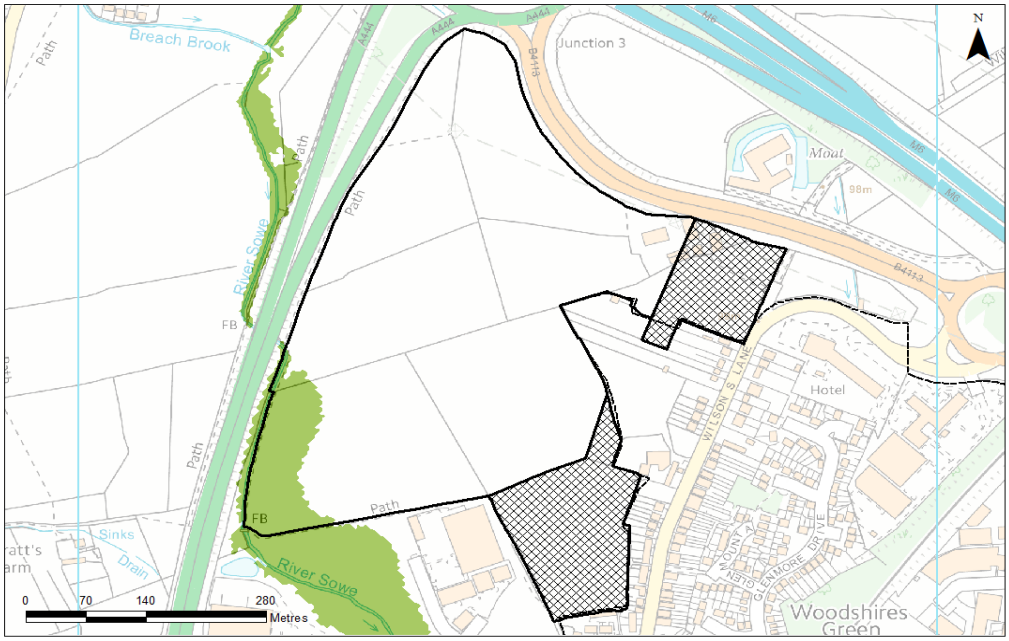


Cross-hatched area of development depictes areas of the site allocated for residential uses.

Note: Indicative flood extents have been used to represent FZ3b in certain locations. For more information please refer to section 10 in the main report.

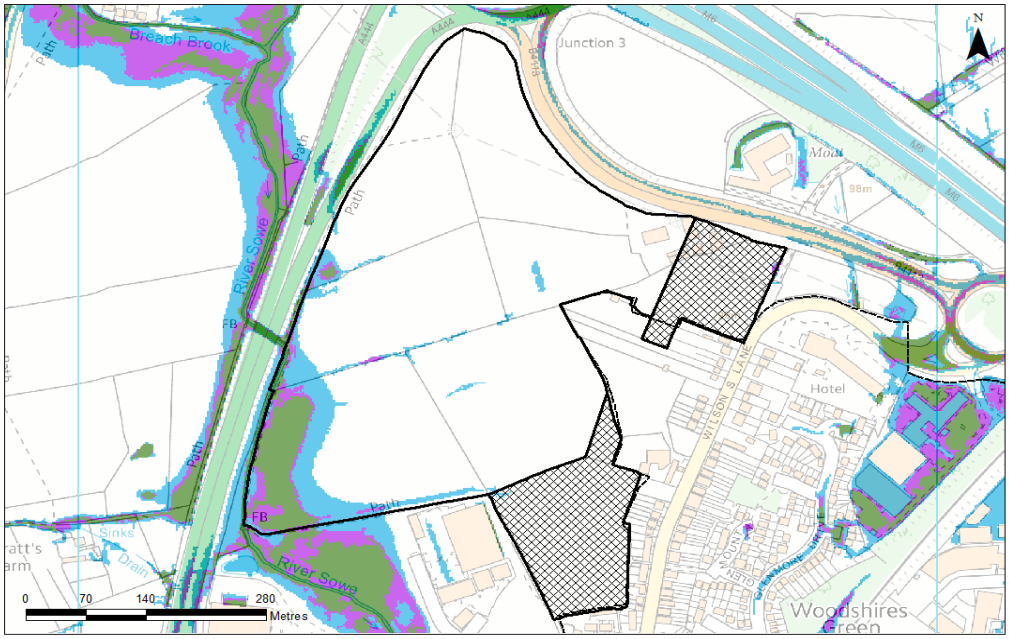
Potential development location
Council boundary
Flood Zone 3b
Indicative Extent of Flood Zone 3b
Flood Zone 3a
Flood Zone 2

Climate Change Map



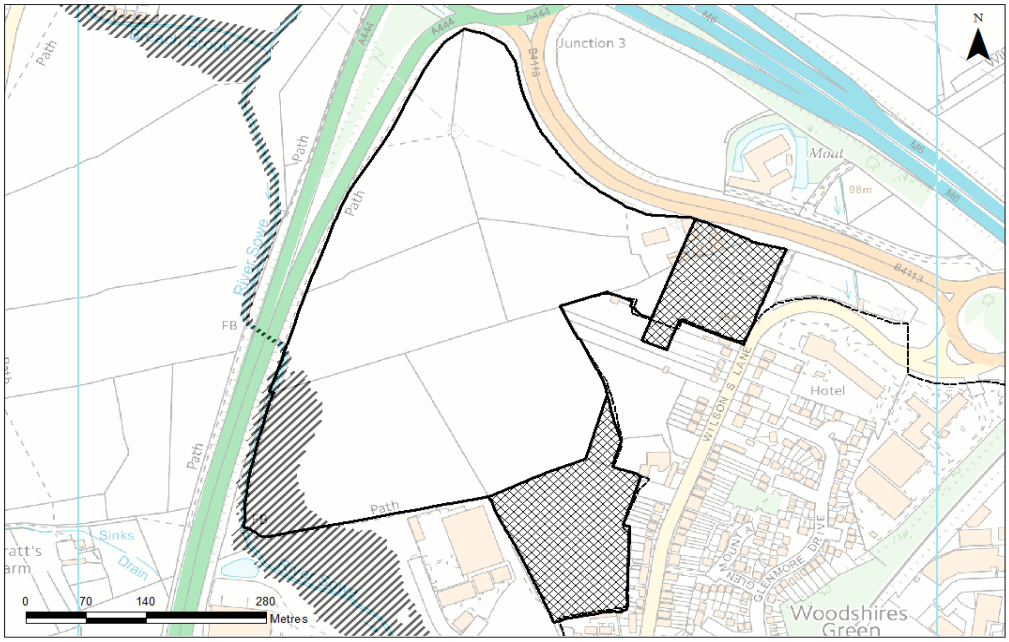
Potential development location
Council boundary
Flood Zone 3 with Climate Change
Indicative Extent of Flood Zone 3 with Climate Change

Surface Water Map



Potential development location
Council boundary
uFMfSW 30-year Extent
uFMfSW 100-year Extent
uFMfSW 1,000-year Extent

Depth Map - fluvial flooding (1 in 100-year event)

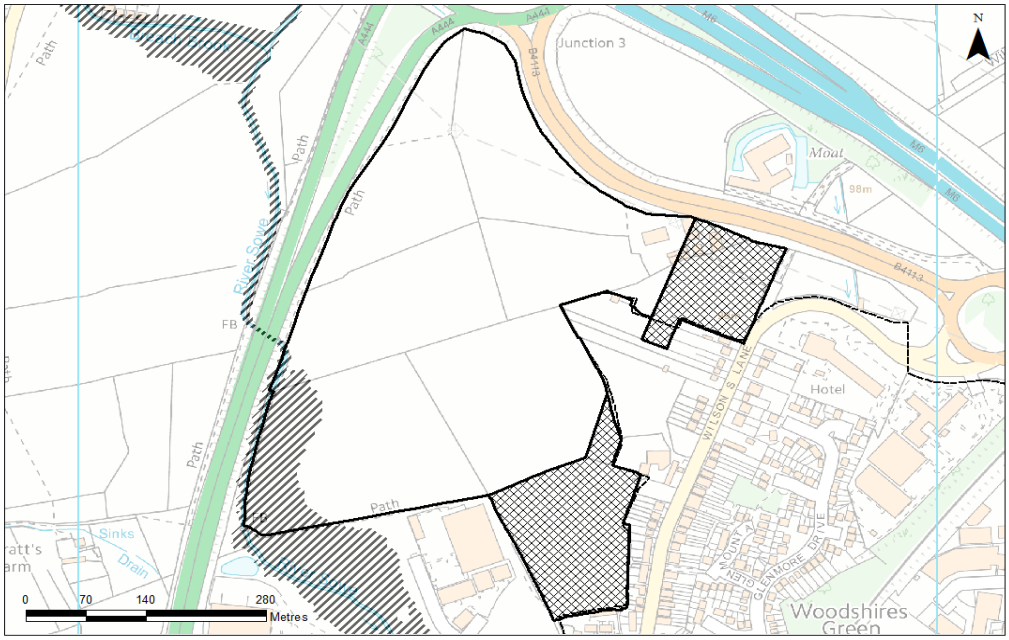


Potential development location
Council Boundary

Depth (m)

0 - 0.01 | 0.01 - 0.1 | 0.1 - 0.5 | 0.5 - 1.0 | 1.0 - 1.5 | 1.5 - 2.0 | 2.0 - 2.5 | 2.5 - 4.5 | Unknown depth rating

Velocity Map - fluvial flooding (1 in 100-year event)

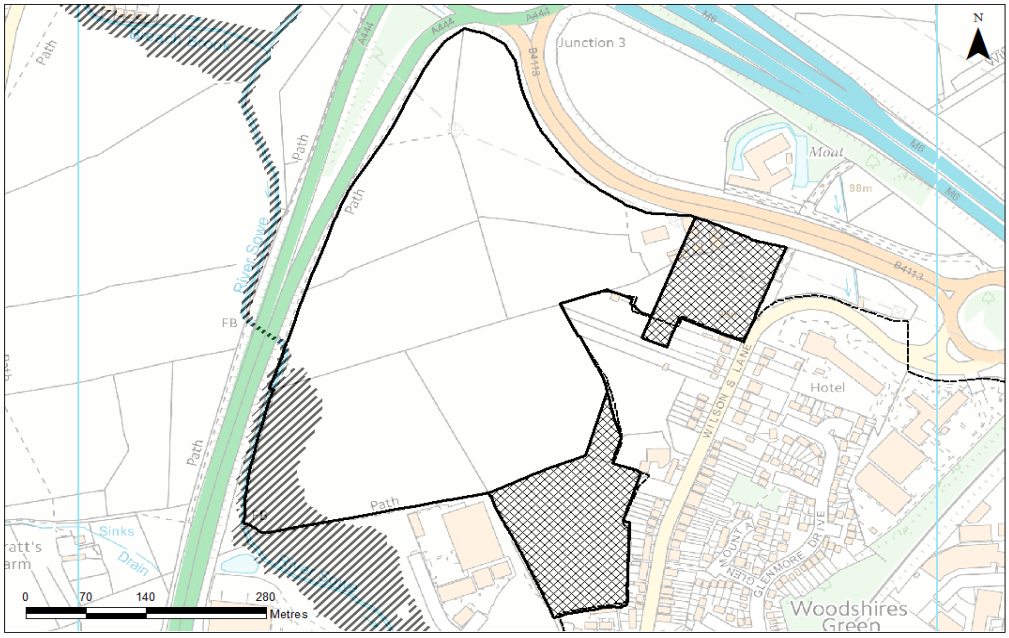


Potential development location
Council Boundary

Velocity (m/s)

0 - 0.2 | 0.2 - 0.5 | 0.5 - 1.0 | 1.0 - 2.0 | > 2.0 | Unknown velocity rating

Hazard Map - fluvial flooding (1 in 100-year event)



Potential development location
Council Boundary

Hazard Rating

Very low hazard - caution
Danger for some
Danger for most
Danger for all
Unknown hazard rating

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		Mapping suggests that the site slopes are suitable for all forms of detention.
Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

- *The site is not located in an area designated by the Environment Agency as a landfill site.*
- *The site is not located within any Environment Agency designated ground source protection zones.*

Flood Defences:
There are no flood defences at this site.

Flood Warning:
There are currently no flood warning areas covering this site.

Climate Change:
- Increased storm intensities.

Flood Risk Implications for Development:

• Only a small proportion of the development site is affected by flood levels, therefore all development should be located within Flood Zone 1, unless appropriate in accordance with NPPF Planning Practice Guidance. Also with a larger region in the south of the development site is located in Flood Zone 2 new infrastructure should be designed to not increase flood risk in these regions during large rainfall events.
• Consideration of the peak flows on the River Sowe and its durations required when considering drainage.
• A site specific flood risk assessment will be required for any development in Flood Zone 2 and 3.
• Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
• Assessment for runoff should include allowance for climate change effects.
• New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
• Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
• Demonstration that development at this location can be made safe.
• New development must seek opportunities to reduce overall level of flood risk at the site for example by:
o Reducing volume and rate of runoff
o Relocating development to zones with lower flood risk
o Creating space for flooding.
• Consider using Flood Zone 2 and 3as public open space.

EMP3 - Prologis Extension

OSNGR: 432737,284606	Area: 5.34ha	Greenfield

Sources of flood risk:

• Primary flood risk is from surface water flooding and overland flows.
• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

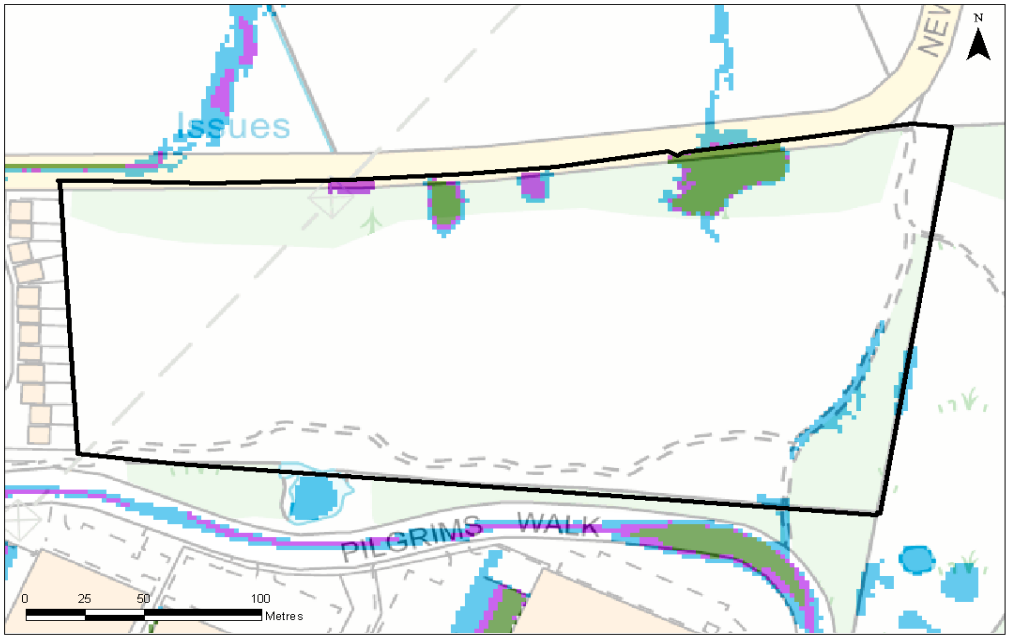
Exception Test Required?

No

NPPF Guidance:

• For development proposals on sites comprising one hectare or above in Flood Zone 1 the vulnerability of flooding from other sources as well as from river flooding should be incorporated into a FRA. The potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off must be included.
• Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development and through appropriate sustainable drainage techniques.

Surface Water Map



Potential development location
Council boundary
uFMfSW 30-year Extent
uFMfSW 100-year Extent
uFMfSW 1,000-year Extent

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SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.

Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.
Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

- *The site is not located in an area designated by the Environment Agency as a landfill site.*
- *The site is not located within any Environment Agency designated ground source protection zones.*

Flood Defences:

There are no flood defences at this site.

Flood Warning:

There are currently no flood warning areas covering this site.

Climate Change:

- Increased storm intensities

Flood Risk Implications for Development:

- Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
- Assessment for runoff should include allowance for climate change effects.
- New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
- Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
- Demonstration that development at this location can be made safe.
- New development must seek opportunities to reduce overall level of flood risk at the site for example by:
  - Reducing volume and rate of runoff
  - Relocating development to zones with lower flood risk
  - Creating space for flooding.

EMP4 - Coventry Road

OSNGR: 436023,289636	Area: 17.06ha		Greenfield	
Flood Zone Coverage:	**FZ3b**	**FZ3a**	**FZ2**	**FZ1**
	0%	3%	5%	92%

Sources of flood risk:

• Primary flood risk is fluvial, resulting from overtopping of an unnamed drain that runs directly through the site in an easterly direction. There is also risk from overland flows from adjacent developments.
• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

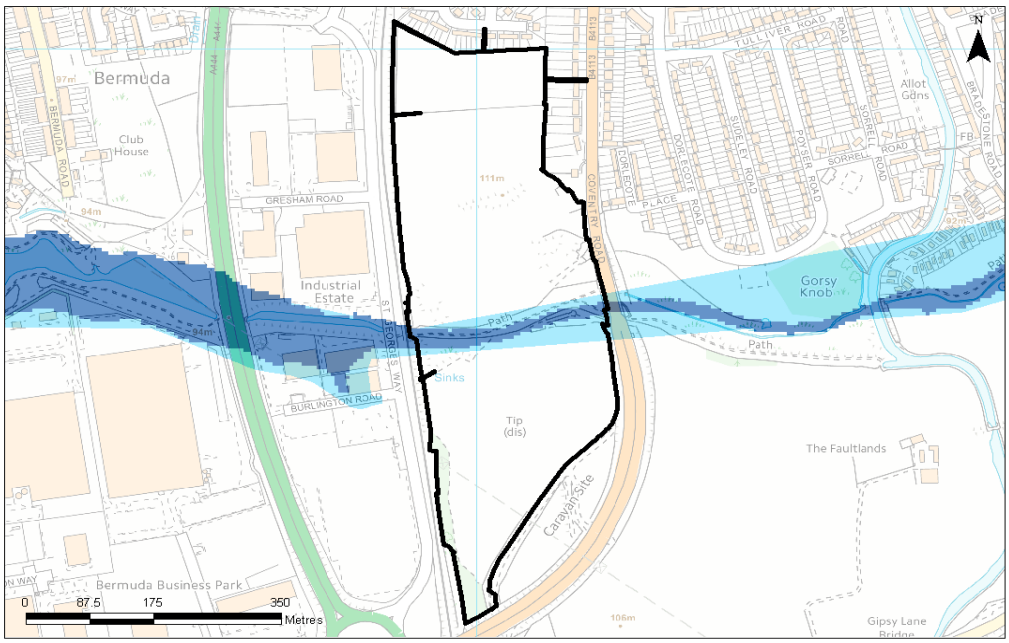
Exception Test Required?

Yes, for Essential Infrastructure and more vulnerable development in FZ3a and Highly Vulnerable development in FZ2. Highly Vulnerable infrastructure should not be permitted within FZ3a.

Requirements for passing the Exception Test:

• To pass Part 'b' of the Exception Test, a FRA should demonstrate that: the development will be safe, will avoid increasing flood risk elsewhere and will reduce flood risk overall.
• Preference should be given to locating development outside of flooded areas that run through the centre of the development site. It should be possible to reduce flood risk at this development site by using sequential design to locate more vulnerable developments towards higher ground, through building design and by meeting drainage requirements. New developments being located outside of Flood Zone 2 and 3 needs to ensure that no increase in flood risk occurs. Some resilience measures may be required if buildings are situated in the flood risk area.
• Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.

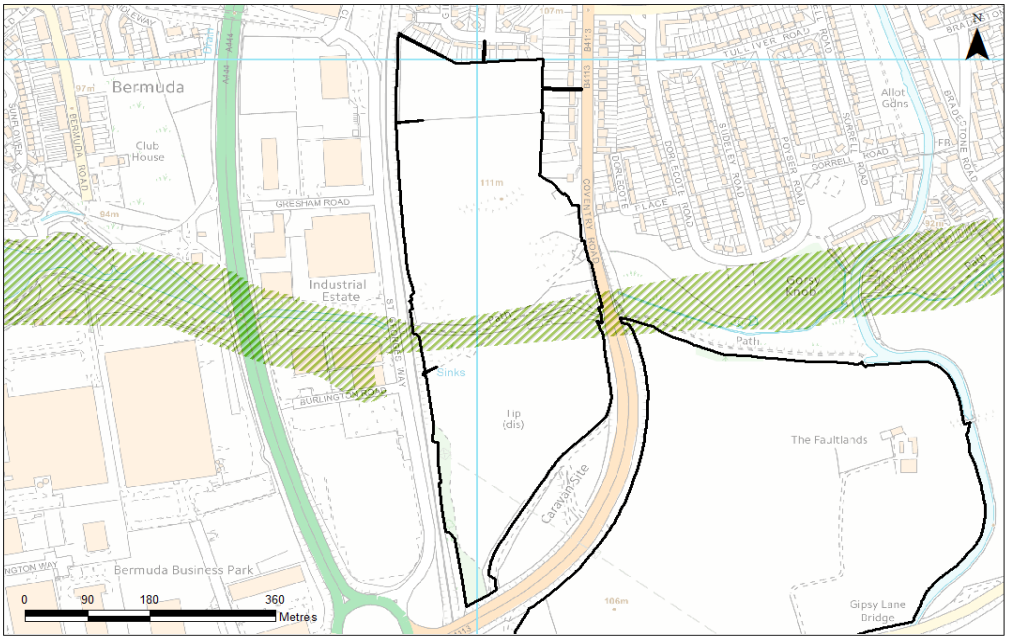
Flood Zone Map



Note: Indicative flood extents have been used to represent FZ3b in certain locations. For more information please refer to section 10 in the main report.

Potential development location
Council boundary
Flood Zone 3b
Indicative Extent of Flood Zone 3b
Flood Zone 3a
Flood Zone 2

Climate Change Map



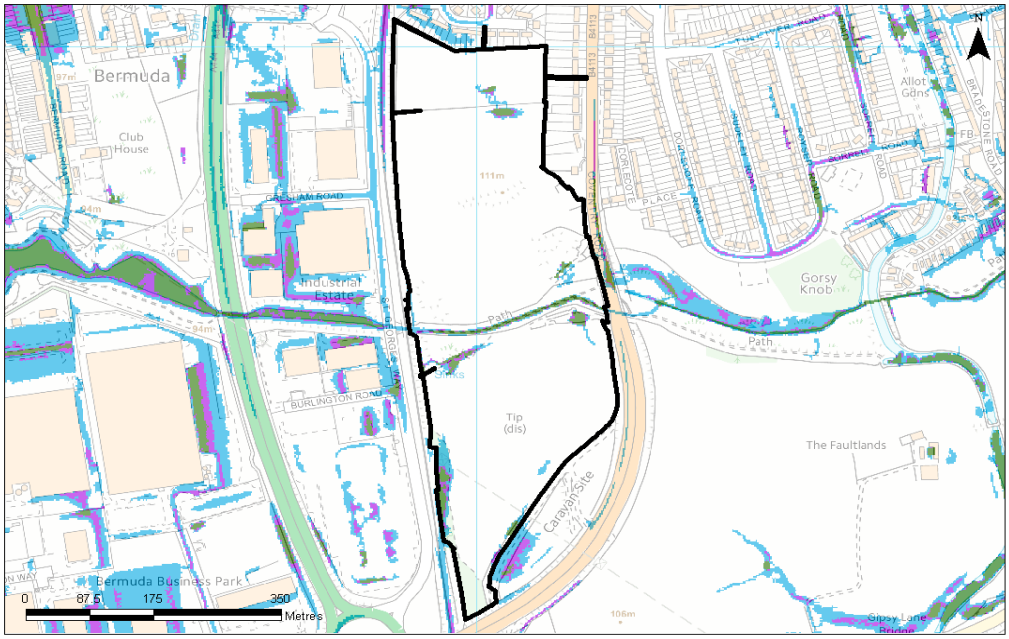
Potential development location

Council boundary

Flood Zone 3 with Climate Change

Indicative Extent of Flood Zone 3 with Climate Change

Surface Water Map



Potential development location

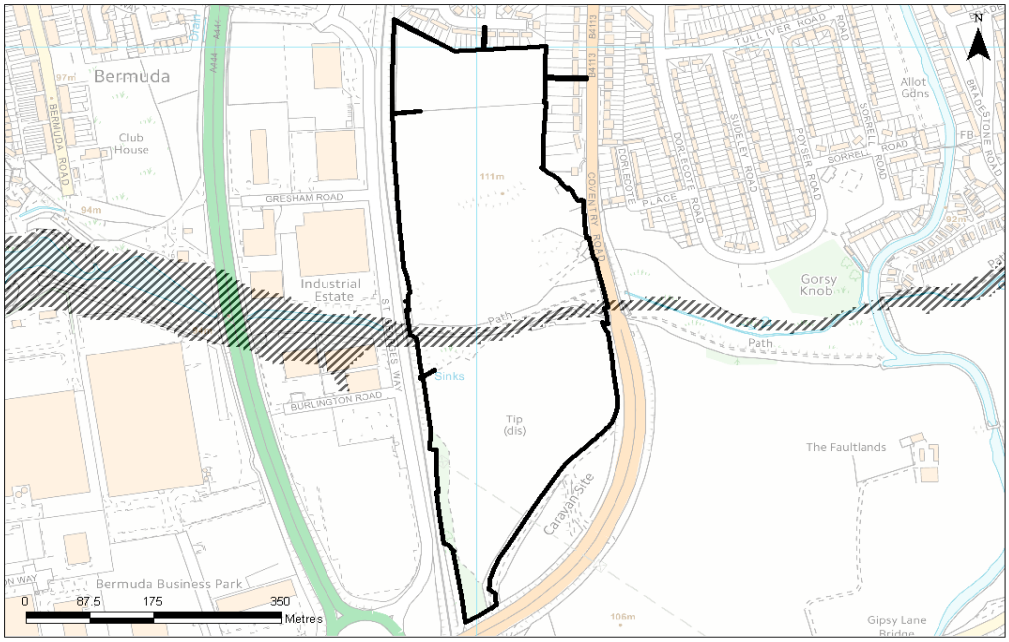
Council boundary

uFMfSW 30-year Extent

uFMfSW 100-year Extent

uFMfSW 1,000-year Extent

Depth Map - fluvial flooding (1 in 100-year event)

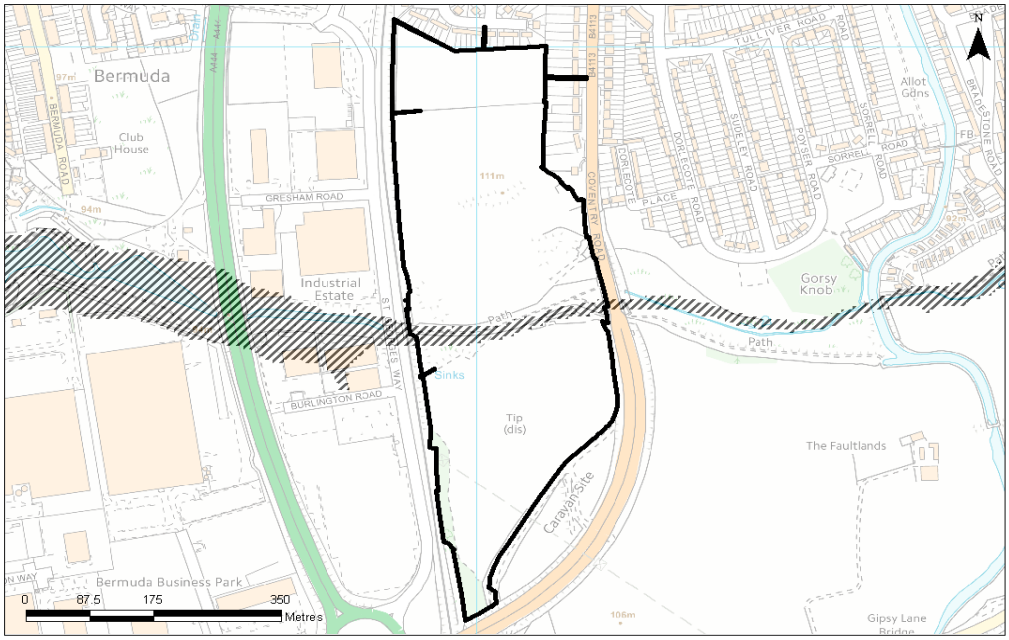


Potential development location
Council Boundary

Depth (m)

0 - 0.01
0.01 - 0.1
0.1 - 0.5
0.5 - 1.0
1.0 - 1.5
1.5 - 2.0
2.0 - 2.5
2.5 - 4.5
Unknown depth rating

Velocity Map - fluvial flooding (1 in 100-year event)

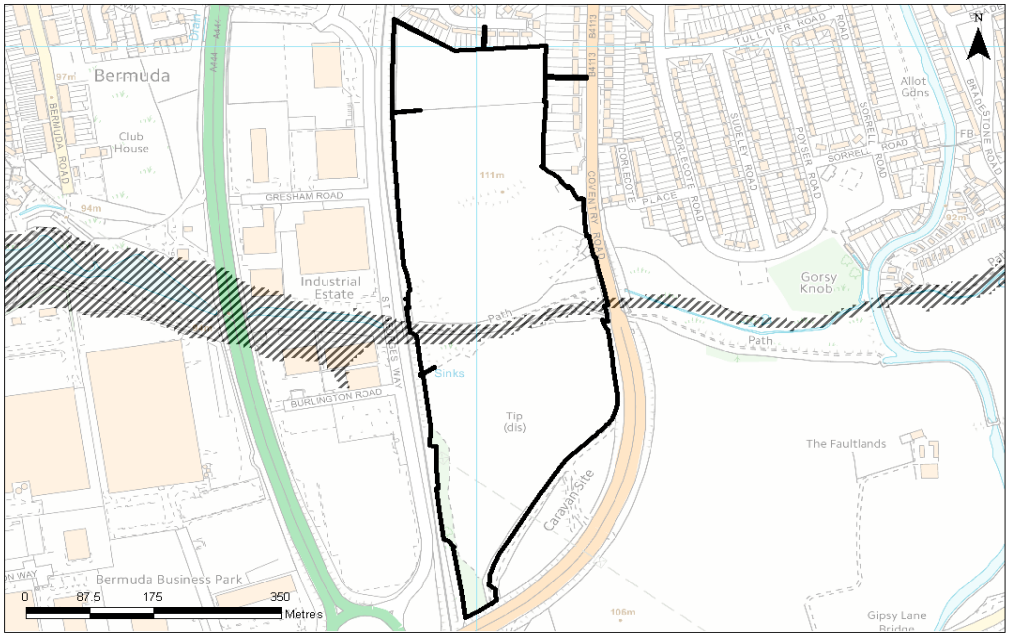


Potential development location
Council Boundary

Velocity (m/s)

0 - 0.2
0.2 - 0.5
0.5 - 1.0
1.0 - 2.0
> 2.0
Unknown velocity rating

Hazard Map - fluvial flooding (1 in 100-year event)



Potential development location
Council Boundary

Hazard Rating

Very low hazard - caution
Danger for some
Danger for most
Danger for all
Unknown hazard rating

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		Mapping suggests that the site may be too steep to allow 'above ground' detention features to be used at this development.
Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

• This site has areas within its boundary designated by the Environment Agency as being a landfill site. A thorough ground investigation will be required as part of a detailed FRA to determine the extent of the contamination and the impact this may have on SuDS. As such proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.

• The site is not located within any Environment Agency designated ground source protection zones.

Flood Defences:

There are no flood defences at this site.

Flood Warning:
There are currently no flood warning areas covering this site.

Climate Change:
• Increased storm intensities.
• Increased water levels in the unnamed drain.

Flood Risk Implications for Development:
• Only a small proportion of the development site is affected by flood levels, therefore all development should be located within Flood Zone 1, unless appropriate in accordance with NPPF Planning Practice Guidance.
• Consideration of the peak flows on the unnamed drain and its durations required when considering drainage.
• A site specific flood risk assessment will be required for any development in Flood Zone 2.
• The affect of climate change will need to be assessed as part of a detailed site specific SFRA.
• Developers should consider reservoir flooding during the planning stage, using the EA's reservoir inundation mapping. Where possible, developers should consider using areas at possible risk as public open space.
• Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
• Assessment for runoff should include allowance for climate change effects.
• New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
• Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
• Demonstration that development at this location can be made safe.
• New development must seek opportunities to reduce overall level of flood risk at the site for example by:
o Reducing volume and rate of runoff
o Relocating development to zones with lower flood risk
o Creating space for flooding.
• Consider using Flood Zone 2 and 3 as public open space

EMP5 - Caldwell Road

OSNGR: 436375,290437	Area: 0.65ha	Predominately Brownfield

Sources of flood risk:

• Primary flood risk is from surface water flooding and overland flows.
• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

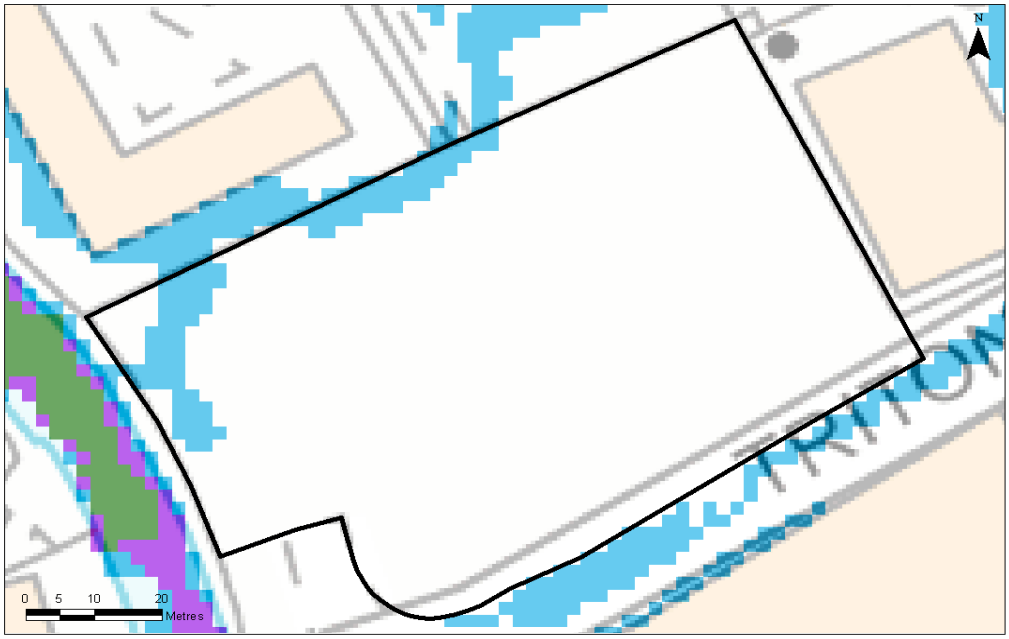
Exception Test Required?

No

NPPF Guidance:

• For development proposals on sites comprising one hectare or above in Flood Zone 1 the vulnerability of flooding from other sources as well as from river flooding should be incorporated into a FRA. The potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off must be included.
• Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development and through appropriate sustainable drainage techniques.

Surface Water Map



Potential development location
Council boundary
uFMfSW 30-year Extent
uFMfSW 100-year Extent
uFMfSW 1,000-year Extent

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.

Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

- *The site is not located in an area designated by the Environment Agency as a landfill site.*
- *The site is not located within any Environment Agency designated ground source protection zones.*

Flood Defences:

There are no flood defences at this site.

Flood Warning:

There are currently no flood warning areas covering this site.

Climate Change:

- Increased storm intensities.

Flood Risk Implications for Development:

- Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
- Assessment for runoff should include allowance for climate change effects.
- New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
- Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
- Demonstration that development at this location can be made safe.
- New development must seek opportunities to reduce overall level of flood risk at the site for example by:
  - Reducing volume and rate of runoff
  - Relocating development to zones with lower flood risk
  - Creating space for flooding.

EMP6 - Longford Road		
OSNGR: 435114,284858	Area: 2.06	Greenfield

Sources of flood risk:

• Primary flood risk is from surface water flooding and overland flows.

• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

Exception Test Required?

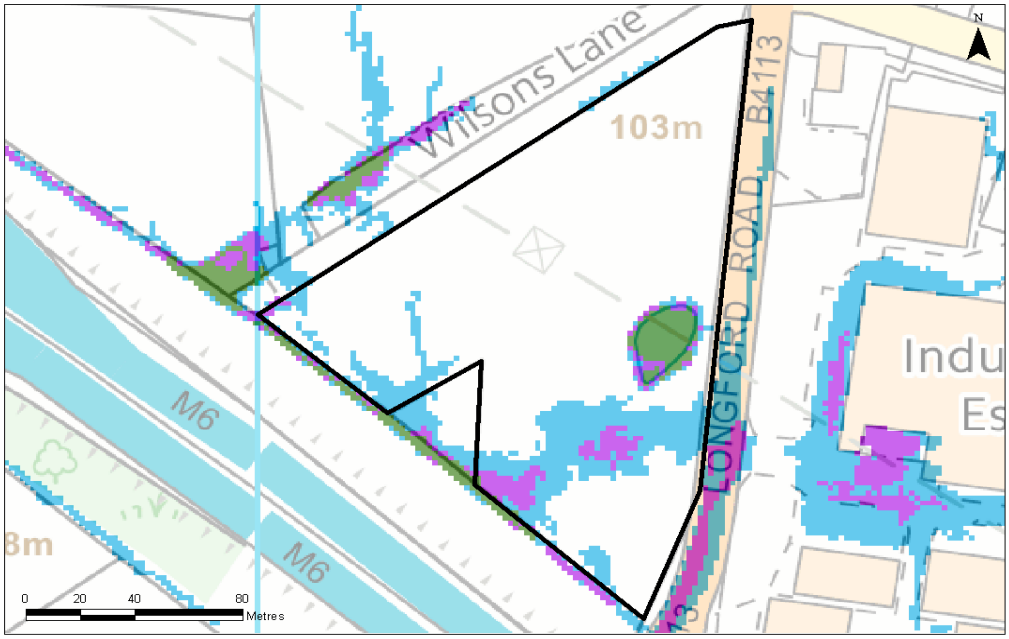
No

NPPF Guidance:

• For development proposals on sites comprising one hectare or above in Flood Zone 1 the vulnerability of flooding from other sources as well as from river flooding should be incorporated into a FRA. The potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off must be included.

• Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development and through appropriate sustainable drainage techniques.

Surface Water Map



Potential development location | uFMfSW 30-year Extent | uFMfSW 1,000-year Extent

Council boundary | uFMfSW 100-year Extent

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.

Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

- *The site is not located in an area designated by the Environment Agency as a landfill site.*
- *The site is not located within any Environment Agency designated ground source protection zones.*

Flood Defences:

There are no flood defences at this site.

Flood Warning:

There are currently no flood warning areas covering this site.

Climate Change:

- Increased storm intensities.

Flood Risk Implications for Development:

- Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
- Assessment for runoff should include allowance for climate change effects.
- New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
- Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
- Demonstration that development at this location can be made safe.
- New development must seek opportunities to reduce overall level of flood risk at the site for example by:
  - Reducing volume and rate of runoff
  - Relocating development to zones with lower flood risk
  - Creating space for flooding.

EMP7 - Bowling Green Lane

OSNGR: 434035,285574	Area: 26.26ha	Greenfield

Sources of flood risk:

• Primary flood risk is from surface water flooding and overland flows.
• With further development and creation of impermeable ground surfaces, surface water flooding may become a problem.

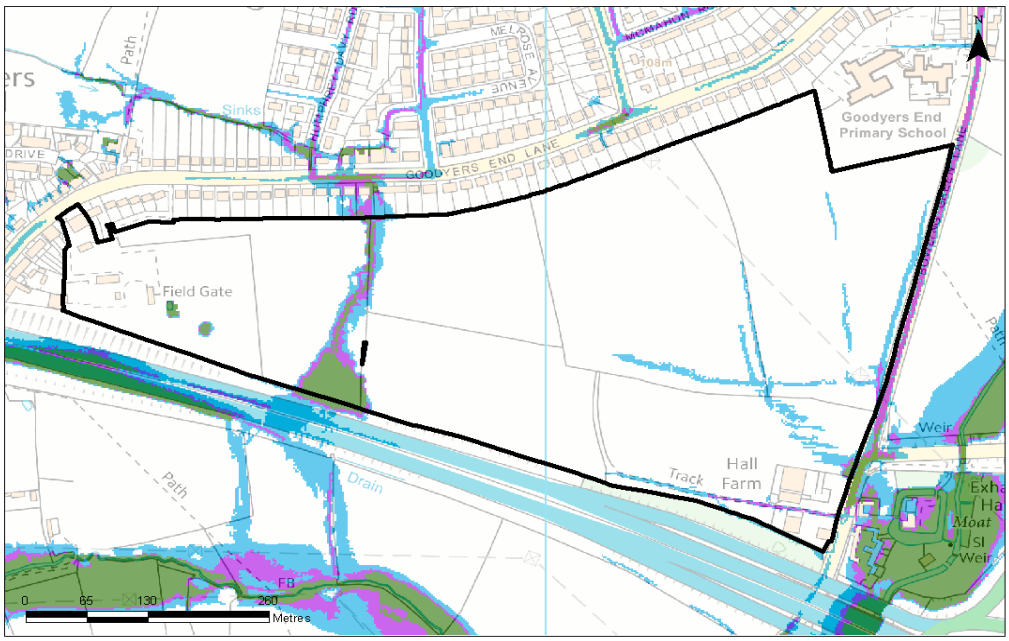
Exception Test Required?

No

NPPF Guidance:

• For development proposals on sites comprising one hectare or above in Flood Zone 1 the vulnerability of flooding from other sources as well as from river flooding should be incorporated into a FRA. The potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off must be included.
• Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development and through appropriate sustainable drainage techniques.

Surface Water Map



Potential development location
Council boundary
uFMfSW 30-year Extent
uFMfSW 100-year Extent
uFMfSW 1,000-year Extent

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.

Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

- *The site is not located in an area designated by the Environment Agency as a landfill site.*
- *The site is not located within any Environment Agency designated ground source protection zones.*

Flood Defences:
There are no flood defences at this site.

Flood Warning:
There are currently no flood warning areas covering this site.

Climate Change:
- Increased storm intensities.

Flood Risk Implications for Development:
- Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
- Assessment for runoff should include allowance for climate change effects.
- New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
- Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
- Demonstration that development at this location can be made safe.
- New development must seek opportunities to reduce overall level of flood risk at the site for example by:
  - Reducing volume and rate of runoff
  - Relocating development to zones with lower flood risk
  - Creating space for flooding.

EMP8				
OSNGR: 434898,288702	Area: 16.01ha		Greenfield	
Flood Zone Coverage:	**FZ3b** 1%	**FZ3a** 1%	**FZ2** 5%	**FZ1** 93%

Sources of flood risk:

• Primary flood risk is fluvial resulting in overtopping of unnamed drains. The majority of the drains run along the boundaries of the site; however, one drain flows north to south through the development site. In addition, overland surface water and overland flows may also pose a risk to the site.
• With further development and creation of impermeable ground surface, surface water flooding may become a problem.

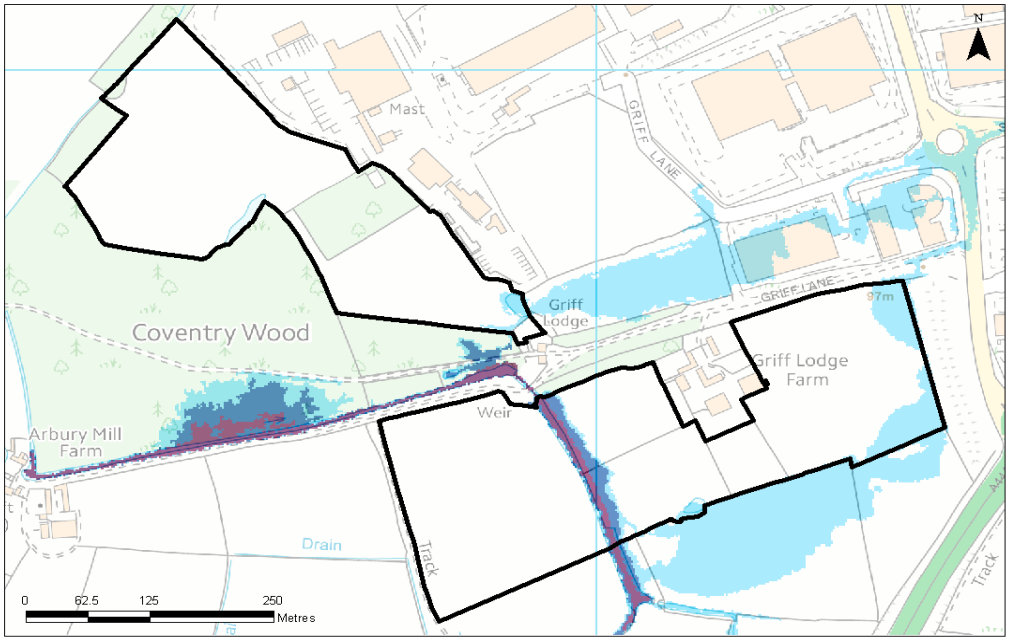
Exception Test Required?

Yes, for Essential infrastructure in FZ3b, Essential Infrastructure and more vulnerable development in FZ3a and Highly Vulnerable development in FZ2.
Highly Vulnerable infrastructure should not be permitted within FZ3a. Highly Vulnerable, More Vulnerable and Less Vulnerable infrastructure should not be permitted within FZ3b.

Requirements for passing the Exception Test:

• To pass Part 'b' of the Exception Test, a FRA should demonstrate that: the development will be safe, will avoid increasing flood risk elsewhere and will reduce flood risk overall.
• Preference should be given firstly to locating development outside of flooded areas to the north western part of the development site away from the unnamed drain flowing through the site. Secondary preference would be for area in the centre of the development that is shown not to flood. It should be possible to reduce flood risk at this development site by using sequential design to locate more vulnerable developments towards higher ground, through building design and by meeting drainage requirements. New developments being located outside of Flood Zone 2 and 3 needs to ensure that no increase in flood risk occurs. Some resilience measure may be required if buildings are situated in the flood risk area.
• Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.

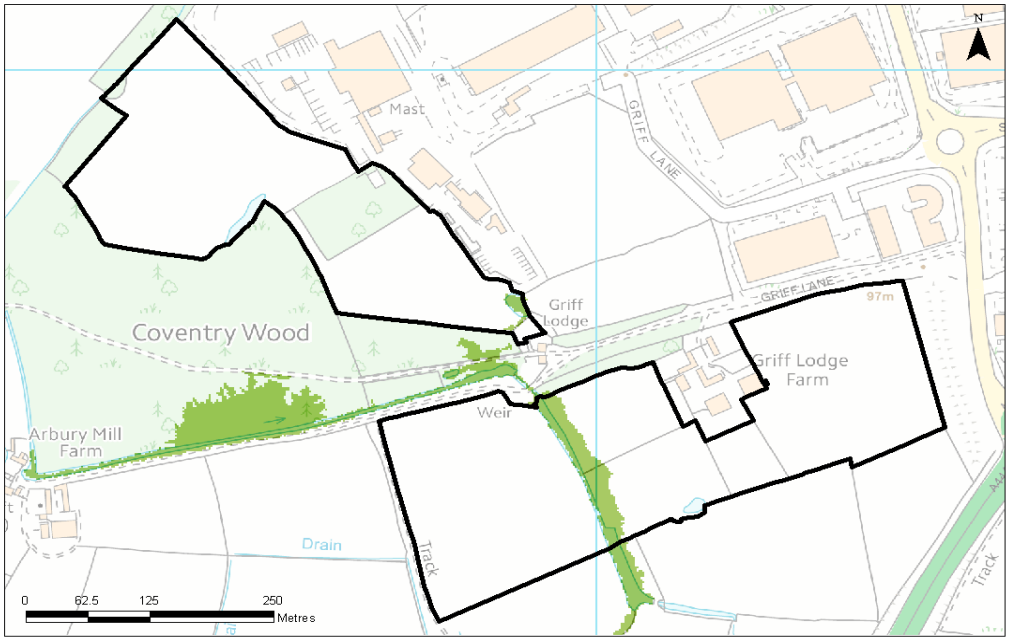
Flood Zone Map



Note: Indicative flood extents have been used to represent FZ3b in certain locations. For more information please refer to section 10 in the main report.

Potential development location
Council boundary
Flood Zone 3b
Indicative Extent of Flood Zone 3b
Flood Zone 3a
Flood Zone 2

Climate Change Map



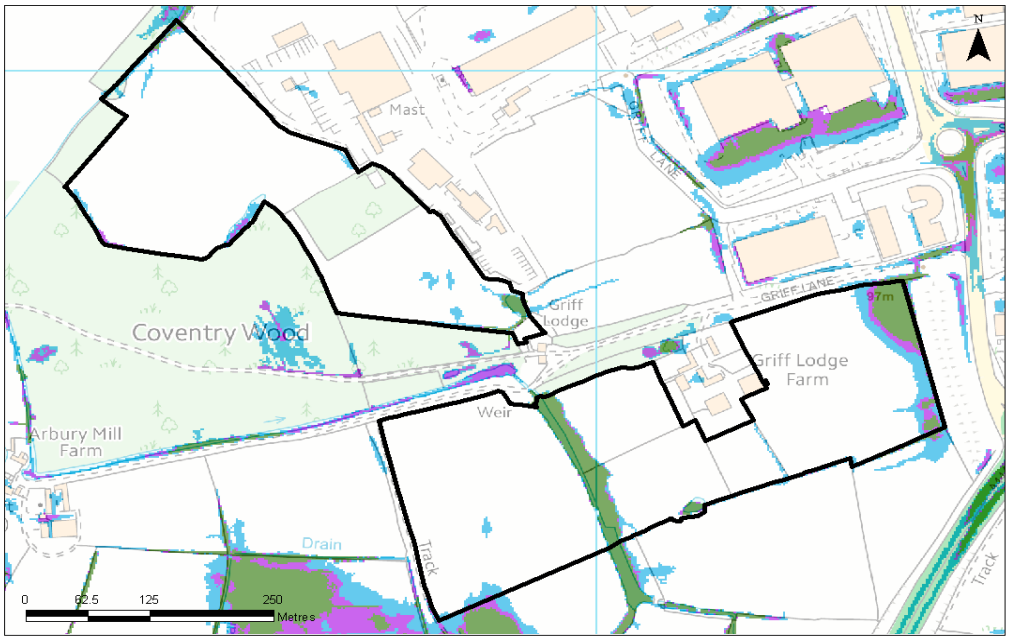
Potential development location

Council boundary

Flood Zone 3 with Climate Change

Indicative Extent of Flood Zone 3 with Climate Change

Surface Water Map



Potential development location

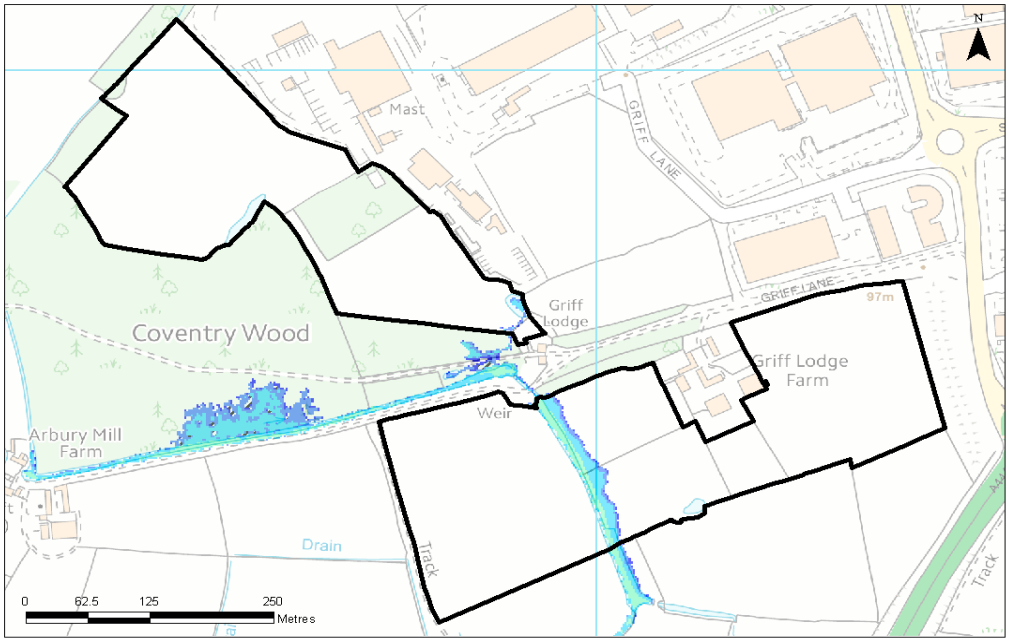
Council boundary

uFMfSW 30-year Extent

uFMfSW 100-year Extent

uFMfSW 1,000-year Extent

Depth Map - fluvial flooding (1 in 100-year event)

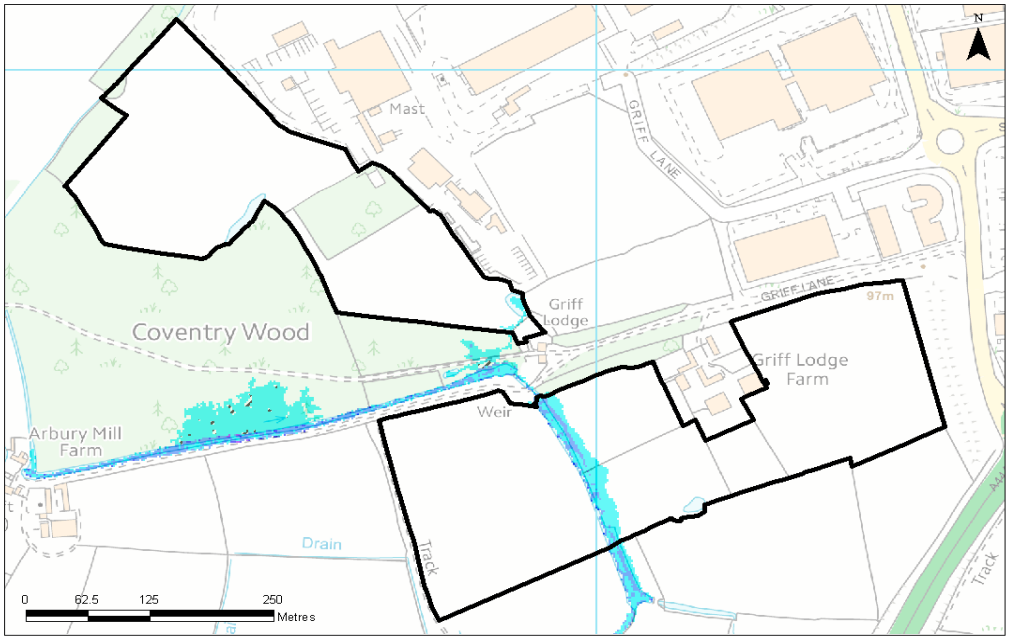


Potential development location
Council boundary

Depth (m)

0 - 0.10	0.50 - 1.00	2.00 - 2.50	3.50 - 4.00
0.10 - 0.50	1.00 - 1.50	2.50 - 3.00	>4.00
	1.50 - 2.00	3.00 - 3.50	

Velocity Map - fluvial flooding (1 in 100-year event)

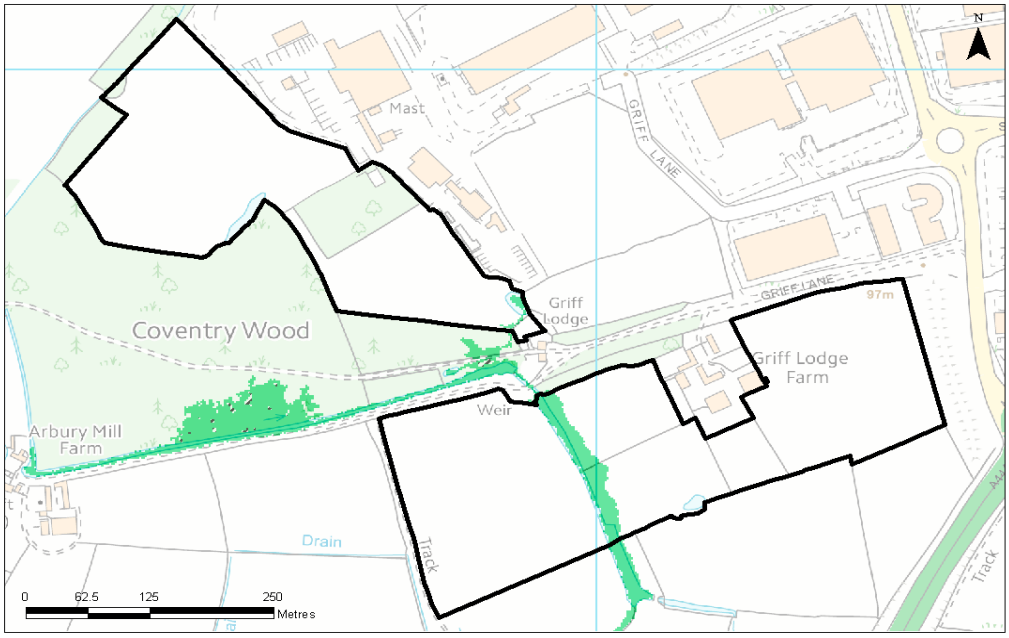


Potential development location
Council boundary

Velocity (m/s)

0 - 0.2	0.2 - 0.5	0.5 - 1.0	1.0 - 2.0
			> 2.0

Hazard Map - fluvial flooding (1 in 100-year event)



Potential development location
Council boundary

Hazard Rating

Very low hazard - caution
Danger for some
Danger for most
Danger for all

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Mapping suggests high permeability at this site, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.
Filtration		All filtration techniques are likely to be suitable. If the site has contaminated land issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows.If the site has groundwater contamination issues, a liner will be required.

- *The site is not located in an area designated by the Environment Agency as a landfill site.*
- *The site is not located within any Environment Agency designated ground source protection zones.*

Flood Defences:
There are no flood defences at this site.

Flood Warning:
There are currently no flood warning areas covering this site.

Climate Change:

• Increased storm intensities.
• Increased water levels in the unnamed drains

Flood Risk Implications for Development:

• Only a small proportion of the development site is affected by flood levels, therefore all development should be located within Flood Zone 1, unless appropriate in accordance with NPPF Planning Practice Guidance.
• A site specific flood risk assessment will be required for any development in Flood Zone 2 and 3.
• Consideration of the peak flows on the unnamed drain is required when considering drainage.
• Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
• Assessment for runoff should include allowance for climate change effects.
• New or re-development should adopt exemplar source control SUDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
• Onsite attenuation schemes would need to be tested against the hydrograph of the receiving watercourse to ensure flows are not exacerbated downstream within the catchment.
• Demonstration that development at this location can be made safe.
• New development must seek opportunities to reduce overall level of flood risk at the site for example by:
o Reducing volume and rate of runoff
o Relocating development to zones with lower flood risk
o Creating space for flooding.
• Consider using Flood Zone 2 and 3 as public open space.