



APPENDIX 9-1

BUILDING SERVICES REPORT

Meath County Council - Viewing Purposes Only!

SITE A – STRATEGIC EMPLOYMENT ZONE

BUILDING SERVICES REPORT

PROJECT NO: 21025

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Meath County Council - Viewing Purposes Only!

SITE A – STRATEGIC EMPLOYMENT ZONE

DOCUMENT RECORD

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1. INTRODUCTION

This Building Services M&E Report outlines the scheme proposals for the Mechanical and Electrical Services for the proposed Biotechnology and Medtech Office Campus Development at Moygaddy, Co. Meath.

2. PROJECT DESCRIPTION

The proposed development comprises 3 no. office blocks and all associated site development works (GFA: 20,633.26 sq.m) as follows:

- Block A: 5 storey office building providing offices, stair and lift cores and plant rooms (GFA: 10,260.42 sq.m)
- Block B: 3 storey office building providing offices, stair and lift cores and plant rooms (GFA: 5,186.54 sq.m)
- Block C: 3 storey office building providing offices, stair and lift cores and plant rooms (GFA: 5,186.30 sq.m)
- The development includes a surface car park which includes 323 no. car parking spaces and 320 no. bicycle car parking spaces (including 16 no. accessible car parking spaces and 12 no. EV charging infrastructure)
- Undertaking of road upgrade works including the provision of a signalised junction on the R157 Dunboyne Road and the construction of a section of the Maynooth Outer Orbital Route and provision of associated pedestrian and cycle infrastructure, as well as a realignment of a section of the R157. The works to the R157 adjoin the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).
- Vehicular access to the site will be provided via the R157 Dunboyne Road and provision is made for a secondary vehicular access via the proposed section of the Maynooth Outer Orbital Route.
- Provision of water, foul and surface water drainage infrastructure including pumping station.
- Provision of a new pedestrian & cycle bridge structure at the River Rye Water adjacent to the existing Kildare Bridge.
- Provision of roof mounted solar PV panels on Office Blocks A, B & C.
- Provision of 3 no. ESB Kiosks.
- Provision of bin stores, bike stands, landscaping, boundary treatments and public lighting and all other site development works and services ancillary to the proposed development.

3. MECHANICAL

3.1 Element 51 – Heating Centre Services

3.1.1 VRV

All common areas will be served by a variable refrigerant volume (VRV) system.

Each space will be served with an indoor ducted unit with the outdoor condenser located on the roof. The ducted units will supply cool or heated air to meet the buildings precise requirements via 250 diameter secondary ductwork.

The units shall have filters to maintain the highest possible air quality.

3.1.2 Controls

A central controller shall be installed to operate the entire building with each unit to have individual control for each area allowing simultaneous heating and cooling of the building.

3.2 Element 52 – Drainage Services

All above ground soils and wastes within the buildings shall be run in PVC piping.

All waste systems shall be provided in accordance with the recommendations of BS EN 12056-2 2000.

3.3 Element 52 – Water Services

3.3.1 Cold Water Storage

The cold-water storage tanks shall be located on the roofs.

Block A shall be a GRP, insulated tank to format 30 with a nominal size of 18,000litres

Block B & C shall be a GRP, insulated tank to format 30 with a nominal size of 8,000litres

A cold-water meter shall be installed for each tank and sub- metered at each floor of the building in line with the LEED Gold Standard.

3.3.2 Water Services Installation

All hot and cold-water services pipework within the buildings shall be copper tube to IS EN 1057 2006 +A1:2010, with bronze welding or capillary fittings.

All pipework shall run in risers and in ceiling voids.

3.3.3 Hot Services Installation

Hot water will be generated via a VRV high temperature hydrobox to feed a hot water storage cylinder on each floor for all the buildings.

Hot water services will be distributed from the hot water cylinder and will serve the buildings hot water demands.

3.3.4 Cold Water Services Installation

Cold water services will be distributed from the cold-water storage tank on the roof via a booster pump and will serve the cold-water demands. The cold-water services will have a central meter with all floor sub-metered in order to monitor and control the amount of water usage for the individual areas.

3.4 Element 56 – Space Heating Services

3.4.1 Electric Radiators

Electric radiators will be provided in all toilet areas for heating. Each zone will be controlled via individual thermostats with smart control.

3.5 Element 57 – Ventilation Services

3.5.1 Air Handling Unit (AHU)

The fresh air requirements will be achieved via an air handling unit with heat recovery located on the roof. The AHU will supply fresh air from the outside air and extract stale/unwanted air to all common areas/toilets. The ventilation system shall be design to ASHRAE Standards in order for increased fresh air to all areas in order to achieve LEED Gold Standard.

3.5.2 Ductwork

All ductwork shall be semi-rigid plastic ducts. All ductwork and fittings to be installed in accordance with the manufacturer's instructions.

3.6 Element 58 – Sprinkler System

A sprinkler system will be installed in the building in compliance with BS 9251:2021. The sprinkler system will cover all areas with the water storage and pumps located on the roof of all blocks. The sprinkler system will be design, installed and commissioned by an approved LPS 1048 Contractors.

4. ELECTRICAL

4.1 Element 60 – Site Services

4.1.1 ESB Services

A new Unit Substation will be required to supply electricity to each building. It is proposed to use Unit Subs rather than a standard substation in order to maintain landscape views in keeping with the open plan design.

The ESB supply to the developments will be a Three Phase and Neutral (TPN) supply. Each individual floor will have a TPN Distribution Board which will be supplied from the main distribution board off loader from the Unit Sub. There will be a TPN supply for a vertical transportation system and Landlord Supplies for the common areas.

4.1.2 Public Lighting Services

The public lighting installation shall consist of low energy consumption LED lighting and will be designed to meet the requirements of the Meath County Council public lighting standards.

4.1.3 Incoming EIR Services

Each Block will be supplied with a new EIR telecoms infrastructure.

4.1.4 Incoming Virgin Media Services

Each Block will be supplied with a new Virgin Media infrastructure.

4.2 Element 61 – Distribution Services

The main distribution board will supply sub distribution boards for the Landlords common areas and each floor of all the building. This will allow for the additional metering of the electrical supplies required for LEED Gold Standard.

4.3 Element 62 – General Services

General services will be available to all areas via the sub-distribution boards applicable to each area.

4.4 Element 63 – Lighting and Emergency Lighting Services

Each Block will be supplied by LED luminaires controlled by switches/Daylight/Occupancy Sensors while the exterior will have lighting controlled by a photocell.

Each Block will have a standalone emergency lighting system.

4.5 Element 64 – Communication Services

Each Block will be supplied by an ICT system. Provisions for EIR infrastructure and Virgin Media will be provided.

4.6 Element 65 – Mechanical Power Services

LV electrical supplies will be provided for all mechanical equipment in each Block.

A BMS System will be installed to allow for close control and energy metering for all the individual mechanical services.

4.7 Element 66 – Transport Services

The proposed blocks contain a vertical transportation system in compliance with lift Standards EN81-20, EN81-72, EN81-73 complete with TPN 50 Hertz supply provided and associated isolators.

4.8 Element 67 – Security Services

Each Block will have a voice intercom system complete with door release to allow entry to the communal areas.

The communal areas will be provided with a CCTV system where required.

4.9 Element 68 – Fire Safety Services

Each Block will have an L3 systems installed.

4.10 Element 69 – Protective Services

Each Block will have a system of earthing and bonding throughout with connections to external earth electrodes.

4.11 PV Panels

Each Block will be supplied with a Solar PV system. Each Block will house the inverter, meter and distribution board while PV panels will be mounted on the roof generating renewable electricity for the Blocks.

4.12 Electric Vehicle Charging

4No. EV chargers will be installed per office block.

Installation of cabling infrastructure will be allowed to all other car spaces for EV charging to allow for future installation.