

# Proposed Storage Unit at Coverstructures Commercial, Exeter Road, Ottery St Mary, EX11 1RE

## Flood Risk Assessment

20.05.2020

ARA Architecture

Rev A – 21.05.2020

- 1.0 The proposal, the subject of this Flood Risk Assessment is a development of a new industrial storage unit, to be used as additional secure storage building, located at Coverstructures Commercial, Exeter Road, Ottery St Mary, EX11 1RE
- 2.0 The site is located within Flood Zone 3, as designated by the Environmental Agency.

The Flood risk is from fluvial flooding from the River Otter to the East of the site and Thorne Farm Stream to the West of the Site.

Refer to Appendix A for Flood Mapping

- 3.0 There have been two previous flooding events on the site which have been recorded by the Environment Agency. The first flood event was in July 1968 and the latest being in October 2008.

The below image has been provided by the Environment Agency from the latest flood event in October 2008.



- 4.0 The site benefits from flood defences running along the side of the River Otter as well as flood defence structures to both the River Otter and Thorne Farm Stream.
- The location and details of the existing flood defences have been provided by the Environment Agency - refer to Appendix B.
- 5.0 The Defence Details Table within Appendix B gives flood level details for the embankment of the River Otter adjacent to the site - see Asset 3602. This data shows that the embankment provides a level of defence from flooding up to a level of 41.9m AOD (above ordinance datum).
- 6.0 The flood event of October 2008, as depicted in the above photograph in front of the former Flegg's premises, was largely dominated by fluvial inflows from the Thorne Farm Stream. Following this event, the Environment Agency constructed a scheme on the Thorne Farm Stream to restrict the volumes of water that can reach the industrial estate area and direct excess flows into the River Otter upstream of the estate. The chances of a reoccurrence are therefore much reduced.
- 7.0 The 1 in 100 Flood Depth Map within Appendix A shows a potential flood depth of the site of up to 0.6m. Therefore the proposed building will be provided with a floor level 0.6m above the existing ground level.
- 8.0 The depth grid mapping shows a scenario in the absence of any flood defences. The quoted 0.6m depth of flooding is therefore a conservative estimate, given the active defence structures on both the River Otter and the Thorne Farm Stream.
- 9.0 The existing ground of the site is at a level of 40.06m AOD. The proposed floor level of the new storage building will therefore be constructed at a level of 40.66m AOD.
- 10.0 The flood defence embankment on the River Otter which protects the site is noted as having a flood defence level of approximately 41.9mAOD, which demonstrates a good level of protection above the proposed 40.66mAOD finished floor level of the development.
- 11.0 It is a reasonable assumption to assume that the 1-in-1000 year AEP fluvial flood outline, as shown by the extent of Flood Zone 2, provides a conservative outline of the design flood event (i.e. 1-in-100 year AEP) with an allowance for climate change over the 60 year lifetime of the commercial development. It is noted that this is very marginally larger than the Flood Zone 3 outline, which demonstrates that the impacts of climate change will be minimal. This is to be expected, as there is a substantial floodplain associated with the River Otter at this location and any increased flows resulting from climate change will have a negligible impact on water levels.

- 12.0 All electrical installations will be provided at worktop level (1050mm above floor level).
- 13.0 Hazardous substances and waste will be appropriately contained and stored to ensure that they do not come in contact with flood water.
- 14.0 The existing site surface water drains directly to an adjacent watercourse via private gravitational drainage system. The drainage systems will follow the existing drainage regime by discharging surface water to the adjacent watercourse.
- 15.0 The proposed development will not increase the impermeable area of the site from the existing and will not increase the rate and volume of runoff, therefore will not increase the risk of flooding elsewhere.
- 16.0 The owners of the development will sign-up to the Environment Agency's flood warning service, in order to receive advance warnings of any impending flood risk in the vicinity. An emergency flood plan will be developed to highlight necessary actions in the event of flooding.
- 17.0 Through receiving advanced warnings, it would be anticipated that safe evacuation of any occupants could be achieved before any flooding occurred. Access routes to the site are likely to be inundated by up to a 0.5m depth of water during a flood event and in an emergency it is felt that this could be negotiated on foot for the short distance to higher ground.
- 18.0 In the unlikely event of safe refuge being required within the building, it is intended to provide an elevated storage area inside the building which will be readily accessible for occupants and retained with suitable free space for this purpose.

# APPENDIX A

## FLOOD MAPPING



### Flood map for planning

Your reference  
Coverstructur

Location (easting/northing)  
309185/95265

Created  
20 May 2020 12:58

**Your selected location is in flood zone 3, an area with a high probability of flooding.**

#### This means:

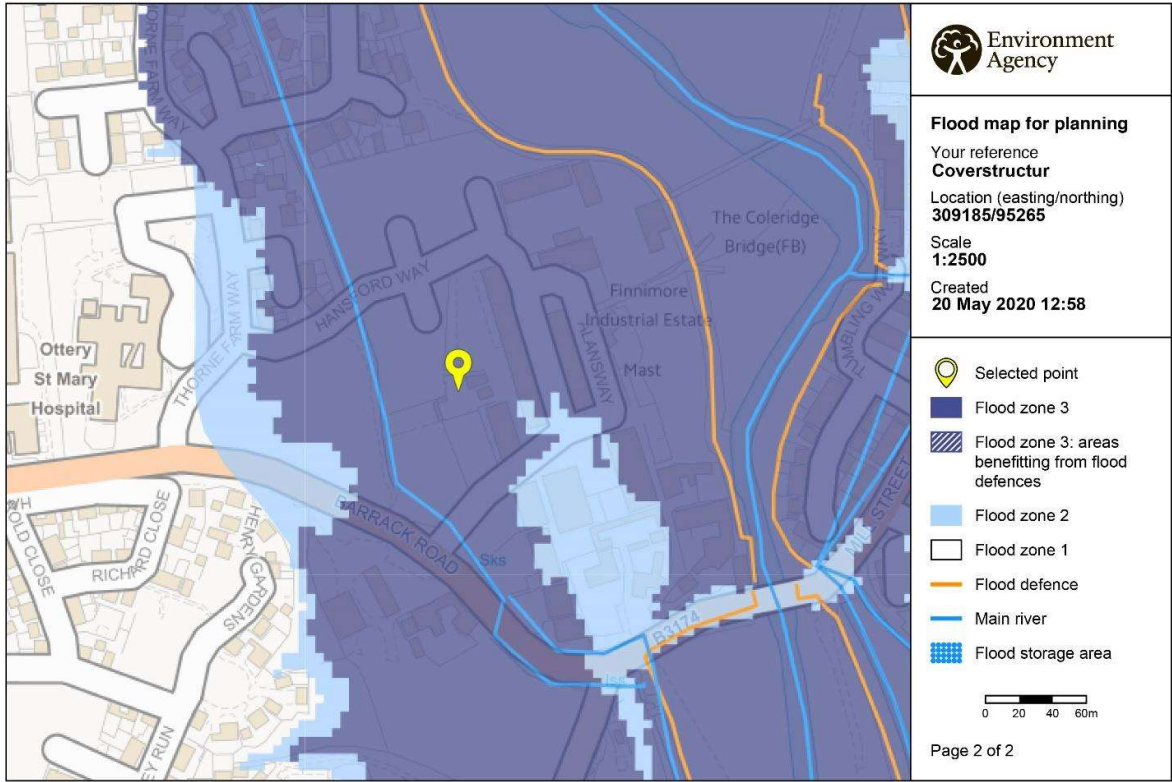
- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see [www.gov.uk/guidance/flood-risk-assessment-standing-advice](http://www.gov.uk/guidance/flood-risk-assessment-standing-advice))

#### 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.

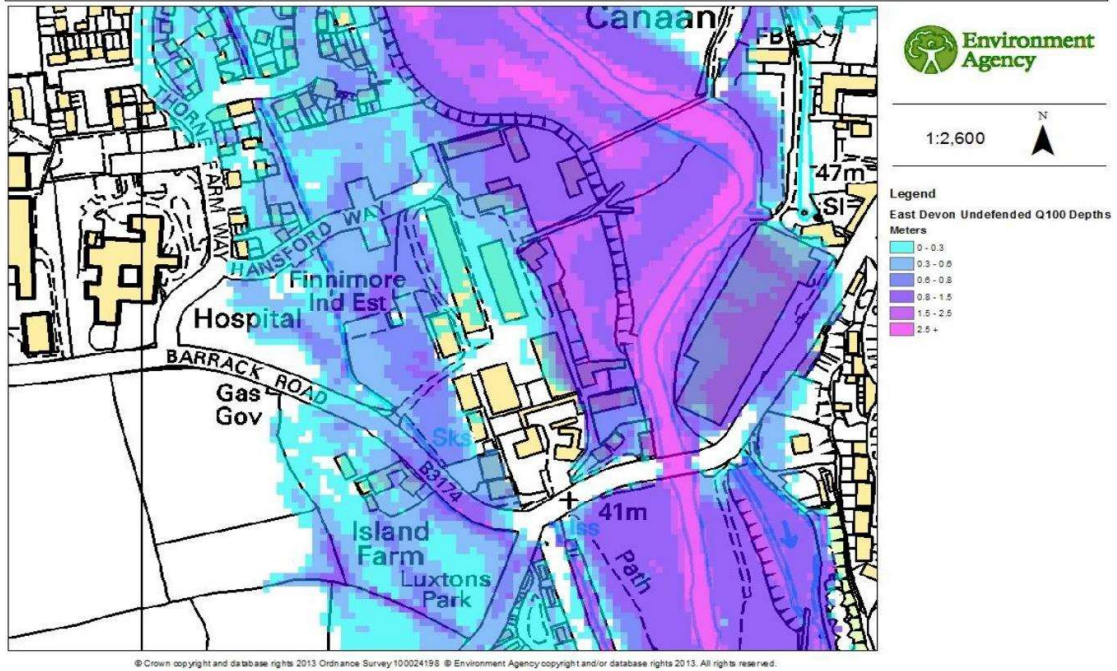
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<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>



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Proposed Storage Unit at Coverstructures Commercial, Exeter Road, Ottery St Mary, EX11 1RE

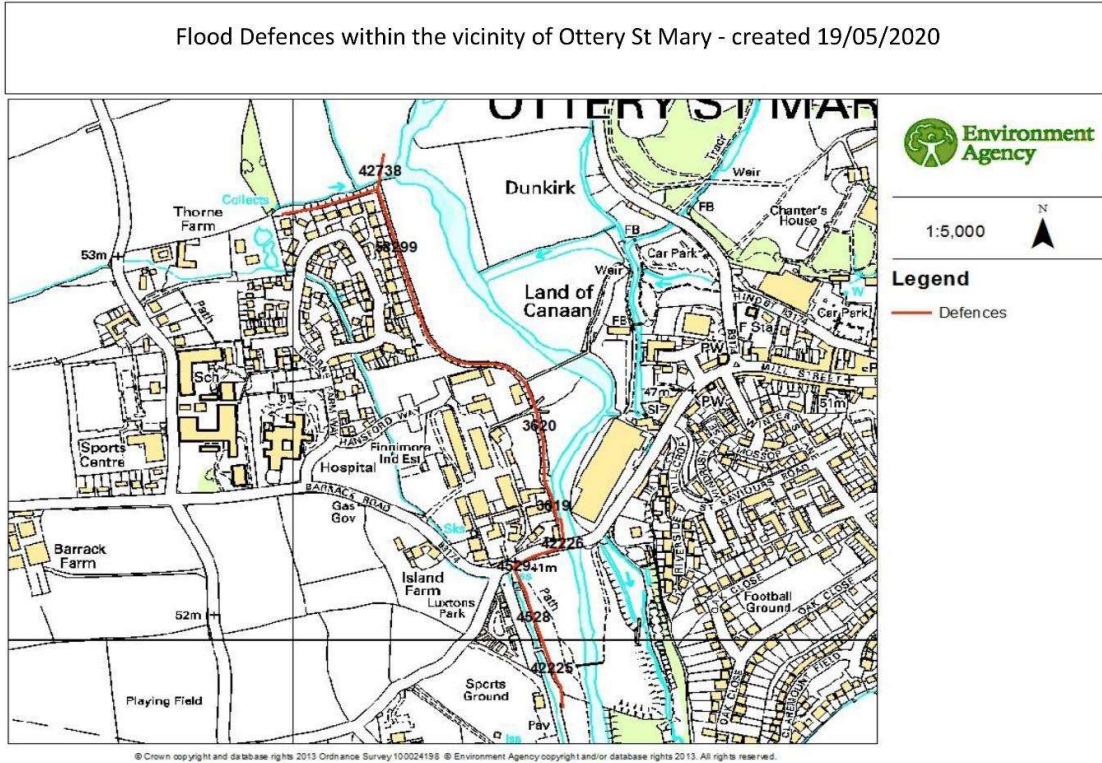
Q100 Depth Grid Map centred on Ottery St Mary - created 19/05/2020



Manley House, Kestrel Way, Sowton Industrial Estate, Exeter, EX2 7LQ  
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Proposed Storage Unit at Coverstructures Commercial, Exeter Road, Ottery St Mary,  
EX11 1RE

# APPENDIX B FLOOD DEFENCES



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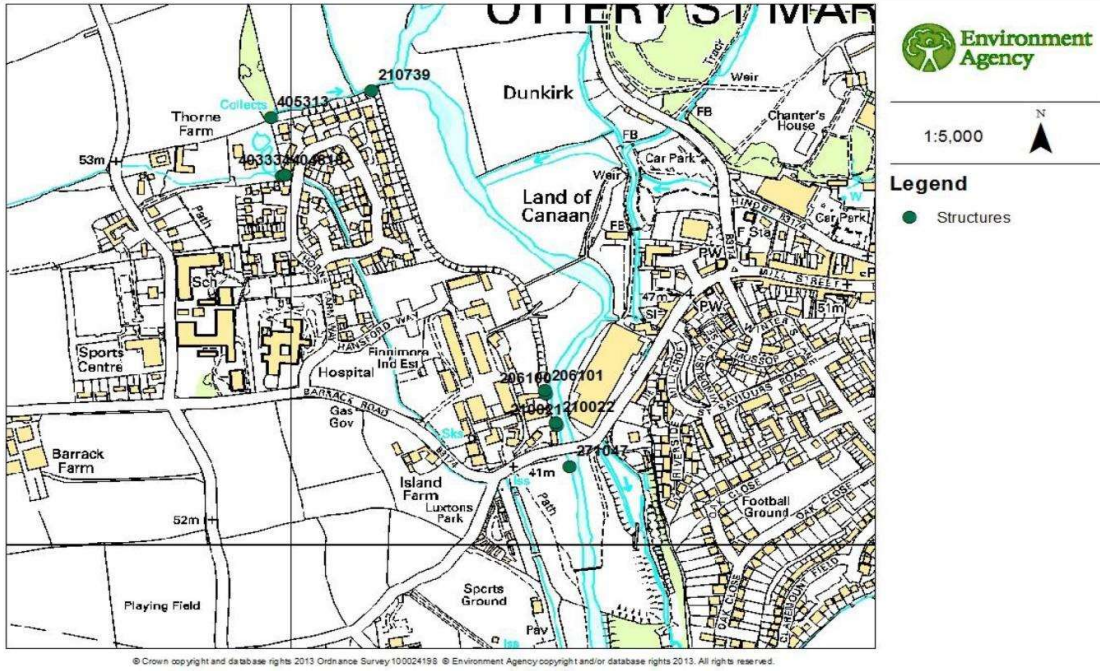
## Defence Details

If the table below is empty there are no significant flood defences in this area which are owned or maintained by the Environment Agency.

Asset ID	Description	Maintainer	Comments	Location	Fluvial		Condition Grade
					D/S Crest Level	U/S Crest Level	
42226	Bridge Abutment	local authority	Lowest point = 43.33 (mODN) (309362, 95141). Levels taken by Halcrow Group on 21/03/2007.	OTTERY ST MARY ROAD BRIDGE	43.37	43.36	Fair
3619	New SHEET PILE WALL 2012 Rest is brick faced wall with concrete core	environment agency	Includes building. Sheet piled toe Lowest point = 41.74 (mODN) (309350, 95186). Levels taken by Halcrow Group on 21/03/2007. Wall in very poor condition and being replaced 2017. Now renewed and CGI for	U/S OTTERY ST MARY ROAD BRIDGE right bank	41.75	41.75	Fair
3620	Embankment	environment agency	Lowest point = 41.69 (mODN) (309336, 95245). Levels taken by Halcrow Group on 21/03/2007.	U/S OTTERY ST MARY ROAD BRIDGE	41.75	41.9	Good
4528	Embankment	environment agency	Lowest point = 40.27 (mODN) (309317, 95050). Levels taken by Halcrow Group on 21/03/2007.	D/S OTTERY ST MARY ROAD BRIDGE	40.3	40.27	Fair
4529	Embankment	environment agency	Bridge approach Lowest point = 40.12 (mODN) (309301, 95096). Levels taken by Halcrow Group on 21/03/2007.	D/S OTTERY ST MARY ROAD BRIDGE	40.3	43.37	Good
42225	Embankment	environment agency	Lowest point = 39.88 (mODN) (309362, 94899). Levels taken by Halcrow Group on 21/03/2007.	D/S OTTERY ST MARY ROAD BRIDGE	39.88	40.29	Fair
42738	Embankment	private	Uneven ground, remains of railway embankment, not a flood defence.	300M EAST THORNE FARM	42.59	42.1	Fair
58299	Embankment plus ramp	environment agency	Northern end now has housing on raised ground levels. Lowest point = 41.86 (mODN) (309317, 95360). Levels taken by Halcrow Group on 21/03/2007.	U/S OTTERY ST MARY ROAD BRIDGE	41.88	42.91	Good
184317	Natural Bank	private	0	0	0	0	Fair

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Flood Defence Structures within the vicinity of Ottery St Mary - created 19/05/2020



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### Defence Structures Details

If the table below is empty there are no significant flood defence structures in this area which are owned or maintained by the Environment Agency.

Asset ID	Description	Maintainer	Comments	Location	Condition Grade
210739	Outfall	environment agency	Former outfall structure lost to erosion; now just a ditch. Changed to a NFDA 04/05/2011	APPROX 300M NORTH EAST THORNE FARM	Good
206100	Flapped Outfall	environment agency	150 Intovalve at base of wall (one of a pair)	APPROX 20M U/S ST SAVIOUR'S BRIDGE	Fair
206101	Flapped Outfall	environment agency	150 Intovalve at base of wall (one of a pair)	APPROX 25M U/S ST SAVIOUR'S BRIDGE	Fair
210021	Flapped Outfall	environment agency	0	APPROX 10M U/S ST SAVIOUR'S BRIDGE	Fair
210022	Flapped Outfall	environment agency	0	APPROX 15M U/S ST SAVIOUR'S BRIDGE	Fair
271047	Outfall	environment agency	APPROX 50M D/S OF BRIDGE	D/S ST SAVIOUR'S BRIDGE	Good
403334	Reinforced concrete side spill.	environment agency	0	Thorne Farm way	Very Good
404818	Reinforced concrete orifice	environment agency	Added to AIMS as penstock, actually RC orifice, potential to add penstock in future.	Thorne Farm Way	Very Good
405313	Blockstone and rip-rap energy dissipation structure	environment agency	0	Thorne Farm Way	Very Good

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