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*Comhairle Chontae Uíbh Fhailí*  
Offaly County Council

## **Offaly County Council**

### **Proposed Development of 6 No. Residential Units at Elderberry Drive, Moneygall, Co. Offaly**

### **Planning Stage Engineering Report**



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# Contents Amendment Record



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**Title:** Proposed Development of 6 No. Residential Units at Elderberry Drive, Moneygall, Co. Offaly – Planning Stage Engineering Report

**Job Number:** 19055

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**Approved By:** Noel Dillon

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## Revision Record

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## 1 INTRODUCTION

### 1.1 Introduction

Malone O'Regan have been commissioned to prepare drainage, water supply and road infrastructure plans in relation to a proposed housing development at Elderberry Drive, Moneygall, Co. Offaly. This report has been prepared to describe the proposed infrastructure and to support a planning application for the development.

The proposed development is fully described on the drawings which accompany this planning submission. Where reference is made to drawings and drawing numbers within this report these should be taken as meaning those drawings produced by Malone O'Regan unless specifically stated otherwise.

### 1.2 The Site

The proposed site is located on Elderberry Drive, which is accessed via Main Street (R445) and subsequently Barnagrotty Road. The site is located at the southwestern edge of Moneygall Village. The M7 motorway is located approximately 1.3 km from the site.

- To the east of the site is Mountain View, an existing residential road.
- To the west of the site is Moneygall Football Club and pitch. Beyond the football club are undeveloped greenfield areas.
- Immediately to the north of the site is an Astro Turf pitch. Beyond the pitch is an area zoned for *Village Centre/Mixed Use* and a playground.
- To the south of the site is an existing residential house and community garden. Beyond this are currently undeveloped greenfields.

The proposed development is located within land zoned for *Residential* developments.

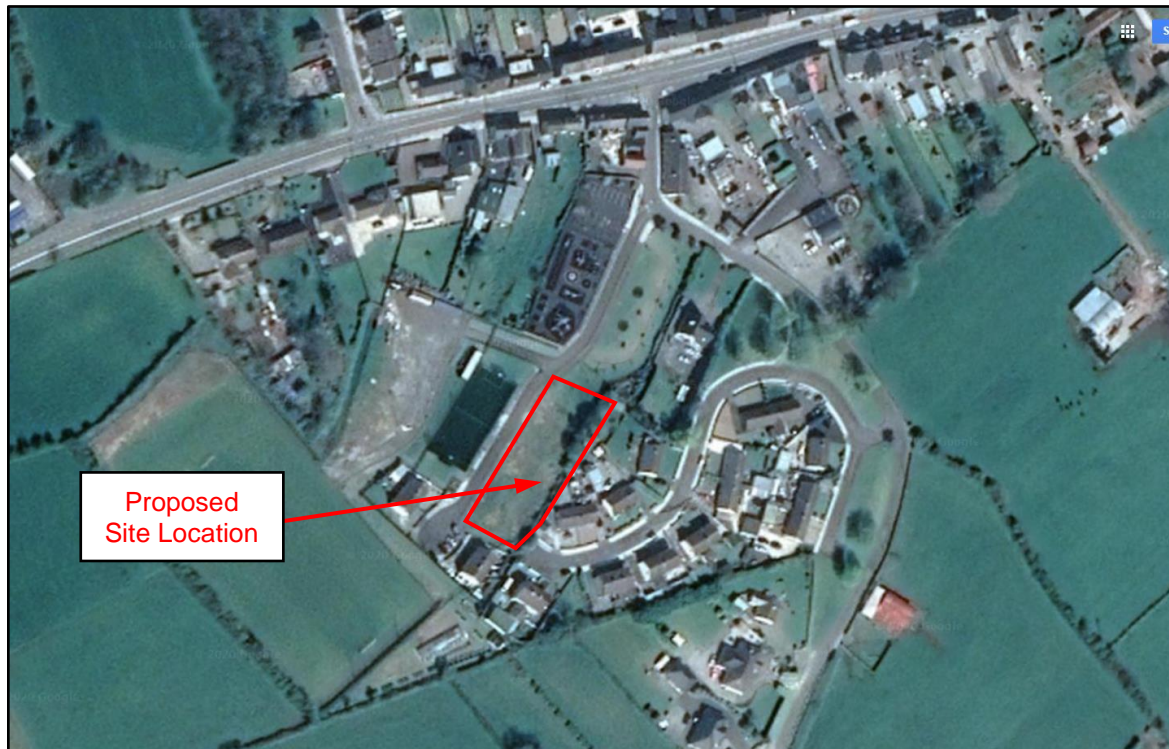


Figure 1 – Proposed Site Location

### 1.3 Project Description

The proposed development includes the construction of 6 residential units. The residential units will consist of 6 No. residential units via 3 No. two-storey semi-detached houses. Details of the proposed development are indicated on the architect's plans.

### 1.4 Site Topography

The site has an overall area of 0.165 hectares. A topographical survey has been conducted which indicates that the site generally slopes towards the northern-western and north-eastern boundaries of the existing site. The existing ground level falls from the highest elevation of +123.51m in the southern corner of the site to a lowest elevation of +120.43m at the north-western boundary of the site and an elevation of +120.39m at the north-eastern boundary of the site.

### 1.5 Consultation

In preparing this planning application Malone O'Regan consulted with the following personnel within the Local Authority and within Irish Water:

Ms Noelle McGinley

Offaly County Council, Executive Architect

Mr Paul McDonald

Offaly County Council, Senior Executive Technician

A Pre-Connection Enquiry Form was submitted to Irish Water. The Irish Water reference code CDS 20004659.

### 1.6 References

Reference has been made to the following publications in the preparation of this report.

- Greater Dublin Regional Code of Practice for Drainage Works, Version 6.0.
- Greater Dublin Strategic Drainage Study.
- Offaly County Development Plan 2016-2022.
- EPA Wastewater Treatment Manuals, Treatment Systems for Small Communities, Business, Leisure Centres and Hotels.
- Planning Systems and Flood Risk Management: Guidelines for Planning Authorities November 2009
- Irish Water Code of Practice for Water Infrastructure
- Irish Water Code of Practice for Wastewater Infrastructure

## 2 SURFACE WATER DRAINAGE DESIGN

### 2.1 Proposed Layout

The proposed surface water drainage layout is indicated on Malone O'Regan drawing number 19055-MON-101 Drainage Layout Rev P. It is proposed to discharge all surface water runoff generated on site into the existing sewer located on Elderberry Drive.

Surface water runoff from new hardstanding surfaces and the roofs of the new building will be collected by gullies and directed towards existing sewer network via a network of 100mm diameter pipes.

### 2.2 Sustainable Drainage Systems

It is proposed to include the following SuDS measures as part of the development:

- Permeable paving will be specified in driveways of the proposed dwellings. An overflow pipe will be connected to the main drainage network.

### 2.3 Attenuation / Run-off Calculations

#### Development Area Details

Area – Proposed	
Item	Area (m <sup>2</sup> )
Roof Area	378
Paving and Car Parking Areas	500
Green Area	772
Total Area	1650 (0.165 hectares)
Impermeable Area – Proposed	900 (0.09 ha)

#### Rainfall Data

The rainfall data used was based on Met Eireann Rainfall Data for Moneygall. The rainfall data and drainage criteria employed is as follows:

M5 – 60 = 17.9mm (Max. rainfall in 1 hour for 5 year return period)

M5 – 2D = 64.6mm (Max. rainfall in 2 days for 5 year return period)

Ratio, r = 0.28 (M5 - 60/ M5 - 2D)

Standard Average Annual Rainfall (SAAR) = 1043mm

Climate change increase = 20%

The maximum surface water runoff from the site for a 1:100 year storm event for a storm duration of 5 min is 6l/s per dwelling. The surface water discharge profile will be flattened by the provided permeable paving within the driveway of each dwelling.

The proposed site location is a service site with surface water service pipes brought to the site curtilage as part of previous works.

### 3 WATERMAINS

#### 3.1 Proposed Layout

The proposed preliminary water main layout is indicated on drawing *19055-MON-101 Drainage Layout Rev P* which accompanies this application. It is proposed to connect to the existing water main located on Elderberry Drive at the north-western site boundary.

A Pre-Connection Enquiry Form was submitted to Irish Water. The Irish Water reference code is CDS 20004659.

#### 3.2 Residential Water Demand Calculations

The average and peak water demand rates were calculated in accordance with the Irish Water Code of Practice for Water Infrastructure which assumes a loading rate of 150 litres / person / day and an average occupancy ratio of 2.7 persons per dwelling. The average day, peak week demand is taken as 1.25 times the average daily domestic demand. The peak demand is taken to be 5 times the average day, peak week demand.

Number of residential properties = 6

Average Daily Domestic Demand =  $6 \times 150 \times 2.7 = 2,430$  litres / day  
= 0.028 l/s

Average Day Peak Week Demand =  $0.028 \times 1.25 = 0.035$  l/s

Peak Demand (Residential) =  $0.035 \times 5 = 0.176$  l/s

Normal Demand (assuming principal water usage over 8 hrs) =  $0.035 \times 24/8 = 0.105$  l/s

The proposed water meter type is to be confirmed with Offaly County Council / Irish Water.



## 4 FOUL WATER DRAINAGE DESIGN

### 4.1 Proposed Layout

The proposed preliminary foul drainage layout is indicated on drawing *19055-MON-101 Drainage Layout Rev P* which accompanies this application.

It is proposed to discharge all foul water from the site into the existing 225mm U-PVC sewer located along Elderberry Drive via three saddle connections.

A Pre-Connection Enquiry Form was submitted to Irish Water. The Irish Water reference code is CDS 20004659.

### 4.2 Foul Discharge Calculations

The average and peak discharge rates were calculated using loading rates provided in the Irish Water Code of Practice for Wastewater Infrastructure:

Dry Weather Flow (DWF) = 446 litres per dwelling

Number of properties = 6

Total DWF =  $446 \times 6$  = 2,676 litres / day  
= 0.031 l/s

Peak Discharge =  $6 \times \text{DWF}$  =  $6 \times 0.031$   
= 0.186 l/s

## 5 ACCESS AND CIRCULATION

### 5.1 Existing Road Network and Access

The main vehicle routes surrounding the site of the proposed development are Main Street (R445) and Barnagrotty Road, both located to the north of the proposed site. Vehicular access will be facilitated at the northern boundary of the site off Elderberry Drive.

The existing sightlines and access for emergency vehicles will not be altered.

### 5.2 Road Safety Records

Records of historical traffic collisions are available on the Road Safety Authority website. Figure 2 shows accident data in the vicinity of the proposed site. It can be seen there have been no recorded collisions on Elderberry Drive, or on the adjoining road, Mountain View. There does not appear to be any particularly dangerous junctions in the immediate vicinity of the site.

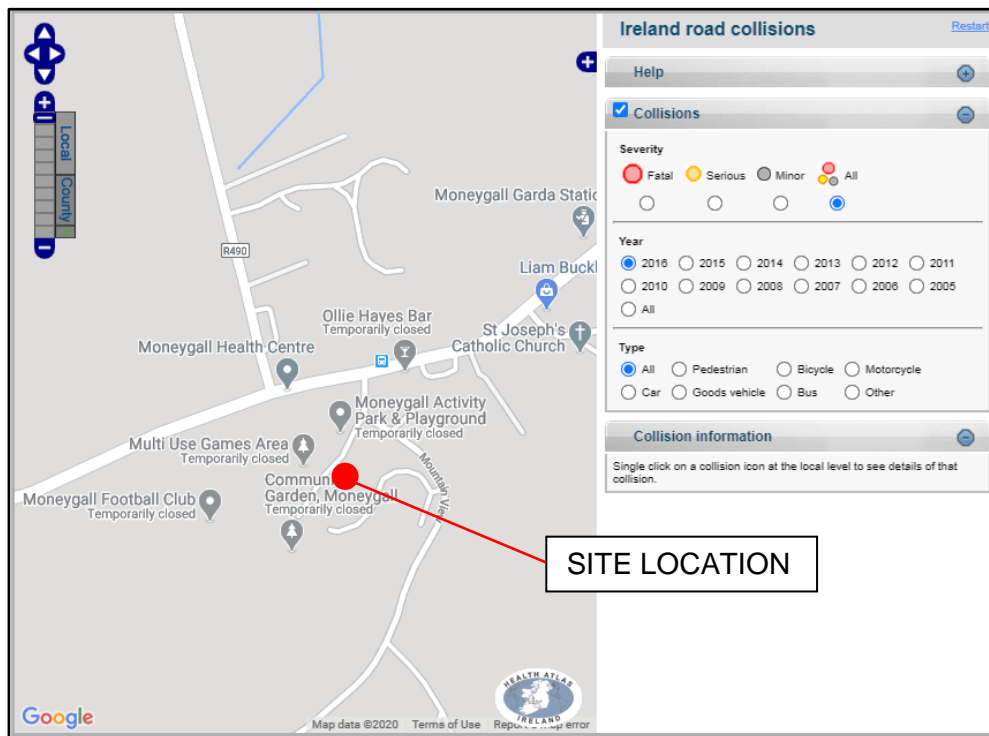


Figure 2 Road Collision Data (Source: Road Safety Authority)

### *5.3 Construction Phase*

The works Contractor will be required to provide a detailed Construction Traffic Management Plan prior to work commencement. This report will propose measures to minimise construction vehicles and construction vehicle movements on site as well as personnel parking and movement. This will be agreed with Offaly County Council prior to commencement of the proposed works.

Typically Construction Management Plans would include the following measures:

- Construction fencing and hoarding will be erected as required with defined vehicular access points for the site.
- The surrounding road network will be signed to define the access and egress routes for construction vehicles
- The arrival of delivery vehicles will be locally managed in order to minimise the impact of this traffic on the surrounding road network
- A dust minimisation plan will be developed incorporating truck wheel washes at the construction site entrance and / or a programme of road sweeping.