



Client:	Clockstrike Ltd.
Project Title:	Proposed Residential Development (Phase 01)
Project Location:	Ringwood, Blarney, Cork
Document Title:	Surface Water Drainage Technical Note-RFI Response –
Document No.:	21079HD-MHL-TN00-DRA-Rev B_Surface Water Drainage Technical Note-
Author/s:	Mr. David Murphy, MHL & Associates Ltd.
Job No.:	Surface Water Drainage Technical Note-RFI Response –
Date:	07/10/2024

1 INTRODUCTION

1.1 Overview

MHL & Associates Ltd (MHL) have been appointed by the Clockstrike Ltd. to prepare a **Surface Water Drainage Technical Note-RFI Response** for an LRD Application in Ringwood, Blarney, Cork. This technical note sets out our responses to Cork City Council’s request for further information on Drainage queries at the Proposed Residential Development (Phase 01) at the Ringwood site, in particular the following:

- Proposed attenuation tank design rationale.
- Proposed attenuation tank details.
- Proposed attenuation tank access.
- Proposed detention basins .

1.2 Scope of Technical Note

This technical note is supplementary to the design reports previously submitted for the LRD application.

Please refer to the:

- 21079HD_MHL_Ringwood-Doc01-EDR Planning Engineering Design Report.
- 21079HD_MHL_Ringwood-Doc06-DIA_ Rev C- Drainage Impact Assessment.

The LRD application area is within Blarney, located east of Station Road. See Figure 1.1 below.

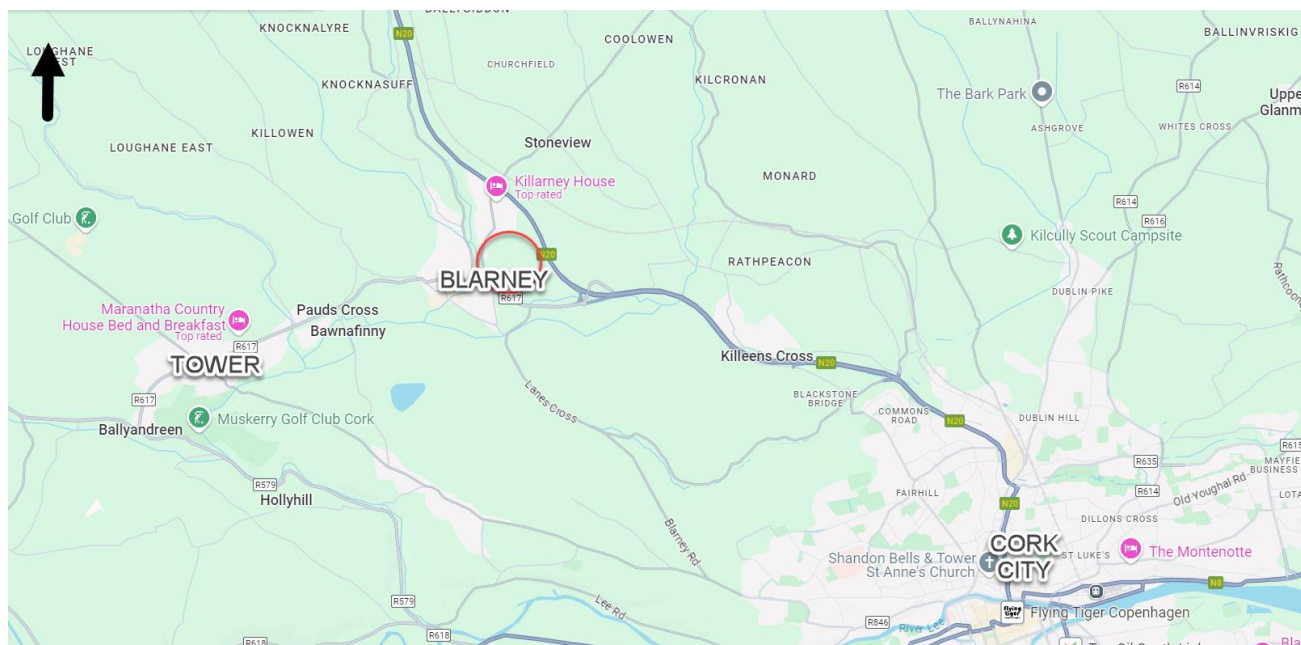


Figure 1.1 – Wider Context

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1.3 Project Development Description

The proposed development will consist of a largescale residential development (LRD) of 246no. residential dwellings comprising the following: 101no. apartments arranged in 4no. part 3-storey, part 4-storey apartment blocks (to include 6no. 1-bed studio units, 35no. 1- bed units and 60no. 2-bed units); 30no. duplex dwellings arranged in 3no. 3-storey buildings (to include 15no. 1-bed dwellings and 15no. 2-bed dwellings); and 115no. 2-storey and 3- storey houses (to include 19no. 2-bed dwellings, 64no. 3-bed dwellings, and 32no. 4-bed dwellings).The proposed development also includes crèche (380.6sqm) with capacity to accommodate 61no. children. See Figure 1.2 below.



Figure 1.2 - Site Location Map

The proposed development will include provision for car parking, including EV charging points, bicycle parking, and motorcycle parking bays, and the provision of an area reserved for future resident car parking to the rear of Woodville Terrace on Station Road.

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2 FI QUERIES -PHASE 1

a. Number of Attenuation Tanks

The design submitted at Opinion Stage included 3Nr. attenuation tanks as part of Phase 01. The applicant was requested to clarify if consideration was given to the overall drainage strategy for the development (Phase 01 & Phase 02) to reduce the number of tanks and ensure they are located in appropriate areas. The revised design submitted as part of this application now includes 4Nr. attenuation tanks as part of Phase 01.

This application has increased rather than reduced the number of attenuation tanks and has not clarified if the drainage strategy will accommodate the drainage from Phase 02.

- Please clarify why the number of attenuation tanks has increased.
- Please clarify if the drainage strategy for Phase 01 takes account or makes allowances for Phase 02.

b. Attenuation Tank Details

The Drainage LRD Opinion Report raised concerns over the size of the 3Nr. attenuation tanks proposed as no details or dimensions were provided.

The revised design submitted as part of this application now includes 4Nr. attenuation tanks and the dimensions and details of the tanks have still not been provided. Layout drawings are provided but the tanks are not dimensioned. The Drainage Impact Assessment states that interception storage is to be provided under the tanks by providing stone filled infiltration under the tanks. This is not shown in the attenuation tank drawing and Drainage Report Page 4 of 6 no detail is provided on how water gets to the area under the tank. We would have significant concerns with this proposal and highlight that attenuation tanks should be sealed concrete tanks.

- Please provide fully dimensioned general arrangement drawings for each attenuation tanks.
- Please review the proposed interception storage under the attenuation tanks.

c. Attenuation Tank Access

The Drainage LRD Opinion Report raised concerns over access to the proposed attenuation tanks during operation and maintenance. The applicant was requested to clarify how the tanks will be accessed and maintained safely which was not addressed in this application. Please clarify how each of the 4Nr. proposed attenuation tanks will be accessed and maintained safely. This should include highlighting where plant and machinery can be parked and located safely during maintenance works. It should be noted that it is the duty of designers to ensure a project can be constructed and maintained safely. This includes the identification, and elimination or mitigation of risks during the operation and maintenance phase.



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d. Detention Basins

This application includes 4Nr. detention basins which were not proposed in the scheme submitted at Opinion Stage. The Engineering Design Report submitted at Opinion Stage discussed a range of SuDS features, not all of which were proposed as part of the scheme. This included detention basins. The areas now proposed as detention basins were previously labelled as kickabout areas in the stormwater drainage drawings submitted at Opinion Stage. Furthermore, 3Nr. of the proposed detention basins are located on top of the proposed attenuation tanks (i.e. 1a, 1c, 1d)

- Please detail how the proposed detention basins will function and if they are interconnected with the attenuation tanks.
- Please provide full details, layout drawings, cross sections and storage volume calculations for each of the proposed detention basins.
- Please clarify how long the detention basins will be wet or hold water following arrange of storm events from 50% AEP up to the 1% AEP
- Please clarify the side slopes and maximum depth of water in each of the detention basins and if there are any overflow controls
- Please clarify the level of the water table and any risk of floatation for each of the attenuation.

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3 FI QUERIES- RESPONSES

3.1 Number of Attenuation Tanks

RFI ITEM 1A.

The design submitted at planning opinion stage included for 3Nr. attenuation tanks as part of the pre planning Phase 01 design. This design was reflective of the early data acquisition on site, i.e. site investigation, the provisional residential layout and provisional FFL and corresponding road design levels. Subsequently, the drainage design information at the pre planning stage was reflective of the site layout (Figure 3.1) proposed at that stage.

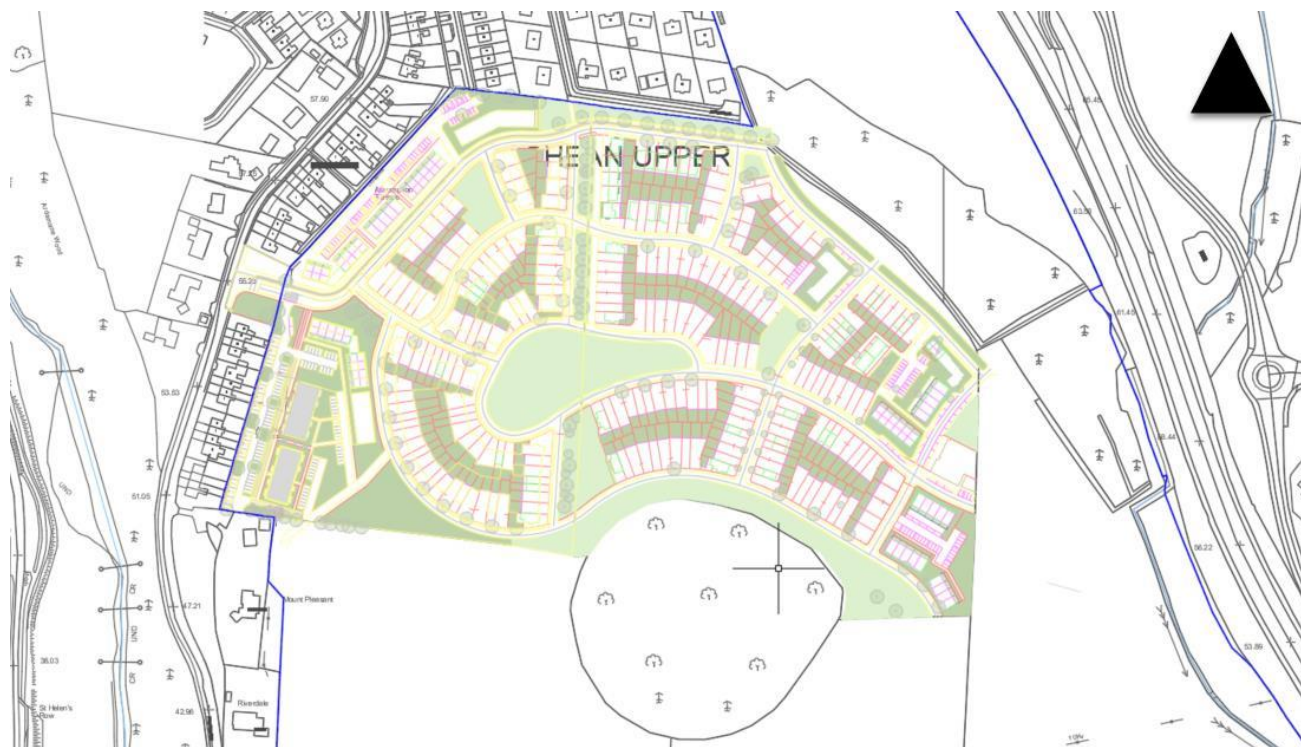


Figure 3.1 – Preplanning site context

The existing and proposed surface water catchment assessment, as detailed in the Preplanning Engineering Report (MHL-21079HD-Ringwood-PER-DOC01) and the subsequent LRD Drainage Impact Assessment (21079HD_MHL_Ringwood-Doc06-DIA_ Rev C- Drainage Impact Assessment) noted the design rationale for the attenuation tank numbers, locations and sub catchments contributing to the network.

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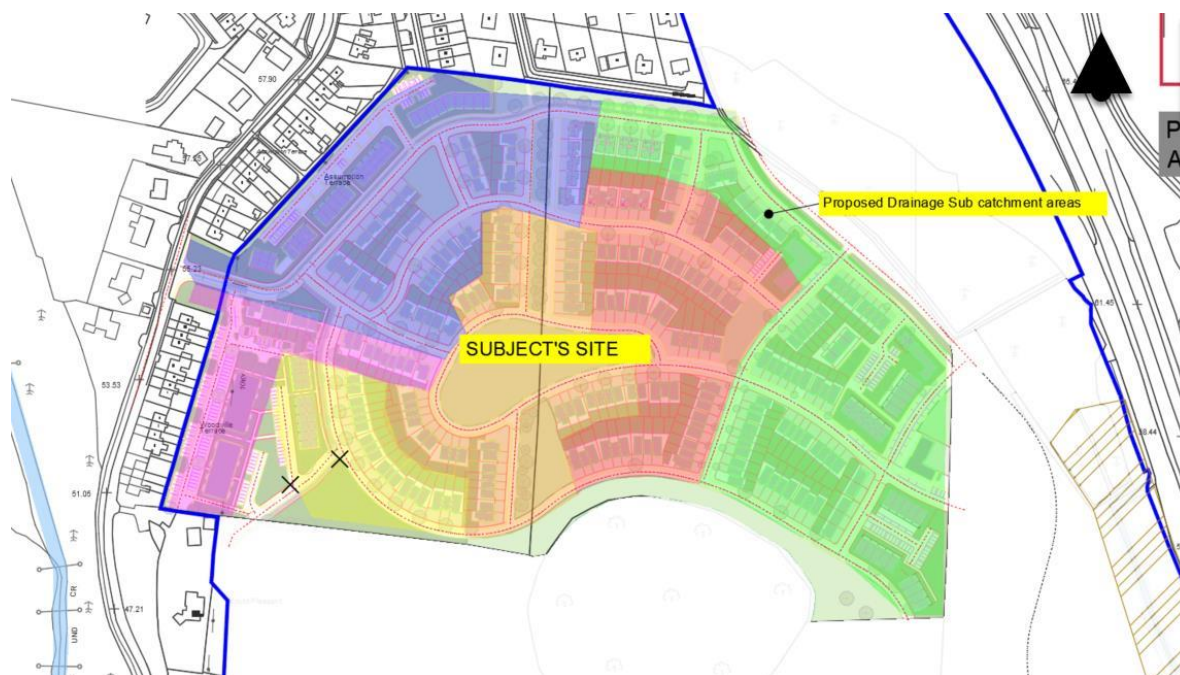


Figure 3.2 – Sub catchment assessment (preplanning)

The subsequent design revisions between LRD opinion and LRD formal submission stages were incorporated into the design of the site levels, access provision, service separation details, Uisce Éireann's Statement of Design Acceptance review/ requirements and reconfiguration of contributing proposed road/ finished floor levels.

CCC requested an increase unit density for the LRD application at Ringwood Phase 01, necessitating changes to the drainage proposals proposed at pre planning stage. These site revisions had an impact on the contributing catchment/ flow paths previously determined at pre planning stage. The storm water drainage network /design was adjusted to account for these changes for the LRD development layout.



Figure 3.3 – Phase 01 LRD development layout

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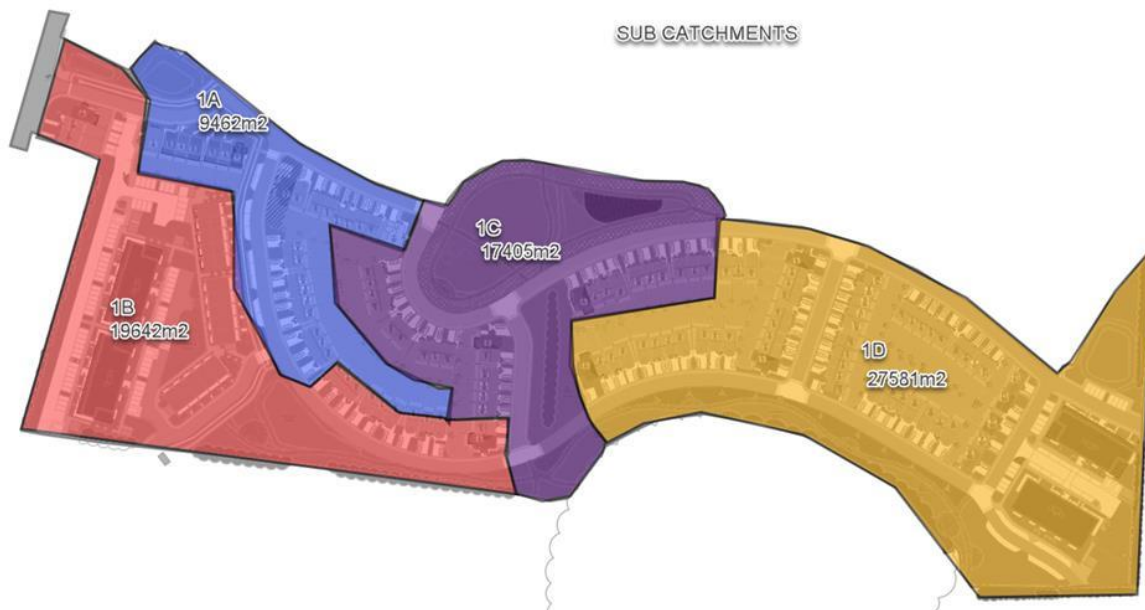


Figure 3.4 – Phase 01 LRD catchment assessment

Consideration was given to the overall drainage strategy for the development (Phase 01 & Phase 02) to ensure the number of tanks and their locations were appropriately aligned for both development phases and that contributing flows from Phase 02 could be catered for within the Phase 01 network. Phase 02 storage requirements have been reasonably accounted for in the Phase 01 surface water design and it is not envisioned that subsequent tank modifications will be required. If additional storage is found to be necessary (due to Phase 02 development layout/density changes), the location of the tanks have been designed to allow subsequent tank expansion, where R.C modular tanks have been specified. This is evident at locations A, C, D, noted in Figure 3.5. Expandable zones are available at the interface between Phase 01 and Phase 02 of this development. Please refer to Figure 4.3.



Figure 3.5 – Phase 1 Tanks locations

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The surface water pipe network for Phase 01 has been designed to ensure sufficient capacity is available to cater for the Phase 02 northern catchments flows. As noted in Figure 3.6:

- Sub catchment 1 (yellow) does not enter the Phase 01 network, running northeast until the connecting with the new development spine road.
- Sub catchment 2 (red) connects into Phase 01 drainage network and runs through 450mm diameter pipe.
- Sub catchment 3 (green) connects into Phase 01 drainage network and runs through 300mm diameter pipe and is proposed to attenuate within the central green zone.
- Sub catchment 4 (purple) connects into Phase 01 drainage network and runs through 450mm diameter pipe, connecting onto the outflow to Station Road, and not entering the lower catchment area of the development site.



Figure 3.6 – Phase 2 sub catchment – assessed northern flows

To give context of the Phase 02 drainage proposals, the suds areas/basins for this portion of the site are noted in Figure 3.7 below.

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Figure 3.7 – Phase 02 suds locations

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4 ATTENUATION TANK DETAILS

RFI ITEM 1B.

As previously noted in Figure 3.5, the tanks are situated in the proposed residential green space locations, evenly distributed across the full application area for Phase 01. The previously submitted LRD Drainage Impact Assessment for the site noted proposed volumes of attenuation per catchment, as tabulated below.

Tank No.	Capacity (M3)	Restricted Outflow (l/s)
Catchment Area 1a	500	3.16
Catchment Area 1b	750	6.57
Catchment Area 1c	525	5.82
Catchment Area 1d	1180	9.22

Figure 4.1 Catchment Attenuation



Figure 4.2 Proposed surface water network (21079HD-MHL-DBAT-P01)

In terms of dimensions and details of the tanks, these are as note in Figure 5.1

Catchment	Tank Length (m)	Tank Width (m)	Tank Depth (m)	Tank Volume (0.3m freeboard)	Additional storage
1a	20	20	2.3	800	300
1b	68	8	1.7	750	
1c	28	21	1.2	525	
1d	37	31	1.8	1289	110

Figure 4.3 Proposed Tank dimensions

The LRD designs, as submitted, include 4No. attenuation tanks. Please refer to the revised layouts (21079HD-MHL-DBAT-P01), noting proposed tank dimensions and depth. These layouts are as is listed at the back of this technical note.

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5 INTERCEPTION STORAGE

RFI ITEM 1B.

The Drainage Impact Assessment mistakenly states that “interception storage is to be provided under the tanks by providing stone filled infiltration under the tanks”. This note was from pre planning stage which was erroneously included in the LRD formal submission. At pre planning stage, the proposed tank solution was to use geo-cellular chamber tank systems, inclusive of a stone filled layer under the tank. After the LRD opinion feedback received by the design team, the design proposal for attenuating surface water on site was revised to R.C tanks, as per CCC recommendations. The interception volume was calculated and included in the design as follows:

Run off area	Area (m2)	Run off coefficient	Rainfall (mm)	Interception volume (m3)
Catchment Area 1a	6730	0.8	5	27
Catchment Area 1b	9271	0.8	5	37
Catchment Area 1c	5419	0.8	5	22
Catchment Area 1d	16017	0.8	5	64
Total				150

Figure 5.1 Proposed interception volume

In accordance with the requirements of GDSGS, at least 5mm, of interception storage should be provided on site, where runoff to the receiving water can be prevented. It has been assumed that where the rainfall falls on green areas there will be no runoff occurring for the first 5mm - 10mm.

Permeable paving is proposed for private parking spaces at dwellings, covering a total area of circa 8000m². The drainage pipe within the stone bed for these areas will be set 100mm above the bed formation giving (assumed 35% voids) an interception storage volume of approximately 280m³. It should be noted that this volume is discounted from the overall interception storage for the development as per Cork City Council recommendations (due to ongoing maintenance concerns).

Basins are proposed throughout the development. The drainage pipe within the gravel bed for these areas will be set at 100mm above the bed formation providing (assumed 30% voids) an interception storage of approximately 170m³.

A green roof will be provided to control surface water runoff from identified apartments. The total area to be covered by green roof will be 1432m². This would provide an interception storage volume of 15m³ (1000 x 0.005). Standard roof downpipes will direct excess runoff to the stormwater drainage network, with excess flows drained into the drainage network. Tree pits will provide infiltration with an overflow system to collect and convey runoff from extreme storm events to the pipework and detention basins.

Tree pits will mostly be located adjacent to roads and will provide infiltration of rainwater runoff from these roads. The drainage pipe within the gravel bed for the tree pits will be set at 100mm above the bed formation providing (assumed 30% voids) an interception storage of approximately 6.2m³ will be achieved assuming a 5m² area for each of the 41 tree pits. The overall interception storage volume provided is therefore 191.2³.

These cumulative volumes, as described, provide interception storage greater than the required minimum provision for the site as detailed in Figure 5.1.

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6 PROPOSED ATTENUATION TANK ACCESS

RFI ITEM 1C.

In response to the request for clarification on how the four proposed attenuation tanks will be accessed and maintained safely, each of the 4 attenuation tanks are designed with practical access points to facilitate routine inspection and maintenance activities. The design incorporates safety measures to ensure that maintenance personnel can perform their tasks without risk to their health and safety.

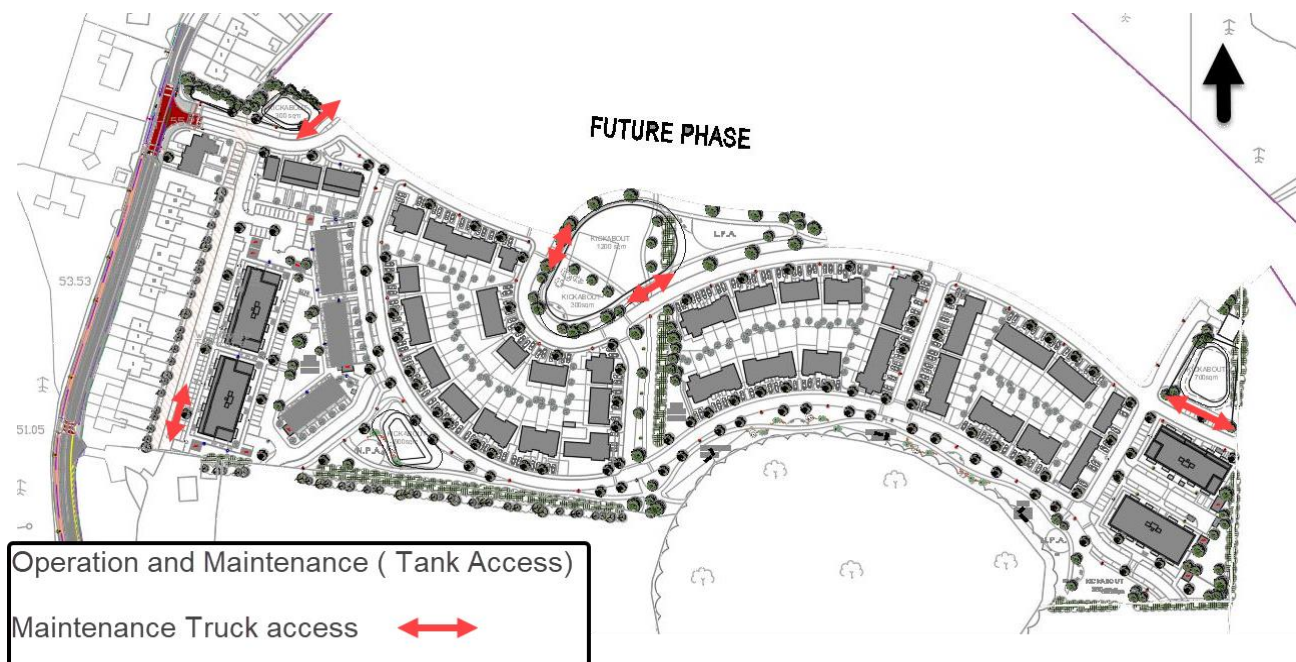


Figure 6.1 Proposed maintenance vehicle / tank access.

Specifically:

Access Points:

Each tank will be equipped with dedicated access hatches, compliant with safety regulations, allowing for easy and safe entry during maintenance operations. The access points will be marked, and their locations are to ensure minimal disruption to surrounding areas during maintenance.

Parking and Machinery Placement:

The machinery parking areas will be designed to accommodate all necessary maintenance equipment while maintaining a safe distance from the tanks and minimizing risk to both workers and machinery. In accordance with safety best practices, machinery will be parked on stable ground with appropriate safety measures such as wheel stops and warning signage.

Risk Mitigation:

The design ensures that all maintenance activities can be performed without the need for personnel to enter confined spaces, unless absolutely necessary. If confined space entry is required, all relevant safety measures will be implemented in line with industry standards and regulations.

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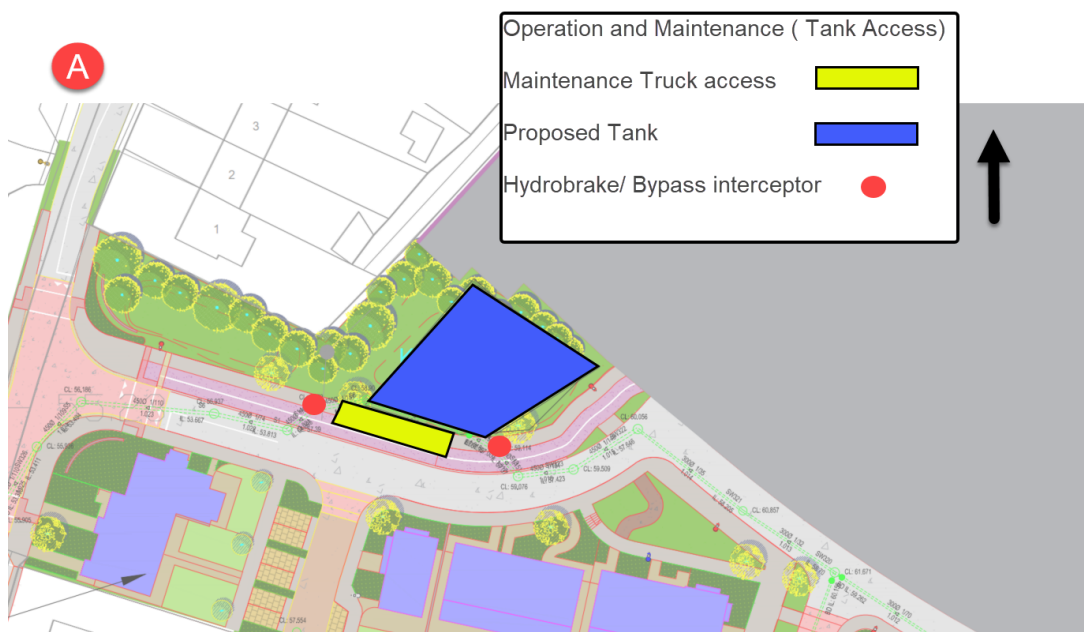


Figure 6.2 Proposed maintenance vehicle / tank access- Tank A.

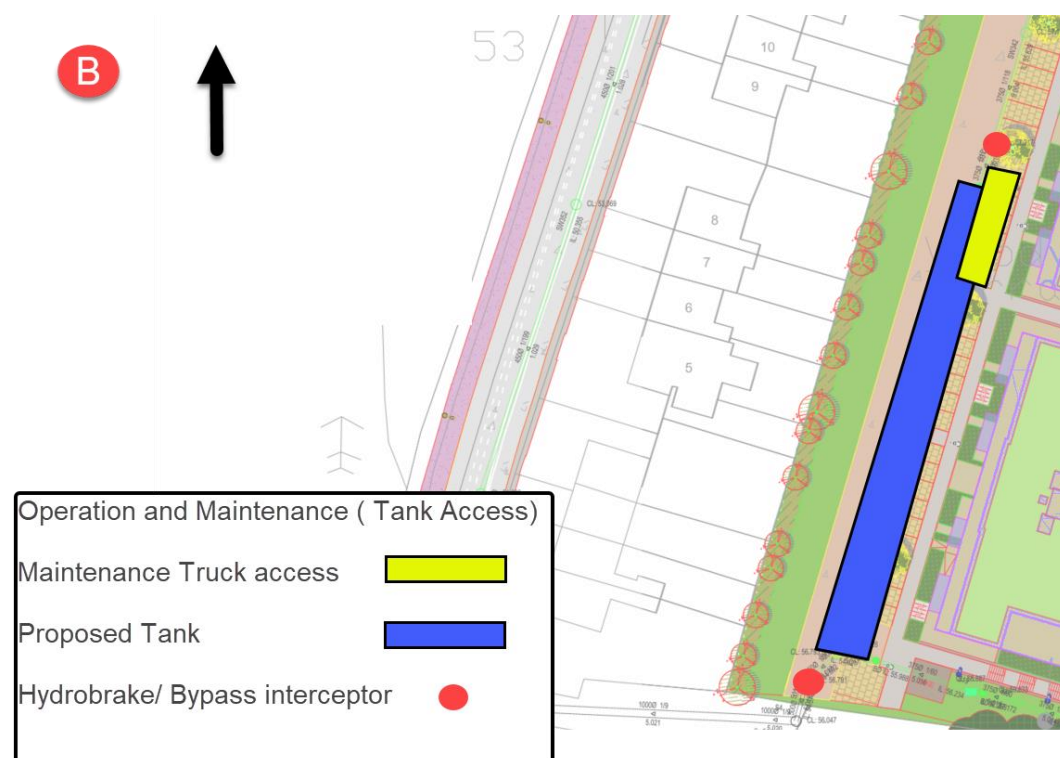


Figure 6.3 Proposed maintenance vehicle / tank access- Tank A.

Whilst efforts to ensure access to the tanks and corresponding infrastructure applicable to the design are a priority, particular attention must be paid to traffic and pedestrian management during maintenance operations. Given the proximity of the tanks to key public pathways—such as pedestrian footpaths, cycle lanes, and nearby roadways—there will be inevitable temporary disruptions. However, these would need to be carefully managed through a well-structured traffic management plan that minimizes risk and inconvenience while ensuring compliance with safety standards.

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The maintenance traffic management is required for ensuring the safety and smooth operation of maintenance activities when working on the reinforced concrete tanks, Hydrobrake manhole, and petrol interceptor located in an area surrounded by pedestrian footpaths, cycle lanes, and nearby roadways. Given the proximity of these critical infrastructure components to public spaces, such as residential footpaths in a green park area, temporary disruptions are inevitable during maintenance works. However, with proper traffic management, these disruptions can be minimized, and risks to the public and workers can be adequately controlled.

Temporary Road and Cycle Lane Closures:

To carry out the necessary operation and maintenance activities on the tanks and associated infrastructure, it will be necessary to temporarily block certain areas, including adjacent roadways, cycle lanes, and pedestrian footpaths.

Traffic management plan during maintenance would include for:

- Temporary road closures or lane reductions on nearby roadways, ensuring that vehicular traffic can be rerouted effectively.
- Temporary detours for cyclists, with clear signage guiding them to safe alternate routes that bypass the work area.
- Pedestrian management, ensuring that walkways are temporarily closed or redirected without causing major inconvenience to residents or park visitors.

Managing Pedestrian Footpaths in Residential Areas:

The tanks are located near residential footpaths in a green park area, and access to these paths will also need to be managed carefully. For safety reasons, certain footpaths will be temporarily closed to the public during maintenance activities. The following steps will be taken:

Clear warning signs will be installed well in advance to inform pedestrians of upcoming closures and provide alternate walking routes.

Barriers or fencing will be used to clearly demarcate work zones, ensuring that residents do not accidentally enter hazardous areas.

Access to residential properties and park amenities will be maintained wherever possible, with alternate pathways or temporary crossings provided to minimize inconvenience.

Safe Plant and Machinery Operation:

During maintenance, heavy machinery and plant equipment, necessary for tasks such as accessing the tanks, manholes, and petrol interceptors, will be in use. To ensure the safe placement and operation of this equipment:

- Dedicated areas for machinery will be established, safely positioned to avoid interference with pedestrian or vehicular movement.
- Traffic controllers will be on-site to manage the movement of machinery and ensure that it does not pose a danger to cyclists, pedestrians, or vehicles.
- Temporary traffic lights or signage may be used where necessary to control vehicle and pedestrian flow near the work zone.

Cyclist and Pedestrian Safety:

Given the presence of nearby cycle lanes and footpaths, special consideration will be given to the safety of cyclists and pedestrians during maintenance operations. In addition to road detours and temporary closures:

Temporary barriers or bollards will separate pedestrians and cyclists from the work area, reducing the risk of accidents.

Warning signals such as flashing lights, cones, and temporary speed limits will be put in place to ensure that traffic slows down near the maintenance site.

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Cyclists and pedestrians will be given clear instructions via temporary signage about alternate routes and the duration of closures to minimize confusion and inconvenience.

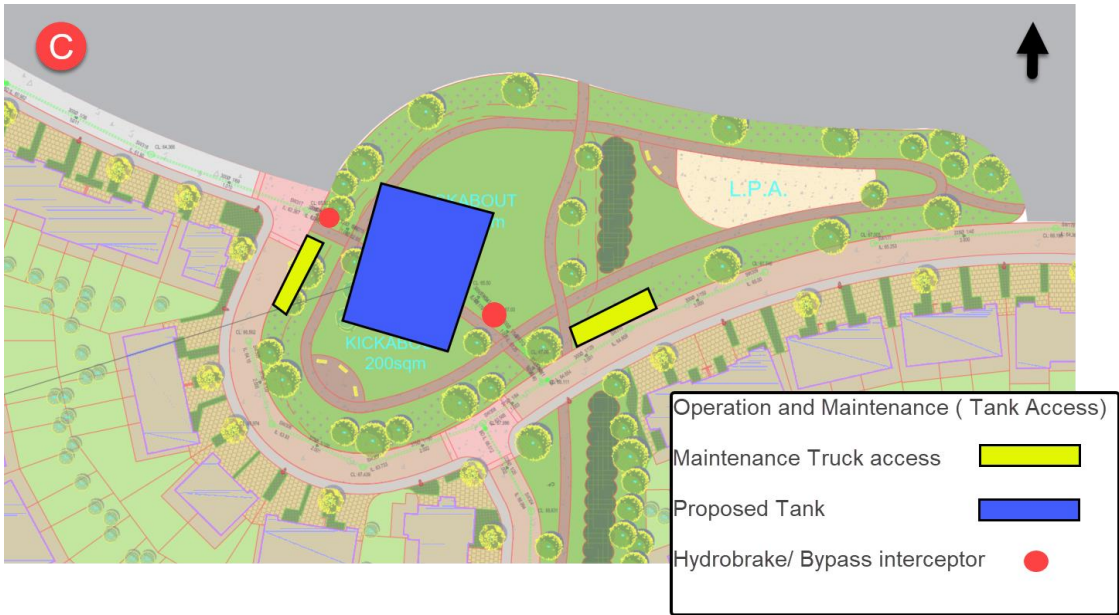


Figure 6.4 Proposed maintenance vehicle / tank access- Tank C.

Coordination:

All temporary road, cycle lane, and footpath closures should be carefully coordinated with relevant stakeholders to ensure that the public is adequately informed, and that emergency access is maintained. Communication will also be extended to residents, ensuring that they are aware of the planned works and the measures in place to minimize disruption.

Since the maintenance works will occur in a green park area near residential footpaths, special care should be taken to minimize the environmental impact of the operations. Measures such as noise control, dust suppression, and waste management will be implemented to ensure that the park remains an enjoyable space for residents, even during maintenance. Additionally, by maintaining clear communication with residents and park users, we aim to reduce any social impact from temporary closures or restricted access.

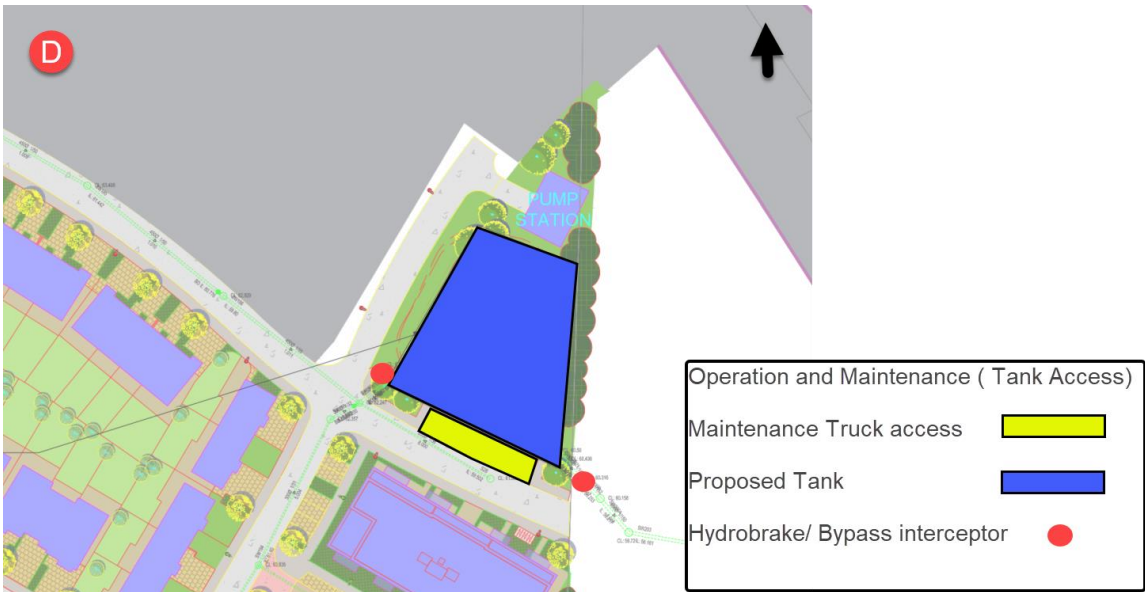


Figure 6.5 Proposed maintenance vehicle / tank access- Tank D.

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7 PROPOSED DETENTION BASINS

RFI ITEM 1D.

7.1 Detention basins

On the recommendations for the LRD opinion stage, the pre planning design was adjusted to incorporate SUDS measures were noted in the formal LRD application. This application includes 4No. detention basins, with 3No. of the proposed detention basins located on top of the proposed attenuation tanks (i.e. 1a, 1c, 1d)

The design of the reinforced concrete (RC) tanks and Sustainable Urban Drainage System (SUDS) basins manage stormwater runoff from the new residential development. The RC tank provides underground attenuation storage, collecting stormwater during peak rainfall events and controlling the discharge rates to prevent overwhelming the local drainage network. The SUDS basin complements this by providing additional surface-level storage and promoting the natural infiltration of water into the ground. Both systems are connected by inspection chambers, ensuring a regulated discharge that aligns with the site's drainage strategy, reducing the risk of flooding, and accommodating the increased storm flow rates generated by the development.

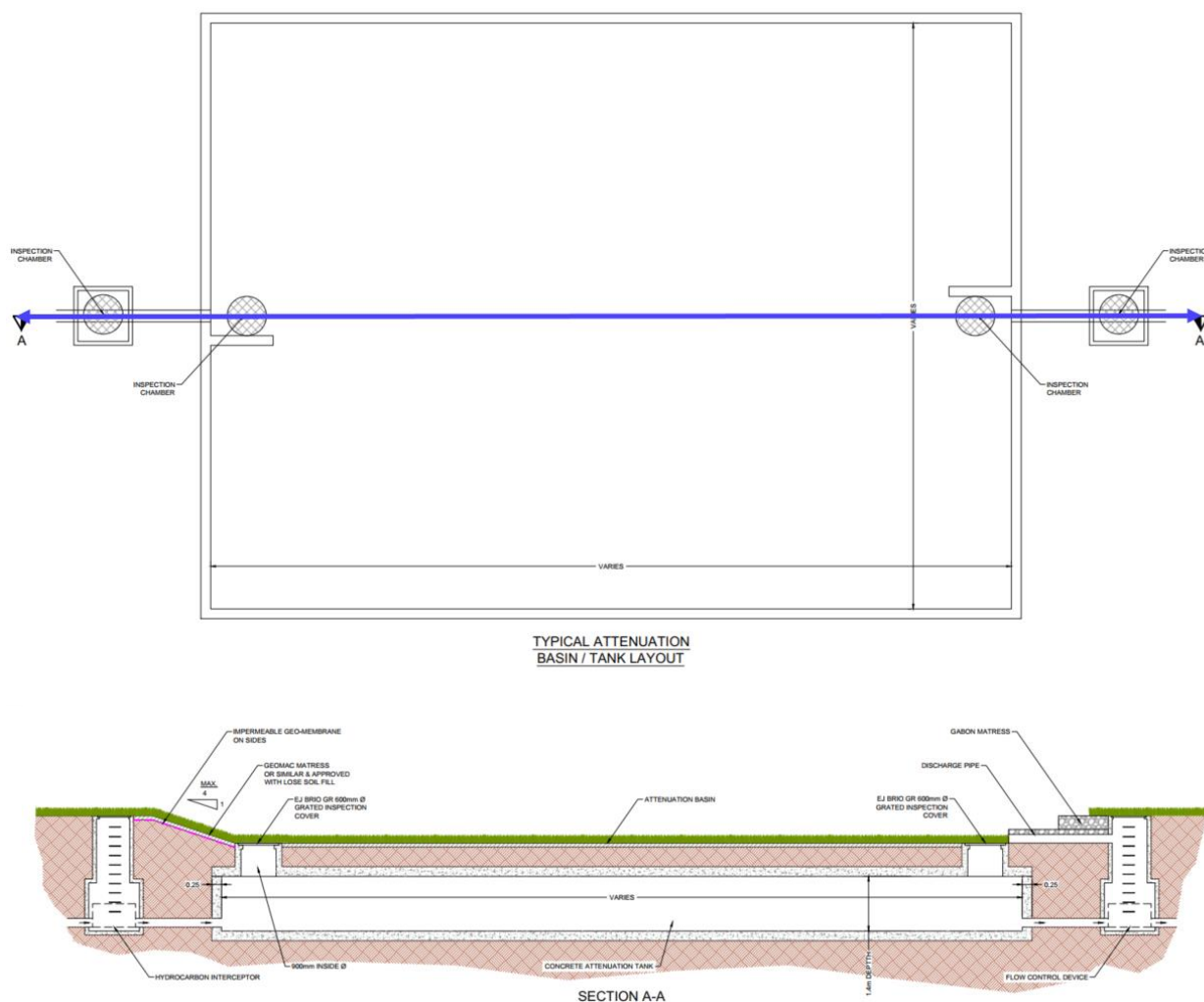


Figure 7.1 Phase 01- Suds basin/ attenuation tank design

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7.1.1 Interconnection

The proposed detention basins are to provide additional storage duration peak storm events and also act as a conduit for storm surface flows running of hardstanding areas and within the green park areas. The basins are to be interconnected with the attenuation tanks, as referenced in 21079HD-MHL-DBATD-P01 and Figure 7.1 below.

7.1.2 Basin details

Details of basins are as per the RFI submitted layout drawings, which show detailed cross sections of each proposed basin. Storage volume calculations for each of the proposed detention basins are as per Figure 7.2.

Due to the nature of site, it's existing topography and ground conditions, suds volumes have been developed to ensure where feasible, appropriate storage volumes can be achieved. The central suds zone in the middle of the site has been over sized to ensure this element can cater for additional flows generated by the Phase 02 sub catchment, located just north of the basin.

Catchment	Area m2	Calculated Suds Area m2	% Catchment area given to Suds	Estimated Suds Volume m3	Storage volume req m3	% Storage to Suds
1a	9462	585	6%	30	502	6%
1b	19642	669	3%	185	750	25%
1c	17405	3000	17%	878	525	167%
1d	27581	615	2%	120	1180	10%

Figure 7.2 Phase 01 Proposed Suds calculations

The detention basins are designed as dry basins and will be wet or hold water following storm events where storm water from contributing hard standing areas/ surface flows will enter these features. Minor storage is expected for the 50% AEP, with detention volumes between the outlines suds volumes and RC tank volumes contributing to the calculated 1% AEP event. Additional storage has been considered to account for Phase 02 of the development which runs through these features/drainage pathways. Please refer to the supplementary details as submitted.

The basins have been designed in 3d, with reference to associated levels of the proposed road levels and proposed property finished floor levels. This ensures the proposed suds features tie into the surrounding proposed ground levels and the feature can maintain a maximum side slopes of 1/4.



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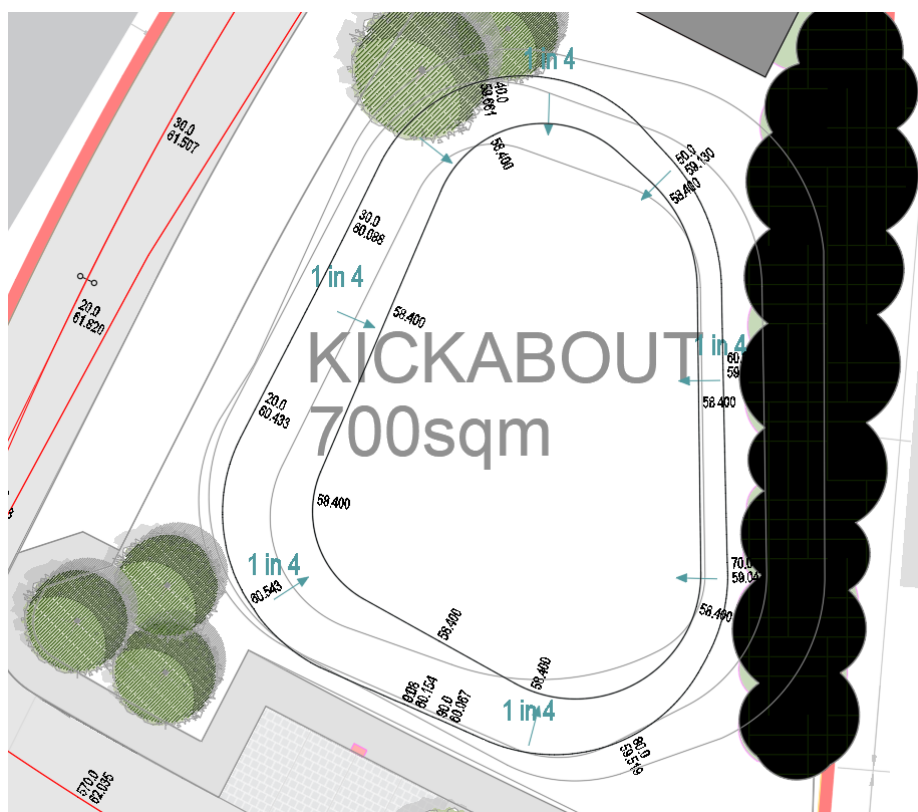


Figure 7.5 Phase 01 Proposed Suds basin – near pump station

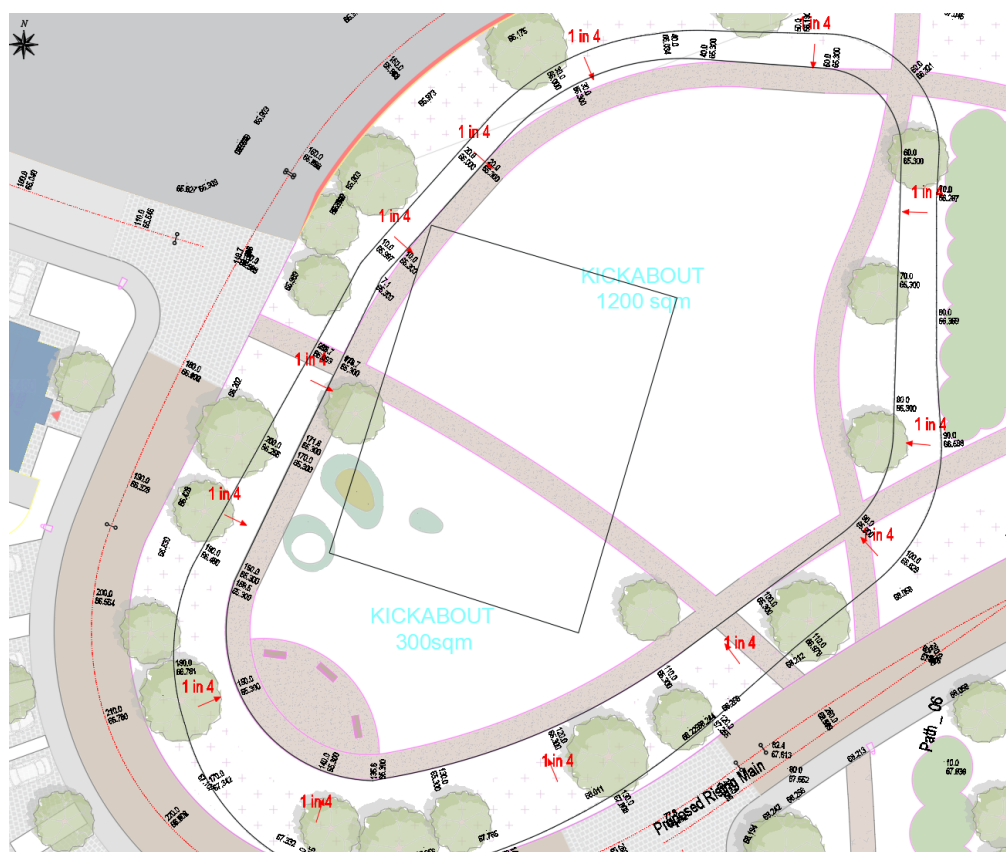


Figure 7.6 Phase 01 Proposed Suds basin – central green

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Proposed cross sectional details of each of these basin locations are noted in the supplied layouts: Detention Basin / Attenuation Tank Layout, Sheets 1 through 5.

Of particular relevance are sections A-A, B-B, C-C and D-D.

The detention basins are designed to temporarily hold surface runoff from the adjoining road and hardstanding areas during storm events, allowing for initial water retention and settlement. The basins gradually transferred this volume to the reinforced concrete (RC) tanks located beneath the basins. This two-tier system ensures that the basins temporarily manage peak runoff, reducing the risk of immediate flooding, while the RC tanks provide additional long-term storage. By holding water in the SuDS basins before storing it in the tanks, the system effectively manages stormwater, controlling flow rates and improving water quality before final discharge. The basins have been designed as dry basins, with the depth of water in each of the detention basins to be reflective of the hardstanding flows during storm events and will primarily feature as part of the retention volumes for Phase 01 and Phase 02 flows combined.

7.1.4 Overflow

Overflow controls between the suds basin/ and storm network are as shown in Figure 7.7, where a 225mm diameter overflow pipe is located downstream (within the suds basin) and directly connects into the adjacent downstream manhole. Labels 2 and 3 show the EJ BRIO GR 600mm diameter grated inspection cover. In compliance with the Safety, Health, and Welfare at Work Act and related confined space codes of practice for access guideline, all covers on the attenuation tanks will be lockable, are to include a fall arrest system (opening in the same direction as the cover), and are to be large enough for entry with full Breathing Apparatus (BA) equipment, details to be agreed with Cork City Council Drainage Department preconstruction stage.

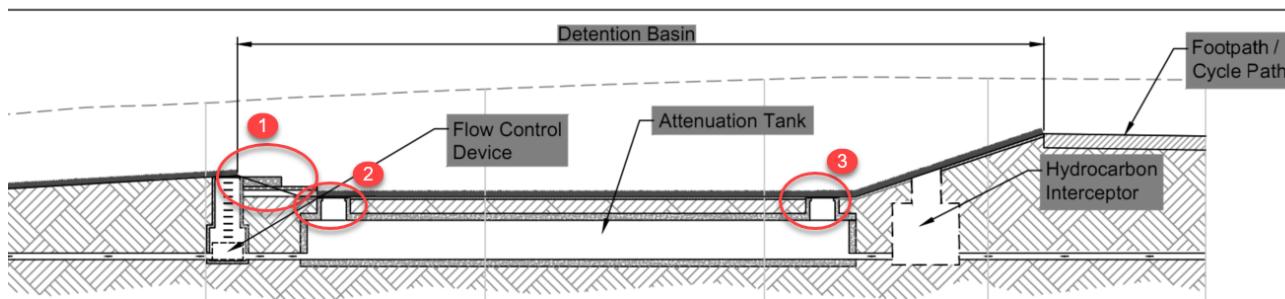


Figure 7.7 Phase 01 Suds/ tank overflow (extract)

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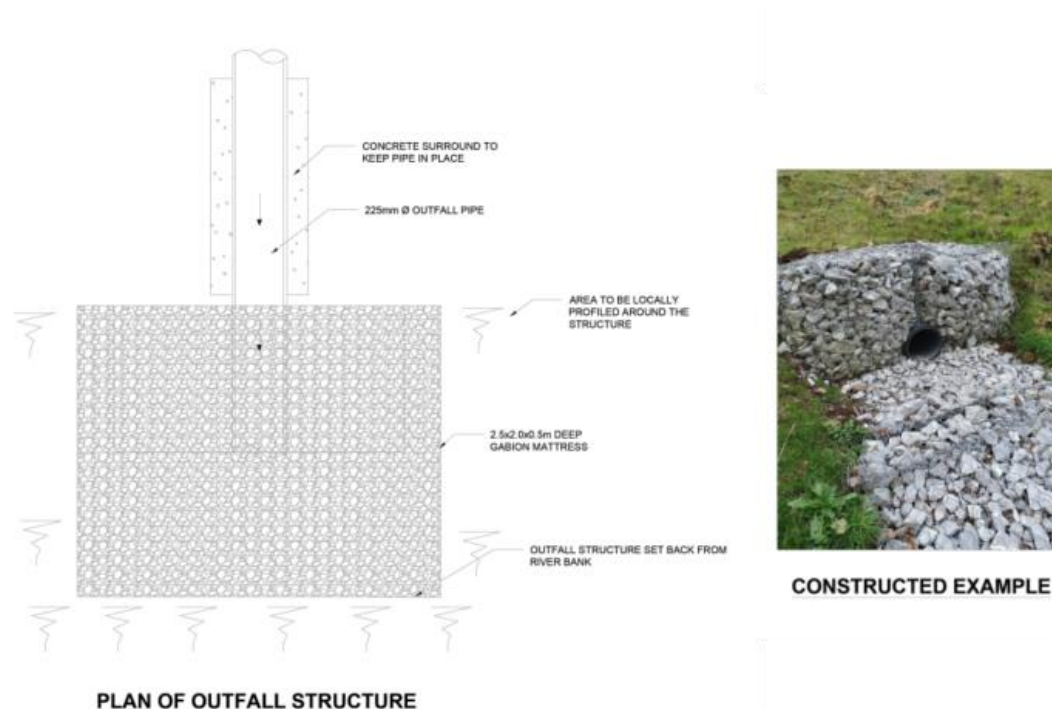


Figure 7.8 Phase 01 Proposed Suds – overflow detail

7.1.5 Water Table / attenuation tank floatation

In September 2023, Priority Geotechnical Ltd. (PGL) undertook a preliminary site investigation on site. The scope of the preliminary site investigation determined by M.H.L. comprised of:

- Visit project site to observe existing conditions.
- 7 No. Trial Pit excavations TP01 – TP07.
- In site testing: 4Nr. BRE365 soakaway; tests: TP01, TP02, TP05 and TP07.
- All associated sampling; Laboratory testing with Environmental testing, Suite E: TP02, TP03, TP04 and TP06.

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Figure 7.9 Phase 1- Site investigation locations

The trial pit locations relevant to Phase 01, include TP001 (location of Tank A), TP005 (location of Tank C) and TP007 (location of Tank D). The site investigation noted no groundwater strikes at depths of 3.7m, 4.2m and 3.25m. Groundwater was detected at TP007 below 3.25m BGL.

From these preliminary SI findings, the tank bases are estimated not be impacted by floatation due to the in-situ water table on site. This will be further confirmed preconstruction stage, during enabling works which will verify the site investigation findings undertaken at planning stage. There may be low risk of floatation a location (tank D) but is seen as unlikely due to the existing and proposed topography /gradient at this side of the site. Tank floatation can be mitigated against through employing methods such as increasing the weight of the tank by making it thicker or adding ballast to counteract the buoyant force. Another method is anchoring the tank to the ground using piles or ground anchors to secure it in place. Each of these approaches helps ensure the tank remains stable, even in challenging conditions where groundwater levels are high, safeguarding both the structure and its long-term functionality.

Location	Final depth, m bgl	Remarks	
		Stability	Groundwater
TP01	3.70	Good	None encountered.
TP02	4.20	Good	None encountered.
TP03	3.60	Moderate	None encountered.
TP04	3.25	Good	None encountered.
TP05	4.20	Good	None encountered.
TP06	2.65	Good.	None encountered.
TP07	4.60	Good	Steady rate of flow 3.25m.

Figure 7.10 Phase 01- Trail pit findings



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7.1.6 Supplementary

Material

Proposed storm sewers are designed and specified to comply with Uisce Éireann's requirements for gravity sewers as outlined in their Code of Practice for Wastewater Infrastructure.

Depth of cover

As per Cork City Council's Minimum Engineering Requirements for Residential Site Development Works, "all sewers shall be laid with a minimum cover of 1.2m in roads and footpaths immediately adjacent to roads and 0.9m in all other areas." This requirement is adhered to across the proposed Ringwood LRD stormwater and wastewater network. Please refer to the drainage layouts as submitted for details.

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8 PROPOSED DRAINAGE LAYOUTS- SUPPLEMENTARY

Please refer to the proposed design layouts, as listed below, which provide supplementary supporting details of the drainage proposals to be employed at the Ringwood Phase 01 development.

ID	Drawing
1	21079HD-MHL-ABTD-P02 Typical Gabion Detail.pdf
2	21079HD-MHL-DBAT-P01 Detention Basin / Attenuation Tank Layout.pdf
3	21079HD-MHL-DBAT-P02 Detention Basin / Attenuation Tank Layout.pdf
4	21079HD-MHL-DBAT-P03 Detention Basin / Attenuation Tank Layout.pdf
5	21079HD-MHL-DBAT-P04 Detention Basin / Attenuation Tank Layout.pdf
6	21079HD-MHL-DBAT-P05 Detention Basin / Attenuation Tank Layout.pdf

Table 8.1 Drawing Schedule – RFI Stage



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9 COMMENTS

9.1 Taking in charge

The applicant will not seek Phase 01 to be “Taken in Charge” by Cork City Council until shared Phase 01 and Phase 02 infrastructure works are completed.

It is proposed to include the identified shared basin/attenuation system locations as part of future Phase 02 planning applications to ensure the subsequent planning application has appropriate access / permission at these shared infrastructure locations on site.



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