

26-021-PHSP (T1)

PRELIMINARY HEALTH AND SAFETY PLAN

Coláiste Cois Siúire
Mooncoin, Co. Kilkenny
Boiler System Upgrade
Emergency Works



kcetb

Bord Oideachais agus Oiliúna
Chill Chainnigh agus Cheatharlach
Kilkenny and Carlow
Education and Training Board

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EnerJ Building Services Engineering

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FOREWARD

EnerJ Building Services Engineering and Building Performance Ltd. has prepared this Preliminary Health and Safety Plan for the Coláiste Cois Siúire Mooncoin Kilkenny, Boiler Upgrade Emergency Works. The Plan brings together health and safety information obtained from the Client, the tender drawings, the mechanical design, the builders works requirements and the M&E Safety in Design assessment. This Preliminary Health and Safety Plan is issued to prospective Contractors as part of the tender documentation. Tenderers shall take account of the specific requirements, constraints and residual risks identified in this document when preparing their tender, programme, resources, method statements, lifting plans and temporary works proposals.

The appointed Main Contractor shall undertake the role of Project Supervisor Construction Stage (PSCS), unless advised otherwise by the Client. The PSCS shall develop this Preliminary Plan into a Construction Stage Safety and Health Plan before construction work proceeds on site.

The Safety in Design / M&E Risk Register for the works is included as Appendix D. This Plan does not remove the requirement for the PSCS, Contractors and Sub-Contractors to prepare their own site-specific risk assessments and method statements.

Safety, Health and Welfare at Work (Construction) Regulations 2013

All prospective contractors tendering for the works must be aware that the Safety, Health and Welfare at Work (Construction) Regulations 2013 apply to this project. The appointed Contractor / PSCS shall comply with all duties imposed by the Regulations and all other relevant statutory requirements.

All persons employed on site shall hold a current SOLAS Safe Pass Card where required.

Persons undertaking tasks requiring Construction Skills Certification Scheme (CSCS) registration shall hold current and appropriate cards.

The PSCS shall coordinate arrangements to verify Safe Pass / CSCS compliance for all contractors and sub-contractors.

Where statutory thresholds are reached, the PSCS shall facilitate the appointment of a Site Safety Representative and Safety Officer as required.

The PSCS shall coordinate and maintain welfare facilities, site access controls, emergency procedures, inductions, permit systems and site safety records.

Construction work shall not commence until an adequate Construction Stage Safety and Health Plan has been developed by the PSCS and submitted to the Employer's Representative.

The contractor shall provide all requisite watching and lighting during the progress of the works and they shall be responsible for any damage occasioned by want of sufficient watching and lighting.

Specific Requirements for Contract Award

Prior to contract award and prior to commencement on site, the successful Contractor shall provide the following information as a minimum:

- Company Safety Statement and project-specific Construction Stage Safety and Health Plan.
- Written acceptance of the role of PSCS, where applicable.
- Evidence of competence, resources and experience to complete domestic water services remedial works in an occupied education / training building.
- Evidence of insurances as required by the contract documents.
- Outline programme identifying service shutdowns, out-of-hours working, sequencing and commissioning periods.
- Site-specific risk assessments and method statements for isolation, drain down, work above ceilings, attic works, tank removal, hot works, electrical isolation, water hygiene controls, flushing, disinfection and commissioning.
- Traffic management / access control proposals where deliveries, skips, plant or parking may interface with building users or public routes.
- Emergency arrangements, first aid provision and site contact list.
- Waste management arrangements, including disposal of redundant tanks, pipework, water heaters, insulation and general construction waste.
- Proposals for development and handover of the Safety File.

1.0 Project Health and Safety Responsibilities

1.1 Introduction

This Preliminary Health and Safety Plan collects and passes on information about significant health and safety risks which the appointed Contractor / PSCS will have to manage during the construction stage. It should be read in conjunction with the tender drawings, specification, pricing document, domestic water services review and Safety in Design risk register.

The Contractor must make full allowance in their tender for complying with all relevant Regulations, standards and good industry practice, including the cost and program implications of working in an existing occupied building with live services.

1.2 PSCS Role

The appointed Main Contractor shall act as Project Supervisor Construction Stage (PSCS), unless the Client confirms an alternative arrangement. The PSCS shall develop this Preliminary Health and Safety Plan into a Construction Stage Safety and Health Plan before works commence.

1.3 Commencement Condition

Construction works shall not commence until the PSCS has submitted an adequate Construction Stage Safety and Health Plan, which addresses the site-specific risks and constraints identified in this document. The plan shall be issued to the Employer's Representative in advance of commencement on site.

1.4 General Health and Safety Principles

Eliminate risks where practicable through planning, sequencing and isolation.

Reduce residual risks through competent supervision, safe systems of work, permits, segregation, access control and commissioning procedures.

Maintain safe access and emergency escape routes for building users at all times.

Maintain water hygiene standards and prevent contamination of potable water services during the works.

Ensure that no service is returned to normal use until it has been tested, commissioned and verified as satisfactory.

Ensure all contractors cooperate and coordinate with the Client, Employer's Representative, designers, PSCS and building management.

2.0 Project Particulars

Item	Details
Project Name	Coláiste Cois Siúire Boiler Upgrade Emergency Works
Project Number	26-021
Site Name	Coláiste Cois Siúire Secondary School
Site Address / Location	Coláiste Cois Siúire Mooncoin Kilkenny, Co. Kilkenny
Employer / Client	Kilkenny and Carlow Education and Training Board (KCETB) Philip Doyle / Philip.Doyle@kcetb.ie / 087 211 2220
Employer Address	KCETB, Seville Lodge, Callan Road, Kilkenny
M&E Consulting Engineer / Employer's Representative	EnerJ Building Services Engineering and Building Performance Ltd.
EnerJ Address	86 Springfort Meadows, Nenagh, Co. Tipperary, E45 NC80
EnerJ Contacts	John Hayes / johnhayes@enerj.ie / 086 028 6302
Project Supervisor Design Process	EnerJ Building Services Engineering
Main Contractor	TBA - Appointed Contractor
Project Supervisor Construction Stage	TBA - Appointed Contractor
Document	Preliminary Health and Safety Plan
Document Number	26-021-PHSP-Rev T1

3.0 The Nature of the Project

3.1 Location

The works are located at Coláiste Cois Siúire, Mooncoin, Co. Kilkenny. The principal work areas are the existing boiler plantroom, the Sports Hall, the proposed external LPG tank compound and the external route between the LPG compound and boiler house. The works interface with an operational education facility and existing heating, electrical and fire-alarm systems serving the school.

3.2 Nature of the Works

The works comprise replacement of the existing oil-fired boiler plant with a new three-boiler LPG-fired condensing cascade, provision of a new bulk LPG installation and gas main, replacement of four high-level Sports Hall LPHW unit heaters, and associated mechanical, electrical, BMS, flue, roof, fire-alarm interface and builders works.

The principal activities include:

- Survey, identification, isolation and safe decommissioning of the existing plantroom services.
- Removal from site of 2 No. existing boilers, associated shunt pumps, local pipework, valves, fittings and redundant ancillary plant, together with removal of the existing heating-system pressurisation unit where indicated.
- Removal of the existing boiler flue system, supports and ancillary components and installation of the new common flue system to the three-boiler cascade, including safe roof access, penetration, flashing and weatherproofing.
- Drain down, decommissioning and removal of the existing oil tank and redundant oil pipework, including safe management and disposal of residual fuel and contaminated materials.
- Strip-back and modification of existing LPHW flow and return pipework and headers to suit the new plate heat exchanger, boiler cascade and replacement heating circuit pumps P.01 and P.02.
- Installation of 3 No. high-efficiency LPG condensing boilers B.01-B.03, total scheduled output approximately 252 kW at 80/60°C, on a proprietary cascade frame complete with primary pumps, common headers, plate heat exchanger HEX.01, PU.01 pressurisation unit, 100 L expansion vessel, safety devices, dosing/water-treatment provisions and associated controls.
- Replacement of heating circuit pumps P.01 and P.02 and removal of the existing 3-port valve indicated on the tender drawings, together with new valves, temperature pockets, sensors, gauges and associated pipework modifications.
- Provision of the LPG compound and downstream gas installation, including concrete base, 1.8 m high secure enclosure, access path, 32 mm PE underground gas main, road/path crossing and reinstatement, PE-to-steel transitions, second-stage regulator, internal steel gas pipework, gas detection panel, LPG and CO detectors, emergency stop and slam-shut valve. The bulk LPG tank and first-stage regulator are to be coordinated with the Client's nominated LPG supplier.
- Installation of 4 No. high-level Sports Hall unit heaters UH.01-UH.04, each approximately 14 kW, complete with EC fans, destratification hoods, 2-port valves MV.01-MV.04, controls and connections to retained high-level LPHW pipework.
- Electrical decommissioning of the existing MCC and installation of new MCC.01, new mains feed from the existing MDB, outgoing supplies and local isolation to boilers, pumps, PU.01 and Sports Hall unit heaters/valves, together with earthing, containment, testing and certification.

- Provision of the new BMS controls installation, including boiler cascade interfaces, P.01/P.02 controls, Sports Hall space and high-level temperature sensing, unit-heater 0-10 V fan control, destratification sequence, Reception BMS front end, approximately 70 m CAT6 link and fire-alarm interface cabling.
- Testing, flushing, chemical cleaning, water treatment, pressure testing, LPG strength/tightness testing and purging, combustion analysis, flue verification, hydraulic balancing, gas-detection commissioning, BMS point-to-point and functional testing, certification, training and handover.

3.3 Restrictions on Working Hours

Working hours shall be agreed with the Client and Employer's Representative prior to commencement. Tenderers shall allow for out-of-hours works where required to minimise disruption, particularly for service shutdowns, isolation, drain down, flushing, disinfection, noisy works and any works affecting building users.

3.4 Intended Contract Dates

Contract award, mobilisation and completion dates are to be confirmed by the Client / Employer's Representative. Tenderers shall submit a detailed programme with their tender, clearly identifying lead-in time for equipment, shutdown windows, sequencing, commissioning and handover period.

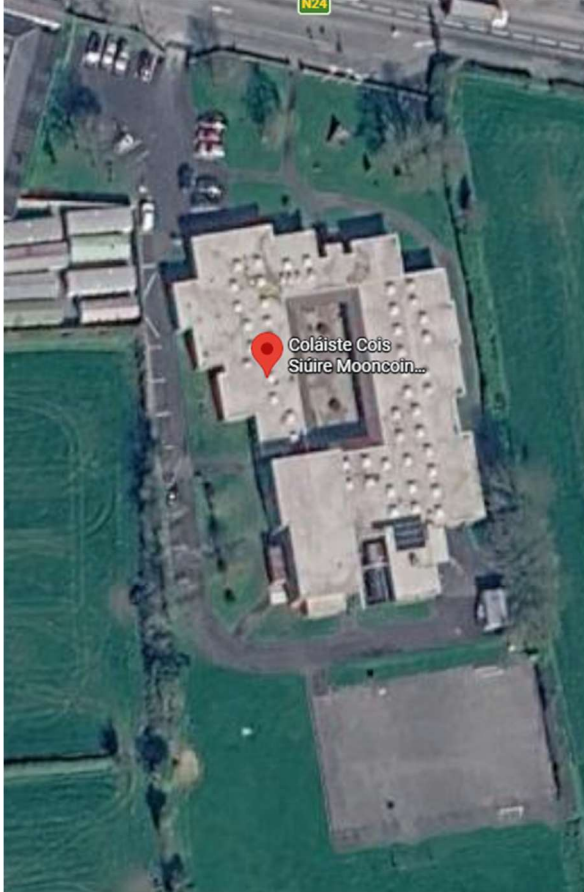
3.5 Environmental Restrictions and On-Site Risks

The site is located within an industrial estate and the building may remain occupied or partially occupied during the works. The Contractor shall strictly control access to work areas and maintain safe segregation between construction activities and building users.

4.0 The Site and Existing Environment

4.1 Description of the Site

Access, parking, delivery routes, contractor compound, storage and welfare arrangements shall be agreed with the Client and Employer's Representative at the pre-start meeting.



4.2 Existing Structures

The existing building structure, roof, finishes and fire compartmentation shall be protected. Before forming the new flue penetration, the Contractor shall verify the roof build-up, structural members, waterproofing system and any concealed services. Roof works shall be planned to prevent falls, water ingress and damage to the building.

4.3 Existing Services

- No existing LPG service is to be relied upon for the new installation. A new bulk LPG supply, underground PE gas main and boiler-house gas train are to be installed and coordinated with the nominated LPG supplier.
- Existing LPHW headers and retained school/Sports Hall distribution circuits, with existing circulation pumps and valve arrangements to be modified as shown on the tender drawings.
- Existing MCC panels, controls wiring, temperature sensors and electrical supplies.
- Existing condensate and drainage routes.
- Redundant oil lines and associated residues.

- Existing high-level LPHW pipework within the Sports Hall is to be retained and reused for connection of UH.01-UH.04; existing local electrical supplies/isolators are to be verified and adapted in accordance with the electrical tender requirements.
- Existing fire detection, emergency lighting and escape-route provisions.
- Exact routes, isolation points and operational dependencies may not be fully represented on the drawings. The Contractor shall survey, trace, identify, isolate and prove all services before cutting, drilling, dismantling or connecting.

4.4 Ground Conditions

No significant excavation works are envisaged. Should the Contractor propose excavation, drilling or ground penetration, the Contractor shall obtain approval from the Employer's Representative and shall verify underground services before commencing.

4.5 Asbestos and Hazardous Materials

No asbestos survey has been provided as part of this PHSP. The Contractor shall remain vigilant when opening ceilings, voids, service routes and plant areas. If suspect asbestos containing materials or other hazardous materials are encountered, works shall stop immediately and the PSCS / Employer's Representative shall be notified. Works shall not recommence until the material has been assessed and appropriate controls are in place.

5.0 Drawings and Information

The following tender information has been used in preparation of this Preliminary Health and Safety Plan:

Document No.	Title
26-021-SP-M (T1)	Mechanical Services Specification - Boiler System Upgrade Emergency Works
26-021-M.100 (T1)	Mechanical Services - LPHW Boiler System Demolition Works
26-021-M.101 (T1)	Mechanical Services - New Boiler Plant Room Layout
26-021-M.102 (T1)	Mechanical Services - Sports Hall Heating System
26-021-M.103 (T1)	Mechanical Services - New Gas Tank Location and Site Services Routes
26-021-M.105 (T1)	Mechanical Services - New Heating System Schematic / BMS Points List
26-021-E.100 (T1)	Electrical Services - LPHW Boiler System Power and Controls
26-020-Safety in Design	Safety in Design - M&E Risk Assessment Report / Risk Register

6.0 Design and Particular Risks

6.1 Introduction

The PSDP / Designer shall apply the general principles of prevention and identify project-specific risks that may not be immediately apparent to a competent contractor. The following risks and constraints have been identified for inclusion in this Preliminary Health and Safety Plan. The detailed M&E risk register is included in Appendix D.

6.2 General Site Set-Up

Contractor site establishment, storage, welfare and parking arrangements shall be agreed at the pre-start meeting.

Work areas shall be physically segregated from building users with suitable barriers, signage and access control.

The Contractor shall maintain a signing-in/signing-out system and restrict unauthorised access to work areas.

The Contractor shall maintain clean, safe and unobstructed access routes and escape routes at all times.

The Contractor shall coordinate shutdowns and disruptive works with the Employer's Representative and building management.

6.3 Risks Identified by the PSDP / M&E Designer

Risk / Constraint	Design Stage Information / Required Contractor Control
Oil tank and residual fuel	The existing oil tank and redundant oil lines are to be drained and removed. Confirm fuel removal, ventilate as required, prevent ignition sources, use spill containment and dispose of fuel/oily residues through licensed routes.
Boiler and flue removal / lifting	Existing boilers, shunt pumps and flue sections are heavy and awkward. Prepare lifting/dismantling plans, confirm access and floor capacity, use suitable lifting equipment and establish exclusion zones.
Gas accumulation in services pit	The open pit may act as a low-level gas reservoir. Openings are to be sealed gas-tight with a proprietary fire-rated system and gasketed access hatch. Atmosphere testing is required before any pit access.
Boiler / flue removal	Existing boilers and common flue sections are heavy and awkward. A lifting plan, controlled dismantling sequence, suitable lifting equipment and exclusion zones are required.
Roof penetration and work at height	New flue penetration and making good of the redundant penetration require safe roof access, edge protection / fall restraint, weather controls and coordination with roof structure.
Hot works and combustible residues	Cutting and welding may be required near old oil lines, insulation and gas services. Oil lines shall be drained and cleaned; gas services isolated; hot-work permits and fire watch implemented.
Heating system pressure and hot water	Existing LPHW systems may retain pressure and high-temperature water. Drain down, cooling, isolation and verification are required before opening pipework.
Electrical isolation / MCC replacement	Existing MCC and controls may contain multiple incoming supplies or backfeeds. Lock-out/tag-out, proving dead and identification of retained circuits are required.

School occupancy and loss of heating	Programme outages to minimise disruption. Maintain segregation and provide contingency arrangements for delayed commissioning or cold weather.
Fire compartmentation	All disturbed penetrations and the service pit sealing shall use tested systems installed by competent personnel with product data and photographic records.
High-level Sports Hall unit heaters	Removal and installation of 4 No. high-level unit heaters at approximately 6.1 m floor-to-ceiling height creates work-at-height and dropped-object risks. Use suitable MEWPs/scaffolds, exclusion zones and controlled lifting; coordinate works with Sports Hall occupancy.
LPG tank compound / delivery interface	The nominated LPG supplier will provide the bulk tank and first-stage regulator; the Contractor provides the compound and downstream works. Coordinate tank orientation, exclusion zone, delivery access, lifting and final interface before construction.
Underground LPG main / access road crossing	A new 32 mm PE LPG main crosses external grounds and an access road/hardstanding. Locate existing services, control excavation, vehicle/pedestrian interfaces, trench safety, pipe protection, warning tape, testing and full reinstatement.
LPG gas testing, purging and commissioning	LPG presents fire/explosion and asphyxiation hazards. Gas work shall be by competent registered personnel using approved tightness testing/purging procedures, controlled ignition sources, exclusion zones and emergency arrangements.
Gas detection / emergency shutdown	Gas detection panel, LPG detector, CO detector, emergency stop and slam-shut valve form a hardwired safety system. The system shall be fully installed, commissioned and proven before boiler operation; BMS monitoring shall not bypass safety functions.
Electrical isolation / MCC replacement	Existing MCC and connected services may have multiple sources or retained circuits. Implement lock-out/tag-out, prove dead, verify incoming MDB supply, segregate live services and coordinate all BMS/fire-alarm interfaces.
Commissioning and combustion products	Boilers shall not operate until flue integrity, ventilation, condensate, gas proving, controls, safety devices and CO protection are confirmed. Combustion analysis and certification are required.

6.4 Schedule 1 Particular Risks

The works are expected to involve work at height, lifting of heavy plant, high-level work within the Sports Hall, roof work for the new flue, excavation for the LPG main, work adjacent to school traffic routes, removal of an oil tank and fuel residues, installation/testing of LPG services and work within a constrained plantroom. The PSCS shall review the Schedule 1 particular risks as the construction methodology develops and include any additional particular-risk controls in the Construction Stage Safety and Health Plan.

6.5 Designer's Risk Assessment

The M&E Designer's Risk Register / Safety in Design Assessment is included in Appendix D and shall be considered by tenderers when pricing, programming and planning the works.

7.0 Construction Materials and Substances

The following materials and substances may be present or used during the works. This list is not exhaustive and shall be developed by the PSCS as part of the Construction Stage Safety and Health Plan. Copper or multilayer composite barrier pipework, valves, fittings, insulation and associated jointing materials.

- Natural gas and residual gas within existing pipework.
- Heating-system water containing corrosion debris, sludge and chemical inhibitor.
- Residual fuel oil and contaminated residues within redundant oil lines.
- Condensate from gas condensing boilers, including neutralisation media where specified.
- Steel / copper pipework, valves, pumps, plate heat exchanger, pressurisation equipment and expansion vessels.
- Boilers, flue components, insulation, sealants, gaskets and weathering materials.
- Chemical cleaners, flushing agents, inhibitors and biocides where specified.
- Fire-rated sealing screed, mineral-wool backing, fire collars, wraps and sealants.
- Electrical cables, isolators, control panels, sensors and BMS components.
- Waste materials including boilers, flues, pumps, oil lines, controls, insulation, packaging and potentially contaminated absorbents.

The PSCS shall maintain a register of hazardous substances and Safety Data Sheets (SDS) and shall ensure appropriate COSHH / chemical risk assessments, storage, PPE and disposal arrangements are in place.

8.0 Site Wide Elements

8.1 Site Access and Egress

Contractor access and egress shall be agreed with the Client and Employer's Representative. Access routes shall be kept clear and shall not obstruct emergency access, pedestrian routes, exits or operational building entrances.

8.2 Pedestrians and Building Users

Existing pedestrian routes shall be maintained where possible. Where routes are affected by the works, alternative safe routes, signage, barriers and temporary controls shall be provided.

8.3 Site Traffic and Deliveries

Deliveries shall be planned to avoid peak building-use times where practicable. Vehicles shall not obstruct entrances, sight lines, emergency access, escape routes or public roads. A banksman shall be used where reversing or restricted visibility creates risk.

8.4 Noise and Vibration

Noisy works shall be agreed in advance with the Employer's Representative and building management. Noisy operations shall be programmed to minimise disruption to teaching, training and administration activities.

8.5 Dust and Water Hygiene

Dusty works and flushing works shall be controlled to prevent nuisance, contamination, slips or damage to finishes. Affected outlets shall be labelled or isolated during works and shall not be returned to service until verified.

8.6 Off-Loading and Storage

Materials shall be stored in agreed areas only. Storage shall not block access routes, plantrooms, doors, fire escape routes, corridors or operational areas. Materials shall be stored securely to prevent unauthorised access.

8.7 Site Accommodation and Welfare

Welfare arrangements shall be provided or agreed by the PSCS in accordance with statutory requirements. This shall include access to toilets, washing, drinking water, rest facilities and first aid.

8.8 Security

The PSCS shall maintain site security, signing-in procedures and access control. Work areas shall be segregated from staff, students, visitors and members of the public at all times.

8.9 Fire Safety

The existing fire safety arrangements shall be maintained. Fire escape routes shall remain clear. Fire detection shall not be isolated without agreement and shall be reinstated immediately after works. Hot works shall be controlled by permit and fire watch.

8.10 Temporary Electrics

Temporary electrical installations shall be designed, installed, tested and certified by competent persons. 110V tools shall be used where applicable. Existing circuits shall be isolated, locked off and proved dead before works.

9.0 Overlap with Client Undertaking

The works are within an existing education / training building and may overlap with Client operations. The Contractor shall liaise with the Client, Employer's Representative and building management to ensure safe coordination of all works.

9.1 Fire / Emergency Procedures

The Contractor shall follow the Client's fire and emergency procedures and shall ensure all operatives are inducted on emergency routes, assembly points, alarm procedures and emergency contact arrangements.

9.2 Client Rules for Contractors

The Contractor shall comply with the Client's site rules, safeguarding requirements, access restrictions, signing-in procedures, parking arrangements, security requirements and any additional requirements advised at the pre-start meeting.

9.3 Client Operations

The works may overlap with school operations and retained building services. The Contractor shall liaise with the Client, Employer's Representative and school management to coordinate access, heating outages, fire precautions and emergency arrangements.

10.0 Site Rules

10.1 Prevention of Nuisance

Noise shall be controlled and noisy works agreed in advance.

Dust, debris and flush water shall be controlled and removed as works proceed.

Waste shall not accumulate outside agreed storage areas.

Pollution of drainage, external areas or water services shall be prevented.

Work areas shall be left clean, safe and secure at the end of each working period.

10.2 PPE

The PSCS shall assess PPE requirements and ensure appropriate PPE is worn by all operatives and visitors. Minimum site PPE shall be defined by the PSCS and shall include additional PPE for task-specific risks such as eye protection, gloves, respiratory protection, hearing protection and fall protection where required.

10.3 Work at Height

Work above ceilings, access to attic spaces and high-level services works shall be planned and carried out using suitable access equipment. Ladders shall only be used where risk assessed and appropriate for short duration tasks. Mobile towers, podium steps or MEWPs shall be used where required.

10.4 Manual Handling

The Contractor shall risk assess manual handling of tanks, water heaters, pipework, access equipment, tools and materials. Mechanical aids or team lifting shall be used where required.

10.5 Hot Works

Hot works shall be avoided where practicable. Where unavoidable, a hot works permit shall be implemented, combustible materials shall be removed or protected, appropriate extinguishers shall be available and a fire watch shall be maintained after completion.

10.6 Isolation and Permit to Work

Isolation of electrical, water or heating services shall be planned, agreed and recorded. Electrical works shall be isolated, locked off and proved dead. Water systems shall be drained down and made safe before cutting into pipework.

10.7 Reporting of Accidents and Dangerous Occurrences

The PSCS shall report and record all accidents, incidents, near misses and dangerous occurrences in accordance with statutory requirements. The Employer's Representative shall be notified of all such events.

10.8 Safe Pass / CSCS

The Contractor shall demonstrate compliance with SOLAS Safe Pass and CSCS requirements for their own personnel and sub-contractors.

11.0 Continuing Liaison

This Preliminary Health and Safety Plan reflects the project information available at tender stage. The Plan shall be reviewed and developed by the PSCS as the project progresses. Health and Safety shall be a standing agenda item at project meetings.

Designers shall notify the PSDP / PSCS of design changes which materially affect health and safety.

The PSCS shall notify the PSDP / Employer's Representative of unforeseen hazards, changed conditions or proposed alternative methods that affect risk.

Service shutdowns and access restrictions shall be agreed in advance with the Client / Employer's Representative.

The PSCS shall coordinate contractors and sub-contractors to prevent conflicting works, unsafe interfaces and uncontrolled service interruptions.

Any design or construction change shall be assessed before implementation and recorded in the Construction Stage Safety and Health Plan and Safety File as required.

12.0 Information to be Supplied by PSCS with Tender

Tenderers shall include sufficient information with their tender to demonstrate their ability to manage the health and safety requirements of the project. As a minimum, tenderers shall provide:

Outline Construction Stage Safety and Health Plan.

Project-specific outline programme identifying shutdowns, out-of-hours works, access requirements and commissioning sequence.

Confirmation of acceptance of PSCS role, where applicable.

Safety Statement, insurances and evidence of competence.

Outline RAMS for key activities including water isolation, drain down, attic tank removal, work above ceilings, electrical isolation, USWH replacement, BCWS installation, fire stopping, flushing and disinfection.

Details of proposed site supervision and safety management arrangements.

Traffic management, segregation and access control proposals.

Waste management proposals.

Emergency contact and first aid arrangements.

Proposals for development and delivery of the Safety File.

Appendix A - Suggested Format for Developed Safety and Health Plan

Section	Required Content
1.0 General	Description of project, person responsible for PSCS duties, contractor safety policy and project objectives.
2.0 Organisation and Management	Organisation chart, safety responsibilities, named supervisor, safety officer where required, emergency contacts and contact numbers.
3.0 Health and Safety Standards	Standards, legislation, procedures, permits and contractor rules to be applied.
4.0 Communication and Coordination	Arrangements for inductions, toolbox talks, coordination meetings, contractor briefings and information exchange.
5.0 Risk Assessments and Method Statements	RAMS for all high risk and task-specific activities, including subcontractor RAMS.
6.0 Particular Risks	Controls for occupied-school interfaces, live services, oil tank removal, LPG compound and gas-main works, excavation, work at height, Sports Hall high-level unit heaters, lifting operations, roof/flue works, hot works, electrical isolation, fire-alarm/BMS interfaces and commissioning.
7.0 Emergency Procedures	Fire, accident, first aid, evacuation, spill, flooding and emergency service arrangements.
8.0 Welfare	Toilets, washing, drinking water, rest facilities, first aid and hygiene controls.
9.0 Training and Competence	Safe Pass, CSCS, electrical competence, manual handling, working at height, hot works and task training.
10.0 Site Rules	Access, PPE, segregation, traffic, housekeeping, waste, permit to work and reporting requirements.
11.0 Safety File	Arrangements for collecting as-built drawings, certificates, manuals, fire-stopping records and commissioning data.
12.0 Monitoring and Review	Site inspections, audits, incident review, corrective actions and close-out arrangements.

Appendix B - Information Required for Safety File Prior to Practical Completion

The Contractor / PSCS shall provide the following information to the PSDP / Employer's Representative before Practical Completion. Delay in submission of required Health and Safety File information may delay Practical Completion.

- As-installed mechanical, gas, flue, condensate, electrical and controls drawings.
- Boiler cascade O&M manuals, warranties, commissioning records and combustion-analysis reports.
- Gas installation, soundness, purging and commissioning certification; gas detection and emergency shut-off test records.
- Flue manufacturer data, installation certificate, support details, terminal location record and roof weathering details.
- Pressure-test certificates, flushing / cleaning records, chemical dosing records and final water-treatment analysis.
- Pump, plate heat exchanger, pressurisation unit, expansion vessel, safety valve and control settings.
- Electrical test certificates, MCC schematics, circuit schedules, controls points list and BMS commissioning records.
- Fire-stopping certificates, product data, installer records and photographs of concealed works.
- Service-pit sealing system data, tested detail, installation records and access-hatch load / gasket information.
- Waste-transfer records for boilers, oil lines, flues, pumps, insulation and hazardous residues.
- Roof-work completion / warranty information and photographs of new and redundant flue penetrations.
- Updated risk information and maintenance access requirements for the completed Safety File.

Appendix C - Legislation Applicable to Construction Sites

- Safety, Health and Welfare at Work Act 2005.
- Safety, Health and Welfare at Work (Construction) Regulations 2013, S.I. No. 291 of 2013, as amended.
- Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2021, as amended.
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006, as applicable.
- Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, as amended.
- Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations, as applicable.
- Fire Services Acts 1981 and 2003.
- Building Control Acts and Building Regulations, as applicable.
- I.S. 10101 National Rules for Electrical Installations.
- Relevant Irish, British and European Standards, Codes of Practice, HSA guidance and manufacturer's instructions.

Statutory Construction Forms

- AF1 - Notification by Client to HSA where applicable.
- AF2 - Notification by PSCS to HSA where applicable.
- CR / GA forms for lifting equipment, hoists, MEWPs, excavations and related plant where applicable.
- WH1 - Work Equipment for Work at Height Inspection Form where applicable.
- IR1 - Form of Notice of Accident.
- IR3 - Form of Notice of Dangerous Occurrence.

Appendix D - M&E Designer Risk Register / Safety in Design Assessment

SAFETY IN DESIGN - M&E RISK ASSESSMENT REPORT

Revision T1



Project Name: **Coláiste Cois Siúire Boiler Upgrade Emergency Works**

Project Address: **Mooncoin, Co. Kilkenny**

Project Description: **Boiler Upgrade works within an existing plantroom**

Project Number: **26-021**

This report provides our understanding of any unusual hazards to the future workers on the project. All buildings present potential hazards during construction, during operation, in their maintenance and in demolition. We assume that all parties act reasonably, understand the normal risks in and around buildings and take all reasonable care and precautions in what they do.

LOCATION OF WORKS

Coláiste Cois Siúire
Mooncoin, Co. Kilkenny

DESCRIPTION OF WORKS

Decommission and removal of existing Oil Boilers and upgrade with new condensing Gas boiler cascade

- > (Mech) Demolition of existing boiler system
- > (Mech) new Boilers, header and gas connections and gas tank
- > (Elec) Disconnection and reconnection of power for boilers, new MCC panel control wiring

TIME FRAME

Time Frame TBC:

Refer to Main Tender Documentation

HEALTH & SAFETY PRINCIPLES AND OBJECTIVES

The client and PSDP are committed to an injury free, safe and healthy workplace, and to its continual improvement. The specific safety objectives are:

- Zero Lost Time Injuries.
- Zero Dangerous Occurrences.
- Zero Health and Safety Authority prosecutions, prohibition notices, improvement notices, improvement directives and advice notes.
- Promote a safety culture by the provision of information and training.
- To maintain existing hygiene standards
- Restrictions which may affect work:
 - Existing Services
 - Electrical & Mechanical Services
 - Access at all times for emergency service vehicles.
 - Parking of site plant and vehicles shall not interfere with sight lines of exiting vehicles; if sight lines are impeded and motorists cannot safely enter onto public roads or access in and around the facility, alternates such as flagmen will be used
 - Parking of site plant and vehicles shall not obstruct any entrances overnight.

ENVIRONMENT

Colaise Cois Siuire is located within a village and has high footfall and traffic

The site is surrounded as follows;

North	Main Road
South	Playing Fields
East	Argicultural Land
West	Argicultural Land

Project Name:	Coláiste Cois Siúire Boiler Upgrade Emergency Works
Project No:	26-021
Project Manager:	John Hayes - EnerJ Building Services Engineering
Assessment By:	John Hassett - EnerJ Building Services Engineering

Risk Rating (RR.) = Severity (S) x Probability (P)	
RATING FOR SEVERITY AND LIKELIHOOD	RISK RATING
1 = LOW 2 = MEDIUM 3 = HIGH	1,2 =LOW 3,5 =MEDIUM 6,9 = HIGH

Risk Register								
Activity Info			Risk					
Risk ID	Activity/Task	Hazard Identification	Who is at Risk	Likelihood	Severity (1-3)	Total Score (Risk)	Action at Design Stage	Possible Control Options
1	Existing oil-fired boiler plant and fuel oil services	Residual fuel oil, hot surfaces and stored energy during isolation and decommissioning.	Operatives, school users	2	3	6	Design removes the redundant oil-fired boiler plant and associated fuel oil services.	Confirm shutdown and cool-down. Isolate all energy sources, drain oil lines, control spills and keep ignition sources away from residual fuel.
2	Removal of 2 No. existing boilers and shunt pumps	Heavy and awkward plant; crush, trapping and manual-handling hazards during dismantling and removal.	Operatives	2	3	6	Existing boilers and associated shunt pumps are to be fully removed to allow the replacement modular cascade.	Prepare a lifting/removal plan. Verify weights, routes and floor capacity; use certified lifting aids, competent operators and exclusion zones.
3	Drain down and removal of existing oil tank	Residual oil, vapour, fire, environmental contamination and unstable load during removal.	Operatives, environment	2	3	6	Existing oil tank is identified for drain-down and removal from site.	Competent contractor to empty, clean and make safe before removal. Provide spill control, suitable lifting/transport and licensed disposal documentation.
4	Existing boiler flue removal	Falling sections, soot/condensate exposure and work at height.	Operatives, persons below	2	3	6	Existing boiler flue system is to be removed in its entirety.	Controlled dismantling sequence, scaffold/MEWP where required, exclusion zone, PPE and secure lowering of sections.
5	New Ø200 common flue and roof penetration	Falls from height, roof damage, water ingress, hot flue surfaces and concealed structural hazards.	Roofing/flue operatives, building users	2	3	6	New common flue is routed to roof; penetration to be kept high toward ridge and fully weathered.	Roof RAMS, fall prevention, weather monitoring, verify structure/services, independent supports, temporary weathering and competent roofing/flue installers.
6	Excavation for new Ø32 PE LPG gas main	Contact with unidentified underground services, trench collapse, slips/trips and public access.	Operatives, school users	2	3	6	Gas route is shown from the LPG compound to the boiler house with sand surround, compacted backfill and warning tape.	Permit to dig, service drawings/scanning, trial holes, controlled excavation, trench support as required, barriers and prompt backfilling/reinstatement.
7	Gas main crossing internal access road	Vehicle interface, damage to installed pipe, open excavation and inadequate reinstatement.	Operatives, school users, drivers	2	3	6	Tender drawing requires suitable protection and full reinstatement where the gas route crosses roadway/hardstanding.	Traffic management, barriers, banksman where needed, agreed shutdown/route diversion, protective installation detail and reinstatement suitable for vehicle loading.
8	New LPG tank compound and access path	Excavation/concrete works, plant movement, exclusion-zone breaches and unauthorised access.	Operatives, school users, public	2	3	6	Nominal 1 tonne LPG tank area includes 4.5m x 3.5m concrete base, 1.8m secure mesh enclosure, outward-opening gate and 1m access path.	Secure work zone during construction. Maintain required 3m separation, coordinate deliveries, install warning signage and prevent access by students/public.
9	LPG tank / first-stage regulator supplier interface	Interface failure between contractor and nominated LPG supplier may create unsafe connection, delivery or commissioning conditions.	Operatives, school users	2	3	6	KCETB arranges LPG supply; nominated supplier provides bulk tank and first-stage regulator. Contractor provides compound and downstream installation.	Agree responsibilities, connection point, tank orientation, regulator arrangement, exclusion zones, delivery access and commissioning sequence before work starts.
10	LPG pipework installation, testing and purging	LPG release, fire/explosion, cold burns and ignition during testing/purging/commissioning.	Operatives, school users	2	3	6	New underground PE and above-ground steel LPG installation includes second-stage regulation and isolation.	Registered competent gas personnel only. Pressure/tightness testing, controlled purge to safe location, ignition control, gas monitoring and certification.
11	Gas detection, slam-shut and emergency controls	Failure or incorrect wiring could allow gas flow during alarm/fire conditions.	School users, operatives	2	3	6	Independent gas safety system includes LPG detector, CO detector, gas detection panel, key-release emergency stop and slam-shut valve with fire-alarm interface.	Specialist commissioning and cause-and-effect testing. Prove detector alarms, valve closure, fire alarm interlock, manual reset and fail-safe operation before boiler use.

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12	New 3-boiler gas condensing cascade commissioning	Gas leak, delayed ignition, CO production, unsafe combustion or failure of sequence controls.	Commissioning staff, school users	2	3	6	Three boilers B.01-B.03 are arranged in cascade with proprietary sequencing and common flue.	Competent commissioning, gas soundness test, ventilation/flue verification, interlock tests, combustion analysis, lead/lag proving and monitored first firing.
13	Opening and modifying existing LPHW headers	Hot water/pressure release, flooding, chemical exposure and loss of heating.	Operatives, building fabric, school users	2	3	6	Existing distribution is retained and modified at defined tie-in points around HEX.01 and circuit pumps.	Cool, isolate, drain and prove zero pressure. Protect floors/drains, identify retained circuits and coordinate shutdowns with school management.
14	Pressurisation unit, expansion vessel and safety relief	Over-pressure, vessel failure, unsafe mains connection or discharge from relief devices.	Operatives, maintenance staff	1	3	3	New PU.01, expansion vessel and associated safety devices serve the boiler cascade.	Verify vessel sizing/pre-charge, set pressures, backflow protection and safe relief discharge. Commission, label and record settings.
15	Replacement heating pumps and control valve(s)	Unexpected operation, rotating parts, hot surfaces and incorrect flow during commissioning.	Operatives, maintenance staff	2	2	4	New pumps P.01 and P.02 and associated controls/valves are included to suit retained school and Sports Hall circuits.	Hydraulic/electrical isolation, correct supports, rotation checks, balancing and controlled commissioning against verified duty.
16	Removal of 4 No. existing Sports Hall high-level unit heaters	Work at approximately 6.1m, falling objects and heavy/awkward equipment.	Operatives, persons below	2	3	6	Four existing high-level LPHW fan heaters are to be removed while retaining existing high-level distribution pipework.	Use suitable MEWP/scaffold, isolate heating/electrical services, establish exclusion zone, use lifting aids and controlled lowering method.
17	Installation and commissioning of 4 No. new Sports Hall unit heaters	Work at height, falling objects, hot water, fan movement and draught/air-distribution issues.	Operatives, school users, maintenance staff	2	3	6	UH.01-UH.04 are mounted at high level with 2-port valves, EC fans, 0-10V control and proprietary destratification hoods.	Certified access equipment, secure supports, isolate before servicing, verify clearances, valve operation, fan direction/speed and discharge pattern during commissioning.
18	New MCC.01, BMS front end and fire-alarm interface	Electric shock, arc fault, unidentified supplies, control malfunction or unintended loss of safety systems.	Electrical operatives, school users	2	3	6	New MCC.01 serves boiler/pump controls; BMS front end is at Reception with CAT6 and fire-alarm interface cabling.	Lock-out/tag-out, prove dead, identify all circuits, maintain segregation, coordinate with controls specialist and fire alarm contractor, then point-to-point test all interfaces.
19	Hot works in plantroom / gas service areas	Ignition of residual oil, LPG or combustible materials; fire spread.	All persons	2	3	6	Prefabrication and mechanical joints should be used where practicable; gas and oil services are being removed/installed in the same project.	Permit to work, confirm gas/oil isolation, remove combustibles, provide extinguishers/fire blankets, continuous fire watch and post-work inspection.
20	Occupied school interface, deliveries and temporary work zones	Unauthorised access, collision, noise/dust exposure or disruption to school operations.	Students, staff, visitors, operatives	3	3	9	Works occur within an operational school and extend from boiler room to Sports Hall and external LPG compound route.	Secure segregation, signage, supervised deliveries, agreed working hours, daily liaison, maintain emergency routes and programme disruptive works outside peak occupancy where practicable.
21	Asbestos / unknown hazardous materials	Exposure when disturbing old insulation, gaskets, panels, roof materials or buried services.	Operatives, occupants	2	3	6	No intentional asbestos disturbance is identified in the design information.	Review available asbestos information before work. Stop and report suspect material; arrange survey/analysis and licensed removal where required.
22	Chemical cleaning, flushing and inhibitor dosing	Chemical burns, inhalation, spills, uncontrolled discharge and slips.	Operatives, environment	2	2	4	Heating system is to be flushed, chemically cleaned, dosed and water quality verified before handover.	SDS/chemical assessment, controlled dosing, suitable PPE, spill response, approved discharge arrangements and final water-quality testing.
23	Fire stopping and new/alterd service penetrations	Loss of fire compartmentation or gas/smoke migration if penetrations are inadequately sealed.	Building occupants	2	3	6	New gas, electrical and flue penetrations must be sleeved/sealed and fire stopping reinstated where ratings are affected.	Use tested proprietary systems installed by competent personnel. Inspect before concealment and provide product data, photographs and certification.
24	Future maintenance of high-level unit heaters and flue	Unsafe access for inspection, cleaning, valve servicing or equipment replacement.	Maintenance staff	2	2	4	Unit heaters are at high level and boiler/flue plant requires routine access; layout is to maintain service clearances.	Confirm maintainable access, isolation points and clearances. Include access method, equipment data and residual-risk information in the Safety File/O&M manuals.