# Proposed Development at Kishoge,

# Co. Dublin

## Civil Engineering Report

| | |
|---|---|
| Prepared for: | AFEC International |
| Prepared by: | MMOS Consulting Engineers |
| Date: | 27/07/2022 |
| Reference: | 22087-MMS-XX-XX-RE-C-0001 |

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Report Title: Civil Engineering Report
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**REVISION CONTROL TABLE**

**Document reference: 22087-MMS-XX-XX-RE-C-0001**

| Revision | Date | Issue | Author | Checked |
|---|---|---|---|---|
| 01 | 27.07.22 | Planning Issue | SL | PTM |
| | | | | |

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## 1.0 Introduction

Murphy Matson O'Sullivan (MMOS) have prepared this report as part of a planning application for a proposed commercial development at Kishoge, Co. Dublin. The site is accessed via a proposed road which will tie into the Thomas Omer way. This report deals with the civil engineering drainage aspects of the proposed development and is to be read in conjunction with the Civil Engineering planning drawings accompanying this application. The area related to this development can be indicated by the red boundary line in Figure 1.

### *1.1 Background*

Murphy Matson O'Sullivan Consulting Engineers Ltd (MMOS) were requested by AFEC International to conduct a support services application in Kishoge, Co. Dublin for a planning application for a commercial development.
The purpose of the report is to consider the main civil engineering elements involved with the proposed application for this development, including the following.

- Design of Surface water infrastructure network including the requirements for the provision of SUDs.
- Design of the Foul Sewer Network.
- Design of the Water Main Supply.

### *1.2 Existing Site*

The site of the proposed development is located at Kishoge, Co. Dublin and is bounded by:

- The Thomas Omer Way to the North.
- Greenfield sites to the South and East
- Kishoge Community College & Griffeen Community College to the West.


*Figure 1 – Site Location Map*

## *1.3 Proposed Development*

The development will consist of:

The construction of a new primary school. The proposed primary school will extend to c3,355sq.m will be 2 storeys in height and will comprise 16 no. classrooms with an additional 2 classroom Special Educational Needs Unit; a General Purpose Hall and all ancillary teacher and pupil amenities and facilities. The proposed development also provides for hard and soft play areas, including 2 no. outdoor ball courts, bicycle parking, staff car parking, vehicle drop off and set down areas. Photovoltaic Panels (PV) are proposed on roofs in addition to EV Charging Points and a packaged Biomass heating plant. The proposed development also provides for all landscaping and boundary treatments and all associated site development works.

# 2.0 Surface Water Design.

## *2.1 Surface Water Policy*

The management of the surface water for the proposed development will be designed to comply with the policies and guidelines outlined in 'BS EN 752:2008 Drain and Sewer Systems outside buildings' and Building Regulations 2010, TGD Part H and the Greater Dublin Strategic Drainage Study (GDSDS).

The main criteria to be provided in the design are as follows.

- Water Course Regime Protection will be satisfied by the provision of on-site attenuation.
- On site flood protection will be satisfied by providing adequate surface water drainage to manage the runoff within the site, the site is not on a flood plain.

## *2.2 Surface Water General Design*

The proposed development will consist of a new dedicated surface water drainage system to collect generated runoff from roof and hardstanding areas, water runoff will discharge by gravity to the below ground gravity surface water sewers. Runoff for both areas will combine into the local drainage and the surface water will flow into an online storm water attenuation tank.

The proposed attenuation tanks provided on site are sized to accept 1 in 30 year rainfall event (with additional capacity for 10% increase for climate change). Discharge is limited to the expected flow rate from a greenfield area, the value of this flow is equal to 2.32 l/s (See Appendix A).

The site will contain 1 No. attenuation tank which has all been designed based on the percentage area drained as a proportion of the entire site. The following indicates the allowable discharge from the tank:

The proposed Stormtech cellular attenuation systems were designed using Micro Drainage software and an allowance of 10% for climate change was also included.
The following is the tank size before including for permeable paving:

- Required Attenuation Tank Size - 284m$^3$

The permeable paving system that is proposed for this site covers approximated 413m$^2$which will include 450mm of stone with a void ratio of 30%. This will hence provide 62m$^3$ of storm water storage which will reduce the size of the attenuation tank to 222m$^3$.

The landscaping design also includes some additional methods of stormwater attenuation in the form of bioswales, rain gardens, and sustainable design strategies. These items have not been included on the overall attenuation strategy but will provide additional beneficial storage to the storm drainage system.

These SUDs measures included in the storm network will also help remove pollutants such as suspended solids and hydrocarbons from the storm water before it reaches the attenuation system. As the surface wall will then be flowing to an existing stream a Kingspan NSBE010 Bypass Separator has also been included for in the design to ensure all pollutants are removed prior to discharge.

The restricted outfall from the attenuation tank will then flow by gravity into an existing stream located adjacent to the Thomas Omer Way. Refer to the proposed services layout planning drawing 22087-MMS-ZZ-ST-DR-C-10002 for surface water layout details. Please refer to Appendix A for the storm network calculation, the greenfield runoff calculation, and the attenuation tanks calculation.

The surface water run off generated on the proposed entrance road will be collected by a separate system. This system will flow to a temporary soakaway to the south of the site. There are future proposals to introduce a large attenuation pond to the south of this area which we would then route our system to.

Please see table below which breaks down site areas and corresponding run off coefficients.

| | |
|---|---|
| Site area | = 1.168 Ha |
| SAAR | = 754 mm (Met Eireann) |
| Soil Value | = 2 (HR Wallingford Calculation) |
| Qbar | = 2.32 l/s |

| **Structure Type** | **Area - Ha (Hectares)** | **SUDS Area - Ha** | **Runoff Coefficients** | |
|---|---|---|---|---|
| Buildings | 0.212 Ha | | 1.00 | |
| Roads & Paths | 0.488 Ha | | 1.00 | |
| Permeable Paving | | 0.0413 Ha | | Include in Interception |
| Grass | 0.426 Ha | | 0.00 | |
| Total | 1.168 Ha | | | |

# 3.0 Foul Water Discharge

## *3.1 Proposed Foul Layout*

The proposed foul sewer system will consist of a new 150 mm diameter UPVC Pipe located within the site that will collect foul drainage from the school and will outfall to the existing foul sewer network located on Thomas Omer Road. Please refer to drawing 22087-MMS-ZZ-ST-DR-C-10001 for details of the proposed foul sewer network. Please refer to Appendix B for the foul sewer calculation.

The existing foul sewer which is located on the Thomas Omer Way comprises a 750mm Pipe which has been confirmed by Irish Water.

## *3.2 Wastewater discharges*

The foul sewer discharged from the proposed development is as follows:

- DWF 0.210 l/sec.
- 6DWF 1.260 l/sec.

## 4.0 Water Supply

It is proposed to tie into the existing 150mm diameter ring water main around Kishoge Community College to supply the site.

Refer to the proposed services layout planning drawing 22087-MMS-ZZ-ST-DR-C-10003 for watermain layout details.

A confirmation of feasibility has been received from Irish Water confirming that a water connection can be made to existing loop around Kishoge Community School.

## 5.0 Flood Risk Assessment

A flood risk assessment has been undertaken at the proposed site and it can be confirmed that there is currently at no risk from pluvial, fluvial, groundwater or tidal flooding due to the site's topography and its proximity to local waterbodies. Please see Figure 2 below indicating the location of the site and any areas at risk of either pluvial, fluvial, groundwater or tidal flooding which confirms our findings.


*Figure 2 – Extract from Flood Maps.ie*

# *APPENDIX A STORM WATER ATTENUATION DESIGN*

Print | Close Report

HR Wallingford
Working with water

# Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

| | |
|---|---|
| **Calculated by:** | Stephen Leonard |
| **Site name:** | 22087 |
| **Site location:** | 22087 |

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

**Site Details**

| | |
|---|---|
| **Latitude:** | 53.33646° N |
| **Longitude:** | 6.42119° W |
| **Reference:** | 543389942 |
| **Date:** | Jun 29 2022 16:54 |

**Runoff estimation approach** IH124

**Site characteristics**

**Total site area (ha):** 1.168

**Methodology**

| | |
|---|---|
| **$Q_{BAR}$ estimation method:** | Calculate from SPR and SAAR |
| **SPR estimation method:** | Calculate from SOIL type |

| **Soil characteristics** | Default | Edited |
|---|---|---|
| **SOIL type:** | 2 | 2 |
| **HOST class:** | N/A | N/A |
| **SPR/SPRHOST:** | 0.3 | 0.3 |

| **Hydrological characteristics** | Default | Edited |
|---|---|---|
| **SAAR (mm):** | 978 | 754 |
| **Hydrological region:** | 12 | 12 |
| **Growth curve factor 1 year:** | 0.85 | 0.85 |
| **Growth curve factor 30 years:** | 2.13 | 2.13 |
| **Growth curve factor 100 years:** | 2.61 | 2.61 |
| **Growth curve factor 200 years:** | 2.86 | 2.86 |

**Notes**

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

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

**(2) Are flow rates < 5.0 l/s?**

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

**(3) Is SPR/SPRHOST ≤ 0.3?**

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

| **Greenfield runoff rates** | Default | Edited |
|---|---|---|
| **$Q_{BAR}$ (l/s):** | 3.15 | 2.32 |
| **1 in 1 year (l/s):** | 2.68 | 1.97 |
| **1 in 30 years (l/s):** | 6.71 | 4.95 |
| **1 in 100 year (l/s):** | 8.22 | 6.06 |
| **1 in 200 years (l/s):** | 9 | 6.64 |

## Summary of Results for 30 year Return Period (+10%)

| Storm Event | Max Level (m) | Max Depth (m) | Max Control (l/s) | Max Volume (m³) | Status |
|---|---|---|---|---|---|
| 15 min Summer | 8.310 | 0.310 | 2.1 | 83.8 | O K |
| 30 min Summer | 8.416 | 0.416 | 2.1 | 112.4 | O K |
| 60 min Summer | 8.526 | 0.526 | 2.1 | 141.9 | O K |
| 120 min Summer | 8.643 | 0.643 | 2.1 | 173.7 | O K |
| 180 min Summer | 8.713 | 0.713 | 2.1 | 192.4 | O K |
| 240 min Summer | 8.760 | 0.760 | 2.1 | 205.3 | O K |
| 360 min Summer | 8.822 | 0.822 | 2.1 | 222.0 | O K |
| 480 min Summer | 8.860 | 0.860 | 2.1 | 232.1 | O K |
| 600 min Summer | 8.883 | 0.883 | 2.1 | 238.3 | O K |
| 720 min Summer | 8.896 | 0.896 | 2.1 | 241.9 | O K |
| 960 min Summer | 8.905 | 0.905 | 2.1 | 244.5 | O K |
| 1440 min Summer | 8.905 | 0.905 | 2.1 | 244.4 | O K |
| 2160 min Summer | 8.889 | 0.889 | 2.1 | 239.9 | O K |
| 2880 min Summer | 8.864 | 0.864 | 2.1 | 233.3 | O K |
| 4320 min Summer | 8.806 | 0.806 | 2.1 | 217.7 | O K |
| 5760 min Summer | 8.743 | 0.743 | 2.1 | 200.7 | O K |
| 7200 min Summer | 8.677 | 0.677 | 2.1 | 182.7 | O K |
| 8640 min Summer | 8.596 | 0.596 | 2.1 | 160.9 | O K |
| 10080 min Summer | 8.515 | 0.515 | 2.1 | 139.1 | O K |
| 15 min Winter | 8.348 | 0.348 | 2.1 | 94.1 | O K |
| 30 min Winter | 8.468 | 0.468 | 2.1 | 126.2 | O K |

| Storm Event | Rain (mm/hr) | Flooded Volume (m³) | Discharge Volume (m³) | Time-Peak (mins) |
|---|---|---|---|---|
| 15 min Summer | 65.571 | 0.0 | 83.1 | 26 |
| 30 min Summer | 44.184 | 0.0 | 111.9 | 41 |
| 60 min Summer | 28.239 | 0.0 | 146.6 | 70 |
| 120 min Summer | 17.640 | 0.0 | 183.2 | 130 |
| 180 min Summer | 13.299 | 0.0 | 207.1 | 188 |
| 240 min Summer | 10.867 | 0.0 | 225.4 | 248 |
| 360 min Summer | 8.156 | 0.0 | 253.3 | 366 |
| 480 min Summer | 6.646 | 0.0 | 274.4 | 484 |
| 600 min Summer | 5.667 | 0.0 | 291.2 | 604 |
| 720 min Summer | 4.974 | 0.0 | 304.5 | 722 |
| 960 min Summer | 4.048 | 0.0 | 317.5 | 920 |
| 1440 min Summer | 3.026 | 0.0 | 308.8 | 1154 |
| 2160 min Summer | 2.262 | 0.0 | 425.5 | 1552 |
| 2880 min Summer | 1.839 | 0.0 | 460.9 | 1968 |
| 4320 min Summer | 1.373 | 0.0 | 512.9 | 2812 |
| 5760 min Summer | 1.115 | 0.0 | 560.6 | 3640 |
| 7200 min Summer | 0.948 | 0.0 | 596.1 | 4472 |
| 8640 min Summer | 0.831 | 0.0 | 626.5 | 5272 |
| 10080 min Summer | 0.743 | 0.0 | 653.0 | 5952 |
| 15 min Winter | 65.571 | 0.0 | 93.1 | 26 |
| 30 min Winter | 44.184 | 0.0 | 125.1 | 40 |

## Summary of Results for 30 year Return Period (+10%)

| Storm Event | Max Level (m) | Max Depth (m) | Max Control (l/s) | Max Volume (m³) | Status |
|---|---|---|---|---|---|
| 60 min Winter | 8.592 | 0.592 | 2.1 | 159.8 | O K |
| 120 min Winter | 8.725 | 0.725 | 2.1 | 195.8 | O K |
| 180 min Winter | 8.804 | 0.804 | 2.1 | 217.1 | O K |
| 240 min Winter | 8.860 | 0.860 | 2.1 | 232.1 | O K |
| 360 min Winter | 8.933 | 0.933 | 2.1 | 252.0 | O K |
| 480 min Winter | 8.979 | 0.979 | 2.1 | 264.4 | O K |
| 600 min Winter | 9.009 | 1.009 | 2.1 | 272.5 | O K |
| 720 min Winter | 9.029 | 1.029 | 2.1 | 277.8 | O K |
| 960 min Winter | 9.048 | 1.048 | 2.2 | 283.0 | O K |
| 1440 min Winter | 9.045 | 1.045 | 2.2 | 282.1 | O K |
| 2160 min Winter | 9.022 | 1.022 | 2.1 | 275.8 | O K |
| 2880 min Winter | 8.983 | 0.983 | 2.1 | 265.4 | O K |
| 4320 min Winter | 8.888 | 0.888 | 2.1 | 239.9 | O K |
| 5760 min Winter | 8.786 | 0.786 | 2.1 | 212.3 | O K |
| 7200 min Winter | 8.677 | 0.677 | 2.1 | 182.9 | O K |
| 8640 min Winter | 8.535 | 0.535 | 2.1 | 144.3 | O K |
| 10080 min Winter | 8.422 | 0.422 | 2.1 | 114.0 | O K |

| Storm Event | Rain (mm/hr) | Flooded Volume (m³) | Discharge Volume (m³) | Time-Peak (mins) |
|---|---|---|---|---|
| 60 min Winter | 28.239 | 0.0 | 164.3 | 70 |
| 120 min Winter | 17.640 | 0.0 | 205.1 | 128 |
| 180 min Winter | 13.299 | 0.0 | 231.7 | 186 |
| 240 min Winter | 10.867 | 0.0 | 252.1 | 244 |
| 360 min Winter | 8.156 | 0.0 | 282.7 | 360 |
| 480 min Winter | 6.646 | 0.0 | 305.0 | 474 |
| 600 min Winter | 5.667 | 0.0 | 320.3 | 588 |
| 720 min Winter | 4.974 | 0.0 | 326.8 | 702 |
| 960 min Winter | 4.048 | 0.0 | 325.8 | 922 |
| 1440 min Winter | 3.026 | 0.0 | 316.0 | 1312 |
| 2160 min Winter | 2.262 | 0.0 | 476.5 | 1648 |
| 2880 min Winter | 1.839 | 0.0 | 515.9 | 2116 |
| 4320 min Winter | 1.373 | 0.0 | 568.2 | 3032 |
| 5760 min Winter | 1.115 | 0.0 | 627.9 | 3928 |
| 7200 min Winter | 0.948 | 0.0 | 667.7 | 4832 |
| 8640 min Winter | 0.831 | 0.0 | 701.9 | 5536 |
| 10080 min Winter | 0.743 | 0.0 | 731.7 | 6160 |

## Rainfall Details

| | | | |
|---|---|---|---|
| Rainfall Model | FSR | Winter Storms | Yes |
| Return Period (years) | 30 | Cv (Summer) | 0.750 |
| Region | Scotland and Ireland | Cv (Winter) | 0.840 |
| M5-60 (mm) | 17.000 | Shortest Storm (mins) | 15 |
| Ratio R | 0.309 | Longest Storm (mins) | 10080 |
| Summer Storms | Yes | Climate Change % | +10 |

## Time Area Diagram

Total Area (ha) 0.699

| Time (mins) From: | To: | Area (ha) | Time (mins) From: | To: | Area (ha) | Time (mins) From: | To: | Area (ha) |
|---|---|---|---|---|---|---|---|---|
| 0 | 4 | 0.233 | 4 | 8 | 0.233 | 8 | 12 | 0.233 |

## Model Details

Storage is Online Cover Level (m) 10.000

## Tank or Pond Structure

Invert Level (m) 8.000

| Depth (m) | Area (m²) | Depth (m) | Area (m²) | Depth (m) | Area (m²) |
|---|---|---|---|---|---|
| 0.000 | 270.0 | 1.200 | 270.0 | 1.201 | 0.0 |

## Hydro-Brake® Optimum Outflow Control

| | |
|---|---|
| Unit Reference | MD-SHE-0069-2300-1200-2300 |
| Design Head (m) | 1.200 |
| Design Flow (l/s) | 2.3 |
| Flush-Flo™ | Calculated |
| Objective | Minimise upstream storage |
| Application | Surface |
| Sump Available | Yes |
| Diameter (mm) | 69 |
| Invert Level (m) | 8.000 |
| Minimum Outlet Pipe Diameter (mm) | 100 |
| Suggested Manhole Diameter (mm) | 1200 |

| Control Points | Head (m) | Flow (l/s) |
|---|---|---|
| Design Point (Calculated) | 1.200 | 2.3 |
| Flush-Flo™ | 0.304 | 2.1 |
| Kick-Flo® | 0.617 | 1.7 |
| Mean Flow over Head Range | - | 1.9 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|---|---|---|---|---|---|---|---|
| 0.100 | 1.7 | 1.200 | 2.3 | 3.000 | 3.5 | 7.000 | 5.2 |
| 0.200 | 2.0 | 1.400 | 2.5 | 3.500 | 3.8 | 7.500 | 5.4 |
| 0.300 | 2.1 | 1.600 | 2.6 | 4.000 | 4.0 | 8.000 | 5.6 |
| 0.400 | 2.1 | 1.800 | 2.8 | 4.500 | 4.2 | 8.500 | 5.7 |
| 0.500 | 2.0 | 2.000 | 2.9 | 5.000 | 4.5 | 9.000 | 5.9 |
| 0.600 | 1.8 | 2.200 | 3.0 | 5.500 | 4.7 | 9.500 | 6.0 |
| 0.800 | 1.9 | 2.400 | 3.2 | 6.000 | 4.8 | | |
| 1.000 | 2.1 | 2.600 | 3.3 | 6.500 | 5.0 | | |

# *APPENDIX B FOUL SEWER DESIGN*

# Water Demand Calculations

Note; Calculations carried out in accordance with Section 3.7.2 of Code of Practice for Water Infrastructure document IW-CDS-5020-03

| | | |
|---|---|---|
| Assumed Student Occupancy Ratio | 250.00 | |
| Assumed Staff Occupancy Ratio | 25.00 | |
| Per Capita Consumption | 60 | l/day |
| average day multiplier | 1.25 | |
| Peak Day multiplier | 5.00 | |

| Type | No. of Units | Assumed Occupancy | Daily Domestic Demand (l/sec) | Average Domestic Demand (l/sec) | Peak Domestic Demand (l/sec) |
|---|---|---|---|---|---|
| School Development | 1 | 275 | 0.191 | 0.239 | 1.194 |
| Total | | | 0.191 | **0.239** | **1.194** |

# Waste Water Calculations

Note; Calculations carried out in accordance with Section 3.7.2 of Code of Practice for

| | | |
|---|---|---|
| Assumed Student Occupancy Ratio | 250.00 | |
| Assumed Staff Occupancy Ratio | 25.00 | |
| Per Capita Consumption | 60 | l/day |
| Growth Factor | 10 | % |
| average day multiplier | 1.00 | DWF |
| Peak Day multiplier | 6.00 | DWF |

| Type | No. of Units | Assumed Occupancy | Daily Domestic Demand (l/sec) | Average Domestic Demand (l/sec) | Peak Domestic Demand (l/sec) |
|---|---|---|---|---|---|
| School Development | 1 | 275 | 0.210 | 0.210 | 1.260 |
| Total | | | 0.210 | **0.210** | **1.260** |

# *APPENDIX C IRISH WATER – CONFIRMATION OF FEASIBILITY*

Stephen Leonard and Peter Martin

MMOS Engineers
The Chapel
Blackrock House
Blackrock Road
Cork
T12VK2Y

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

www.water.ie

3 May 2022

**Re: CDS22002610 pre-connection enquiry - Subject to contract | Contract denied**

**Connection for Business Connection of 1 unit(s) at Kishoge, Lucan, Dublin**

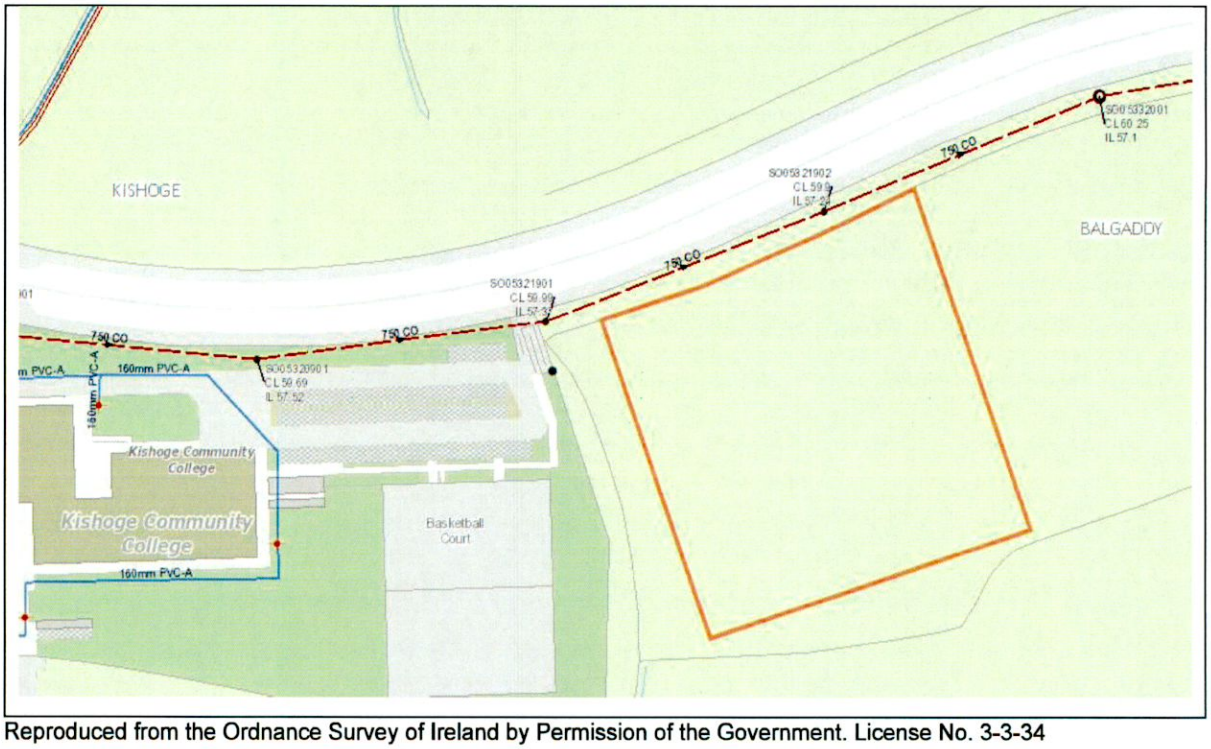
Dear Sir/Madam,

Irish Water has reviewed your pre-connection enquiry in relation to a Water & Wastewater connection at Kishoge, Lucan, Dublin (the **Premises**). Based upon the details you have provided with your pre-connection enquiry and on our desk top analysis of the capacity currently available in the Irish Water network(s) as assessed by Irish Water, we wish to advise you that your proposed connection to the Irish Water network(s) can be facilitated at this moment in time.

| SERVICE | OUTCOME OF PRE-CONNECTION ENQUIRY<br>THIS IS NOT A CONNECTION OFFER. YOU MUST APPLY FOR A CONNECTION(S) TO THE IRISH WATER NETWORK(S) IF YOU WISH TO PROCEED. |
|---|---|
| Water Connection | Feasible subject to upgrades |
| Wastewater Connection | Feasible without infrastructure upgrade by Irish Water |
| **SITE SPECIFIC COMMENTS** | |
| Water Connection | Approximately 120m of network extension will be required for the connection to the watermain to the West of the development at Kishoge Community College. These extension works are not currently on the Irish Water investment plan therefore, the applicant will be required to fund these local network upgrades.<br>Please be advised that at Connection Application stage, you have to provide evidence of consent from any Third Party Landowners to carry out works on Third Party lands (If applicable).<br>This Confirmation of Feasibility to connect to the Irish Water infrastructure does not extend to your fire flow requirements. Please note that Irish Water cannot guarantee a flow rate to meet fire flow requirements and in order to |

| | |
|---|---|
| | guarantee a flow to meet the Fire Authority requirements, you should provide adequate fire storage capacity within your development |
| Wastewater Connection | The proposed wastewater connection is connecting to Irish Water infrastructure through third party infrastructure not owned by Irish Water. Prior to connection the customer is to provide a letter to Irish Water from the Third Party owner confirming the following:<br>• The customer has permission to connect to the Third Party infrastructure<br>• The Third Party infrastructure has sufficient capacity to cater for the additional load<br>• The Third Party infrastructure is of sufficient integrity to take the connection and the additional load |
| The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this development shall comply with the Irish Water Connections and Developer Services Standard Details and Codes of Practice that are available on the Irish Water website. Irish Water reserves the right to supplement these requirements with Codes of Practice and these will be issued with the connection agreement. | |

**The map included below outlines the current Irish Water infrastructure adjacent to your site:**




Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

Whilst every care has been taken in its compilation Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Irish Water. Irish Water can assume no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions. This information

should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Irish Water underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Irish Water underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

**General Notes:**

1) The initial assessment referred to above is carried out taking into account water demand and wastewater discharge volumes and infrastructure details on the date of the assessment. **The availability of capacity may change at any date after this assessment.**
2) This feedback does not constitute a contract in whole or in part to provide a connection to any Irish Water infrastructure. All feasibility assessments are subject to the constraints of the Irish Water Capital Investment Plan.
3) The feedback provided is subject to a Connection Agreement/contract being signed at a later date.
4) A Connection Agreement will be required to commencing the connection works associated with the enquiry this can be applied for at https://www.water.ie/connections/get-connected/
5) A Connection Agreement cannot be issued until all statutory approvals are successfully in place.
6) Irish Water Connection Policy/ Charges can be found at https://www.water.ie/connections/information/connection-charges/
7) Please note the Confirmation of Feasibility does not extend to your fire flow requirements.
8) Irish Water is not responsible for the management or disposal of storm water or ground waters. You are advised to contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges
9) To access Irish Water Maps email datarequests@water.ie
10) All works to the Irish Water infrastructure, including works in the Public Space, shall have to be carried out by Irish Water.

If you have any further questions, please contact Kevin McManmon from the design team at kmcmanmon@water.ie For further information, visit **www.water.ie/connections.**

Yours sincerely,

Yvonne Harris

**Yvonne Harris**

**Head of Customer Operations**