



**MICHAEL EVANS
& ASSOCIATES LTD**

Civil and Structural Engineers
& Design Consultants

FLOOD RISK ASSESSMENT

For Proposed Development of land at:
Coventry Court
Coventry Road
Bulwell
Nottingham

Job No: 23-230
Prepared by: Michael Evans & Associates Ltd
Date: 29th September 2023
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CONTRACT

This report describes work commissioned by Mann Premium Group Ltd following written instruction on 21 August 2023. Paul Gaughan was the architect for the project. Mr Myles O'Hanlon of Michael Evans & Associates Ltd carried out the work.

Date: 29 th September 2023	
Prepared by:	Myles O'Hanlon Graduate Engineer
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REVISIONS

Revision / Dated Issued	Amendment

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DRAWINGS

DB/JM/23/00/01	Proposed Site Plan
6253_Rev0-Sc200	Topographical Survey

1 INTRODUCTION

1.1 General

1.1.1 Michael Evans & Associates Ltd have been commissioned to undertake a Flood Risk Assessment (FRA), on behalf of Mann Premium Group Ltd relating to the proposed development of a self-storage facility at Coventry Court, Coventry Road, Nottingham, NG6 8PR.

1.1.2 This report sets out the findings of the FRA required by the Local Planning Authority in support of the planning application for the development. The assessment has been carried out in accordance with the guidance set out in the National Planning Policy Framework (NPPF).

1.2 Background Information

1.2.1 The Department for Communities and Local Government (DCLG) published the NPPF and the Technical Guidance to the National Planning Policy Framework (Technical Guidance) in March 2012, with the most recent updates being published in August 2018. The NPPF and the accompanying Technical Guidance explain how flood risk should be taken into consideration during the planning process. The guidance specifies a sequential test which local planning authorities should apply to all future proposed development sites. The following Table 1: Flood Zones, extracted from Table 1 of the Technical Guidance, defines the levels of flood risk within England.

Table 1: Flood Zones		
Flood Zone	Flood zone Classification	Description
Flood Zone 1	Low Probability	This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any one year (<0.1%).
Flood Zone 2	Medium Probability	This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.
Flood Zone 3a	High Probability	This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding

		from the sea (>0.5%) in any year.
Flood Zone 3b	Functional Floodplain	The zone comprises land where water has to flow or be stored in times of flood.

- 1.2.2** As part of its general obligations under the Water Resources Act 1991, the Environment Agency has carried out surveys of its existing flood defences and has published a series of nationwide 'Indicative Floodplain Maps' based upon information from historic flood events and basic hydraulic modelling. In general terms, these maps give a good indication of the areas likely to be affected by flooding. More recently the Environment Agency have published the 'Flood Map' on their website which is based on improved hydraulic modelling and detailed local data. The Flood Map indicates areas which may be affected by a 1 in 100 year fluvial flood or a 1 in 200 year tidal/coastal flood (ie Zone 3 as defined in the NPPF). It also indicates which areas may be affected by an extreme flood (ie Zone 2 as defined in the NPPF).
- 1.2.3** The Flood Map for the Coventry Court area of Nottingham shows that the proposed development is located within Flood Zone 2. The extent of the indicative floodplain is shown in Appendix 1 'Environment Agency Flood Information'.
- 1.2.4** The NPPF stipulates that all proposed development sites which are located outside of Flood Zone 1 and/or are greater than 1ha in area must be accompanied by a Flood Risk Assessment as part of the planning process. For site located within Flood Zone 1 which are less than 1ha in area, the main flood risk consideration is the management of surface water runoff from the site.

2 STRUCTURE OF THE REPORT

- 2.1** The report has been structured to follow the general principles set out in the Site Specific Flood Risk Assessment Checklist, included as Section 26 of the PPG.
- 2.2** The methodology for this FRA has comprised a desktop study including liaison with the Environment Agency and the Lead Local Flood Authority (Nottingham City Council). Reference has also been made to the Greater Nottinghamshire Strategic Flood Risk Assessment (2010)¹ and the Greater Nottinghamshire Strategic Flood Risk Assessment (2017)² which covers this area.

¹ Black & Veatch (2010) *Greater Nottingham Strategic Flood Risk Assessment* [available online at: <http://www.nottingham.gov.uk/CHttpHandler.ashx?id=23060&p=0>]

² AECOM (2017) *Greater Nottinghamshire Strategic Flood Risk Assessment Addendum* [available online at:

https://www.nottinghamcity.gov.uk/media/cfbnevXu/2017-09-26-aecom_gnsfra_addendum_final_issued.pdf]

3 SITE SETTING

3.1 Site Description and Location

3.1.1 A summary of the site and its characteristics is provided in Table 2: 'Site Location Summary', below.

Table 2: Site Location Summary	
Site Name	Coventry Court
Site Address	Coventry Court, Coventry Road, Bulwell, Nottingham, NG6 8PR
Site Area	1250m ² (0.125ha)
National Grid Reference	453999 E, 344538 N
Existing Land Use	Industrial – car park for multi-business premises
Proposed Land Use	Industrial - Container Self-Storage Area
Local Planning Authority	Nottingham City Council
Environment Agency Area	Derbyshire, Nottinghamshire, Leicestershire
Lead Local Flood Authority	Nottingham City Council
Sewer Undertaker	Severn Trent Water
Other Authorities	Canals and Rivers Trust

3.1.2 A site location plan can be found in the drawings section at the end of this report.

3.1.3 The proposed development site is located at Coventry Court, Coventry Road, Bulwell, Nottingham. The site is located at approximate National Grid Reference (NGR) 453999E, 344538N, and the site postcode is NG6 8PR. The site is bounded by Coventry Road to the west, the river Leen to the east, with the Nottingham to Bulwell railway line lying to the east of the watercourse. To the north and south of the site are existing industrial units. . The site is within a small industrial area, surrounded by existing residential development, located to the North-West of Nottingham City centre, with good road links to Nottingham and the wider area.

3.1.4 The development site has an area of approximately 0.125ha comprising of existing hardstanding yard and tarmac areas. The existing impermeable area on the site is taken to include the tarmac access area, which is measured as approximately 340m²

(0.034ha) of the site, and the remaining, stoned areas are considered to be permeable/ semi-permeable (although due to the nature of the site and the likely compaction of the gravel and underlying material, the ground may be largely impermeable irrespective of the surfacing).

- 3.1.5** The nearest modelled main river is the river Leen, located adjacent to the site's eastern boundary (approximately 13m east of the site). No other watercourses or waterbodies are located within the immediate vicinity of the site, or within a distance considered to have an influence on the flood risk setting of the site.
- 3.1.6** The site topography is shown on drawing 6253_Rev0-Sc200 Topographical Survey. The site is shown to be relatively flat, with a slight slope from West to East, with a minimum level of approximately 41.7mAOD at the Eastern boundary of the site, rising to approximately 42.13mAOD close to the Western boundary of the site.

3.2 Existing Drainage

- 3.2.1** Manholes are located on the tarmac access area towards the Western boundary of the site. Foul and Surface water public sewers are located within Coventry Road. It appears foul and surface water sewers run beneath the site, with surface water potentially draining into the River Leen to the Eastern boundary of the site, and foul water draining under the river and continuing in an easterly direction. It is anticipated that surface water from the site would currently collect on the ground and either infiltrate (if ground conditions allow) or follow overland flow routes to the nearest drain and into the watercourse, following the natural topography across the site.
- 3.2.2** Existing brownfield runoff rates have been calculated using the Rationale Method, based on a design rainfall intensity of 40.6mm/hr and an impermeable area of 0.034ha. This equates to surface water runoff from the site of approximately 4.61l/s. Existing runoff calculations can be found in Appendix 2 of this report.
- 3.2.3** For comparison purposes, the greenfield runoff rates have been calculated using the UKSUDS software, based on a contributing area of 0.125ha. The calculated greenfield runoff rates suggest that QBAR (Average Annual Runoff Rate) flows from the site would be circa 0.2l/s, and during a 1 in 100 year event would be circa 0.5l/s. These rates are significantly lower than those calculated using the Rationale Method. Greenfield runoff calculations can be found in Appendix 3 of this report.

- 3.2.4** It is not clear if there are any existing foul flows from the site, although foul drainage is present within Coventry Road and across the site, and is understood to serve the sites along this road.

3.3 Flooding History

- 3.3.1** The site is shown to lie within Flood Zone 2, an area that is prone to flooding for events between a 1 in 100 year and 1 in 1000 year event. A copy of the Environment Agency's Floodmap can be seen in Appendix 1– 'Environment Agency Flood Information'.

- 3.3.2** As exhibited by the Environment Agency's records, historical flooding via the River Leen has occurred at this site in 1900, 1947, 1960 and 1979. Subsequently, this area has been prone to flooding in the past. However, since the last flooding event, defences (in the form of engineered high ground) have been implemented to reduce the likelihood and extent of future flooding, and therefore it is not considered that the historical flood outlines provide an accurate representation of the current flood risk at the site. No other details of flooding affecting this area are found within the SFRA for Greater Nottinghamshire.

3.4 Ground Conditions

- 3.4.1** Geological information made available for the site shows that the site is underlain by freely draining floodplain soils. The ground at this location is, therefore, likely to be permeable.
- 3.4.2** Table 3, below outlines the groundwater vulnerability at this location. The information has been gathered from the Environment Agency website.

Table 3: Summary of Groundwater Information	
Groundwater Source Protection Zone	N/A
Superficial Deposits Designation	Secondary A
Bedrock Designation	Secondary B
Groundwater Vulnerability Zone	Medium-High, soluble rock risk

4 PROPOSED DEVELOPMENT

4.1 Description of Site Proposals

- 4.1.1** The proposed development will consist of a number of self-storage containers, with the retention of the existing site access.
- 4.1.2** There will be no increase in the impermeable area at ground level at the site. The existing will be retained at approximately 340m² (0.034ha). The ground beneath the storage containers will be retained in its current permeable form and the containers raised above the ground level.
- 4.1.3** A copy of the proposed site development plan is shown on drawing DB/JM/23/00/01 – ‘Planning’, contained within the drawings section at the end of this report.

4.2 Vulnerability Classification

- 4.2.1** The Environment Agency Indicative Floodmap shows that the site lies within Flood Zone 2, with respect to Table 1 of the Technical Guidance.
- 4.2.2** The vulnerability class for the proposed development, with respect to Table 2 of the Technical Guidance, is ‘less vulnerable’. There is no change to the land use vulnerability compared to the existing permitted use of the site.
- 4.2.3** Table 3 of the Technical Guidance, ‘Flood Risk Vulnerability and Flood Zone Compatibility’, shows that less vulnerable developments are suitable for locating within Flood Zone 2. There is also no change in the land use vulnerability classification compared to the existing site use. The site is therefore suitable for the type of development proposed.

4.3 Sequential and Exception Test

- 4.3.1** The Sequential Test, as set out in the Technical Guidance, aims to steer development to areas with the lowest risk of flooding (ie to steer developments to Flood Zone 1 where possible). There is no change in the land use classification of the site, and the proposed site use is suitable for the flood zone classification. Therefore, following the guidance in Table 3 of the Technical Guidance, the Sequential Test is deemed to have been passed and there is, no requirement for the Exception Test to be carried out.

4.4 Drainage Proposals

- 4.4.1** For brownfield sites, it is preferable to reduce surface water flows to greenfield runoff rates where possible, or as a minimum reduce the existing flows by 30%. The

existing flows from the site are 4.61l/s, and a reduction of 30% would result in a proposed flow of 3.23l/s. Greenfield runoff rates from the site have been calculated at approximately 0.5l/s during a 1 in 100 year event. In line with current best practise, surface water flows should not be restricted to less than 5l/s due to the increased risk of blockages within the system. It is therefore recommended that surface water flows from the site be restricted to 5l/s as part of the proposed redevelopment of the site, where practicable.

- 4.4.2** Since there is no new impermeable area on the site, and no proposals to alter or relay the existing impermeable areas on the site, it is not anticipated that any new drainage network will be installed at the site. There is a manhole and two gullies already present within the tarmac hardstanding area of the site. The existing drainage network, where present, will be retained to serve the proposed change of use development. It is not anticipated that any new connections into the existing private drainage network or the public sewer network will be required.

- 4.4.3** Since there is no proposed change to the existing drainage network, and no increase in impermeable area at the site, it is not anticipated that there will be any increase in flows as a result of the development itself. Some minor increases may still occur as a result of climate change. Rainfall intensities for the 1 in 100 year + climate change events would be increased to approximately 53mm/hr, would results in a runoff rate of circa 4.88l/s. Since this is still below the recommended minimum flow restriction, there is no requirement to provide a flow control or corresponding surface water attenuation at the site.

- 4.4.4** There will be no foul flows associated with the proposed development and no connections to the foul sewer network will be required.

5 FLOOD RISK

5.1 Flood Risk – To the Development

5.1.1 The main sources of flooding are from rivers, tidal waters, high land/ overland runoff, high water tables, sewers/drains, and from artificial sources such as canals or reservoirs.

5.1.2 The presence of a potential flooding source within the vicinity of the site does not necessarily translate into a high risk of flooding. Table 4 (below) summarises the potential flood sources and the related flood risks posed to the site by the various sources.

Table 4: Sources of Flood Risk			
Flood Source	Presence at site?	Potential risk at site (high/ medium/ low)	Description
Fluvial	✓	Low	The site is shown to be within flood zone 2.
Tidal	✗		
Groundwater	✗		
Sewers	✗		
Other Artificial Sources (canals/reservoirs)	✗		
Pluvial	✓	Low	Low risk of surface water flooding is shown on the EA mapping.
Other	✗		No other potential sources of flooding have been identified

5.1.3 The site is not near to the coast or within the tidal reaches of any watercourse, and therefore flooding from this source has been discounted.

5.1.4 Fluvial Flooding

The site is shown to be within the modelled fluvial flood outlines of the River Leen. There are flood defences (engineered higher ground) present along the River Leen at this location, and the site is shown to be within an area at a reduced risk of flooding due to the presence of the defences.

Modelled in-channel flood levels have been provided by the Environment Agency for events ranging from the 1 in 5 year to the 1 in 1000 year events. These levels would suggest that the site is at risk of flooding from events from around the 1 in 50 year event, however due to the prescense of the flood defences, the on-site modelled floodplain levels suggest that the site itself would not be at risk of flooding until in excess of the 1 in 100 year event.

1 in 100 year + 29% climate change event, to the 1 in 100 year + 62% climate change event and the 1 in 1000 year flood level. Numerous node points have been utilised by the Environment Agency to model the flood levels for the various events along the River Leen. Node 106.80 is closest to this site. A summary of flood levels and depths for node 106.80 is included below:

Modelled Flood Levels and corresponding depths				
Watercourse	Return Period	Flood Level	Flood Depth (m)	(mm)
River Leen	100 year	41.96	0.26	260
	100 year + 29% climate change	42.28	0.58	580
	100 year + 39% climate change (higher)	42.37	0.67	670
	100 year + 62% climate change (upper)	42.53	0.83	830
	1000 year	42.55	0.85	850

Flood depths are based on the lowest ground level recorded at the site, approximately 41.7mAOD.

Modelled floodplain levels for the site are comparable with the in-channel levels and are, therefore, a comparison of the in-channel levels with site ground levels is considered to be suitable for determining likely flood depths at the site.

As depicted, flooding is present at the site under normal 1 in 100 year conditions, resulting in a flood depth of 260mm. Flood depth increases with the addition of climate change scenarios, leading to reasonably high flood inundation at this site.

Flood hazard mapping provided by the Environment Agency indicates that, the hazard to the majority of the site, particularly the western portion of the site is considered to be “danger to most”, with other areas of the site, predominantly the northern and eastern areas of the site shown to present a “low” to no flood hazard.

The flood risk to the site is, therefore, considered to be significant, but due to the low vulnerability of the land use, and the minimal changes compared to the existing use of the site, this is considered to be acceptable.

Additional recommendations for flood resistance with the site layout and design are discussed within the later sections of this report.

5.1.5 Groundwater

Groundwater flooding can occur anywhere where groundwater levels rise above the ground level. There are no records of groundwater flooding within the locality of the site. The SFRA mapping indicates that the 1km grid square containing the site is located within an area with <25% chance of groundwater emergence (flooding). Since there is no development below ground level, and due to the relative levels of the site to other areas within the same grid square, it is not anticipated that groundwater flooding would actually occur at the site. There are no known groundwater concerns at the site, and the risk of groundwater flooding is considered to be low.

5.1.6 Sewers

There are no known sewer capacity issues within the vicinity of the site. The additional flows generated from the new development would be low and as a result of climate change rather than as a result of the development itself, and are not anticipated to cause any capacity problems within the existing public sewer network. The flood risk from sewer sources is therefore considered to be low.

5.1.7 Pluvial/ Overland Flow

On land where there is impermeable surfacing or where the ground infiltration capacity is exceeded, there is the potential for surface water runoff to occur. Surface Water flood maps are hosted on the Environment Agency's website and on the SFRA mapping website, and show areas of high, medium and low pluvial flood risk. The surface water flood maps for the site area show that a small portion towards the Western boundary of the site, is at low risk of surface water flooding (1 in 1000 year), with flood depths of below 300mm and flow velocities of less than 0.25m/s. The surface water flood risk to the site is therefore considered to be low.

The site access to and from Coventry Court is also shown to be at low-medium pluvial flood risk. The flood depths are considered to be largely <300mm along all of the immediate access routes to/ from the site, and so it is considered that safe access will be available at all times, albeit this may not always be dry access.

5.1.8 Artificial Sources

A small portion of the site is shown to be at risk of flooding from reservoirs when river levels are normal, and the majority of the site is shown to be at risk from additional inundation when the river is also in flood.

Despite the potential flood risk posed by reservoirs, flooding from reservoirs has not resulted in loss of life in the UK since 1925. All of the reservoirs shown as potentially affecting the site are owned and maintained by public bodies, and are strategic assets. The probability of flooding from the reservoirs is low and the consequential risk of flooding from this source is, therefore, considered to be low.

5.2 Climate Change

5.2.1 In assessing the potential flood risk at the site over the lifetime of the development climate change has been taken into account. Climate change allowances have been based on the most recent climate change allowances published on the Environment Agency which has been reproduced as Table 6 (below) for the Lower Trent and Erewash Management Catchment.

Table 6: Recommended national precautionary sensitivity ranges			
Parameter	2020s	2050s	2070s
Peak rainfall intensity (upper end)		+40%	+40%
Peak river flow (central allowance)	+29%	+39%	+62%

5.2.2 In assessing the likelihood of flood risk to the site from River Leen the 1 in 100 year + climate change outlines/figures provided by the Environment Agency have been used, which are all at or above the climate change allowances outlined in the latest climate change forecasting (reproduced above).

5.2.3 In assessing the volume of storage needed to attenuate surface water flows from the site estimated peak rainfall intensities have been increase by 40% to allow for climate change during the lifespan of the development. It should be noted that since there are no proposals to alter the drainage network serving the site, and because the 1 in 100 year + climate change rainfall intensities result in flows less than the recommended minimum flow rate, no surface water attenuation is considered to be necessary at the site.

5.3 Flood Risk – From the Development

5.3.1 Floodplain Storage

Given the nature of the proposals, it is recommended that the containers be raised above the ground, so that no loss of floodplain will occur as a result of the development.

5.3.2 Based on the 1 in 100 year event modelled levels, it is clear that low level flooding will occur at the site. If the containers were to be installed at ground level then this could result in a loss of floodplain storage of up to 25m³. However, by raising the containers above the ground and allowing flood water to flow and infiltrate beneath them, there will be no effective loss of floodplain storage as a result of the development proposals. As a result, it is deemed that no loss of floodplain storage will occur as a result of this development and no compensatory floodplain storage will be required.

5.3.3 Flood Flow Routes

There are no undefended 1 in 100 year flood flow routes across the site, and therefore there is no requirement to provide any mitigation for any changes in flow routing across the site. The site layout, compared to the existing site layout and the raised container positions means that there will be no material changes to the flood flow routing during higher magnitude flood events.

5.3.4 Culverts

There are no known culverts crossing the site. A review of historical mapping on the Council's website does not indicate any historical watercourses crossing the site and so it is considered unlikely that the development would impact on any existing culverts crossing the site.

There are no proposals to culvert any watercourses as part of the proposed development, and the minimal increase in surface water flows resulting from climate change are not considered likely to adversely affect any existing stretches of culverted watercourses downstream of the site. Therefore, the proposed development is not considered to have any impact on culverts or culverted watercourses.

5.4 Flood Risk Management Measures

5.4.1 Calculated 1 in 100 year + climate change flows from the site are less than the recommended minimum rate of 5l/s. Therefore, there will be no requirement to provide a flow restriction and corresponding surface water attenuation at the site. There will be no increase in impermeable area as a result of the proposed

development, and the existing drainage network serving the site will be retained. It is not considered that any further surface water management measures will be required at the site. Since there are no changes to the drainage network and no increase in impermeable area, there is no requirement to incorporate any formal SuDS into the site layout. Surface water will continue to infiltrate into the underlying ground, where the ground is suitable for infiltration.

- 5.4.2** The site is located within an Environment Agency Flood Warning Area, and it is highly recommended that site users sign up to the service to receive early warnings of when flooding to the site is likely to occur. There will be no habitable accommodation at the site, and no requirement for users to be on site during a flood event. A flood risk management plan should be developed which should include for any users on site to be evacuated prior to any flooding on the site and not return to the site until they are officially informed that it is safe to do so.
- 5.4.3** As discussed within the earlier sections of this report, flooding is shown to affect the site during the 1 in 100 year + climate change event for the projected lifetime of the development. Given the depth of flood inundation and the nature of the site use, it is recommended that the containers be raised to a minimum level matching the higher central climate change flood level of 42.37mAOD. This could be achieved by placing the containers on elevated platforms, thus allowing potential flood water to flow underneath the containers and ensure the contents remain safe above the anticipated maximum flood depth.
- 5.4.4** The site access and egress route is onto Coventry Road, which is an existing public highway, outside of the site ownership boundary. This highway is also shown to be within the 1 in 100 year + climate change outline, and therefore there would be no safe dry access and egress route from the site under such conditions. The hazard mapping for this event shows that this route is also considered to be a “danger to most”. There is no option within these proposals to update the road network outside of the site boundary.. Therefore, it is recommended that an early evacuation of the site, when flood alerts are issued, is undertaken to minimise the risk to site users. All units are to be raised above the modelled 1 in 100 year + climate change level and, therefore, during extreme situations where access and egress is not possible and evacuation has not taken place, then safe refuge areas will be available within the containers themselves.

6 RESIDUAL RISKS

- 6.1** There is always a possibility of a flood in excess of that allowed for which might conceivably cause some flooding to the development. However, such an event would have a very low probability and the risk of flooding to development would be low.

6.1.1 Breach or Defence Failure

The only other residual risk considered to potentially affect the site is as a result of a breach in the flood defences or of defence failure.

The site is protected from fluvial flooding by a flood defence in the form of an engineered high ground to the Eastern boundary of the site and flood walls along the watercourse to the north, providing a degree of defence to the site. The integrity of this defence is considered to be critical to the protection of the wider area, which means that these defences are likely to be maintained, however the future maintenance of the structures and the future investment cannot be guaranteed in planning terms.

No breach flood level information is available for the site, but the engineered high ground at this location does not lie significantly higher than the site. This indicates that flooding resulting from the failure of this defence is not likely to significantly impact on the site as the direct result of a breach of the adjacent flood defences. Flooding could still impact the site as a result of an upstream breach which could increase the in overland flows reaching the site from upstream. The results of a breach are considered to be similar, or less than the undefended modelled levels at the site, which have already been addressed and mitigation proposed as part of this Flood Risk Assessment. Therefore, there are not considered to be any significant remaining residual risks at the site posed by flood defence breaches.

The site is within a flood warning area, and so it is recommended that future occupants of the building sign up for the Environment Agency's flood alert and warning system to allow a managed site evacuation when flood warnings are issued.

There is no habitable accommodation proposed for the site and, therefore, no sleeping accommodation will be on the site. This means that should a flood warning be issued, then the operatives should be in a position to respond to the advice promptly.

Therefore, the risk to the site from breach or flood defence failure is considered to be manageable and should not be considered an unacceptable risk to the proposed development.

7 CONCLUSIONS

7.1 This report gives details of the Flood Risk Assessment, which has been carried out in relation to the proposed development of a self-storage facility at the Coventry Court site, Coventry Road, Bulwell, Nottingham, NG6 8PR.

7.2 The site falls within Flood Zone 2 of Table 1 of the Technical Guidance, and the vulnerability class of the proposed development is 'less vulnerable'. Table 3 of the Technical Guidance indicates that sites classified as Flood Zone 2 are suitable for the vulnerability class of development proposed, and therefore the proposals are considered appropriate for this location. There is no change of flood risk vulnerability compared to the current site use.

Existing flood defences along the River Leen offer some protection from flooding at the site, but protection is not offered for all events to to the 1 in 100 year + climate change level and residual risk remain. Mitigation measures are proposed as part of this FRA report to ensure that the site remains safe during its projected lifetime.

7.3 The existing surface water drainage network will be retained to serve the site. Unrestricted flows have been calculated to be less than the recommended minimum flow rate, and so no flow restriction or attenuation is deemed to be required.

7.4 The Strategic Flood Risk Assessment for the Greater Nottinghamshire which covers the proposed development site does not indicate any other flood risks likely to pose a significant risk to the site.

7.5 There are no local site specific risks that would adversely affect this categorisation. Similarly there are considered to be no significant increased offsite flooding risks as a result of the development. The site is therefore considered suitable for the type of development proposed.

APPENDICES

Appendix 1
Environment Agency Flood Information

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
454008/344523

Created
21 Aug 2023 9:13

Your selected location is in flood zone 2, an area with a medium 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)

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.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

Flood map for planning

Your reference
<Unspecified>

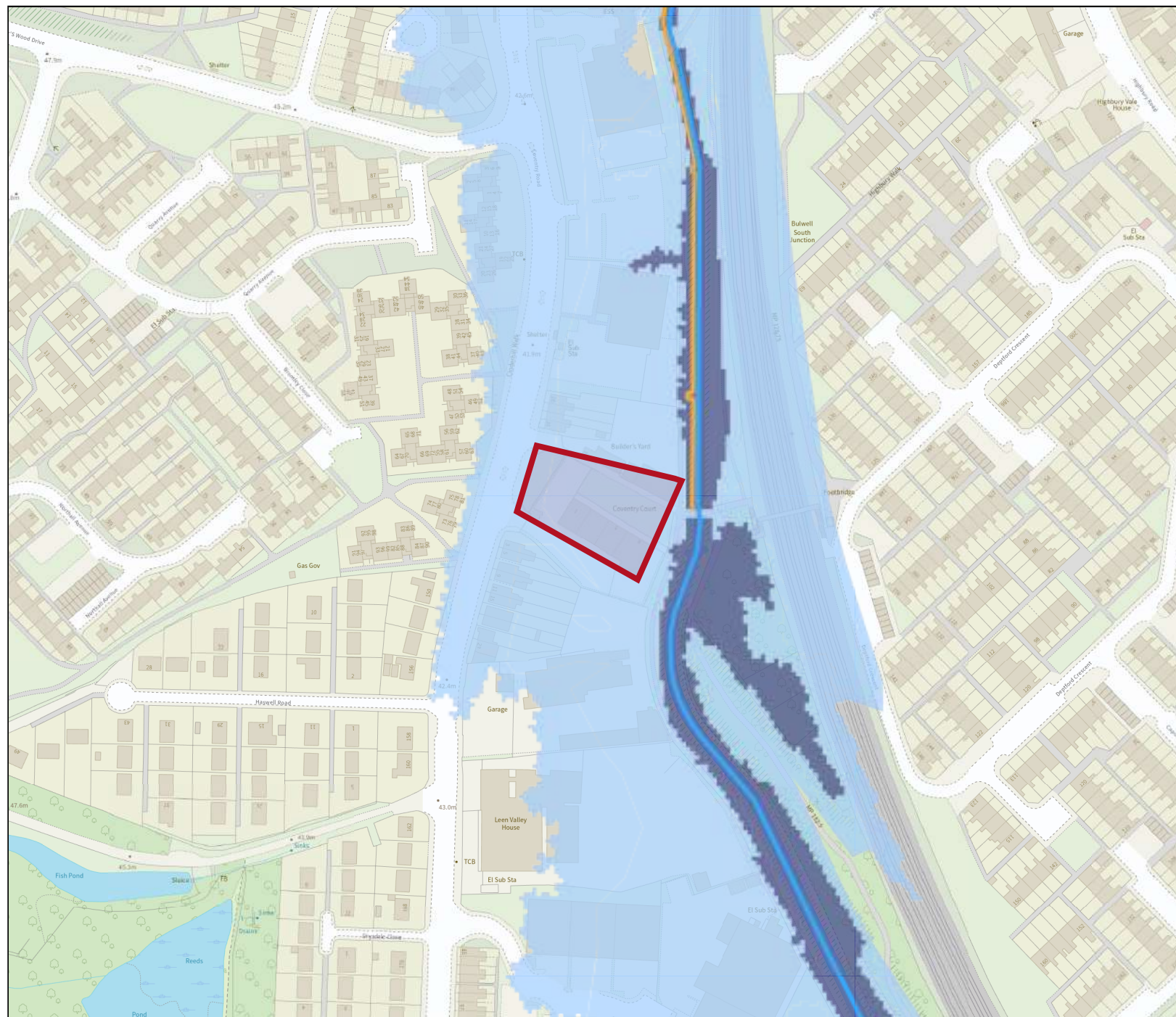
Location (easting/northing)
454008/344523

Scale
1:2500

Created
21 Aug 2023 9:13

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

0 20 40 60m



Flood Map for Planning: The Flood Map for Planning is now classed as Open Data. As such it can be downloaded free of charge under an open data licence from the following addresses:

- <https://data.gov.uk/publisher/environment-agency>
- <https://flood-map-for-planning.service.gov.uk/>

Your development is in **flood zone 2**.

The flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties refer to the probability of river and sea flooding.
- ignore the presence of defences,
- do not take into account potential impacts of climate change.
- This data is updated on a quarterly basis as better data becomes available.
- The NaFRA 2 will be completed Summer 2024 and the flood zones will then be updated [NaFRA2](#) (As such we are not accepting any flood map challenges at this time).

Zone 1: Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone2: Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a: High Probability	Land having a 1% (1 in 100) or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)
Zone 3b: Functional Floodplain	• land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). • Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. • (Not separately distinguished from Zone 3a on the Flood Map)

Probability	Percentage chance of flooding each year
1 in 2 year	50%
1 in 5 year	20%
1 in 20 year	5%
1 in 50 year	2%
1 in 100 year	1%
1 in 1000 year	0.1%
Surface Water Flooding	
1 in 30	High Risk
1 in 100	Medium Risk
1 in 1000	Low Risk

Updated Climate Change Guidance: On 19th February 2016, the [Flood risk assessments: climate change allowances](#) was published on www.gov.uk website. It has replaced previous guidance [Climate Change Allowances for Planners](#). The climate change guidance can be found at: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

The climate change allowances for this location are:

-  **29% (central)**
-  **39% (higher central),**
-  **62% (upper)**

Modelled Information: River Leen, Arup, 2022

NODE_ID	X	Y	20% (1 in 5) modelled level	20% (1 in 5) modelled flow	10% (1 in 10) modelled level	10% (1 in 10) modelled flow	5% (1 in 20) modelled level	5% (1 in 20) modelled flow
106.00	454057	344419	41.07	14.15	41.15	15.48	41.32	18.39
106.80	454054	344522	41.23	13.77	41.32	15.09	41.47	18.07
107.00	454054	344525	41.25	13.77	41.33	15.09	41.65	18.07
108.00	454054	344623	41.46	13.78	41.54	15.08	41.81	18.10

NODE_ID	X	Y	2% (1 in 50) modelled level	2% (1 in 50) modelled flow	1.3% (1 in 75) modelled level	1.3% (1 in 75) modelled flow	1% (1 in 100) modelled level	1% (1 in 100) modelled flow
106.00	454057	344419	41.61	22.81	41.74	25.17	41.83	26.81
106.80	454054	344522	41.73	21.65	41.87	22.42	41.96	22.74
107.00	454054	344525	41.95	21.65	42.08	22.42	42.16	22.74
108.00	454054	344623	42.09	22.44	42.18	24.19	42.23	25.36

NODE_ID	X	Y	0.5% (1 in 200) modelled level	0.5% (1 in 200) modelled flow	0.1% (1 in 1000) modelled level	0.1% (1 in 1000) modelled flow
106.00	454057	344419	30.25	42.01	42.38	37.75
106.80	454054	344522	23.03	42.17	42.55	23.22
107.00	454054	344525	23.03	42.31	42.62	23.22
108.00	454054	344623	27.79	42.32	42.57	33.31

NODE_ID	X	Y	1% (100 year) plus 29% CC level	1% (100 year) plus 29% CC flow	1% (100 year) plus 39% CC level	1% (100 year) plus 39% CC flow	1% (100 year) plus 62% CC level	1% (100 year) plus 62% CC flow
106.00	454057	344419	42.11	32.80	42.19	34.86	42.35	37.31
106.80	454054	344522	42.28	22.95	42.37	22.83	42.53	22.79
107.00	454054	344525	42.40	22.95	42.46	22.83	42.59	22.79
108.00	454054	344623	42.38	29.33	42.43	30.68	42.55	32.93

Please note: The flows provided represent **in channel flow only** and do not take into account flow on the floodplain.

All data is discussed as metres above Ordnance Datum (mAOD). This is based on the Ordnance Datum Newlyn in Cornwall. Tide gauges have been used over time to calculate a mean sea level datum point. This point is marked as height zero on maps in Britain. For more information please see: [Ordnance Datum Newlyn reaches 100 years | Blog | Ordnance Survey](#)

We are unable to provide any breach data for this site as there is none available.

Defence Information Flood defence data is routinely updated and freely available at: [AIMS Spatial Flood Defences \(inc. standardised attributes\) - data.gov.uk](#) and [AIMS Asset Bundle - data.gov.uk](#).

Historic Information We have records of historic fluvial flooding at this location in 1900, 1947, 1960 and 1979. Please note that we may or may not hold the original records in question. We do not make any claim as to the reliability of recorded flood extents or that all flood events in the area have been recorded. Please also be aware that flood defences may have been built subsequent to these historic flood events. Note - This information relates to the area the above named property is in, and is not specific to the property itself - it **does not** provide an indicator of flood risk **at individual property level**.

Surface Water & Drainage: The Environment Agency (empowered under the Water Resources Act 1991) concentrates on the major elements of the drainage system, managing flood risk arising from designated "main rivers" and the sea. The Flood & Water Management Act (2010) has given Lead Local Flood Authorities (LLFAs) responsibility for the management of local flood risk, which includes surface runoff, groundwater and flooding from ordinary watercourses (smaller rivers and streams). The LLFA for this area is **City of Nottingham Council**, and we recommend that you contact them with concerns about any flooding issues for this area.

Further information and maps for surface water, ordinary watercourses, and reservoir flooding can be found here: <https://www.gov.uk/check-long-term-flood-risk> ; [Reservoir flood maps: when and how to use them - GOV.UK \(www.gov.uk\)](#)

Open Data Information: Many datasets are now classed as Open Data and as such can be downloaded free of charge under an open data licence from the following address: <https://data.gov.uk/publisher/environment-agency>

Permitting Information: Under the Environmental Permitting (England and Wales) Regulations 2016, any permanent or temporary works in, over or under a designated main river will require an Environmental Permit for Flood Risk Activities from the Environment Agency. Any permanent or temporary works within 8 metres of the top of bank of a designated main river, or landward toe of a flood defence may require an Environmental Permit for Flood Risk Activities from the Environment Agency. In addition, any permanent or temporary works within the floodplain of a designated main river may also require an Environmental Permit for Flood Risk Activities. To find out whether your activity requires a permit or falls under a relevant exclusion, exemption or standard rule please follow this link: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>. The Environment Agency require access to the watercourse and free movement up to 8m from the river bank/ defence for maintenance purposes.

Please note that a permit is separate to and in addition to any planning permission granted.

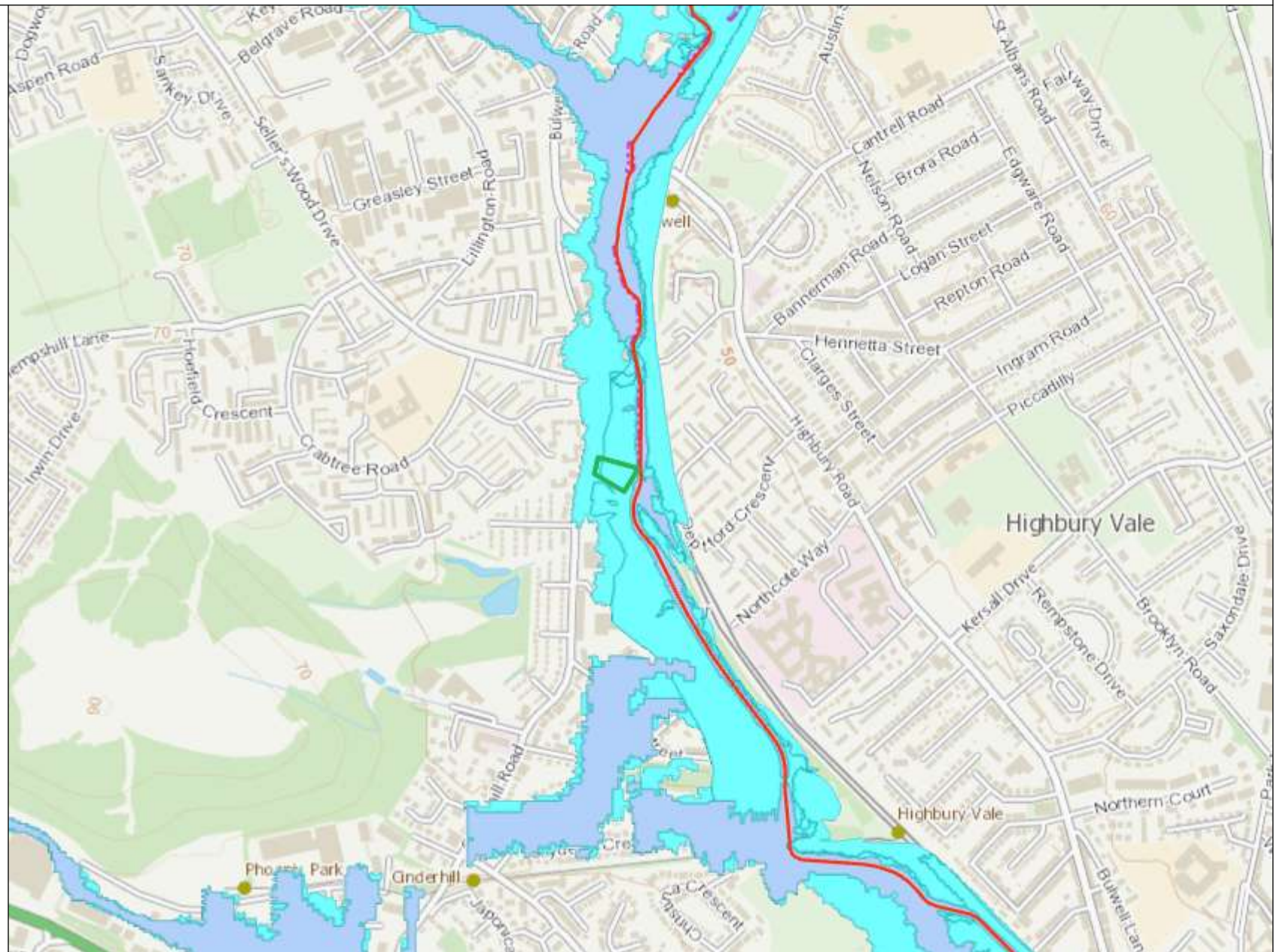
Strategic flood risk assessments: We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment. This should give you information about: the potential impacts of climate change in this catchment areas defined as functional floodplain flooding from other sources, such as surface water, ground water and reservoirs. This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood Risk Assessment Advisory: All guidance on how to complete a full site specific Flood Risk Assessment (FRA) can be found here: [Flood risk and coastal change - GOV.UK \(www.gov.uk\)](#). Furthermore professional assistance can be provided by our planning officers, by contacting planning.trentside@environment-agency.gov.uk.

Detailed Flood Map, centred on Coventry Court road, Nottingham [EMD 324122]

Legend

- Statutory Main Rivers
- - - Defences
- ▭ Flood Storage Areas
- Flood Zone 3
- Flood Zone 2



Detailed River Network Map, centred on Coventry Court road, Nottingham [EMD 324122]

Legend

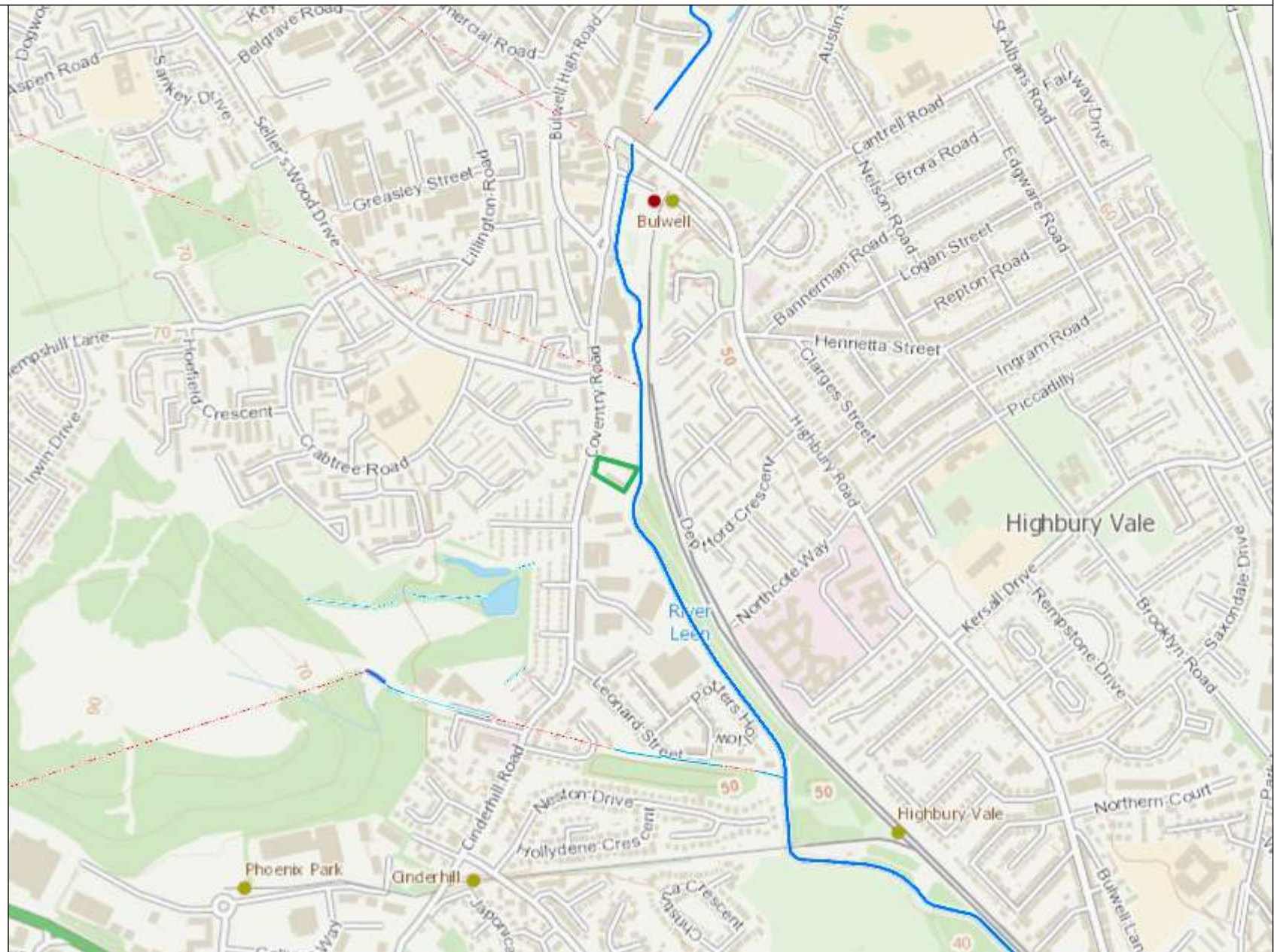
Detailed River Network

- Primary River
- Secondary River
- Tertiary River
- Lake / Reservoir
- Canal
- Canal Tunnel
- Extended Culvert
- Multiple Channel Culvert
- Underground River (potential sewer)
- Underground River (inferred)
- Underground River (local knowledge)
- Undefined

Offline Drainage features

Detailed River Network

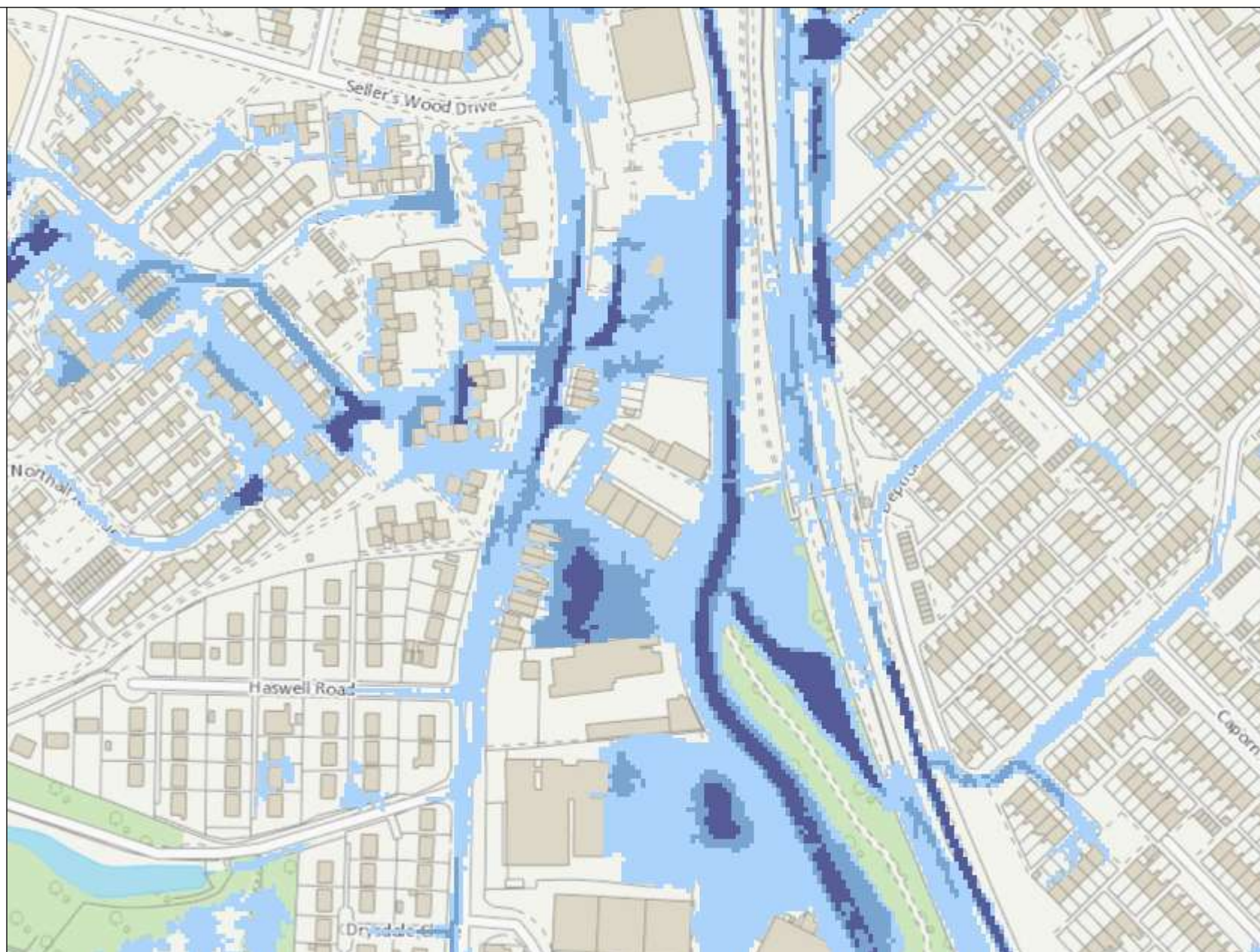
- Primary River
- Secondary River
- Tertiary River
- Lake / Reservoir
- Canal
- Canal Tunnel
- Extended Culvert
- Multiple Channel Culvert
- Underground River (potential sewer)
- Underground River (inferred)
- Underground River (local knowledge)
- Undefined



Surface Water Map, centred on Coventry Court road, Nottingham [EMD 324122]

Legend

-  Flood Extent 1 in 30
-  Flood Extent 1 in 100
-  Flood Extent 1 in 1000



1: 2,500
0 62
Metres



Flood Defence Map

centred on Coventry Court road, Nottingham - Ref: [EMD324122]



Scale 1:10,000
Date created: 08 September 2023

- Legend**
- EMD Defences - March 2023**
- ASSETTYPE**
- Bridge Abutment
 - Demountable Defence
 - Embankment
 - Engineered High Ground
 - Flood Gate
 - Natural High Ground
 - Spillway
 - Wall

Modelled Nodes Map centred on Coventry Court road, Nottingham - Ref: [EMD324122]

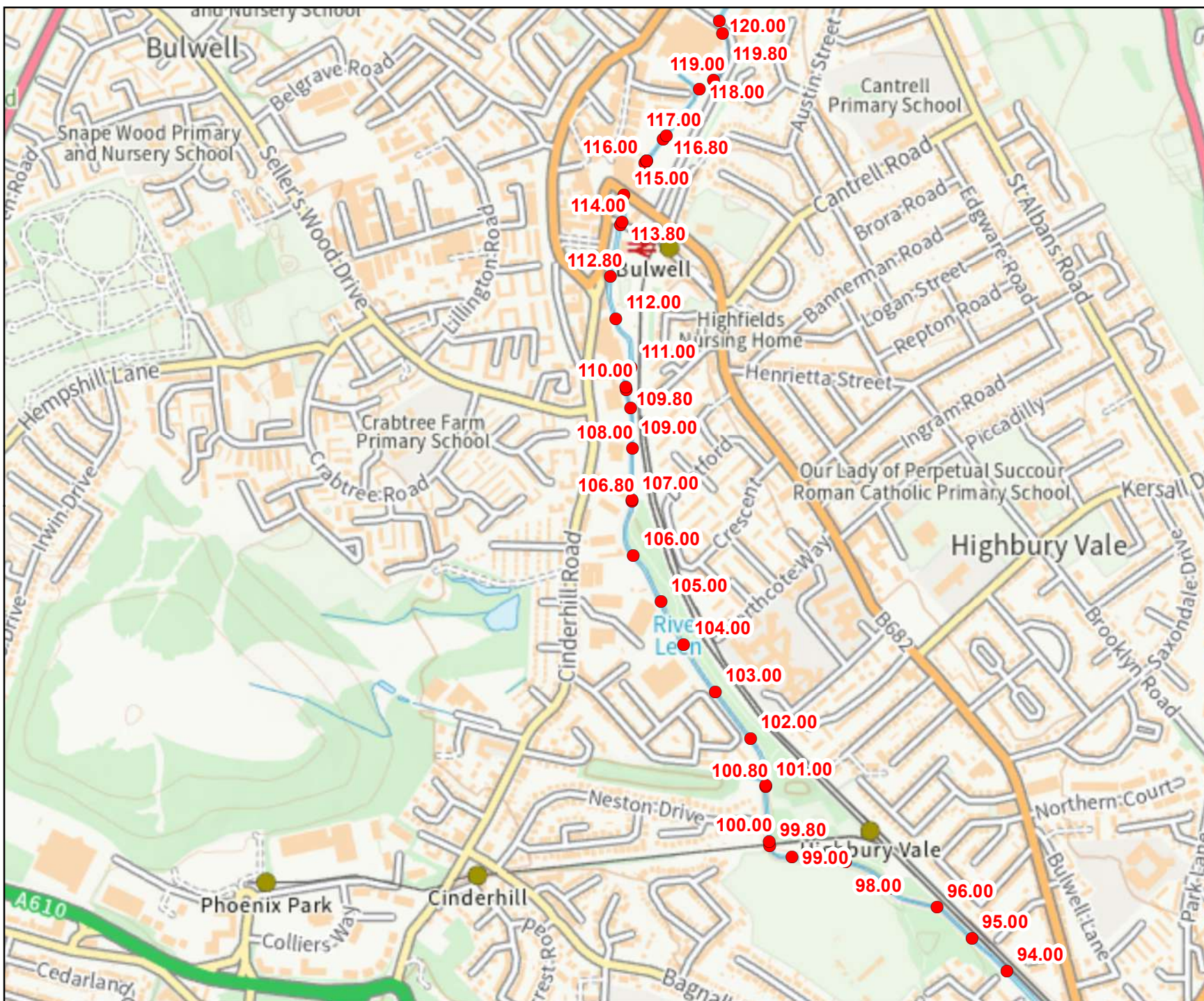


Scale 1:10,000
Date created: 08 September 2023

Legend

● Modelled Nodes_River Leen

SOURCE:
River Leen,
Arup, 2022



Modelled Flood Extents Map centred on Coventry Court road, Nottingham - Ref: [EMD324122]



Scale 1:10,000
Date created: 08 September 2023

Modelled Flood Extents

- 1 in 2 year extent
- 1 in 5 year extent
- 1 in 10 year extent
- 1 in 20 year extent
- 1 in 30 year extent
- 1 in 50 year extent
- 1 in 75 year extent
- 1 in 100 year extent
- 1 in 200 year extent
- 1 in 1000 year extent

SOURCE:
River Leen,
Arup, 2022

Floodplain Heights Map

centred on Coventry Court road, Nottingham - Ref: [EMD324122]



Scale 1:1,000
Date created: 08 September 2023

Legend

+ 1 in 1000 year height (mOAD)

SOURCE:
River Leen,
Arup, 2022

Modelled Flood Extents Map centred on Coventry Court road, Nottingham - Ref: [EMD324122]

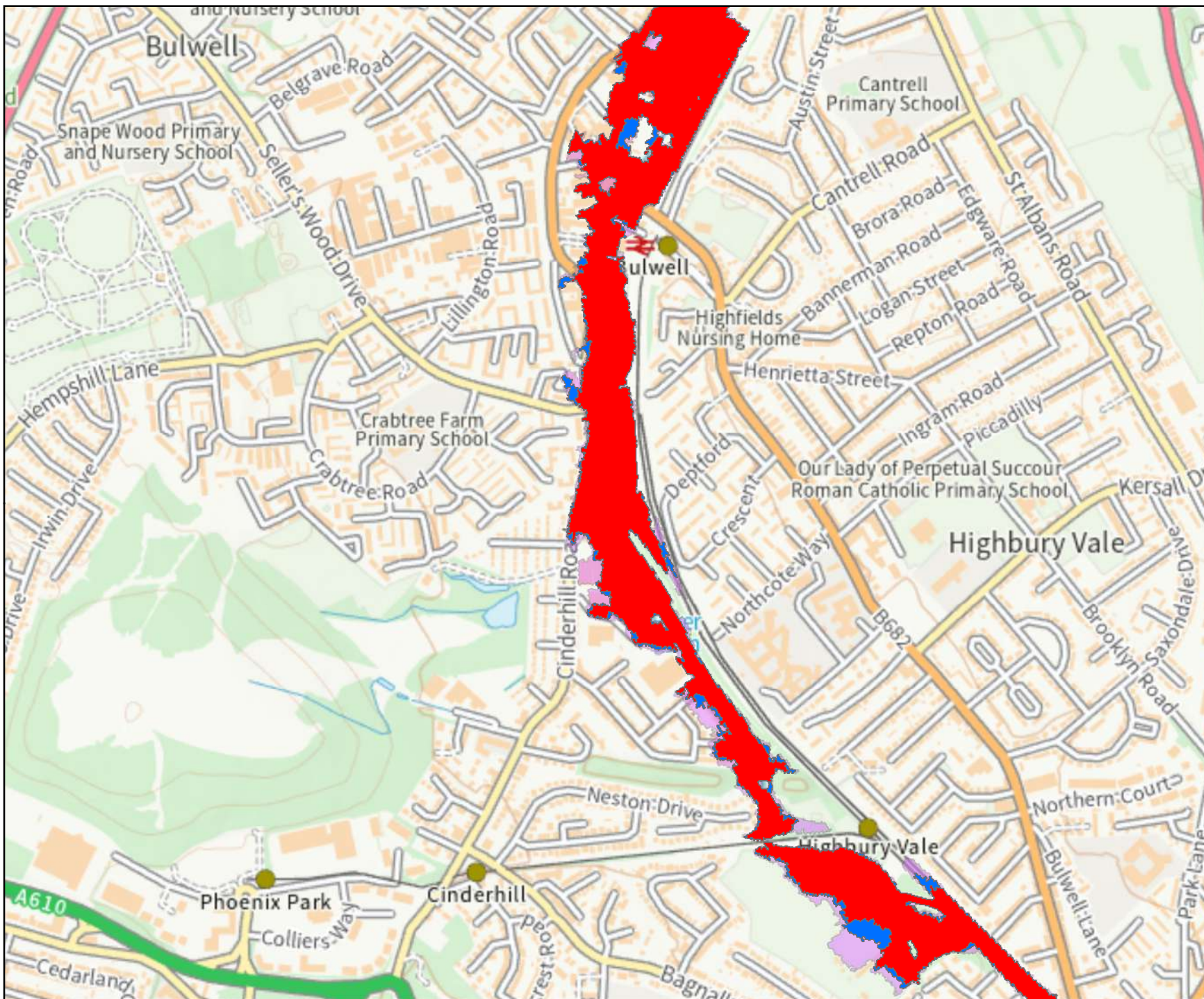


Scale 1:10,000
Date created: 08 September 2023

Legend

- 1 in 100 year + central CC extent
- 1 in 100 year + higher central CC extent
- 1 in 100 year + upper CC extent

SOURCE:
River Leen,
Arup, 2022



Floodplain Heights Map

centred on Coventry Court road, Nottingham - Ref: [EMD324122]



Scale 1:1,000
Date created: 08 September 2023

Legend

+ 1 in 100 year +Higher Central CC height (mAOD)

SOURCE:
River Leen,
Arup, 2022

Floodplain Heights Map

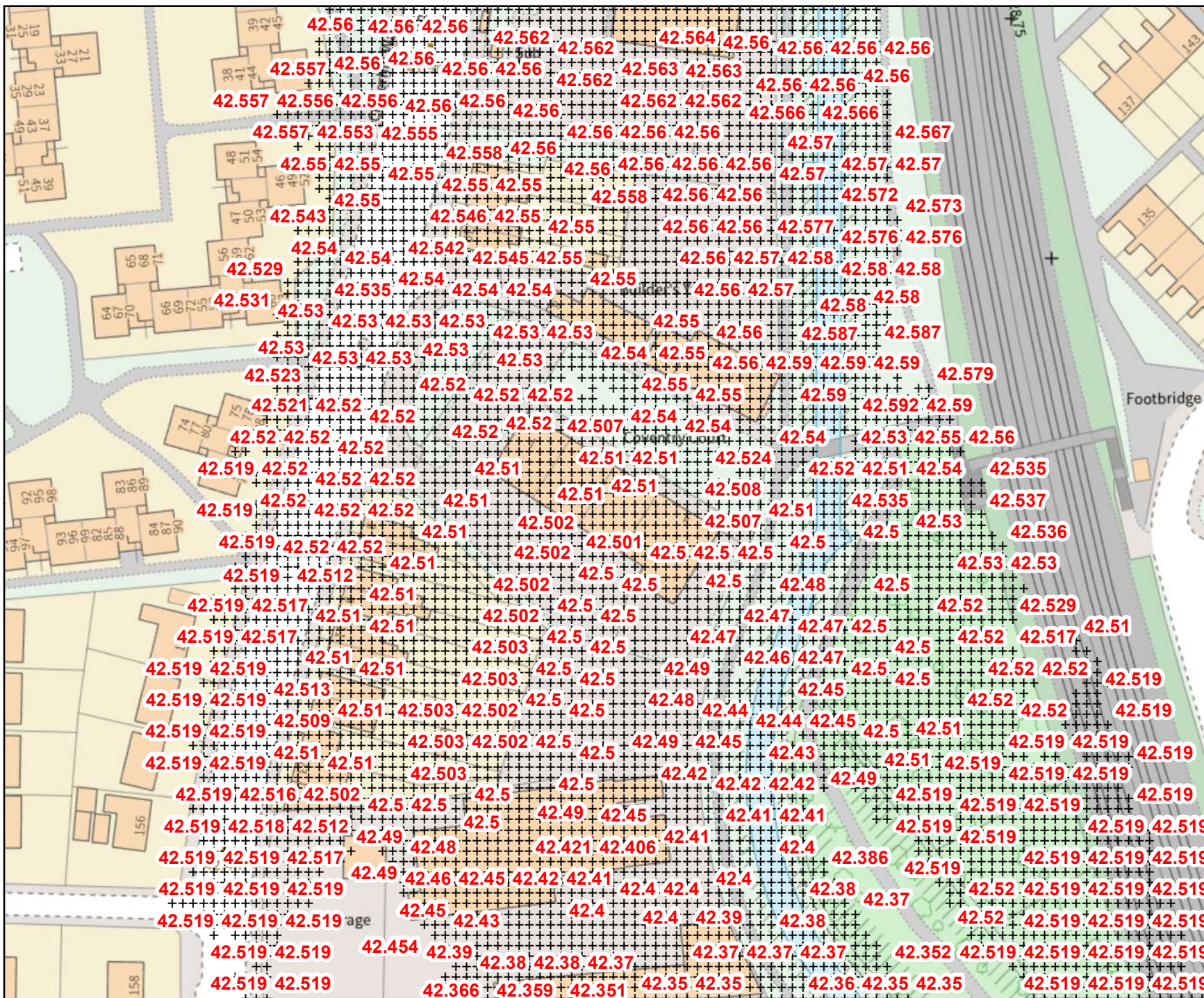
centred on Coventry Court road, Nottingham - Ref: [EMD324122]



Scale 1:1,000
Date created: 08 September 2023

Legend
+ 1 in 100 year + upper CC height (mAOD)

SOURCE:
River Leen,
Arup, 2022



Flood Hazard Map centred on Coventry Court road, Nottingham - Ref: [EMD324122]



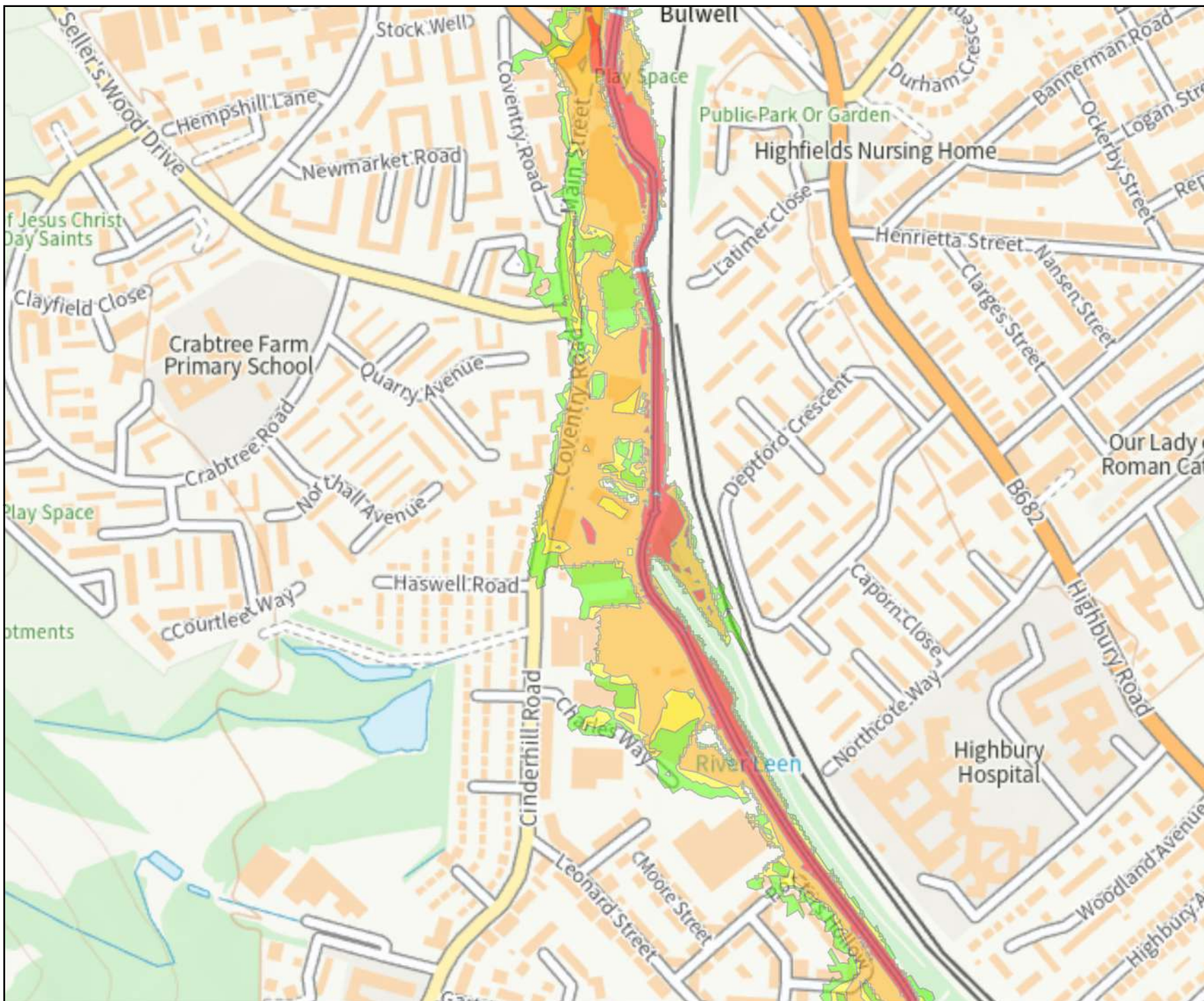
Scale 1:5,000
Date created: 08 September 2023

Legend

category

- Danger to all
- Danger to most
- Danger to some
- Low

SOURCE:
River Leen,
Arup, 2022



Appendix 2
Existing Brownfield Runoff Calculations



**MICHAEL EVANS
& ASSOCIATES LTD**
Civil and Structural Engineers
& Design Consultants

TEL: 01332 871 840

DATE: Sep. 2023

PROJECT NO.:

23-230

SHEET NO.:

1 of 1

PROJECT: Coventry Court, Nottingham

BY:

CHECKED:

REVISION:

CALCULATION: Existing Brownfield Surface Water Runoff Rates

MOH

ND

-

Following the Rationale Method as described by the Wallingford Procedure

$$Q_p = C i A$$

Q_p = runoff (litres/second)

C = runoff coefficient

i = rainfall intensity (mm/hr) = 50

A = area (hectares) = 0.034

If the units are as follows then the equation becomes $Q_p = 2.78C i A$;

Runoff coefficient $C = C_v C_r$, as standard values of 0.75 and 1.30 are used for C_v and C_r respectively.

If the above values for C are used the equation becomes:

$$Q_p = 3.61C_v i A$$

$$= 2.71 i A$$

$$= 2.71 \times 50 \times 0.03$$

$$= 4.61 \text{ litres/second}$$

NOTES:



**MICHAEL EVANS
& ASSOCIATES LTD**
Civil and Structural Engineers
& Design Consultants

TEL: 01332 871 840

DATE: Sep. 2023

PROJECT NO.:

23-230

SHEET NO.:

1 of 1

PROJECT: Coventry Court, Nottingham

BY:

MOH

CHECKED:

ND

REVISION:

-

CALCULATION: Existing Brownfield Surface Water Runoff Rates

Following the Rationale Method as described by the Wallingford Procedure

$$Q_p = C i A$$

Q_p = runoff (litres/second)

C = runoff coefficient

i = rainfall intensity (mm/hr) = 53 100 year + climate change

A = area (hectares) = 0.034

If the units are as follows then the equation becomes $Q_p = 2.78C i A$;

Runoff coefficient $C = C_v C_r$, as standard values of 0.75 and 1.30 are used for C_v and C_r respectively.

If the above values for C are used the equation becomes:

$$Q_p = 3.61C_v i A$$

$$= 2.71 i A$$

$$= 2.71 \times 53 \times 0.03$$

$$= 4.88 \text{ litres/second}$$

NOTES:

Appendix 3

Greenfield Runoff Calculations

Calculated by:	Nicola Dibble
Site name:	Coventry Court
Site location:	Nottingham

Site Details

Latitude:	52.99541° N
Longitude:	1.19674° W
Reference:	2529529071
Date:	Sep 27 2023 14:56

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Runoff estimation approach IH124

Site characteristics

Total site area (ha):	1.25
-----------------------	------

Methodology

Q _{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Notes

(1) Is $Q_{\text{BAR}} < 2.0 \text{ l/s/ha}$?

When Q_{BAR} is $< 2.0 \text{ l/s/ha}$ then limiting discharge rates are set at 2.0 l/s/ha .

Soil characteristics

	Default	Edited
SOIL type:	1	1
HOST class:	N/A	N/A
SPR/SPRHOST:	0.1	0.1

(2) Are flow rates $< 5.0 \text{ l/s}$?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

Hydrological characteristics

	Default	Edited
SAAR (mm):	659	659
Hydrological region:	4	4
Growth curve factor 1 year:	0.83	0.83
Growth curve factor 30 years:	2	2
Growth curve factor 100 years:	2.57	2.57
Growth curve factor 200 years:	3.04	3.04

(3) Is $\text{SPR/SPRHOST} \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q _{BAR} (l/s):	0.2	0.2
1 in 1 year (l/s):	0.16	0.16
1 in 30 years (l/s):	0.39	0.39
1 in 100 year (l/s):	0.5	0.5
1 in 200 years (l/s):	0.59	0.59

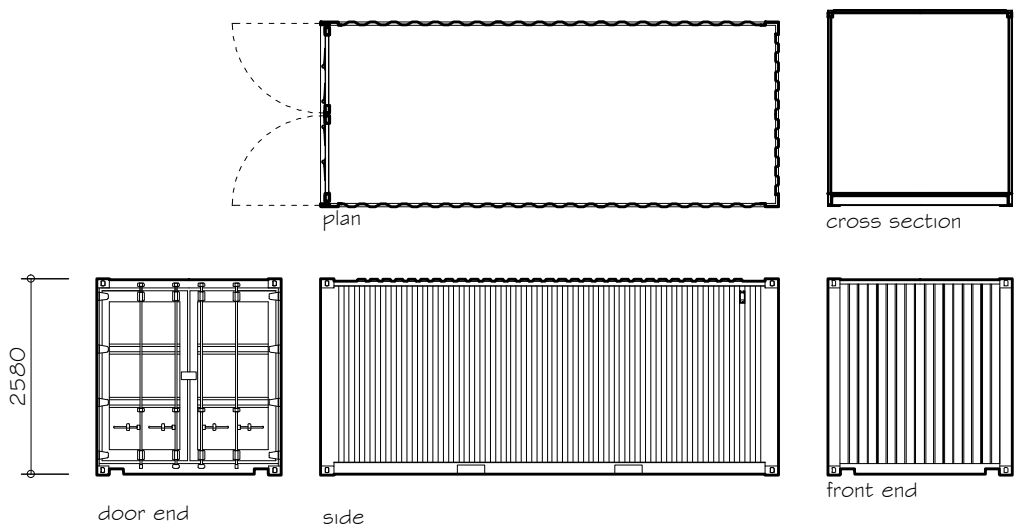
This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

DRAWINGS

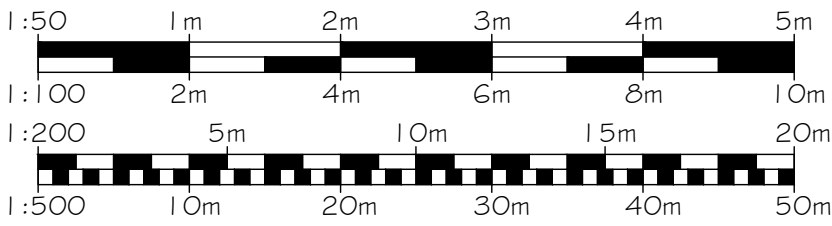
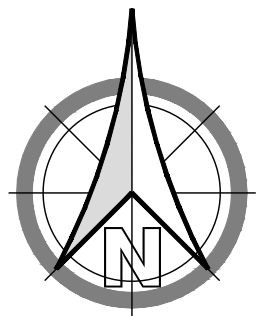


PROPOSED SITE PLAN
SCALE 1:200

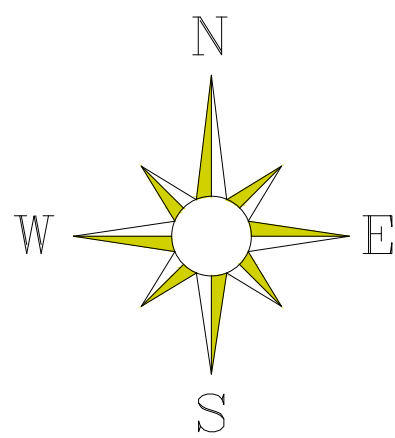
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Obtained from www.centremapslive.com



PROPOSED CONTAINER DETAILS
SCALE 1:100



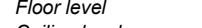
REVISIONS		
	Unit E14, Langham Park Industrial Estate, Lows Lane Stanton by Dale, Ilkeston DE7 4RJ Phone 0115 9324010 E-mail: info@paul-gaughan.co.uk Web: www.paul-gaughan.co.uk	
	CLIENT	
	LOCATION Coventry Court, Coventry Road, Nottingham, NGG 8PR	
	PROJECT Proposed Self Storage Site	
TITLE Proposed Site Plan		
PAPER SIZE ISO A1 (594.00 x 841.00 MM)	SCALE 1:100; 1:200	DATE Aug 2023
DRAWING NUMBER DB/JM/23/00/01		REVISION -
Scales are correct at time of plotting however please note that distortion can occur during copying. This drawing is copyright and may not be altered, traced, photographed, electronically copied or used for any purpose other than for which it is issued, without written permission from Mr. Gaughan. Check all dimensions on site. Any discrepancies should be reported to the designer before works proceed. Hatching is a representation of materials only.		



Key:

FL: Floor level
CL: Ceiling level
SusCL: Suspended ceiling level
U/S: Underside level
SHL: Sill height level
HHL: Head height level
SPR: Spring Point

Building line
Beam
Ceiling Break
Angled Ceiling
Window
Dimension



Ground level

Sanitary ware

Door / sliding door

Heater / radiator

Inspection cover

Ag	At value	Gt	Gm circumference	Sv	Stop valve
Bg	Back gully	Gy	Gully	Tb	Telephone call box
BH	Benchmark	Hc	Height	TTL	Tree top level
BM	Borehole	IC	Inspection cover	Th	Threshold level
Bs	Borehole	IFL	Inside floor level	TCSB	Telephone call box
Bt	Bus stop	IL	Inside level	TL	Tree light
Bt	British Telecom	Lb	Ladder box	Th	Threshold level
Bg	Back gully	LP	Lamp Post	Tp	Telephone post
CB	Control box	ML	Manholes	Ts	Tree signal
CBX	Control box	MP	Manhole post	TT	Tree top
CC	Cable crossing aid	Mkr	Marker	Twt	Top of waste in ditch
CTV	Cable TV Pipe	NVP	No visible pipes	Ud	Under 10 ft
Ec	Electricity pole	Ob	Obstruction	W	Water
Er	Electricity pole	Pb	Pole box	WM	Water meter
Er	Earth road	Re	Road edge	Wo	Wash out
Fh	Fire hydrant	Sp	Sign post		
Fs	Footpath	Sr	Sign		
Road			Verge Grass		
Drop Kerb			Verge		
Verge Terminal			Verge		
Verge Concrete			Bottoms		

Ordnance Survey information is provided for a guide only

—— OS BUILDING OUTLINE —— OS DETAIL

Station	Easting (m)	Northing (m)	Level (m)
M1	453979.054	344549.270	42.164
M2	453953.623	344529.042	42.115
M3	453981.201	344512.180	41.825
M4	454000.483	344541.502	41.902

REV	DATE	DESCRIPTION OF WORK	SURVEYOR	CHECKED BY
-----	------	---------------------	----------	------------



SETTING OUT ■ UTILITY SURVEYS ■ CCTV SURVEYS ■ CAMERA SURVEYS ■ FLOOD RISK ASSESSMENT

Mapmatic, Suite 1, Woburn House, South Street, Vernon Gate, Derby, DE1 1UL
Tel: 01332 650 580 www.mapmatic.com Email: info@mapmatic.com

CLIENT

Mann
Premium Group Ltd

PROJECT

Coventry Court
Coventry Road, Bulwell
NG6 8PR

TITLE Topographica
Survey

Scale 1: 200@A1

Date 31.08.2023

Drawn

Checked AW

Level datum GNS

Grid orientation GNSS

Job number 6253

Revision 0

Notes

All critical measurements should be checked on site prior to design. No liability will be taken for this plan if passed onto 3rd parties. Trees and other survey data may be omitted due to dense vegetation. Some surveying may have been omitted due to parked vehicles and vegetation. Please note the drainage information has been ascertained by visual inspection from the surface and therefore values are estimated. This survey has been orientated to the Ordnance Survey (OS) national grid via a Global Navigation Satellite System (GNSS) and the OS Active Network (OS NET). A true OS2316 coordinate has been established near to the site centre via a transformation using the OSGTNS1 & OSGTNS15 transformation models. The survey has been correlated to this point and a further one or more OS2316 points established to create a true OS bearing for any orientation. No scale factor has been applied to the survey therefore any dimensions shown are approximate. The survey is not intended to be used for legal purposes. Please refer to the survey for further details. Incomplete representation of the results and

