



TECHNICAL NOTE 1

DATE:	02 May 2025	CONFIDENTIALITY:	Confidential
SUBJECT:	Rochdale Borough Council LLFA Response		
PROJECT:	South Heywood Plot 3	AUTHOR:	SR
CHECKED:	MS	APPROVED:	MS

INTRODUCTION

This Technical Note has been prepared to support the discharge of Condition 22 attached to the outline planning permission 22/01569/OUT, specifically in relation to the drainage design for Plot 3 of the South Heywood development.

The purpose of this document is to provide detailed responses to the comments raised by the Lead Local Flood Authority (Rochdale Borough Council), as set out in their consultation response dated 09 April 2025.

1. PLEASE CLARIFY THE DESIGN PHILOSOPHY FOR THE WATER COURSE (BRIGHTLY BROOK) DIVERSION.

Within the extents of the proposed South Heywood Plot 3 development, the Brightley Brook watercourse is designated as Main River and therefore falls within the remit of the Environment Agency (EA) as the overseeing organisation for any works affecting the watercourse. A diversion of this watercourse is necessary to accommodate the proposed masterplan, specifically the access into the site – the bellmouth of which was built under Rochdale Borough Council's (RBC's) delivery of Pilsworth Road Widening Scheme. The proposals have been developed following extensive consultation with the EA prior to submitting both the Outline (22/01569/OUT) and Reserved Matters (25/00045/REM) planning applications. The EA's *Designation of 'main rivers'* document has informed our approach to its management.

Condition 24 of planning permission reference 22/01569/OUT was proposed by the EA and specifically addresses the applicant's obligations with respect to the Main River diversion. Condition 24 mandates the preparation of a River Corridor Strategy which is required to set out the ecology, hydrology, geomorphology details, along with the necessary construction details.

I'm pleased to confirm that the EA has confirmed that they are happy with the information provided, following meetings with them this week, and they are to write up a response early next week. It is anticipated that a formal application to discharge Condition 24 will be submitted to the planning authority and the case officer will seek confirmation from the EA that all required information has been provided, albeit the EA recognises that much of what has been submitted so far as part of this application is covered in condition 24 in any case.

2. THE INLET CULVERT DIMENSIONS, AND UPSTREAM CATCHMENT ARE NOT IDENTIFIED. RBC POLICY IS FOR CULVERTS TO BE DAYLIGHTED AS MUCH AS POSSIBLE. HAS THIS BEEN ASSESSED FOR THE UPSTREAM / INLET CULVERT.

The culvert upstream of the proposed Main River diversion forms part of the Pilsworth road widening scheme that is being delivered by Rochdale Borough Council (RBC). The culvert is an existing RBC asset that falls outside of the South Heywood Plot 3 planning application. The highway improvement scheme

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includes road realignment and drainage works associated with the former Pilsworth Road, for which land was formally dedicated to the Council by the applicant to facilitate these improvements.

At the time of design and construction (of the highway scheme), it was determined that there was no feasible opportunity to daylight this section of the culvert and this position remains unchanged. The highway improvement scheme has since been completed and this application responds to the existing situation at the Site.

Further details, including technical specifications, are available within the RBC Pilsworth Road drainage as-built drawings, references T8121/500/001 and T8121/500/002.

3. THE DRAWINGS NOTE THAT THE CULVERT MAY BE AFFECTED BY POTENTIAL HIGHWAY PROJECTS FOR PILSWORTH ROAD. PLEASE CLARIFY WHAT LIAISON HAS BEEN UNDERTAKEN WITH RBC HIGHWAYS.

The note referenced on the drawings reflects the status at the time they were produced. At that stage, the Pilsworth Road highway improvement scheme had not yet commenced by RBC, and therefore a precautionary comment was included to acknowledge the potential for future impact.

The Pilsworth Road scheme has been fully delivered by Rochdale Borough Council. WSP will update the relevant drawings to reflect the completed works for clarity.

4. THE ATTENUATION PROPOSALS ARE FOR TRADITIONAL BURIED STORAGE. THIS IS NOT CONSIDERED TO BE THE MOST SUSTAINABLE APPROACH. A MAJOR DEVELOPMENT SUCH AS THIS SHOULD HAVE SCOPE TO INCORPORATE GREEN SURFACE-BASED SUDS SOURCE CONTROL SUCH AS BASINS, SWALES ETC.

Plot 3 forms part of the wider South Heywood development and has come forward earlier than other industrial and logistics phases due to the overall phasing strategy, and obligations on the land, which planning officers are aware of. While it is acknowledged that the current attenuation proposals within Plot 3 rely on traditional below-ground storage, this approach has been driven by specific site constraints, including topography, limited space, and the need to maintain commercial viability. The site is bounded by existing watercourses to the north and south and requires retaining walls to overcome the level difference whilst achieving balanced earthworks. This restricts the opportunity to provide open attenuation features such as swales or ponds.

Consultation was undertaken with the LLFA (Mr Stephen McCann) in 2022 when plans were prepared for the Outline application (22/01569/OUT), and was agreed with Stephen then at a site visit. This consultation involved a site visit and follow on discussion, to outline the engineering challenges of the site due to the existing topography. Within the Design & Access Statement (approved document) is a constraints and

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opportunities plan which details the topographical challenges of the plot. The document also provides an illustrative layout, which the proposed application aligns with, and which is shown to use traditional buried tanks as part of the drainage system in place of a swales or a pond, due to the site constraints.

Whilst this has placed restrictions on the drainage system, the applicant remains fully committed to providing sustainable development measures throughout the South Heywood development.

This is also evidenced by the comprehensive design of the Brightley Brook river diversion within this application and the associated upstream tributary improvements, which incorporate a range of sustainable features, including:

- Channel Realignment with Naturalised Design:** Brightley Brook has been realigned to create a more natural, open channel form. The new alignment includes gentle bank slopes protected with coir matting and rock rolls, alternating berms to promote hydraulic diversity, and top-of-bank landscaping to improve amenity and habitat value.
- Low-Flow Channel and Natural Substrate:** The proposed culvert includes a depressed invert and accommodates a low-flow meandering channel constructed from material translocated from the existing watercourse. This approach facilitates aquatic continuity, supports biodiversity, and aligns with Environment Agency good practice guidelines.
- Bank and Bed Protection:** Rock armour and coir rolls have been strategically placed in key areas to dissipate energy during high flows and prevent erosion, maintaining channel stability and safeguarding adjacent infrastructure.
- Tributary Berms and Riparian Enhancement:** Upstream of Plot 3, three earth-formed berms have been constructed to enhance floodplain connectivity and accommodate natural inundation patterns. These berms are seeded with native UK riparian plant species and protected with coir matting, providing both immediate erosion control and long-term ecological resilience.
- Native Planting and Habitat Creation:** Across both the main river and tributary corridors, a diverse range of native species have been incorporated to stabilise banks, increase flood resilience, and create habitat for local wildlife. These efforts contribute to improved water quality, soil retention, and biodiversity across the site.

Together, these measures embody a nature-based approach to water management and river engineering. They contribute meaningfully to the long-term resilience and sustainability of the South Heywood site, fulfilling both regulatory expectations and the applicant’s broader environmental objectives.

In addition, within Plot 3, a rainwater harvesting system has been incorporated to capture runoff from the warehouse roof. This system supports water reuse on-site, reduces reliance on mains water, and helps to manage runoff at source, in line with the SUDS management train.

Although the engineering and spatial constraints within Plot 3 preclude the delivery of surface-based SuDS features, the applicant is committed to utilising sustainable drainage measures across the wider South

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Heywood development wherever possible. Examples of this include residential phases currently under construction, all of which utilise attenuation ponds as the primary form of attenuation.

These measures are outside the scope of the Plot 3 planning application and will be presented on a case-by-case basis as these phases are brought forward for development as part of subsequent planning applications.

We note that there is a long standing partnership working approach between the Council and applicant, with weekly strategic South Heywood meetings on progress, design and delivery. Stephen McCann, planning officers and the EA have been properly consulted at each stage of the process, which has informed this Reserved Matters Application.

5. PLEASE PROVIDE HYDRAULIC CALCULATIONS &/OR MODELLING FOR ALL DRAINAGE ASPECTS, INCLUDING BUT NOT LIMITED TO GREENFIELD RUNOFF ESTIMATES VARIOUS SW NETWORKS DESIGN ATTENUATION STORAGE VOLUMES AND DRAIN DOWN TIMES. FOUL PS & RISING MAIN DESIGN

Greenfield Runoff Estimates

Hydraulic calculations and runoff estimate for Plot 3 have been undertaken in accordance with the overarching drainage strategy for the South Heywood development.

This was prepared by Campbell Reith and covers the full extent of the South Heywood development which covers an area of approximately 100 hectares. The Campbell Reith strategy was submitted as *Appendix 12.1* to the Environmental Statement supporting planning permission reference *16/01399/HYBR*.

Since the Campbell Reith drainage strategy was prepared, the phasing strategy has been amended to reflect changes to the strategic masterplan for the development. Greenfield runoff rates for the Plot 3 development have therefore been calculated on a pro-rata basis for the associated development parcel for the revised area.

This methodology is fully documented within the WSP “*241202 South Heywood Plot 3 Drainage Strategy and Flood Risk Assessment – Rev E*”, which contains detailed calculations supporting the drainage design for Plot 3.

in line with the approved strategic approach, the discharge rates for Plot 3 have been calculated using the principles established by Campbell Reith. Specifically:

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- Drawing 12441-CRH-Z1-XX-SK-C-4009 from the Campbell Reith report identifies Plot 3 as located within Sub-Catchment 8 (parcels EP3 and EP4), forming part of Area 4 of the wider masterplan.
- The greenfield runoff rates for the QBar (mean annual peak flow), 1:1, 1:30, and 1:100-year events for Sub-Catchment 8 were originally based on a gross development area of 16.2 hectares.
- For the purposes of Plot 3, these runoff rates have been pro-rata adjusted to reflect the smaller area within the Plot 3 red line boundary, resulting in a scaled greenfield runoff rate of 7.82l/s/ha.
- Plot 3 has been further subdivided into two catchments (north and south), with the area of each catchment reflecting the existing topography of the site.
- The greenfield runoff rate has been applied to each of the three catchment areas to determine the final discharge rates applicable to each part of the site. Reference should be made to Table 5-2 in the WSP drainage strategy report.
- Catchment splits, areas, and discharge rates are shown on WSP drawing reference SOHW-WSP-SHP3-PLOT-DR-D-0505. This was included as Appendix H in the WSP drainage strategy report.

Various SW Networks Design

A detailed Infodrainage model has been produced by WSP to support the design of the surface water drainage networks for Plot 3. This model contains full hydraulic calculations, including pipe network design, flow control structures, attenuation storage, and discharge rates. Hydraulic modelling results have been included in Appendix K of the WSP drainage strategy report and the model file will be shared separately for review.

Attenuation Storage Volumes and Drain Down times

Attenuation storage volumes are detailed within WSP drawing reference SOHW-WSP-SHP3-PLOT-DR-D-0501. As a high-level estimate for drain down times, we have calculated the utilised volume of storage for the 1:100 + CC event to calculate a total storage volume for the worst-case event. We have then assumed that the tank will empty at a constant rate that accords with the peak discharge rate for the associated network. The performance characteristics for the two tanks are summarised in the table below:

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	Northern Tank	Southern Tank
Plan Area (m²)	100 x 13.5	95 x 9.5
Water Level at 1:100years + CC (m)	1.21	1.85
Volume (m³)	1633.5	1670
Adjusted Volume for 95% void ratio	1552	1586
Discharge Rate (m³/s)	0.0331	0.0172
Drain Down Time (hours)	13 hours	25.6 hours

Foul PS and Rising Main Design

It is considered that the drawings submitted as part of the reserved matters planning application show an appropriate level of detail for the proposed foul pumping station and rising main to enable the LLFA to undertake a review of the drainage proposals as part of the reserved matters planning application.

The outfall into the United Utilities public sewerage network will be subject to a Section 106 agreement for a new connection to an existing system. A pre-development enquiry has been undertaken with United Utilities which has confirmed the proposed arrangement is acceptable in principle. Copies of the correspondence with United Utilities is included as Appendix N of the WSP drainage strategy report.

The foul pumping station will remain in private ownership, and it is anticipated that a packaged pumping station will be suitable for this site due to limited capacity and flow requirements. A detailed design for the pumping station including final pump sizing and rising main design will be undertaken following the successful award of planning permission once the scheme progresses to detailed design.