

**SITE C – STRATEGIC HOUSING DEVELOPMENT**

**BUILDING SERVICES REPORT**

**PROJECT NO: 21025**

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Parkbourne Consultancy Ltd,  
Coliemore House,  
Coliemore Road,  
Dalkey,  
Co Dublin.



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## 1. MECHANICAL INSTALLATION

### 1.1 HOUSES & DUPLEXES

#### 1.1.1 Heating Centre Services

The developments houses & duplexes heating centre shall be via an air to water heat pump.

Each dwelling shall have its own dedicated ASHP system transferring heat from the outside air to the indoor space.

#### 1.1.2 Space Heating Services

Low temperature radiators will be provided in all rooms. Each zone will be piped to a centrally located heating manifold. The radiator pipework shall be of multilayer Pex-Al-Pex pipe 16x2mm to DIN 16892/3, BS EN 1264-4:2009 with EVOH oxygen diffusion barrier to DIN standard 4726/9.

The dwellings space heating system will be served by controlled heating circuits/zones. The circuit/zones will be controlled via 2-port valves with thermostats and TRV's.

#### 1.1.3 Cold Water Services

The cold water services tank will be a GRP, insulated tank to format 30 with a nominal size of 300-500 litres

The tank shall be located in the attic space and shall have a submersible booster pump.

Cold water services will be distributed from the dwellings cold water storage tank to a cold water manifold and will serve the dwellings cold water demands.

All water services pipework within the dwelling, hot, cold and mains shall be of multilayer Pex-Al-Pex pipe 16mm x 2mm, 22mm x 2mm, made of high density cross linked polyethylene (H.D. PEXc) pipe to DIN 16892/3, BS EN 1264-4:2009 with EVOH oxygen diffusion barrier to DIN standard 4726/9.

All hot and cold-water services pipework in the dwellings plant area shall be copper tube to IS EN 1057 1996, with bronze welding or capillary fittings.

All pipework shall run in the ceiling voids and where applicable in the floor screed

#### **1.1.4 Hot Water Services**

Hot water will be generated via a steel cylinder located in the ASHP's indoor unit with 200 or 270L litres of storage.

Hot water services will be distributed from the dwellings hot water cylinder to a hot water manifold and will serve the apartments hot water demands.

All water services pipework within the dwelling, hot, cold and mains shall be of multilayer Pex-Al-Pex pipe 16mm x 2mm, 22mm x 2mm, made of high density cross linked polyethylene (H.D. PEXc) pipe to DIN 16892/3, BS EN 1264-4:2009 with EVOH oxygen diffusion barrier to DIN standard 4726/9.

All hot and cold-water services pipework in the dwellings plant area shall be copper tube to IS EN 1057 1996, with bronze welding or capillary fittings.

All pipework shall run in the ceiling voids and where applicable in the floor screed

#### **1.1.5 Ventilation Services**

Demand control ventilation will be the dwellings ventilation strategy. Habitable rooms will have a humidity-controlled wall inlet supplying fresh air and a centralised extract fan will extract the stale/unwanted air from the wetrooms and kitchens. The wetrooms and kitchens extraction will be controlled via presence and humidity detection.

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

All ductwork will run in the joists and within the attic.

#### **1.1.6 Above Ground Drainage**

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

## 1.2 APARTMENTS

### 1.2.1 Space Heating Services

Electric radiators will be provided in all rooms. Each room will be controlled via individual thermostats with smart control

### 1.2.2 Cold Water Services

The cold-water storage tanks shall be located in the Ground Floor Plant Area.

The tank will be a GRP, insulated tank to format 30 with a nominal size of 9,000litres

The tank will serve the whole development.

Cold water services will be distributed from the buildings cold water storage tank to the apartments cold water manifold and will serve the apartments cold water demands.

All water services pipework within the apartments, hot, cold and mains shall be of multilayer Pex-Al-Pex pipe 16mm x 2mm, 22mm x 2mm, made of high density cross linked polyethylene (H.D. PEXc) pipe to DIN 16892/3, BS EN 1264-4:2009 with EVOH oxygen diffusion barrier to DIN standard 4726/9.

All hot and cold-water services pipework in the apartments plant area shall be copper tube to IS EN 1057 1996, with bronze welding or capillary fittings.

All pipework shall run in the ceiling voids and where applicable in the floor screed

### 1.2.3 Hot Water Services

Hot water will be generated via a steel cylinder with a Hot water Heat Pump mounted on top with 200 or 270L litres of storage.

Hot water services will be distributed from the apartments hot water heat pump to a hot water manifold and will serve the apartments hot water demands.

All water services pipework within the apartments, hot, cold and mains shall be of multilayer Pex-Al-Pex pipe 16mm x 2mm, 22mm x 2mm, made of high density cross linked polyethylene (H.D. PEXc) pipe to DIN 16892/3, BS EN 1264-4:2009 with EVOH oxygen diffusion barrier to DIN standard 4726/9.

All hot and cold-water services pipework in the apartments plant area shall be copper tube to IS EN 1057 1996, with bronze welding or capillary fittings.

All pipework shall run in the ceiling voids and where applicable in the floor screed

#### **1.2.4 Ventilation Services**

Mechanical ventilation heat recovery (MVHR) will be installed in each Apartment. The unit will be located within the apartment and will continuously draw fresh air into the home. Fresh air shall be supplied to all habitable rooms and extracted from the wetrooms and kitchens.

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

All ductwork will run in the ceiling void.

#### **1.2.5 Above Ground Drainage**

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

#### **1.2.6 Sprinkler System**

A sprinkler system will be installed in the apartments in compliance with BS 9251:2014. The sprinkler system will cover all apartments and common areas with the water storage and pumps located in the ground floor plant area.

The sprinkler system will be designed, installed and commissioned by an approved LPS 1048 Contractors.



## **2. ELECTRICAL INSTALLATION**

### **2.1 SITE SERVICES**

#### **2.1.1 ESB Services**

The ESB supply to the development will be a Three Phase and Neutral (TPN) supply. Each individual apartment will have a SPN consumer unit which will be supplied from the main distribution board. There will be a TPN supply for a vertical transportation system also.

The ESB have confirmed that there is MV cables in the area and would be sufficient to cater for the developments load. This will require a 3No. Unit Subs.

#### **2.1.2 Telecoms Services**

The development will be supplied with either a new EIR or Virgin Media telecoms infrastructure.

#### **2.1.3 Public Lighting**

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.

### **2.2 HOUSES & DUPLEXES**

#### **2.2.1 Distribution Services**

All dwellings will be supplied by a SPN consumer unit containing protective devices.

#### **2.2.2 General Services**

All dwellings will be supplied by 3 pin socket outlets with some of the outlets incorporating USB adaptors, fused connection units and double pole isolators.

#### **2.2.3 Lighting**

All dwellings will be supplied by a mixture of pendant and LED downlighter luminaires controlled by switches.

#### **2.2.4 Communication Services**

All dwellings will be supplied by an ICT and TV system.

Provisions in the form of EIR infrastructure or Virgin Media will be provided.

### 2.2.5 Photovoltaic Panels (PV)

All duplexes will be supplied with a Solar PV system. The dwellings will house the inverter, meter and distribution board while PV panels will be mounted on the roof while generating electricity for the dwelling's occupiers.

### 2.2.6 Security Services

All dwellings will have a security system wire only installed for future security alarm system installation

### 2.2.7 Fire Safety Services

All dwellings will have an LD2 fire alarm system installed.

### 2.2.8 Protective Services

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

### 2.2.9 EV Charging

Each house within the scheme will have an EV charging point located within the external ESB cabinet.

## 2.3 APARTMENTS

### 2.3.1 Distribution Services

All apartments will be supplied by a SPN consumer unit containing protective devices.

The apartment block will be supplied by a TPN supply distribution board. The protective devices will consist of Miniature Circuit Breakers (MCB's).

### 2.3.2 General Services

All apartments will be supplied by 3 pin socket outlets, fused connection units and double pole isolators.

### 2.3.3 Lighting

All apartments will be supplied by a mixture of pendant and LED downlighter luminaires controlled by switches.

The communal areas of the apartment block will have LED downlighters controlled by motion detectors, the exterior will have lighting controlled by a photocell.

The apartment block will have a standalone emergency lighting system.

### 2.3.4 Communication Services

All apartments will be supplied by an ICT and TV system.

Provisions in the form of EIR infrastructure or Virgin Media will be provided.

### 2.3.5 Photovoltaic Panels (PV)

All apartments may be supplied with a Solar PV system. The apartments will house the inverter, meter and distribution board while PV panels will be mounted on the roof while generating electricity for the apartment occupiers.

### 2.3.6 Transport Services

The proposed apartment 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.

### **2.3.7 Security Services**

All apartments will have a security system wire only installed for future security alarm system installation

All apartments will have a voice intercom system complete with door release to allow entry to the communal areas of the complex.

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

### **2.3.8 Fire Safety Services**

The apartment block will have an L3x fire alarm system with each apartment having an LD2 fire alarm system.

### **2.3.9 Protective Services**

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

### **2.3.10 EV Charging**

10No. EV charging points shall be installed for the apartments and duplexes.

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