



CONSULTING
ENGINEERS
LTD

Works Requirements V1

Electrical Works
at

**Shannon Valley
Co. Roscommon**

March 2026.

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Section A – Contract Works

A.1 PROJECT PARTICULARS

Note.

The general specification (Part B) is a general document covering standards and procedures and quality. It is not the scope of works.

If options will save money a quality review will take place after the tender to review these. There will be no costs to the client for adhering to what they have asked for, regardless of any caveats or notes with the tender.

Installation work to be carried out by qualified staff with minimum 3 years post apprentice experience. fully conversant with the relevant rules.

We will require Collateral Warrantees directly between the Contractor and the Client.

PROPOSED DEVELOPMENT

The works consist of the supply, delivery, installation on site, and commissioning of the Electrical Services at the proposed development.

All services are to be concealed, and where exposed of the highest standard, both for visual appeal, but also durability.

CONSTRUCTION

The building is a concrete ground floor slab and timber joists upstairs.

The site will NOT BE in occupation during the works.

SCOPE OF WORKS

The works include for the full scope of electrical services. The works to comprise the supply delivery, installation on site including all handling and accessories of:-

- Liasing with Utility providers – ESB and EIR
- Distribution
- Lighting installation
- Light fittings,
- Switches / faceplates / controls
- General services
- Face plates
- Fire alarm installation
- Mechanical Plant
- Television
- A/V system
- Data installation
- Structured wiring
- Controls wiring and attendances
- Electrical Services to Mechanical Plant.
- Site lighting including the decommissioning and removal of the existing site poles.
- Earthing
- Testing
- Record drawings & maintenance manuals
- Strip out of existing services, and setting up temporary services for the main contractor

For ONE-year full maintenance support is to be available. This is to be priced as part of the tender, on a separate submission.

The following specialists will be on site and will require servicing either from the mechanical or electrical contractors.

- Kitchen equipment supplier. Connecting up part of electrical

All lights to be standard white finish, for example 9W LED dimmable downlights, 6" pendant BC white with a LED 60W bulb, 42W LED wall lights
OSRAM, GE Lighting or Philips. only lamps or equal and approved.

All lights that penetrate the ceiling to be either fitted with fire hats, or be fire rated, whichever is more economic

Equipment is to be installed in accordance with the manufacturers requirements and with due regard for Safety and Health at Work requirements.

We have made the applications but following up and chasing the utilities will be carried out by the contractor. Liaison and organising the ESB and Phones Provider will form part of these works.

Preliminaries, and enabling works are to be included in you tender bid and no variation claim will be accepted for these items. All capital contributions will be paid by the Client direct. The contractor shall ensure that the requirements of the Local County Council and other statutory bodies are being adhered to completely.

QUALITY NOTES

Brackets are not a luxury item, and gallband is not to be used as a matter of course, and agreement sought and received where it is used.

Liaise with the electricity supply company, as necessary to ensure suitability of supply and earthing arrangement, and to ensure connection when required.

Install, test and commission the electrical work in accordance with the ETCI, and the requirements of the electricity supply company to provide a safe, well insulated, earth protected system capable of supplying the anticipated maximum demand using only fully qualified staff.

Accessories necessary to complete the installation to be types recommended for the purpose by relevant equipment manufacturer.

In locations where moisture is present or may occur, use corrosion resisting fastenings and avoid contact between dissimilar metals.

Comply with restrictions on the cutting of holes, chases, notches, etc. in structural elements, as directed by the Structural Engineer.

Cable routes to be straight and vertical or horizontal unless shown otherwise. Concealed cable runs to wall switches and outlets to be vertically in line with the accessory.

Conceal cables wherever possible; obtain approval of locations where exposed to view.

Position cables at least 150 mm clear of other services. Cables running parallel and adjacent to heating pipes to be located below the pipes.

Sleeve cables passing through masonry walls.

Do not run cables in spaces where they will be surrounded or covered by insulation. Where this is not practical, size cables accordingly and inform CA.

Protect cables in plaster with galvanized steel channel.

All services are to be concealed, and where exposed of the highest standard, both for visual appeal, but also durability.

The works include the full supply delivery to site, putting in place, securing and connecting up, with all measures necessary for commissioning, and final commissioning, testing and final hand-over to the client, including detail man to man instructional walk-through for the hotel staff, and maintenance contract for one full year as part of the package.

It will be a condition for the award of this Contract that the contractor must be able to produce promptly on request a tax clearance certificate. In the case of a non resident, a statement from the Revenue commissioners will be required.

Mechanical or Electrical services shall NOT be erected without having met and agreed the services routes with the other specialist contractors.

These inter-services meetings are all to be minuted, and the minutes circulated.

GENERALLY

The preceding comprises a description of the works, and a note on the requirements under BCAR.

The general specification is there as support information should there be a detail query. In all cases the manufacturers requirements take precedence, but where conflict occurs we are to be notified prior to any work, in good time so there can be no delays on site.

The lowest tender may not be the accepted tender. Previous experience and the team proposed will form part of the qualification process. The contracts manager and foreman shall be identified as part of the Tender submission.

A list of equipment has been included. Where specific materials or equipment are named, alternatives can be considered. **However**, any alternatives have to be submitted with a quality review sheet, with two columns indicating the primary functions and quality points identifying the pros and cons for each element to allow prompt reviews and consideration. Costs have to be identified as part of this matrix. Running costs can also be considered as part of this process.

Periodically the **ELECTRICAL** contractor must co-ordinate an on site meeting with the other contractors. This is to be minuted. The meeting is to have an agenda to include who is delivering what. The equipment size. Sketches of plant areas, with plant roughed out. Details of all wiring requirements, and what links to where. CMD are to be part of this process.

The particular specification provides site specific details of particularly important areas of the design. . It is to be read in conjunction with the drawings, additional information and any data sheets at the end of this specification, the general specification, the drawings and all other contract documentation. Any apparent contradictions between tender documentation should be queried with the Employer's representative during the tender process. In the case where a contradiction is not highlighted it will be at the discretion of the Employer's Representative to decide which document takes precedence. In the case of all standards outlined in this and other contract documentation it is to be taken that the latest version or superseding standard is the relevant standard. (The precedence of information as defined within the Contract will still stand on all other matters.)

Any pipework or conduit systems used in the screed shall be suitable and approved for that use.

Cables in conduit in the screed must be pulled in after the screed is poured.

Include for liaising with statutory bodies, where their service is required

The installation must comply with the current relevant regulations, and the current Building Regulations.

The works include the full supply delivery to site, putting in place, securing and connecting up, with all measures necessary for commissioning, and final commissioning, testing and final hand-over to the client, including detail man to man instructional walk-through for the client, and maintenance contract for one full year as part of the package.

Including removal from site of all rubbish and debris and any consumable items required to provide a complete and operational system.

Failure to attend site will not be accepted as a reason for issues once started

A foreman is to be on site at all times familiar with Electrical modern building procedures. He will be required to counter-sign all test sheets. The contracts manager and foreman shall be identified as part of the tender submission.

Any works in and around finished areas is to include making good, and where there is a painted finish, this surface is re-instated and primed ready for a finish coat of paint.

All equipment delivered to site, off-loading and placing in position, and removal to licensed waste for all

waste.

Sleeve items passing through masonry walls.

BCAR

Please note the following as no exceptions can be or will be accepted.

Under the building regulations CMD are to be notified a minimum of 5 working days in advance of major milestones. This for example is the laying of underfloor pipes. If we do not get adequate notice the Assigned Certifier is required to ask the works to be proven, but where this requires visual inspection, they have asked for floors to be lifted and fully replaced from scratch.

The Government inspector has the same authority, so early notice avoids any issues later.

CE

All materials installed must have determined and provided as part of the submission confirmation on the requirements for a "CE" mark, and the product must be marked CE but the accompanying certificate is to be provided

SAFETY

All services serving the existing property are to be made safe, BEFORE works commence.

The ESB MUST be contacted by the contractor, and met to review the incoming supply points, to allow them to be made safe.

The builder will require a builders supply, and as such an ESB supply should be made secure and safe and a temporary supply provided to the builder.

All staff must have a safe pass, and each company shall have a completed safety file prior to commencement approved by the Health & Safety Co-ordinators for the site.

PROGRAMME

The successful tenderer will be expected to commence on site with a full work-force immediately on appointment.

The contracts manager and foreman shall be identified as part of this tender submission.

Tenderers are required to attend site, prior to submission. Failure to attend site will be an automatic disqualification.

A.3 MAIN AND SUB-MAIN DISTRIBUTION

The tenderer shall allow for attendances on, co-ordination and general contract management of the ESB Networks connection. CMD will do the initial application but the electrical contractor will do all further liaising with ESB.

The Main Board/Consumer unit shall comprise earth leakage, overload, under current, overcurrent protection as required, and shall have surge protection included.

Every electrical circuit shall be protected against excess current and / or overload, by Fuses, Circuit-Breakers, overloads, or other devices which will operate automatically at values related to safe current values.

Each circuit way is to be permanently labelled so as to clearly identify circuit and rating.

MAIN CABLING

Incoming main	3 x 16sq – PVC/ SWA/ XLPE
Heat pump	3 x 10sq – PVC/ SWA/ XLPE

MAIN SUPPLY POINT

Location	New ESB meter cabinet
Manufacturer and reference:	Capital or BMC Switchgear or equal.
Rating:	100/80 Amp Breaking
Supply characteristics:	SP & N 50Hz
Protection:	IP 65
Standard:	Form 3 Type 2 TBC by supplier
Enclosure:	METAL / SURFACE / COLOUR T.B.A.

MAIN DISTRIBUTION BOARD

Manufacturer and reference:	Hagar or equal.
Rating:	80/63 Amp Breaking
Supply characteristics:	SP & N 50Hz
Protection:	IP 55
Standard:	Form 2 Type 2
Enclosure:	METAL / SURFACE / COLOUR T.B.A.
Space	below 2.0m to top device >= 1.2m in front
Number of ways: ON COMPLETION	One per circuit plus 25% spare Add 25% for base build for construction period

A.4 FACEPLATES / Controls

Switches / Faceplates

White Click type or equal and approved.

Where face-plates or other equipment breaks the fire barrier, a metal back-box is to be used in all cases, with an **INTUMESCENT** pad fitted at second fix as part of the fire compartmentation of the area.

Switch boxes and socket outlet boxes will be double deep, pressed steel, welded and galvanised, suitable for flush mounting – ***No plastic outlet boxes will be permitted.***

Where surface mounted boxes are used, they shall be of the type with no cable knockouts.

Local isolators for equipment shall be both suitable for the environment that they are located and the electrical load they are expected to function at.

Isolators to fans with run-on facility, shall be capable of isolating the switched live, ***AND*** the permanent live feeds.

Accessories shall be suitable for either inductive or resistive loads, a working voltage of 250 volts and a test voltage of 500 volts. Current ratings shall be as indicated on drawings or particular equipment schedules.

A.5 LIGHTING INSTALLATION

LIGHT FITTINGS

Light fittings will be selected by the contractor and to be approved by the design team and client

Erection connection materials labour storage delivery etc. must all be included.

No variation will be entertained in this respect.

Before any lights are ORDERED, the lighting supplier must be brought to site, or informed by the electricians regarding the internal wiring and switching as being installed.

The electrician MUST get confirmation that what wiring system being installed is suitable for the lights

If there is a change required, this must be resolved and costed BEFORE placing the order.

Any other lights delivered without this process may involve rewiring or extra costs and must be confirmed prior to unboxing.

Fire hats or similar are deemed included to all down-lights on the drawings.

GENERAL

The security system is to include a link to a master switch on the lighting to the gardens front and rear

Garden and external lights to be controlled by switches on agreed doors, a master switch in the bedroom, PIRs. All these lighting circuits to be wired independently to lighting control panel.

Provisions for central control of all external lights is to be provided by carrying all external lighting circuits to a central location, within the dwelling, and all associated switching to the same point.

A master over-ride switch, located in the master bedroom of the house is to be provided

Lighting shall be as per the drawings. Wiring to lights shall have 1.0m long spare cable to allow fittings to

be moved at will within that range

PIR's externally are to control the range of lights in that area again from the central location. **No local wiring of PIR's to lights will be acceptable.**

All luminaires and lighting points, shall be as specified on the drawings and shall be complete with dimmable **LED type energy saving lamp warm white.**

The luminaires and equipment offered shall comply with all relevant Irish, CIBSE and British Standards and Codes of Practice and in particular with the following insofar as they apply.

Switch boxes will be double deep, pressed steel, welded and galvanised, suitable for flush mounting. **No plastic outlet boxes will be permitted.**

The light fittings will be selected by the contractor for approval by the design team and client.

Unless otherwise specified, the lighting installation shall be suitable for use on a 1-phase 2-wire 230 volt 50Hz system, carried out generally in PVC / PVC earthed neutral system insulated cable.

Most of these shall be LED loads (these may be trailing edge.

Keypads will be in a finish to match the general light switches.

Universal interface gateways (UIG's) shall be provided as indicated.

The luminaires shall be designed to operate at all voltages encountered due to the fluctuations in nominal supply voltage, as stated by the Electricity Supply Board ($\pm 10\%$).

CONTAINMENT / CABLING

Generally	Basket/ Trunking / conduit,
Outdoors	PVC / SWA / PVC
Support system	
Indoors	Trunking / conduit / cable basket
Outdoors, underground	Ducting
Outdoors, over ground	Catenary wire / surface / trunking
Areas around heated surfaces	Heat resistant cable in glass sheath

TYPICAL CABLE SIZES

Circuit	Cable Size
Lighting circuits, Fire alarms	2.5mm ^{sq.}
Lighting circuits E.D.D.	1.5mm ^{sq.}

All equipment to be matched, and compatible. All necessary accessories reqd to complete the works to the level expected by an end user.

A.5 GENERAL SERVICES

The works comprise general services, containment, power, distribution boards, metering & sub-mains,

Power for a heat pump, ventilation system and mechanical control centre will also be included.

General services, including flush socket outlets, facility for cookers, fireplace, immersions, along with power requirements and final connecting up for mechanical services.

The services shall be installed in a manner that minimises the damage to the structure. With this in mind, all service routes must be approved with the services engineer and double checked with the Architect prior to commencement of any work.

The complete general service installation shall be wired on the radial system, circuits taken from the M.D.B. boards, with circuits and phasing as shown on drawing.

Cables to outdoors will be run in armoured cable.

All conduits are to be concealed; all drilling of joists must be approved by the main contractor and structural engineer **BEFORE** starting to drill.

Socket outlets shall be 13 Amp rating, 3 pin switched shuttered pattern to B.S. 1363 suitable for flush or surface-mounting as indicted in the particular specification and mounted to appropriate boxes.

All items of Plant, Equipment or Apparatus which require attention or operation in normal use shall be so installed that they can be safely accessed. All items of Plant, Equipment or Apparatus shall be effectively earth bonded to the main terminal.

Devi mats are to be provided as per the drawings.

The Electrical Contractor shall supply and install the complete power and control wiring installation in the plant room, for all plant and equipment as installed by the Mechanical Contractor.

The Mechanical Contractor shall supply and fix in place, all equipment as supplied by the Mechanical Contractor and or associated control systems.

The Mechanical Contractor shall be responsible for the supply delivery and erection of the sensor, items of plant and the relevant actuators etc.

Where face-plates or other equipment breaks the fire barrier, a metal back-box is to be used in all cases, with an **INTUMESCENT** pad fitted at second fix as part of the fire compartmentation of the area.

Switch boxes and socket outlet boxes will be double deep, pressed steel, welded and galvanised, suitable for flush mounting – **No plastic outlet boxes will be permitted.**

Where surface mounted boxed are used, they shall be of the type with no cable knockouts.

Local isolators for equipment shall be both suitable for the environment that they are located and the electrical load they are expected to function at.

Isolators to fans with run-on facility, shall be capable of isolating the switched live, **AND** the permanent live feeds.

Accessories shall be suitable for either inductive or resistive loads, a working voltage of 250 volts and a test voltage of 500 volts. Current ratings shall be as indicated on drawings or particular equipment schedules.

A.6 FIRE ALARM

Supply deliver, install, erect on site and commission the full installation a completed fire alarm system generally as indicated on the drawings.

A dedicated power supply to a central panel located as shown on the drawings is to be provided and labelled clearly as to its function.

Commission as per IS 3218 2024 or latest edition

Provide maintenance for one full year

A mixture of both optical and ionisation type should be used. The smoke detectors shall be located at least 300mm away from any wall or light fitting.

Detectors are to be spaced a minimum 600mm apart from each other.

STANDARD REQUIRED

Standard required
Inspection,

LD 3 Grade C to IS3218:2013 + A1 2017
Initial testing, commissioning and certification to I.S.
3218: 2013 + A1 2017

Control

Test / Hush as shown on drawings

The system to include detectors in all rooms, the attics and plant rooms, not showers or toilets, with central control element

The main power to the smoke detectors is to loop through an isolator beside the main board for maintenance, and is to be labelled clearly as to its function.

A central test point with a central hush button is to be supplied and installed near the Kitchen.

Smoke detectors shall be provided with a minimum level of 10 year sealed for life, rechargeable type, Mains powered battery back-up detectors to be provided on as shown. A mixture of both optical and ionisation type should be used with optical type used on the ground floor and ionisation type on the upper floors. The smoke detectors shall be located at least 300mm away from any wall or light fitting.

Detectors are to be spaced a minimum 600mm apart from each other.

Mains Heat Detectors complete with Lithium Polymer Back-Up Battery with service life of 10 years and no user accessible. Linked to other smoke/heat detectors within the dwelling

Hush button

Make

Ei

A.11 STRUCTURED WIRING

DATA

Data points to low level	note / 450 above floor
Data points for WiFi behind TV	at around 1500 above floor
WiFi access points / Modem	not part of these works
Wifi	Fit out post completion

GENERAL

A complete structured cabling distribution system is to be provided as shown on the drawings. Include for all fixings, brackets, hangers etc. plus commissioning, and final handover. The system is to be wired with the other L.V services.

The distribution system is to be a certified Cat 6 type system and all field terminations are to be via RJ45 type connections. A full network continuity test to be carried out on the Data cable infrastructure and the full set of data test results shall be issued to CMD. All patch rails are to be 24 port RJ 45 type (1U). All patch and device leads are to be from the same manufacturer and are to be of the correct length and colour type. The contractor shall ensure that the Telecom Network provider (i.e. Eir) provide a fully operational master socket before the completion of the contract.

The incoming telephone Installation comprises the cable distribution from the incoming ETU box, to the master socket.

EQUIPMENT SCHEDULE

WIFI

A distributed Wi-Fi network (1st fix only) is to be provided as per the drawing, consisting of hub points located at high level in each of the designated spaces.

Commission all wifi equipment including repeater wifi stations.

Make`	Ubiquity
Model	POE type.

DATA

Each data point to be as follows:-

RJ45 Cat 6	2 No
2-gang single plate	per point

PHONES

From incoming point to agreed location

Poly/Poly	10 Pair
RJ45 Cat 6	2 No

A.12 CONTROLS

A complete equipment and plant controls distribution system is to be provided as shown on the drawings. The contractor shall connect up all the following equipment, the panel and actuators are free issue and placed by mechanical contractor.

It will be the responsibility of the electrical contractor to have the positions of all plant items identified and agreed before any containment is placed. The Electrical contractor must agree these with The Mechanical Contractor and obtain final approval from the Architect and CMD.

The controls will be room by room using Heatmiser controls

Linked all manifold and plant rooms positions with an 8-core 1.0sq cable and 2 Cat 6 cables.

POWER FOR PLANT ITEMS

Power to OUTDOOR unit	1
Power to Indoor unit	1
Power to CMEV units	1
Indoor sensor	1
Outdoor sensor	1
Circulation pump	1
Stat controllers	item
Pipe frost stat	1
External Temperature Probe	1
Power to each UFH Wiring Centre Heating Manifolds (1 Flow + 1 Return)	1
Link Cat 6 to Control wires (6 core 1.0 sq. back from each motorised valve)	all stats
Mixing valve sets incl DRVs 28mm dia	1 No.
Hot water control mixing valve set 22mm dia	1 No.
Thermostats (3 channel min.) Necessary contactors and relays Cylinder temperature control system	As per drg.
wiring Centre/ Controller	1 No.

Temperature sensor and valves wiring & connections for the Underfloor heating protection system.

CONTAINMENT / CABLING

Cabling for controls shall be as directed by specialist supplier.
 Specialist
 Sensors
 Room controls
 Cabling for motorised valves, and actuators

 Cabling for mains powered control items

As per manufacturers' requirements
 Beldon stranded / screened
 6 core Beldon stranded / screened
 PVC/PVC multi core, normally as
 general services
 PVC/ PVC multi-core cable, normally
 as general services

A.13 ACCESS CONTROL SYSTEMS

N/A

A.14 GENERAL DESIGN CRITERIA

CONTROL

Area:
 Porch/Front Exterior Control
 Security lights
 Hall
 Sitting
 Living Room
 Kitchen/Breakfast Dining
 Dining Room
 Utility/Stores
 Bedrooms
 Ensuite/WC's
 Plant room/Store

Control (generally)
 Local switch
 Combined photocell / PIR
 Local switch
 Local switch
 Local switch
 Local switch
 Local switch
 Lo Local switch cal switch/PIR
 Momentary Dimmers
 Momentary Dimmers/PIR
 Local switch

NOISE LEVELS

Area:
 Living Areas
 Bedrooms
 Kitchens

Noise Level (NR):
 40
 32
 45

INTERNAL HEAT GAINS

The following minimum heat loads will be used in designing the air conditioning or ventilation system:-

Area:	Watts
Lights:	15 w/m2
Machines:	250 w per person
Miscellaneous items:	10 w/m2

SYSTEM OPERATING VOLTAGES

System:	Voltage	Volt drop
LV single phase	240 V	4% total
Sub-mains		1.5%
Final circuit		2.5%
LV three phase	400V	4% total
Sub-mains		1.5%
Final circuit		2.5%

A.15 WIRING SYSTEMS / CONTAINMENT

GENERAL SERVICES

All sub-main distribution cables linking the main switchboard to the distribution centres shall be PVC sheathed steel wire armoured PVC insulated cables with copper conductors 600/100 volt grades, XLPE-insulated LSF – Bedding and over sheath : steel wire armoured stranded copper conductor to B.S. 6724 : 1986

Final sub circuit cables unless otherwise stated shall be 450/750 volt grade, PVC insulated stranded copper type in accordance with B.S 6004 : 1969 and amendments, to run in conduit and or trunking as set down and described elsewhere.

Cables shall be of adequate rating in accordance with the Table contained in the National Rules for Electrical Installations.

All cables shall be protected in conduits or trunkings, placed on cable trays, in U.G. pipe ducts or trenches, or safeguarded so as to prevent danger.

All joints and connections in conductors where approved by the Electrical Engineer / Clients representatives, shall be accessible for inspection and test and properly "made off" with regard to conductance, insulation, mechanical strength and protection.

GENERAL SERVICES TYPICAL CABLE SIZES

16A	6 sq.mm. -	6 sq.mm. Earth
25A	6 sq.mm. -	6 sq.mm. Earth
32A	10 sq.mm. -	10 sq.mm. Earth
50A	16 sq.mm. -	16 sq.mm. Earth
63A	16sq. mm. -	16 sq.mm. Earth

Fire Alarm Containment / Cabling

Indoors	Prysmian FP120 Gold clipped direct with fire rated fixings with red LSF/PVC outer sheath. LSF/PVC shrouds
Support	Trunking / conduit / cable basket

FIRE ALARM TYPICAL CABLE SIZES

Circuit	Cable Size
Fire alarms	1.5 ^{sq.} mm.

LIGHTING TYPICAL CABLE SIZES

Circuit	Cable Size
Lighting circuits	2.5 ^{sq.} mm.
Lighting circuits E.D.D.	1.5 ^{sq.} mm

INSTALLING CABLES GENERALLY

Cable routes to be straight and vertical or horizontal unless shown otherwise.

Concealed cable runs to wall switches and outlets to be vertically in line with the accessory.

Conceal cables wherever possible; obtain approval of locations where exposed to view.

Position cables at least 150 mm clear of other services. Cables running parallel and adjacent to heating pipes to be located below the pipes.

Sleeve cables passing through masonry walls.

Transit frames shall be used where large quantity of cables cross through structural or solid walls,

These shall be supplied by MCT Brattberg. Where smaller groups of cables are run through a structure, they shall be sealed using an RTV736 Silicon.

CABLES ENTERING BUILDING(S) FROM BELOW GROUND

Seal both ends of pipe duct to a depth of not less than 150 mm, with an approved non-hardening, non-cracking, water resistant compound. Alternatively, fit a proprietary moulded pipe-duct seal.

INSTALLATION OF STEEL TRUNKING

Unless specified otherwise the minimum gauge of metal to be used shall be 1.2mm for trunking up to 75x75 and 1.6 for larger sizes.

Where trunking is fixed upside down on the horizontal cable retaining clips shall be installed at 1000 mm intervals. Where vertical runs of trunking exceed 300mm in length, proprietary PVC coated steel cable retaining pins shall be installed around which cables shall be effectively harnessed.

Trunking lengths shall be coupled using galvanised steel couplers of equal gauge to the trunking together with a copper earth strap fixed outside the trunking. Coupling bolts and nuts shall be M6 pan head cadmium plated with the bolt heads fixed on the inner surface of the trunking.

When trunking passes through walls the hole shall be made good with cement or other suitable fire resisting material and fire barriers of glass wool or other suitable material shall be packed into the trunking and held compressed in position by means of proprietary retaining plate or trunking lid.

INSTALLATION OF CONDUIT

Conduit shall be of a standard type as specified in the NREI Part I: Clause 5.7.1 and shall be hot dipped galvanised screwed throughout.

Conduit erection shall be completed before cables are down in. Adequate allowance shall be made for variations in building dimensions so that conduits or cables are not subjected to undue stress.

A.16 EARTHING

Cross bonding is to be carried out through-out the installation, as a matter of course, irrespective of size of building, or layout.

Earth leakage circuit breakers shall incorporate overload and short circuit protection, and shall trip when an earth leakage current of 30mA or 100mA, or 10mA as required, is detected.

Individual Earth leakage circuit protection shall be provided in the following circuits:

Water heaters
Single Phase Socket Outlets,
5A light circuits
Bathroom lights

Provide for Lightning protection for the 3No. lead/zinc roofs shown on the Architect's drawing. Provide for bonding the lead/zinc roofs with 16sq.mm green PVC earth conducts sleeved in galvanised steel conduit to earth rods in pits for 4No. locations.

The down conductors shall be built in during wall construction.

All labelling and identification shall be in accordance with the relevant regulations, standards and codes of practice.

A.17 ELECTRICAL TESTING

During the progress of the Works and upon completion, the Contractor shall carry out such tests and provide such apparatus, instruments and materials as the Engineers may consider necessary and as may be reasonably demanded to prove compliance with the Standards and Codes of Practice required for the Contracted Works.

Such tests shall include:-

- Earthing & loop impedance tests
- Insulation Resistance Tests
- Continuity Tests
- Working Tests
- Simulated Fault Tests. (Short circuit, overload, earthing, no voltage).

Such tests shall be carried out in the presence of the Resident Engineer who will then countersign the appropriate Test Record Sheets or Cards upon satisfactory results.

The countersigning of such Test Cards upon completion of the Works shall determine the commencing date of the twelve month guarantee period.

A.18 MOUNTING HEIGHTS / POSITIONS

Equipment	Height A.F.F.L:-
Thermostats	1500 mm
Sensors	1500 mm
Wall lights	1800 mm
Ceiling lights	on logical grid
Smoke detectors grilles	in line with lights, away from vent
Sounders	Normally to be part of base
Points in typical bedrooms General	Refer to elevation drawings
Sockets low level	450 mm to centre of back box
Sockets above worktop	150 mm above counter top
Sockets in disabled room	1100 mm
Cooker isolator	300 to side of appliance
Fan isolator	150 above door architrave

Plant isolator	150 to side, with conduit link to plant
TV point	450 mm / 150 mm above w/top
Data point	450 mm / 150 mm above w/top
Phone point	450 mm / 150 mm above w/top

Points will not be accepted, cut into architraves or reveals.

Distribution, and control boards	2000 to topmost switching device
Metering	1000 to 2000 affl
Socket outlets/Data/TV/Phone	450 mm affl
Socket outlets above work-tops	150 mm above the work surface.

Radiators	200 mm AFFL
Shower control	1200 mm
Shower head,	2000 mm

All heights to be re-confirmed prior to first fix. Where the aforementioned schedule differs from the drawings such conflicts are to be raised by the contractor prior to works proceeding.

Under no circumstances are any electrical outlets, sockets or fused spurs to be left loose or left on the ground unless specifically noted on the drawings.

Section B - Contract Particulars

B.1 DEFINITIONS

In reading this specification or any other document connected with it, the following terms shall have the meanings assigned to them:

PROJECT

Shannon Valley
Co. Roscommon

CLIENT

ARCHITECT

STRUCTURAL

QS

FORM OF CONTRACT

The form of contract will be the same form as the main contractors

The main contractor will be appointed as Project Supervisor (Construction Stage) for SHWW.

We WILL BE require Collateral Warrantees directly between the Contractor and the Client.

The successful tenderer will be expected to commence on site with a full work-force immediately on appointment. The contracts manager and foreman shall be identified as part of this tender submission. Tenderers are required to attend site, prior to submission. Failure to attend site will be an automatic disqualification.

VARIATIONS

Variations are to be priced and approved prior to any work being carried out.

A photo record of any on site changes are to be in the following format.

Photo of existing location showing works to be changed AND Photo of new location showing where the work is to move to, showing what is there already. Extract of drawing prior to the revision.

Photo of finished works location, and the original location showing clearly resolved terminations etc to make original location safe and complete.

Extract of drawing of revision

Copy of instruction, or confirmation as to who approved the changes.

B.2 GENERAL PREAMBLE

This Schedule is NOT prepared per the Rules of a Standard Method of Measurement. It is a schedule and description of the work to be done.

The schedule does not purport to exhaustively describe each task. The precise standards of materials and workmanship, where not specified in detail, are the responsibility of the contractor to deliver to the reasonable satisfaction of the architect.

The Quantities in this Schedule will NOT form part of the Contract. The Contractor takes the risk of the quantities being wrong. The quantities are the architect's conscientious measurement of the quantities involved, but are not measured or described per ARM 7 or anything like that. NOTE all quantities are NET. The contractor should determine any wastage and add for this. Wastage is the Contractor's risk.

Contractor is to take the risk as regards Specification of work elements. The specifications and descriptions are to encompass a thorough job of top class work. That's what is to be priced for no matter whether little bits of work are spelled out in detail. The work items encompass all temporary works needed to achieve each work item: props, shuttering, scaffold, the lot.

All work necessary to carry out the refurbishment to this end is to be carried out and properly executed, whether or not any individual task to achieve such is particularly set out in the following schedule.

The architect is the arbiter of what's acceptable.

The contractor shall diligently execute the works as described in this schedule and the accompanying drawings, and in accordance with any instructions as shall be issued from time to time during the course of the works, by the employer or his agents. Report all discrepancies in information and seek instructions before executing work. Follow figured dimensions, and do not scale drawings. Check all dimensions on site before executing the work.

Where products or components are specified by proprietary name, do **not** substitute without prior approval.

All materials are to be fit for their intended purpose.

Dimensions are in *millimetres* unless otherwise indicated. 'Selected' or 'Approved' means in every case, selected or approved by CMD Consulting Engineers Ltd and the Architects.

Tendering contractors will be aware that the Building Control (Amendment) Regulations apply from 1 March 2014 and that at this time of tendering.

The entire construction sector has to handle this mess created by the State and the architect will look at claims for disruption arising out of this S.I.9.

B.3 FORM OF CONTRACT

FORM OF CONTRACT

The form of contract shall be: - **see above**.

The Appendix to the Articles of Agreement and Conditions of Contract will be completed as per the attached: -

If not completed defaults will apply, but clarification **MUST** be sought to clarify the position

Elements of this section are related solely to the Main Contractor,

A	Clause 1(a) - Designated Date:	REFER TO MAIN CONTRACT
B	Clause 22(b) - Percentage for Professional Fees:	REFER TO MAIN CONTRACT
C	Clause 22(b) - Cost of Site Clearance:	REFER TO MAIN CONTRACT
D	Clause 23(a)(ii) - Minimum sum for Public Liability Insurance:	REFER TO MAIN CONTRACT
E	Clause 28 - Date for possession:	REFER TO MAIN CONTRACT
F	Clause 28 & 29(a) - Date for completion:	REFER TO MAIN CONTRACT
G	Clause 29(a) - Liquidated and Ascertained Damages:	REFER TO MAIN CONTRACT
H	Clause 31 & 35(g) - Defects Liability Period:	REFER TO MAIN CONTRACT
I	Clause 35(a) - Period of interim Certificates:	REFER TO MAIN CONTRACT
J	Clause 35(a) - Time for receipt of Interim Certificates:	REFER TO MAIN CONTRACT
K	Clause 35(a) - Time for honouring Interim Certificates:	REFER TO MAIN CONTRACT
L	Clause 35(d) - Percentage of certified value retained:	5%
M	Clause 35(f) (iii) - Period of final measurement:	REFER TO MAIN CONTRACT
N	Clause 37 - Period for serving notice of Arbitration:	REFER TO MAIN CONTRACT

B.4 PRELIMINARIES

PRELIMINARIES

Include in price for everything shown on tender drawings, everything written in this schedule; and everything to be reasonably inferred from all those documents, as being necessary for proper and complete execution of works.

SCOPE OF WORKS, SAFETY AND HEALTH

Co-ordinate all safety and health matters on site.

Prepare Safety Plan for safe execution of entire project. Prepare Method Statement for works presenting particular risks. Carefully read the Preliminary Safety and Health Plan and study the Site Limitations drawing, as these contain important project specific information and are not just "form" documents.

See all work people have Safe Pass certification, personal protective equipment. Allow nobody on site who does not have an up-to-date Safe Pass card. Dismiss anybody found otherwise. Use only CSCS registered scaffolding contractors and other specialist trades where required, e.g., crane operatives, banksmen, drivers.

SITE

Visit and inspect site before tendering.

Ascertain any local restrictions or conditions likely to affect execution of works.

No claim will be allowed on grounds of ignorance of conditions under which works will be executed.

Include for meeting main contractor for short period every day to tell them what is to be done that day and to advise in particular of any deliveries or events which may impact on them.

Take all reasonable efforts to facilitate neighbours in their comings and goings and to minimise sound, vibration and other disturbance.

PRICING OF WORK

Make no alterations or qualifications to tender documents without consent.

Price is to include for everything in documents, without qualification.

Costs of items in Detail Breakdown which the contractor leaves unpriced are deemed to be included.

Where such items are varied in quantity they will be re-measured and CMD will value the variation.

Any errors in tender received will be dealt with in accordance with the Code of Procedure for Selective Tendering,

CONTRACT GUARANTEE BOND

Provide, in a wording and from a bondsman to be subject to the architect's approval, a bond from an Insurance Company in the amount of 15% of the contract sum, to cover the employer against the extra cost arising from the default of the contractor to complete the works, whether from liquidation, bankruptcy or other causes.

The bondsman will be released from his obligations 10 working days after the architect certifies Practical Completion of the contract.

SPECIFICATION NOTES

This schedule of works constitutes the specification for project.

If any other specifications are required by contractor, architect will forward them on request.

No extra money will be paid for top quality finishes or anything else, it's all to be included in the tender price and in job.

Any chances contractor takes at tender stage on quality skimping are at his own risk.

Definitions given in this schedule apply to terms, derived terms and synonyms in all documents. Interpret any near synonymous terms in light of definitions.

When required to inform, instruct, agree, confirm, or obtain approval or instructions - do so in writing. "Instructions" means - Architect's written instructions; "Approval" means - Architect's written approval.

Published versions of NSAI or BSI documents, current at tender date, apply.

"Makers Recommendations" means - manufacturer's written or printed instructions or recommendations, current at tender date.

Where products or components are specified by proprietary name, do not substitute without prior approval.

No extra cost incurred will be allowed for in any such case.

Obviously this is a top-class job and in almost every case the particular product has been chosen and specified - so, don't change the product unless architect agrees.

Products are specified by co-ordinating size unless otherwise stated.

STATUTORY AND GENERAL OBLIGATIONS

Comply with laws, statutory instruments and recommended practice of public agencies, relating to safety, health and welfare of work force.

Main contractor will be appointed as Project Supervisor (Construction Site).

Take entire responsibility for safe carrying out of contract works.

Carefully read Preliminary Safety and Health Plan, prepare safety plan; post plan on site, inform site staff of plan, and ensure safety plan is complied with.

Prepare method statements as indicated in Preliminary Safety and Health Plan and amend as needed in the light of unfolding experience.

Provide and maintain all necessary protective and safety clothing, headgear and equipment, for workpeople, site staff, and designers' site staff.

Cartridge operated fixing tools to be designed, made and used to accord with BS 4078.

Take adequate precaution to prevent - personal injury and damage from fire;- nuisance from smoke, dust, rubbish and other causes;- damage and nuisance from storm, surface and subsoil matter.

Do not use site for any purpose other than carrying-out of Works.

Ensure that no damage is caused to roads and footpaths by site traffic.

Keep approaches to site clear of debris.

Protect, uphold and maintain all public and private services.

Do not interfere with their operation without prior appropriate consent.

If any damage results to same from execution of works, immediately - (1) notify Clients representative and service authority (2) make good to damage without delay to satisfaction of appropriate authority or owners.

Prevent damage to existing buildings and contents, gates, railings, walls, roads and other site features which are to be retained on or around the works.

Works are to be carried out in or around occupied premises.

Ascertain nature and times of occupation and use.

Carry out works to prevent nuisance. No radios on site.

No smoking on site.

Note restrictions on Site Limitations drawing and in PSHP.

There are time restrictions *per se* on what times during the day the works may be executed.

PROGRESS

Site Meetings will be held fortnightly.

Employer may attend site meetings for purpose of facilitating contractor in timely and safe execution and completion of contract.

Architect will take and distribute minutes.

Review programme fortnightly: Include information such as progress [particular and overall], numbers of labour force on site, indicating each work force category with exact description of their activities, materials ordered or on order [with earliest delivery dates] and memorandum of information required from Designers, and any time lost due to adverse weather.

If at any time it should appear that actual progress of Works does not conform to approved programme then produce revised programme at Architects request, showing modifications to approved programme as necessary to ensure completion of Works within Period for completion.

If for any reason which does not entitle Contractor to an extension of time, rate of progress of Works or any section, is at any time, in Architects opinion, too slow to ensure completion by prescribed time or previously extended time for completion, Architects shall so notify Contractor.

Thereupon take such steps as are necessary and as Architects approve, to expedite progress, so as to complete Works, or such section, by prescribed time or extended time.

Overtime will not be paid for under any circumstances whatsoever. If architect agrees with contractor that overtime is desirable, or may be worked, or is needed for completion: no payment will be made for same.

No act or omission or anything else by architect implies any commitment to certify overtime. Overtime payments are contractor's problem to be paid for out of contract sum.

INSPECTION AND PROGRESS RECORDS

Give at least 5 working days' notice before covering up completed works

Contractor to serve Commencement Notices on HSA as required under SHWW regulations.

PARTICULAR RISKS AND TEMPORARY WORKS

Provide all temporary offices, mess rooms, sanitary accommodation, and the like needed for main and contract use.

Provide temporary access and protection for all specialists to access their works at all times. ALL to be included under Attendance.

Main Contractor will provide all general and special scaffolding for execution of works.

BUILDER'S WORK

Main Contractor will execute all builder's work in connection with work by all domestic contractors, all contractors, all statutory undertakers.

WORKS GENERALLY

Where and to extent that, materials or workmanship are not fully specified, they are to be (1) suitable for their intended purpose (2) per best building practice. This means: best practice, a top quality job.

Accurately set out works. Inform CMD when setting out is complete.

Check all dimensions, on drawings on site.

Use new products throughout. Handle, store, prepare and fix products to accord with makers' recommendations, and to prevent damage to them.

Where choice of maker or of supply source is allowed for a particular product or material, entire quantity needed to complete works to be of same type, or from same maker or source. Produce written evidence of supply sources when requested.

All workmanship to be carried out by, or under close supervision of experienced tradesmen skilled in that particular kind of work.

Make adequate provision for services, including unobstructed routes and fixings. Wherever possible, form ducts, chases and holes during construction, not by cutting.

Cutting for services to be minimum needed. Obtain prior approval of sizes and locations. No notches in joists - all holes for services to be drilled, and no matter what the difficulty.

Positions of any agreed service runs to be to Architects approval and to facilitate location for maintenance and repair.

BEFORE THE ARCHITECT WILL CERTIFY PRACTICAL COMPLETION

Make good all damage consequent on work. Remove all temporary markings, coverings, protective rubbish and surplus materials.

Use cleaning materials recommended by makers of product being cleaned.

Adjust, ease, lubricate moving parts to ensure efficient and easy operation.

Organise a secondary demonstration one Month after handover to Client management the entire works, including non-technical demonstration and explanation of mechanical services, electrical services including emergency services, safe maintenance and use of fire doors and fire stopping. Answer any questions they put.

Provide "Simple Guide Handbook" as well as formal O & M manuals

SAFETY FILE

Within three months of Practical / Substantial Completion of Works, collect from all suppliers, prepare and submit to Architect and Engineers, Safety File in approved format, to include as-built drawings, makers' instructions and literature, and all commissioning certificates.

Note list appended to Preliminary Safety and Health Plan in this regard.

Submit and amend to Architect and Engineers approval.

If this isn't done, Final certificate and final release of moneys retained will not happen.

Proprietary Product Names,

Manufacturer's Names, Suppliers Names, National Standards

Where a specification or a description of a product or element of work includes a specific make or source such as a product name or manufacturers name or a suppliers name, or a National Standard, the specification or description shall be deemed to be accompanied by the words "or equivalent" notwithstanding that those exact words may not in fact accompany the name or standard. This also applies where the name or standard is accompanied by other words such as "or equal approved" or suchlike phrases.