



APPENDIX 9-1

BUILDING SERVICES REPORT

SITE B – HEALTHCARE FACILITIES

BUILDING SERVICES REPORT

PROJECT NO: 21025

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SITE B – HEALTHCARE FACILITIESDOCUMENT 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 Primary Care Centre & Nursing Home at Moygaddy, Co. Meath.

2. MECHANICAL – PRIMARY CARE CENTRE (PCC)

2.1 Element 51 – Heating Centre Services

2.1.1 VRV

The PCC building 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.

2.1.2 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.

2.2 Element 52 – Drainage Services

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

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

2.3 Element 53 – Water Services

2.3.1 Cold Water Storage

All cold-water storage tanks shall be located in the ground floor plant spaces.

All tanks shall be GRP, insulated tanks to format 30.

2.3.2 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.

2.3.3 Hot Services Installation

Hot water will be generated via a VRV high temperature hydrobox to feed hot water storage cylinders in the plant rooms of the building.

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

2.3.4 Cold Water Services Installation

Cold water services will be distributed from the cold-water storage tanks located in the ground floor plant rooms via booster pumps and will serve the cold-water demands.

The cold-water services will have a central meter with all spaces sub-metered in order to monitor and control the amount of water usage for the individual areas.

2.4 Element 56 – Space Heating Services

2.4.1 Electric Radiators

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

2.5 Element 57 – Ventilation Services

2.5.1 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 areas of the building.

2.5.2 Ductwork

All ductwork shall be galvanised ducts.

All ductwork shall be located in risers and ceiling voids

3. ELECTRICAL – PRIMARY CARE CENTRE (PCC)

3.1 Element 60 – Site Services

3.1.1 ESB Services

A new substation will be required to supply electricity to the building located in the car park area.

The ESB supply to the building 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.

3.1.2 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.

3.1.3 Incoming EIR Services

The building will be supplied with a new EIR telecoms infrastructure.

3.1.4 Incoming Virgin Media Services

The building will be supplied with a new Virgin Media infrastructure.

3.2 Element 61 – Distribution Services

The main distribution board will supply sub distribution boards for each floor of the building.

3.3 Element 62 – General Services

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

3.4 Element 63 – Lighting and Emergency Lighting Services

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

The building will have a standalone emergency lighting system.

3.5 Element 64 – Communication Services

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

3.6 Element 65 – Mechanical Power Services

LV electrical supplies will be provided for all mechanical equipment in the building.

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

3.7 Element 66 – Transport Services

The proposed buildings 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.

3.8 Element 67 – Security Services

A security system will be installed for the following:

1. Access Control System
2. CCTV System
3. Intruder Alarm System

3.9 Element 68 – Fire Safety Services

The building will have an L1 systems installed.

3.10 Element 69 – Protective Services

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

3.11 Electric Vehicle Charging

4No. EV chargers will be installed in the Primary Care Centre car park.

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

4. MECHANICAL – NURSING HOME (MCU)

4.1 Element 51 – Heating Centre Services

4.1.1 Heat Pumps

The MCU building will be served by air to water heat pumps.

There will be a low loss header located in the plant room with pumped secondary circuits feeding the various areas of the building.

4.1.2 Gas Boilers

The MCU building will have gas boilers installed as a backup for the air to water heat pumps.

The boiler will be connected to the low loss header in the event of the heat pumps not meeting the required heating demand of the building

4.2 Element 52 – Drainage Services

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

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

4.3 Element 53 – Water Services

4.3.1 Cold Water Storage

All cold-water storage tank shall be located in the ground floor plant space.

All tanks shall be GRP, insulated tanks to format 30.

4.3.2 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.

4.3.3 Hot Services Installation

Hot water will be generated via a VRV high temperature hydrobox to feed hot water storage cylinders in the plant room of the building.

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

4.3.4 Cold Water Services Installation

Cold water services will be distributed from the cold-water storage tanks located in the ground floor plant rooms via booster pumps and will serve the cold-water demands.

The cold-water services will have a central meter with all spaces sub-metered in order to monitor and control the amount of water usage for the individual areas.

4.4 Element 54 – Gas Services

The MCU building will be supplied with a gas supply.

All gas pipework shall be corrugated stainless steel painted yellow.

4.5 Element 56 – Space Heating Services

4.5.1 Underfloor Heating

Underfloor heating will be the main source of space heating for the building.

Low temperature water is distributed through a circuit of pipes beneath the finished floor. The heat is monitored and controlled by intelligent thermostats to maintain a consistent temperature throughout the individual zones.

4.6 Element 57 – Ventilation Services

4.6.1 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 areas of the building.

4.6.2 Ductwork

All ductwork shall be galvanised ducts.

All ductwork shall be located in risers and ceiling voids.

5. ELECTRICAL – NURSING HOME (MCU)

5.1 Element 60 – Site Services

5.1.1 ESB Services

A new substation will be required to supply electricity to the building located in the PCC car park area.

The ESB supply to the building 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.

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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.

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

5.7 Element 66 – Transport Services

The proposed buildings 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.

5.8 Element 67 – Security Services

A security system will be installed for the following:

1. Access Control System
2. CCTV System
3. Intruder Alarm System
4. Nurse Call System

5.9 Element 68 – Fire Safety Services

The MCU building will have an L1 systems installed.

5.10 Element 69 – Protective Services

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