



GEANEY ENGINEERING CONSULTANTS

PROFESSIONAL BUILDING SERVICES & ENERGY REDUCTION CONSULTANTS

MECHANICAL EQUIPMENT SCHEDULE

***PROJECT NAME: Coláiste Mhuire Co-Ed, Castlemeadows,
Thurles, Co. Tipperary.***

PROJECT REFERENCE: 0850

PROJECT STAGE: Tender

1.1 GENERAL REQUIREMENTS

All equipment shall be supplied by manufacturers and suppliers who meet the following minimum requirements:

1. References and Proven Performance

- Suppliers shall provide, on request, a minimum of ten satisfactory references for previous installations utilising the same or similar equipment.

2. Fitness for Purpose and Environmental Suitability

- All equipment shall be demonstrably suitable for its intended function and capable of reliable operation under the environmental and weather conditions prevailing at the project site.

3. Regulatory and Standards Compliance

- All equipment and associated systems shall comply with all relevant statutory regulations, including the current Irish Building Regulations, associated Technical Guidance Documents and all applicable DoEY TGD/SDG Documents, EU directives and industry standards.
- All plant and equipment shall bear the CE mark or equivalent approved certification where applicable.

4. Technical Support

- Suppliers shall provide a technically competent representative who is fully knowledgeable in the design, installation, commissioning, and operation of the proposed equipment.

5. Triple E Scheme Compliance

- Where applicable, equipment falling under a Triple E technology category shall be listed on the Triple E Register or shall meet all criteria defined for that technology.

WARRANTIES

- The contractor shall provide manufacturer warranties or extended warranties for all equipment for a minimum period of 15 months beyond Practical Completion.
- Warranty documents shall be submitted as part of the handover documentation.

NOTES

- Schedules must be read in conjunction with relevant parts of the Mechanical Specification.
- The contractor shall ensure all proposed equipment fully complies with this specification before procurement.
- Any equipment installed that does not comply with the specification shall be removed and replaced at the contractor's cost.
- References to "equipment" include all plant, components, accessories, and materials.
- All required as-built documentation, commissioning sheets, and certification shall be submitted.
- Alternative products must be submitted for approval with full datasheets. No substitutions may be installed without prior written approval from the Engineer.

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1. Laboratory Gas Taps

Reference	Description	Fuel Type	Fire Alarm Interface	Location	Specification
GT-2	Laboratory Gas Tap – Two Way	Bottle LPG	Yes	Home Economics Room 23	Robust laboratory-grade gas tap suitable for school science laboratory use and LPG. Two-way outlet arrangement, high-visibility lever operation with positive ON/OFF positions, anti-rotation fixing and fixed serrated hose nozzles. Brass construction with durable coated finish. Suitable for operating pressure of approximately 20–25 mbar. Certified/tested for gas service and suitable for connection to laboratory gas hose. Arboles 2-Way Drop Lever Gas Tap or equivalent.
GT-4	Laboratory Gas Tap – Four Way	Bottle LPG	Yes	Science Rooms 24 & 25	Laboratory-grade four-way gas tap suitable for school science laboratory use and LPG. High-visibility lever operation, positive ON/OFF positions, anti-rotation fixing, fixed serrated hose outlets and robust brass construction. Suitable for LPG at the system operating pressure. Arboles 4-Way Gas Tap or equivalent.

- *Laboratory gas taps to be robust, clearly identifiable, have positive ON/OFF positions and secure anti-rotation fixing. Taps to be fitted with non-return valves and flow restrictors where appropriate*

2. LPG Bottle Gas

Reference	Description	Fuel Type	Fire Alarm Interface	Location	Specification
Bottle Gas	LPG Gas Bottles – 4No	LPG	Yes	Externally of the school building	47 kg LPG propane cylinders, complete with suitable cylinder valves, regulators, pigtails, manifold/connection arrangement and associated safety devices. Cylinders to be installed externally within a secure, ventilated and suitably protected compound/cage. Final installation and cylinder arrangement to comply with I.S. 820 and LPG supplier requirements.

- *Complete installation to be strength and soundness tested, purged, commissioned and certified by a suitably competent/registered gas installer.*
- *All gas isolation valves, emergency knock-out points, proving valves and control panels to be permanently labelled and clearly identified.*
- *Gas pipework to be installed in accordance with the project gas services specification and I.S. 820. Above-ground steel pipework to be suitably protected/finished and identified.*
- *Gas installation to comply with I.S. 820:2019 – Non-domestic gas installations, together with applicable manufacturer requirements and relevant gas industry standards.*

3. Master Gas Proving Panel

Reference	Description	Fuel Type	Fire Alarm Interface	Location	Specification
MGPP	Master Gas Proving Panel – Key Operated	LPG	Yes	Principle Office – 1No.	Master gas proving panel, key operated, complete with 7-day programmable time-clock control, master gas supply control, system status indication and interface with the building fire alarm system. Panel to enable the gas installation to be isolated outside permitted operating periods and to automatically shut down the gas supply upon operation of the fire alarm/emergency shutdown system. Complete with all required controls, relays, wiring and accessories.

- Gas installation to comply with I.S. 820:2019 – Non-domestic gas installations, together with applicable manufacturer requirements and relevant gas industry standards.
- Gas pipework to be installed in accordance with the project gas services specification and I.S. 820. Above-ground steel pipework to be suitably protected/finished and identified.
- Complete installation to be strength and soundness tested, purged, commissioned and certified by a suitably competent/registered gas installer.
- All gas isolation valves, emergency knock-out points, proving valves and control panels to be permanently labelled and clearly identified.
- Gas proving system to be fully tested with the fire alarm interface and emergency shut-down facilities prior to handover.
 - Allow for an integration into the fire alarm system

4. Gas Emergency Knock

Reference	Description	Fuel Type	Fire Alarm Interface	Location	Specification
G	Gas Emergency Knock-Out Point	LPG	Yes	• Home Economic Room (2No) • 2No. Science Classroom (2No. Each) • Science prep/ Store Room • 2No. Metal Work Room	Emergency gas shut-off/knock-out point, readily accessible and clearly identified, for immediate manual isolation of the associated gas supply. To be of robust construction, suitable for school environment and connected to the relevant gas proving/control system. Where incorporated within the gas proving panel, provide integral emergency gas shut-off facility.

5. Gas Emergency Control

Reference	Description	Fuel Type	Fire Alarm Interface	Location	Specification
GEC	Gas Emergency Control / Interface	LPG	Yes	Between master gas proving panel and existing fire alarm system	Operation of the fire alarm system shall initiate automatic isolation of the gas supply. Electrical interface and cause-and-effect operation to be coordinated with the electrical/fire alarm contractor.

6. CO2 SENSORS

Description	Carbon Dioxide Measurement	Operating Temp.	Analogue Outputs	Digital Outputs	Electrical	Quantity
Carbon Dioxide Sensor	0 to 2000 ppm	0 to 50°C	0 to 10V	RS485, Modbus	24V	15

7. GAS DETECTION SYSTEM

Reference	Description	Fuel Type	Gas Slam Shut Valve	Fire Alarm Interface	Key release emergency stop button	Detectors	Electrical	Specification
GPP	4 Channel Gas Detection Panel with OLED display and integral Emergency Gas Shut off button.	Bottle LPG	New	Yes	12	2 x CH4 Detectors (EACH) 1 x CO Detectors (EACH)	220V-240V/1/50Hz	Medem AGDS-MC v2 or Equivalent

- Gas installation to comply with I.S. 820:2019 – Non-domestic gas installations, together with applicable manufacturer requirements and relevant gas industry standards.
- Gas pipework to be installed in accordance with the project gas services specification and I.S. 820. Above-ground steel pipework to be suitably protected/finished and identified.
- Complete installation to be strength and soundness tested, purged, commissioned and certified by a suitably competent/registered gas installer.
- All gas isolation valves, emergency knock-out points, proving valves and control panels to be permanently labelled and clearly identified.
- Gas proving system to be fully tested with the fire alarm interface and emergency shut-down facilities prior to handover.
- Allow for an integration into the fire alarm system
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Notes:

1. This Gas Slam Shut Valve should be the normally closed type, with a manual reset button.
2. The gas slam shut valve shall close shut upon failure of mains supply.
3. The gas slam shut valve shall close shut upon detection of Gas or CO.
4. The gas slam shut valve shall close shut upon activation of Fire Alarm.
5. Upon activation of the gas detection system, the gas slam shut valve shall close. A signal shall be sent via an addressable interface to the fire alarm panel indicating activation. The fire alarm shall not go into alarm at this stage.

1. Gas Detection

- (a) On activation of any gas detection system, the gas slam shut valve shall close. A signal will be sent via an addressable interface into the fire alarm panel indicating activation. The fire alarm shall not go into alarm at this stage.
- (b) On activation of the Fire Alarm a signal will be sent via an addressable interface to the gas detection panels, which in turn will close the gas, slam shut valves.