

Revitalising Buxton

Flood Risk Assessment



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This document uses revision codes in accordance with ISO EN 19650:

P##: Preliminary (non-contractual) - review, comment or approval.

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2: Concept

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5: Construction

6: Handover

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1. Introduction & Scope

1.1. Introduction

Booth King Partnership Ltd. (BKP) have been appointed by Capital & Centric (Atomic) Limited and High Peak Borough Council to undertake a Flood Risk Assessment (FRA) in support of a planning application for the redevelopment of Buxton Town Centre, Revitalising Buxton, at Spring Gardens Centre, 33 Station Road, Buxton, SK17 6DF.

This Flood Risk Assessment (FRA) has been developed in accordance with the requirements of the National Planning Policy Framework (NPPF), specifically the guidance set out in Flood Risk and Coastal Change (www.gov.uk/guidance/flood-risk-and-coastal-change), and the associated Planning Practice Guidance. The assessment also aligns with current Environment Agency (EA) technical guidance and the findings of the Level 1 Strategic Flood Risk Assessment (SFRA) for the local authority area. All reference materials and data sources informing this assessment are detailed in the References section.

The site exceeds 1 hectare in area and is located within Flood Zone 3; consequently, a Flood Risk Assessment (FRA) is required in accordance with the National Planning Policy Framework (NPPF). This FRA has been undertaken to demonstrate that the proposed development will not result in an increased risk of flooding to adjacent or downstream areas. In addition, the assessment considers the criteria for BREEAM accreditation, specifically the requirements of Pol 03, alongside potential risks of pollution to controlled waters and the environmental conditions of the site before, during, and following the development works.

This report is intended to identify and evaluate all potential sources of flooding affecting the site, both on- and off-site, and to demonstrate how these risks will be effectively mitigated, with specific consideration given to the impacts of climate change. The Flood Risk Assessment also addresses the management of surface water runoff in line with relevant planning and environmental requirements.

It is assumed, where feasible, that post-development ground levels will remain as close as reasonably practicable to existing levels. Should this assumption or any other key parameters change, the conclusions and recommendations set out in this report may require re-evaluation to ensure their continued validity.

This report is based on information obtained from the recently undertaken site topographical and buried utilities survey, and drainage record plans.

1.2. Scope

Our client by Capital & Centric (Atomic) Limited and High Peak Borough Council has requested Booth-King Partnership Ltd. to undertake a flood risk assessment for Flood Zone 3, for the purposes of planning permission from the High Peak borough Council for the redevelopment of Buxton Town Centre, Revitalising Buxton, shown in Figure 1.

2. Existing Site

2.1. Location

The site is located at centre of Buxton town and surrounded by commercial and residential land use. The proposed development being 2.92ha and it is located at Ordnance Survey Grid Reference E:405981, N: 373628.

The site is surrounded by the Palace Hotel to the north-west, Buxton Visitor Centre and grounds to the west, residential and commercial properties to the south and a viaduct with a railway to the east. Station Road passes through the north of the site, Wye Street in the east and Spring Gardens passes through the south of the site.

A Site Location Plan can be found in Appendix A.

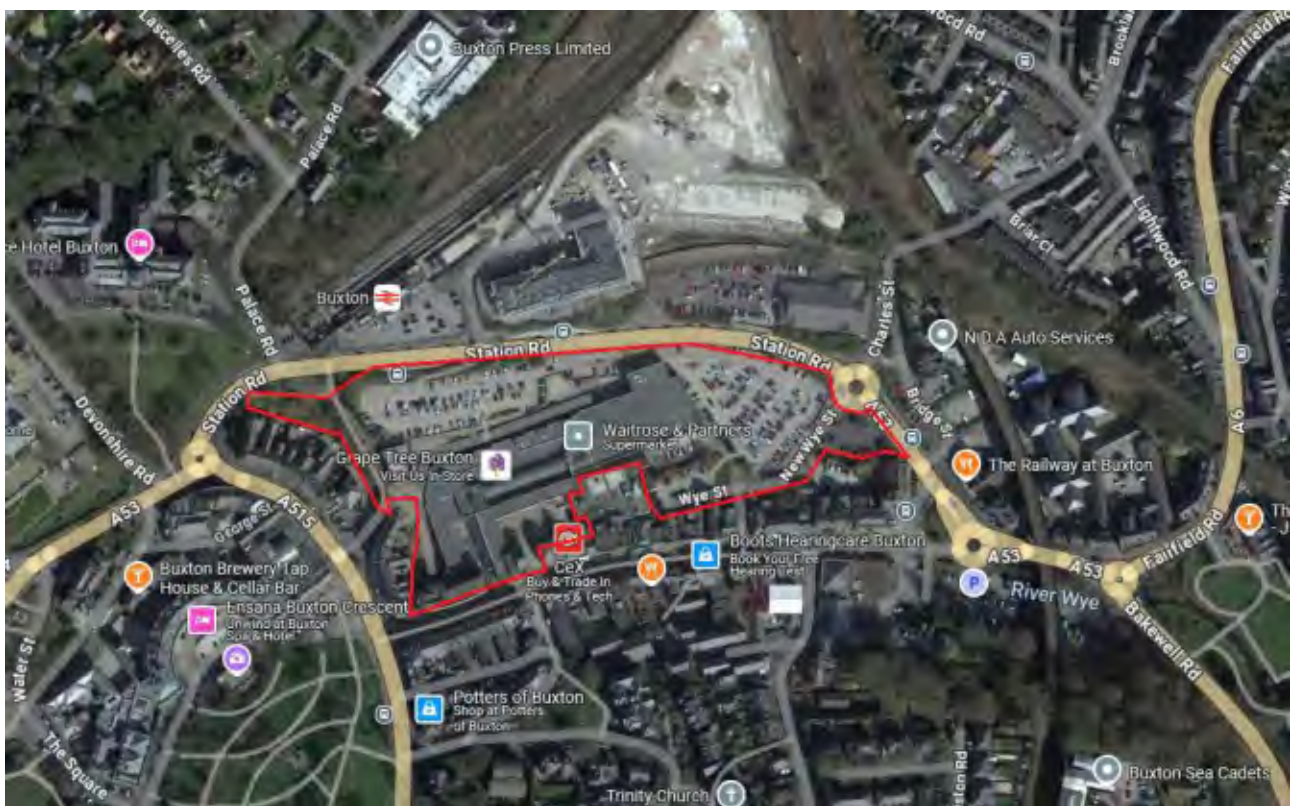


Figure 1. Existing Site – Google Maps

2.2. Site Levels

A topographical survey of part of the site has been undertaken by Greenhatch in March 2025. The topographical survey shows levels at the base of a valley to range between 289.7m (AOD) immediately west of the Springs Shopping Centre boundary and 287.5mAOD towards the eastern boundary where the open section of watercourse is culverted. A copy of the survey Drawing 53766_T is included in Appendix B.

Water levels at the open section of the River Wye were also recorded as part of the Inspection Survey of Culvert under Springs Shopping Centre work. Water levels ranged from 284.27m AOD at the upstream end to 285.62m AOD at the downstream. Details are included in the Inspection Survey drawing A9694_1. A copy of the Inspection Survey Report and drawing can be found in Appendix B.

2.3. Site History

Phase 1 Geo-environmental and Geotechnical Desk Study Report by Atkins Réalis on behalf High Peaks Borough Council (5221802-ATK-XX-ZZ -RP-G-1001-P01) was carried out by Groundsure dated 10th January 2024 summarises the past land use at the Site. An extract from the report (Section 3) regarding the site's history can be found in Appendix C.

2.4. Current Use of the Site

The Site is currently of mixed use, food, and retail stores (including a Waitrose), as well as car park. Surfacing across the site is approximately 95% hardstanding, which comprises a mixture of buildings, block paving and asphalt. The remaining 5% comprises small areas of vegetation / soft landscaping.

The western area of the supermarket carpark is situated approximately 5 m lower than Station Road with a retaining wall between the two. A further retaining wall (and change in level of approximately 5 m) is also present in this area of the site between the Waitrose car park and the Waitrose store.

Two open sections of the River Wye are present within the east of the site, to the south of the Waitrose carpark, approximately 3 m below ground level.

2.5. Existing Drainage

In February 2024, Greenhatch Group conducted a Utility Survey of the Springs Shopping Centre, including the surrounding car park area. While detailed information on private drainage systems in the wider area within the site boundary is not available, it is anticipated that both surface water and foul water drainage systems serving the existing buildings are present on-site.

Surface Water

The Utility Survey plan (49865_T_UG), included in Appendix H, identifies private surface water sewers and two three-stage interceptors that manage runoff from the Springs Shopping Centre. This runoff is discharged into the River Wye at seven distinct locations, as outlined below:

1. **Northwestern and Western Car Park (north of the River Wye):** This area drains westward and then southward via a 375mm diameter pipe into the culverted watercourse. Runoff from this section passes through a three-stage interceptor.
2. **Southwest Area (south of the River Wye):** A small section drains into the culverted watercourse through a 150mm diameter sewer.
3. **Southern Inflow to Central Courtyard:** A 300mm diameter sewer enters the central courtyard of the shopping centre from the south and flows northward to the culverted watercourse. The area contributing to this flow lies outside the surveyed zone.
4. **Central Courtyard:** This area drains into the culverted watercourse via a 150mm diameter pipe.
5. **Northeastern Car Park and Access Road:** Runoff from this area drains into the culverted section of the River Wye located between two open channel sections. Flow is routed through a three-stage interceptor before entering the culvert.
6. **New Wye Street Vicinity (south of the River Wye):** A small surface water drainage network discharges to the culverted watercourse via a 150mm diameter sewer.
7. **Eastern Car Park (east of New Wye Street and north of the open channel):** This section drains directly into the River Wye through a 150mm diameter pipe.

Foul Water

The survey also indicates foul sewers serving the Springs Shopping Centre located to the southwest of the building. Foul flows are collected and transported across the open section of the River Wye via a 150mm diameter pipe to a foul pumping station situated immediately south of the river. From there, a rising main carries the flows southward for discharge into the public sewer operated by Severn Trent Water, which runs along Spring Gardens.

Severn Trent Assets

Public surface water and combined sewers are present both within the site and in the surrounding area. A 675mm diameter public combined sewer, along with associated manholes, runs west to east, south of the site along Spring Gardens Street. Additional drainage from New Wye Street and Wye Street also flows into this combined sewer along Spring Gardens.

Another combined 150mm sewer runs from the corner of Pontefract Way and Station Approach towards Grove Parade where meets the 675mm combined sewer.

Utility records further indicate the presence of the culverted River Wye running through the site. A public surface water sewer begins as a 150mm diameter pipe, increasing to 225mm as it flows eastward along Spring Gardens before turning north to discharge into the open channel section of the River Wye located to the east of the site.

Refer to Appendix B for Severn Trent Asset Map and current drainage layout.



Figure 2. Severn Trent Water Maps Extract

2.6. Geology

In the absence of a Ground Investigation, historic borehole logs (appendix B) were obtained from the interactive map (Figure 3) of the British Geological Survey (BGS), data from the closest available boreholes are SK07SE118, SK07SE119, SK07SE120, SK07SE121, SK07SE122, SK07SE123, SK07SE126, SK07SE127, SK07SE128 and SK07SE129.

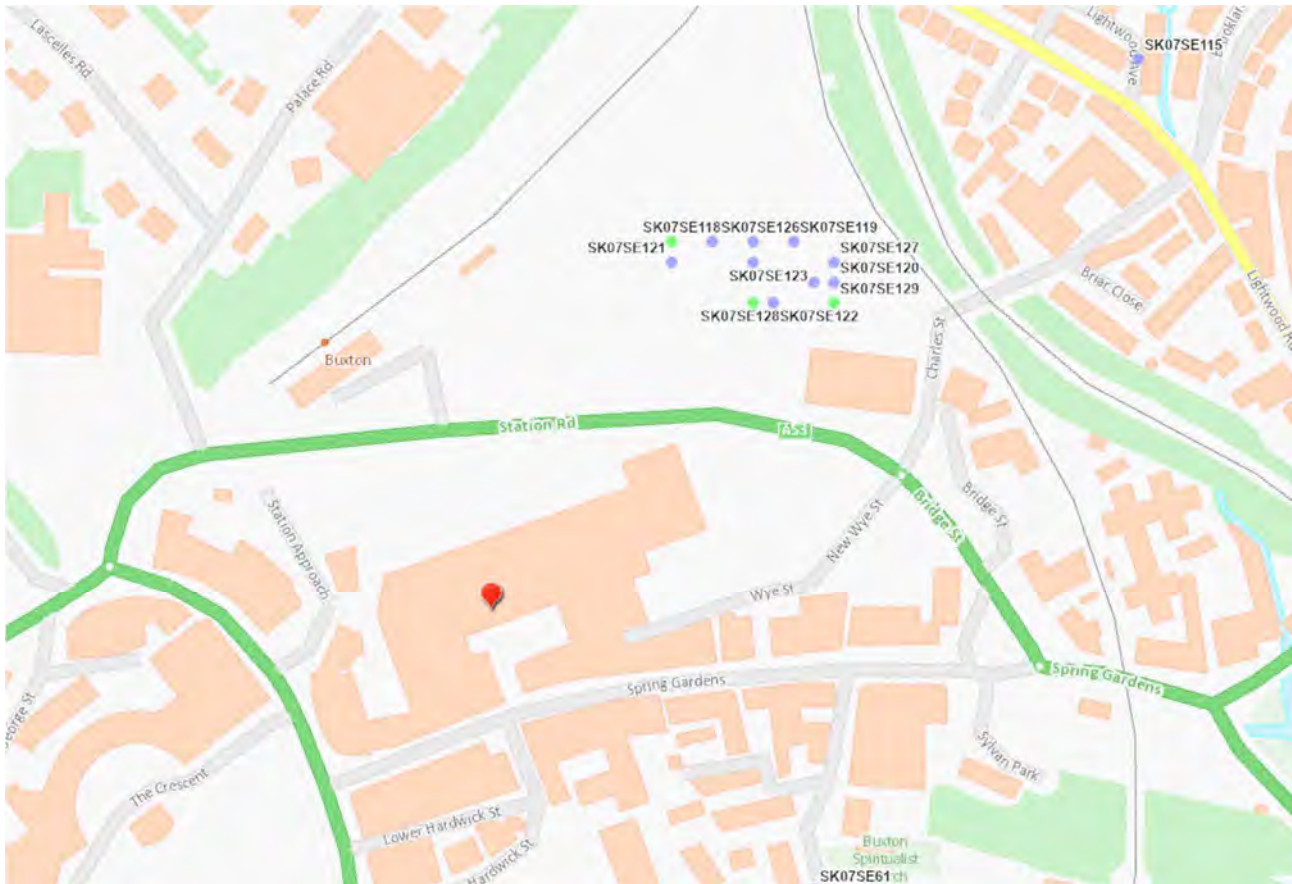


Figure 3. Borehole logs interactive map.

Following a review of the boreholes' logs, located northeast of the site, The site is underlain by Made Ground, that varies in depth from 1.50m to 4.70m deep followed by as described a soft brown/ grey/ yellowish brown gravelly/very gravelly (shale) Clay or dark brown clayey Peat with some broken mudstone or stiff dark brown/ black laminated Clay (completely/highly weathered shale/mudstone).

The AtkinsRéalis Phase 1 Geo-environmental and Geotechnical Desk Study Report was also reviewed, and its key findings are summarised below:

Key Findings:

- **Site Use & History:** The site has a long history of commercial and industrial activity, including former railway sidings, gas works, engineering works, a smithy, garages, and substations. Off-site influences include historical quarries and stables.
- **Geology & Hydrogeology:** Made Ground is likely present due to prior development. Superficial Alluvium (Secondary A aquifer) covers the south; underlying Bowland Shale (Secondary A) and Monsal Dale Limestone (Principal aquifer) underlie the site. The site lies within a Source Protection Zone 1 (Inner Catchment) serving water abstractions ~150–250 m to the southwest – indicating high groundwater and surface water sensitivity.

- **Environmental Sensitivities:** The River Wye runs through the site (partly culverted). Elevated radon potential – protection measures will likely be required. No active landfills nearby; low risk from historical waste sites.
- **Risk Assessment: Human Health:** Moderate overall risk, elevated in the north-east (former gasworks area). Controlled Waters: Moderate risk due to aquifer sensitivity and past industrial use. Buildings/Services: Very low to low risk.
- **Geotechnical Considerations:** Possible constraints include variable Made Ground, soft compressible materials, shallow groundwater, buried obstructions, aggressive ground conditions, and buried utilities.

According to Soilscales, the soils overlying the Site are described as slowly permeable wet very acid upland soils with a peaty surface with impeded drainage.

The British Geological Survey (BGS) GeoIndex shows that there are no mapped superficial deposits underlying the north and south of the site, the central band of the site along the bed of the River Wye is underlain by 'Alluvium – Clay, Silt, Sand and Gravel'.

The bed rock underlying the Site is identified on BGS mapping as comprising 'Bowland Shale Formation – Mudstone, Siltstone and Sandstone'.

Groundwater was encountered in borehole SK07SE122 at 3.50m bgl, in borehole SK07SE126 at 5.5m bgl, in borehole SK07SE127 at 7.0m bgl that rose to 2.8m bgl after 20 minutes, in borehole SK07SE128 at 5.0m bgl that rose to 4.8m bgl after 20 minutes and finally in borehole SK07SE129 at 5.6m bgl that rose to 5.5m bgl.

2.7. Hydrogeology

Watercourse

The nearest watercourse to the site is the River Wye, which flows through a culvert beneath the area. It briefly emerges into two open channel sections, one located immediately east of the Spring Gardens Shopping Centre, and another between New Wye Street and Bridge Street. The river then re-enters a culvert as it continues through the site along Bridge Street and Bakewell Road.

An Inspection Survey of Culvert (Reference No: A9694) was conducted in March 2025 by EDS Marine & Civil Contractors. Their report can be found in Appendix B.

The open sections of the River Wye are protected by flood defences.

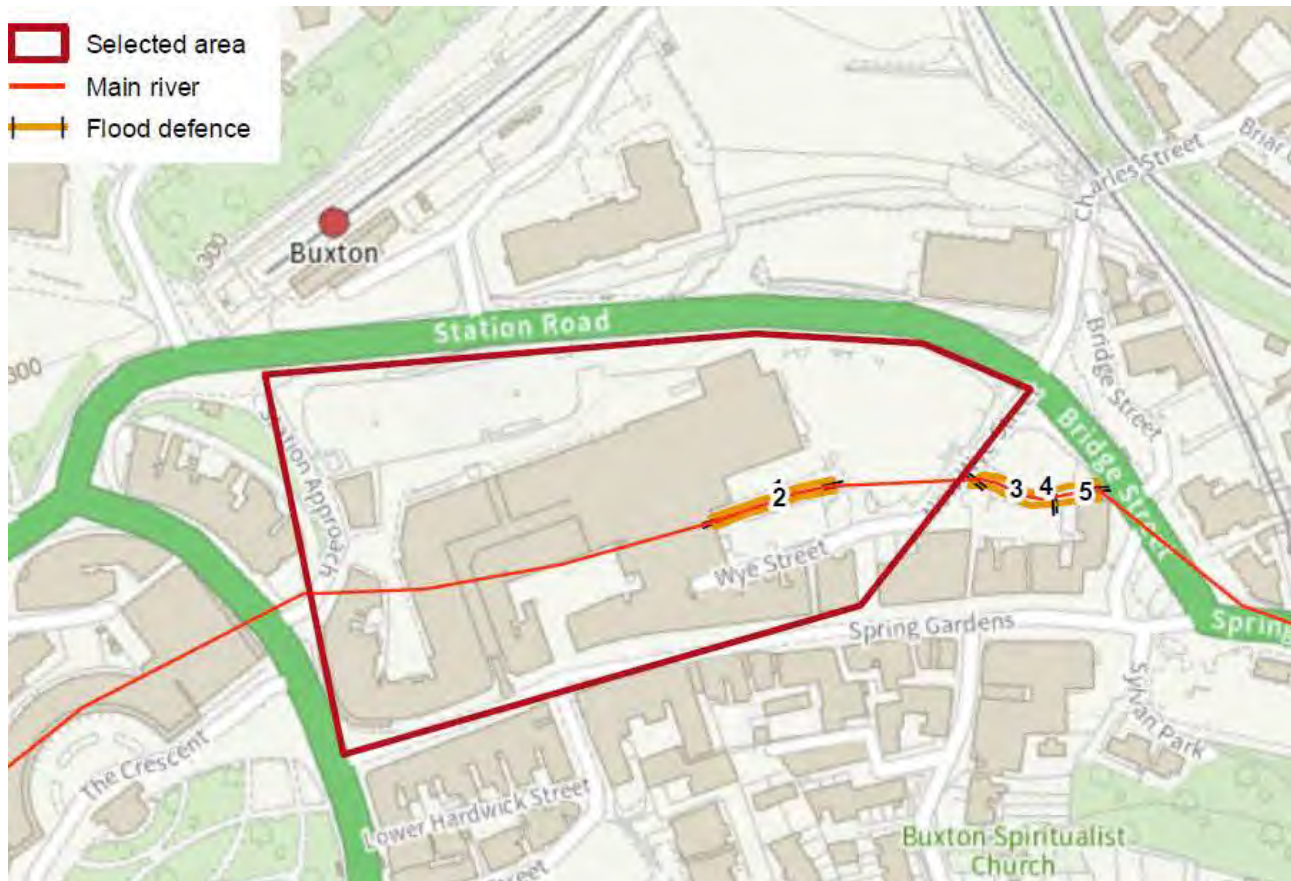


Figure 4. EA Product 4 – River Wye

The River Wye is classified as a Main River by the Environment Agency and flows in an easterly direction. It forms a principal tributary of the River Derwent, which subsequently discharges into the River Trent, ultimately contributing to the Humber Estuary catchment and outflow into the North Sea. In accordance with the Water Framework Directive (WFD), the reach of the River Wye intersecting the site is designated as a Heavily Modified Water Body (HMWB), reflecting significant alterations to its natural morphology and hydrological characteristics.

Additional watercourses in the vicinity of the site include Hogshaw Brook and Nun Brook, both located to the northeast, beyond the adjacent railway corridor. These watercourses are classified as Main Rivers by the Environment Agency. The two brooks converge approximately 270 metres northeast of the site boundary, forming a single channel that subsequently discharges into the River Wye approximately 145 metres to the southeast of the site.

Waterbodies

The Pavilion Gardens are situated within the valley of the River Wye, approximately 200 metres west of the proposed redevelopment site's boundary. The southern branch of the River Wye flows through the Gardens, linking a series of three man-made lakes within the park.

The regeneration area's location is influenced by the convergence of several watercourses originating from the surrounding upland areas. These elevated catchments facilitate rapid runoff towards the town centre during significant rainfall events. As a result, the River Wye and its tributaries are capable of exhibiting very rapid hydrological responses, leading to limited lead time for flood warning dissemination.

Furthermore, the steep upstream topography contributes to elevated sediment and debris transport, increasing the risk of blockages at culverts, bridges, and other in-channel structures, thereby exacerbating the potential for localised flooding.

2.8. Source Protection Zone

According to Manual for the production of Groundwater Source Protection Zones published in March 2019 by the Environment Agency, source protection zone (SPZs) form a key part in controlling the risk to groundwater supplies from potentially polluting activities and accidental releases from pollutants.

The site is located to be within a Type 1 Total Catchment. This zone encompasses areas where groundwater can travel to a specific point within 50 days or less, at or below the water table. It has a minimum radius of 50 metres and is primarily defined using biological decay criteria. The main purpose of this zone is to safeguard against the spread of toxic chemicals and waterborne diseases.



Figure 5. Magicmap Extract

Red Line boundary depicts the Nutrient Neutrality Catchments. This spatial dataset illustrates the boundaries and locations of surface water catchment areas for designated sites identified as Nutrient Neutrality catchments. It is derived from a combination of sources, including the N2K Diffuse Water Pollution Plans Catchments data, Water Framework Directive (WFD) catchment data, River Basin Management Plans, and Surface Water Catchment mapping. The dataset was developed in collaboration with Area Teams, Local Planning Authorities (LPAs), and the Environment Agency.

According to High Peak Borough Council, in March of 2022, Natural England and the Department for Levelling Up, Housing and Communities issued guidance concerning phosphate levels in the River Wye. Excessive phosphates can lead to rapid plant growth, which negatively impacts biodiversity and threatens wildlife habitats.

The guidance clarified that certain types of development within the catchment of these sensitive habitats can contribute to nutrient pollution. This includes, but is not limited to:

- Developments involving overnight accommodation, such as new housing or tourist facilities.
- Permitted developments under planning legislation that result in new overnight accommodation.
- Developments without overnight accommodation that may still impact water quality, particularly through non-sewerage-related discharges.

The “Habitats Regulations 2017”, planning authorities must ensure that new developments do not adversely affect the integrity of protected habitats before granting approval. As a result, the Council cannot approve developments within the Peak District Dales SAC catchment unless it can be clearly demonstrated that there will be no “likely significant effects” on the SAC. This requirement has caused delays in housing delivery across parts of the catchment, including Buxton, sections of Dove Holes, and the surrounding rural areas.

Natural England has developed a framework for assessing the effectiveness of habitat restoration and mitigation proposals and an associated reference tool in addition to the nutrient calculator and tools. These were developed into a guidance for landowners/managers and LPAs on the use of nature-based solutions to mitigate nutrient pollution. This guidance is assisting in determining the appropriate and the most effective mitigation measures and complement the nutrient calculator tool.

Planning application in SAC areas, have to consider the possibility of adverse effects, as a result of additional nutrient loads (including from residential developments); as part of a Habitat Regulations Assessment (HRA).

The Nutrient Neutrality Mitigation Strategy (Project Ref: 2025-02-564326) and Proposal for Nutrient Neutrality Budget Calculation (Project Ref: 202502563940) were developed by Antea Group and can be provided upon request.

The hatched black diagonal lines depict the Drinking Water Safeguard Zones for England. Drinking Water Safeguard Zones (Surface Water) are designated catchment areas that impact the quality of water supplying their corresponding Drinking Water Protected Areas (Surface Water). These zones are identified where the protected areas are considered “at risk” of failing to meet the drinking water protection objectives outlined in the Water Environment (Water Framework Directive) (England & Wales) Regulations 2017.

Safeguard Zones serve as a key mechanism for achieving these protection objectives. They are non-statutory and represent a collaborative effort between the Environment Agency and water companies. Within these zones, targeted actions and measures are implemented to prevent or reduce water contamination, helping to avoid or limit additional water treatment requirements.

Each Safeguard Zone is supported by an Action Plan; in this case, the plan titled Surface Water Safeguard Action Plan Summary Upper River Derwent (SWSGZ2305) outlines the specific impacts, sources of pollution, and proposed mitigation measures.

3. Flood risk

The site is located within Flood Zones 1, 2, 3a and 3b, as it falls within the designated floodplain of the River Wye.

The vulnerability of the site to flooding from sea and other sources has been considered and the local SFRA has been taken into account. Typical sources of flooding include fluvial, tidal, surface water, groundwater and anthropogenic sources such as sewer flooding and reservoir flooding. These are all considered in this Section.

The probability of flooding from rivers and the sea is modelled by the EA for the whole of the UK and mapped as Flood Zones which categorise areas according to the likelihood of flooding occurring. The zones are defined by the predicted extent of flooding during annual exceedance probability (AEP) events.

The maps are based on a broad assessment of areas using digital mapping techniques. Extracts from the EA flood maps for the site and its surroundings are included here for reference purposes.

The flood zones are defined in NPPF, and the High Peak Borough Council Level 1 Strategic Flood Risk Assessment (March 2024) and summarised below:

Flood Zone	Definition
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)
Zone 2 – 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% 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 – The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: - 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)

3.1. Sequential and Exception Test

The High Peak Local Plan, adopted in April 2016, identifies the site as part of the Station Road and Spring Garden Regeneration Areas, as outlined in Chapter 6: Strategic Development Sites – Policy 22.

Policy DS 22

Station Road and Spring Gardens Regeneration Area, Buxton

Land amounting to 3.34ha is allocated for town centre regeneration uses, including residential, office, hotel and tourist accommodation, leisure and cultural related developments. Retail development within the Primary Shopping Area will be supported. Development will be subject to compliance with other relevant Local Plan policies, and should have regard to the Buxton Design and Place Making Strategy SPD and Station Road Design Framework SPD. In addition applications will be subject to:

- Applications for retail development outside of the Primary Shopping Area will require a sequential and impact assessment;
- Preparation of a comprehensive development plan and phasing programme, including a physical design assessment and viability appraisal;
- Heritage Assessment;
- Archaeological Assessment;
- Contributions towards infrastructure, services and other community needs, including: local labour agreement employment and training scheme; highway, parking and traffic management measures; greenways and public realm;
- Provision of additional parking (approximately 30 spaces) to serve Buxton Station to the north of Station Road
- Transport Assessment;
- Travel Plan;
- Environmental Impact Assessment if required;
- Ecological Survey;
- Hydrological Survey;
- Flood Risk Assessment, including surface water control measures via the use of SuDS.

Figure 6. Extract from High Peak Local Plan Adopted 2016

The High Peak Borough Council SFRA provides recommendations for the Station Road and Spring Gardens Regeneration Area (Southern Area) concerning the sequential approach, which are outlined below:

- A Sequential Approach should be applied throughout the allocation, with all new development—especially more vulnerable uses such as residential—being directed to areas of lowest flood risk. The lowest-risk area is located along the site's northern boundary, currently used as a car park.
- In line with watercourse bye laws, it is generally not permissible to place new development within 8m of a watercourse bank, without express permission. Renovation of existing buildings in closer proximity to the watercourse would not normally be subject to this restriction.
- ***As the site is classified as 'brownfield', no areas within it are designated as Flood Zone 3b (functional floodplain).***

Based on the above information, it can be concluded that the Sequential Test was satisfactory.

Flood Risk Vulnerability and Flood Zone Incompatibility

Table 2 of the NPPF classifies the compatibility of different development end uses, based on their vulnerability to flooding, against the defined flood zones for rivers and sea, and an extract of the table is provided below.

Table 2 of the NPPF classifies the compatibility of different development end uses, based on their vulnerability to flooding, against the defined flood zones for rivers and sea, and an extract of the table is provided below.

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	×	×	×

Key: ✓ Development is appropriate.
 × Development should not be permitted.

Figure 7. Table 2 of NPPF

The NPPF defines the Flood Risk Classifications within Annex 3, and the definitions are not repeated here. The proposed development is mixed use (residential and commercial) with an extensive car park.

It is proposed that ground floor use of the development to be is designated to commercial use and carparking which are classified as **LESS** vulnerable and therefore an Exception Test is **NOT** required.

It is also recommended all residential finished floor levels to be at least 600 millimetres above the design flood level, including an allowance for climate change as per Pre-planning application Guidance Note: Derbyshire, Nottinghamshire and Leicestershire (DNL) Area (Last Updated: February 2024)

3.2.Flooding History

The Environment Agency’s “Product 4” data indicates that the portion of the site located in the Wye Valley falls within Flood Zones 2 and 3. The flood risk in this area arises from the culvert’s inability to accommodate flows during extreme events. When the volume of water entering the culvert surpasses its capacity, water levels rise at the upstream entry point, leading to overtopping of the riverbanks and downstream flow along Spring Gardens.

The Environment Agency last recorded historic fluvial flooding at this location is dating back to 1984.

Additionally, historical flood events are recorded in the Groundsure Report (Reference: GS-AEL-W6X-8JC-J2S), which forms part of the Phase 1 Geo-environmental and Geotechnical Desk Study Report prepared by AtkinsRéalis for High Peak Borough Council, issued in March 2024. The records show that in February 1984, the open channel section of the River Wye within the proposed regeneration area exceeded its capacity.

It is mentioned in the AtkinsRéalis Flood Risk Assessment and Drainage Appraisal commissioned by the High Peak Borough Council and issued in April 2024 that the LLFA have records of historic flooding incidents located at four areas within the site: The River Wye (open section – west), and the River Wye (open section – east) which runs across New Wye Street. The two other areas include the car park at the northeast boundary, and the properties south of The Spring Gardens Centre, aligning with the River Wye.

The High Peak Level 1 Strategic Flood Risk Assessment (SFRA) indicates that significant fluvial flooding occurred along the River Wye in February 1984 and in November 2000. The exact location is not provided.

3.3. Coastal, Tidal & Estuarine Flooding

The site is situated at a considerable distance from coastal, tidal, and estuarine waters; as such, the associated flood risk from these sources is deemed negligible.

3.4. Sewers

The High Peak Borough Council Level 1 Strategic Flood Risk Assessment (SFRA) identifies 4 incidents in the postcode SK17 6 area where properties have experienced flooding from sewers and surface water runoff. Overall, the flood risk associated with artificial drainage systems across both the plan area and the wider High Peak Borough is considered to be low to medium.

3.5. Artificial Sources

The Environment Agency's Reservoir Flood Map confirms that the site is not at risk of flooding from reservoirs.

The interactive mapping within the High Peak Borough Council Level 1 Strategic Flood Risk Assessment (SFRA) indicates that the site is not subject to flooding from A reservoir.



Figure 8. High Peak Borough Council Interactive Map – Reservoir Flood Extents

The High Peak Borough Council Level 1 Strategic Flood Risk Assessment (SFRA) identifies a single canal within the borough—the Peak Forest Canal—located to the east of Furness Vale and Newtown. There are no recorded incidents of breaches, overtopping, or any other local flood risk events associated with this canal. As it is situated approximately six miles north of the site, it does not present a flood risk to the proposed development area.

3.6. Culvert Flooding

The obstruction of watercourses or structures by debris—such as vegetation, sediment, and man-made materials—can reduce flow capacity and elevate water levels, thereby increasing the potential risk of flooding. Elevated water levels may result in saturation, seepage, or percolation, which can compromise the integrity of earth embankments or other structures. Additionally, the accumulation of debris can alter flow patterns, potentially causing scour, sedimentation, or structural failure.

Although the culverts on-site are located below the surrounding ground level and have protective measures in place, they are still considered to present a flood risk to the site.

It is advised in discussions with the LLFA to clarify the responsibility for maintaining the infrastructure.

3.7. Groundwater Flooding

In the absence of a detailed Ground Investigation, a review of historical borehole records in the vicinity indicates the presence of a shallow water table at approximately 3.5m bgl (Ref: SK07SE122), suggestive of a perched water table situated above a low-permeability stratum.

The Environment Agency's Flood Risk Summary website indicates that groundwater flooding is unlikely in this area, while the High Peak Borough Council's interactive map suggests there is a less than 25% likelihood of groundwater flooding.

It is recommended that a comprehensive Ground Investigation, along with further testing, be undertaken to inform the development process.

3.8. Surface Water Flooding

The Environment Agency's Surface Water Flood Map identifies several areas within the Site as being susceptible to surface water flooding. Specifically, approximately six small zones, predominantly located in the western portion of the site along Station Approach and Terrace Road (A515), as well as part of the Spring Garden Shopping Centre are subject to an annual probability of flooding exceeding 3.3%. Additional areas in the east part of the Spring Gardens Shopping Centre and close to the open parts River Wye are associated with a medium risk, with an estimated annual probability of between 1% and 3.3%. In contrast, the northern and southern extents of the site fall within areas classified as very low risk, where the likelihood of surface water flooding is less than 0.1% per year.

Given the extensive urbanisation of the area, exceedance flows are anticipated to follow the natural topography and drain under gravity toward the town centre.

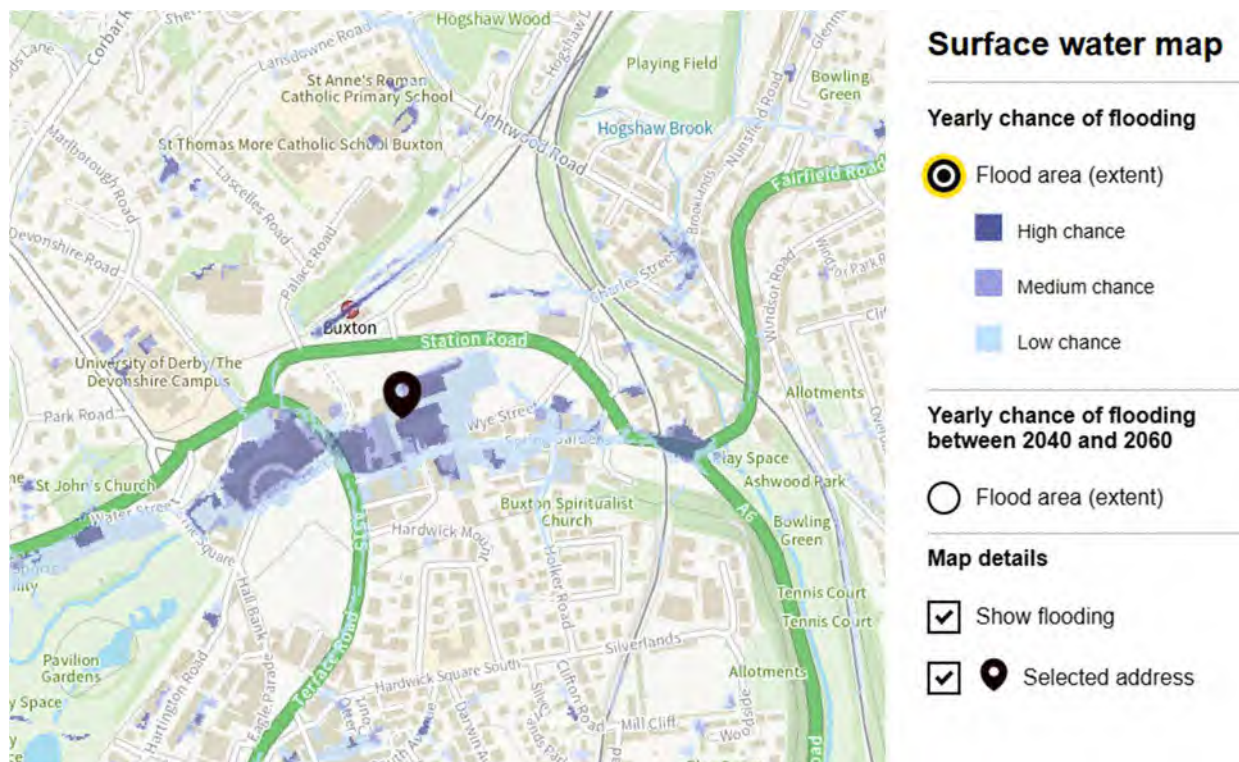


Figure 9. Surface Water Map - Flood Extents

According to the Environment Agency's Risk of Flooding from Surface Water (pluvial) mapping, a Medium risk event is projected to result in surface water flooding in areas adjacent to the watercourse. During such an event, flood depths along Spring Gardens and to the north of the main shopping centre building are expected to be less than 300mm. In contrast, flood depths in the area immediately west of the building and within the internal service yard are anticipated to range between 300mm and 900mm. The most significantly affected areas are expected to be along the open sections of the watercourse, where flood depths may exceed 900mm.

3.9.Flooding from River/Fluvial Flooding

The Environment Agency Product 4 Maps indicate that the site is located wholly within Flood Zone 3 associated with fluvial flooding of River Wye.

The Environment Agency 'Product 4' maps show several scenarios of flooding to the site from River Wye. The EA Node Point Maps are presented in Appendix D.

There were five numbered node points used for this study Wye: WY129-4, WY129-3 and WY129-2, points with the development.



Figure 10. 'Product 4' Modelled Nodes Map

Table 3.1 Modelled Information River Wye.

Return Period	WY129-4 Annual Exceedance Probability – Maximum Water Levels (m ODN)	WY129-3 Annual Exceedance Probability – Maximum Water Levels (m ODN)	WY129-2 Annual Exceedance Probability – Maximum Water Levels (m ODN)
20% (1 in 5 year)	286.53	286.05	285.63
10% (1 in 10 year)	286.81	286.37	286.13
5% (1 in 20 year)	287.26	287.11	286.96
2% (1 in 50 year)	287.58	287.48	287.22
1.33% (1 in 75 year)	287.66	287.58	287.32
1% (1 in 100 year)	287.67	287.62	287.37
0.5% (1 in 200 year)	287.76	287.71	287.50
0.1% (1 in 1000 year)	3.92	3.87	

0.1% (1 in 1000 year)	287.93	287.83	287.73
0.1% (1 in 1000 year inc 20% CC level)	287.76	287.73	287.52

The site is currently located within an area defined as Flood Zone 3 and is considered to benefit from flood defences located to the south of the site protecting it from flooding by River Wye.

The flood defences in the area are illustrated in Figure 11 below. The nearest assets within the site include engineered high ground and a flood wall that forms part of the banks along the open sections of River Wye.

The available data does not specify the current condition, or the standard of protection associated with these flood defence features.

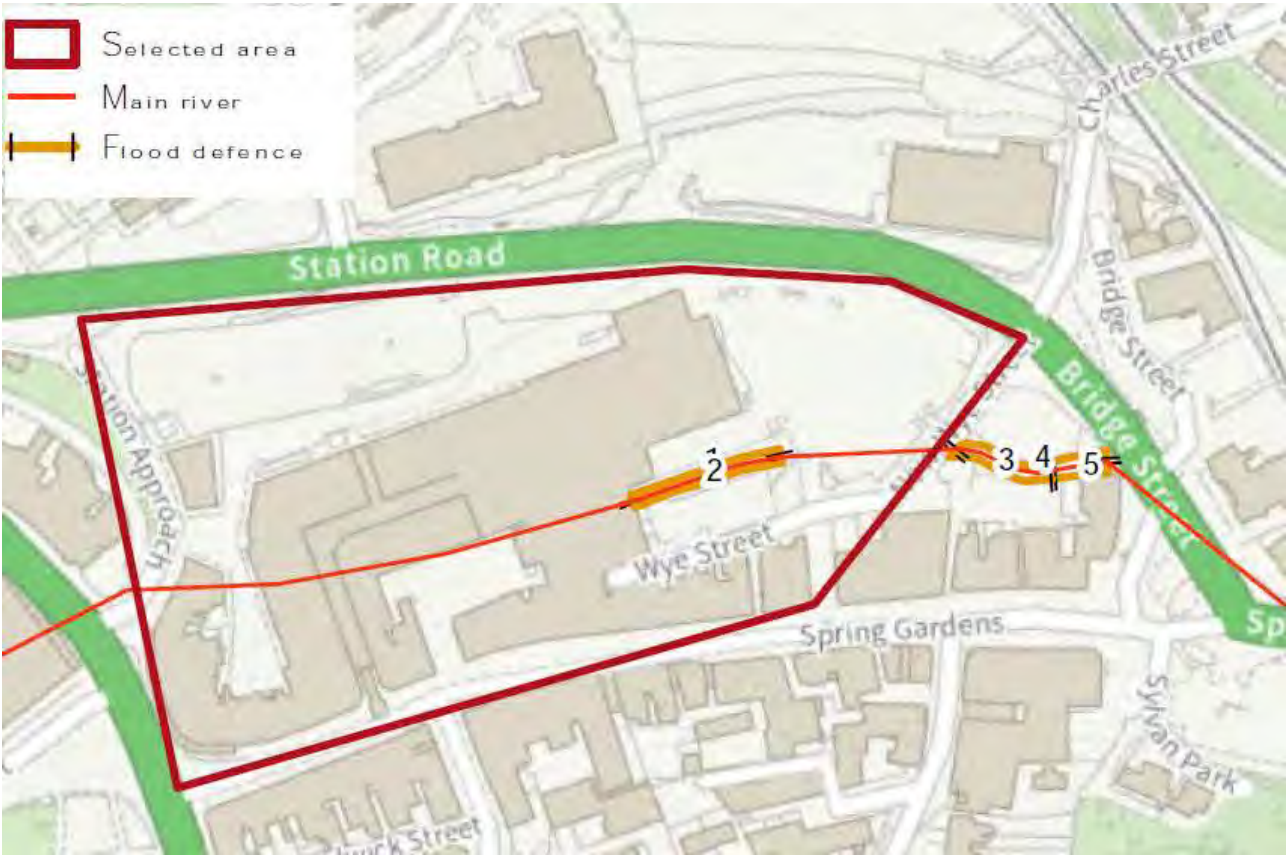


Figure 11. 'Product 4' Flood Defences Map

According to the Topographical survey (Appendix B), the crest height of the walls ranges from approximately 288.99mAOD and 287.27mAOD along both sections of open watercourse.

Table 3.2 Flood Defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current Condition	Downstream Actual Crest Level (m AOD)	Upstream Actual Crest Level (m AOD)	Effective Crest Level (m AOD)
1	91266	Engineered High Ground	9				
2	180277	Engineered High Ground	9				
3	527651	Wall			285.37	285.17	284.95
4	91448	Engineered High Ground	9				
5	180275	Engineered High Ground	9				

As the site is located within the EA's fluvial floodplain, modelled flood elevation data were obtained from the EA. EA Product 4: Flood Risk Data Package for Spring Gardens, Fairfield, Buxton, High Peak, Derbyshire (Dated:22/01/2025) has been used to assess flood risk and to provide recommendations for mitigation for the proposed development.

Modelled flood data from the River Wye SFRM2 Study (Halcrow, 2010) has been supplied for three locations (Figure 10) within the site boundary, covering a range of storm events as shown in Table 3.1.

Modelled flood levels at the three locations have been compared with existing ground levels to evaluate the flood risk across the site. The findings are presented in Table 3.3, with supporting Product 4 data provided in Appendix D.

The results indicate that for the majority of the events assessed, the river flows remain within the riverbanks. For the 1 in 100year storm event the flood water exceeds the level of the bank at node: WY129-4, WY129-3, WY129-2 and one of the lowest points in the topographical survey at Station Approach (west part of the site), flood depths at these points are shown in Table 3.3 in red for clarity.

Table 3.3 Ground Levels VS Flood Levels

Label	Ground Levels (m AOD)	Flood Levels (m AOD)				
		1 in 100 year event	1 in 100 year event + 20% CC	1 in 100 year event + 30% CC	1 in 100 year event + 50% CC	1 in 1000 year event
WY129-4	288.71	287.67	287.76	288.80	289.00	289.70
	Flood Depth (m)	No flooding (-1.04)	No flooding (-0.94)	0.09	0.29	0.99
WY129-3	287.33	287.62	287.73	287.50	287.72	287.50
	Flood Depth (m)	0.29	0.40	0.17	0.39	0.17
WY129-2	287.60	287.37	287.52	287.49	287.66	287.74
	Flood Depth (m)	No Flooding (-0.23)	No Flooding (-0.08)	No Flooding (-0.11)	0.06	0.14
Station Approach (maximum flood levels from EA Maps)	289.67	-	290.40	290.40	290.60	290.90
	Flood Depth (m)	-	0.73	0.73	0.93	1.23

The Environment Agency’s Flood Risk Assessments: Climate Change Allowances guidance, published in May 2022, requires consideration of various potential increases in river flows for the site. Located within the Derwent Derbyshire Management Catchment and assuming a development lifespan of 60 years, the relevant allowances for the 2080s are 29% for the Central scenario, 39% for the Higher scenario, and 63% for the Upper scenario.

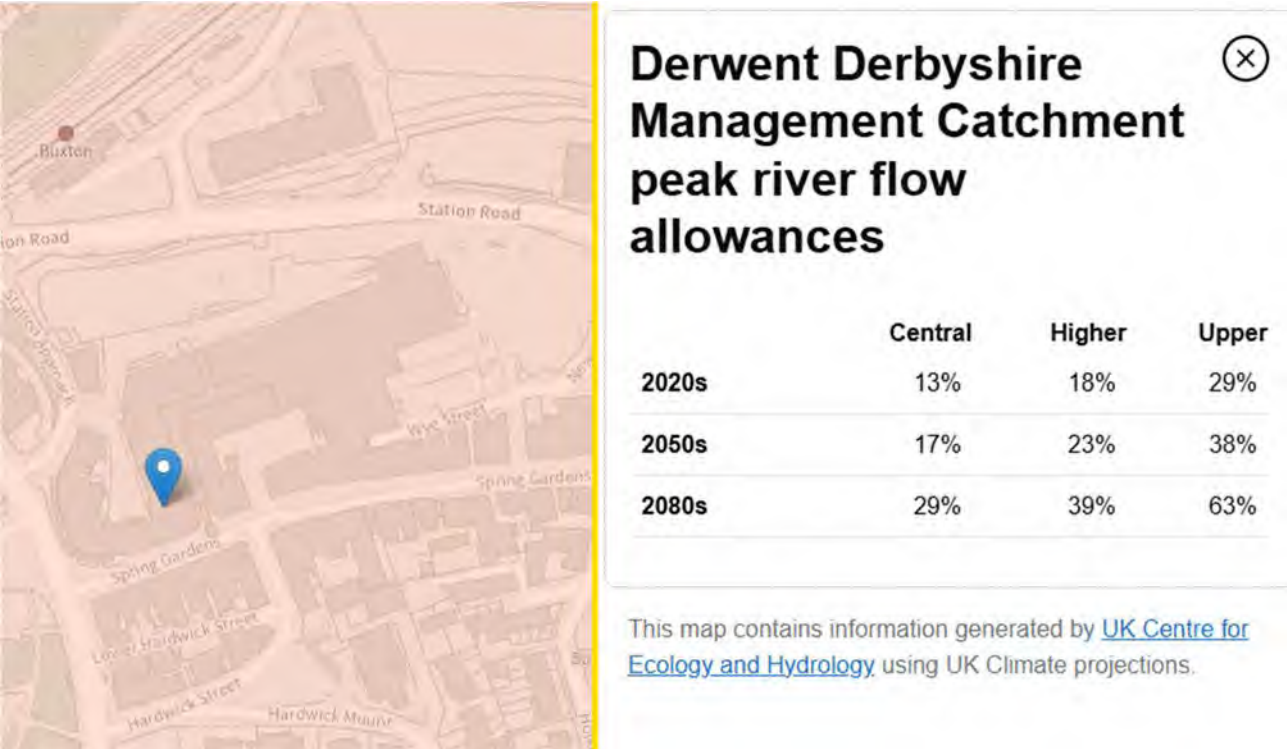


Figure 12. River Flow Allowances

It is understood that the masterplan for the site is fixed. However, based on the proposals provided by the architect, refer to Appendix E, the potential site usage and their relation to the EA Flood Zones is mapped in Figure 13 below.



Figure 13. Current Proposed Site Layout

An assessment of the proposed development and its suitability based on the ground floor use and the vulnerability of the proposals, its relevant flood zone compatibility was carried out, this has been summarised in Table 3.4.

Additionally, Table 3.4 includes an assessment of flood allowances based on the vulnerability of the ground floor level development. This assessment also provides recommendations for the use of flood-resilient construction materials.

Table 3.4 Flood Vulnerability Summary per Block

Block Label	Proposed Ground Floor Use	Vulnerability Classification	Flood Zone	Suitability	Allowed flood to	Flood Resilient Construction Materials
Block 1	Car Park	Less Vulnerable	FZ1	Yes	N/A	N/A
Block 2	Car Park	Less Vulnerable	FZ1/FZ3	Yes	Open Route for Flood Water	N/A
Block 3A	Car Park	Less Vulnerable	FZ1/FZ3	Yes	Open Route for Flood Water	N/A
Block 3B	Car Park / Commercial	Less Vulnerable	FZ1/FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required
Block 4	Commercial	Less Vulnerable	FZ1/FZ3	Yes	Open Route for Flood Water	N/A
Block 6	Car Park	Less Vulnerable	FZ1	Yes	N/A	Resilient Construction Materials required
Block 7	Commercial	Less Vulnerable	FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required
Block 8	Commercial / Existing Building	Less Vulnerable	FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required
Block 9	Commercial	Less Vulnerable	FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required
Block 10	Commercial	Less Vulnerable	FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required
Block 11	Commercial	Less Vulnerable	FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required
Block 12	Access Road	Less Vulnerable	FZ3	Yes	Open Route for Flood Water	Resilient Construction Materials required

The assessment determines that the proposed development will not result in an upward reclassification of the site's flood vulnerability. This is attributed to the spatial allocation of 'Less Vulnerable' commercial uses within areas of higher flood risk, and the siting of 'More Vulnerable' residential uses within areas of lower flood risk—namely Flood Zone 1 and/or upper building levels. Consequently, the development satisfies the requirements of both the Sequential Test and the Exception Test. It should be noted, however, that any future proposals involving an escalation in vulnerability classification within Flood Zone 3 will necessitate the application of the Sequential and Exception Tests in accordance with national planning policy.

4. Proposed Flood Mitigation Measures

4.1. Proposed Floor Levels

In accordance with the High Peak Borough Council Strategic Flood Risk Assessment (SFRA) Level 1 (March 2024) and the Environment Agency's flood risk management requirements, finished floor levels (FFLs) for new development must be set a minimum of 300mm above the 1% Annual Exceedance Probability (AEP) fluvial flood level, inclusive of climate change allowances, using the most up-to-date guidance.

The lowering of existing FFLs within the 1% AEP plus climate change floodplain is not supported and should be avoided, as it increases vulnerability to flood risk.

New development presents a key opportunity to improve the resilience of buildings to flooding. In line with the principles outlined in CIRIA C790F: Code of Practice for Property Flood Resilience (2021), such improvements may include the incorporation of adaptive construction materials, elevated electrical and mechanical systems, flood-resistant detailing, and other design measures that reduce the likelihood and impact of water ingress, facilitate quicker recovery, and enhance long-term asset durability.

Finished floor levels (FFLs) are to be set as close to existing ground levels as practicable, particularly within flood-prone areas, in order to minimise the displacement of floodwaters and preserve natural floodplain storage capacity. This approach is essential to avoid increasing flood risk elsewhere, in accordance with the principles of sustainable flood risk management outlined in the NPPF and the Environment Agency's standing advice.

Where alterations to existing ground levels or unraised FFLs are unavoidable, appropriate mitigation strategies will be implemented, which may include:

- Passive flood door systems.
- Temporary flood barriers.
- Air brick covers (manual or automatic closing).
- Non-return flap valves on sewer outfalls.
- Landscaping to divert water away from the property.
- Sustainable Drainage Systems (SuDS) to store/intercept flood water.
 - Incorporation of flood-permeable landscaping features, such as swales or attenuation basins, to support on-site water storage and reduce surface water runoff.
 - Stepped building designs that respond to site topography while maintaining effective floor levels and limiting the need for widespread land regrading.
- Water, electricity and gas meters and electrical sockets should be located above the predicted flood level.
- Hard flooring and flood resilient metal staircases.
- The use of internal lime plaster/render or where plasterboards are used these should be fitted horizontally instead of vertically and/or using moisture resistant plasterboard at lower levels.
- Communications wiring: wiring for telephone, TV, Internet, and other services should be protected by suitable insulation in the distribution ducts to prevent damage.
- Application of flood-resistant/resilient construction techniques, as detailed in CIRIA C790F and BS85500, to safeguard structures where full avoidance of flood risk is not achievable.

These measures ensure that the development remains compliant with both national policy requirements and best practice guidance, while safeguarding the functional integrity of the floodplain and minimising residual flood risk.

4.2. Flood Risk Management

To mitigate flood risk and ensure the proposed development is compliant with the National Planning Policy Framework (NPPF), Environment Agency requirements, and High Peak Borough Council's Strategic Flood Risk Assessment (March 2024), the following measures are proposed:

- The development will include a programme for the regular inspection and maintenance of surface water drainage infrastructure, including gullies and drains. This will reduce the risk of surface water flooding by ensuring blockages and debris are removed in a timely manner. Where necessary, drainage features will be upgraded to maintain sufficient capacity and flow conveyance.
- The development will include a program for the regular inspection and maintenance of surface water drainage infrastructure, including gullies and drains. This will reduce the risk of surface water flooding by ensuring blockages and debris are removed in a timely manner. Where necessary, drainage features will be upgraded to maintain sufficient capacity and flow conveyance.
- New and refurbished buildings will, where required, be served by separate foul and surface water drainage systems. The scheme will incorporate Sustainable Drainage Systems (SuDS) in accordance with CIRIA C753: The SuDS Manual, including features such as:
 1. Permeable paving
 2. Swales and filter strips
 3. Rain gardens and green/blue roofs
 4. Below-ground attenuation tanks or basins

These SuDS components will slow runoff rates, reduce peak flows to nearby watercourses, and improve water quality, while contributing to amenity and biodiversity gains.

- Culvert Monitoring and Maintenance: A monitoring and maintenance regime should be established for any existing or proposed culverts within the site. This will include routine inspections to ensure culverts remain free from debris and blockages, supporting their hydraulic function and preventing surcharging or overtopping during flood events.
- Ground Level Design Around Buildings: Where feasible, external ground profiles around buildings should be shaped to encourage surface water to flow away from structures. This approach provides a passive flood protection measure and complements SuDS features by promoting overland flow routing in exceedance scenarios.

4.3. Flood Compensation

Given the potential increase in built footprint associated with the proposed development, there is a risk that new structures may displace floodwaters during extreme rainfall events. The loss of functional floodplain storage can alter natural flood flow routes and may lead to an increased risk of flooding elsewhere. As such, it is anticipated that compensatory flood storage will be required to offset any reduction in available floodplain capacity.

In line with Environment Agency guidance, compensation must be provided on a level-for-level and volume-for-volume basis, ensuring no net loss of floodplain storage. This may involve regrading land at the periphery of the floodplain to provide equivalent storage capacity at appropriate elevations.

Where conventional ground-level compensation is not feasible due to site constraints, alternative design approaches may be considered. Subject to an agreement with the Environment Agency (EA) and the Lead Local Flood Authority (LLFA), acceptable alternatives may include:

- Void spaces beneath buildings;
- Stilted or raised structures;
- Undercroft parking designed to allow floodwater conveyance.

These solutions must be introduced with caution, as they are susceptible to blockage or obstruction over time, which can lead to a progressive loss of their storage function. Therefore, such measures will require the development and implementation of a long-term management and maintenance plan to ensure their continued effectiveness.

4.4. Access and Egress

Where feasible, safe emergency evacuation routes to areas located outside the floodplain should be provided as part of the site's flood risk management strategy. In instances where such external evacuation is not achievable, particularly for 'more vulnerable' developments and buildings with basement levels, provision should be made for internal vertical evacuation. This involves access via internal staircases to an area of safe refuge located above the maximum anticipated flood level.

The designated refuge area must be:

- Sufficient in size to accommodate all potential occupants,
- Readily accessible,
- Located above the predicted 1% AEP (plus climate change) flood level,
- Accessible to emergency services, where practicable.

Emergency evacuation procedures should be informed by a comprehensive understanding of the site-specific flood risk, mitigation measures in place, the vulnerability classification of occupants, and the availability of safe evacuation routes. Evacuation from the site should only be attempted where these factors are fully considered and appropriately managed.

A detailed Flood Emergency Plan should be prepared for any part of the development situated below the estimated flood level. This plan should be:

- Clearly communicated to all future residents, businesses, or site users;
- Kept up to date; and
- Incorporated into the landowner's Operations and Maintenance (O&M) manual.

Given that the principal source of flood risk to the site is the River Wye Valley, it is noted that safe access and egress can be achieved via routes to the north and south, subject to confirmation through site-specific topographical and flood level analysis.

5. Foul Drainage

As mentioned in Section 2.5 Existing Drainage, foul sewers serve the Springs Shopping Centre located to the southwest of the building. Foul flows are collected and transported across the open section of the River Wye via a 150mm diameter pipe to a foul pumping station situated immediately south of the river. From there, a rising main carries the flows southward for discharge into the public sewer operated by Severn Trent Water, which runs along Spring Gardens

5.1. Proposed Foul Drainage

A separate document (15289-BKP-XX-XX-RP-C-0002 - Buxton Masterplan Drainage Strategy) addressing this matter, in extensive detail, has been prepared and will be submitted in conjunction with this planning application.

5.2. Nutrient Neutrality

Buxton lies within the Peak District Dales Special Area of Conservation (SAC), which means that new developments in the area are subject to Nutrient Neutrality requirements. The Peak District Dales SAC is a designated habitat site where water pollution, particularly eutrophication, poses a significant threat to the ecological condition and biodiversity.

In March 2022, Natural England and the Department for Levelling Up, Housing and Communities issued guidance concerning elevated phosphate levels in the River Wye. Excessive phosphate concentrations can stimulate the rapid growth of certain aquatic plants, leading to reduced biodiversity and adverse effects on protected wildlife sites.

The guidance highlights that certain development types within the catchment area of these habitats may contribute to nutrient pollution. Such developments include, but are not limited to:

- Any proposals involving overnight accommodation, such as new residential units, tourist facilities, or similar uses;
- Any forms of permitted development under planning legislation that result in new overnight accommodation;
- Developments without overnight accommodation but which may still have non-sewerage related water quality impacts.

Appropriate water quality management measures must be integrated to ensure compliance with nutrient neutrality requirements and to protect the integrity of the SAC.

The Nutrient Neutrality Mitigation Strategy (Project Ref: 2025-02-564326) and Proposal for Nutrient Neutrality Budget Calculation (Project Ref: 202502563940) were developed by Antea Group and can be provided upon request.

6. Surface Water

The Utility Survey plan (49865_T_UG), included in Appendix H, identifies private surface water sewers and two three-stage interceptors that manage runoff from the Springs Shopping Centre. This runoff is discharged into the River Wye at seven distinct locations, as outlined below:

1. **Northwestern and Western Car Park (north of the River Wye):** This area drains westward and then southward via a 375mm diameter pipe into the culverted watercourse. Runoff from this section passes through a three-stage interceptor.
2. **Southwest Area (south of the River Wye):** A small section drains into the culverted watercourse through a 150mm diameter sewer.
3. **Southern Inflow to Central Courtyard:** A 300mm diameter sewer enters the central courtyard of the shopping centre from the south and flows northward to the culverted watercourse. The area contributing to this flow lies outside the surveyed zone.
4. **Central Courtyard:** This area drains into the culverted watercourse via a 150mm diameter pipe.
5. **Northeastern Car Park and Access Road:** Runoff from this area drains into the culverted section of the River Wye located between two open channel sections. Flow is routed through a three-stage interceptor before entering the culvert.
6. **New Wye Street Vicinity (south of the River Wye):** A small surface water drainage network discharges to the culverted watercourse via a 150mm diameter sewer.
7. **Eastern Car Park (east of New Wye Street and north of the open channel):** This section drains directly into the River Wye through a 150mm diameter pipe.

6.1. Drainage Hierarchy

In line with DCG and Ciria C753, surface water drainage proposals should comprehensively consider the surface water hierarchy of discharge options, which can be summarised as follows:

1. Collecting surface water runoff for beneficial use.
2. Discharging surface water into the ground through infiltration methods.
3. Discharging surface water to a natural watercourse or other surface water body.
4. Discharging surface water to a surface water sewer, highway drain, or alternative drainage system that ultimately discharges into a watercourse or surface water body.
5. Discharging surface water into a combined sewer system.

6.1.1. Water Collection

Implementing water recycling measures safely can contribute significantly to reducing the discharge of phosphates and other nutrients into surface waters. Additionally, such practices conserve potable water resources, yielding economic and social benefits for communities through reduced water bills and promoting sustainable living.

The High Peak Borough Council Water in Buxton Supplementary Planning Document (Adopted December 2021) references Local Plan Policy EQ1, which advocates for high water efficiency standards and the incorporation of water recycling and consumption minimisation measures in all new developments across High Peak. Specifically, Policies EQ1 and S7 support the adoption of water efficiency measures in new residential developments within the Buxton sub-area.

These policies require that new residential developments achieve a water efficiency target of 110 litres per person per day, reflecting the more stringent 'optional' standard set out in the technical Building Regulations, in recognition of the sensitivity of Buxton's water environment.

Furthermore, rainwater harvesting and water recycling systems may be subject to the Private Water Supply Regulations 2016, as amended in 2018, and it is recommended that appropriately qualified professionals are engaged to advise on the regulatory and health implications.

6.1.2. Infiltration

As described in Section 2.6 of this report, because of the nature of the site, the ground beneath the site is likely to be Made Ground and contamination might be present.

The High Peak Borough Council Level 2 Strategic Flood Risk Assessment (SFRA) evaluates the appropriateness of using Sustainable Drainage Systems (SuDS) within the High Peak area, with particular focus on infiltration techniques. It notes that infiltration may not be feasible due to unsuitable ground conditions or may be considered inappropriate where potable water abstractions from groundwater are located nearby. These abstractions are safeguarded by designated Source Protection Zones (SPZs).

The majority of the site is located within Zone I Inner Protection Zone, with the northern portion falling within the Zone I – Subsurface Activity area, as illustrated in Figure 7-1. These zones are highly sensitive to contamination. According to the High Peak Borough Council Level 1 SFRA, attenuation storage of surface water runoff is required to prevent infiltration and mitigate the risk of contamination within these protected areas.

The feasibility of discharging surface water to ground be further examined through an Intrusive Ground Investigation report, which will be undertaken once the site proposals have been more fully developed.

6.1.3. Watercourse/ Surface waterbody

The High Peak Borough Council Level 1 SFRA advises that where low permeability soils are present and infiltration methods relying on discharge into existing ground conditions are not feasible—due to factors such as a high water table, Source Protection Zones, or contamination—discharging surface water runoff directly to watercourses is preferable to connection to the sewer system.

Similarly, Severn Trent Water expects all surface water generated by the site to be managed sustainably, with discharge directed to the nearest watercourse or land drainage channel, subject to consultation with the Local Lead Flood Authority (LLFA) regarding all aspects of the surface water drainage design.

Accordingly, it is recommended that surface water runoff from the site be discharged to the River Wye where possible. However, for areas of the site located further from the River Wye, discharge to the public surface water sewer may represent a more appropriate drainage solution.

6.1.4. Watercourse/ Surface waterbody

Existing surface water outfalls within the site may potentially be reused as part of the proposed scheme. Prior to any decision on their reuse, these outfalls should be thoroughly investigated and evaluated against the established outfall hierarchy. It is recommended that their condition be assessed through CCTV surveys.

The potential discharge of surface water into the combined sewer network crossing the site should only be considered after all other outfall options have been fully explored and ruled out.

6.2. Discharge Rates

The High Peak Borough Council Level 2 SFRA provides specific guidance regarding Sustainable Drainage Systems (SuDS) on brownfield sites. It advises that existing drainage systems must be investigated to determine discharge locations and flow rates, noting that some systems may be inadequate or derelict, potentially contributing to flooding. Redevelopment should address such issues without increasing discharge rates to existing networks.

Key policy principles include:

- Maintaining discharge rates at or below existing levels, with climate change allowances applied.
- Considering multiple return periods (1 in 1 year, Qbar, 1 in 30 year, 1 in 30 plus 35% climate change, 1 in 100 year, and 1 in 100 year plus 40% climate change).

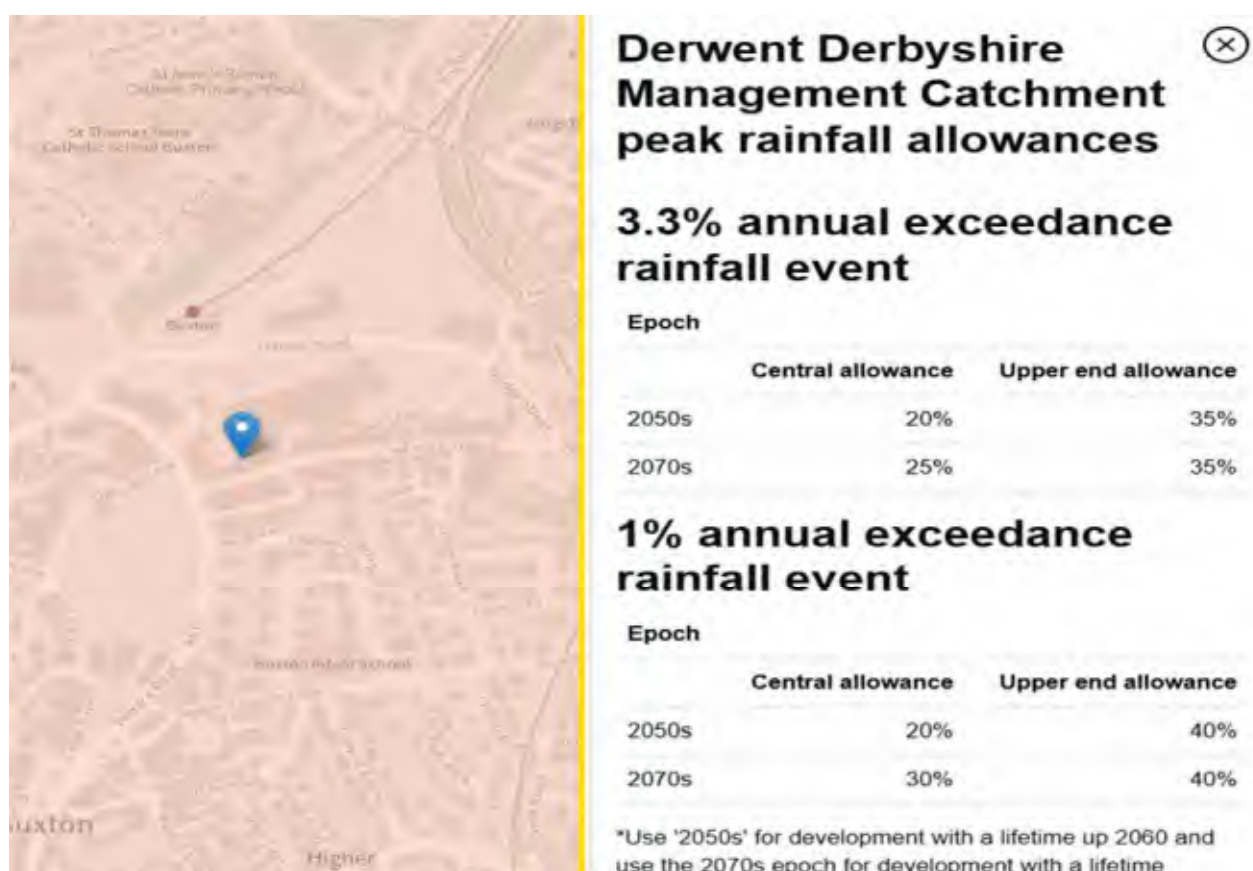


Figure 13. Climate Change Allowance

- Retaining exceedance flows within the site for events up to the 1 in 100 year standard.
- Investigating and controlling any increase in annual runoff volumes to maintain pre-development levels where feasible.

The Lead Local Flood Authority (LLFA) requires surface water drainage designs to comply with DEFRA's Non-statutory Technical Standards for Sustainable Drainage Systems (March 2015), including limiting discharge to greenfield runoff rates, accounting for climate change and urban creep allowances.

While the LLFA recommends restricting discharge to greenfield rates, further reference to Sections 3 and 5 of the DEFRA standards is advised for brownfield site specifics.

It is therefore recommended that the LLFA be reconsulted on a site-specific basis when detailed drainage proposals are available.

6.3. Sustainable Drainage Systems (SuDS)

SUDS are a desirable way to manage surface water disposal within new developments and SUDS methods for surface water drainage management are discussed further within the SUDS Manual.

The types of benefits that can be achieved by SUDS will be dependent on the site, but fit broadly into four categories: water quantity, water quality, amenity and biodiversity. These are also referred to as the four pillars of SUDS design (Figure 14):

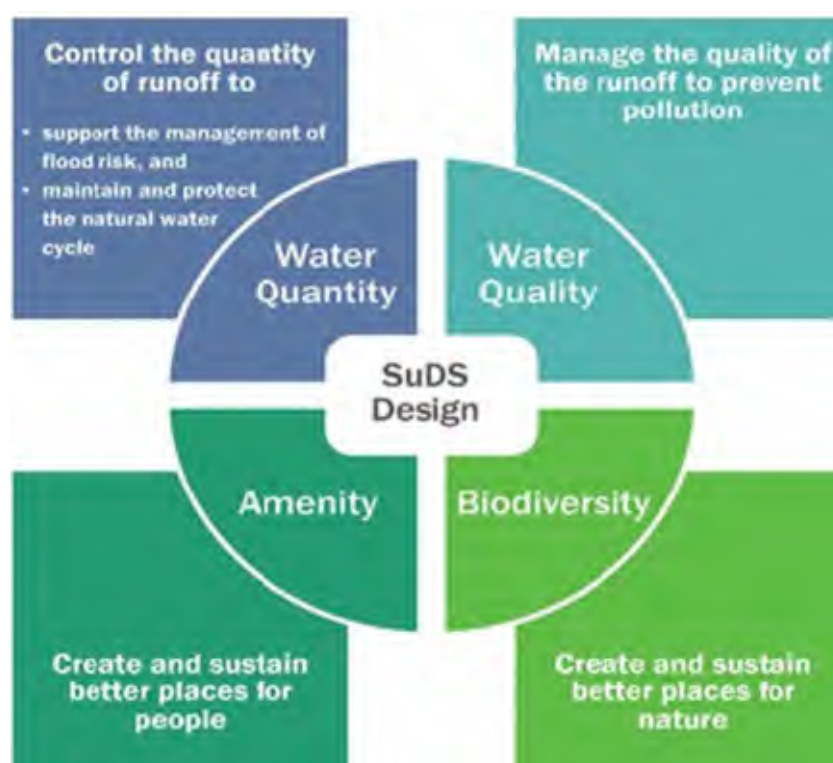


Figure 14. Four Pillars of SuDS

The proposed development will address the above 4 pillars of SuDS design criteria with the inclusion of a range of sustainable features through a comprehensive treatment train.

- **Water Quantity:** the quantity of run-off from the site will be significantly reduced, as set out in more detail in the Drainage Strategy in Section 5, whilst taking account of likely increases in future rainfall due to climate change.
- **Water Quality:** the quality of run-off from the site is improved by the inclusion of an oil interceptor. The flows arising from the building roof will initially be treated via a network of pipes. All flows will be collated within the site prior to discharge into existing private network.
- **Biodiversity** will be addressed by a small increase in the existing green areas and vegetation areas around the site, as well as by the inclusion of a significant planting regime creating a better environment for nature to thrive.
- **Amenity** is provided through the proposed green areas, which presents the opportunity to create visually attractive areas within the proposed site which have the ability to connect people to water. Such features have been shown to improve the well-being of people that live within the proposed development.

6.4. Sustainable Drainage Systems (SuDS) – Selection

The LLFA requires SuDS to be considered for inclusion within the drainage strategy for the Scheme. There are numerous different ways that SUDS can be incorporated into a development. The appropriate application of a SUDS scheme to a specific development is heavily dependent upon the topography and geology of the site and the surrounding areas.

Careful consideration of the site characteristics is necessary to ensure the future sustainability of the adopted drainage system. CIRIA C75321, Table 1.1 Types of SuDS components was used to assess the suitability of SuDS features in Buxton regeneration Area, a summary is included in According to CIRIA C753, Table 26.2, the Site, being mix-used, is expected to have a 'Low' pollution hazard level in the case of residential uses. However, the majority of the site falls in the 'Medium' pollution hazard level which includes commercial yards and delivery areas, non-residential carparking areas. For 'Low' and 'Medium' pollution hazard levels, where run-off is to be discharged to surface water, the simple Index Approach can be used to assess the water quality management requirements for the Scheme.

The requirements of water quality should be discussed further with the LLFA so that the source protection zones, sensitive areas and mineral water catchments are not impacted by the development.

Table 6.4 – Suitability of SuDS

SuDS Component	Potential Use
Rainwater Harvesting Systems	Yes
Green Roofs	Yes – Heritage requirements for mansard roof is not compatible with green roof systems.
Infiltration Systems	Not viable – due to source protection zones and potential contamination
Proprietary treatment systems	Yes – Conventional separators, vortex separators with the green roofs will provide a 3 stage separation.
Filter Strips	Not likely – Space Constrains
Filter Drain	If Lined
Swales	Unlikely – Space Constrains
Bioretention Systems	If lined
Tree pits	Yes - lined
Pervious pavements	If lined at Ground Level – Bauder Roof System at Podium Level
Attenuation Tanks	Yes - if lined
Detention Basin	If lined – unlikely due to space constraints
Ponds and Wetlands	Not likely – Space Constraints

Below is the Level 1 SFRA guidance from High Peak Borough Council on the application of SuDS within the High Peak Plan Area:

- Runoff which is likely to be heavily contaminated must be treated by a proprietary device, which should be carefully considered to ensure the correct system is selected to remove pollutants.
- Source control SUDS must be considered and incorporated where suitable. For example, surface water drained from a car park should implement a filter bed wherever possible before considering an interceptor device to remove contaminants.
- If the local soil is contaminated, then a lined system is generally required. This may include a drainage design which allows infiltration in the upper layer but should incorporate an impermeable layer at its base to prevent contamination. In such cases lined underground attenuation storage is used to store a 1 in 100 year + 40% (for climate change) storm event and discharges into a nearby watercourse.

6.4.1. Rainwater Harvesting Systems

- **Collection and Storage**

1. Rainwater harvested from roofs and impermeable surfaces (CIRIA C753, Ch. 24).
2. Stored in above-ground or below-ground tanks, designed for accessibility and maintenance.

- **System Design**

1. May include treatment stages depending on intended end use (e.g. irrigation vs. toilet flushing).
2. Dedicated storage provision required where used to achieve runoff management to design standards.
3. Design must account for system reliability, capacity, and water quality requirements (CIRIA C753, Section 24.3).

- **Applications**

- Basic systems: garden irrigation via water butts.
- Advanced systems: non-potable re-use for toilet flushing, laundry, or external taps.
- Opportunities for integration into new developments and retrofitting in existing urban areas (CIRIA C753, 24.5).

- **Strategic Role**

1. Reduces demand for potable (mains) water in line with sustainable water management principles.
2. Provides localised storage and flow attenuation, contributing to flood risk management.
3. Mitigates pollutant loads in receiving watercourses through reduced surface runoff volumes.
4. Supports integrated water management approaches (CIRIA C753, Ch. 2).

- **Wider Benefits**

1. Reduces household and commercial water bills.
2. Decreases abstraction, treatment, and distribution pressures on water companies.
3. Aligns with sustainable development objectives by delivering environmental, social, and economic benefits (CIRIA C753, Ch. 3).

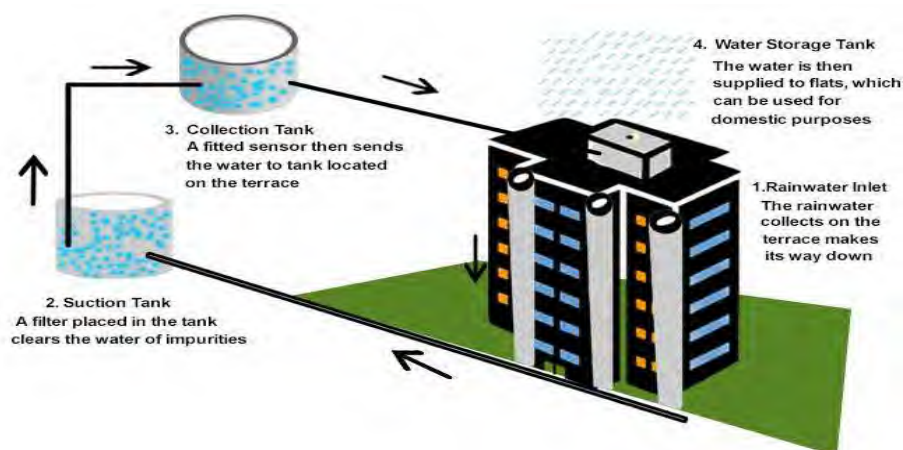


Figure 15. Rainwater Harvesting

6.4.2. Green/ Blue Roofs

- **Definition & Types**

1. **Green roofs:** vegetated roof systems comprising a multi-layered build-up (growing medium, vegetation, drainage, waterproofing, protection) (CIRIA C753, Ch. 19).
2. **Blue roofs:** non-vegetated systems designed to store and control rainwater at roof level (CIRIA C753, Section 19.7).

May also integrate with podium decks, landscaped surfaces, or permeable parking areas.

- **Hydrological Function**

1. Intercept and retain precipitation at source, reducing surface runoff volumes.
2. Attenuate peak discharge rates, supporting downstream flood risk reduction.
3. Provide temporary water storage within soil, substrate, or drainage layers.
4. Contribute to water quality improvements by filtering pollutants through substrate and vegetation.

- **Design Considerations**

1. Structural capacity of the building must be assessed for additional loading (CIRIA C753, 19.3).
2. Specification of growing medium depth, drainage layer, and vegetation type tailored to roof type (extensive vs. intensive).
3. Blue roofs require hydraulic design to control release rates in line with design standards.
4. Maintenance regimes essential for sustained performance (CIRIA C753, 19.5).

- **Applications**

1. Extensive green roofs: lightweight, low-maintenance, suitable for large roof areas.
2. Intensive green roofs: deeper substrates supporting landscaping, amenity, and biodiversity.
3. Blue roofs: retrofit potential in highly urbanised areas with limited ground-level SuDS opportunities.

- **Strategic Role**

1. Deliver runoff volume reduction and flow attenuation, contributing to integrated urban drainage.
2. Reduce pollutant loads entering receiving waters.
3. Provide multiple co-benefits: improved urban air quality, cooling (mitigating heat island effect), and enhanced biodiversity (CIRIA C753, Ch. 4).
4. Particularly effective in dense urban environments where ground-level SuDS are constrained.

- **Wider Benefits**

1. Support compliance with NPPF and High Peak Local Plan policy objectives on sustainable drainage.
2. Enhance building energy efficiency and resilience.
3. Contribute to placemaking, visual amenity, and green infrastructure networks.

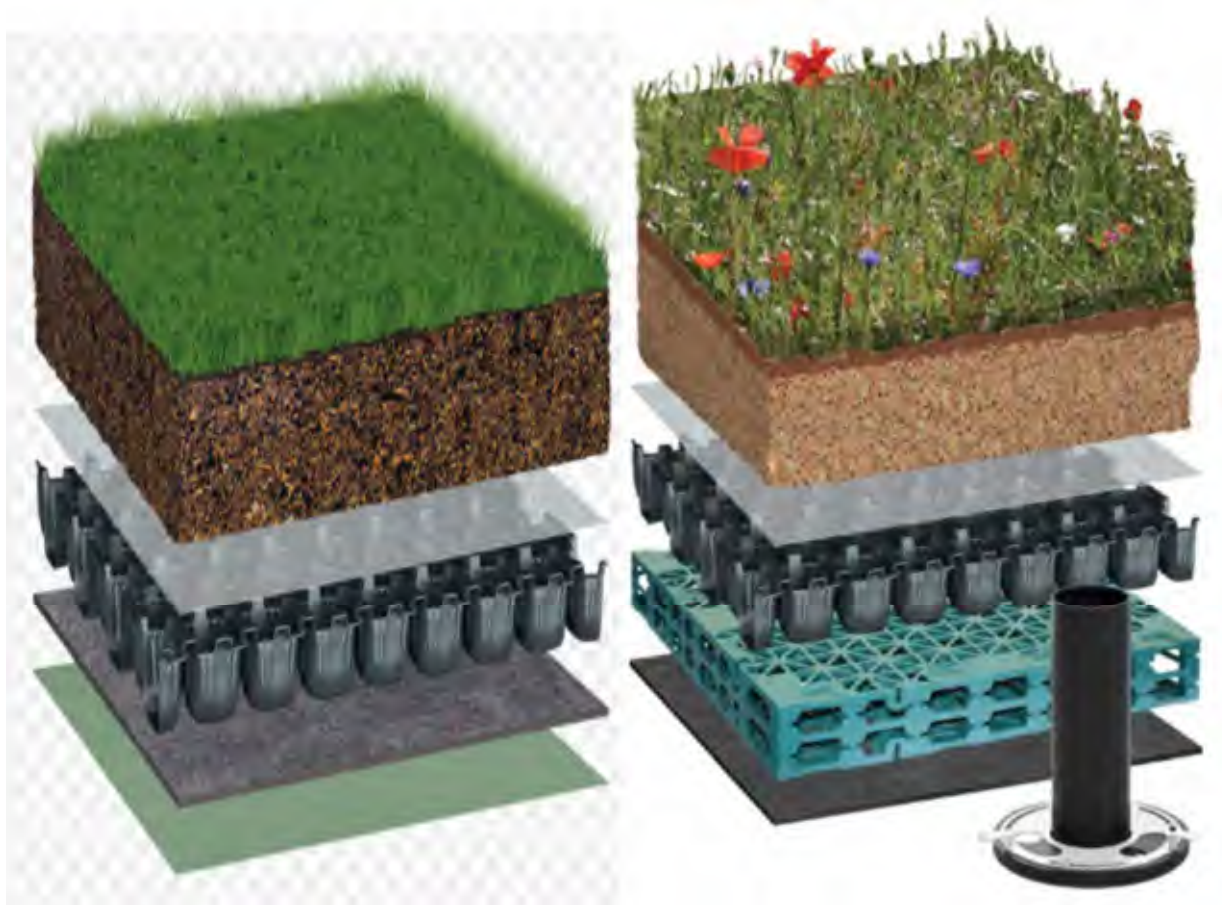


Figure 16 - 17. Green Roof – Blue Roof

6.4.3. Proprietary Treatment Systems

- **Definition & Purpose**

1. Engineered, manufactured systems designed to treat surface water runoff (CIRIA C753, Ch. 14).
2. Remove specific pollutants (e.g. hydrocarbons, suspended solids, heavy metals).
3. Support compliance with SuDS water quality management objectives (C753, Section 14.2).

- **Forms & Structure**

1. May be subsurface (e.g. filter chambers, settlement units) or surface-based.
2. Frequently complementary to landscaped SuDS features, enhancing overall treatment train performance.
3. Typical examples: sediment forebays, vortex separators, proprietary filter systems.

- **Applications**

1. Effective where site constraints (e.g. limited space, ground conditions) restrict use of natural SuDS.
2. Provide targeted treatment where higher pollutant removal is required.
3. Used in combination with other SuDS components to protect amenity, biodiversity, and downstream water quality.

- **Additional Measures**

1. Depending on development type, pre-treatment methods may be necessary:
2. Trapped gullies.
3. Trapped linear drainage channels.
4. Oil/petrol interceptors (CIRIA C753, Section 14.6).

- **Strategic Role**

1. Contribute to water quality improvements by removing contaminants at source.
2. Reduce pollutant loads in runoff, preventing deterioration of receiving watercourses.
3. Ensure compliance with environmental regulations and Water Framework Directive objectives.

- **Wider Benefits**

1. Enable delivery of SuDS in constrained sites where natural features alone are impractical.
2. Provide resilience and reliability in treatment performance.
3. Help safeguard the long-term amenity and biodiversity functionality of downstream SuDS features.



Figure 18 – 19. Oil Interceptor - Trapped linear drainage channels.

6.4.4. Filter Drains

- **Definition & Purpose**

1. Shallow, stone- or gravel-filled trenches designed to collect, convey, attenuate, and treat surface water runoff (CIRIA C753, Ch. 16).
2. Provide both storage and pollutant removal through filtration processes.

- **Structure & Design**

1. Typically comprise a trench filled with clean stone aggregate.
2. May be lined with a geotextile, geomembrane, or impermeable liner to control infiltration.
3. Alternative designs include concrete troughs or modular structures for greater stability.

4. Depth and cross-sectional dimensions designed to achieve required storage and flow rates (CIRIA C753, Section 16.3).

- **Functionality**

1. Temporary subsurface storage of runoff.
2. Provides attenuation by slowing discharge rates.
3. Facilitates pollutant removal through sedimentation and filtration.
4. Can allow infiltration where soil conditions are suitable and groundwater protection is assured.

- **Applications**

1. Often located alongside roads, car parks, or hardstanding areas to intercept and treat runoff.
2. Appropriate for linear developments and constrained urban sites.
3. Can be designed as part of a wider drainage corridor or integrated with swales and filter strips.

- **Strategic Role in SuDS Train**

1. Provide source control and conveyance functions.
2. Complement landscaped features by pre-treating runoff before it enters downstream SuDS components.
3. Can form part of treatment trains to ensure compliance with water quality standards (CIRIA C753, Section 16.4).

- **Wider Benefits**

1. Enhance water quality by removing sediments, oils, and heavy metals.
2. Reduce flood risk through localised attenuation.
3. Can be designed to integrate with streetscape and highways infrastructure.
4. Support Water Framework Directive (WFD) objectives by improving discharge quality.

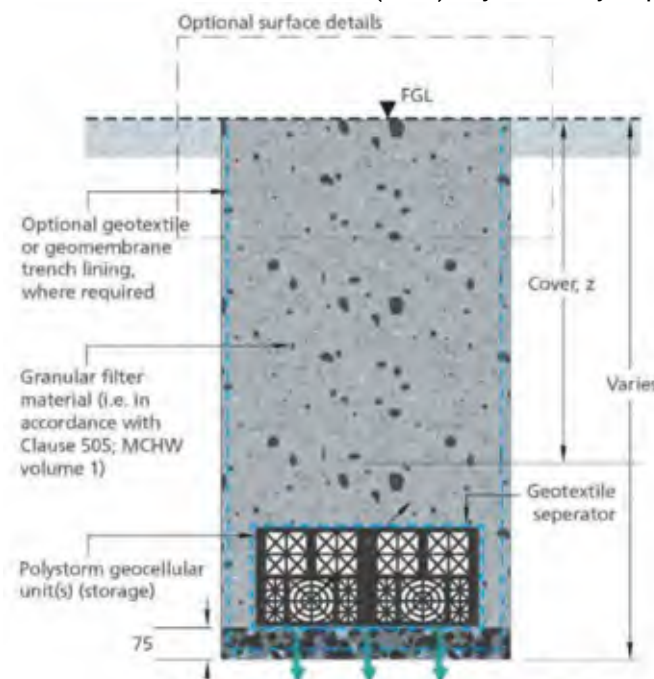


Figure 20. Filter Drain

6.4.5. Bioretention Areas – Rain Gardens

- **Definition & Purpose**

1. Shallow landscaped depressions designed to collect, store, filter, and treat surface water runoff (CIRIA C753, Ch. 18).
2. Utilise engineered soils, vegetation, and drainage layers to provide water quality, amenity, and biodiversity benefits.

- **Structure & Design**

1. Multi-layered systems typically comprising:
 - Surface vegetation layer (grasses, shrubs, trees).
 - Engineered soil filter media.
 - Drainage layer with underdrain (if required).
 - Impermeable liner (where infiltration is unsuitable).
2. Design must consider inflow controls, overflow provision, and maintenance access (CIRIA C753, Section 18.3).

- **Functionality**

1. Intercept, slow, and temporarily store runoff close to source.
2. Promote infiltration where feasible, reducing volumes discharged to sewer or watercourse.
3. Filter pollutants through soil and vegetation, improving water quality.
4. Attenuate peak flows, reducing downstream flood risk.

- **Applications**

1. Bioretention basins: larger landscaped features in open space or streetscapes.
2. Rain gardens: smaller-scale features at plot, kerbside, or courtyard level.

- **Strategic Role in SuDS Train**

1. Deliver water quality treatment at source.
2. Contribute to volume reduction, infiltration, and flow attenuation.
3. Provide amenity and biodiversity value, supporting multifunctional green infrastructure (CIRIA C753, Section 18.5).

- **Wider Benefits**

1. Enhance public realm and local character through attractive planting.
2. Provide urban cooling, air quality improvements, and habitat creation.
3. Flexible for retrofit in constrained/highway environments.
4. Contribute to NPPF and High Peak Local Plan policy objectives for sustainable, climate-resilient development.



Figures 21 & 22. Bioretention Area & Rain Garden

6.4.6. Tree Pits – Tree Planters

- **Definition & Purpose**

1. Structural tree pits or planters designed to capture, store, and treat surface water runoff while supporting urban tree growth (CIRIA C753, Ch. 19 & 18).
2. Provide source control, attenuation, and water quality benefits in highly urbanised or constrained sites.

- **Structure & Design**

1. Typically consist of:
 - Tree rooting zone with engineered soil/substrate.
 - Inlet for surface water runoff (e.g. kerbside entry).
 - Drainage and storage media (stone or structural soil).
 - Overflow and underdrain (where infiltration is not viable).
2. May be lined or unlined depending on infiltration potential and groundwater sensitivity.
3. Must balance tree health requirements (oxygen, nutrient availability) with hydrological function (CIRIA C753, Section 19.8).

- **Functionality**

1. Capture and temporarily store runoff from adjacent paved areas (roads, footpaths, car parks).
2. Provide treatment through filtration, sedimentation, and nutrient uptake by vegetation.
3. Attenuate peak flows, supporting downstream flood risk reduction.
4. Support evapotranspiration and interception via tree canopy.

- **Applications**

1. Suitable for retrofitting into streetscapes, town centres, and new developments.
2. Can replace conventional street trees with multifunctional SuDS-enabled systems.
3. Raised or structural tree planters can be used in constrained urban environments.

- **Strategic Role in SuDS Train**

1. Act as source control measures in the SuDS treatment train.
2. Provide both water quantity and quality management close to runoff generation points.
3. Complement rain gardens, bioretention features, and permeable paving.

- **Wider Benefits**

1. Enhance urban character, amenity, and visual quality.
2. Provide shade, urban cooling, and improved air quality.
3. Increase biodiversity through habitat provision.
4. Contribute to climate resilience and delivery of High Peak green infrastructure objectives.



Figures 23 & 24. Tree Pit & Tree Planter

6.4.7. Pervious Pavements

- **Definition & Purpose**

1. Pavement systems that allow water to infiltrate through the surface or joints, providing storage, treatment, and controlled discharge (CIRIA C753, Ch. 12).
2. Reduce runoff at source while delivering a functional trafficable surface.

- **Structure & Design**

1. Types include:

- **Permeable block paving** (infiltration via jointing material).
- **Porous asphalt / concrete** (infiltration across entire surface).
- **Geocellular or reinforced gravel systems.**

2. Construction typically includes:

- Pervious surface layer.
- Sub-base/storage layer (often clean, open-graded aggregate).
- Geotextile or geomembrane layers depending on infiltration or containment design.

3. Design variations:

- **Infiltration system** – runoff infiltrates into subsoil.
- **Partial infiltration system** – some infiltration, with overflow to drainage.
- **Tank system** – sealed, with controlled discharge via underdrain (CIRIA C753, Section 12.3).

- **Functionality**

1. Provides temporary storage within the sub-base.
2. Attenuates peak flows and reduces total runoff volumes.
3. Delivers treatment through sedimentation, filtration, and biodegradation within the pavement layers.

- **Applications**

1. Suitable for car parks, driveways, access roads, pedestrian areas, and low-speed streets.
2. Retrofit opportunities where conventional hardstanding is replaced or upgraded.
3. Can be combined with other SuDS (e.g. filter drains, tree pits).

- **Strategic Role in SuDS Train**

1. Provides **source control** by intercepting rainfall close to where it lands.
2. Contributes to water quantity, quality, and amenity/biodiversity benefits in urban drainage networks.
3. Often used as a “treatment stage” before discharge to other SuDS or watercourses.

- **Wider Benefits**

1. Reduces surface water flooding risk in urbanised areas.
2. Improves water quality entering downstream systems.
3. Enhances urban realm through multifunctional, low-impact infrastructure.
4. Can reduce need for separate underground attenuation tanks, lowering overall construction costs.



Figures 25 & 26. Pervious Pavements

6.4.8. Detention Basins

- **Definition & Purpose**

1. Shallow, vegetated depressions designed to provide **temporary storage of surface water runoff** (CIRIA C753, Ch. 21).
2. Control peak discharge rates by attenuating flows before discharge to watercourses or downstream SuDS.
3. Normally dry outside rainfall events (unlike ponds/wetlands).

- **Structure & Design**

1. Graded depression with controlled inlet and outlet structures.
2. May include check dams, low-flow channels, or underdrains depending on design intent.
3. Vegetation and ground cover reduce erosion and support pollutant removal.
4. Sized to accommodate design storm events in line with local standards (CIRIA C753, Section 21.3).

- **Functionality**

1. Provide storage and controlled release, reducing flood risk downstream.
2. Support limited water quality improvements through sedimentation and vegetative filtration.
3. Allow safe conveyance of exceedance flows in extreme storm conditions.

- **Applications**

1. Typically located in public open space, amenity areas, or development margins.
2. Suitable for large development sites with available land.
3. Can be integrated with sports pitches, parkland, or landscaped corridors.

- **Strategic Role in SuDS Train**

1. Operates as a **site control or regional control measure**, managing runoff from multiple sources.
2. Provides flow attenuation ahead of discharge to watercourses or further treatment systems.
3. Complements ponds, wetlands, swales, and infiltration features.

- **Wider Benefits**

1. Multi-functional land use: flood storage combined with amenity and recreation space.
2. Potential biodiversity benefits where designed with varied planting and habitat features.
3. Can improve visual character of developments while reducing engineering requirements for underground storage.
4. Supports NPPF and High Peak Local Plan objectives for integrated flood risk and green infrastructure planning.



Figures 27. Detention Basin

6.4.9. Ponds and Wetlands

- **Definition & Purpose**

1. Surface water SuDS features designed to provide **permanent water storage** and additional treatment capacity (CIRIA C753, Ch. 22).
2. **Ponds**: primarily attenuation and treatment basins with a permanent pool.
3. **Constructed wetlands**: shallow, vegetated systems designed for extended treatment and biodiversity benefits.

- **Structure & Design**

1. Include a permanent pool plus additional storage for storm events.
2. May incorporate forebays, sediment traps, and aquatic benches for water quality treatment.
3. Shallow shelves and varied depths support habitat diversity and enhance treatment efficiency (CIRIA C753, Section 22.3).
4. Require controlled inlets and outlets, with provision for exceedance flows.

- **Functionality**

1. Attenuate peak flows, reducing downstream flood risk.
2. Improve water quality through sedimentation, filtration, and biological uptake.
3. Provide long-term storage of runoff, including for extreme storm events.

- **Applications**

1. Most suitable for larger development sites with available land.
2. Can be designed as standalone features or as part of a treatment train with swales, filter drains, and detention basins.
3. Appropriate for retrofitting into green spaces, parks, or redevelopment sites with sufficient landtake.

- **Strategic Role in SuDS Train**

1. Provide **site or regional control** in the SuDS hierarchy.
2. Deliver high-level water quality treatment and biodiversity enhancements.
3. Act as end-of-pipe features managing runoff before final discharge to watercourses.

- **Wider Benefits**

1. Significant amenity and recreational value when integrated with public open space.
2. Enhance biodiversity and ecological networks through wetland planting and aquatic habitats.
3. Improve visual character of developments, contributing to placemaking and green infrastructure.
4. Support NPPF and High Peak Local Plan objectives for multifunctional SuDS, water quality, and climate resilience.



Figures 28 & 29. Pond & Wetland

6.4.10. Attenuation Tanks

- **Definition & Purpose**

1. Engineered underground storage systems that **temporarily store surface water runoff** and release it at a controlled rate (CIRIA C753, Ch. 20).
2. Used where space constraints preclude open SuDS (e.g. ponds, swales, basins).
3. Provide **quantity control** but limited water quality or biodiversity benefits.

- **Structure & Design**

1. Typically modular geocellular crates, oversized pipes, culverts, or pre-cast concrete chambers.
2. Designed with flow control structures (e.g. orifices, vortex controls) to limit discharge.
3. Can be sealed (no infiltration) or combined with infiltration where ground conditions permit.
4. Must include inspection points and maintenance access (CIRIA C753, Section 20.3).

- **Functionality**

1. Reduce flood risk by attenuating peak flows.
2. Provide short-term storage, with controlled discharge to sewers, watercourses, or downstream SuDS features.
3. Do not normally deliver significant treatment; pre-treatment may be required upstream.

- **Applications**

1. Suitable for constrained urban sites with limited land for above-ground SuDS.
2. Often used beneath car parks, roads, or landscaped areas.
3. Can retrofit into redevelopments where open storage is not feasible.

- **Strategic Role in SuDS Train**

1. Provide **site control** for runoff management.
2. Should be combined with other SuDS features (e.g. permeable paving, proprietary treatment systems) to deliver water quality and amenity functions.
3. Typically positioned downstream in treatment trains as quantity-focused measures.

- **Wider Benefits & Limitations**

1. Space-efficient solution where surface land use is constrained.
2. Hidden from view, enabling multifunctional land use above.
3. Limited ecological and amenity benefits compared to natural SuDS.
4. Maintenance burden can be higher than surface features, risk of blockage if not properly managed.
- 5.

CIRIA C753 emphasises that **attenuation tanks should not be used as the sole SuDS measure** but integrated with other components to meet water quality, biodiversity, and amenity objectives.



Figures 30. Attenuation Tank.

7. Conclusion

This Flood Risk Assessment (FRA) has been prepared in support of the redevelopment proposals for Buxton Town Centre (Spring Gardens Centre) by Capital & Centric Ltd. The assessment has reviewed all potential sources of flooding affecting the site, including fluvial, pluvial, groundwater, sewers, and residual risks, using up-to-date data from the Environment Agency (Product 4 package), the High Peak Level 1 Strategic Flood Risk Assessment (2024), site-specific topographic and utilities surveys, and other technical reference material.

The site is intersected by the River Wye, much of which is culverted beneath the Springs Shopping Centre and associated infrastructure. The Environment Agency's mapping and hydraulic model outputs confirm that the site lies partly within Flood Zones 2, 3a, and 3b.

Historical records also confirm flood events in the 1980s and 2000s linked to exceedance of culvert capacity. The primary fluvial risk therefore arises from blockage or surcharge of the existing culvert system, with surface water ponding and exceedance flows representing a secondary risk mechanism.

The proposals have been tested against the Sequential Test. The masterplan layout ensures that 'more vulnerable' residential uses are located in areas of lower risk (Flood Zone 1 and upper storeys), while 'less vulnerable' uses such as retail, commercial, and car parking are located at ground floor level in higher risk zones. This approach satisfies the sequential approach advocated in the NPPF and removes the need for the Exception Test.

A robust package of flood risk mitigation measures has been developed to address residual risks and climate change impacts. These include:

- **Finished Floor Levels (FFLs):** New development will set FFLs at least 300mm above the 1% AEP plus climate change design flood level, consistent with Environment Agency and LLFA guidance. Where raising FFLs is impractical within retained buildings, adaptive measures (such as flood-resilient construction and passive protection systems) will be incorporated.
- **Flood Compensation:** Level-for-level and volume-for-volume floodplain storage will be provided, with cut-and-fill analysis demonstrating that the redevelopment achieves a net gain of flood storage capacity, particularly through the removal of retaining walls and opening of exceedance flow routes across the site.
- **Surface Water Management:** The scheme integrates a comprehensive SuDS treatment train including rainwater harvesting, permeable paving, tree pits, bioretention areas, attenuation tanks, and blue/green roofs. These measures reduce runoff volumes and peak flows, improve water quality, and contribute to amenity and biodiversity objectives. Proprietary treatment systems such as interceptors and vortex separators will manage higher pollution hazard areas such as car parks and service yards.
- **Resilient Design:** Buildings will incorporate property flood resilience measures in accordance with CIRIA C790F and BS 85500, including flood-resistant materials, raised utilities, sacrificial finishes, and the use of undercroft car parking designed to safely convey floodwaters.
- **Access and Egress:** Safe evacuation routes towards higher ground will be incorporated into the layout, with provision for internal refuge above design flood levels where external escape is not possible.
- **Culvert Management:** While large-scale de-culverting beneath the shopping centre is not deliverable due to structural and urban constraints, the alignment of the River Wye will be safeguarded, with no additional culverting permitted. Culverts will be subject to a monitoring and maintenance regime to reduce blockage risk, and targeted daylighting will be pursued where redevelopment opportunities arise.

The FRA has also carefully considered the policy context, including Policy EQ11 of the High Peak Local Plan and the SFRA (2024), both of which establish a clear presumption against new culverting and seek opportunities to restore watercourses wherever possible. This assessment acknowledges that wholesale de-culverting within central Buxton is unachievable within the Local Plan period, given that large sections of the river are embedded beneath multi-storey structures, highways, and critical utilities. Full daylighting would

require demolition and realignment on a scale that would severely compromise town centre viability, heritage, and community functions.

However, the redevelopment represents an important opportunity to deliver incremental river restoration and green infrastructure. The masterplan includes new public spaces adjacent to the River Wye, landscape enhancements that integrate SuDS features, and biodiversity net gain through habitat creation. Where feasible, small sections of culvert will be opened to daylight the river, enhancing flood storage and improving amenity. These measures will ensure that the river is treated as an asset within the town centre, in line with the Environment Agency's aspirations.

Taken together, the assessment demonstrates that the proposed development will:

- Be safe for its lifetime, taking account of climate change.
- Avoid increasing flood risk elsewhere through careful design, compensation, and storage measures.
- Deliver wider environmental benefits in terms of biodiversity, water quality, and green infrastructure.
- Align with the requirements of the NPPF, PPG, the Water Framework Directive, the High Peak SFRA (2024), and Local Plan Policy EQ11.

The FRA provides a positive evidence base demonstrating that the scheme can proceed without increasing flood risk and while contributing positively to long-term climate resilience, sustainable drainage, and ecological enhancement within Buxton town centre.

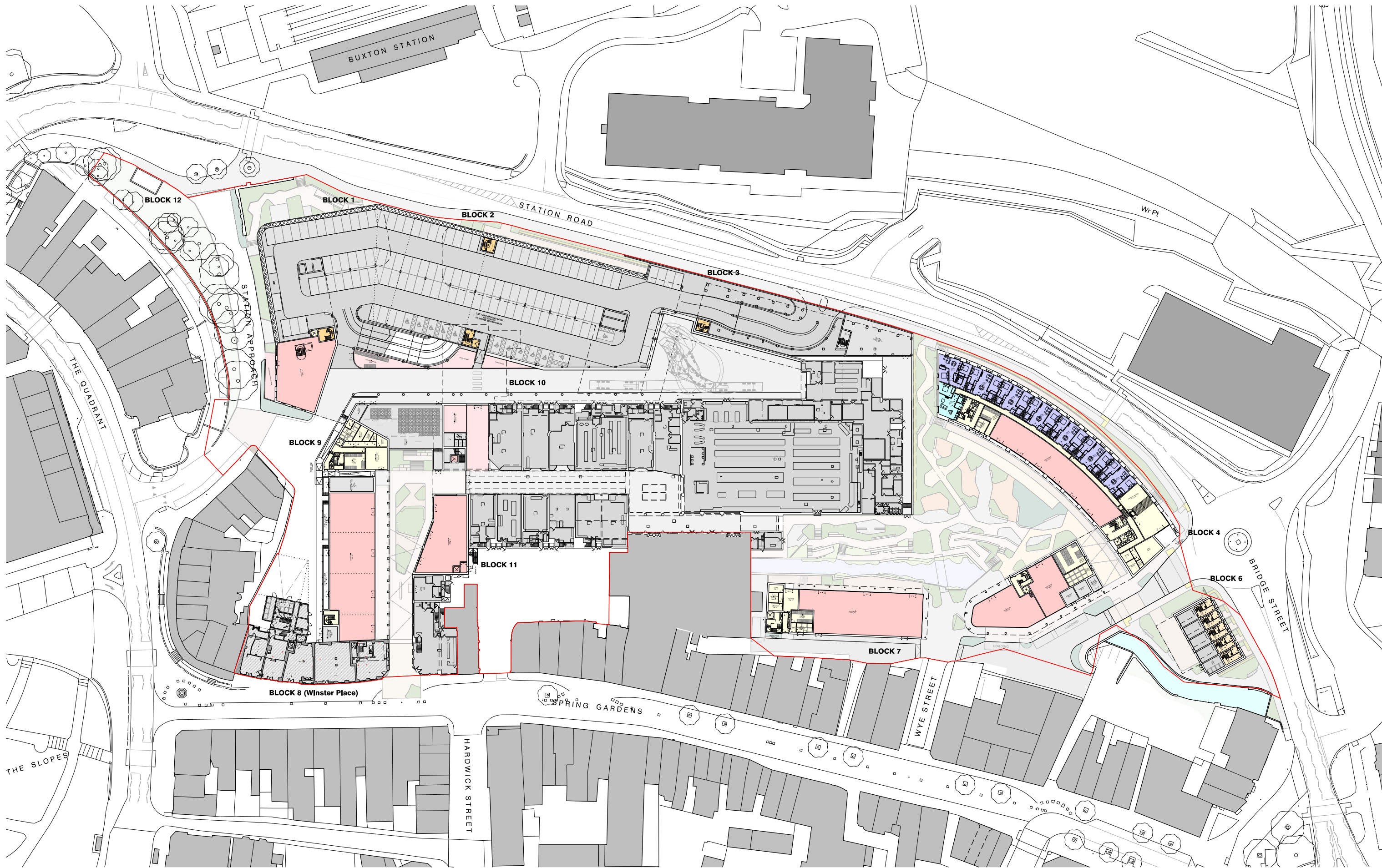
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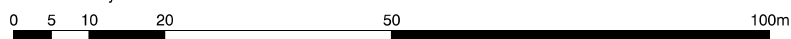
APPENDIX A

LOCATION PLAN – ARCHITECT’S PROPOSED DEVELOPMENT



revision:	date:	note:
P01	20250718	preliminary first issue
P02	20250826	preliminary second issue
P03	20251009	preliminary third issue
P04	20251031	planning issue
P05	20251107	planning issue

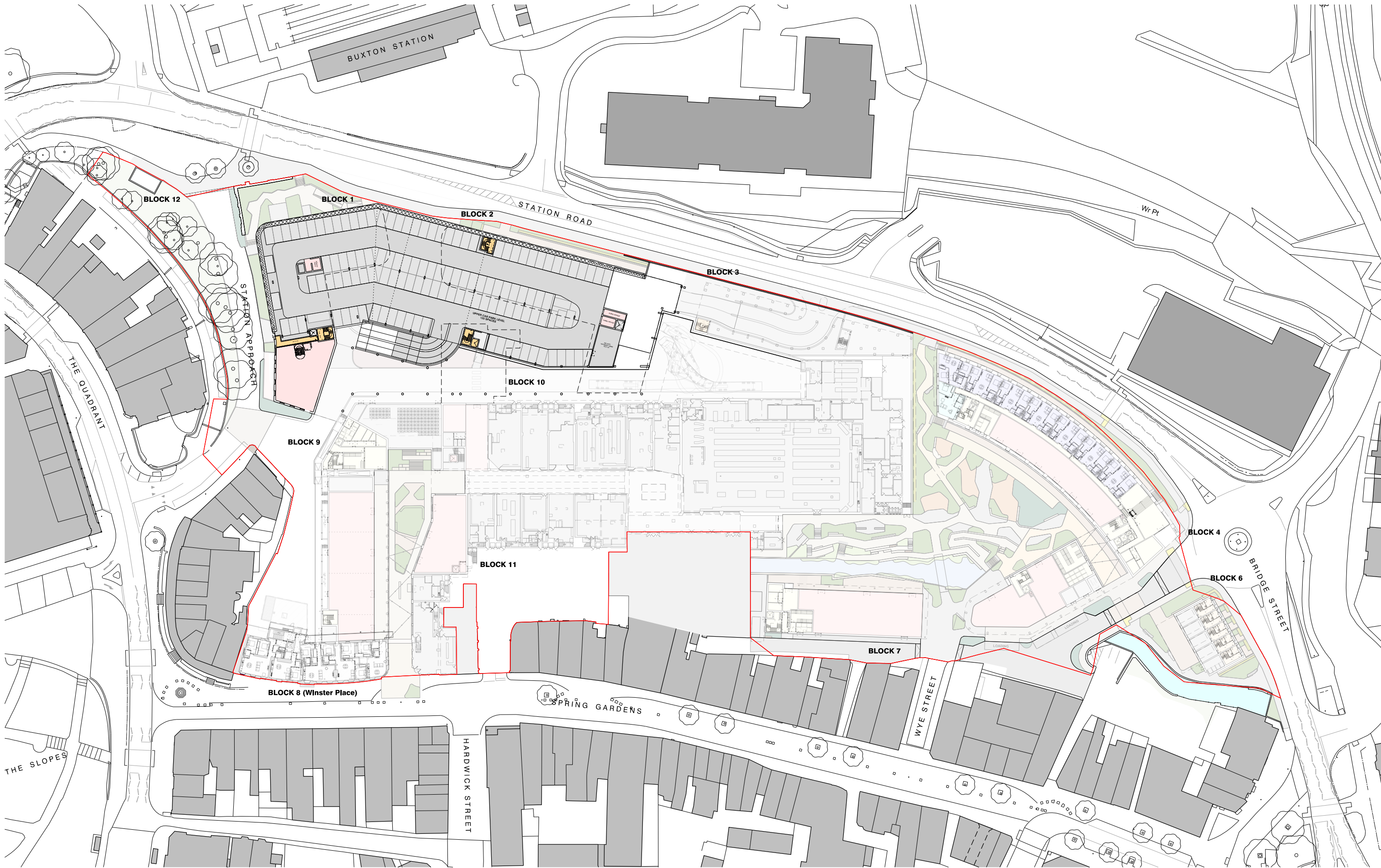
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residential circulation / ancillary spaces
1 bedroom dwelling
2 bedroom dwelling
3 bedroom dwelling
4 bedroom dwelling
winstler place - refer to 8000 series drawings
car park
car park escape route
site boundary



project
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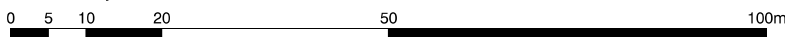
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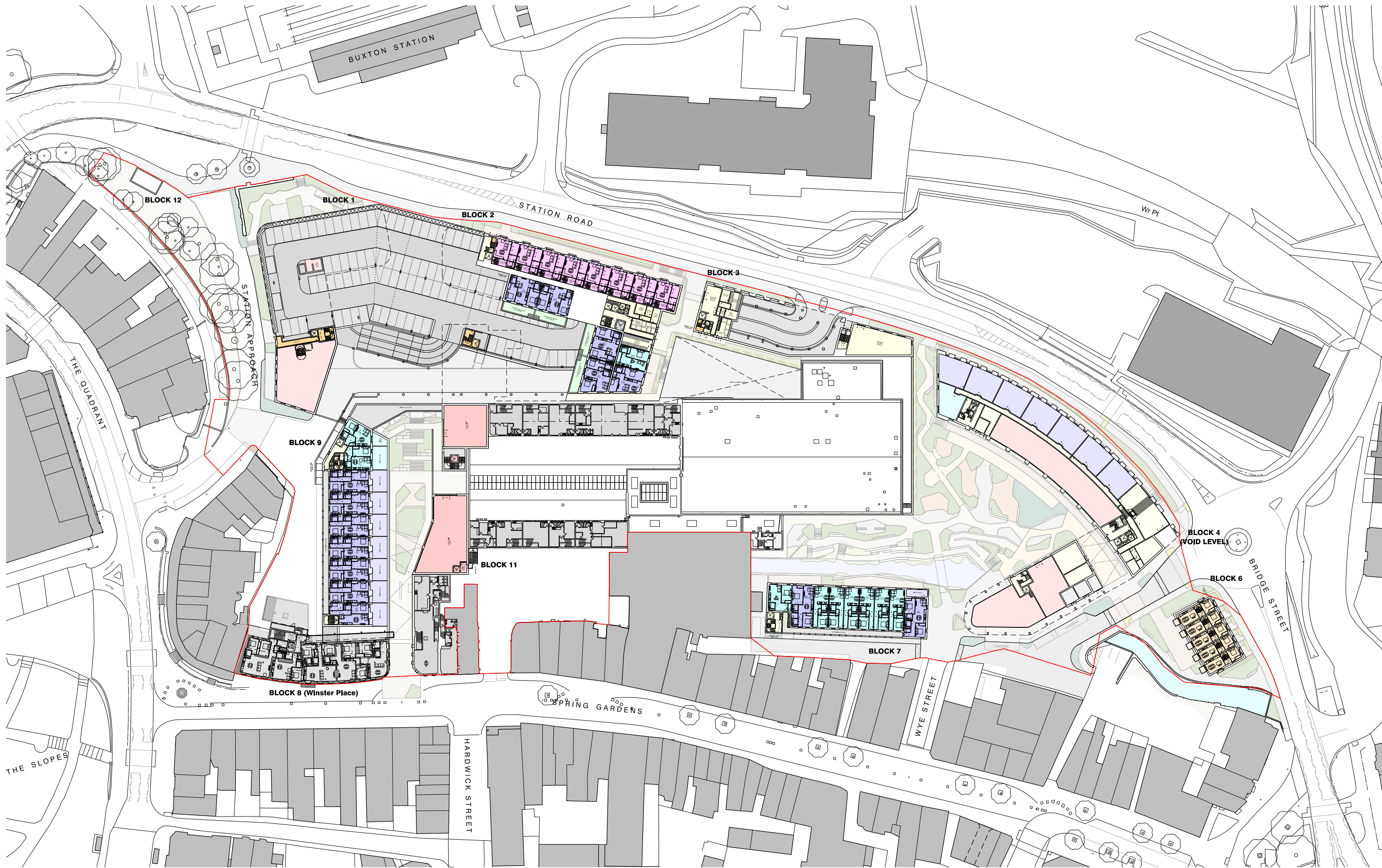
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3 bedroom dwelling
4 bedroom dwelling
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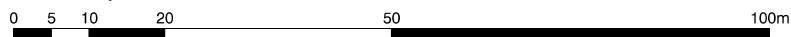
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