Comer Homes Group

c/o Savills

Via Email

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5th July 2021

Dear Sir/Madam,

Flood Risk Assessment for the Permitted Development application from office to residential use at Highfield Building, Midhurst Road, Fernhurst, Haslemere GU27 3HA

This letter report summarises the flood risk and surface water drainage arrangements at the above site, to support the permitted development (PD) application for the conversion of the existing office building to residential units. A Flood Risk Assessment has previously been prepared by AWP in January 2019 for an alternative scheme at the site. This document has been consulted and will inform parts of the assessment for the PD application.

The site location is shown in **Appendix A**, and the proposed development layout is enclosed in **Appendix B**. Proposals consist of a total of 235 flatted units across two storeys comprising of: 155 x one-bedroom apartments, 65 x two-bedroom apartments and 15 x three-bedroom apartments.

The existing building is understood to have been unoccupied since the 1990s however a neighbouring office building 'Pagoda' has remained operational. Two car parks are within the red line boundary and are located to the north and west of Highfield House. The site is surrounded on all other sides by the Cooksbridge Meadow Nature Reserve.

Topographic Survey

A topographic survey is enclosed in **Appendix C.** Levels in the car park to the north of the building range between 57m AOD and 59m AOD. Levels in the car park to the east of the building range between 63m AOD and 60m AOD.

The entrances to the building appear to be located via down a set of steps. For example, along the western perimeter of the building levels at the top of the stairs along the footpath are around 55.8m AOD. Levels then fall to a low of 54.9m AOD directly adjacent to the building.

Local Policy- South Downs Local Plan (2014-2033)

The South Downs National Park Authority is a public body responsible for the protection and management of the South Downs National Park. Adopted in 2019, relevant polices have been detailed below.

Fenhurst Parish published a neighbourhood plan in 2016 and the site is noted for its development potential and is an important brownfield site within the parish which could help deliver housing needs.

Policy Strategic Policy SD49: Flood Risk Management

1. Development proposals will be permitted that seek to reduce the impact and extent of all types of flooding through:

a) Steering development away from areas of flood risk as identified by the EA and the SFRA and directing development to Flood Zone 1, wherever possible. Development in areas of flood risk will, where relevant, be required to meet the national Sequential and Exception Tests;

b) Not increasing the risk of flooding elsewhere and, wherever possible, reducing overall flood risk;

c) Flood protection, mitigation and adaptation measures necessary and appropriate to the specific requirements of the proposal, the development site and other areas potentially impacted; and

d) Ensuring that the integrity of coastal and river flood defences are not undermined.

2. Development proposals should, where required by national policy and guidance, be accompanied by a site specific Flood Risk Assessment (FRA).

3. Proposed flood protection, mitigation and adaptation measures should be supported with a management schedule, the identification of the body responsible for maintenance, and evidence of funding and maintenance in perpetuity.

West Sussex Local Flood Risk Management Strategy (2013 – 2018)

This document was prepared to assess present and future flood risk in the county from all sources and assess the impact that any future development would have on flood risk. The information in this report allows the local planning authority to make informed development decisions across the district, by locating development in areas at low risk of flooding. South Downs National Park Authority is not noted as a priority area at risk and the site is not located within a 'wet spot' where properties are known to be a significant risk of flooding.

Flood Risk Assessment

The contents of this flood risk summary are based on the advice set out in The National Planning Policy Framework (NPPF) published in July 2019 and the Planning Practice Guidance (PPG), published March 2014.

Fluvial/Coastal - With reference to the Flood Map for Planning (**Appendix D**), the site is located in Flood Zone 1 which indicates a less than 1 in 1000 probability of flooding from rivers and the sea each year. The risk of fluvial flooding to the development is considered to be low.

Surface Water – Surface water flooding refers to flooding caused when the intensity of rainfall, particularly in urban areas, can create runoff which temporarily overwhelms the capacity of the local drainage systems or does not infiltrate into the ground. The water ponds on the ground and flows towards low-lying land. This source of flood risk is also known as 'pluvial'.

Causes of Surface Water Flooding

As identified in the Flood Risk Assessment produce by AWP, the surface water flooding in this instance is sourced from the presence of a culverted watercourse which flows through the site. It is understood the watercourse was culverted to facilitate the construction of the site in the 1980s. The watercourse enters 600mmdia culvert along the southern boundary of the site and flows a distance of approximately 230m to the north east where it flows into a tributary of the River Lod. The surface water maps therefore show flooding that may result should the culvert exceed capacity or become blocked and force flows above ground. The velocity mapping identifies the route of the watercourse with the overland flow path flowing north east across the southern boundary of the site.

Surface water flooding within the site is also attributable to low points however the flooding shown within the 'courtyard' areas is not considered to reflect the reality of flooding on the ground. In a low-risk scenario flood depths between 300mm and 900mm are shown within the courtyards. It is anticipated the mapping does not account for the presence of the building between each courtyard area which would obstruct flows from

the outer perimeter of the building. The mapping is an overview based on topographic low points and the assumption that there are no drainage features, hence the courtyard areas are filled with water.

Long Term Flood Map Modelled Scenarios

A high-risk scenario indicates a greater than 1 in 30 probability of surface water flooding each year, i.e. the most frequently occurring scenario. In a high-risk scenario, surface water flooding with depths below 300mm is also shown to pool up the buildings edge along the western perimeter of the site. Assessing the topographic level in this area it appears the surface water flooding is attributable to a low point.

A medium risk scenario indicates a probability of surface water flooding between 1 in 30 and 1 in 100 each year. In a medium risk scenario, surface water flood depths are shown to be between 300mm-900mm along the building edge.

Flooding appears to be mainly limited to the edges of the building. Assessing the topographic levels along the perimeter of the building, it is evident surface water would not be able to reach such depths as shown on the EA's surface water map. The lowest level in this part of the site is 54.71m AOD. Immediately south east of this, the ground levels adjacent to the building are 54.87m AOD. This ground level then continues around the outside of the building to the east. Therefore, water would only pool to 54.87m AOD (i.e. 160mm) before it would flow away from this low spot and either dissipate into the landscaped area or flow around the building.

As aforementioned, the topographic survey shows there are several gullies located in the area shown to experience surface water flooding, further inhibiting the ability of flood waters to reach up to 900mm as runoff would enter the drainage network.

The car parks within the wider red line boundary remain unaffected by surface water flooding.

A low-risk scenario indicates a probability of surface water flooding between 1 in 100 and 1 in 1000 each year (i.e., the least frequent but worst-case scenario). In this scenario, surface water flood depths are shown to be between 300mm-900mm along the building edge. As described above, it is extremely unlikely such depths would be able to pool onsite. The car parks within the red line boundary are shown to remain outside the surface water flood extent and are at very low risk of surface water flooding.

The EA's surface water flood map, from the GOV.UK website, are included in **Appendix E**.

Mitigation measures are discussed below.

Sewer – It is understood there are no adopted sewers within the vicinity of the site. Surface water runoff from the roof of the building currently discharges into the culverted watercourse. Within the car parks, the topographic survey identifies several gullies. It is understood these enter the onsite private surface water sewer network which ultimately discharges to the watercourse north east of the site.

It is understood the site was served by two intermediate and one terminal private pumping station and rising main which conveyed foul flows 500m north to Cooks Bridge Sewage Treatment Works. It is understood much of this infrastructure is in a state of disrepair and should be repaired as part of the site redevelopment.

A residual risk of sewer flooding is present on site should the pumping station fail, or in the event that there is a blockage within the surface or foul water drainage systems onsite. Measures in place to manage the surface water flood risk would also mitigate against sewer flooding, and have been discussed below.

Groundwater – The MAGIC Map website (https://magic.defra.gov.uk/MagicMap.aspx) shows the site is not located above a designed aquifer or a source protection zone.

British Geological Survey (BGS) online mapping shows the site to be located on a bedrock of Weald Clay Formation – Mudstone with no superficial deposits recorded. Borehole records on the BGS website identify

a borehole drilled to a depth of 66m approximately 1km north of the site (BGS Reference: SU82NE6). Groundwater was not struck until 33m below ground level, which is very deep.

There is no basement level therefore it is unlikely that groundwater flooding would pose a significant risk.

The risk of flooding from groundwater is therefore considered to be low.

Artificial – The Long-Term Flood Risk map on the GOV.UK website shows the site is not located in an area at risk of flooding from reservoirs. There are no other artificial sources nearby, so the risk of flooding from artificial sources is considered to be low.

Mitigation Measures

Finished Floor Levels

The finished floor levels at the building entrances leading into the foyer area will be raised by 300mm above the current threshold level which is likely to be around 450mm above the surrounding ground level allowing for the slab depth. This will provide a level of protection, however it is not possible to raise any further due to access constraints. As previously discussed, it is unlikely that surface water flood depths would exceed 300mm.

Domestic Flood Warning System

The site is not located within an area which receives EA Flood Warnings. Although flood warnings are not issued for surface water flooding, as the flooding at the site is directly attributable to the presence of the culverted watercourse, high water levels of nearby watercourses are likely to correspond with the surface water flood maps. It is recommended that a private domestic warning system is installed, which would include sensors located around the building to detect rising surface water. The monitoring system could be located on all external thresholds with warnings sent directly to residents or an appointed management company should flood waters become present at the building entrances. An example is the 'Aquasentry Flood Alarm System' or similar which sends a text or email directly to residents. Such a feature may be particularly useful to residents located on the ground floor, providing time to gather belongings or raise belongings off the ground. It is recommended that an appointed management company is notified and attends the building upon receipt of a message, to inspect the situation and carry out flood mitigation tasks if necessary.

Flood Resilient Construction

As the proposals consist of a conversion, it may not be possible to implement extensive flood resilient construction measures. Nonetheless, internal flood resilient measures are recommended to be retrofitted.

For example, for the communal entrance a suitable floor finish such as ceramic or concrete-based floor tiles, stone, and sand/cement screeds could be used. This type of flooding would be easy to clean and restore should a flooding occur.

Some examples of flood resilient internal fittings are:

- Place fittings (e.g. electrical appliances, gas ovens) as high as practical above the floor to minimise the risk of being affected by floodwater.
- Use plastic or stainless steel for kitchen units (i.e. materials not appreciably affected by floodwater).
- Raise plug sockets as high as possible (ideally a minimum of 900mm above ground level)
- Use PVC skirting boards and tiled floors (e.g. marble or stone).

During the proposed conversation, it may be possible to improve existing service features or fittings.

Some example of flood resilient services are:

- Water, electricity and gas meters should be located as high as possible (ideally a minimum of 900mm above ground level)
- Communications wiring: wiring for telephone, TV, Internet and other services should be protected by suitable insulation in the distribution ducts to prevent damage. Any proposed design solution for flood insulation on all potentially vulnerable wiring should be discussed with the relevant service providers.
- Electrical services: electrical sockets should be installed above flood level for ground floors to minimise damage to electrical services and allow speedy re-occupation. Electric ring mains should be installed at first floor level with drops to ground floor sockets and switches.

Foul Pumping Station

It is anticipated the foul rising main and pumping station will be replaced as part of the proposals. It is recommended an alarm system warning of failures is fitted on the foul pumping station to alert site management.

It is recommended that the site management sign up to a maintenance contract with the foul pump manufactures to allow for regular maintenance and upkeep.

Demountable Flood Gates

Demountable flood gates are recommended at all entrances. It is recommended these are securely located near the entrances for swift installation when required. The flood gates could be deployed when the alarm system detects the presence of flood waters at the building entrances. It would be the responsibility of the management company to deploy the flood gates and ensure they remain in working order.

Surface Water Drainage

The proposed development will be a conversion of the existing office building and will not increase the footprint of the building or area of hardstanding. The existing building will continue to drain in the same manner so no new drainage strategy has been included as part of this Flood Risk Assessment.

The existing onsite drainage features should be jetted and inspected prior to occupation with any faults rectified. The maintenance of the onsite drainage is anticipated to remain private and the responsibility of an appointed maintenance company.

Pre-Development Enquiry

It is recommended South East Water be consulted with regards to the proposals and sewerage capacity at Cooks Bridge Sewerage Treatment Works.

Conclusion

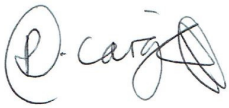
This Flood Risk Assessment letter report has been prepared to support the Permitted Development application for the proposed conversion of the existing office building to 235 flatted residential units at Highfield Building, Midhurst Road, Fernhurst, Haslemere GU27 3HA.

In a low-risk scenario, surface water flood depths are shown to be up to 900mm. Assessing topographic survey levels, up to around 160mm of flooding would be able to pool before surface water would flow to the south east around the building and dissipate into the landscaped area. The presence of the onsite surface water drainage network would further prevent the pooling of water to such depths. Given the nature of a conversion, flood mitigation measures will need to be retrofitted as part of the conversion. The finished floor levels of the building entrance leading into the foyer will be raised by 300mm. Measures such as using sacrificial materials in the entrance halls which can be easily replaced should a flood event occur as well as raising electric sockets and meters will limit the damage caused in a flood event. It is recommended that a

private domestic warning system is installed, which would include sensors located around the building to detect rising surface water, alerting residents should a flood event occur. Demountable flood gates are recommended at all entrances and could be deployed when the alarm system detects the presence of flood waters at the building entrances.

There are to be no increases in impermeable area at the site so no increase in surface water runoff. As such, there are no planned alterations to the existing surface water drainage system serving the building.

Yours sincerely,



Rose Cargill

Engineer

Enc. Appendix A – Location Plan

Appendix B – Proposed Development Plans

Appendix C – Topographic Survey

Appendix D – EA Flood Map for Planning

Appendix E – Surface Water Mapping

Appendix A – Location Plan

NOTES:

LEGEND

+9.450	Height Levels
FFL+9.450	Proposed Floor Finished Levels
1 / 1:100	Section Marks
	Site Boundary
	Outline of Existing Building

KEY TO MATERIALS:

REV:	DATE:	DETAILS:	INITIALS:	REV:	DATE:	DETAILS:	INITIALS:

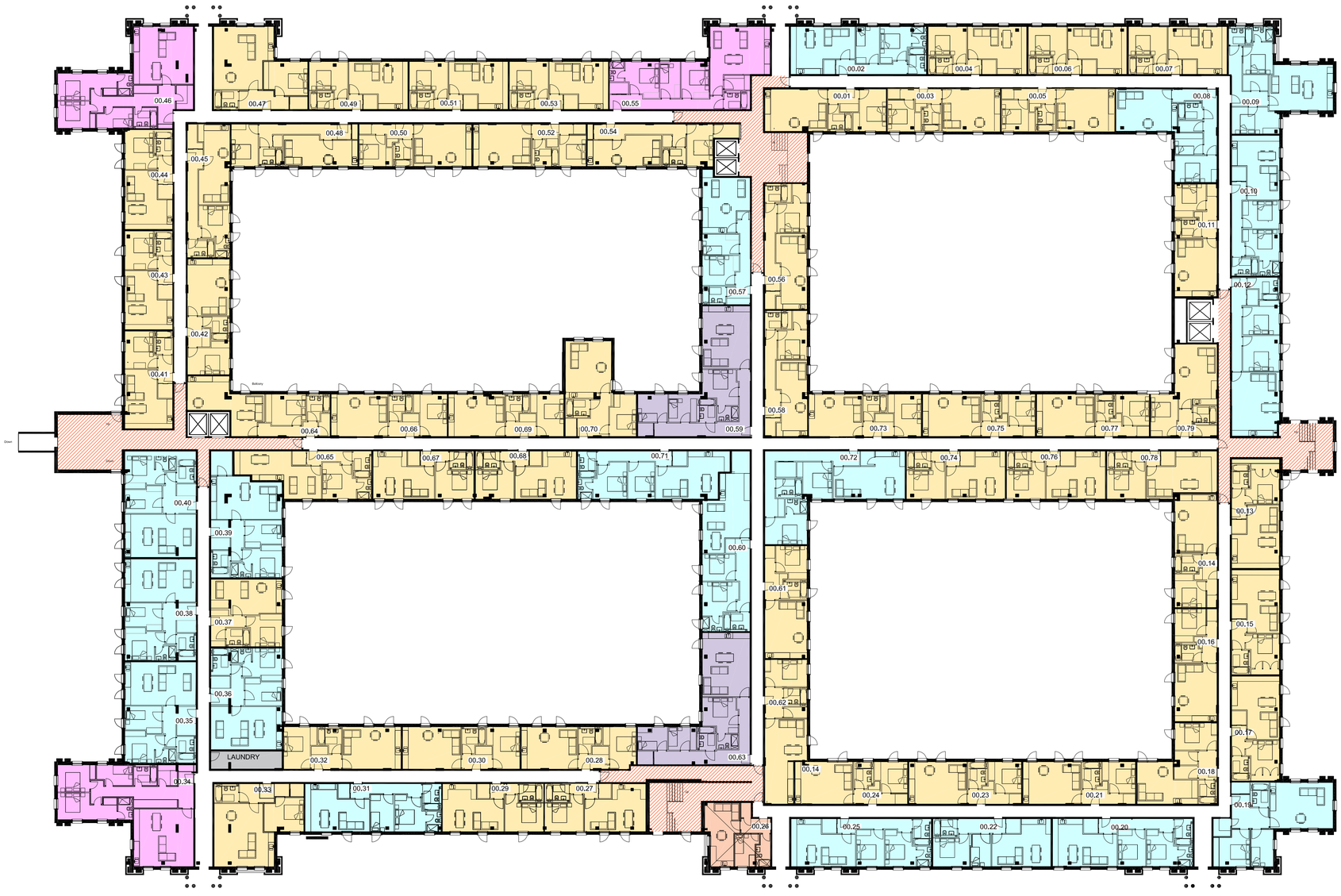
NORTH POINT: N

KEY PLAN:

PLUS ARCHITECTURE
Chancery Lane, Dublin 8, Ireland.
W: www.plusarchitecture.ie T: 353 (0)1 521 3378

PROJECT:	Highfield House	PROJECT NO.: 476	DATE: 27.05.2021
CLIENT:	Comer Homes Group	DRAWING NO.: 476_B1_01_01	REVISION
TITLE:	Site Plan	DRAWN BY: LC	SCALE AT A1: 1:1000
ISSUE TYPE:	Information	CHECKED BY: GW	SCALE AT A3:

Appendix B – Proposed Development Plans



NOTES:

LEGEND

- +9.450 — Height Levels
- FFL+9.450 — Proposed Floor Finished Levels
- 47/08/1 — Section Marks
- Site Boundary
- Outline of Existing Building

KEY TO MATERIALS:

REV:	DATE:	DETAILS:	INITIALS:

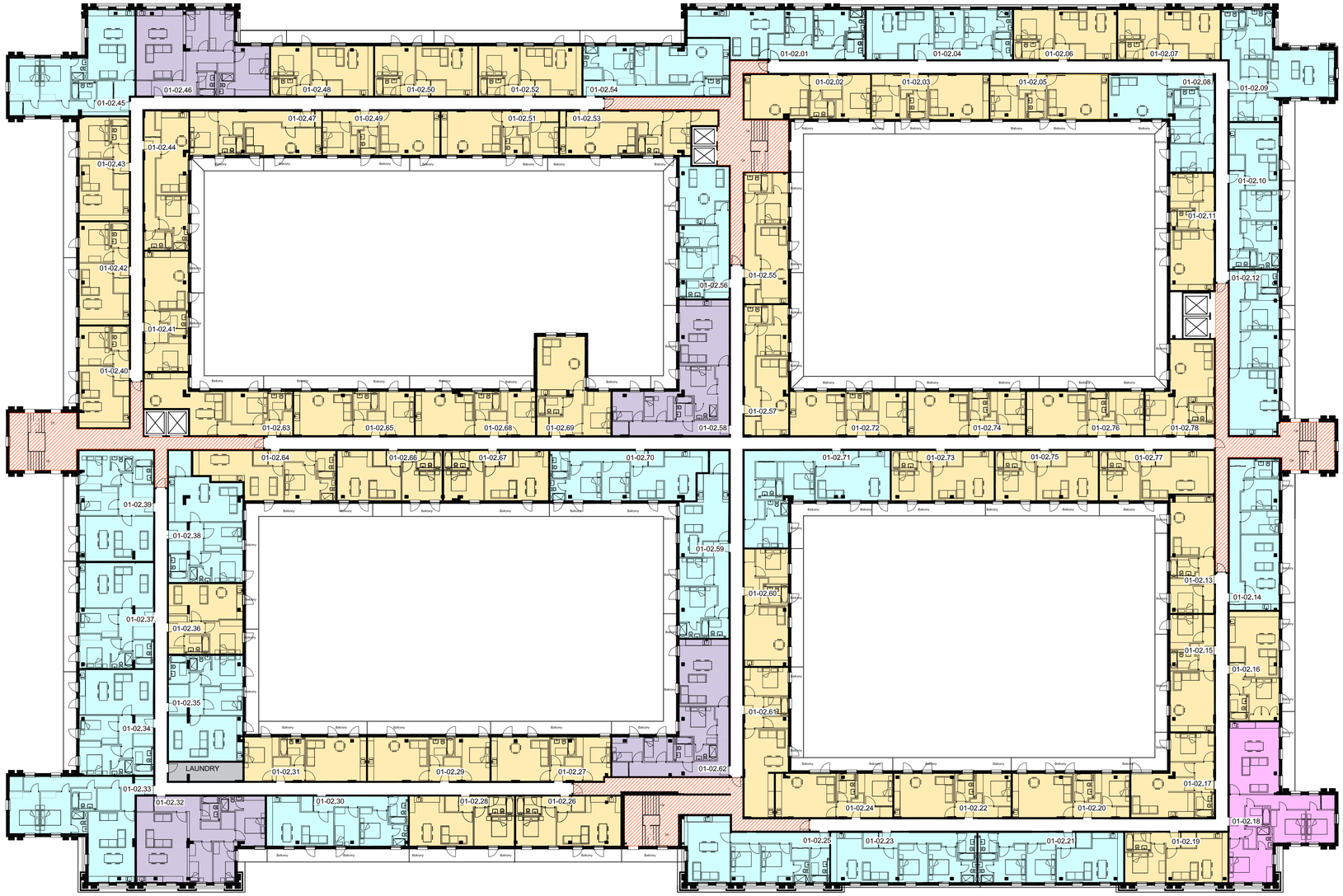
REV:	DATE:	DETAILS:	INITIALS:

NORTH POINT: N

KEY PLAN:

PLUS ARCHITECTURE
Chancery Lane, Dublin 8, Ireland.
W: www.plusarchitecture.ie T: 353 (0)1 521 3378

PROJECT: Highfield House	PROJECT NO.: 476	DATE: 27.05.2021	
CLIENT: Comer Homes Group	DRAWING NO.: 476_B1_02_01	REVISION	
TITLE: Proposed Ground Floor	DRAWN BY: LC	SCALE AT A1: 1:250	
ISSUE TYPE: Information	CHECKED BY: GW	SCALE AT A3:	



Fire zone

1 Bed

1 Bed (1 p)

2 Bed

3 Bed

3 Bed (4p)

NOTES:	LEGEND	KEY TO MATERIALS:	REV:	DATE:	DETAILS:	INITIALS:	REV:	DATE:	DETAILS:	INITIALS:	NORTH POINT:	KEY PLAN:
	+9.450 Height Levels FFL+9.450 Proposed Floor Finished Levels (TYP.02) Section Marks Site Boundary Outline of Existing Building										N	

PLUS ARCHITECTURE
Chancery Lane, Dublin 8, Ireland.
W: www.plusarchitecture.ie T: 353 (0)1 521 3378

PROJECT:	Highfield House	PROJECT NO.: 476	DATE: 27.05.2021
CLIENT:	Comer Homes Group	DRAWING NO.: 476_B1_02_02	REVISION
TITLE:	Proposed First & Second Floor	DRAWN BY: LC	SCALE AT A1: 1:250
ISSUE TYPE:	Information	CHECKED BY: GW	SCALE AT A3:

Appendix C –Topographic Survey

Appendix D – Flood Map for Planning

Flood map for planning

Your reference	Location (easting/northing)	Created
HighfieldHse	**489748/126907**	**18 Jun 2021 13:49**

Your selected location is in flood zone 1, an area with a low probability of flooding.

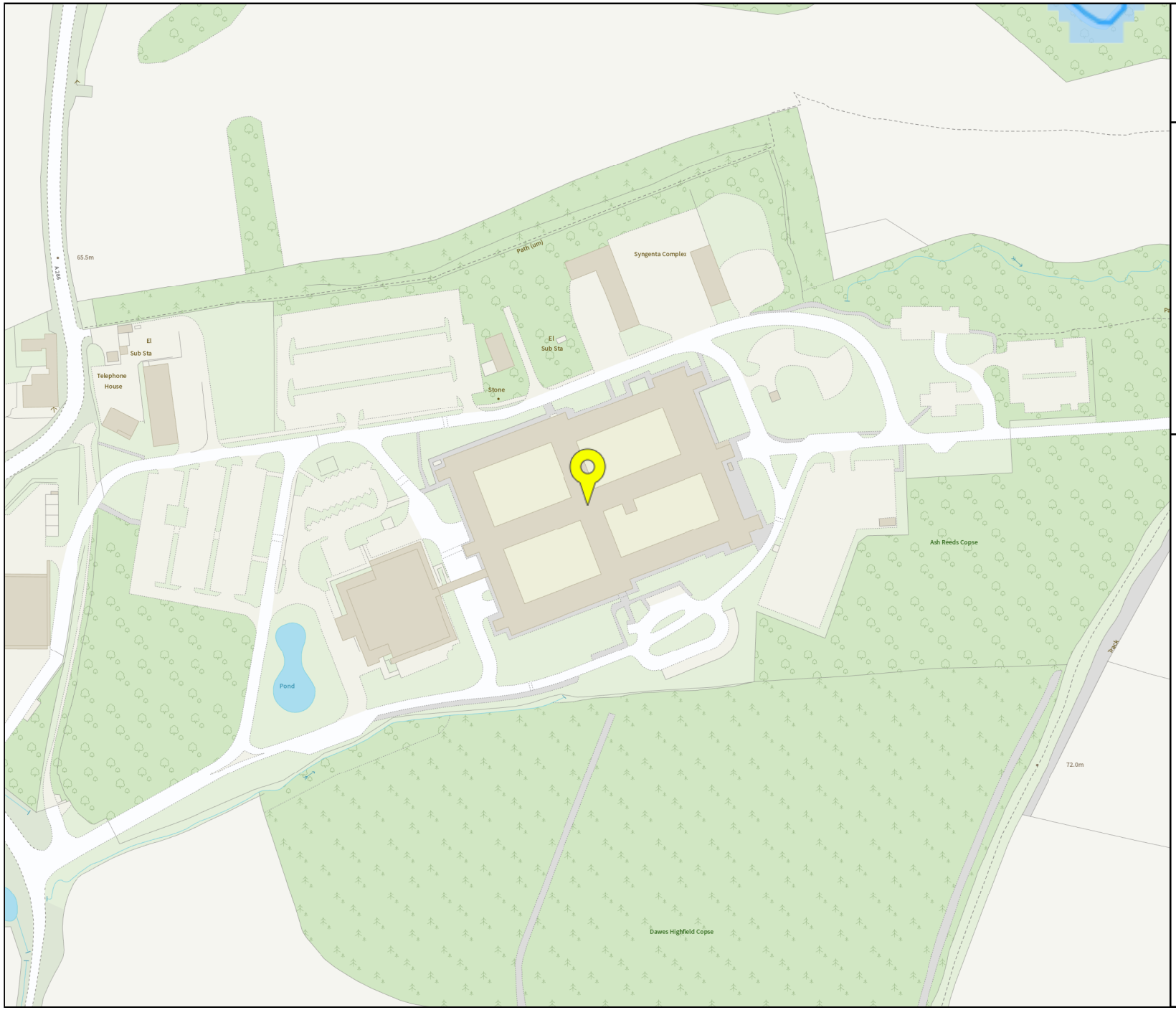
This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
HighfieldHse

Location (easting/northing)
489748/126907

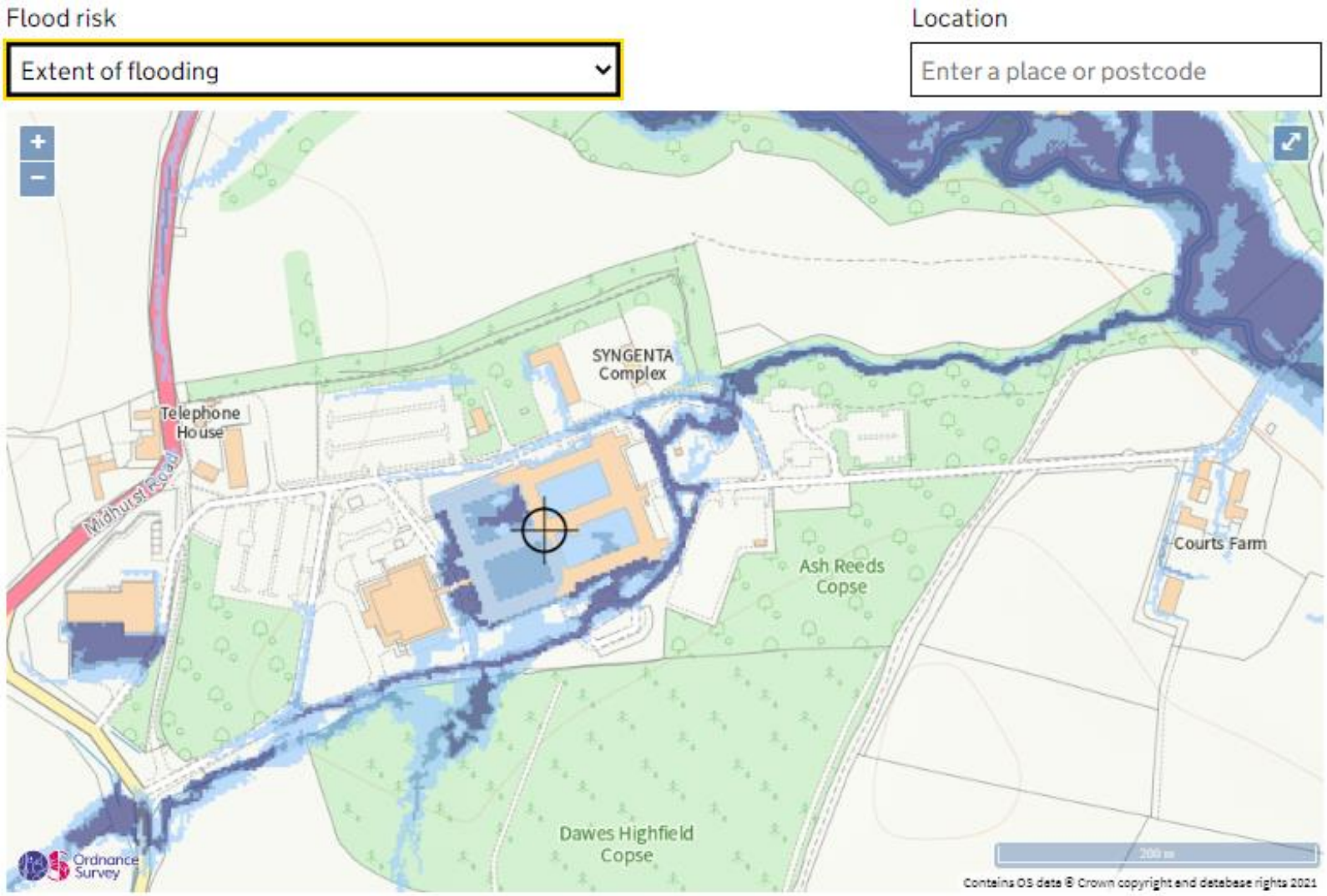
Scale
1:2500

Created
18 Jun 2021 13:49

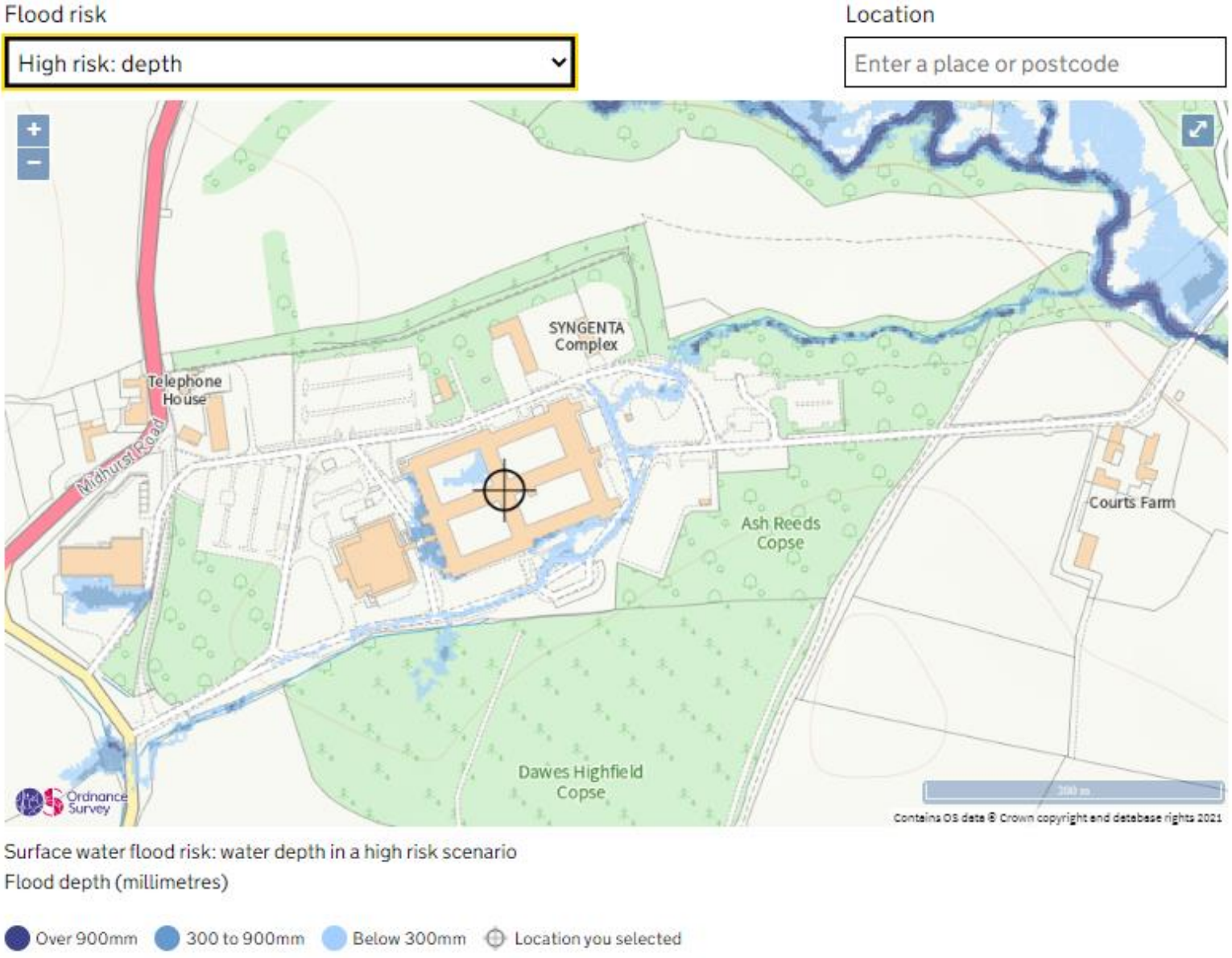
- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m

Appendix E – Surface Water Flood Map



Source: https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?easting=489746&northing=126911



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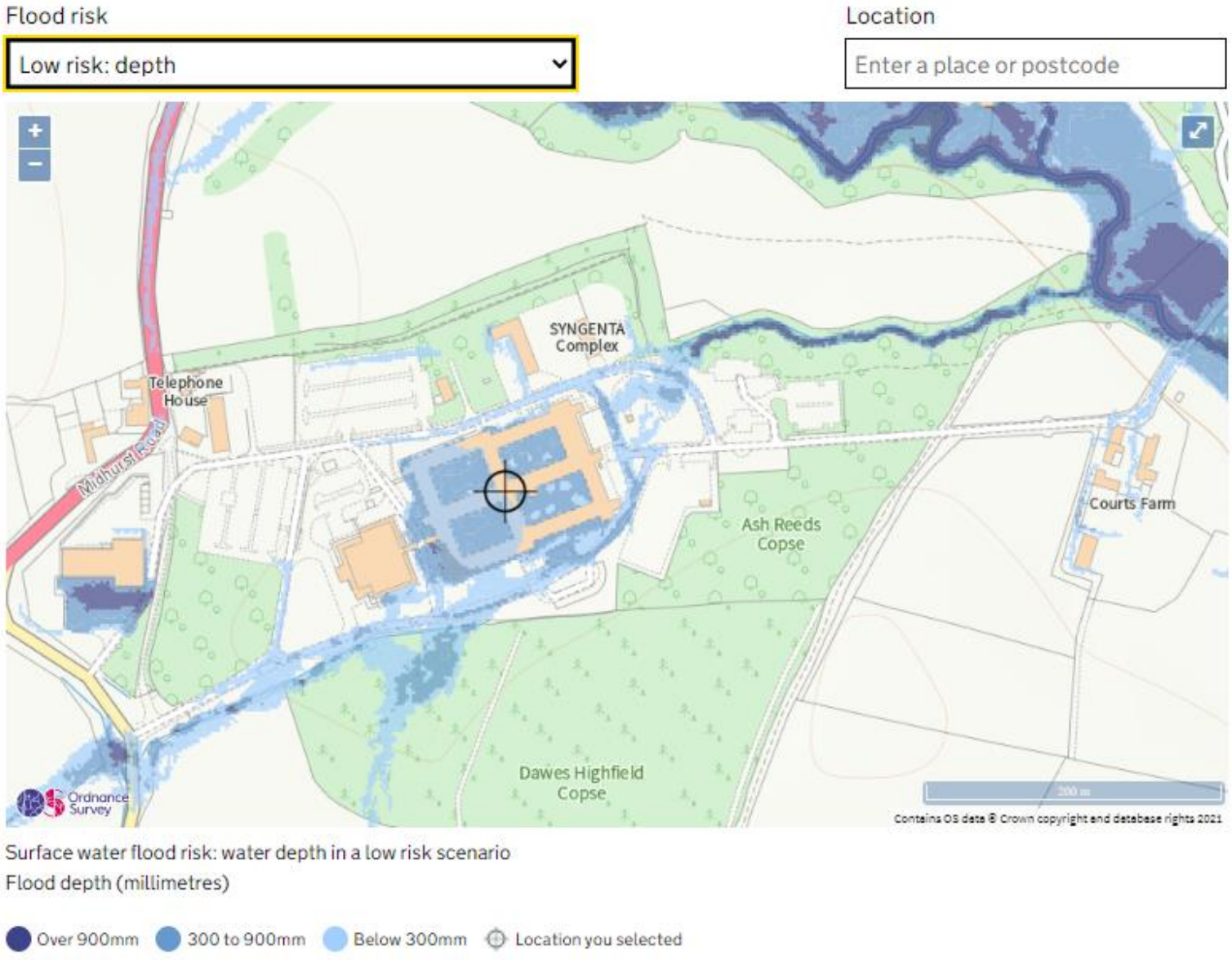

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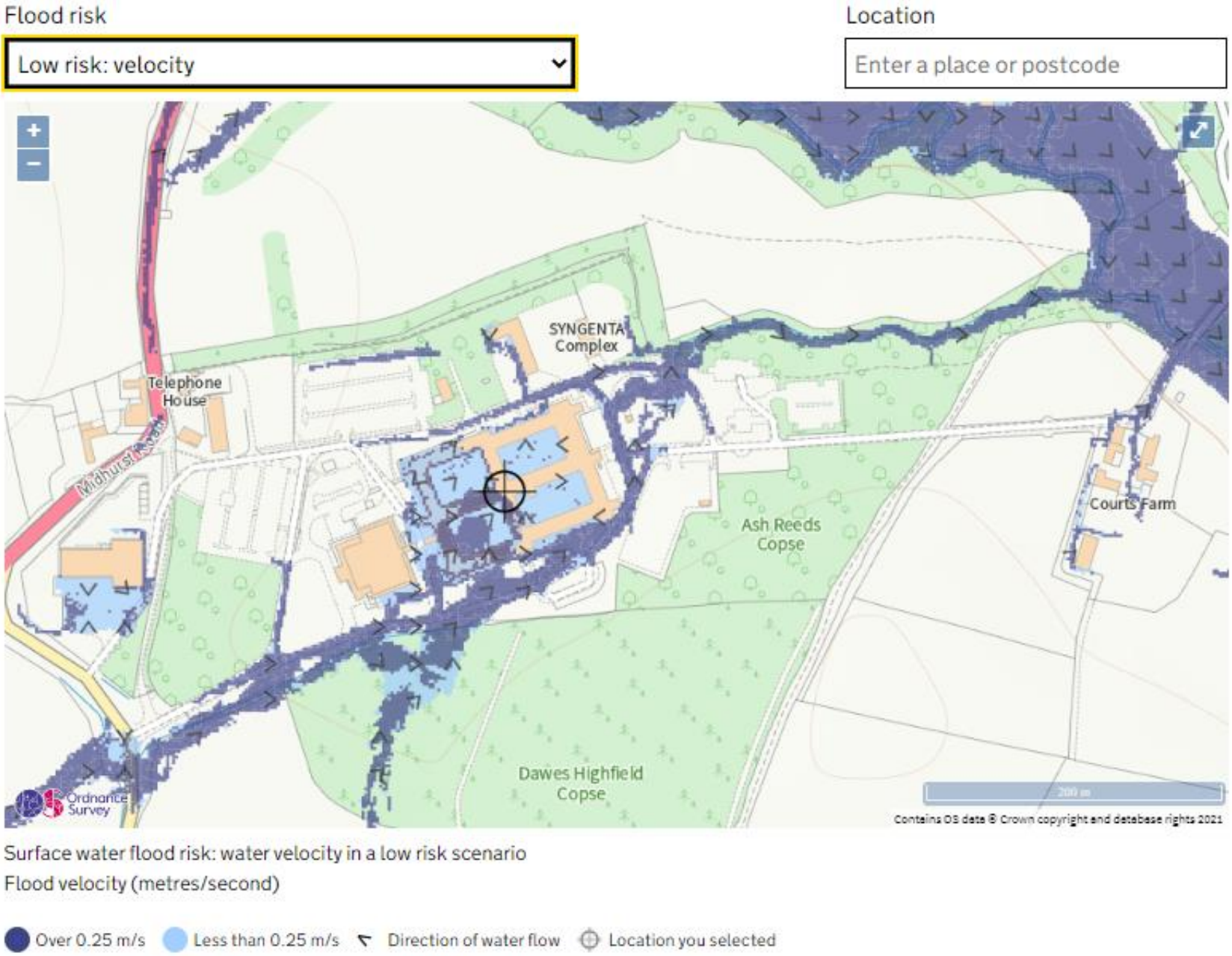

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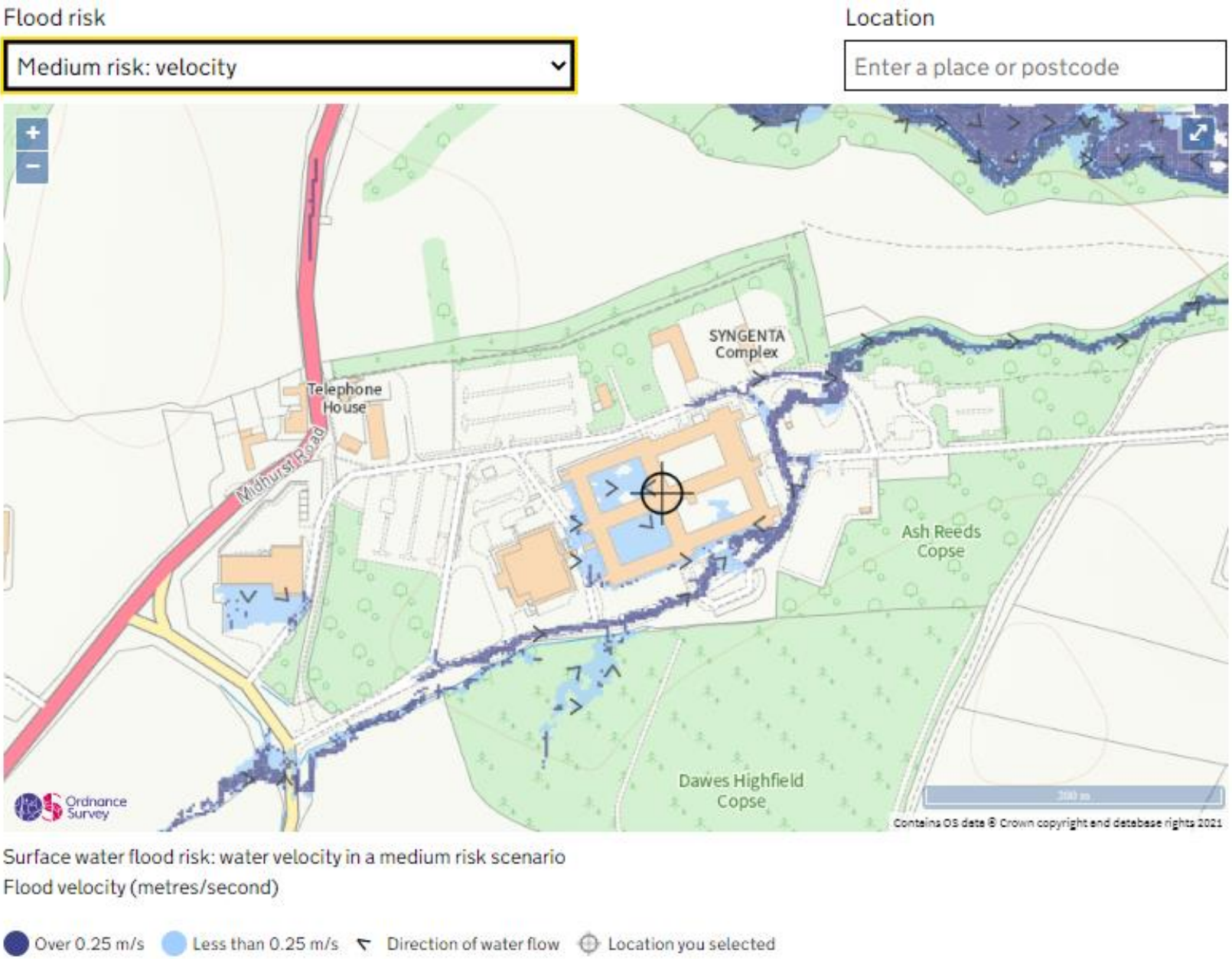

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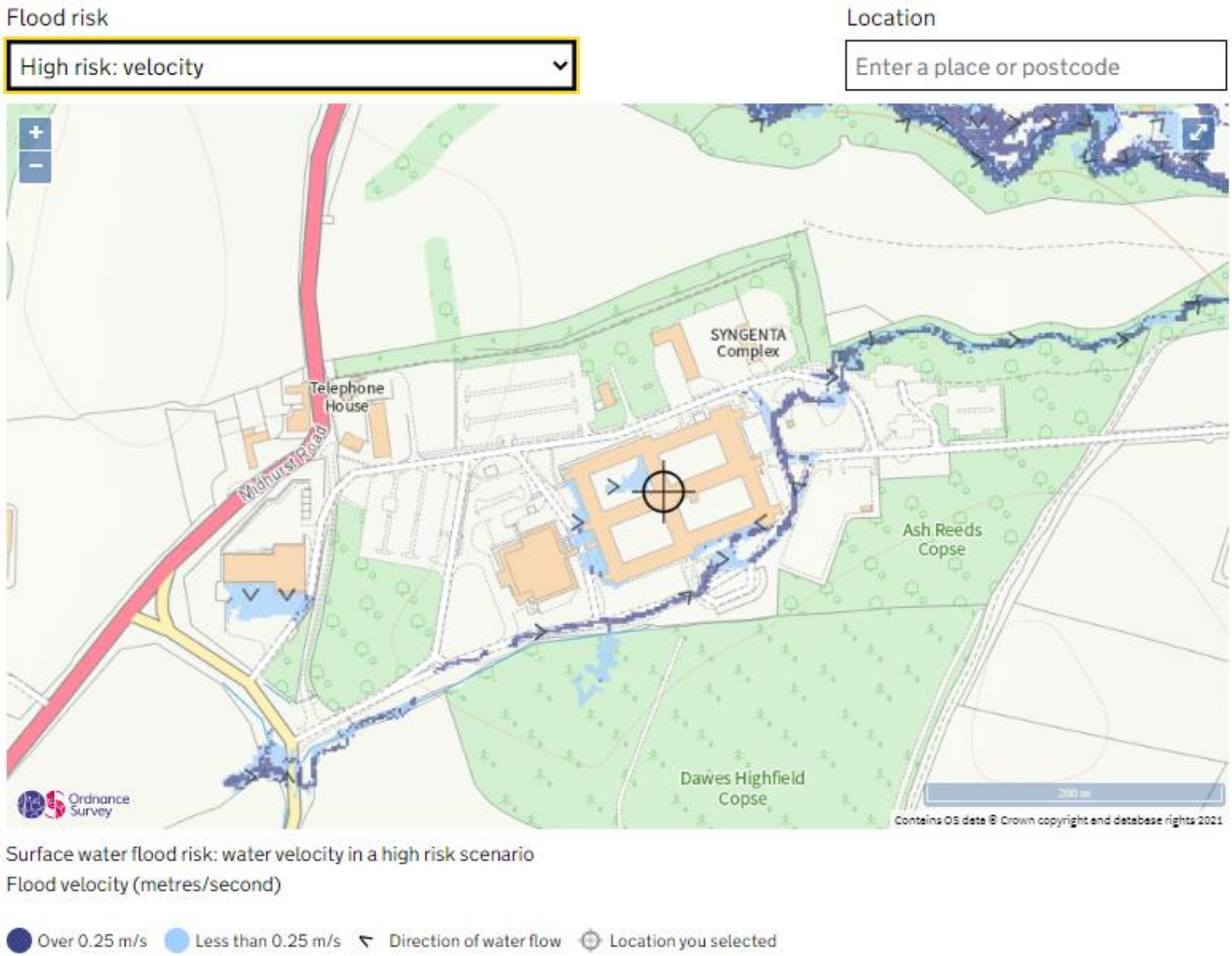

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