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Corran Deel Voluntary Housing Association – Cronins Bungalow, Kilmeedy, Co. Limerick

Project Works Requirements & General Construction Specification

INTRODUCTION

This document forms part of the Project Works Requirements under the Public Works Contract (PW-CF) and is to be read in conjunction with all architectural, structural, civil, mechanical and electrical drawings, schedules and specifications issued for the project.

The purpose of this document is to describe the general construction requirements, workmanship standards, coordination obligations and compliance procedures applicable to the renovation, extension and associated site development works. It sets out the minimum expected standards for execution, safety, quality assurance, documentation, and regulatory compliance.

This document does not prescribe specific proprietary products unless expressly noted. Where products, materials or systems are referenced on the drawings, schedules or separate M&E specifications, those documents take precedence for performance criteria, technical detail and product selection.

The Contractor is responsible for :

- Ensuring all construction works comply with current Building Regulations, Irish and European Standards
- Coordinating all information across drawings, schedules and specifications
- Requesting clarification for any discrepancies prior to installation
- Ensuring that the higher or more onerous requirement applies in the event of conflicting information
- Completing all works in accordance with manufacturers' requirements, Agrément certificates and industry best practice
- Nothing in this document shall relieve the Contractor of their obligations under the Contract, Health & Safety legislation or BCaR.

- The Contractor must allow for everything necessary to deliver a complete, fully compliant and functional installation, even if items are not explicitly listed but are reasonably inferred.

SECTION 1 — PRELIMINARIES & PROJECT NOTES

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1. GENERAL REQUIREMENTS

1.1 Scope of the Works

The Works comprise all labour, materials, plant, supervision, design elements (if applicable), coordination, testing, commissioning, certification and temporary works required for:

- Renovation and refurbishment of the existing dwelling house.
- Construction of the proposed extension.
- Modifications to existing structural, architectural, mechanical, electrical and fire systems as required.
- Associated external works including site development, drainage, pavements, utilities, landscaping, boundary treatments, and ancillary installations.

All Works shall be executed fully in accordance with:

- Public Works Contract (PW-CF) and associated schedules
- The Public Works Requirements (PWR)
- Contract Drawings and Specifications
- Health & Safety Legislation
- Building Control Regulations
- All applicable Irish and European Standards

1.2 The Contract Documents

The Contract Documents consist of :

- Form of Contract and Articles of Agreement
- Conditions of Contract
- Specifications
- Drawings
- Bills of Quantities / Pricing Document

- Addenda or Clarification Notices issued pre-contract
- Employer's Requirements (if applicable)
- Programme and Method Statements agreed post-appointment
- The Contractor must check all documents and promptly notify the Design Team of discrepancies.

1.3 Description of Site

The Works are located at an existing derelict dwelling house on the outskirts of Kilmeedy Village, Co. Limerick.

- Access, working areas, and storage zones are limited and must be strictly controlled.
- Existing services (electrical, water, drainage, comms, fire systems) are to be protected and maintained unless noted otherwise.
- The Contractor must allow for restricted access, public interface, noise constraints, and sequencing related to the existing building.

1.4 Contractor's Obligations

The Contractor shall :

- Provide competent supervision at all times.
- Provide all labour, plant, temporary works, hoarding and scaffolding.
- Maintain good order and protection of the Works and existing structures.
- Maintain safe access routes and emergency escape paths.
- Coordinate all trades, subcontractors, and specialists.
- Attend site meetings, safety audits, and inspections.
- Ensure continuity of essential building services where required.

1.5 Insurances

The Contractor shall maintain:

- Public and Employers Liability
- Contractor's All Risks (CAR)
- Professional Indemnity (for design elements if applicable)
- Insurance for existing structures
- Certificates must be submitted before start on site.

1.6 Health & Safety Requirements

The Contractor shall :

- Act as Project Supervisor Construction Stage (PSCS) or equivalent role.
- Comply with all Health & Safety legislation, regulations and Codes of Practice.

Prepare and maintain:

- Construction Stage Safety & Health Plan
- Risk Assessments and Method Statements (RAMS)
- Daily permits to work (hot works, excavation, confined space, etc.)
- Emergency procedures and site induction programme

1.7 Temporary Works & Site Establishment

Provide and maintain:

- Site hoarding, fencing, gates, and access control
- Site accommodation, welfare, toilets, showers, drying rooms, and office facilities
- Temporary power, water, lighting, and telecommunication services
- Scaffolding, shoring, propping, dust screens, crash decks, and protection systems
- Protection of existing finishes, ceilings, services, and furnishings
- Traffic management and pedestrian segregation as required
- Weather protection and temporary roofing (if required for internal works)

1.8 Working Hours

- Standard working hours to be agreed with the Employer.
- Noisy works may be restricted due to ongoing occupation or neighbour proximity.
- Weekend or out-of-hours work only with prior approval.

1.9 Security

- Control access for all personnel and visitors.
- Maintain a secure site and ensure protection of Employer's property.
- Provide CCTV or additional security if required.

1.10 Environmental & Waste Management

The Contractor shall :

- Implement a Construction Environmental Management Plan (CEMP).
- Segregate waste; maximise recycling and reuse of demolished materials.
- Prevent pollution of drains and watercourses.
- Control dust, noise, vibration, and emissions.
- Provide spill kits and environmental protection measures on site.

1.11 Temporary Diversions & Protection of Services

- Locate and verify all existing services.
- Provide temporary support, diversions, or shutdowns with proper notice.
- Maintain life-safety systems (fire alarm, sprinklers, emergency lighting) during works.

1.12 As-Built Information & Handover

- Prior to Practical Completion, the Contractor shall provide:
- Operation & Maintenance (O&M) Manuals
- As-built drawings in CAD and PDF formats
- BC(A)R compliance documentation (if applicable)
- Test certificates for M&E systems
- Fire alarm, emergency lighting, gas, water, ventilation, and electrical certifications
- Commissioning reports, balancing data, and guarantees/warranties

2. PROJECT NOTES

2.1 Existing Building Interface

- The Contractor shall carry out a full survey and verification of existing dimensions before fabrication or installation.
- The Contractor shall allow for opening-up works to confirm structure and services prior to demolition.
- Unknown conditions must be reported immediately for direction.

2.2 Demolition & Strip-Out Works

- Carefully remove designated elements without damage to retained structures.
- Provide dust control, vibration monitoring, and isolation of services.
- Remove waste off site to licensed facilities.

2.3 Structural Works

- Coordinate with the Structural Engineer's details.
- Temporary propping and support must be designed by a competent engineer.
- Allow for sequencing to maintain stability of the existing building.

2.4 Mechanical & Electrical Coordination

- Existing M&E services to be kept live unless otherwise instructed.
- Temporary lighting and power to be maintained.
- All new services must be coordinated using the agreed M&E drawings.
- Provide full testing, balancing, commissioning, and certification.

2.5 Finishes & Quality Requirements

- All workmanship to comply with relevant standards (ISO, BS, EN).
- Mock-ups or sample panels to be provided where required.
- Protect all new and existing finishes until handover.

2.6 Site Logistics & Phasing

- The Contractor shall prepare a detailed programme showing:
 - Phasing of demolition and construction
 - Temporary works installation
 - Service diversions
 - Delivery and access restrictions
 - Coordination with ongoing building operations

2.7 Communication & Meetings

- Weekly site meetings with Employer's Representative.
- Daily coordination with subcontractors.
- Maintain a site diary and issue weekly progress reports.

2.8 Completion & Defects

- Provide training to the Employer's maintenance staff.
- Attend defects inspections at end of Defects Liability Period.
- Rectify defects promptly and maintain warranties.

SECTION 2 — PARTIAL DEMOLITION, STRIP-OUT, EXCAVATION & ENABLING WORKS

SPECIFICATION: PARTIAL DEMOLITION, STRIP-OUT, EXCAVATION & ENABLING WORKS

1. GENERAL REQUIREMENTS

1.1 Scope

This section covers all labour, plant, supervision, materials and temporary works necessary to carry out:

- Partial demolition of existing building elements
- Internal strip-out works
- Removal of fixtures, fittings, partitions and redundant services
- Soft strip of finishes and non-structural elements
- Controlled demolition of structural components (where indicated)
- Excavation for foundations, drainage, services and external works
- Enabling works including temporary supports, protection works, diversions and isolations

All works shall be carried out:

- In strict compliance with the PW-CF contract
- Under the control of the PSCS
- With full coordination with Architect, Structural Engineer and M&E Engineer
- Without damage to retained structures, services or adjacent property

2. HEALTH & SAFETY

2.1 PSCS Requirements

The Contractor shall:

- Prepare RAMS for all demolition, strip-out, temporary works and excavation
- Implement a Permit-to-Work system including Hot Works, Confined Space, Excavation, Working at Height
- Carry out weekly safety audits and toolbox talks

- Maintain exclusion zones around demolition and excavation areas

2.2 Asbestos & Hazardous Materials

- The Employer will provide an asbestos survey if applicable.
- The Contractor must not commence demolition until hazardous materials are confirmed safe or removed by licensed contractors.
- Any suspect materials encountered shall cause immediate stop-work and reporting to ER.

3. VERIFICATIONS BEFORE WORKS

3.1 Survey and Setting Out

Before commencing, the Contractor shall :

- Verify all dimensions and element locations
- Identify and mark retained structural and non-structural elements
- Mark out protected areas and required clearances

3.2 Services Isolation & Diversions

The Contractor shall :

- Trace, test and confirm all live services
- Isolate services where instructed
- Provide temporary or diversion works for:
 - Electrical systems
 - Water
 - Drainage
 - Communications
 - Fire alarm systems
- Maintain essential services to occupied parts of the building.

3.3 Temporary Works Design

Contractor shall provide engineered temporary works including:

- Propping and shoring of retained structures
- Temporary bracing
- Crash decks
- Safety barriers and hoarding

- Service supports
- Temporary weather protection

Temporary works design must be prepared by a competent engineer and submitted to the ER for review only (Contractor retains full responsibility).

4. PARTIAL DEMOLITION WORKS

4.1 General Requirements

Partial demolition shall be :

- Carried out in a controlled, sequential manner
- Undertaken by experienced demolition operatives
- Restricted to areas indicated on the drawings
- Coordinated to prevent instability of retained structures

4.2 Structural Demolition

Where structural elements are to be removed:

- Provide temporary support before cutting or breaking
- Cut reinforced concrete using low-vibration methods where possible
- Avoid damage to adjacent slabs, beams, columns and walls
- Remove steel elements by unbolting where feasible before cutting

4.3 Noise, Dust and Vibration Control

Provide :

- Dust suppression (mist, extraction, sheeting)
- Vibration monitoring if required
- Noise-reducing methods (saws instead of breakers where possible)
- Dust protection screens for occupied or sensitive areas

4.4 Protection of Retained Elements

Protect :

- Retained floors, walls and roofs
- Existing glazing and doors
- Services, ducts, cables, and panels
- Fire alarm devices and detectors

- Internal finishes not designated for removal
- Cover, sheet or box-in as required.

5. STRIP-OUT WORKS

5.1 General

Strip-out includes removal of :

- Partitions, ceilings, raised floors, carpets, timber floors
- Doors, frames, ironmongery and glazing (where indicated)
- Fixtures, fittings and joinery
- Redundant services (electrical, mechanical, plumbing, fire services)
- Loose furniture and equipment (if not by Employer)

5.2 Mechanical & Electrical Strip-Out

Remove redundant:

- Pipework, ductwork, insulation
- Electrical wiring, trunking, sockets, switches
- Light fittings
- Fire alarm cabling and devices

All works shall be preceded by:

- Isolation certificates
- Lock-out/tag-out procedures
- Confirmation from the ER or M&E engineer

5.3 Salvage

Items identified for reuse or salvage shall be :

- Carefully removed
- Cleaned and stored in designated areas
- Protected from damage or theft

6. EXCAVATION WORKS

6.1 General Requirements

Excavation includes:

- Reduced level dig
- Foundation excavations
- Service trench excavations
- Excavation for retaining walls, tanks or pavements

Comply with :

- Engineer's drawings
- Geotechnical recommendations
- Excavation support requirements

6.2 Excavation Safety

- Provide trench shoring, benching or battering as needed
- Maintain safe access/egress to all excavations
- Keep excavations free of water
- Provide barriers and warning signage

6.3 Discovery of Unknown Services

If services are found :

- Stop work
- Expose service by hand digging
- Notify ER immediately
- Protect until directed

6.4 Support of Adjacent Structures

Where excavation is close to :

- Existing foundations
- Retaining structures
- Utility lines
- Boundary walls

Provide supports and monitoring as required by the Structural Engineer.

7. REMOVAL OF MATERIALS & DISPOSAL

7.1 Segregation of Waste

Waste shall be segregated into :

- Concrete, masonry, brick
- Metal
- Timber
- Gypsum
- Hazardous waste (if any)
- M&E components
- General waste

7.2 Cart Away & Disposal

- All waste to be removed from site promptly.
- Waste hauliers must hold valid waste collection permits.
- Disposal to be at licensed facilities only.
- Waste dockets to be maintained and submitted weekly.

7.3 Reuse & Recycling

Where feasible :

- Recycle metals, concrete and timber
- Crush concrete for reuse (if allowed)
- Reuse items specified for salvage

8. ENABLING WORKS

8.1 Temporary Services

Provide and maintain:

- Temporary electrical supply
- Temporary water supply
- Temporary drainage
- Temporary lighting
- Temporary fire detection (where required)

8.2 Site Preparation

- Install hoarding and access control

- Establish site welfare and offices
- Implement traffic and pedestrian management
- Install environmental protection measures

8.3 Protection Works

- Install crash decks and debris netting
- Protect adjoining buildings
- Provide temporary roofs or weather protection
- Protect retained trees, landscaping and public footpaths

9. COMPLETION OF DEMOLITION & ENABLING WORKS

9.1 Verification

Upon completion :

- Submit demolition certificates
- Submit records of temporary works used
- Confirm all services removed or capped
- Provide updated drawings of exposed structure
- Submit waste disposal records

9.2 Handover

Before main construction works commence :

- Clear and level work areas
- Remove temporary works unless required for follow-on trades
- Remove loose debris and hazardous materials
- Reinstate site protections where required

SECTION 3 — FOUNDATIONS: REINFORCED CONCRETE STRIP FOUNDATIONS

SPECIFICATION: REINFORCED CONCRETE STRIP FOUNDATIONS

1. GENERAL

1.1 Scope

The work in this section includes the supply, placing, forming, finishing and curing of :

- Reinforced concrete strip foundations
- Associated starter bars, dowels and holding down bolts
- Foundation blinding
- Concrete pads to support walls, columns or piers
- Localised thickening or reinforcement zones
- Foundation ties, pads, and kicker forms (where shown)
- Any lean-mix sub-base beneath foundations (if specified)

All foundations shall be constructed strictly in accordance with :

- Structural Engineer's drawings & schedules
- Project Geotechnical/Soils report
- IS EN 206 & IS EN 13670 (Execution of Concrete Structures)
- TGD Part A – Structure
- All relevant Irish/European standards

2. SETTING OUT & VERIFICATION

2.1 Setting Out

- Setting out of all foundations shall be undertaken by a competent surveyor.
- Foundation widths, depths and bearing levels shall be in strict accordance with drawings.
- Verify levels before excavation and after blinding.

2.2 Bearing Strata Approval

Before placing concrete :

- The bearing layer must be inspected and approved by the Structural Engineer or ER.

Foundation trench bottoms must be:

- Level
- Undisturbed
- Free of soft spots, loose material, standing water or debris

If unsuitable material is encountered:

- Stop work
- Notify the ER
- Do not proceed until instructions are issued (e.g., deeper excavation, stone fill, or redesigned foundation).

3. EXCAVATION & PREPARATION

3.1 Excavation

Carry out excavation for strip foundations in accordance with :

- Drawings
- Geotechnical recommendations
- Temporary works and safety requirements

Provide :

- Side support or battering to avoid collapse
- Dewatering as required
- Access ramps and safe working areas

3.2 Blinding

- Provide minimum 50–75 mm blinding layer (C7.5 or lean mix) unless shown otherwise.
- Blinding to be level, smooth and firm.
- Protect blinding from contamination prior to reinforcement installation.

3.3 Trench Protection

- Prevent trench sides from collapsing.
- Prevent ingress of water.
- Protect excavation from frost (if applicable).
- Avoid loading trench edges with spoil heaps or plant.

4. REINFORCEMENT

4.1 Reinforcement Steel

Reinforcement shall comply with :

- IS EN 10080
- BS 4449 Grade B500B
- Engineer's reinforcement schedules

4.2 Installation

- Reinforcement shall be clean, free of rust scale, oil or contaminants.
- Maintain correct cover using concrete spacers (not plastic or metal blocks).
- Tie bars securely with 1.6 mm soft iron wire.
- Do not bend or cut bars without Engineer approval.

4.3 Spacing & Cover

- Minimum cover: 50 mm, unless drawings specify otherwise.
- Maintain bar spacing as per schedule.

4.4 Starter Bars and Dowels

- Fix starter bars for walls or columns accurately.
- Provide templates for holding down bolts if required.
- Ensure correct projection above finished foundation level.

5. CONCRETE REQUIREMENTS

5.1 Concrete Grade

- Concrete strength to be:
- C25/30 for typical strip foundations (unless otherwise specified)

Concrete shall comply with :

- IS EN 206
- IS EN 13670

5.2 Supply & Delivery

- Concrete to be supplied from a QSRMC-certified or equivalent supplier.
- Delivery documentation to include batch records, slump, time of loading.

5.3 Slump

Slump to be as per Engineer's specification, typically:

- S3 (100 mm $\pm$ 30 mm) for strip foundations

5.4 Placing Concrete

Concrete shall be :

- Placed immediately after mixing
- Dropped vertically into trench to avoid segregation
- Properly compacted using immersion vibrators
- Not allowed to free-fall from excessive height (>1.5m)

5.5 Working Time

- Concrete shall be placed within 90 minutes of batching unless retarder is used.

6. FORMING, CURING & PROTECTION

6.1 Surface Level & Finish

- Top of strip foundation to be screeded level.
- Tolerance: ± 10 mm across length.

6.2 Curing

Concrete shall be cured for minimum 7 days by :

- Wet hessian + polythene sheeting
- Proprietary curing compounds
- Formwork left in place where applicable

6.3 Protection

Protect freshly placed concrete from :

- Frost
- Rapid drying
- Rain
- Contamination
- Foot traffic or plant

7. INSPECTION & TESTING

7.1 Pre-Concrete Pour Inspection

Contractor shall notify ER and Engineer to allow inspection of :

- Excavation
- Bearing level
- Blinding
- Reinforcement
- Formwork
- Cover
- Starter bars
- No concrete shall be placed until written approval is given (site inspection record).

7.2 Concrete Cube Tests

Carry out compressive strength testing :

- Minimum set: 3 cubes per 25 m³ or per day's pour
- Testing at: 7 and 28 days
- Results to be forwarded to ER

7.3 As-Built Records

Provide :

- Reinforcement photos
- Pour records
- Delivery dockets

- Cube test reports
- Any deviation notices

8. BACKFILLING

8.1 General

- Backfilling shall commence only when:
- Foundations have achieved required strength
- ER approval is confirmed

8.2 Material

Backfill with :

- Suitable excavated material (engineer-approved)
- Imported fill complying with Clause 808 or equivalent (if required)

8.3 Compaction

- Compact in 150–200 mm layers to required densities.

8.4 Protection of Foundation Walls

Protect rising walls or blockwork from :

- Impact from plant
- Overloading of adjacent soil
- Trench collapses

9. COMPLETION

9.1 Cleaning & Disposal

- Remove all debris and excess soil.
- Dispose of waste in accordance with Waste Regulations.

9.2 Handover

Provide to the ER :

- As-built foundation levels

- Cube test results
- Inspection records
- Confirmation of reinforcement installation
- Photographic record

SECTION 4 — WORKS TO DPC LEVEL

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SPECIFICATION: WORKS TO DPC LEVEL & FLOOR CONSTRUCTION

1. GENERAL

1.1 Scope

This section covers all works from the finished foundation level up to and including Damp Proof Course (DPC) level, and all works forming the substructure floor, including:

- Masonry deadwork below DPC
- Concrete cavity filling
- Certified hardcore / engineered fill
- Service ducting & service trenches
- Radon barrier system
- Radon sumps & ventilation pipes
- Precast reinforced concrete floors
- Ground-supported slabs
- Underfloor heating installation
- Floor insulation
- Concrete screed
- All works shall comply with:
 - TGD Part A (Structure)
 - TGD Part B (Fire)
 - TGD Part C (Site Preparation & Moisture)
 - TGD Part D (Materials)
 - TGD Part E (Sound)
 - TGD Part J (Heat Producing Appliances)
 - TGD Part L (Conservation of Fuel & Energy)
 - IS 325 (Radon)
 - IS EN 1996 (Masonry)

- IS EN 206 & IS EN 13670 (Concrete)

2. MASONRY DEADWORK (Up to DPC Level)

2.1 Blockwork

Provide dense concrete blocks :

- Strength class: 7.5 N/mm² or as per Engineer
- Dimensions: 440 × 215 × 100/150 mm
- Bond: Stretcher bond
- Mortar: M4 designation (1:1:5–6 cement/lime/sand)

2.2 Construction Requirements

- Build to lines and levels shown on drawings
- Maintain blockwork plumb, level and true
- Provide stainless steel wall ties at every second course in cavity walls
- Provide DPC at all required locations

2.3 Rising Walls / Deadwork Tolerances

- Vertical tolerance: ±10 mm per storey
- Level tolerance: ±5 mm across any 5m length
- Ensure bearing for floor units is fully level, true and solid

3. CAVITY FILLING (Concrete Infilling Below DPC)

3.1 Concrete Mix

Use :

- C12/15 concrete unless specified otherwise
- Max aggregate size 20 mm

3.2 Placement

- Fill cavity to Engineer's specified height
- Ensure no voids or honeycombing
- Compact with rodding or light vibration
- Avoid damage to adjacent blockwork

- Allow to cure before subsequent masonry

3.3 Damp-Proof Course Adjacent to Concrete Fill

- Ensure DPC is fully supported
- Prevent bridging of the cavity unless specifically designed

4. CERTIFIED HARDCORE / SUB-BASE

4.1 Material

Provide :

- Certified 804 or Clause 808 granular fill
- Clean, well-graded stone
- Free from clay, humus or organic matter

4.2 Placement & Compaction

- Compact in maximum 150 mm layers
- Use vibrating plate or roller (size appropriate to layer depth)
- Achieve required relative compaction of > 98%
- Maintain level tolerances of ± 10 mm

4.3 Proof Roll

- Proof roll with roller or plate to identify soft spots
- Remove soft/defective areas and replace with suitable fill

5. SERVICE DUCTING, DRAINAGE & TRUNKING

5.1 Ducts

Provide:

- uPVC or HDPE ducts (minimum $\varnothing 100$ mm unless stated otherwise)
- Drawcord installed in every duct
- Marker tape above

5.2 Installation Requirements

- Grade to prevent standing water
- Provide smooth bends (radius > 750 mm)
- Minimum cover:
 - 500 mm internal
 - 600–750 mm external

5.3 Drainage Works

Install drainage in accordance with Engineer's details

- Provide granular surround
- Test before backfilling
- Ensure all pipes penetrating foundation walls are sleeved

6. RADON PROTECTION SYSTEM

6.1 Radon Barrier

Radon barrier membrane shall :

- Comply with IS 325
- Be minimum 1200 gauge (300 µm)
- Be continuous and fully sealed
- Be installed by competent specialist operatives

6.2 Installation Requirements

- Lay radon barrier on smooth sand blinding
- Overlaps: minimum 150 mm, sealed with proprietary tapes
- Protect against puncture during works
- Turn up at walls to meet DPC and airtightness membrane

6.3 Service Penetrations

- Seal all penetrations using proprietary radon collars
- Avoid cutting where possible
- Provide sleeves with sealant around ducts, pipes and drains

6.4 Radon Sumps

Provide radon sumps :

- Minimum 1 sump per 250 m² floor area
- Connect using 110 mm uPVC radon pipework
- Terminate at external wall at 1.5–2.0 m height
- Provide capped stub for future activation

7. FLOOR STRUCTURE OPTIONS

A) PRECAST CONCRETE FLOOR UNITS

7.1 Precast Units (If applicable – presume not)

- Precast reinforced concrete slab units to manufacturer's specification
- CE marked
- Design to IS EN 1992
- Bearing on walls minimum 90 mm

7.2 Installation

- Place on full mortar bed
- Provide temporary supports as directed
- Install grout between joints after laying
- Provide lifting anchors / bracing as per manufacturer

7.3 Floor Screed

Over precast floors :

- Provide bonded or unbonded screed
- Minimum thickness 50–75 mm depending on UFH

7.4 Air Tightness

- Seal gaps between wall and floor units.

B) GROUND-SUPPORTED FLOOR SLAB

7.5 Sub-base Preparation

- Minimum 150 mm compacted hardcore
- Sand blinding (15–25 mm)

7.6 Radon/DPM

- Radon barrier acts as DPM
- Protect membrane with 500-gauge slip layer if insulation above

7.7 Floor Insulation

- Use PIR, XPS or EPS to thickness specified on drawings.

Requirements :

- Boards tightly butted
- Staggered joints
- No open gaps
- Perimeter insulation installed at all edges

8. UNDERFLOOR HEATING SYSTEM

8.1 General

- Underfloor heating (UFH) shall be installed by an approved specialist.

8.2 Manifold Position

- As shown on drawings
- Easily accessible
- Allow space for future maintenance

8.3 Pipework

- PEX or multilayer pipework
- Fixed to insulation using clips or track system
- Installed to manufacturer's spacing (typically 100–200 mm centres)
- Pressure-tested before screed

8.4 Requirements

- Min 6 bar test pressure for 1 hour
- Leave UFH pipes under pressure during screed pour

9. FLOOR SCREED

9.1 Screed Type

Provide:

- Cement:sand screed (1:3–4 mix) or
- Proprietary flowing screed (anhydrite / cement-based)
- As per drawings/specification.

9.2 Thickness

- 65–75 mm for UFH
- 50–65 mm standard screed
- Do not exceed 75 mm unless designed

9.3 Installation

- Pour in continuous sequence
- Avoid cold joints
- Cure with polythene for minimum 48–72 hours
- Prevent rapid drying
- Maintain UFH pressure during pour

9.4 Flatness Tolerance

- SR2 (± 5 mm over 2 m) unless SR1 specified

9.5 Drying

- Allow to dry per manufacturer's recommendations
- Moisture < 75% RH before floor coverings

10. INSPECTION, TESTING & HANDOVER

- Inspections Before Pouring
- Hardcore compaction
- Radon barrier integrity
- Insulation layout
- UFH pressure test results
- Services and ducting
- Levels and fall lines
- Testing
- Concrete cube tests (where applicable)
- UFH pressure test
- Radon sump installation check
- Slab level survey
- Handover

Provide :

- As-built records
- Photographs of radon barrier
- UFH test results
- Delivery dockets for insulation, hardcore and ducting
- Screed curing records

SECTION 5 — SUPERSTRUCTURE: DPC LEVEL TO WALL PLATE LEVEL

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SPECIFICATION: SUPERSTRUCTURE FROM DPC LEVEL TO WALL PLATE LEVEL

1. GENERAL REQUIREMENTS

1.1 Scope

This section covers all labour, materials and workmanship necessary to construct the superstructure from DPC level up to wall plate level including:

- Cavity blockwork

- 200 mm full-fill bonded bead insulation (such as EcoBead)
- Stainless steel wall ties
- Inner and outer leaf blockwork
- Movement joints
- DPCs at openings and interfaces
- Concrete lintols and cills
- Structural steel beams & supporting details
- Fire stopping and cavity barriers
- Airtightness detailing
- Cavity trays and weep holes
- Windposts and lateral restraint straps

All works shall comply with :

- TGD Part A, B, C, D, E, L
- IS EN 1996 (Eurocode 6 – Masonry)
- IS EN 845 (Ties & accessories)
- IS 325 for radon interfaces (below)
- BS 8215 (DPC installation)
- IS EN 1991 (Loading)
- IS EN 1090 (Structural steel CE marking)

2. MASONRY WALL CONSTRUCTION

2.1 Cavity Wall Build-Up

Unless shown otherwise, the standard wall construction shall be:

- Outside leaf: 100 mm concrete block (7.5 N/mm²)
- Cavity: 200 mm
- Inside leaf: 100 mm concrete block (7.5 N/mm²)
- Total wall thickness: 400 mm nominal.

2.2 Blockwork Requirements

- Blocks to IS EN 771-3
- Strength class 7.5 N/mm²
- Mortar M4
- Joints full and flush

- Maintain plumb, level and true

2.3 Cavity

- Maintain clean cavity
- Keep insulation/droppings off ties
- Use cavity boards during construction

3. CAVITY INSULATION – 200 mm FULL FILL BONDED BEAD

3.1 Insulation Material

- Bonded bead insulation system (EcoBead Platinum or equal approved)
- $\lambda \leq 0.033 \text{ W/mK}$
- NSAI Agrément certified

3.2 Installation

- Installed by NSAI-approved contractor
- Installed in layers as walls rise
- Fully filled, no voids
- Rain protection during installation

3.3 Quality Assurance

Installer must provide :

- NSAI certificate
- Photographic records

4. WALL TIES & RESIDUAL CAVITY

4.1 Wall Ties

- Stainless steel ties to IS EN 845-1:

Spacing :

- 900 mm horizontal
- 450 mm vertical

- 150 mm around openings

4.2 Residual Cavity

- Maintain 10–20 mm where required by insulation manufacturer

5. DAMP PROOF COURSES, CAVITY TRAYS & WEEP HOLES

5.1 DPC General

DPC at :

- Cills
- Lintels
- Floor junctions
- Partitions meeting external wall
- Changes in wall thickness

5.2 Cavity Trays

Install:

- Above lintels
- Over steel beams
- At roof abutments
- At meter boxes

5.3 Weep Holes

- Min 2 per opening
- 450–750 mm centres
- Proprietary weep vents

6. OPENINGS: LINTELS, CILLS & CLOSERS

6.1 Concrete Lintels

- CE-marked
- To IS EN 845-2
- Min 150 mm bearing

- Mortar bed
- DPC over

6.2 Concrete Cills

- Precast concrete
- Throated
- Full mortar bed
- DPC beneath
- Proper outward fall

6.3 Insulated Cavity Closers

- Proprietary insulated closers at all openings unless noted otherwise.

7. STRUCTURAL STEEL WITHIN MASONRY

7.1 Fabrication

- CE-marked to IS EN 1090
- Execution Class EXC2
- 3.1 certs for materials

7.2 Installation

- DPC slip membrane at bearings
- 100–150 mm bearing
- Fire protection to required rating
- Cavity barriers around steel
- DPC/cavity tray over beams

8. MOVEMENT JOINTS & RESTRAINT

8.1 Vertical Movement Joints

Provide :

- Every 6–12 m (per Engineer)
- At changes of height/thickness
- At junctions with existing walls

Include :

- Compressible filler
- Bond breaker
- Sealant

8.2 Lateral Restraint Straps

- 30 × 5 mm straps
- At 2 m centres
- Fixed to floor joists/wall plates

9. AIRTIGHTNESS & THERMAL BRIDGING

9.1 Airtightness Membranes

Provide airtightness :

- Membrane around openings
- Tapes sealing junctions
- Sealant at difficult junctions

9.2 Thermal Bridging

Provide continuity at:

- Lintels
- Cills
- Jambs
- Floor/wall junction
- Roof/wall junction

10. FIRE STOPPING & CAVITY BARRIERS

Provide fire stopping :

- At party wall junctions
- Around structural steel

- At openings
- At eaves and roof junctions

Materials :

- Mineral wool
- Intumescent products

11. QUALITY CONTROL

Inspections to cover :

- Cavity condition
- Wall ties spacing
- DPC/Cavity tray installation
- Steel installation
- Insulation layers

Records :

- Photographs
- Certificates
- Material compliance
- As-built dimensions

SECTION 6 — ROOF CONSTRUCTION: TRUSS ROOF WITH FIBRE CEMENT SLATES

=====

SPECIFICATION: TRUSS ROOF WITH FIBRE-CEMENT SLATES 1. GENERAL

This section covers the full roof build-up including :

- Cut timber roof
- Wall plates
- Bracing system

- Roof underlay (breathable membrane)
- Counter battens & slate battens
- Fibre cement slates
- Ridge & verge systems
- Valleys, flashings, soakers
- Roof ventilation
- Airtightness at ceiling level
- Insulation
- All fixings and accessories

All workmanship shall comply with :

- BS 5534 (Roof Slating/Tiling)
- BS EN 12326
- BS 5250
- IS EN 14250 (Trussed rafters)
- Manufacturer installation guidance
- TGD Part A, B, C, L

2. WALL PLATES

2.1 Material

- Structural graded timber (C16/C24)
- Pressure treated

2.2 Fixing

- 30 × 5 mm galvanised restraint straps at 2 m centres
- Fixed over minimum 3 joists
- Plates level and fully bearing

3. CUT TIMBER ROOF – GENERAL TIMBER SPECIFICATION

- All structural timber to be strength-graded softwood in accordance with EN 14081, minimum grade C24 unless noted otherwise.
- Timber sizes, spans, and centres to be as indicated on drawings.
- All timber to be kiln-dried, regularised, and free from defects that may impair strength or durability.



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- Wall plates, rafters, joists, binders, purlins, and ridge members to be fixed and connected in accordance with engineer's details and current building regulations.
- All timber to be treated in accordance with BS 8417 (Use Class 2 minimum, or as required for exposure conditions).
- Strutting, bracing, and lateral restraint to be provided as shown on drawings and in accordance with relevant standards.
- All fixings to be galvanised or stainless steel as appropriate.
- Contractor to ensure proper bearing, alignment, and installation of all members.
- Refer to drawings for member sizes, setting out, and structural layout.

4. ROOF DECK: MEMBRANE & BATTENS

4.1 Breathable Roof Underlay

Provide NSAI-certified breathable underlay :

- Horizontal laps 150 mm
- Extend into gutters
- Installed without holes or over-tension

4.2 Counter Battens

- 25 mm treated timber
- Provide ventilation path below battens

4.3 Slate Battens

To BS 5534 :

- 38 × 25 mm treated battens
- Graded and stamped
- Fixed at correct gauge
- Stainless or galvanised nails

5. FIBRE CEMENT SLATES

5.1 Slate Product

Slates shall be :

- Fibre cement
- NSAI Agrément certified
- 600 × 300 mm (unless noted otherwise)
- Colour per Architect

Approved :

- Cedral / Tegral / Thrutone / Fibrecon.

5.2 Fixings

Stainless steel nails (30–32 mm)

- Hooks (if required)
- All slates mechanically fixed — BS 5534 requirement

5.3 Laying Slates

- Half-bond pattern
- Correct headlap (90–110 mm typical)
- Maintain alignment and gauge
- Provide double course at eaves

6. RIDGE, VERGE & HIP SYSTEMS

6.1 Ridge

Provide dry ridge system :

- Mechanically fixed
- Ventilated
- Compatible with slates

6.2 Verges

- Provide dry verge:
- Manufacturer-approved
- UV-stable
- Mechanically fixed

6.3 Hips

If required :

- Hip trays
- Mechanically fixed hip slates
- Hip irons

7. FLASHINGS, SOAKERS & VALLEYS

7.1 Lead Flashings

- Code 4 or 5 lead
- Dressed into joints min 40 mm
- Installed per Lead Sheet Association guidelines

7.2 Valleys

- GRP or lead valley trays
- Continuous valley boards beneath
- Underlay protection

7.3 Soakers

- Lead or proprietary metal
- One per slate course
- Used for all side abutments

8. VENTILATION

8.1 Cold Roof (typical)

- Continuous eaves ventilation
- Continuous ridge vent
- 5000 mm²/m free area at eaves
- 8.2 Warm Roof

If used :

- Ventilation may not be required
- Follow insulation manufacturer's guidance

8.3 Rafter Ventilation

- Provide rafter vents where required to maintain airflow.

9. AIRTIGHTNESS & CEILING LEVEL WORKS

9.1 Airtightness Layer

Provide :

- Airtight membrane at ceiling level
- Tapes at joists, beams, penetrations
- Seal service penetrations fully

9.2 Service Void

Optional :

- 38 × 50 mm battens
- Prevents perforation of membrane by services

10. INSULATION

10.1 Cold Roof

- Mineral wool between ceiling joists
- Additional layer over joists
- Maintain 50 mm vent gap above insulation

10.2 Warm Roof

If specified :

- PIR between rafters
- PIR over rafters
- Vapour control layer internally

11. FIRE STOPPING & CAVITY BARRIERS

Provide fire stopping at :

- Gable junctions
- Eaves junctions
- Rooflights
- Party walls
- Structural steel penetrations

Use :

- Mineral wool
- Intumescent materials

12. QUALITY CONTROL

Contractor must allow inspection of:

- Truss layout & bracing
- Membrane installation
- Batten gauge
- Slating quality
- Flashings & valleys
- Ventilation provision
- Fire stopping
- Airtightness detailing
- Maintain photographic records.

13. COMPLETION

Provide :

- Truss manufacturer certs
- Membrane warranty
- Slate warranty
- Ventilation details
- Fire stopping certs
- As-built drawings
- Photographs of concealed works

SECTION 7 — CEILING SLABBING, FIRE SLABBING, INTERNAL & EXTERNAL PLASTERING

SPECIFICATION: CEILING SLABBING, FIRE SLABBING, INTERNAL & EXTERNAL PLASTERING

1. GENERAL REQUIREMENTS

1.1 Scope

This section covers all works associated with :

- Plasterboard to ceilings and soffits
- Fire-rated plasterboard and fire protection systems
- All preparation works prior to boarding and plastering
- External cement-based render
- Internal plaster, skim coats and finishing
- Jointing, corner beads, trims and airtightness compatible installations

All works shall comply with :

- TGD Part A, B, C, D, E & L
- BS 8212 (Dry Lining)
- BS EN 520 (Plasterboard)
- BS 8000-8 (Plastering)
- Manufacturer installation guidance
- NSAI-certified systems

2. PREPARATION WORKS

2.1 General Preparation

- Ensure building is watertight (roof complete, windows fitted)
- Remove debris, dust and loose materials
- Confirm M&E first fix is completed and tested
- Ensure airtightness membranes are fully installed where required

2.2 Substrate Requirements

Walls and ceilings must be :

- Structurally sound
- Straight, true and plumb
- Free from oil, dust, grease
- Clear of protruding nails or fixings

2.3 Battens & Framing

- Timber battens min 38 × 50 mm (treated)
- Metal frame systems (MF ceilings/wall linings)
- Provide noggings for fixings (lights, access panels)

2.4 Airtightness

Before closing :

- Inspect membrane
- Tape penetrations
- Seal window reveals
- Form airtight connections at junctions
- Record with photographs.

3. CEILING SLABBING (STANDARD)

3.1 Plasterboard Requirements

Use :

- 12.5 mm standard plasterboard for typical ceilings
- Boards to be BS EN 520 Type A

3.2 Fixing

- Fix to MF system or joists
- Drywall screws at 150 mm centres
- Joints staggered
- Boards tight to framing

3.3 Jointing

- Tapered edge boards
- Tape and joint compound to manufacturer's guidance
- Two coat minimum

3.4 Access Panels

- Provide fire- or acoustic-rated access panels as required.

4. FIRE SLABBING / FIRE PROTECTION

4.1 Fire-Rated Boards

Where fire resistance required :

- Use Type F fire-rated boards
- 15 mm or 2 × 12.5 mm build-up
- Installed per manufacturer's fire test certification

4.2 Required Ratings

Achieve :

- 30 minutes minimum
- 60 minutes where required by drawings/engineer

4.3 Fire Protection to Steel

- Approved fire board system (Gyproc Fireline / Siniat / Knauf)
- Fire-rated screws
- Complete boxing with taped joints

4.4 Penetration Fire-Stopping

Provide :

- Intumescent mastic
- Mineral wool batts
- Fire collars around services

- Document and certify works

5. INTERNAL WALL SLABBING

5.1 Direct Bond (Dot & Dab)

- Only on dry internal blockwork
- Not allowed on radon barriers
- Dab thickness min 10 mm

5.2 Stud Lining

- Boards fixed at 300 mm centres
- Use Type A, Type F or Type H board depending on location

5.3 Moisture Resistant Boards

- Use MR boards (Type H):
- Bathrooms
- Wetrooms
- Utility areas

6. INTERNAL PLASTERING / SKIMMING

6.1 Materials

- Gypsum skim coat
- Sand/cement two-coat
- Lightweight backing plaster + skim

6.2 Skim Finish

- 2 mm coat
- Smooth and uniform
- Free from ridges and hollows

6.3 Beads & Trims

- Corner beads

- Stop beads
- PVC beads in wet areas

6.4 Tolerances

- Max 3 mm deviation under 2 m straight edge

6.5 Drying

- No forced drying
- Ventilate appropriately
- Protect from frost

7. EXTERNAL PLASTERING / RENDER

7.1 System Type

- A. Traditional Render
- Scratch coat 10–12 mm
- Finish coat 8–10 mm
- Mix 1:4–5
- Two-pass application
- B. Bagged Render System (Weber / K-Rend / Parex / Sto) NSAI certified
Installed per manufacturers instructions.
- Mesh reinforcement included

7.2 Mesh Reinforcement

At :

- Windows/doors
- Corners
- Material junctions
- Above/below DPC

7.3 Preparation

- Clean surface
- Wet blockwork
- Install beads, movement joints

7.4 Movement Joints

- Follow blockwork joints
- Proprietary beads and sealant

7.5 Curing

- Protect from rain and frost
- Minimum 48–72 hours initial curing

7.6 Finish

- Nap
- Smooth
- Scraped
- Dry dash
- Wet dash

8. ACOUSTIC PERFORMANCE

Where required :

- Acoustic-rated plasterboard
- Mineral wool insulation
- Acoustic sealant at junctions
- Double boarding where specified

9. QUALITY CONTROL & INSPECTION

Contractor must allow ER to inspect :

- Airtightness membrane before closing
- Fire stopping before covering
- Framing and noggings
- Board fixing patterns
- Render mesh in basecoats
- Final plaster finish

Provide :

- Material certs
- Fire certs
- Render warranties
- Photographic records

SECTION 8 — INTERNAL FINISHES SPECIFICATION (GENERAL)

INTERNAL FINISHES SPECIFICATION (GENERAL)

This section sets out the general requirements for all internal finishes, including walls, ceilings, floors, joinery, windows, doors, ironmongery, painting, tiling, and associated preparation works. Specific materials, colours, models, and performance requirements shall be taken from the Architect's Door Schedule, Window Schedule, and Finishes Schedule.

1. GENERAL REQUIREMENTS

1.1 Scope

This section includes :

- Internal walls and ceiling finishes
- Floor finishes and underlayments
- Joinery, skirtings, architraves
- Internal doors and ironmongery
- Window boards and reveals
- Painting & decorating
- Tiling and wet area finishes
- Preparation and protection

1.2 Coordination With Schedules

All finishes shall comply with and be selected from :

- Door Schedule
- Window Schedule
- Internal Finishes Schedule

- These schedules take precedence for:
- Material type
- Dimensions
- Fire rating
- Acoustic rating
- Ironmongery sets
- Colour & finish
- Opening direction & hardware type
- Glazing type (if any)

2. WALL & CEILING FINISHES (INTERNAL)

2.1 Plasterboarded Walls/Ceilings

As specified in the slabbing, drylining and plastering section :

- Plasterboard fixed to studs/joists/MF system
- Tape and joint or skim finish as required
- Two-coat gypsum skim finish unless otherwise specified
- Smooth, even, uniform finish ready for painting

2.2 Block Walls

- Two-coat sand/cement render internally where required
- Gypsum skim finish unless otherwise specified

2.3 Paint System

Surfaces to receive :

- Primer/sealer
- 2 coats undercoat
- 1–2 finishing coats

Paint requirements :

- Washable finish in wet areas
- Scrubbable finishes for heavy-use areas
- Colours per Finishes Schedule

3. FLOOR FINISHES

3.1 Concrete Substrates

- Floors must be level, dry and free from contamination
- Moisture testing required before installing finishes
- Self-levelling compound where required

3.2 Floor Coverings

Installed per Finishes Schedule, including:

- Ceramic/porcelain tiles
- Timber or laminate flooring
- Carpet tiles or broadloom
- Vinyl or LVT flooring

3.3 Tile Work (Floors & Walls)

- Polymer-modified adhesive
- Waterproofing membrane in wet areas
- Anti-fracture membrane if required
- Grout per schedule
- Movement joints at perimeters and every 3–4 m in large areas

3.4 Movement Joints

Provide flexible sealant joints at :

- Thresholds
- Wet areas
- Junctions of different materials
- Large floor areas

4. INTERNAL DOORS & JOINERY

4.1 Internal Doors

Doors must comply with the Door Schedule, which governs :

- Dimensions

- Fire rating (FD30/FD60)
- Acoustic rating
- Leaf finish (painted, laminate, veneer)
- Frame type and material
- Glazing panels (if any)
- Ironmongery sets
- Opening directions

4.2 Installation

- Doors installed plumb, level and true
- Correct clearances maintained
- Fire doors installed with intumescent strips & cold smoke seals
- Acoustic doors installed with drop seals or acoustic seals

4.3 Skirting & Architraves

Per Finishes Schedule :

- MDF primed
- Softwood or hardwood
- Shadow-gap trims (if specified)
- PVC/metal trims for wet areas

Installed with :

- Mitred corners
- Plugged and filled fixings
- Fully decorated

4.4 Window Boards

- Timber, MDF, stone, PVC or composite
- Installed level
- Joints neat and tight
- Prepared for painting/finishing

5. WINDOWS (INTERNAL INTERFACE)

5.1 Frames

- All details per Window Schedule.

5.2 Internal Reveal Finishes

Finish reveals with :

- Plaster skim
- Corner beads
- Airtightness tapes
- Paint finish

5.3 Window Boards

- Installed as per Section 4.4 above.

6. IRONMONGERY

6.1 General

Ironmongery sets as per Door Schedule, including:

- Hinges
- Locks / latches
- Handles
- Door closers
- Fire-rated hardware
- Panic / emergency hardware (if required)
- Stops, buffers and privacy hardware

6.2 Installation

- Follow manufacturer's requirements
- Stainless steel fixings
- Smooth and quiet operation
- Provide fire certification for fire-rated sets

7. KITCHENS & FITTED FURNITURE (IF APPLICABLE)

7.1 Kitchen Units

- Carcass material, colour, worktops, finishes per Finishes Schedule
- Moisture-resistant components in wet areas

7.2 Specialist Joinery

- Wardrobes, shelves, counters
- All edges sealed

9* Installed plumb and level

8. BATHROOMS & WET AREAS

8.1 Tiling

- Full-height tiling where specified
- Waterproof tanking system
- Movement joints to be included

8.2 Fixtures

- Installed per M&E drawings
- Sealed with sanitary silicone

9. PROTECTION & CLEANING

9.1 Protection

Protect :

- Door frames
- Skirting and joinery
- Floors
- Windows and sills
- Newly plastered walls

9.2 Cleaning

At completion :

- Remove debris

- Clean all surfaces
- Wash glazing
- Leave building ready for handover
-

SECTION 9 — REFURBISHMENT WORKS TO EXISTING BUILDING

SPECIFICATION: REFURBISHMENT WORKS TO EXISTING BUILDING

1. GENERAL REQUIREMENTS

1.1 Scope

This section covers all works required for the refurbishment, upgrade and alteration of the existing building including:

- Strip-out of existing roof coverings
- Replacement of roof finishes to match new extension
- Removal and replacement of flat roof to warm roof specification
- Replacement of all internal doors
- Replacement of external doors and windows
- Replacement of internal joinery
- Full electrical upgrade
- Mechanical & plumbing upgrade
- External insulation to building perimeter
- Making good disturbed areas
- Integration with new-build works

All works must comply with :

- PW-CF contract
- TGD Parts A–M
- NSAI, BS/EN standards
- Fire & accessibility regulations
- Energy efficiency requirements

2. EXISTING PITCHED ROOF — REMOVAL & REPLACEMENT

2.1 Strip-Out of Existing Roof

Remove and dispose of :

- Existing slates/tiles
- Battens
- Felt/underlay
- Ridges, verge details
- Flashings, soakers, valleys
- Redundant fixings

Protect :

- Rafters/trusses
- Wallplates
- Internal finishes
- Eaves structures

2.2 Inspection of Existing Structure

Before re-roofing :

- Inspect rafters/trusses for decay or defects
- Replace defective timber
- Reinstate/upgrade bracing
- Apply preservative treatments if required

2.3 Re-Roofing System

Install new roofing to match proposed new-build roof specification, including:

- Breathable membrane
- 38 × 25 mm battens
- Fibre-cement slates
- Stainless steel nails
- Dry ridge & verge
- Lead flashings & valley trays
- Eaves ventilation
- Fascia and soffit repairs/replacement
- All installed per BS 5534.

3. EXISTING FLAT ROOF — WARM ROOF REPLACEMENT

3.1 Strip-Out

Remove :

- Existing membranes (felt/bitumen)
- Defective OSB or plywood deck
- Redundant vents
- Lead flashings
- Existing insulation

3.2 Warm Roof Build-Up

Provide warm roof system including :

- Vapour control layer (VCL)
- 150 mm PIR insulation or as per BER/Part L
- New OSB3/Plywood deck (18 mm) where required
- New single-ply / torch-on / liquid membrane

System shall be :

- NSAI certified
- Installed by approved contractors
- Provided with warranty

3.3 Upstands & Flashings

- Membrane upstands min 150 mm
- Insulated upstands
- Lead flashings at abutments
- Proprietary edge trims

3.4 Drainage

- Replace or upgrade outlets
- Ensure falls min 1:80
- Replace gutters/downpipes as needed

4. INTERNAL DOOR REPLACEMENT

4.1 Removal

Remove :

- Existing door leaves
- Frames
- Architraves
- Ironmongery
- Make good wall finishes

4.2 New Doors

Install doors per Door Schedule :

- FD30/FD60 fire doors where required
- Acoustic doors where required
- Pre-hung or site-fitted frames
- Intumescent & cold-smoke seals
- All hardware per Ironmongery Schedule

4.3 Finishing

- Decorate
- Adjust operation
- Certify fire doors

5. EXTERNAL WINDOWS & DOORS — REPLACEMENT

5.1 Removal

- Remove frames, glazing, beads
- Remove sealant
- Protect internal reveals

5.2 New Units

Install new windows/doors per Window Schedule :

- uPVC / aluminium / alu-clad / timber
- Double/triple glazing
- Fire rating where applicable
- Acoustic requirement where applicable

- Uw values per BER/Part L

5.3 Installation

- Airtight tape internally
- Breather tape externally
- Proper packing and fixing
- Insulated cavity closers
- External weather sealant

6. INTERNAL JOINERY REPLACEMENT

Replace :

- Skirting
- Architraves
- Window boards
- Timber trims
- Built-in joinery (if noted)

Installation :

- Mitred corners
- Plugged and filled fixings
- Prepared for decoration

7. ELECTRICAL UPGRADE WORKS

7.1 Removal

Strip out redundant :

- Wiring
- Conduits
- Sockets/switches
- Distribution boards
- Light fittings

7.2 New Installation

Install new system to ET101:

- New consumer unit
- New power & lighting circuits
- External lighting
- Emergency lighting
- Fire alarm system
- Data cabling (CAT6)
- Containment (trunking, conduits)
- Testing & certification required.

8. MECHANICAL & PLUMBING UPGRADE

8.1 Removal

Remove redundant :

- Pipework
- Radiators
- Sanitaryware
- Ductwork

8.2 New Works

Provide :

- New radiators/UFH extensions
- Heat source upgrades if required
- New water services
- New cylinder (if specified)
- Ventilation/MVHR where required
- Pipe insulation
- Balancing & commissioning

9. EXTERNAL INSULATION TO PERIMETER

9.1 System

Provide NSAI-certified system :

- 160 mm EPS or mineral wool

- Adhesive + mechanical fixings
- Reinforced basecoat + alkali-resistant mesh
- Reinforced beads at edges
- Acrylic or mineral topcoat finish

9.2 Installation

- By certified installer
- Ensure continuity with cavity insulation
- Correct flashing details
- Interface with windows/doors sealed

10. MAKING GOOD

The contractor shall make good all :

- Walls
- Ceilings
- Plasterboard
- Skirting & architraves
- Floors
- External render
- Internal finishes
- Following door/window replacement, M&E works, structural works or demolition.

11. INTEGRATION WITH NEW-BUILD WORKS

Provide :

- Structural tying
- Airtightness continuity
- Thermal bridge mitigation
- Fire stopping
- Moisture control membranes
- Level alignment with new construction

12. INSPECTIONS, TESTING & CERTIFICATION

Provide :

- Electrical certificates

- Mechanical commissioning
- Fire stopping certificates
- Airtightness test reports
- Window/door installation certs
- Flat roof warranty
- Slate roof warranty
- External insulation warranty
- As-built drawings
- O&M manuals

SECTION 10 — DRAINAGE, RAINWATER GOODS, ACO DRAINS & EXTERNAL SERVICES

SPECIFICATION: DRAINAGE, RAINWATER GOODS, ACO DRAINS & EXTERNAL SERVICES

1. GENERAL REQUIREMENTS

1.1 Scope

The works in this section include :

- Foul and surface water drainage systems
- Rainwater downpipes and gutters
- ACO channels to door thresholds
- Car park surface drainage
- Site sewers and stormwater systems
- Manholes, inspection chambers and gullies
- External watermain, gas, telecoms, ESB ducting
- Soakaways / attenuation systems (if required)
- External tap points, vents and drainage connections
- Making good all surfaces

All works must comply with :

- TGD Part H – Drainage
- Irish Water Code of Practice (if applicable)
- EN 12056, EN 1401, EN 13598
- SUDS best practice
- Local authority standards

2. FOUL DRAINAGE SYSTEM

2.1 Pipes & Materials

Provide :

- uPVC structured wall pipe to EN 1401-1
- Typical pipe sizes:
- 110 mm for foul
- 160 mm for mains/long runs
- Strength Class SN8

2.2 Installation

- Lay at gradients 1:40 to 1:60 unless noted
- Install on granular bed
- Ensure uniform support
- Use appropriate fittings for changes in direction

2.3 Access Chambers & Manholes

- uPVC or precast concrete
- Min internal sizes: 450 × 600 mm (domestic)

Covers :

- D400 for traffic areas
- C250/B125 for footpaths

2.4 Testing

- Water or air testing
- Manholes to be visually inspected
- CCTV testing if required by ER

3. SURFACE WATER DRAINAGE SYSTEM

3.1 Pipes

- uPVC or HDPE pipes
- Laid to falls per Engineer's drawings
- Granular surround to EN standards

3.2 Gullies

Install :

- Road gullies with silt baskets
- Yard gullies
- Trapped gullies where required

3.3 Manholes & Chambers

- Precast or uPVC
- Silt traps upstream of soakaways

3.4 Stormwater Quality Control

Provide :

- Silt traps

3.5 SuDS Features (if applicable)

- Permeable paving
- Infiltration trenches
- Soakaways designed to BRE Digest 365

4. RAINWATER GOODS

4.1 Gutters

- uPVC / aluminium / metal
- Profile per drawings (ogee/half-round/box)
- Brackets at 800 mm max centres

- Provide expansion joints where required

4.2 Downpipes

- uPVC / aluminium / metal
- Min size 68 mm
- Fix with proprietary brackets
- Connect to gullies or drainage system

4.3 Leaf Guards

- Provide at gutter outlets where necessary

5. ACO CHANNEL DRAINS TO DOOR THRESHOLDS

5.1 Product

- ACO or equal approved:
- Polymer concrete/uPVC channel
- Galvanised or stainless grates
- Class A15 domestic or B125 trafficked

5.2 Installation

- Set directly in front of thresholds
- Connect to stormwater drainage
- Concrete surround
- Level set 5–10 mm below door threshold
- Grates removable for cleaning

5.3 Waterproofing Integration

Coordinate with :

- DPC
- Door threshold detailing
- Airtightness membranes
- External paving levels

6. CAR PARK - DRIVEWAY DRAINAGE

6.1 Falls

Car parking areas graded at :

- 1:60 to 1:80 to gullies or channels

6.2 Construction

As per Engineer :

- Sub-base
- Binder course
- Asphalt wearing course

6.3 Drainage

- Road gullies with D400 covers
- Channel drains where required

6.4 Pollution Control

- Provide a Class 1 petrol interceptor if required by authority
- Provide silt traps

7. WATERMAIN & PLUMBING SERVICES

7.1 Watermain

- 25–32 mm MDPE pipe (blue)
- Marker tape above
- Insulation at entry points
- Provide boundary meter box where required

7.2 External Taps

- Frost-proof taps
- Backflow protection

8. GAS SUPPLY (IF APPLICABLE)

8.1 Gas Pipes

- PE100 gas-rated pipe
- Tracer wire
- Marker tape
- Sleeve at entry to building

9. ELECTRICAL / ESB SERVICES

9.1 ESB Ducting

- Red ESB duct, 100 mm
- Draw rope installed
- Marker tape
- ESB chamber/pit as required

9.2 Earthing

- Install earth rods or external earth ring

10. TELECOMS / BROADBAND SERVICES

10.1 Ducting

- 50 mm green duct
- Draw rope
- Marker tape
- Terminate at Eir connection point

11. PAVING & SURFACE REINSTATEMENT

After drainage/service works :

- Compact all backfill
- Restore gravel or topsoil where required

12. TESTING & COMMISSIONING

12.1 Drainage Testing

- Foul: air/water test
- Stormwater: water test
- Chamber and gully checks

12.2 CCTV Survey

If required by ER, provide:

- CCTV of all underground drainage runs

12.3 As-Built Records

Provide :

- Drainage layout
- Invert & cover levels
- Chamber schedule
- Duct routes
- Pipe gradients and diameters

SECTION 11 — EXTERNAL WORKS, KERBS, DRIVEWAY, PATHS, SLOPES, STEPS & HANDRAILS

SPECIFICATION: EXTERNAL WORKS, PAVING, ACCESS & LANDSCAPING

1. GENERAL REQUIREMENTS

1.1 Scope

This section covers all external civil and hard landscaping works including:

- Site preparation and formation
- Concrete kerbs
- Tarmacadam roadways and parking areas
- External drainage gullies and channel drains

- Concrete footpaths
- Gently sloped accessible routes
- Stepped access compliant with TGD-M
- Tie-in to existing services and drainage
- Making good grassed areas or soft landscaping (to be detailed on Landscape Plan)

All works to comply with :

- TGD Part M (Accessibility)
- TGD Part H (Drainage)
- Local authority & TII standards
- SUDS principles
- Manufacturer installation guidance

2. SITE PREPARATION

2.1 General Preparation

- Clear site of debris, vegetation, and unsuitable material
- Strip topsoil to stockpile
- Remove obstructions and redundant services
- Protect existing utilities

2.2 Formation & Subgrade

- Excavate to formation levels
- Proof-roll to detect weak areas
- Replace weak material with compacted hardcore
- Achieve solid, uniform formation

3. CONCRETE KERBS

3.1 Product

Provide precast concrete kerbs :

- 175 × 125 mm standard
- Splay or half-battered as shown
- Dropped kerbs at entrances

3.2 Installation

- Bed on 100 mm concrete kerb race
- Backed with 150 mm concrete
- Joints tight and aligned
- Kerbs smooth and true

4. TARMACADAM ROADWAYS & CAR PARKING

4.1 Sub-Base

Provide :

- 150–250 mm Type 804 / Clause 808 sub-base
- Compacted in layers
- Achieve > 98% compaction

4.2 Asphalt Build-Up

Typical :

- 40–60 mm AC10 wearing course
- 60–100 mm AC20 binder course

4.3 Falls & Drainage

- Minimum fall 1:60–1:80
- No ponding permitted

4.4 Line Marking

N/A

4.5 EV Charging Bays

- Ducts & base as per EV supplier

5. SURFACE WATER GULLIES

5.1 Type

- Road gullies with silt buckets
- B125–D400 covers

5.2 Installation

- Concrete surround
- Levels flush with finished surface

6. TOBERMORE TEGULA PAVING

6.1 Paving Blocks

Provide Tobermore Tegula :

- Tegula Trio or equivalent
- 50–60 mm thick
- Colour per Architect

6.2 Bedding & Sub-Base

- 30–50 mm grit sand bedding
- 150–250 mm Clause 808 hardcore
- Edging kerbs installed

6.3 Installation

- Lay in manufacturer-approved pattern
- Compact using plate compactor
- Sweep kiln-dried jointing sand

6.4 Tolerances

- ± 6 mm under 3 m straightedge
- Joint width 2–5 mm

7. CONCRETE FOOTPATHS

7.1 Construction

Provide concrete footpaths :

- 100–150 mm C25/30 concrete
- Reinforcement mesh (A142 or A393 if required)
- Brushed finish with steel trowelled edge

7.2 Falls

- 1:60 minimum away from building

7.3 Expansion Joints

- Every 4.5 m
- At junctions with building

8. GENTLY SLOPING ACCESS ROUTES (TGD-M)

8.1 Gradients

- Preferred slope: 1:20
- Max allowable: 1:12 (short ramps only)
- Crossfall max 1:50

8.2 Surface Finish

- Brushed concrete
- Anti-slip surface
- Tegula paving allowable with stabilised joints

8.3 Landing Areas

- Required at top/bottom of slopes > 5 m
- Min landing length 1.2 m

8.4 Edge Protection

Provide :

- Kerb upstand
- Tactile paving where required

9. STEPPED ACCESS (TGD-M COMPLIANT)

9.1 Construction

Steps to have :

- Min tread 280 mm
- Max riser 180 mm
- Slip-resistant nosings
- Consistent rise/going

9.2 Tactile Paving

Install at:

- Top of steps
- Bottom of steps
- Priority access points

9.3 Handrails

- N/A

SECTION 12 — FIRE STOPPING, COMPARTMENTATION & FIRE SAFETY PROVISIONS

1. GENERAL

This section covers all fire stopping, fire barriers, cavity barriers and fire-resistant construction required to ensure full compliance with:

- TGD Part B (Fire Safety)
- BS 476 & EN 1366
- Manufacturer certification

Fire safety certificate drawings

- Fire consultant's strategy (if applicable)

2. FIRE STOPPING OF PENETRATIONS

Provide fire stopping at :

- Pipe penetrations
- Duct penetrations
- Cables and cable trays
- Service risers
- Steel beams passing through walls/floors
- Voids and gaps around openings

Approved materials :

- Rock mineral fibre fire batts
- Intumescent mastic
- Graphite-based intumescent sealants
- Intumescent pipe collars
- Fire sleeves
- Fire pillows (where removable protection required)

All fire stopping installations must :

- Achieve the FRR (Fire Resistance Rating) shown on drawings
- Be installed by trained/competent personnel
- Be labelled with permanent fire-stopping identification tags
- Be photographed and recorded for the fire stopping register

3. COMPARTMENTATION

- N/A

4. CAVITY BARRIERS

Provide cavity barriers at :

- Eaves
- Top of cavity under roof
- Around window and door openings
- Around steel beams penetrating cavity
- Party wall junctions
- Compartment wall junctions

Materials :

- Intumescent cavity barriers
- Mineral wool barriers
- Non-combustible fire-rated boards

5. CERTIFICATION

Contractor must provide :

- Fire-stopping register
- Photographic evidence of each penetration
- Certificates for intumescent products
- CE certificates for fire doors
- Installer competence certificates
- Fire dampers testing documentation

SECTION 13 — THERMAL, AIRTIGHTNESS & PART L COMPLIANCE

1. GENERAL

This section provides the overall thermal and energy-performance requirements.

Detailed U-values, Psi-values, and final BER will be provided in the Energy/Part L Design Report attached by your BER assessor or designer.

2. THERMAL PERFORMANCE REQUIREMENTS

Minimum U-values (guideline unless overridden by BER design):

- External walls: $\leq 0.18 \text{ W/m}^2\text{K}$
- Roof: $\leq 0.16 \text{ W/m}^2\text{K}$
- Floors: $\leq 0.18 \text{ W/m}^2\text{K}$
- Windows/doors: $\leq 1.4 \text{ W/m}^2\text{K}$ (or as per Window Schedule)

Thermal bridging :

- Conform to Acceptable Construction Details (ACDs)

- Use insulated cavity closers at all openings
- Provide perimeter insulation to floor area
- Provide thermal breaks to sills and thresholds
- Ensure insulation continuity around steel beams

3. AIRTIGHTNESS

The Contractor must deliver :

- Continuous airtightness layer across all building elements
- Airtight membrane at ceiling or rafter level

Airtight tapes at:

- Windows and doors
- Joists, beams, rafters
- Service penetrations
- Floor/wall junctions
- Slab/wall junctions

Airtightness test target :

- New-build extension: $\leq 3 \text{ m}^3/\text{hr}/\text{m}^2 @ 50 \text{ Pa}$
- Existing building upgraded areas: “best achievable” standard
- A final airtightness test must be passed before completion.

4. TESTING AND VERIFICATION

Before covering airtight layers :

- ER to inspect
- Contractor to photograph all junctions
- Red-line airtightness drawings must be updated

SECTION 14 — GENERAL M&E COORDINATION REQUIREMENTS

(Mechanical and Electrical systems are fully specified elsewhere, but the Contractor must comply with the following coordination requirements.)

1. GENERAL COORDINATION

- All M&E installations must be coordinated with architectural, structural and fire-stopping requirements.
- All builders' work in connection (BWIC) shall be provided by the Main Contractor.
- Ensure openings, chases, risers and penetrations are correctly formed.

2. BUILDERS' WORK IN CONNECTION (BWIC)

Contractor must provide :

- Service penetrations
- Concrete pads for plant (flat roof/external units)
- Cutting & drilling of structure (Engineer approval)
- Sleeves and ducts
- Fire stopping
- Weathering around penetrations
- Vent grilles and openings

3. M&E FIXING REQUIREMENTS

- Plant and equipment to be vibration isolated
- Services to be supported on galvanised brackets
- Pipework insulated
- Condensate drained appropriately
- Cable containment installed neatly and securely

4. TESTING & COMMISSIONING

The Main Contractor must coordinate :

- Pressure tests
- Chlorination of water services
- Balancing of ventilation
- Electrical testing & certification
- Fire alarm commissioning
- Emergency lighting certification
- Manufacturer commissioning of heat sources

SECTION 15 — SANITARYWARE & INTERNAL FIXTURES

1. GENERAL

All sanitaryware supplied and installed as per Finishes Schedule and M&E drawings.

2. FIXTURES INCLUDE

- WC pans & cisterns
- Wash-hand basins
- Taps & mixers
- Shower trays, screens & mixers
- Kitchen sinks & taps
- Traps & wastes
- Accessories (towel rails, toilet roll holders, mirrors etc.)

SECTION 16 — FULL COMMISSIONING & HANDOVER

The Contractor must compile :

1. Full O&M Manuals

Including :

- All manufacturers' data
- Guarantees & warranties
- Maintenance instructions
- Fire stopping register
- Window/door schedules
- Cleaning and care instructions

2. As-Built Drawings

- Architectural
- Structural
- Civil/drainage
- M&E (supplied by M&E contractor)

3. Training

Provide training for :

- Heating systems
- Ventilation systems
- Fire alarm
- Electrical systems
- Window/door operation
- External equipment (EV chargers, etc.)

4. Certification

- BCaR Ancillary Certs
- Air tightness test
- Electrical Certs
- Gas Certs
- Fire Cert sign-off
- Mechanical commissioning certs
- Roof warranties
- External insulation warranty
- Drainage test reports

GENERAL CONDITIONS, COORDINATION & PRIORITY OF DOCUMENTS (CATCH-ALL CLAUSE)

1. Interpretation & Coordination of Documents

This specification shall be read in conjunction with all drawings, schedules, details, BOQs, and all other contract documents issued as part of the Public Works Contract (PW-CF).

No document shall be taken in isolation.

2. Contractor's Duty to Verify

The Contractor shall :

- Examine all documents prior to pricing and construction
- Verify consistency across drawings, schedules and specifications
- Identify discrepancies and bring them to the Employer's Representative for clarification before works proceed

- Failure to request clarification shall not relieve the Contractor of compliance with the contract requirements.

3. Conflicting Information – Higher Standard to Prevail

Where discrepancies occur between :

- Drawings
- Specifications
- Bills of Quantities
- Manufacturers' data
- Schedules
- Details

...the Contractor shall adopt the higher / more onerous standard, unless directed otherwise in writing.

Examples :

- If two U-values differ, the lower U-value (better performance) applies.
- If two materials differ, the higher quality material applies.
- If two workmanship standards differ, the more stringent standard applies.

4. Compliance With All Regulations & Standards

The Contractor shall ensure all works comply with :

- Building Regulations
- EN, BS and IS standards
- Manufacturers' installation requirements
- Fire Safety Certificate
- Part L / BER design
- Planning conditions
- Health & safety legislation
- Where a conflict exists between standards, the most demanding standard shall apply.

5. Manufacturer's Instructions & Systems

All proprietary systems (e.g., insulation, render, membranes, roofing, radon) shall be installed in full compliance with :

- Manufacturer installation manuals

- NSAI Agrément certificates
- System warranties and requirements
- If the specification or drawings differ from manufacturer requirements, the manufacturer's requirements prevail unless otherwise instructed in writing.

6. Unspecified Items

Where components, fixings, accessories, trims or ancillary items are:

- Not fully described, OR
- Not shown on drawings
- ...the Contractor shall allow for all necessary items to complete the system in accordance with best practice and manufacturer requirements.

7. Quality of Workmanship

All workmanship shall be :

- Performed by competent tradespersons
- To the highest industry standards
- In accordance with relevant codes of practice
- Substandard workmanship shall not be accepted, even if shown or implied elsewhere.

8. No Claims for Omissions or Misinterpretation

The Contractor accepts full responsibility for reviewing:

- All drawings
- All specifications
- All schedules
- All addenda
- All clarifications
- No claim will be entertained for omissions that should reasonably have been identified by the Contractor.

9. Order of Precedence (If Required)

If the Contract requires a formal hierarchy, apply the following unless PW-CF explicitly overrides:

- Statutory requirements

- Building Regulations
- Manufacturer system requirements
- Project Specifications
- Project Drawings
- Bills of Quantities (for pricing/reference)