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DOCUMENTS	REVISION
Utility Information Report	P01
Design Risk Assessment	P01
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Lighting Reality Report	P01

DRAWINGS		REVISION
DRG. Ref.	DRG. Title	
GCC-AXE-XX-XX-DR-E-61010	Combined Site Services	P01
GRL-AXE-XX-XX-DR-E-60101	Site Lighting Layout	P01

Mechanical & Electrical Services

At

Griffeen Community College Lucan

For

Department of Education

24/05/2021 Rev: 0

Document History

Revision No.	Description	Prepared By	Reviewed By	Date
Rev 1	Planning Issue	GW	RM	20/05/2021

Contents

1. Introduction

Griffeen Commuity College is a 1000 pupil Post Primary school located in Lucan, Co. Dublin.

This document is comprised of a summary of the utility information for the site and the minimum internal M&E requirements. This includes both the Mechanical and Electrical incoming services, utility room locations and vertical & horizontal distribution. This report will outline whether diversions are required and proposed connection points for new utility supplies to the building, subject to agreement with the various utility providers.

A review has been undertaken with the architect at scheme design stage to ensure the M&E Technical Advisor team are satisfied that the proposed scheme is adequately designed and laid out such that there is sufficient allowances for plant and equipment that the D&B Contractors team can develop during detailed design stage.

2. Existing and New Utility Supplies

2.1 ESB

There is currently existing overhead 38kV or higher High voltage ESB lines traversing the site. This will need to be diverted to allow for construction of the school on the site.

It is envisaged a dedicated ESB substation will be required to supply the new school on the site. It is proposed to locate the new substation to the north east of the site which will allow for 24/7 ESB access as required. The substation will have an adjoining customer switchroom which allow for an offloader panel from the substation to the new school and building and the main utility meter can also be located here.

There is currently existing ESB infrastructure outside of the site redline to the north and north west of the site, as well as the existing overhead line which will be diverted. There is also existing ESB supplies to Lucan East ETNS to the west of the site. The proposal will be to supply the substation from the existing ESB infrastructure within the vicinity of the site, albeit works will be required outside of the site boundary to bring a supply to the new substation location.

All ESB connection points and substation requirements is subject to agreement with ESB.

2.2 Telecoms

There is local Eir infrastructure running to the east and west of the site, this ducting appears to be just outside boundary of the site. Further investigation will be required by the D&B contractor to ensure that this infrastructure does not cross into the site boundary at any point. It is proposed to run new Eir ducting from a new chamber to the east of the site, tapping into the existing infrastructure. It is proposed to run this new ducting from the chamber to the internal DCC room within the school. It appears the existing Eir infrastructure is in the footpath just outside of the site boundary which should mean only minimum works outside of the site are required. All connections into existing Eir infrastructure are subject to agreement between the utility provider and the D&B contractor once appointed.

Virgin Media indicate their nearest existing infrastructure is to the north west of the site currently in the vicinity of The Griffeen Centre. It should be possible to bring a new Virgin Media supply from this location to the school site. Road opening works along the road currently used by Lucan East ETNS would be required to allow for this connection, as well as works to get the supply from the Griffeen

Centre across Griffeen Avenue. All connections into existing Virgin Media infrastructure are subject to agreement between the utility provider and the D&B contractor once appointed.

2.3 Gas

There is an existing Gas Networks Ireland High Pressure Transmission Pipe running along the Outer Ring Road to the east of the site. GNI have strict exclusion zones in relation to distances that structures are required to be from their infrastructure. This has been factored advised to the architectural design team during scheme design and they have ensured the building and other structures adhere to GNI requirements.

There is also an existing Medium Pressure Distribution Pipe running along the road to Lucan East ETNS. It is proposed to bring a gas supply from this existing supply to feed the new school subject to agreement with GNI.

It is envisioned that the incoming gas main be connected to a wall mounted metering unit or gas skid at the boiler house. The incoming Gas is medium pressure (4.0bar), from early discussions with GNI the meter comes in both Low Pressure (LP) and Medium Pressure (MP) format. The site services drawing will indicate the proposed route and highlight the required separation distance of 3m from buildings for Medium Pressure Distribution Pipes.

The below figure 4 from GNI "Guidelines for designers and builders" highlights general exclusion zones.

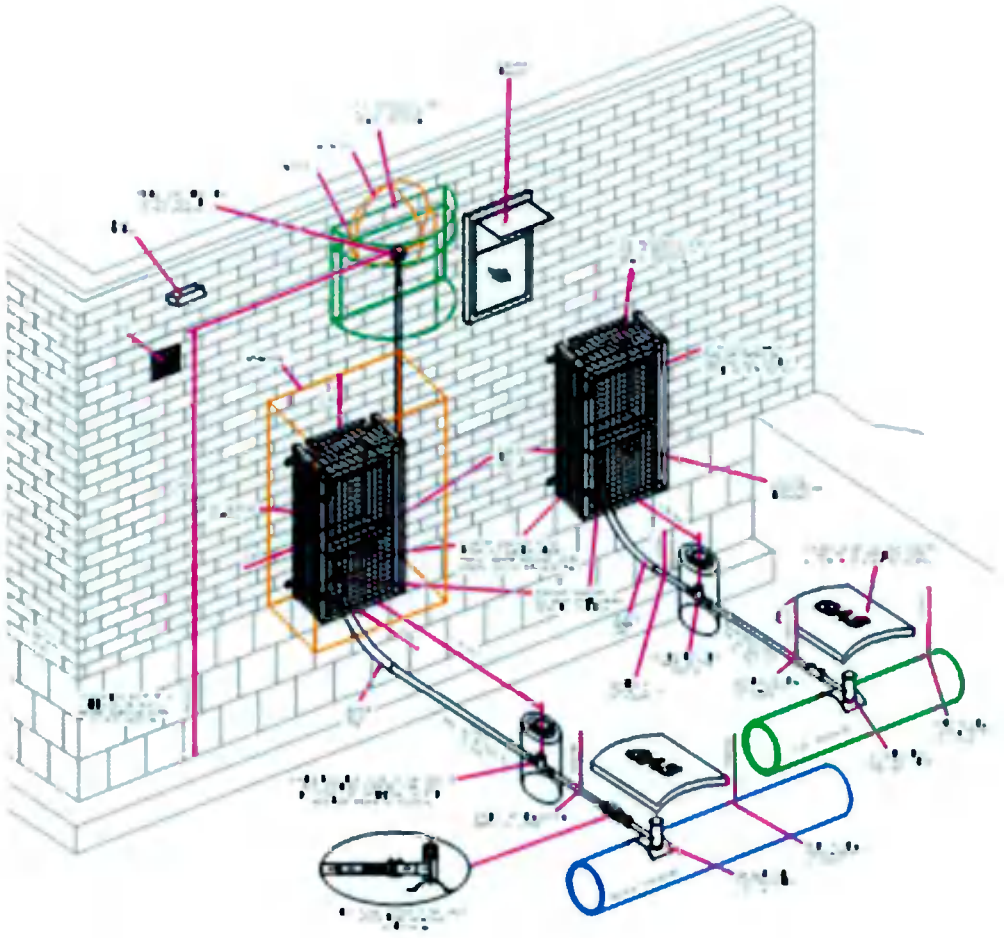

***Figure 4:** The gas mains, services and meter box*

3. Internal Distribution

3.1 Vertical Routes

Vertical risers, although not designed at this point as the structural element would need to be designed in conjunction with these, have been considered.

The main toilet blocks have been stacked on top of each other to allow for easy distribution of water services between these. The intention would be for water and waste services for these to be distributed vertically within a riser in the vicinity of each toilet block. The staff toilets and staff kitchenette have been kept in close proximity to one of these main student toilet blocks allowing them to utilise the same riser for water and waste.

A review has been carried out with the architect and it is deemed there is sufficient room to install one M&E riser from ground floor to second floor beside the Caretakers Store and staircase at ground level. There is also sufficient space for another M&E riser to rise from ground to second floor along the wall at the corridor adjoining the Meditation Room at ground floor level.

Both of these M&E risers will need to be separated with an individual riser door to the mechanical section and an individual door to the electrical section at both locations.

Verical riser locations and sizes will need to be designed by the D&B Contractor and must take into account the type of structure being used and also the design of the M&E services.

3.2 Horizontal Routes

The current allowance for distribution routes is through the circulation spaces. The floor to floor height within these spaces is typically 3.75m. The architect has indicated the void depth would be typically 600mm based on a 2.8m ceiling heigh along the corridor. This is deemed sufficient for the main horizontal distribution routes.

These routes are to formally be outlined by the D&B team during the detailed design stage, taking all elements into account.

4. Internal Service Rooms

4.1 Electrical Room

The proposed location of the Electrical room is on the Ground Floor adjacent to the Secondary Entrance. The proposed room is 10m^2. This room is considered adequate for the main electrical distribution panel to supply the school. A separate sub-distribution board to supply the electrical zone of the building in the vicinity of the main electrical room could also be installed within this room.

The layout and design of the infrastructure within the main electrical room will be carried out by the D&B contractor who must ensure this complies with all necessary standards and regulations.

From the main electrical room, the D&B contractor can supply the various sub-distribution boards located throughout the building which will be captured as part of detailed design.

4.2 Telecoms Room

The DCC (Telecoms) room is located on the Ground Floor close to the secondary entrance. This room is 8m^2.

Due to the size of the building, data cable runs are likely to exceed 90m and therefore, the D&B Contractor will need to factor this into their design and allow sufficient space for remote comms racks to ensure maximum cable runs for data cabling is not exceeded.

This location shall be confirmed by the D&B team during the detailed design stage and in line with all Standards and Regulations.

4.3 Boiler Room

The proposed location of the Boiler Room is on the Ground Floor adjacent to the Secondary Entrance. The proposed room is 34m^2 and will have appropriate external access. The room is adequately sized in accordance with the DoES TDG-031. Should additional plant room space be required this is to be designed by the D&B team at the detailed design stage.

This location shall be confirmed by the D&B team during the detailed design stage and in line with all Standards and Regulations.

4.4 Water Storage Tank Room

Although it is not possible to determine a definite location for the water tank at this stage due to the structural design not been undertaken, consideration has been given to potential areas to locate these based on an initial assessment on water tank requirements. An indicative size has been provided to the architect and they have identified an area above the library which can accommodate this.

The exact size and location will need to be determined by the D&B contractor as part of their detailed design n line with TGD's and other appropriate Standards and Regulations.