

DMA ARCHITECTS

WWW.DMA-ARCHITECTS.IE

ROOM 8, COLLIS SANDES HOUSE, KILLEEN,
TRALEE, CO. KERRY.

INFO@DMA-ARCHITECTS.IE

TEL: 087 649 73 13

Mechanical Specification

Marillac Housing Association – Templemore road, Roscrea, Co.Tipperary E53 EC67

Description	Project Details
Project Title	Roscrea renovation and refurbishment works, community dwelling
Document Title	Mechanical Specification
Document Number	25-017
Revision / Issue	Rev 01
Project Reference	DMA 25-017
Eircode / Postal Code	E53 EC67
Lead Consultant / Employer's Representative	DMA Architects, the Employer's Representative
Client Authority	Marillac Housing Association

Revision History and Approvals

Rev	Description	Origin	By	Date Checked	Checked By	Date Approved	Approved By	Date
T1	Issued for Tender	DMA	AK	02/05/26	DM/AK	02/05/25	TOC	02/05/25

Project Holds

Section	Hold Detail	Action Party
Section 4.7	Verification of underground entry routing via rear common access way	Main Contractor / Mechanical Contractor
Section 4.4	Final validation of localized incoming main pressure and flow rates	Mechanical Contractor

1 Scope of Works

1.1 Form of Contract

The contract conditions are as outlined in this document. In this contract, the Mechanical Contractor shall act as a domestic sub-contractor to the Main Contractor, and all works shall be carried out in accordance with this specification and associated drawings. The works comprise the complete Mechanical Services Installation for Templemore road, Roscrea – Marillac housing association

1.2 Nature of Contract

The Mechanical tenderer will act as a Domestic Sub-Contractor under the Main Contractor yet to be appointed under the contract. The contract shall be determined by the Project Quantity Surveyor.

1.3 Main Contract Conditions

The following conditions shall apply to this contract:

Public Liability Insurance policies are to be maintained until the issue of the Certificate of Final Completion of the works by the Employer's Representative under this Contract.

Before the work commences on the site, the Mechanical Contractor will be required to produce a letter in clear terms from his insurance company or brokers to the effect that they are insured in accordance with the terms of this Contract.

In the event of the Mechanical Contractor's failure to satisfy the Employer that he is so insured, the Employer will immediately operate the remedies provided within the terms of this contract.

1.4 Definitions

The contractual parties, consulting authorities, and representative bodies are defined as follows:

- **Employer's Representative:** Shall mean DMA Architects, who also perform the role of Lead Consultant, Architectural Designer, and Assigned Certifier.
- **Lead Consultant:** Shall mean DMA Architects, responsible for the coordination of structural, civil, mechanical, electrical, and plumbing works.
- **Main Contractor or Building Contractor:** Shall mean the firm appointed to carry out the Building and Civil works.
- **Electrical Contractor:** Shall mean the firm appointed to carry out the Electrical services installations.
- **Mechanical Contractor:** Shall mean the firm appointed to carry out the Mechanical services installations, above-ground drainage, and space heating as contained in this Specification and the Contract Drawings.
- **Contract Documents:** Shall mean the Form of Contract, this Specification and Conditions, the Form of Tender, the drawings relating to the work, and the letter accepting the Tender.
- **Approved, Directed, and Selected:** Shall mean the approval of, or considered necessary, equal, or required by DMA Architects, the Employer's Representative.
- **Supply and Provide:** Shall, unless otherwise stated, include both supply and fixing on site.

Representative Role	Project Party	Address and Contact Information
Client / Employer	Marillac Housing Association	Unit 9a, Plato Business Park, Damastown rd, Parslickstown, Dublin 15
Architect / Employer's Representative	DMA Architects	Tralee, Co. Kerry (RIAI Registered)
Services Design Coordination	DMA Architects, the Employer's Representative	Tralee, Co. Kerry (RIAI Registered)

1.5 Description of Site

The site is located at Templemore road, Roscrea, Co.Tipperary. This urban site features an existing stone-built terraced property fronting onto the N62 public road (Tullaskeagh road) within town envelope. The site coordinates are designated at X (Eastings) 213903 ; Y (Northings) 188379, covering a total site area of approximately 0.134 hectares. The property is bound by neighboring buildings and residential plots, presenting spatial constraints that must be accounted for during the routing of both external site services and internal services.

1.6 Description of Works

The works comprise the comprehensive refurbishment, renovation, and partial demolition of an existing bungalow dwelling fronting onto tullaskeagh road,

The completed development will deliver a supervised one-bedroom bungalow dwelling; potential to fit 2-3 bedrooms configured for community group home occupation. The existing building is to be refurbished and altered in accordance with supplied architectural drawings

Contractually, the works include:

- The change of use of a former public house portion to overall dwelling use, including all alterations, demolition, and elevation changes.

The dwelling must be fully accessible and compliant with Part M of the Technical Guidance Documents to support the community group home environment. Due to the communal nature of the occupancy, the building services must be integrated with an automatic fire alarm system designed to an LD1 minimum standard. The total completed floor area of the development is approximately 119 square meters.

1.7 Description of Installation

The mechanical installation comprises a high-efficiency oil-fired condensing boiler connected to the existing on-site oil storage tank, low-temperature radiator space heating, pressurized hot and cold water distribution, central water softening, uPVC above-ground soils and wastes, continuous mechanical extract ventilation, and certified fire protection equipment.

The existing heating system shall be fully decommissioned and removed prior to installation of the new oil-fired heating system. The new oil-fired condensing boiler shall be connected to the existing buried oil storage tank on site, with a new oil supply line installed in full compliance with current oil firing and Building Regulations requirements. The heating strategy is designed to deliver reliable, efficient space heating and domestic hot water for the community dwelling.

1.8 List of Drawings

All mechanical services layouts, piping schematics, ventilation details, and site service configurations are issued as a separate package by DMA Architects, the Employer's Representative. The Mechanical Contractor shall maintain an updated register of the latest revisions of all architectural, structural, and services drawings prior to completing the rough-in stage.

1.9 Tender Documents

The Tender documents comprise the documents listed in the 'Schedule of Tender Documents'. The Tenderer is requested to check the documents and the number of each page. If any pages are missing, duplicated, or indistinct, the Tenderer must notify DMA Architects, the Employer's Representative, immediately. No subsequent claim for loss consequent upon the Tenderer's failure to comply with this Clause will be entertained.

1.10 Materials

At the commencement of the works, the Mechanical Contractor shall confirm that deliveries of all materials can meet the construction programme requirements. On claiming an increase in material costs, he shall produce satisfactory proof of such variation, the acceptance of which shall be at the discretion of DMA Architects, the Employer's Representative.

In the case of imported materials, costs shall be stated in Euros, and the currency exchange rate at the tender date shall be stated in the tender return. All materials and mechanical equipment must be CE and UKCA certified, carrying appropriate declaration of performance documentation.

1.11 Labour

The Mechanical Contractor shall produce a Schedule of current net hourly rates as laid down by the appropriate regulating body and current on the designated date. Time Sheets recording the total hours worked by each operative per day must be submitted for signature to DMA Architects, the Employer's Representative, or their representative weekly. No claims will be considered unless this clause is strictly adhered to.

1.12 Tender Price

Should a discrepancy exist between the tender price quoted in figures and words, the words shall take precedence over the figures. The tender price is to include the provision of all equipment, materials, carriage, customs, tools, plant, and labor, including all levies and productivity and welfare payments, unless otherwise specified in this Specification.

1.13 Value Added Tax

Value Added Tax is to be excluded from the Contract sum, but identified as a separate item in the tender breakdown.

1.14 Delivery of Tenders

Tenders shall be returned to the Client, Marillac Housing Association, in the manner and at the time stated on the formal tender invitation.

2 General Clauses

2.1 Site Visit

The Mechanical Contractor, prior to submitting his tender, is recommended to visit the site at Templemore Road, Roscrea, Co. Tipperary and ascertain for himself the means of access, the structural challenges of the refurbishment, and any other physical factors which may affect his tender, as no claim will be allowed on account of his not having done so.

2.2 Employer's Representative's Drawings

The Mechanical Contractor shall be deemed to have examined all drawings on the project (Mechanical, Electrical, Architectural, and Structural). No claim for additional payment shall be entertained arising from lack of information or spatial conflicts that could have been identified through cross-referencing the design packages.

2.3 Omissions and Anomalies

Should a tenderer find omissions or anomalies, a formal request for clarification should be made to DMA Architects, the Employer's Representative, prior to the tender return.

Such clarifications shall be confirmed in the form of a written Tender Addendum. Where anomalies between Drawings and Specifications do not come to light until the contract stage, the Mechanical Contractor shall provide the goods or perform the work to the higher standard as ruled by DMA Architects, the Employer's Representative.

2.4 Compliance with Specification

The Tender Sum shall include for equipment and materials precisely as specified. Should the Mechanical Contractor wish to offer "equivalent" equipment or materials to those specified, such equipment or materials shall not be included in the main tender, but offered in the form of a Supplementary Schedule with details of the Manufacture, Specification, and cost or delivery advantage.

For his tender to receive consideration, the Tenderer shall complete in full the Schedule of Manufacturers and Suppliers section of this Specification. Subject to compliance with this Specification in respect of Standard Specifications, materials shall, where possible, be manufactured and assembled in Ireland.

The Mechanical Contractor shall, upon the request of DMA Architects, the Employer's Representative, furnish them with vouchers to prove that the materials comply with the requirements of the appropriate paragraph of this condition.

2.5 Quotation to be Inclusive

The price quoted will be held to include for the supply and delivery on the site of all necessary material and for all work, material matters, including bonus or other incentive payments to the workforce, and things reasonably required for the due and proper carrying out and completion of the work according to the true intent and meaning of this Specification and the drawings taken together, whether specifically mentioned herein or shown on the drawings or not.

2.6 Specialist Equipment

It shall be the sole responsibility of the Mechanical Contractor to ensure that all special equipment conforms in every detail to all relevant clauses of this Specification. The Mechanical Contractor shall note that he is to inform Specialist Manufacturers and Suppliers of the full intent of the terms and conditions of this Contract and that they will be bound to these terms and conditions of contract, as will be the Sub-Contractors.

The Mechanical Contractor is advised to check all suppliers of specialist equipment that the oil-fired condensing boiler, water softeners, ventilation units, and ancillary equipment contained in their offer are in full accordance with the requirements of DMA Architects, the Employer's Representative.

2.7 Royalties

The Mechanical Contractor shall indemnify DMA Architects, the Employer's Representative, from and against all claims and expenses which may be brought or made against them by reason of the Mechanical Contractor infringing or being held to have infringed any Patent Rights or non-payment of any articles, processes, and inventions. In the event of any injunction being obtained against the use of same, the Mechanical Contractor shall forthwith replace the same by other materials or appliances to the satisfaction of DMA Architects, the Employer's Representative, without extra cost, and in addition shall be responsible by way of damages by reason of any delay occasioned thereby in the execution of the work.

The Mechanical Contractor shall not assign the Subcontract or sub-let any portion of the work without the written authority of DMA Architects, the Employer's Representative, except where sub-letting is expressly called for in this Specification. The Tenderer shall state in his tender return the names of all firms to whom he proposes to sub-let portions of the work, for the approval of DMA Architects, the Employer's Representative. Approval of the sub-letting by DMA Architects, the Employer's Representative, and the Main Contractor shall not relieve the Mechanical Contractor of any of his obligations under this contract, and the Mechanical Contractor shall be responsible for the programming and execution of all the work sub-let.

2.8 Sub-letting

The Mechanical Contractor shall not assign the Subcontract or sub-let any portion of the work without the written authority of DMA Architects, the Employer's Representative, except where sub-letting is expressly called for in this Specification. The Tenderer shall state in his tender return the names of all firms to whom he proposes to sub-let portions of the work, for the approval of DMA Architects, the Employer's Representative.

Approval of the sub-letting by DMA Architects, the Employer's Representative, and the Main Contractor shall not relieve the Mechanical Contractor of any of his obligations under this contract. The Mechanical Contractor shall be responsible for the programming and execution of all the work sub-let.

2.9 Bill of Quantities

The Mechanical Contractor shall within 7 days of being requested submit to DMA Architects, the Employer's Representative, a detailed schedule of rates covering every item fixed, as specified, upon which the Mechanical Contractor's estimate has been based.

The number of items and quantities shall be given and extended to form a Bill of Quantities adding up to the totals as indicated in the Tender Summary. The Bill of Quantities shall remain with DMA Architects, the Employer's Representative, until the works are completed and shall form the basis for agreement of variations by measurement. However, the contract is a lump-sum contract and is not subject to re-measurement. The tenderer is to submit a priced Bill of Quantities in accordance with ARM 4 Supplement 2 with his tender.

2.10 Contractor's Work Co-Ordination

Before any work is commenced on site, the Mechanical Contractor shall agree all pipe and duct routes necessary to complete the works, coordinating closely with the structural and electrical trades to ensure that services are integrated without compromising fire compartmentation or architectural finishes.

2.11 Record and Working Drawings

When the installation is complete, the Mechanical Contractor shall supply a set of Record Drawings showing the layout of the installation as installed. Three sets of white prints, coloured to assist interpretation, together with a digital set on CD/USB shall be provided. Drawings shall be handed over to DMA Architects, the Employer's Representative, for checking and their approval obtained before final printing.

The information contained on the Mechanical Contractor's working drawings shall be incorporated on the Record Drawings. Additionally, a Maintenance Manual shall be provided by the Mechanical Contractor as specified.

2.12 Production of Record Drawings & Manuals

In the event of failure by the Mechanical Contractor to produce approved Record Drawings and Manuals, DMA Architects, the Employer's Representative, may deduct up to 1% of the Contract value to cover the costs of having the site surveyed and the record documents produced on behalf of the Client.

2.13 Labelling

The Mechanical Contractor shall be responsible for the clear labelling, identification, and circuitry charting of all mechanical plant, distribution manifolds, control panels, and valves.

2.14 Agreement of Programme

The programme for the works will be as outlined in the Project Quantity Surveyor data. The Mechanical Contractor will ensure that adequate resources are available at each stage of the programme to complete rough-in, second-fix, and commissioning works in alignment with the master building schedule.

2.15 Materials and Equipment Delivery Schedules

Once the Mechanical Contractor has been confirmed by the Main Contractor, the Mechanical Contractor shall submit a detailed material and equipment delivery schedule, confirming lead times and arrival dates for the oil-fired condensing boiler, cylinders, radiators, and major control components.

2.16 Co-ordination

The Mechanical Contractor shall familiarise himself with the details of the location and routes of other building services and shall coordinate his work with those services. Failure of the Mechanical Contractor to coordinate his works shall involve the Contractor re-arranging installed works to the satisfaction of DMA Architects, the Employer's Representative, and at the Contractor's expense. When preparing his tender, the Contractor shall inspect the drawings.

2.17 Maintenance

The work is to be maintained in good running order for a period of twelve months after the completion of the Contract, and after this period of twelve months, finally passed by DMA Architects, the Employer's Representative. Any defect developing in the system during this period shall be rectified and made good at the Mechanical Contractor's own expense, unless caused by factors outside the control of the Contractor.

In the event of the Contractor refusing to rectify defects within a reasonable period, DMA Architects, the Employer's Representative, shall have the power to have the work done by others and deduct the cost of such work from the Mechanical Contractor's account, without prejudice to any other claim which may arise out of the refusal of the Mechanical Contractor to make good the defects.

2.18 Contracts Manager & Foreman

The Contracts Manager or Foreman shall be approved by DMA Architects, the Employer's Representative, which approval may be at any time withdrawn, given sufficient reason. The Contracts Manager or the Foreman, whose name shall be set out in writing by the Contractor, shall be maintained constantly on the works, and he shall not be changed except with the written approval of DMA Architects, the Employer's Representative.

Such Contracts Manager shall be authorised on the Contractor's behalf to receive instructions from DMA Architects, the Employer's Representative, and shall give his whole time to the superintendence of the work. He shall keep accurate records and details of all installed works and shall furnish DMA Architects, the Employer's Representative, with all particulars demanded. The Contracts Manager and Foreman shall not be transferred off-site without the agreement of DMA Architects, the Employer's Representative.

2.19 Site Management & Staff

The Contractor shall include for providing from the outset, and maintaining permanently on site, a contracts manager, Foreman, and chargehands as required to effectively fulfill the requirement for management of the site and workforce to the satisfaction of DMA Architects, the Employer's Representative.

The Contractor shall submit with his tender a labour histogram incorporating the management structure proposal for the project. The Contractor shall name the senior personnel who shall be responsible for the management of the project. The labour histogram shall include man-hour levels for each main area and a graph showing labour force build-up, peak, and run-down.

2.20 Materials and Workmanship

The standards for materials and workmanship shall be as specified in the relevant sections of this Specification and as shown on the Drawings. Items of equipment generally shall comply with the relevant National, European, and International Standards laid down in the specification, carrying appropriate declaration of performance data.

2.21 Trade Names

Where Trade Names are given, it is to be clearly understood that such references are inserted for the guidance of the Mechanical Contractor with respect to the nature and quality of the articles or services required. The Mechanical Contractor is free to offer alternatives, provided they comply in full with the Specification of the specified goods, subject to the written approval of DMA Architects, the Employer's Representative.

2.22 Setting Out

The position of all fittings, pipes, equipment, machinery, apparatus, etc., indicated on the drawings are approximate only, intended to indicate generally the arrangement of the works. The Mechanical Contractor shall be responsible for notifying DMA Architects, the Employer's Representative, of any discrepancy between the Specification, Schedules, and Drawings prior to starting works.

Should any portion of the works, which would reasonably and obviously be inferred as necessary for the complete, safe, and satisfactory operation of the installation as a whole, not be expressly described or specified, the Contractor shall provide and execute such works as part of the Contract and shall not be entitled to any extra payment on that account. The exact positions of all fittings, equipment, and apparatus, and all pipe routes, shall be verified by the Contractor on the site and approved by DMA Architects, the Employer's Representative, prior to installation.

2.23 Builders Work through Structure

Should it be required to cut, drill, or core any part of the structural steelwork, concrete slabs, or existing stone walls, the Contractor shall obtain the written approval of DMA Architects, the Employer's Representative, before any such works are carried out. The Contractor shall include in his Tender for all drilling, cutting, and coring of structural elements where required, which shall be witnessed by DMA Architects, the Employer's Representative.

The Contractor is responsible for all builders' work necessary to complete the mechanical installations. Where pipe or duct routes penetrate existing fire compartments, party walls, or floors, the Contractor shall seal them with a certified, proprietary fire-stopping system to maintain the fire integrity of the structure.

2.24 Compliance with Regulations

The Mechanical Contractor is to guarantee that his work will comply with all statutory regulations, including the Irish Building Regulations (specifically Parts B, E, F, G, H, L, and M), local authority bye-laws, Acts of Government, and utility requirements. No additional cost will be allowed after receipt of his tender for compliance with this Clause.

2.25 Clear Work Areas

The Mechanical Contractor shall at all times keep the site free from obstructions and rubbish and shall remove from the site all surplus materials and temporary works as soon as they are no longer required. Facilities for disposal of rubbish shall be coordinated with the Main Contractor. On completion of the works, the Contractor shall remove all surplus materials, benches, tools, and packaging, leaving the site in a clean and tidy condition to the satisfaction of DMA Architects, the Employer's Representative.

For the purpose of this Clause, the word 'site' shall be extended to include all adjacent roadways, paths, passageways, or other access routes by which the Contractor or his workmen obtain entry to or exit from the property.

2.26 Clear Access Routes

Corridors, roads, and paths shall be kept clear of all mechanical materials and construction rubbish at all times when work is not in progress.

2.27 Safety, Health and Welfare at Work Act 2005

The attention of the Mechanical Contractor is directed to the statutory requirements of the Safety, Health and Welfare at Work Act 2005, and to the construction regulations made thereunder. The Contractor shall submit a project-specific Method Statement and Risk Assessment prior to commencing any works on-site.

2.28 Site Visits & Inspections

DMA Architects, the Employer's Representative, shall visit the site to inspect the mechanical works, and the Mechanical Contractor is advised to coordinate and resolve any design or coordination queries at these times.

2.29 Pre-tender Site Walk

Tenderers are strongly advised to attend the scheduled pre-tender site visit to familiarise themselves with the existing terraced building, access limitations, and physical constraints before submitting their proposals.

3 Mechanical Scope of Works

3.1 General Overview

This section establishes the specific performance, installation, and engineering criteria for the Mechanical Services serving the community group home refurbishment at Templemore Road, Roscrea, Co. Tipperary.

Refurbishing a mid-19th-century stone property to meet modern performance guidelines requires careful integration of services. Standard mechanical designs are often incompatible with historic masonry, where high relative humidity and lack of cavity insulation can lead to interstitial condensation if thermal barriers are altered. The mechanical systems must work in harmony with the building's thermal envelope.

The space heating strategy employs a low-temperature hydronic radiator system fed by a high-efficiency oil-fired condensing boiler connected to the existing on-site oil storage tank, delivering steady, consistent heat throughout the dwelling. Moisture control is managed through a continuous mechanical extract ventilation system, ensuring regulated air change rates that prevent moisture accumulation in the refurbished structure.

3.2 Project Specific Requirements and Standards

Building Energy Rating (BER) and Part L Compliance

Energy efficiency is central to the services design. The complete mechanical services installation shall comply with the Building Regulations (specifically Technical Guidance Document Part L), with the oil-fired condensing boiler selected to achieve the highest available seasonal efficiency for oil-fired plant in a refurbished structure.

The oil-fired condensing boiler, auxiliary circulators, and localized extract fans must comply with the specific fan power (SFP) and minimum seasonal efficiency limits outlined in the Part L guidelines.

3.3 Codes, Standards and Design Guidelines

The mechanical installation shall comply with the latest editions of the following technical standards:

- **Technical Guidance Document B:** Fire Safety (including integration of services with an LD1 automatic fire alarm system).
- **Technical Guidance Document E:** Sound Transmission and Acoustic Insulation.
- **Technical Guidance Document F:** Ventilation (incorporating continuous mechanical extract and background window trickle vents).
- **Technical Guidance Document G:** Hygiene and Hot Water Safety (including TMV3 anti-scald protection).
- **Technical Guidance Document H:** Drainage and Wastewater Disposal.
- **Technical Guidance Document L:** Conservation of Fuel and Energy (Part L energy efficiency standards for refurbishment).
- **Technical Guidance Document M:** Access and Use (providing fully accessible controls and fittings for the group home layout).
- **IS 291:2015:** Selection, Commissioning, and Maintenance of Portable Fire Extinguishers.
- **HVCA DW/144:** Specification for Sheet Metal and Plastic Ducting Systems.
- **CIBSE Guidelines:** Relevant commissioning codes and design criteria.

3.4 Description of Systems

3.4.1 Heating System

Extent of Work

This section covers the space heating plant, heat source, and associated distribution pipework for the community dwelling. The primary space heating source shall be a dedicated high-efficiency oil-fired condensing boiler located internally, connected to the existing on-site oil storage tank, which shall supply the low-temperature hot water (LTHW) radiator heating circuits.

System Configuration

- **Heat Source:** 1 No. High-efficiency oil-fired condensing boiler, ErP A-rated (minimum 92% seasonal efficiency), wall-mounted or floor-standing as detailed on drawings.
- **Emitters:** Steel panel radiators (double panel, double convector as scheduled) installed in all habitable rooms and accessible bathrooms, as indicated on the mechanical drawings.
- **Control:** Programmable room thermostat(s) and time controller, complete with zone valves where required, providing independent heating and domestic hot water scheduling.

Equipment

- 1 No. High-efficiency oil-fired condensing boiler (Grant VortexPro or approved equivalent), complete with integral controls, safety devices, and sealed system pressurisation unit.
- Steel panel radiators (as scheduled on drawings), complete with TRV heads and lockshield valves. 1 No. Indirect unvented DHW cylinder (minimum 180L), complete with immersion heater backup and TMV3 assembly.

3.4.2 Water Systems

Extent of Work

This section covers the incoming mains water supply to the community dwelling, including all on-site distribution pipework, storage, and treatment systems. The Mechanical Contractor shall supply and install an insulated GRP cold-water storage tank equipped with an automatic submersible booster pump to serve the dwelling.

The connection of the main utility water supply on Templemore Road shall be executed by the Main Contractor. The Mechanical Contractor shall be responsible for laying and connecting the underground MDPE barrier pipe from the metered manifold position to the internal rising mains of the dwelling.

Domestic Cold Water and Mains Drinking Water

- **System Configuration:** Pressurized cold water distribution fed from localized GRP tanks, with direct unsoftened bypasses to kitchen drinking water taps.
- **Control:** High-flow float valves, automatic digital pressure switches on submersible pumps, and localized isolation valves at all sanitary tap positions.
- **Equipment:**
 - 1 No. Central ion-exchange water softener.
 - 1 No. 270 L Insulated GRP Cold Water Storage Tank.
 - 1 No. 100 L GRP Rainwater storage tank for external irrigation use.

Domestic Hot Water

- **System Configuration:** Pressurized domestic hot water system supplied from a dedicated indirect unvented cylinder heated by the oil-fired condensing boiler, serving all showers, basins, and sinks. An electric immersion heater shall be installed as a backup heat source.
- **Control:** Dual-stage thermostatic mixing valves (TMV3) to prevent scalding in fully accessible bathrooms, time/temperature zone controls, and automated thermal disinfection cycles.
- **Equipment:**
 - 1 No. Indirect unvented DHW cylinder (minimum 180 L, Megaflo or approved equivalent), complete with factory-fitted immersion heater, pressure/temperature relief valve, and expansion vessel.
 - 1 No. Bronze secondary hot water circulation pump.

3.4.3 Soils & Waste

This section comprises the supply, installation, and testing of all above-ground soils, wastes, and vent pipework connecting the internal sanitary fittings, kitchen sink units, accessible showers, and washing machines to the underground drainage upstands. Underground drainage upstands will be provided by the Main Contractor, and the Mechanical Contractor shall make the final connection to these points. Vertical Soil and Vent (S&V) stacks (110 mm Ø) shall be routed through internal ducts and terminate with weathering slates above roof level.

System Configuration

- Gravity-fed, solvent-welded above-ground uPVC soils and wastes system with acoustic pipe wrapping in occupied zones.
- All vertical stacks vented to atmosphere above gutter line.

Control

- Deep-seal traps on all sanitary fittings to prevent sewer gas ingress.

Equipment

- uPVC waste pipework, solvent-weld fittings, and intumescent fire collars at all compartment floor and wall penetrations.

3.4.4 Ventilation System

Extent of Work

This section covers the continuous mechanical extract ventilation (cMEV) system and ducted ductwork installations for the community dwelling. While background ventilation is achieved via acoustic trickle vents in the windows, continuous active extract ventilation must be provided from wet areas (toilets, bathrooms, and kitchens). Extract air is drawn through low-noise ceiling grilles to a central continuous mechanical extract unit (EVAir F30 or equivalent) located in the utility plantroom, and discharged vertically through dedicated roof terminals.

System Configuration

- Centralized continuous mechanical extract ventilation (cMEV) system per residential unit.
- Rigid and semi-rigid anti-static, radial ducting systems.

Control

- Multi-speed fan controllers integrated with boost switches in wetrooms and humidistats in kitchens to automatically increase extraction rate during high moisture production.

Equipment

- 1 No. Continuous Mechanical Extract Ventilation Unit (EVAir F30 or equivalent).
- Adjustable ceiling-mounted extract grilles and external roof cowls.

3.4.5 Fire Fighting

Extent of Work

This section comprises the supply, positioning, and wall-mounting of portable fire extinguishers and fire blankets in the community dwelling, fully coordinated with the LD1 fire alarm design.

Fire Protection Inventory

- **Extinguishers:** 1 No. Multi-purpose dry powder extinguisher and 1 No. CO2 extinguisher per residential unit (6 No. extinguishers total across the development).
- **Blankets:** 1 No. Heavy-duty fiberglass fire blanket wall-mounted in the kitchen.

3.5 Mechanical Exclusions

The following works and components are excluded from the Mechanical Sub-contract, and shall be provided by others:

- Automatic motorized window actuators and associated controls.
- Below-ground civil drainage, external gulleys, and grease traps.
- Rainwater downpipes, hoppers, and external guttering systems.
- Site waste-water treatment plants, septic tanks, and associated percolation areas.
- Main site water mains distribution, water utility connections, and central metering manifold construction.

4 Particular Specification

4.1 General

The particular mechanical works described in the following sections address the specific refurbishment requirements for the community dwelling at Templemore Road, Roscrea, Co. Tipperary. The works represent a domestic mechanical installation of a high municipal standard; all products specified shall be robust, durable, and highly corrosion-resistant.

The Mechanical Contractor shall be a registered member of the Mechanical Engineering Contractors Association (MECA) or an equivalent professional body, possessing all necessary insurances, licenses, and statutory approvals. Where specialized systems are specified—including the oil-fired condensing boiler, water softening units, and localized continuous extract ventilation—the Contractor shall ensure that all installations are completed by approved specialists capable of issuing mandatory certification for building control compliance (BCAR).

All products, pipes, and fittings shall comply with the latest revisions of the relevant Irish (IS) and European (EN) standards. The complete installation must comply with all current Building Regulations, even where a specific clause or standard is not explicitly referenced within these contract documents. The Contractor shall be fully responsible for the integration of all mechanical elements, including those sub-contracted to specialists, and shall supply all necessary components to deliver fully functional systems whether shown in detail on the drawings or not.

4.2 Heating Centre (Element 51)

Oil-Fired Condensing Boiler

The Mechanical Contractor shall supply, install, test, and commission a high-efficiency oil-fired condensing boiler to serve the space heating and domestic hot water circuits for the community dwelling. Prior to installation, the Mechanical Contractor shall fully decommission and remove the existing heating system, including all redundant pipework, plant, and controls, in a safe and compliant manner. The existing on-site buried oil storage tank shall be inspected, tested, and reconnected to the new boiler installation via a new copper oil supply line complete with fire valve.

Boiler Unit

The oil-fired condensing boiler unit shall be Grant VortexPro, Firebird Enviromax, or an approved equivalent, floor or wall mounted as indicated on the drawings. The unit shall be an ErP A-rated, fully condensing appliance with a minimum seasonal efficiency of 92%, compliant with BS EN 303-1 and the current Irish Building Regulations. The boiler shall be supplied complete with integral overheat thermostat, flue gas thermometer, burner lockout indicator, and automatic air vent.

The boiler installation package shall incorporate a sealed system pressurisation unit (complete with expansion vessel, pressure gauge, filling loop, and safety relief valve), a primary circulating pump, a two-port motorized zone valve for the DHW cylinder circuit, a boiler interlock programmer/controller, and a fully wired control panel. The control package shall support independent time and temperature programming for space heating and domestic hot water, with provision for thermostatic radiator valve (TRV) control at each emitter.

Expansion and Ancillary Equipment

The Contractor shall install a sealed-system pressurisation unit incorporating a pre-charged expansion vessel (sized to suit the system volume), a calibrated pressure gauge, a filling loop, and a safety relief valve (3.0 bar). All pressure relief discharge lines shall be run in copper and terminate safely to a visible, open discharge point over a tundish connected to a trapped drain. The oil supply line from the existing storage tank to the boiler shall be 10 mm OD soft copper tube, complete with a BS EN 14882 compliant fire valve installed in the oil supply line at the point of entry into the building, operated by a fusible link located above the boiler.

Control Valves & Motorised Valves

All manual isolation valves shall be full-bore bronze wedge gate valves with non-rising spindles conforming to BS 5150. Motorized control valves shall be two-port spring-return zone valves with auxiliary end-switches, conforming to the electrical and physical requirements of BS EN 60730.

Automatic Controls & Room Sensors

The controls package shall comprise a programmable zone controller capable of managing independent heating schedules for the living and sleeping zones, complete with a smart-device gateway for remote management.

The wall-mounted room sensors shall be Heatmiser DS1-L or an approved equivalent, featuring a clear LCD screen. In standard operation, the actual room temperature shall be displayed. Turning the adjustment dial shall display the set-point temperature for a period of 5 seconds before reverting to the room temperature.

Radiator Distribution System

Steel panel radiators shall be supplied and installed in all habitable rooms as indicated on the mechanical drawings. All radiators shall be double panel double convector (Type 22) unless noted otherwise, sized by the Mechanical Contractor to achieve the design heat output for each space. Each radiator shall be fitted with a thermostatic radiator valve (TRV) on the flow connection and a lockshield valve on the return connection. The distribution pipework shall include:

- 22 mm OD copper tube primary flow and return from the boiler to a central header in the plant area.
- 15 mm OD copper tube branch circuits from the header to individual radiators or radiator groups.
- Full-bore isolation valves at all branch takeoffs and at the boiler connections.
- Automatic air release vents at high points in the system and drain-off valves at low points.

Heating Pipework

All internal LPHW heating pipework shall be light gauge copper tube (IS 238) with capillary or compression fittings, properly supported and clipped to structure. Pipework shall be run concealed within floors or walls where possible or surface-mounted in purpose-made plastic or chrome clip systems. All heating pipework in unheated areas (roof void, under-floor, external runs) shall be insulated with pre-formed closed-cell foam insulation sections (minimum 25 mm wall thickness) to prevent heat loss and frost damage.

All pipework shall be pressure tested to 1.5 times the working pressure (minimum 3.0 bar) for a period of not less than one hour before any insulation or concealment is applied. Any leaks or defects identified during testing shall be rectified and the test repeated to the satisfaction of DMA Architects, the Employer's Representative.

Pre-Insulated Distribution Pipework

All distribution and primary heating pipework shall be copper tube (IS 238), thermally insulated with pre-formed closed-cell foam insulation in unheated areas. All joints shall be made with capillary fittings (end-feed or integral solder) or Type A compression fittings (Sanbra Fyffe or equivalent) for pipes 28 mm Ø and under.

Pipe Sleeves & Plates

Where pipework passes through solid walls, brickwork, or concrete slabs, the Contractor shall fit copper or heavy-duty plastic sleeves of a suitable diameter. Sleeves shall finish flush with the plaster or applied wall finish. Hard grey plastic 'Seamplate' wall and floor plates (manufactured by Scanglo Industries or equivalent) shall be installed to cover all pipe penetrations in finished rooms.

Balancing and Testing

Upon completion of the pipework installation, but prior to the application of floor screed or thermal insulation, the complete wet heating system shall be subjected to a hydrostatic pressure test of 7.0 bar. This pressure must be maintained drop-tight for a continuous period of eight hours. Any leaks identified shall be rectified immediately using new materials, and the test repeated.

Following successful pressure testing and screed curing, the system shall be commissioned and hydronically balanced. Correct balance must be demonstrated to DMA Architects, the Employer's Representative, by recording temperature readings on the flow and return manifolds, verifying uniform surface temperature distribution across all heated floor areas.

4.3 Drainage (Element 52)

Above-Ground Waste Pipework

All internal, above-ground soil and waste pipework shall be supplied and installed by the Mechanical Contractor, connecting all sanitary ware, sinks, showers, and plant condensate drains to the vertical stacks or direct drainage upstands provided by the Main Contractor. All soil and waste pipework from wash hand basins (W.H.B.), water closets (W.C.), and kitchen sinks shall be rigid, unplasticized PVC (uPVC) or high-density polypropylene (PP) as manufactured by Wavin, Marley, or equivalent approved brands. All materials must be stored under cover on-site and protected from ultraviolet degradation prior to installation.

Jointing and Waste Stack Connections

All uPVC-to-uPVC connections shall be completed using rubber ring push-fit sockets or solvent-welded joints. Where solvent welding is executed, pipe ends shall be cut square using a fine-toothed saw, deburred, cleaned, and coated with the manufacturer's approved solvent adhesive before being pushed home to form a permanent joint.

Bends and Offsets

To prevent blockages, all changes of direction on waste pipes shall be completed using sweep-type, long-radius bends. Double-socketed pattern fittings suitable for solvent jointing shall be used in all concealed voids.

Pipe Supports

All horizontal above-ground waste pipework shall be rigidly supported at centers not exceeding 900 mm. Supports shall consist of proprietary plastic or rubber-lined steel brackets secured to masonry walls with rawlplugs and wood screws.

Waste Traps

The Contractor shall supply and install the following traps, ensuring all traps have a minimum 75 mm water seal and a removable sump for cleaning:

- 32 mm PVC Bottle Trap to all wash hand basins.
- 40 mm PVC Appliance Trap to all kitchen sinks, washing machines, and dishwashers.

All trap models must be approved by DMA Architects, the Employer's Representative, and a sample trap must be inspected and approved before bulk installation commences.

Venting and Weathering

All vertical soil stacks shall extend through the roof structure, terminating at least 300 mm above the roof or gutter line. Stacks shall be finished with an approved uPVC vent cowl and weatherproofed at the slate line using a proprietary lead-lined weathering slate collar.

Fire Stopping

Where plastic waste or soil stacks penetrate fire-rated compartment walls or floors, the Contractor shall install proprietary intumescent fire collars. The collars must have a fire rating equal to or exceeding that of the penetrated structure (minimum 1-hour rating) and must be installed in strict accordance with the manufacturer's instructions.

Testing

The completed above-ground soils and wastes system shall be subjected to a standard water test. The system shall be filled with water to a minimum height of 1.5 meters head and inspected for leaks. Any faulty joints shall be cut out, remade using new fittings, and re-tested until proven completely water-tight.

4.4 Water Distribution (Element 53)

Mains and Drinking Water Installation

The unsoftened mains water connection shall be extended from the external meter manifold into the dwelling using heavy-duty blue MDPE barrier pipe laid in sand-filled trenches at a minimum depth of 750 mm below finished ground level. Inside the plantroom, a primary draw-off branch shall be taken directly to the kitchen sink to provide unsoftened drinking water, complete with a double check valve.

Water Softener

The Mechanical Contractor shall supply and install a time-controlled, ion-exchange water softener to protect the hot water cylinder and heating system from lime-scale deposition. The softener must comply with all current Irish water regulations and shall include a bypass valve arrangement.

Water Services Pipework & Fittings

All pressurized internal cold and hot water pipework shall be run in light gauge copper tube conforming to I.S. 238, manufactured in Ireland. For pipe diameters of 35 mm Ø and greater, all joints shall be oxy-acetylene bronze-welded. For pipes of 28 mm Ø and under, compression fittings conforming to I.S. 239 Type 'A' (Sanbra Fyffe or equivalent) shall be used. No brazing of small-diameter pipes will be permitted.

Isolation Valves & Stopcocks

The Contractor shall install bronze, solid wedge gate valves with non-rising spindles conforming to I.S. 239 (Sanbra Fyffe Fig. 367L or equivalent) in the plantroom and manifold areas. Localized isolation of sanitary fittings shall be achieved using chrome-plated, screwdriver-operated ball valves ('Ballofix' or equivalent). No stopcock or isolation valve shall be installed in an exposed living area without the written approval of DMA Architects, the Employer's Representative.

Cold Water Storage Tank

The Contractor shall supply, install, and commission a GRP Cold Water Storage Tank (minimum 270 L capacity) to provide pressurized booster services. The tank shall include:

- A WRAS-approved GRP body with a fully sealed, insulated lid and insect-screened vents.
- An automatic submersible booster pump equipped with dry-run protection, auto-restart, and an adjustable LED digital flow controller.
- A structural steel support frame designed to hold the tank a minimum of 600 mm above finished floor level.
- A GRP drip tray positioned beneath the tank, equipped with an independent 22 mm overflow piped to gravity drain.

Pipe Insulation

All internal hot and cold water pipework, including fittings and valves in unheated areas, shall be thermally insulated. Insulation shall consist of pre-formed closed-cell elastomeric foam sections (minimum 25 mm thickness) having a thermal conductivity not exceeding 0.035 W/mK.

Safety and Scald Protection

To comply with Building Regulations Part G and Part M (for accessible community dwellings), the Contractor shall install thermostatic mixing valves (TMV3 certified to BS EN 1111) at all bath and shower outlets to limit the maximum hot water discharge temperature to 43°C.

Pressure Testing

Upon completion of the water services pipework, but before thermal insulation is applied, the complete hot and cold water system shall be hydrostatically tested to 7.0 bar. The system must remain drop-tight under this pressure for a continuous period of eight hours. All testing must be conducted in the presence of DMA Architects, the Employer's Representative.

4.5 Ventilation (Element 57)

Mechanical Extract Fans

Continuous, low-noise mechanical extract ventilation shall be achieved in the community dwelling using a centralized extract fan unit (EVAir F30 or equivalent). Damp and stale air shall be extracted from kitchens, utility rooms, and bathrooms through adjustable ceiling-mounted grilles. The extract unit shall incorporate a high-efficiency EC motor with a specific fan power conforming to Part L criteria. Passive ventilation shall be provided via 125 mm Ø wall ducts equipped with acoustic lining and weather cowls.

Ductwork & Supports

All main extract ductwork shall consist of rigid, self-extinguishing PVC or semi-rigid radial plastic ducting (60 mm Ø) with an anti-static and anti-microbial inner lining to minimize dust accumulation and acoustic crosstalk. Ductwork shall be securely routed through ceiling voids and supported using galvanized steel hangers or fire-rated plastic straps at intervals not exceeding 1.0 meter.

Fire Collars

Where ventilation ductwork penetrates party walls, compartment walls, or fire-rated ceilings, the Contractor shall install proprietary intumescent fire dampers or fire sleeves. These dampers must be certified to provide a fire resistance rating equal to that of the penetrated structure (minimum 1-hour rating).

Grilles and Diffusers

Extract grilles shall be adjustable, ceiling-mounted disc valves constructed of white powder-coated steel or UV-stabilized plastic, complete with sealing gaskets to prevent air leakage around the housing. Grilles shall be adjusted and locked in position during the commissioning phase.

Commissioning and Testing

The complete ventilation installation shall be commissioned in conjunction with the equipment supplier and DMA Architects, the Employer's Representative. The Contractor shall balance the system using an anemometer to verify that the extraction rates in kitchens (minimum 60 L/s peak) and bathrooms (minimum 15 L/s peak) comply with Technical Guidance Document F.

An airtightness test shall be performed on the main ducting runs before flexible connections or ceiling grilles are fitted. The duct openings shall be temporarily sealed, and the ductwork pressurized to demonstrate compliance with DW/144 leakage criteria.

4.6 Other Services (Element 58)

Painting and Metal Protection

After successful hydrostatic testing, all uninsulated, exposed steel pipework and support brackets shall be thoroughly wire-brushed to remove rust and scale, primed with one coat of red oxide primer, and finished with two coats of gloss paint to an approved BS colour scheme. Canvas or hard-faced insulation jackets shall be sized and prepared for paint finishes.

Dissimilar Metals

To prevent galvanic corrosion, where copper or stainless steel pipes are connected to galvanized steel or cast-iron mains, the Contractor shall insert an insulating brass bushing, a dielectric union, or a bronze flange. Direct contact between steel and copper surfaces is strictly prohibited.

Water Testing and Analysis

The Mechanical Contractor shall, prior to commencing plumbing works, obtain a raw water sample from the main site connection. The sample shall be analyzed by an accredited laboratory for hardness, iron content, and pH, and the results submitted in writing to DMA Architects, the Employer's Representative, to verify the suitability of the water softening equipment.

Fire Fighting Installation

The Mechanical Contractor shall supply and install portable fire extinguishers in the community dwelling, mounting them on heavy-duty steel brackets secured to masonry walls at an ergonomic height of 1.2 meters to the carry-handle. All extinguishers must comply with IS 291:2015 and be fitted with a plastic inspection tag and a highly visible photoluminescent location sign.

Fire Stopping and Seals

All mechanical pipes, conduits, and ventilation ducts passing through fire compartment walls, ceilings, or party walls shall be sealed internally and externally to maintain a 1-hour fire rating. Sealing shall be achieved using:

- Intumescent wrap-around collars for plastic pipe penetrations.
- High-temperature intumescent acrylic sealants and mineral wool backing (minimum density 140 kg/m³) for copper and steel pipe penetrations.
- Fire-rated mortar or split blocks of compressible intumescent material for larger mechanical openings.

All seal installations must comply with the manufacturer's tested details, and the Contractor shall maintain a visual BCAR register of every penetration seal on-site.

Commissioning and Documentation

The commissioning of all mechanical services shall be executed in a structured and rigorous manner. The oil-fired condensing boiler controls, radiator circuit, DHW cylinder, and water softeners shall be commissioned directly by approved specialist technicians.

All testing, balancing, and flow-rate data shall be recorded on official Commissioning Reports, which must be signed by the testing engineer and submitted to DMA Architects, the Employer's Representative, for approval in the following formats:

- **CR.201:** Water Services and Pressurization Test Report
- **CR.202:** Air Extract and Ventilation Balancing Report
- **CR.203:** Soils and Wastes Flow and Leakage Test Report
- **CR.204:** Hydronic Heating System and Oil-Fired Boiler Commissioning Report

Operation and Maintenance (O&M) Manuals

Prior to the formal handover of the building, the Mechanical Contractor shall supply to DMA Architects, the Employer's Representative, two hardback copies and one digital copy (on USB flash drive) of a comprehensive Operation and Maintenance Manual. The manual shall be bound in a heavy transparent cover and must contain:

- A detailed technical description of the complete mechanical installation.
- Step-by-step operating instructions for the oil-fired condensing boiler, radiator system, DHW cylinder, ventilation fans, and water softeners.
- Emergency shutdown procedures for water, heating, and power failure scenarios.
- A recommended spare parts list with manufacturer part numbers and supplier contact details.
- A comprehensive preventative maintenance schedule for the first five years of operation.
- Full-sized "As-Installed" mechanical drawings, colour-coded to assist interpretation.
- All statutory BCAR certificates, manufacturer warranty cards, and commissioning test sheets.
-

4.7 Site Services (Element 50)

The Mechanical Contractor shall supply, lay, pressure test, and commission all external pipework associated with the domestic water supply for the dwelling. The connection of the main water supply on the boundary of Templemore Road will be completed by others.

The Mechanical Contractor shall install a dedicated 25 mm Ø blue MDPE barrier pipe from each designated meter position at the manifold, routing it underground at a minimum depth of 750 mm within a sand envelope (complete with yellow warning tape positioned 150 mm above the pipe) to the internal plantroom of each individual unit. All external pipework shall be pressure tested to 10.0 bar for a period of two hours before backfilling is executed.

5 Specification Schedules

5.1 Schedule of Manufacturers and Suppliers

The Mechanical Contractor shall base the main lump-sum tender bid precisely upon the specified plant, materials, and equipment manufacturers detailed in the following schedule.

Should the Contractor propose alternative manufacturers, these proposals must not be included in the lump-sum tender. Alternatives may be offered in this schedule, detailing the manufacturer's name, the proposed model, the associated cost adjustment (credit or addition in Euros), and any impact on the delivery period. DMA Architects, the Employer's Representative, is under no obligation to accept or consider any alternative proposals.

Signed: _____

For and on Behalf of: _____

Date: _____

Item No.	Equipment Description	Specified Manufacturer	Proposed Alternative Manufacturer	Cost Adjustment (€)	Delivery
1	Oil-Fired Condensing Boiler	Grant / Firebird / Worcester Bosch (equal approved)			
2	Steel Panel Radiators	Stelrad / Myson / Quinn (equal approved)			
3	Indirect DHW Unvented Cylinder	Megaflo / Joule / Santon (equal approved)			
4	GRP Storage Tanks	Tricel / Balmoral (equal approved)			
5	Submersible Booster Pump	Grundfos (equal approved)			
6	Water Softener	Clack (equal approved)			
7	Soil & Waste Pipework	Wavin (equal approved)			
8	Mechanical Extract Fan	EVAir F30 (equal approved)			
9	Fire Extinguishers	Chubb (equal approved)			
10	Thermostatic Mixing Valves	Horne / Reliance			

5.2 Mechanical Contractor BCAR and Part L Documentation

Certification Required for BCAR (Building Control Amendment Regulations)

The Mechanical Contractor shall supply the following formal, signed certification to the Assigned Certifier and DMA Architects, the Employer's Representative, to facilitate the BCAR validation process:

- **Certificate of Compliance (Design):** Verifying that the mechanical services design meets all relevant Technical Guidance Documents.
- **Certificate of Compliance (Construction - Form S):** Signed by the registered Mechanical Contractor, certifying that the systems have been constructed, installed, and tested in accordance with the approved plans and specifications.
- **Commissioning Certificates:** Independent test sheets confirming successful commissioning of:
 - The oil-fired condensing boiler, auxiliary immersion heaters, and space heating controls.
 - The continuous mechanical extract ventilation systems (confirming flow rates in L/s at each grille).
 - All portable fire extinguishers and fire blankets in compliance with IS 291:2015.
 - Hydrostatic pressure testing of hot and cold water pipework, LPHW radiator heating circuits, and above-ground soils and wastes.
 - Thermostatic Mixing Valves (TMV3 calibration records for accessible bathrooms).

Certification Required for Part L Compliance

To demonstrate Part L compliance for the final Building Energy Rating (BER) assessment, the Mechanical Contractor shall supply:

- Signed designer and installer sign-off sheets for the oil-fired condensing boiler installation.
- Manufacturer technical data sheets displaying the seasonal efficiency (ErP energy label) for the oil-fired condensing boiler.
- Manufacturer data sheets showing Specific Fan Power (SFP) and heat recovery efficiency for the mechanical ventilation units.
- Technical specifications of the localized pipework insulation, verifying compliance with the minimum insulation thickness tables of Part L.
- Flow and pressure commission sheets for all domestic circulating pumps and space heating circulation systems.

6 Mechanical Tender Summary and Breakdown Tender Summary – The Mechanical Contractor shall transfer the section totals from the detailed mechanical estimate to this summary table, which shall form the basis of the mechanical contract sum. This contract is a fixed-price lump-sum contract and is not subject to re-measurement. All figures shall exclude Value Added Tax (VAT).

Item	System Description	Element Reference	Section Total (€)
.1	Mechanical Preliminaries & Insurances	Element 59.1	
.2	Heating Centre & Oil-Fired Boiler Installation	Element 51	
.3	Above-Ground Drainage & Waste Services	Element 52	
.4	Water Distribution & Softening Services	Element 53	
.5	Radiator Heating & DHW Cylinder Systems	Element 56	
.6	Mechanical Extract Ventilation Systems	Element 57	
.7	Fire Fighting & Safety Services	Element 58	
.8	External Site Services & Water Mains	Element 50	
	TOTAL MECHANICAL PROPOSAL (to Bill of Quantities)	Element 59	€