

**RONAN MEALLY CONSULTING ENGINEERS
1 CITY WALL,
JAMES STREET
KILKENNY**

**B332-23-0001
BALTINGLASS GARDA STATION
UPGRADE WORKS**

**MECHANICAL SERVICES
CONTRACT SPECIFICATION**

T1



OPW

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1. INTRODUCTION

This Specification specifically relates to the Mechanical Building Services and must be read in conjunction with the Mechanical General Specifications, drawings and other Contract Document including Conditions of Contract, Preliminaries, Quality and general requirements, and other relevant sections of the Specification.

The clauses and schedule headings of the Form of Contract are included below for pricing. Unless specifically itemised elsewhere in these Preliminaries, any costs for or in connection with any contractual requirements or obligations arising from these clauses should be included under the clause and schedule headings. In accordance with the Agreed Rules of Measurement, some items are listed separately for pricing.

All costs arising from or in connection with the following are to be included in the tender.

1.1 COVID-19

The tenderers shall allow in their tender for working on site in line with the CIF's Standard Operating Procedure (SOP) and allow in the tender, where indicated, for any additional time and cost incurred to accommodate the imposition of COVID-19 restrictions.

Ensure all directly and indirectly employed staff have undergone the CIF's COVID-19 Safety Induction Programme and have a digital card.

It should also be ensured that all staff follow the instructions of the main contractor's COVID-19 compliance officer at all times.

2. SCOPE OF WORKS

2.1 General

This Specification, Documents and drawings detail the work to be carried out by the appointed Mechanical Contractor for this project.

- Removal and disposal of existing radiators and associated pipework where shown
- Installation of new heating pipework, radiators, TRVs, thermal insulation, supports, fixing, valves and fittings
- Complete testing and commissioning
- Complete water inhibitor installation and complete two water laboratory tests.
- Testing and Commissioning
- The provision of the operating and maintenance manuals, OPW Maintenance Schedules and record drawings shall also be included.

The appointed Mechanical Contractor shall be responsible for the supply and installation of all mechanical, electrical and builders work and equipment shown and / or described in this document, on the data sheets or on the drawings. The installation shall be in accordance with the general specification.

The Mechanical Contractor shall include for all supports, brackets, hangers, etc necessary for the above installation.

All mechanical motors and valves associated with the Mechanical Package shall be supplied and installed by the Mechanical Contractor.

The Mechanical Contractor shall supply the Electrical Sub-Contractor with all the necessary information as required to enable the Electrical Sub-Contractor to obtain suitable equipment and adequately cable the installation.

The Mechanical Contractor shall supply all necessary wiring diagrams of control equipment and all other plant supplied by him.

All works shall be carried out in accordance with This Document, the General Specification, Drawings and data sheets

Any discrepancies between the Specification and Drawings must be brought to the attention of the Engineer.

The Mechanical Contractor shall make no assumptions. Variations as a result of assumptions will not be paid. Requests for Information (RFI's) must be issued to the engineer.

The Mechanical Contractor shall be responsible for the complete controls installation associated with the Mechanical Package. The electrical work and cabling to equipment, plant, motors, etc. including local isolators to all relevant mechanical equipment shall be carried out by the Electrical Contractor.

The Mechanical Control Panel(s) shall be supplied and installed by the Mechanical Sub-Contractor.

The Mechanical Contractor shall supply and install valves etc. required to enable the Electrical Sub-Contractor to complete the electrical installation. The Mechanical Contractor shall install all mechanical controls equipment issued to him by the Controls Specialist.

The Controls Specialist shall supply all control related devices required to complete the controls installation. The Controls Specialist shall be a Sub-Contractor to the Mechanical Contractor.

The Electrical Sub-Contractor shall be responsible for making all final electrical wiring and control wiring terminations.

2.2 Mechanical Contractors Responsibilities

The tenderer must at the time of tender, state the manufacturers names and catalogue numbers of the equipment on which his tender is based.

It is not sufficient for the tenderer to state "materials as specified ", the information given must be adequate to identify the actual unit concerned without ambiguity.

The Mechanical Contractor shall study carefully the furniture layouts before commencing the marking out of installations in any room.

Any obstructions to the proper positioning of the outlets shall be brought to the notice of the Engineer.

The Mechanical Contractor shall keep a competent supervisor constantly on the works at all times when the Contract Works are been carried out. The supervisor must be authorised to receive instructions on behalf of the Mechanical Contractor.

The Mechanical Contractor shall be entirely responsible for the Contract works, whether under construction or during testing and commissioning, until the Works have been accepted as been completed by the Engineer. The Engineer reserves the right to reject any workmanship and materials not conforming to the specification and instruct the Mechanical Contractor to carry out such alterations or replacements of materials at the Mechanical Contractor's expense.

When the installation has been completed in accordance with the Contract, a Completion Certificate will be issued certifying the date on which the installation was taken over and the commencement of the maintenance/ defects liability period.

2.3 Builder Attendances

Builders works shall generally include:

- Coring/breaking out for pipework.
- Bases of plant and equipment
- Making good of all surfaces.
- Painting and decorating

2.4 Heating Installation

The mechanical contractor shall supply, install, test, chemically flush, certify and commission the complete LPHW distribution system as detailed on the drawings and in the specification including, but not limited to:

Garda Station

- Supply and installation of pipe-work, insulation, valves etc.
- Supply and installation of radiators, including TRV's

VALVES:

Provide and fit brass draw-off cock, to BS 2879 type A, at the lowest point of the system.

Provide and fit brass gate valve to BS 5154 to mains water feed to heating system.

Provide and fit a safety valve and drip pipe as close and practicable to the heat pump unit outlet

EXPANSION:

The Mechanical Contractor shall supply and install a 15 Litre heating water expansion vessel adjacent to the manifold.

TESTING:

Provide for testing all pipe work and the system, to the entire satisfaction of the Engineer. All leaking pipes or fittings shall be taken out and replaced with new ones, and the whole system tested again. All tests must be attended by the Engineer or his representative.

2.4.1 Pipework

Heating pipe-work shall be mild steel.

All pipe-work supports, guides and anchors to support and control the movement of the pipe-work, including expansion bellows, shall be supplied and installed by the mechanical contractor.

Generally, for clarity, all isolating valves to plant, fixtures and equipment are not shown on the drawings, refer to general specification.

However, isolating valves and drain cocks shall be supplied and installed by the mechanical contractor in accordance with the specification and drawings.

The Mechanical Contractor shall include for the flushing and chemical cleaning of the complete LPHW Heating System.

2.4.2 Radiators

Radiators must be installed in accordance with manufacturers instruction complete with mounting brackets.

All radiators, except those in rooms containing thermostats and the corridor/hall must be installed complete with thermostatic radiator valves and lock shield angle valve.

Generally, for clarity, all isolating valves to plant, fixtures and equipment are not shown on the drawings, refer to general specification.

However, isolating valves and drain cocks shall be supplied and installed by the mechanical contractor in accordance with the specification and drawings.

The Mechanical Contractor shall include for the flushing and chemical cleaning of the complete LPHW Heating System.

2.4.3 Thermal Insulation

After all hydraulic tests have been carried out on the water services installations the system shall be fully insulated. This shall include all pipes, elbow, fittings, and flanges. Pumps and valves shall be encased with insulated covers.

As a minimum all pipe-work will be insulated using mineral fibre wool and shall be finished in foil.

The thickness of insulation shall be in accordance with BS 5422.

Pipe work to be encased in concrete:

AF Armaflex Class O, in black, shall be used. Thermal conductivity 0.033W/m2K.

Pipe Diameter	Thickness of Insulation
mm	mm
15	19
22 or 20	25
28 or 25	25
32	25
40	25

All other pipe work

Exposed pipe work or pipe work in ceiling voids, stud partitions, etc shall be thermally insulated with foil backed mineral fibre wool.

Kingspan Kooltherm FM pipe insulation, silver

Pipe Diameter	Thickness of Insulation
mm	mm
15	15
22 or 20	20
28 or 25	20
32	20
40	20

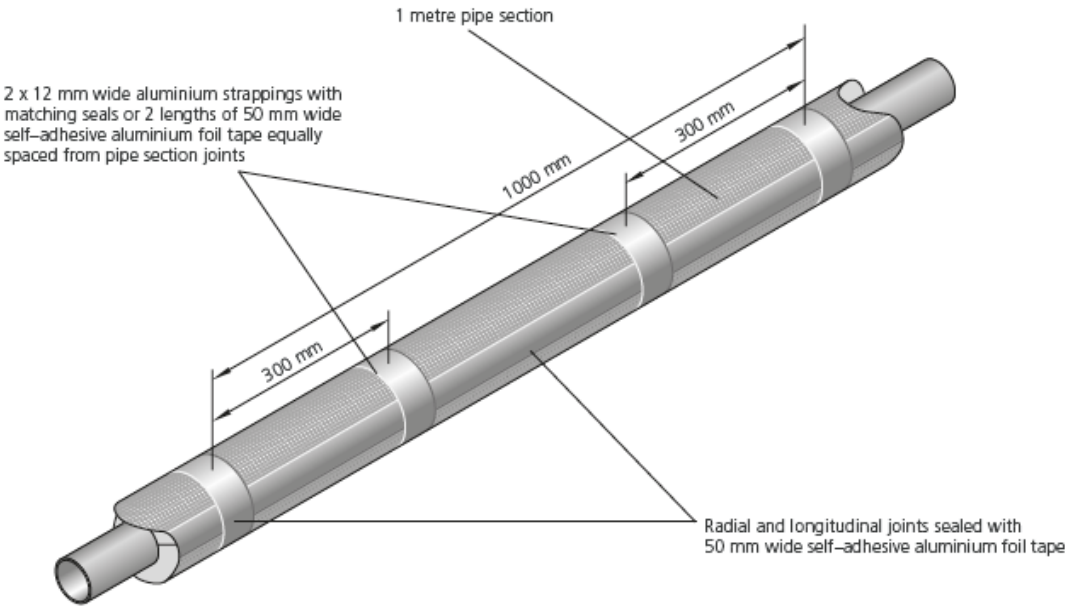
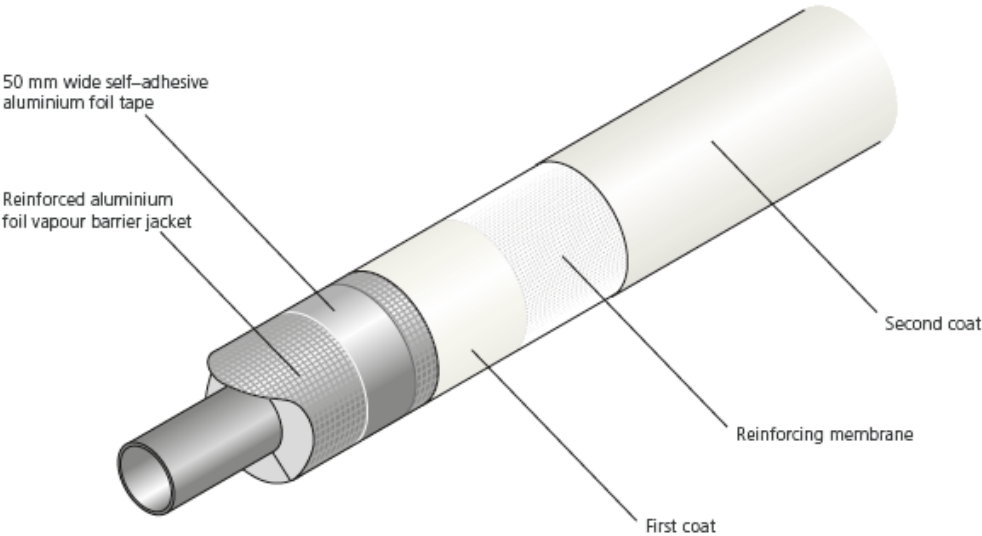


Figure E1: Application of Kooltherm™ FM Pipe Insulation



2.4.4 Pipe Work Identification

All isolating and control valves shall be fitted with a propriety made identification label.

After the pipe-work insulation is complete, appropriate identification labels shall be fitted at every change of direction etc to comply with BS 1710. Refer to the general specification.

3. BUILDERS WORK AND PROTECTION

The Mechanical Contractor shall be responsible for the protection of all equipment specified in this specification and on the drawings and data sheets, from adverse weather conditions or any other damages that may occur during the construction period.

In the event of such damage occurring to such equipment, then the Mechanical Subcontractor shall be responsible for making good the repairs to it.

The Mechanical Contractor shall allow for co-ordination with all existing site services and all other trades on site during the works. This shall include provision of "Builders Works" details/schedules and supervision of all said works.

Builders works shall be undertaken by building contractors included on the list of approved builders. This list has been included with the tender documents.

4. HANDOVER/ OPERATION AND MAINTENANCE DOCUMENTATION

The Mechanical Contractor shall handover all other vendor supplied documentation relating to the mechanical installation of this project.

This shall include, but not limited to the following: -

- A full set of "as built" mechanical services drawings.
- Operating and Maintenance manuals.
- Installation Manuals.
- Spare Parts List.
- Calibration/Test Sheets.
- Calculations.
- Commissioning Certificates.
- Completion Certificates.

The Mechanical Sub-Contractor shall include in the contract sum for the issue of three number copies of all the above drawings/documentation.

For details on the preparation of this documentation please refer to the General Specification

DATA SHEETS

The contractor shall submit full details of all proposed equipment prior to placing an order.

Data Sheets have been provided to control the quality of the installation.

The Mechanical Sub-Contractor must price the equipment listed in the Datasheets and identify in the Tender Return.

For Alternatives refer to the section on Alternatives.

TECHNICAL DATASHEET NO: 1 PIPING AND INSULATION

Service	Nominal Pipe Size	Location	Material	Material Standard	Paint Finish	Insulation Type	Insulation Thickness
Heating System	15-35mm	Internal	Mild Steel	BS1387 Medium	Primed and Painted RAL9101	Foil Backed Fibreglass	25
Heating System	42mm +	Internal	Mild Steel	BS1387 Medium	Primed and Painted RAL9101	Foil Backed Fibreglass	25
Cold Water	15-35mm	Internal	Copper	IS 238	N/A	Foil Backed Fibreglass	25
Cold Water	42mm +	Internal	Copper	IS 238	N/A	Foil Backed Fibreglass	25
Hot Water	15-35mm	Internal	Copper	IS 238	N/A	Foil Backed Fibreglass	25
Hot Water	42mm +	Internal	Copper	IS 238	N/A	Foil Backed Fibreglass	25
Gas	15-50mm	Internal	Mild Steel	BS1387 Heavy	Yellow	Foil Backed Fibreglass, Vapour Sealed	25
Gas	50mm	External	Polyethylene		Yellow		
Cold Water	65mm	External	Polyethylene		N/A		
Chilled Water	15-35mm	Internal	Mild Steel	BS1387 Medium	Primed and Painted RAL9101	Foil Backed Fibreglass, Vapour Sealed	25
Chilled Water	42mm +	Internal	Mild Steel	BS1387 Medium	Primed and Painted RAL9101	Foil Backed Fibreglass, Vapour Sealed	25

Notes:

1. All external exposed pipe-work and internal plant room pipe-work to be insulated in with foil backed fibreglass and shall be aluminium hammer clad

TECHNICAL DATASHEET NO: 2 VALVES

PRODUCT / APPLICATION	SIZE		WATER CHILLED WATER	L.P.H.W.	M.T.H.W.	COOLING WATER	GAS
ISOLATING VALVE	1/2" - 2" 2 1/2" +	B'FLY GATE	Ball Valves INTERAPP D3 M.P. F105	Ball Valves INTERAPP D3 M.P. F105	Ball Valves INTERAPP D3	Ball Valves INTERAPP D3 M.P. F105	RIV 7163 INTERAPP D3N
NON-RETURN VALVE	1/2" - 2" 2 1/2" +		WATTS 1461 M.P. F170	WATTS 1461 M.P. F170	HOLMES 1461 M.P. F170 HT	WATTS 1461 M.P. F170	
STRAINER	1/2" - 2" 2 1/2" +		WATTS 1471 M.P. F185	WATTS 1471 M.P. F185	HOLMES 1471 M.P. F185	WATTS 1471 M.P. F185	
DOUBLE REGULATING VALVE (DRV)	1/2" - 2" 2 1/2" +		HOLMES BV301 HOLMES BV203	HOLMES BV301 HOLMES BV203	HOLMES BV301 HOLMES BV203	HOLMES BV301 HOLMES BV203	
VARIABLE ORIFICE DRV	1/2" - 2" 2 1/2" +		HOLMES BV321 HOLMES BV223	HOLMES BV321 HOLMES BV223	HOLMES BV321 HOLMES BV223	HOLMES BV321 HOLMES BV223	
COMMISSIONING SET	1/2" - 2" 2 1/2" +		HOLMES BV611 HOLMES BV614	HOLMES BV611 HOLMES BV614	HOLMES BV611 HOLMES BV614	HOLMES BV611 HOLMES BV614	
EXPANSION JOINT	1/2" - 2" 2 1/2" +		THERMOSEL TRB/120 THERMOSEL TRB/121	THERMOSEL TRB/120 THERMOSEL TRB/121	THERMOSEL APS/001 THERMOSEL SAF/002	THERMOSEL TRB/120 THERMOSEL TRB/121	
DIRT & AIR SEPERATOR	3/4" - 1 1/2" 2" - 12"		PNEUMATEX VGA/10 PNEUMATEX VFA/10	PNEUMATEX VGA/10 PNEUMATEX VFA/10	PNEUMATEX VGA/10 PNEUMATEX VFA/10	PNEUMATEX VGA/10 PNEUMATEX VFA/10	
DRAIN-OFF COCK	1/2" - 2"		HOLMES 1481 HOLMES 1482	HOLMES 1481 HOLMES 1482	HOLMES 1481 HOLMES 1482	HOLMES 1481 HOLMES 1482	
LOCKSHIELD VALVE	1/2" - 2"		CIM 70BSL	CIM 70BSL	CIM 70BSL	CIM 70BSL	
AUTOMATIC AIR VENT	10mm		HOLMES 1489	HOLMES 1489	HOLMES 1489	HOLMES 1489	
PRESSURE REDUCING VALVE	1/2" - 2" 2 1/2" +		MALGORANI FIG.143 WATTS DRVD	MALGORANIFIG.143 WATTS DRVD	MALGORANI FIG.143 WATTS DRVD	MALGORANI FIG.143 WATTS DRVD	

ISSUE REGISTRATION:

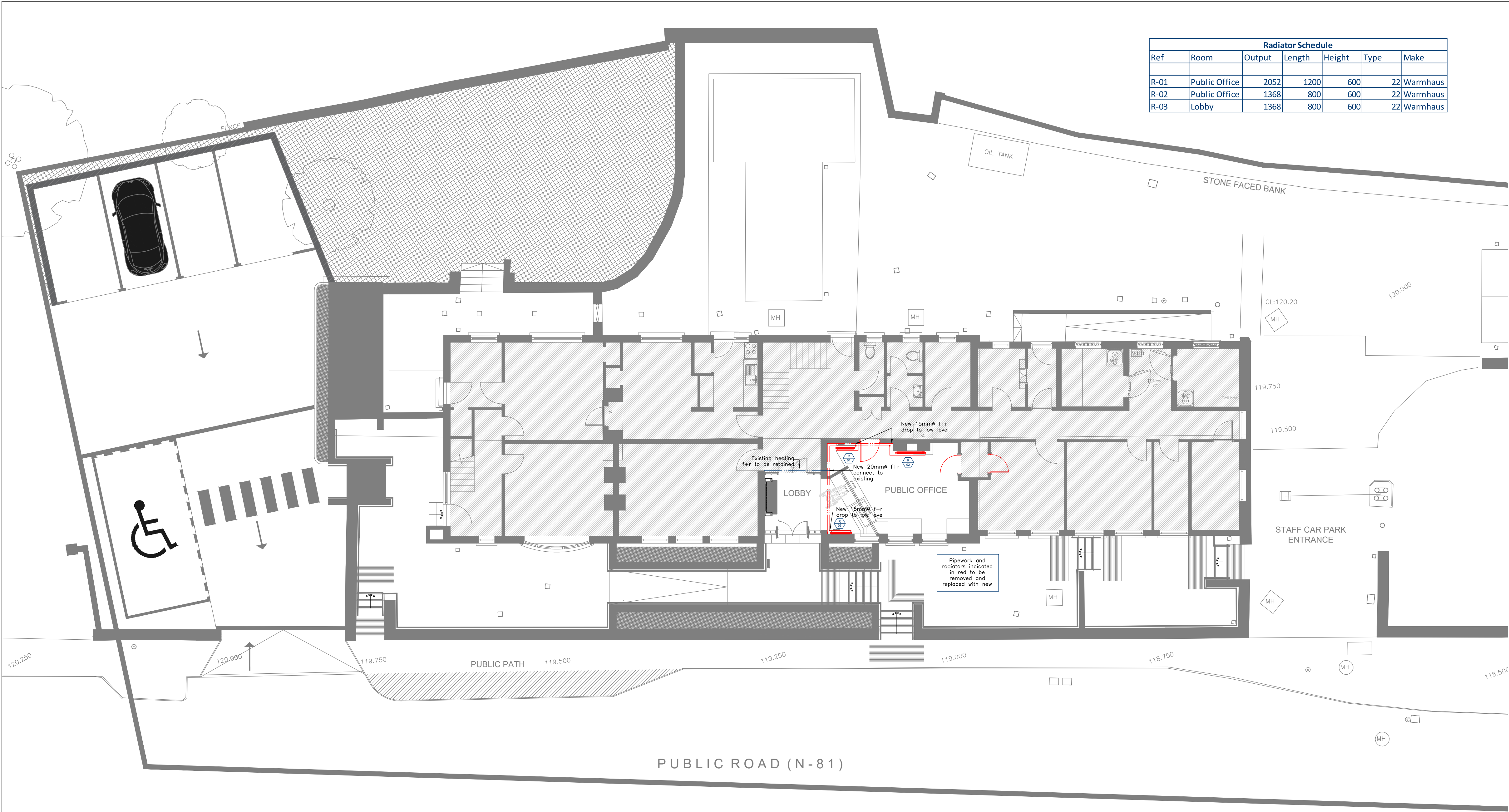
Project Title: BALTINGLASS GARDA STATION

Project No: 22K217

Rev	Date	Purpose of Issue/Nature of Revision	Prepared by	Issue Authorised by
T1	11-10-24	Tender	RM	RM

This document takes into account the particular instructions and requirements of our Client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Ronan Meally Consulting Engineers Limited
1 City Wall, James Street,
Kilkenny
Ireland
Telephone (056) 7795428
Facsimile (056) 7795427
Email: info@rmce.ie



Radiator Schedule						
Ref	Room	Output	Length	Height	Type	Make
R-01	Public Office	2052	1200	600	22	Warmhaus
R-02	Public Office	1368	800	600	22	Warmhaus
R-03	Lobby	1368	800	600	22	Warmhaus

- NOTES:
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY FROM ARCHITECTS DRAWINGS.
 - MECHANICAL SUB-CONTRACTOR WILL COORDINATE THE FINAL POSITIONS OF ALL EQUIPMENT AND SERVICES WITH ALL OTHER TRADES. COST INCURRED DUE TO LACK OF COORDINATION WILL NOT BE ENTERTAINED.
 - ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO FABRICATION.
 - ALL PIPEWORK SHALL BE MILD STEEL
 - PIPE WORK SUPPORTS ARE OMITTED FOR CLARITY.
 - AIR VENTS TO BE PROVIDED AT ALL HIGH POINTS IN THE SYSTEM AND DRAIN COCKS TO BE PROVIDED AT ALL LOW POINTS IN THE SYSTEM
 - FINAL LOCATION OF WALL MOUNTED TEMPERATURE STATS TO BE AGREED ON SITE.
 - TRV'S TO BE INSTALLED ON ALL RADIATORS
 - ALL CONCEALED PIPEWORK TO BE THERMALLY INSULATED



TENDER

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Mechanical & Electrical Engineering

RONAN MEALLY CONSULTING ENGINEERS LTD
1 City Wall, James Street
Kilkenny
Ireland
R95 XF97
Telephone: 056 7795428
Email: info@rmce.ie

2 Ardliath
Rosstownagh
Co Donegal
F94 FC89
Telephone: 087 7460260
Email: info@rmce.ie

PROJECT
B332-21-0001
BALTINGLASS GARDA STATION
CO WICKLOW

DRAWING TITLE
MECHANICAL SERVICES
PROPOSED LAYOUT

DRAWN RM	SCALE 1:100	JOB NO. 22K217	REV
CHECKED RM	DATE OCT 2024	DRAWING NO. M-100	T1