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## **Quay Street Balbriggan**



# **MECHANICAL AND ELECTRICAL ENGINEERING PLANNING REPORT**

08/06/22

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# 1 INTRODUCTION

Hayes Higgins Partnership are engaged by Fingal County Council to carry out a mechanical/electrical services upgrade to allow an infrastructure upgrade: widening of the river bank and demolition of the existing former O'Sheas nightclub building incorporating the historic Saltworks Site. Quay Street is located at the harbour at Balbriggan Beach. The main infrastructure around the site will be ESB, Eir, Gas and Street Lighting infrastructure. The current project is to extend the river walk and demolition of the existing night club with an allowance for kiosks and small retail spaces within the existing foot print. All existing services in the designated areas will be stripped back and replaced to comply with requirements of a modern development, with allowances for all infrastructure upgrades. With each area that is being upgraded, applications will be made to provide full broadband/power and water services.

The following are the developments within the existing Saltworks/ O'sheas demolition:

- Harbour Building (Retail Unit) - 107 Sqm
- Kiosks 3 No - 26 Sqm
- New toilet block location - Area TBC

Site Location



## 2. UTILITIES SERVICES

GPR Survey carried out by APEX surveys below shows the extent of services located around the site.

HHP have overlaid the services with the proposed works:

- Minor adjustments to the drainage services are required.
- Strip out all existing services and infrastructure to the former O'Sheas nightclub located on Historic Saltworks Site.



### 2.1 Site Services Utilities

#### Natural Gas Services

The main gas line distribution runs through Quay Street and Harbour Road. Although there is no mention of gas services requirements, some kiosks may require a gas supply. It is available and could be provided.

No diversions are required for the works proposal. The existing gas pipework is medium pressure and 125mm connection within the vicinity of the proposed works. This is more than sufficient to cater for the needs of our proposal if required.



### Mains Water Services

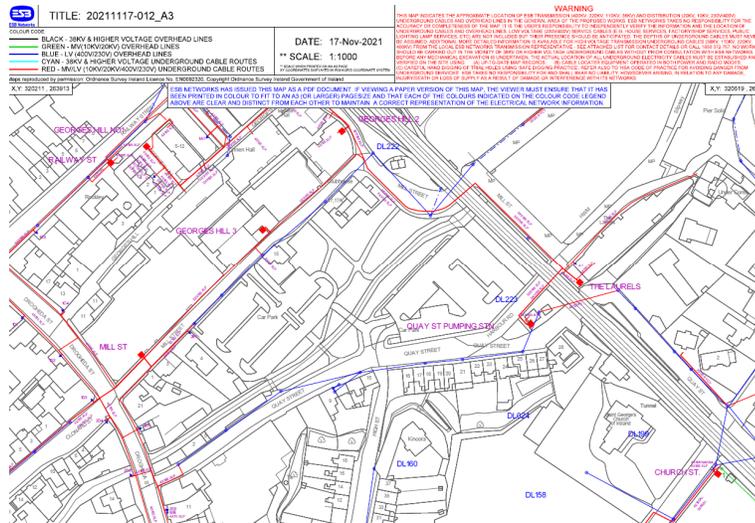
Mains water service currently distributes through Quay Street and Harbour Road. The mains water feeds will be applied for with a capped connection for the kiosks and new building requirements. Each tenant will apply for a metered supply to cater for the needs of IW and billing purposes.



The former O'Sheas nightclub water connection will be removed when the building is being decommissioned.

### ESB Services

Mains ESB is from a mixture of overhead cabling and underground site wide ducting services. Overhead mains cabling will normally be 11KVA with cabling into the houses normally at 400V.



An application to the ESB to cater for the undergrounding of the ESB services will be made. A new ducting system will be provided to underground the existing network and provide future capacity for expanding. This will require a negotiation with all householders to run cabling down the wall in a hidden duct and to the underground network.

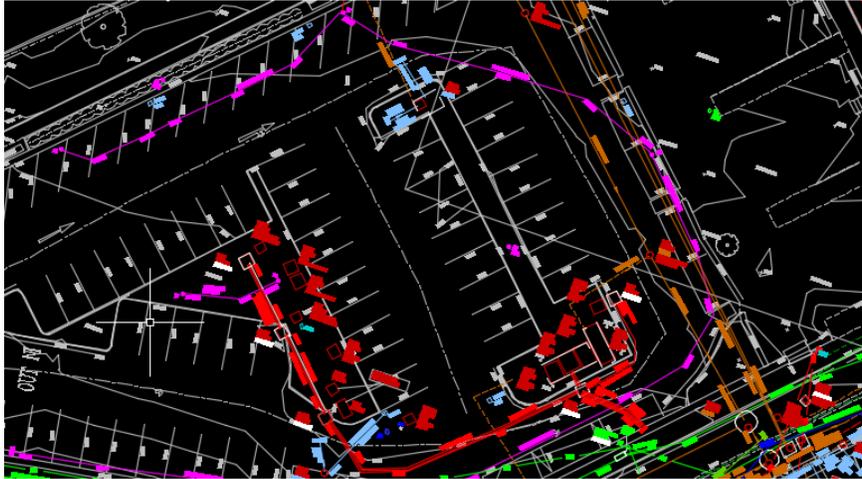
Careful planning will be needed to facilitate undergrounding of the existing ESB overhead cabling due to the amount of services within the road. In some instances, cables may have to be rerouted

### External Lighting

Existing underground cabling shall be utilised and revised to provide the following:

- New lighting system to the car parking areas.
- New lighting to public realm including area around the river works

Lighting layouts will be adjusted at planning stage.



The current street lightening is standard (see picture below - left). Standard street lighting will be upgraded to LED but there may be an oppurtunity to look at a more aestectically pleasing lighting standard. This will suit the upgraded public realm areas and along the riverbank.



## **2.2 Drainage**

### **2.2.1 Soils and Wastes**

A completely new above ground, gravity fed, soils and wastes system will be installed to BS EN12056-2:2000. The current pop up arrangement will be utilised to cater for new toilet layouts and kitchen locations and any requirements for kiosk drainage.

## **2.3 Water Distribution**

### **2.2.2 Water Services**

As part of the process, the mains water system in the building will be renewed with a new supply above ground to a format 30 cold water storage tank. This will be located at high level to feed the proposed Harbour building A mains water feed will be provided at each of the kiosks a. All new pipe-work will be insulated with cold water pipe-work running below the hot water pipe-work to reduce heat gains. Hot water will be localised for under sink point of use for all buildings and kiosks.

## **3. PROPOSED ELECTRICAL SERVICES**

### **3.1 Electrical Site Services**

#### **Ducted External Power Services and Supplies**

The existing ESB supply and local substation will be evaluated. The mini pillar located next to the existing nightclub will be assessed and used for the supply of the new arrangement. The Maximum Import Capacity (MIC) may need to be adjusted depending on the requirements of the existing and new proposal. This will be detailed at a later stage in the project.

Electric in paving pop up boxes like the below picture will be negotiated with the ESB for agreed locations under the viaduct for future market/events.



### **3.2 Lighting**

#### **3.2.1 External Lighting System**

The external lighting system will be re-designed and modified to the constraints of the proposed layouts.

All existing lighting are dated and will be replaced. Coordination between Irish Rail and HHP for the new lighting within the aqua ducts.

New luminaires shall be Bat friendly LED fittings 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. and. Nocturnal mammals are impacted by lighting. Therefore lighting installed within the public realm scheme will be completed with sensitivity for local wildlife while still providing the necessary lighting for human usage. The principal areas of concern are the Arches under the Viaduct, the Bracken River, roosting areas (RNLI buildings and bat boxes). Artificial lights shining on bat roosts, their access points and the flight paths away from the roost will be avoided.

The following BCT Lighting Guidelines (BCT, 2018) will be taken into consideration when choosing luminaires.

- 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 should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible. Ballard lighting should be considered for pedestrian and greenway areas, if deemed necessary.
- 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.

### **3.2.2 Internal Lighting System**

The new lighting system will be dictated by the proposed layouts in full compliance with the final layouts. Existing lighting shall be removed. Luminaires shall be generally LED fittings

### **3.2.3 Lighting Control**

An automatic lighting control system will be specified for areas where such control will not interfere with normal procedures. In offices, and similar areas, combined daylight/absence sensors shall be provided. This will automatically dim lighting to (off) when there is sufficient daylight in the room. The automatic sensors will be specified to have adjustable lux and time elements in other areas where required.

Lighting control in toilet areas will be controlled via manual switch on/off with absence detection only.

Lighting control in store rooms will be provided by means of push type with auto time delay release.

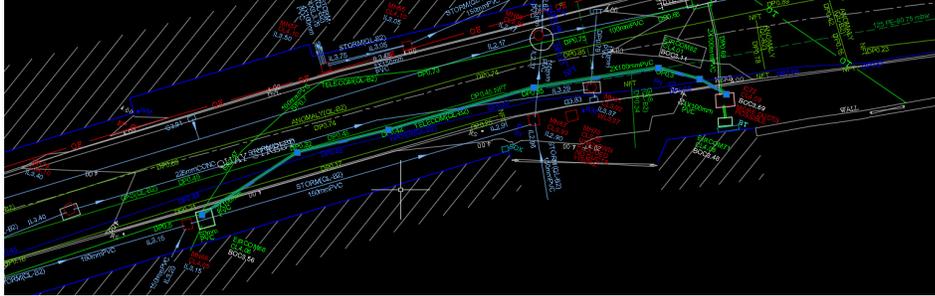
All internal lighting systems will be detailed fully in drawings at a later stage.

## **3.3 Communication**

### **3.3.1 IT Installation**

Final data and power designed in accordance with the new layouts. Existing Eir lines are distributed through Quay Street.

A new application will be made to cater for new broadband to each building and Kiosk. Additional ducting and manholes are required to cater for the connections of the new building requirements.



## 3.4 Security and Protection

### 3.4.1 CCTV System

Final CCTV locations to be agreed with client and end users requirements.

### 3.4.2 Fire Detection and Alarm Systems

A fully addressable fire alarm system consisting of a fire alarm panel, automatic detectors, manual call points and alarm sounders for the new harbour building will be designed for all areas of the building in accordance with the Irish Standard IS 3218: Layout and details of the fire alarm system will be detailed at a later stage. The existing system O'Shea nightclub will be removed and a new system provided at the entry point into the building that will be fully expandable.

All wiring shall be carried out in 2 core MICC cable in HGSW conduit/trunking. The sensors and manual call points shall be in the same loop circuit.

ISSUE REGISTRATION:

**Project:** Balbriggan

**Project No:** 14ME010

Rev	Date	Purpose of Issue/Nature of Revision	Prepared by	Issue Authorised by
P1	08.12.21	Issue for information	N.B	DH
P2	04/04/22	Issue for Information	N.B	DH.
P3	19/04/22	Pre Planning	NB	DH
P4	08/06/22	Planning	NB	SG

*This document takes into account the particular instructions and requirements of our Client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.*

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