Utility Services Review

Colp Residential Development, Mill Road, Drogheda

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Executive Summary

This report prepared by Renaissance Engineering is a review of the utility services required for the successful completion of the proposed Development at Colp Residential Development, Mill Road, Drogheda

The core utilities of Electric Power, Gas and Comms are available in this area, as the complementary development of the Mill Road Commercial has ensured that the services have been installed.

There will be a need for a new electricity Sub-Station to serve this housing development.

The need for gas will be determined by the approach to the design of the heating & cooking for the houses. As these designs may feature heat pumps and electric cooking, then the demand for gas service may be low.

In relation to communications, namely phone, Broadband and television, we will propose inviting at least 2 services to design infrastructure for the development and to provide services for the future residents.

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1 Introduction

This report prepared by Renaissance Engineering demonstrates how the energy performance and the sustainability of design and construction of the proposed development Colp Residential Development, Mill Road, Drogheda will meet or exceed legislative/planning requirements. This report is to form part of the planning submission documentation to An Bord Pleanala.

The proposed development offers a building which meets current development space design and standards whilst working within the constraints and opportunities offered by the site.

The proposed design will comply with national building regulations for energy performance and carbon emissions set out in 'Technical Guidance Document Part L - Conservation of Fuel and Energy 2011 - Buildings other than Dwellings'. A provisional Building Energy Rating (BER) will also be produced in line with the EU Directive on Energy Performance in Buildings (EPBD).

Colp Residential Development, Mill Road, Drogheda is subject to the MCC Development Plan 2013-2029.

The overall energy strategy of the proposed design has been approached in a holistic manner using the adopted energy hierarchy "Be Lean, Be Clean, Be Green". Energy performance has been assessed in accordance with the Domestic Energy Assessment Procedure (DEAP) methodology to demonstrate the systematic improvement in energy performance.

1.1 Draft Development Description

The proposed development consists of a residential development comprising of 357 no. residential units and a childcare facility and associated play area, road infrastructure , a pedestrian bridge over the railway line and associated pathways, all associated open space, cycle and pedestrian infrastructure, services and all other associated development on a site of c. 13.44 hectares at Colp West, Drogheda, Co Meath.

The 357 no. residential units proposed consist of 169 no. houses, 52 no. duplex units and 136 no. apartments. The 169 no. houses will consist of 65 no. 4 bedroom units and 104 no. 3 bedroom units. The 52-no. duplex and apartment units will consist of 52 no. 3 bedroom units. The 136 Apartments will consist of 78 no. 2 bedroom units and 58 no. 1 bedroom units.

The proposed childcare facility has a GFA of 439 sq. mt.

The proposed houses are 2/3 storeys in height and the duplex/apartment blocks are 3 - 6 storeys in height.

The development includes associated site and infrastructural works including all associated road infrastructure, foul and surface / storm water drainage(including upgrading of water services on Mill Road) , surface water management including attenuation and storage features, a pumping station, watermains and utilities, 592 no. car parking spaces, 532 no. cycle parking spaces, public open space including a linear park, bin and bike stores, 2 no. substations, public lighting, landscaping consisting of new tree planting , hedges, berms and grass planting, boundary treatments, public lighting, and all ancillary works.

2 Electric Power

2.1 Overall view

Modern houses and Apartments have energy reducing appliances and lighting, that reduces the power requirement. However, the addition of heat pumps increases the power load per house, which is offset by not having a CO2 producing heating & cooking by gas.

Additionally, there may be Solar PV panels installed to take some of the load from the grid.

2.2 Power application

An application will be made to ESB Networks for supply and distribution of power for all houses and apartments at the initial stage.

This will allow for the main cabling, substation and mini pillar distribution system to be designed and correctly sized from the outset.

As the development progresses and the various phases are constructed, the relevant power infrastructure can be installed in the most economical method.

2.3 Sub Station

Two new sub-stations will be required, one each side of the main dividing road, to deliver the power required for the development.

The location has been identified and all necessary ducting and cabling will be from this point.

2.4 Distribution

The design and location of the Mini-pillars, cables and ductwork will be known and can be integrated into the site development works.

2.5 Street lighting distribution

The Micro-pillars required for street lighting will also be designed from the outset and will also be installed either at the outset or during the various phases of the development

3 Gas supply

3.1 Overall view

As these houses and apartments may get their heating from heat pumps and their cooking from electric power (Heat pumps & electric cookers) there may be little or no demand from the houses for a gas supply.

However, we would advise submitting the application to Gas Networks and reviewing when the design strategy for the houses is agreed.

3.2 Mains supply

An application will be submitted to Gas Networks Ireland for the supply of mains gas to this development.

3.3 Mains distribution

This will pipework system will be designed and integrated into the infrastructure layouts.

4 Communications, Phone, Broadband and TV

4.1 Overall view

There is competition from several large communication companies, such as EIR, Virgin Media, Vodafone & Sky, to be the supplier for these large new developments.

We will recommend that we approach these and seek competing proposals for supply.

4.2 Internal cabling

Each house & apartment will be connected to a duct & joint box system back to the main entry point at the boundary of the development.

The communications companies will require that CAT 6 cabling is installed, typically in the main room, kitchen and bedrooms for connection of TVs. Home phones work from the main Wi-Fi router by DECT phone and do not require cabling.

5 Infrastructure

5.1 Integrated design

Each service has their own requirements for the installation of their ducts, joint boxes, Mini & Micro pillars and this is best designed as an integrated layout to allow for economic installation before roads & paths are installed.

5.2 Locations of plant

These will need to be integrated with the design & location of drive ways, parking bays and trees.