Varming
Consulting Engineers Ltd.

UTILITY REPORT

PROPOSED RESIDENTIAL DEVELOPMENT AT HEADFORD ROAD, BALLINFOYLE, GALWAY CITY

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UTILITIES REPORT

1. Introduction

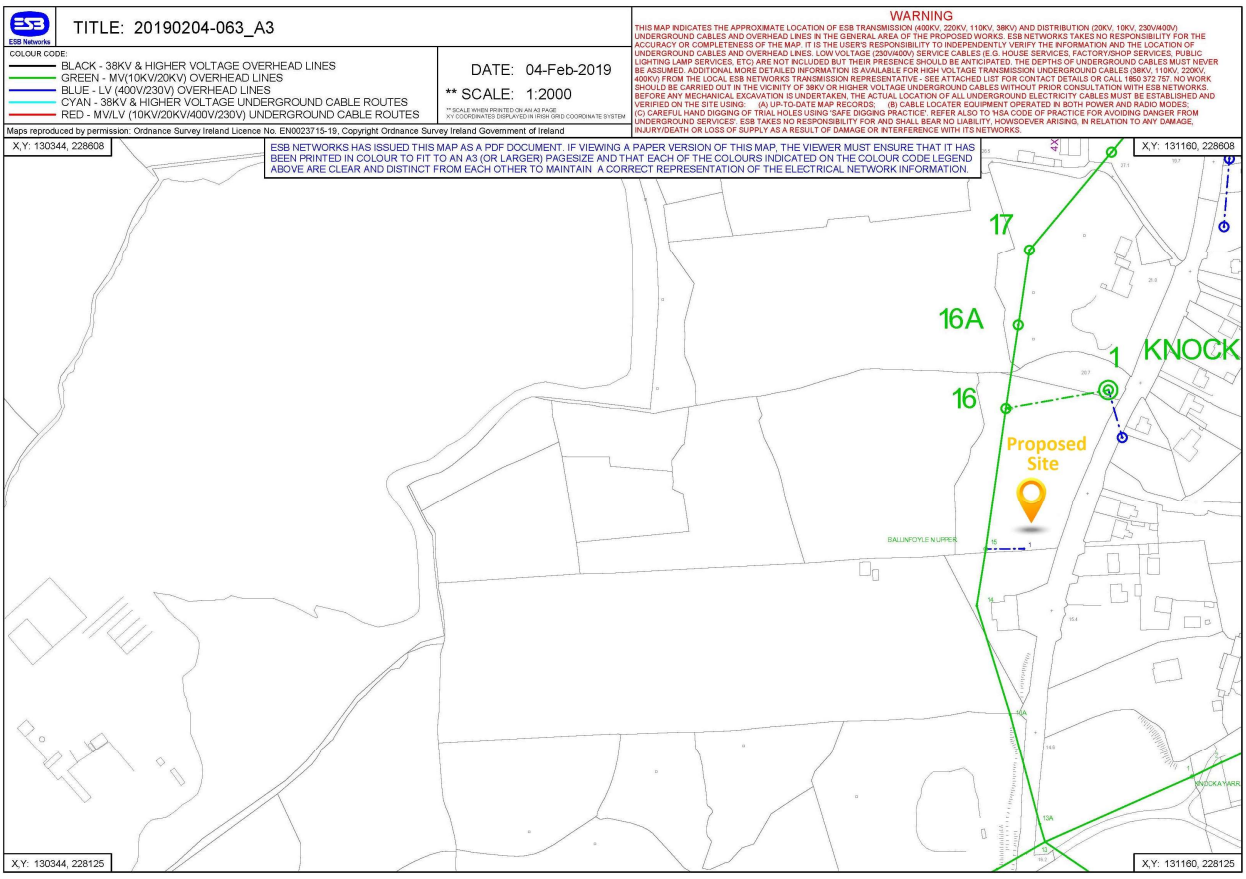
This report was produced to accompany a Planning Application and outlines the potential strategies and considerations to be taken with regards to utility infrastructure requirements to adequately serve the proposed development. Galway City Council are applying for planning permission to develop a site on Headford Road, Ballinfoyle in Galway City. The scheme comprises of residential units comprising of detached traveler specific housing units and an apartment block. The breakdown of proposed dwellings are 3 no. houses, 21 no. apartments and a common landlord area including staircore & lift.

A preliminary investigation has been carried out in order to establish the availability of services in the vicinity of the proposed development as outlined in the following sections. Utility provider infrastructure shall typically connect in to existing service provider infrastructure networks where available as necessary. Prior to any alterations taking place agreement will be sought from each of the relevant utility providers. Maps of existing infrastructure in the vicinity of the proposed development have been sought for each of the utility providers and provided in this report where available. Each utility provider will subsequently carry out a design including drawing upon receipt of a full application.

All utility provider service cables associated with the proposed development shall be located underground where possible. Ducting will be provided to facilitate the provision of broadband infrastructure. All underground chambers shall be suitably traffic rated for the location in which it is intended that they are installed.

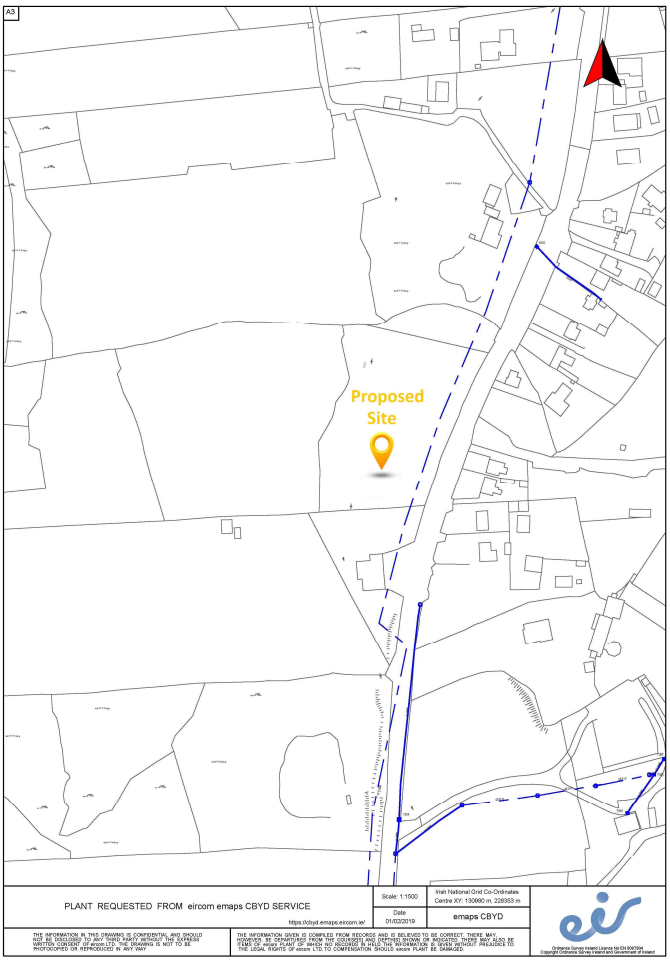
2. ESB Networks

ESB networks are the soul operators responsible for the electricity distribution network. From preliminary investigation and consultation with ESBN it is envisaged that the existing above ground MV & LV ESBN services traversing the proposed site will be diverted through new underground ducting via the new road network within the development. The new MV ducting will in turn feed a new plinth mounted ESBN unit substation to meet the proposed developments electricity demands. The substation will serve a network of minipillars and underground vaults strategically located around the development within footpaths where possible. Individual meters which will be housed in cabinets located on end gable walls of dwelling houses will be fed from the minipillars. Apartments will have centralised metering housed within dedicated electrical cupboards located within the common area of each block, also served by the minipillar infrastructure. As part of the diversion works any existing dwellings and commercial properties in the vicinity of the proposed development, that are currently served from the existing above ground network, will be re connected to the new underground network.



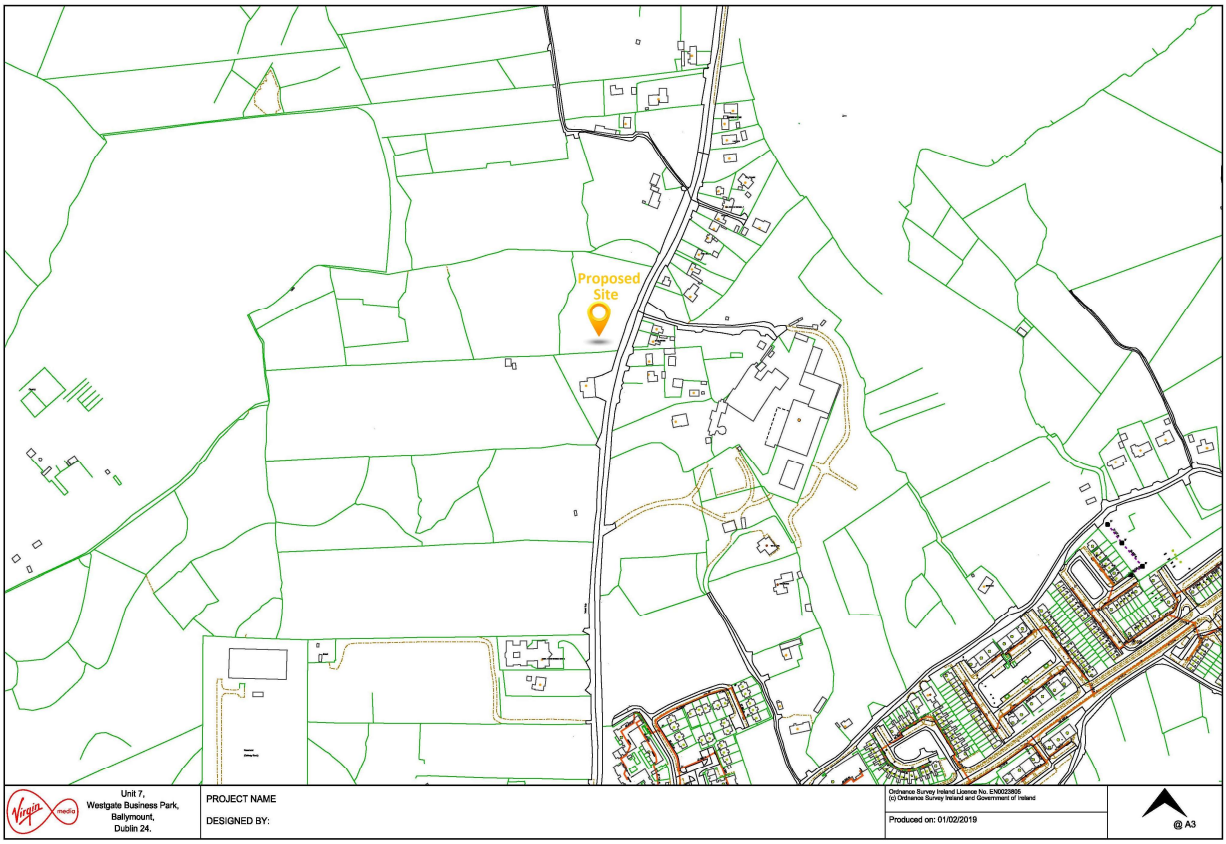
3. Open Eir

Eir are a telecommunications company that provide telephone, television and internet services. Open Eir is the section responsible for the delivery of the infrastructure network. From preliminary investigation and consultation with Open Eir it is envisaged that the existing above ground Open Eir services along the N84 boundary of the proposed site will be diverted through new underground ducting via the new footpath proposed along the N84. From here new underground ducting infrastructure can tie in to extend the current network to service the proposed development. This ducting will in turn run to a network of joint box chambers strategically located around the development within footpaths where possible. Individual external termination units will be located on end gable walls of dwelling houses which will be fed from the joint box chambers. Apartments will have centralised incoming services and equipment as required housed within dedicated communications cupboards located within the common area also served from the joint box chamber infrastructure. Open Eir may in addition require new plinth mounted externally located equipment cabinets subject to detailed design.



4. Virgin Media Ireland

Virgin Media Ireland are a telecommunications company that provide telephone, television and internet services. Preliminary investigation and consultation with Virgin Media has established that the nearest point to the existing Virgin Media Network is approximately 650m south of the site at the junction of the N84 & the L5041. Virgin Media have advised that they would not be in a position to extend their current network to this proposed new residential development at this time. However underground infrastructure may be allowed for within the new development and in time when the Virgin Media network is extended past the development it can easily be connected into it. New ducting can run between a network of underground chambers strategically located around the development within footpaths where possible. Individual external termination units can be located on end gable walls of dwelling houses which can be fed from the underground chambers. Apartments can have centralised incoming services and equipment as required housed within dedicated communications cupboards located within the common area also served from the underground chamber infrastructure.

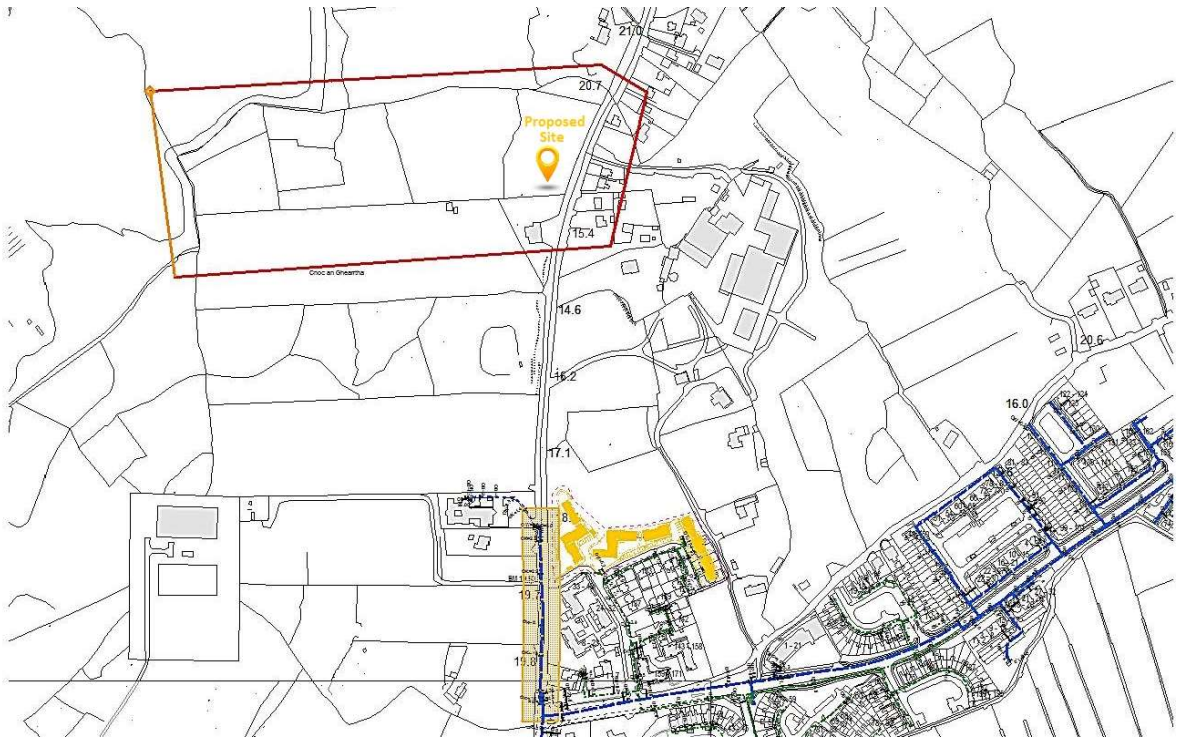


5. Siro

Siro are a telecommunications company joint venture between Vodafone and the ESB that provide broadband through fibre-optic cables which run alongside existing electricity services, all the way to a building to provide a fibre-to-the-home service. From initial consultation with SIRO they have confirmed that a service should be available if required for this proposed development. Should the option of a SIRO service be required, it is delivered for the most part through the ESB networks infrastructure all to way to the ESB minipillars and underground vaults. Individual external termination units can be located on end gable walls of dwelling houses which would be fed via designated service ducts from the ESB minipillars. Apartments can have centralised incoming services and equipment as required housed within dedicated communications cupboards located within the common area also served via designated service ducts from the ESB minipillar infrastructure.

6. Gas Networks Ireland

Gas Networks Ireland are responsible for the delivery of the natural gas network. A preliminary consultation with GNI has established that the nearest point to the existing GNI Network is approximately 450m south of the site at Coral Haven Nursing Home along the N84. The proposed building services strategy involves the use of electrical heat pumps throughout the scheme therefore no gas service is required to be extended to the site.



7. Satellite Television

In order to eliminate the need for individual satellite dishes and aerials being mounted on each dwelling unit the option of providing a central satellite television network will be considered. This has the potential to provide satellite & saorview television services to the development via a ducted underground network, with a centrally located satellite dish and aerial equipment. In addition this ducting network will allow provision for an alternative TV/Broadband systems in the future.

8. Street Lighting

LED street lighting is proposed throughout the development typically mounted on 6m steel columns. The design criteria applied to the proposed street lighting installation shall be in accordance with BS 5489-1:2020 *''Code of practice for the design of road lighting - Lighting of roads and public amenity areas''* & NSAI EN I.S. 13201-2:2015 *''Road Lighting Performance Requirements''*

LED street lighting can also be provided along the proposed N84 typically mounted on 8m steel columns in line with local authority requirements.

Photo-electric cells will be integrated into each street light fitting for automatic switching on at dusk and off at dawn. The street luminaires can also be supplied with a pre-set dimming function applied to each driver, with a dimming regime to 75% of the light output between the hours 12.00 midnight and 6am.

Lighting column positions will be coordinated with the landscape layout taking account for proposed driveways, tree locations, etc. while positioning each one to ensure the optimal uniformity and reduce glare. Any resultant lighting pollution to adjacent properties will be minimised.

In order to minimise disturbance to bats utilising the site in general, the lighting and layout of the proposed development is to be designed to minimise light-spill onto habitats used by the local bat population foraging or commuting. Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following will be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018).

- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.

- Column heights will be carefully considered to minimise light spill. The shortest column height allowed will be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

9. EV Charging Infrastructure:

It is proposed that Electric Vehicle charging ducting infrastructure shall be installed in order to facilitate the installation of an electric vehicle charging system at all car parking spaces within the development in line with planning and client specific requirements. As part of the works EV charging stations will be installed at a portion of the points.