

Preliminary Engineering Assessment Report

Proposed Part 8 Residential Development Site (Phase 1) at
Athgarvan Village, Co. Kildare

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

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Comments

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1. Introduction

1.1 Site Location

The proposed 20 No. unit, Part 8, residential development is Phase 1 of the Athgarvan Village Development. The subject site is located at Athgarvan, Co. Kildare. The subject site is bounded by existing residential developments to the north, south, east and west. A portion of the site along the south-eastern boundary is bound by greenfield lands.

The exact site location is shown on Waterman Moylan drawing No. 17-028-P001.

1.2 Site Description

The site area is approximately 1.59 hectares. The lands are greenfield and slope from north to south. The site is accessed from the L2032 Curragh Road to the west of the Athgarvan town centre, Co. Kildare. A portion of the site contains existing roads and services which are part of the Mountain View housing estate. There are existing overhead electricity wires located on the east of the site near the proposed access point. The subject site is zoned as "C New Residential" in the Athgarvan Small Town Plan within the Kildare County Development Plan 2017-2023 Volume 2.

1.3 Background of Report and Summary

This report investigates the availability of existing engineering infrastructure that would be required to facilitate a medium density residential development on the subject site. It details the options available for the disposal of storm water, disposal of foul water, water supply and road access from the developed site.

2. Surface Water Drainage

2.1 General

There are existing surface water sewers within the Mountain View estate at the eastern & southern boundaries of the subject site which drain the local estate roads and residential units. These pipes drain to a soakpit located in the south-eastern corner of the site with an overflow to the farm lands to the south of the site. Further to investigatory works on site, it was deemed that the existing surface water system was not sufficient to take any additional runoff from the proposed development.

It is proposed to drain surface water runoff from the 6800 m² of hardstanding catchment within the proposed development via new 225 to 375 mm diameter surface water sewers. These sewers will discharge to the existing surface water sewer network in Athgarvan Village. This will require the design and construction of c. 420 m of pipe along the L2032 Curragh Road towards Athgarvan Town Centre in order to connect with the existing surface water manhole. Consultation with Kildare County Council Drainage Division will be required in this regard. Surface water from the subject site will ultimately drain to the Liffey River, located c. 1.1 km east of the development.

The quantity of surface water discharged from the proposed development to the existing system will be restricted to the equivalent of agricultural runoff, 2.45 l/s/Ha (3.90 l/s), based on the recommendations of the Greater Dublin Strategic Drainage Study. This flow restriction is achieved by means of a Hydro-brake, installed at the outfall manhole of the development. Excess surface water runoff from the critical 100 year storm event with additional storage capacity for 20% climate change will be stored in an underground 345 m³ attenuation tank. The attenuation tank has been sized for Phase 1 of the proposed development, however there is scope to increase the volume to cater for Phase 2 in the future.

It is proposed to construct the private driveways of the residential units with permeable pavement to encourage the infiltration of surface water runoff. Roof runoff will drain via a down pipe into the permeable pavement allowing additional filtration. Each residential unit has been designed with individual surface water collector drains in the back garden.

Waterman Moylan drawing No. 17-028-P003 shows the surface water network for the subject site.

3. Foul Water Drainage

3.1 General

There is an existing 225 mm diameter public foul sewer pipeline on the L2032 Curragh Road to the north-east of the subject site. This pipeline currently serves the existing residential units in the area and drains via gravity towards the Athgarvan town centre.

It is proposed to connect the Part 8 residential development to this public foul sewer via a network of 225 mm diameter gravity pipes, to be installed as part of the works.

Further to a pre-connection enquiry form which was submitted to Irish Water, Irish Water have advised that in order to accommodate the proposed development, upgrade works are required to increase the capacity of the wastewater network. Irish Water currently has the Upper Liffey Valley (ULV) Phase 2 project on their current investment plan which will provide the necessary upgrade and capacity. These upgrades are scheduled to be completed by 2020, subject to change.

Waterman Moylan drawing No. 17-028-P003 shows the foul sewer network within the subject site.

4. Water Supply

4.1 Water Supply – General

There is an existing 10 inch cast iron watermain on the L2032 Curragh Road to the north of the subject site. It is proposed to provide potable water to the Part 8 residential development via a connection to this watermain.

Additional 100 mm diameter watermain will be installed as required to service the residential units as part of the proposed development.

Further to a pre-connection enquiry form which was submitted to Irish Water, Irish Water have confirmed that there is sufficient capacity in the water network to supply the proposed development.

Waterman Moylan drawing No. 17-028-P002 shows the proposed watermain layout.

5. Transport

5.1 Site Access

It is proposed to have access via a new entrance of the L2032 Curragh Road. To achieve the required sightlines at this location, it is proposed to realign the public road to the north into the grass verge.

Access to the proposed housing units within the site will be via a new estate road which is also proposed to serve the existing houses and potentially further development on the site.

Waterman Moylan drawing No. 17-028-P002 shows the road layout and access details within the subject site.

Waterman Moylan drawing No. 17-028-P004 shows the auto-track swept path analysis for the site whilst 17-028-P005 shows the sightlines at the site access.

APPENDICES

A. Drawings

17-028-P001 Site Location

17-028-P002 Proposed Watermain and Road Layout

17-028-P003 Proposed Drainage Layout

17-028-P004 Proposed Autotrack Layout

17-028-P005 Proposed Access Sightlines

UK and Ireland Office Locations

