



CORA
 Consulting Engineers
 Behan House
 10 Lower Mount Street
 Dublin
 D02 HT71

+353 1 6611100
 www.cora.ie
 info@cora.ie



Ms. Francesca Rowson,
 KPMG Future Analytics,
 1 Stokes Place,
 St. Stephen's Green,
 Dublin,
 D02 DE03

By email: francesca.rowson@kpmg.ie
 Date: 20th December, 2022
 Our Ref: CORA-2127-LO-01-A
 Planning Ref: SD22A/0342
 Re: **Development at Tay Lane, Rathcoole**

Dear Francesca,

In relation to the proposed age-friendly residential development proposed for lands located to the east of Tay Lane, Newcastle Road, Rathcoole, Dublin 24 for Riverside Projects Limited, we have reviewed the request for additional information, dated 17th October, 2022, received from South Dublin County Council (Decision Order Number: 1319) and would like to make the following comments in relation to the engineering items raised. These are addressed individually below:

5. Roads.

The applicant is requested to submit:

(a) a Traffic and Transport assessment of the nearby junctions, to confirm that the development will have no impact on the traffic flows on the Rathcoole main street.

A traffic and transport assessment prepared by Martin Rogers is included with this letter which addresses (a) above.

(b) a stage 1 road safety audit, with particular focus on the pedestrian access to the west and east of the development.

A stage 1 Road Safety Audit has been prepared by Bruton Consulting is appended to this letter.

(c) a revised layout of not less than 1:200 scale, showing a dedicated 2.0m wide footpath on the east side of Tay Lane from the Rathcoole main street to the access of the proposed development.

We have raised a query on this with the planning department. As it currently stands, there is an existing footpath in place on the western side of Tay Lane which measures approximately 1200mm wide along it's length with a remaining 4.50m wide carriageway for vehicular traffic. The inclusion of a 2.0m wide footpath to the east side of Tay Lane would reduce the carriageway width to circa 2.50m which would be insufficient for vehicular traffic.

The inclusion of a 2.0m wide footpath could be included within the site boundary of the development however this could only be accommodated over the length of the site along Tay Lane and could not be extended to Rathcoole Main Street as this would involve works outside of the applicants site boundary.

If we are to maintain the existing carriageway width, the construction of a 2.0m wide footpath to the east of Tay Lane would involve constructing a footpath over the existing stream which is required to be uncovered under (9) below.

John Casey
 BE, CE, MBE
 John Pigott
 BE, Cert. Eng. Tech., CE, MBE
 John McMenamin
 BE, Dip. Proj. Mgmt., Dip. Bus. Con., CE, MBE
 Kevin O'Mahony
 BA, BAU, CE, MBE, MSc, MSc
 Lisa Edden
 BE, CE, MBE, MSc, MSc

Behan House
 10 Lower Mount Street
 Dublin, D02 HT71
 3507892VH
 608357
 No 02
 16/01/18



Given the existing site constraints, it is proposed to retain the existing road and footpath layout to Tay Lane. A pedestrian crossing will be provided from the existing foot path on the western side of Tay Lane to the proposed development. A dished kerb and associated tactile paving will be provided at the pedestrian crossing to Tay Lane.

An additional pedestrian access will also be provided via Eaton Drive. This layout has been evaluated as part of the Road Safety Audit as prepared by Bruton Consulting Engineers.

Details of the proposed access routes are detailed in the Design Statement Addendum prepared by PAC Studio which will be submitted as part of the additional information submission.

9. Watercourse.

It is noted that a stream running up the west of the site has been culverted and diverted through an underground pipe. This stream is to be uncovered as part of permitted development SD17A/0036. It is council policy to uncover culverts as per Policy GI3 Objective 4 of the County Development Plan, and section 12.4.3. The applicant is requested to revise their landscape and drainage plans in order to uncover this watercourse and integrate it into the landscape proposals.

It is proposed to reinstate the original watercourse to the western boundary of the site as requested. The existing culvert is to be removed over the full extent of the site, with an access bridge to be installed to facilitate vehicular and pedestrian access to the site. The extent of the reinstated watercourse is shown on CORA drawing 2127-C.001 (Rev P03), a copy of which is appended to this letter.

12. Surface Water.

The applicant is requested to submit:

(a) a drawing and report showing a flow route analysis of existing site. The development of the surface water flow routes throughout the site should correlate as closely as possible to the natural flow of surface water on site.

The existing flow routes are shown diagrammatically on CORA drawing C.004 which is included with this letter. There are no large changes proposed to the topography, with the existing and proposed flow paths essentially retained allowing the development to correlate to the natural flow currently present on the site.

(b) a drawing showing all SuDS systems in plan and cross sectional view. Show the treatment train and conveyance of surface water above ground over the site. Show the capacity in m³ of proposed SuDS systems. In exceptional circumstances underground attenuation systems are permitted but only if there is insufficient attenuation provided by SuDS (Sustainable Drainage Systems)

Following on from the completion of site infiltration testing, which revealed a soil infiltration rate of $61.7 \times 10^{-6} \text{m/sec}$, the surface water drainage has been updated as follows:

- Attenuation tank and surface water outfall from the site has been removed.
- Surface water soakaway implemented on site to cater for all roof areas.
- Permeable pavement build-ups adopted in all instances.

This revision to the design will result in all surface water falling on the site being intercepted and discharged to ground, with no requirement for off-site disposal of surface water.

The design of the surface water soakaway has been carried out using the following design criteria:

Impermeable Area:	1660m ²
Return Period:	30 years
M5_60:	19.8mm
R:	0.266
Allowance for Climate Change:	20%

Calculations in accordance with BRE365 confirm a soakaway storage volume of 82.80m³ is required.

It is proposed to construct the soakaway using Wavin Aquacells (or similar proprietary cell system) with a voids ratio of 0.95. We are proposing to install a 10m x 12m x 0.8m deep soakaway with a resultant storage volume of 91.20m³ provided which exceeds the design requirement. The time for emptying to half volume has been calculated at 10 hours and 35minutes which is less than the 24hour requirement.

On this basis, we are satisfied that the proposed surface water soakaway is sufficient to cater for the rainfall generated by the development.

The extent of the soakaway is demonstrated on CORA drawing C.001, and in section on CORA drawing C.002. The depth of the soakaway has been lowered to ensure that sufficient cover is provided to the Aquacell units which will be located under vehicular trafficked areas.


Details of the proposed soakaway, along with the anticipated maintenance are included in the SUDS management plan referenced in (c) below. The SUDS management plan also includes details of the propose permeable pavement build-up and associated maintenance.

(c) a comprehensive SUDS Management Plan to demonstrate that the proposed SUDS features have reduced the rate of run off into the existing surface water drainage network. A maintenance plan should also be included as a demonstration of how the system will function following implementation. (d) a drawing and report which give greater detail regarding the attenuation capacity provided on site. Details required will include the proposed attenuation capacity provided by drainage features given in units of m3.

A comprehensive SUDS Management Plan has been prepared and is included with this letter. The report details the SUDS measures proposed, how the system will function following implementation along with an planned maintenance measures required to ensure adequate functioning of the system in service.

We believe the above, along with the enclosed documentation should address the engineering items as part of the Request for Additional Information, but should you have any queries, please don't hesitate to contact me.

Regards,



John Pigott BE, Cert. Eng Tech., CEng, MIEI
CORA Consulting Engineers

*Encl: SuDS Management Plan
Proposed Drainage Site Plan – C.001 (Rev P03)
Drainage Long Section – Sheet 1 – C.02 (Rev P02)
Existing and Proposed Surface Flow Paths – C.004 (Rev P01)*