Specification of Works

Refurbishment, alterations and extension –

14 Tullyglass Hill, Shannon, Co. Clare

V14KH42

Client: Corlann Clare
Project number: 26COR07-1
Prepared by: Ian Sheehy Building Surveyor Ltd, Bansha, Askeaton, Co. Limerick
Issue: Tender, November 2026

Contents

- Project information
- 1 Preliminaries and general requirements
- 2 Site clearance and existing services
- 3 Demolition, strip-out and alterations
- 4 Substructure and retaining walls
- 5 External walls, insulation and render
- 6 Structural steelwork and lintels
- 7 Roofs, rooflights and rainwater goods
- 8 Windows and external doors
- 9 Internal walls, linings and ceilings
- 10 Internal doors and ironmongery
- 11 Fire safety
- 12 Platform lift and stair
- 13 Accessibility
- 14 Finishes, kitchen and sanitaryware
- 15 Mechanical services
- 16 Electrical services
- 17 Drainage
- 18 External works
- 19 Painting and decorating
- 20 Testing, completion and handover
- Appendix A: Door and window schedules
- Appendix B: Electrical and mechanical pricing schedules

Project information

This specification sets out the materials and workmanship for the refurbishment, alteration and single-storey extension of 14 Tullyglass Hill. It is read together with the drawings listed below and the Structural Engineer's drawings and details.

Item	Detail
Project	Refurbishment, alterations and extension
Address	14 Tullyglass Hill, Shannon, Co. Clare, V14KH42
Client	Corlann Clare
Project number	26COR07-1
Designer	Ian Sheehy Building Surveyor Ltd, Bansha, Askeaton, Co. Limerick
Regulations	Building Regulations 1997–2024 and current Technical Guidance Documents A–M

Drawing register

Drawing	Title	Scale (A1)	Date
26D0731	Existing Site Layout	1:100	10/06/26
26D0732	Existing Plans and Sections	1:50	28/09/26
26D0733	Existing Elevations	1:50	28/09/26
26D0734	Proposed Elevations	1:50	28/09/26
26D0735	Kitchen and Utility Units	1:25	11/02/26
26D0736	Proposed Plan and Section	1:50	28/09/26
26D0738	Proposed Site Layout	1:100	10/06/26
26D0780	Lighting	1:50	02/11/26
26D0781	Emergency Lighting and Fire Alarm	1:50	02/11/26
26D0782	Power and General Services	1:50	02/11/26
26D0783	MVHR Layout	1:50	02/11/26
26D0784	Heating Layout	1:50	02/11/26
26D0785	Plumbing and Drainage	1:50	02/11/26
26D0786	M&E Schematics	NTS	02/11/26
SE spec	Tender Structural Specification, McKenna Consulting Engineering (T0.2)	—	05/10/26
SE drawings	Remaining Structural Engineer's drawings and details (Appendix B)	—	To be issued

How to use this specification

- Clause numbers referred to on the drawings are kept here: clause 3.7 (lean-to demolition), clause 4A.7 (stone retaining wall) and clause 18.4 (footpath).
- Figured dimensions take precedence over scaled ones. Do not scale from drawings.
- Structural elements follow the Structural Engineer's design where it differs from this document.
- Report any discrepancy between drawings, schedules and this specification to the Employer's Representative before proceeding.
- The M&E drawings 26D0780–26D0786 are for pricing purposes only. The mechanical and electrical systems are designed by the specialist contractors or installers (15.1, 16.1).
- Abbreviations: ER = Employer's Representative; SE = Structural Engineer; FSC = Fire Safety Certificate; DAC = Disability Access Certificate; TGD = Technical Guidance Document; FFL = finished floor level.

1 Preliminaries and general requirements

The Contractor provides everything needed to complete the works in this specification and on the drawings, to a standard that complies with the Building Regulations 1997–2024.

1.1 Scope of works. The works comprise:

- internal strip-out and demolition of internal walls
- demolition of the east lean-to and the courtyard glazed roof
- structural alterations, new openings and new steel beams
- a new single-storey extension on a raft foundation
- upgrading of all flat roofs to warm-deck roofs
- a new solid roof with rooflights over the courtyard
- replacement of all windows and external doors
- new internal layout with FD30 door sets
- a new platform lift and widened stair
- new mechanical and electrical services
- new and replaced drainage
- external works to driveway, footpaths, retaining walls and landscaping

1.2 Statutory approvals. Do not start the relevant works until the following are in place and their conditions have been issued to the Contractor:

- Fire Safety Certificate
- Disability Access Certificate
- Commencement Notice lodged on the Building Control Management System
- planning permission or exemption, as confirmed by the ER

1.3 Standards. Comply with the current editions of the Irish Standards and Technical Guidance Documents referred to. Install all products strictly to the manufacturer's instructions and their third-party certification, such as NSAI Agrément or ETA.

1.4 Health and safety. Comply with the Safety, Health and Welfare at Work (Construction) Regulations 2013. The Contractor acts as PSCS and develops the Safety and Health Plan before starting.

1.5 Asbestos. Carry out a refurbishment and demolition asbestos survey before any removal works. Suspect materials include roof felts, corrugated sheeting, soffit boards and mastics. Remove any asbestos found using a competent licensed contractor before other work in that area.

1.6 Site walk and records. Before starting, walk the site with the ER to agree the extent of each removal. Mark everything that is to remain. Record existing levels, kerb lines and manhole cover levels.

1.7 Dimensions. Check all dimensions and levels on site before work starts or any order is placed. Check all window and door opening sizes on site before manufacture.

1.8 Temporary works. Provide temporary propping and needling before forming or altering any opening in an existing wall. Keep it in place until the new lintel or beam is bedded and the mortar has cured.

1.9 Weathertightness. Keep the building weathertight at all times. Board up openings with temporary weatherproof boarding until new units are fitted. Do not strip more roof than can be made watertight the same day.

1.10 Protection. Protect retained work, finishes, trees, fences and neighbouring property. Keep the existing timber ranch fencing to all boundaries and protect it throughout the works.

1.11 Waste. Remove all demolition material, spoil and arisings from site to licensed facilities. Keep waste transfer records and give copies to the ER.

1.12 Samples and submittals. Submit for approval before ordering: windows, external doors, door sets and ironmongery, render and EWI system, roof membrane, rooflights, platform lift, floor finishes, sanitaryware and colours.

1.13 Inspections. Give the ER and the SE at least 48 hours' notice to inspect foundations, steelwork, drainage before backfilling, fire stopping and other work before it is covered up.

2 Site clearance and existing services

Before any excavation or demolition, isolate the building's supplies, locate all underground services and clear the areas marked on drawings 26D0731 and 26D0738.

2.1 Isolation of supplies. Isolate and disconnect the electricity, water and oil supplies before strip-out. Arrange disconnection or diversion with the utility providers where needed.

2.2 Locating services. Before any excavation:

- locate and mark all underground services, including drainage, water, electricity, telecoms and the oil line
- scan with a cable avoidance tool (CAT and Genny)
- dig trial holes by hand where services are near

2.3 Manholes. Lift and protect manhole covers within the working area. Keep chambers free of debris. Where finished levels change, adjust covers to suit (see 17.6).

2.4 Tree removal. Fell the trees marked "Remove existing tree" at the front of the house beside the entrance steps on the west side.

- Use a competent tree surgeon. Dismantle the trees in sections where space is limited.
- Check for nesting birds before felling. Felling is not permitted from 1 March to 31 August under the Wildlife Acts.
- Grind out stumps to at least 300 mm below finished level. Remove roots within 1 m of new construction.
- Backfill with compacted topsoil or sub-base to suit the finish above.

2.5 Retained trees. Protect the trees to remain on the north and east of the site. Do not store materials, park plant or change levels within their root protection areas.

2.6 Hedges and vegetation. Cut back the existing hedge at the south-west entrance and remove the section of timber fence shown. Cut back all hedges, bushes and vegetation in the areas marked along the south boundary.

2.7 Oil tank. Drain the residual oil and decommission and clean the tank. Remove the tank, its supply line, fire valve and base. Inspect the ground under the tank and along the supply line. Report any staining or odour to the ER before backfilling. Dispose of oil and contaminated material through a licensed waste contractor.

2.8 Topsoil. Strip and stockpile topsoil from the working area for reuse in reinstatement.

3 Demolition, strip-out and alterations

Strip the building back to its structural shell, demolish the elements shown in broken line on 26D0732 and 26D0733, and form the altered openings. All structural work is to the SE's design and sequence.

3.1 General. Demolish by hand or with light plant. Do not damage retained structure. Stop and inform the ER and SE if any retained element appears unstable or differs from the drawings.

3.2 Internal strip-out. Remove:

- all internal doors, frames, linings and architraves
- kitchen units, worktops, appliances and tiling
- all sanitaryware, baths, shower trays, screens, tiling, pipework and wastes
- built-in wardrobes, shelving, hot press enclosures and fitted furniture
- all floor finishes, underlays, adhesives and gripper rods
- all ceilings (timber tongue-and-groove and plasterboard) and the insulation between the ceiling joists
- all electrical wiring, fittings, the consumer unit and alarm equipment
- all radiators, heating and plumbing pipework
- the oil boiler, burner, flue, controls, cylinder, header tanks and associated pipework

3.3 Internal walls. Demolish the internal walls shown in broken line. Remove the corridor wall in its entirety and the wall to widen the corridor. Install new steel beams to the SE's design before or as walls are removed (see Section 6).

3.4 Chimney. Demolish the chimney stack and breast to below finished floor level internally and to below roof deck level. Make good the roof deck to suit the warm-deck roof (7.2).

3.5 Courtyard roof. Take down the existing aluminium-framed glazed roof over the courtyard, with its glazing, shade sails, fixtures and fittings.

3.6 Roof coverings and rooflight walls.

- Strip existing flat-roof coverings, upstands and flashings back to the deck, ready for the warm-deck system.
- Remove all fascias, soffits, gutters and downpipes.
- Remove the glazing, roof windows and wall build-up at the rooflight walls, ready for rebuilding (7.5).
- Inspect the exposed deck and joists with the ER. Replace rotten or damaged deck boards and joists as instructed.

3.7 Lean-to structure (east). Demolish the lean-to on the east side of the house, including its roof, frame, walls, slab and foundations. Make good the external wall where the lean-to connected, ready for the new works.

3.8 Porch. Remove the porch flat roof and its timber windows. Alter the openings for the relocated front door on the west elevation.

3.9 Entrance steps and wall (north-west). Remove the existing steps at the north-west corner. Saw-cut the adjoining wall to a clean straight line in line with the house. Make good the cut end with a matching cap or coping and render. If the wall retains ground, prop it before cutting and confirm the detail with the SE.

3.10 Windows and external doors. Remove all windows and external doors for replacement (Section 8). Remove the double doors to the courtyard and lower the threshold to below FFL for the new door.

3.11 Openings in existing walls.

- Where windows become doors, cut out the 225 mm blockwork below the cill down to threshold level.
- Cut new door and window openings and widen existing openings where shown.
- Install new lintels or beams to the SE's design. Prop as clause 1.8.
- Make good all reveals, cills and render at altered openings to match existing.

3.12 Raising cills. Raise the window cills marked on 26D0733 and 26D0734 to 1150 mm above FFL. Build up in blockwork with a new cill and DPC. Make good internally and externally.

3.13 Blocking up openings. Block up the former openings shown hatched on 26D0736, including the rear entrance door on the east elevation. Use blockwork toothed and tied to the existing, with DPC and insulated cavity closers as required. Render to match.

3.14 Floor for platform lift. Remove the section of floor for the platform lift to the SE's detail and the lift manufacturer's pit and opening dimensions (Section 12).

4 Substructure and retaining walls

The extension sits on a reinforced concrete raft foundation, and all retaining walls are built to the SE's design. The SE's drawings take precedence over this section for sizes, reinforcement and concrete grades.

Raft foundation and ground floor (extension)

4.1 Excavation. Excavate to the formation level set by the SE. Do not undermine the foundations of the existing house. If existing foundations are exposed, stop and notify the ER and SE. The SE inspects the formation before any blinding is placed.

4.2 Blinding and engineered fill. Lay a blinding layer on the approved formation as a working platform. Build up the engineered fill in Type 1 (T1) granular material in layers of 225 mm, each compacted thoroughly with a suitably sized vibrating roller or vibrating plate. Step the layers in at each level where needed to leave working space for the slab formwork. Locate the radon sumps and their pipework to the outside of the slab within the compacted fill.

4.3 Radon and damp protection. Radon sumps and pipework as 4.2, to TGD C. Place the radon barrier on top of the raft slab, lapped and taped at all joints and linked to the DPC of the existing house. Tape and seal every penetration with gas-tight top hats or sleeves. The barrier is to be installed by a specialist certified installer, who issues a certificate on completion. Confirm the radon risk for the site with the ER.

4.4 Raft slab. Reinforced concrete raft to the SE's design: concrete C30/37 (minimum 35 N, maximum 40 N) with 20 mm aggregate; two layers of A393 mesh, top and bottom throughout (approx. 90 sheets), lapped to the SE's requirements and separated on chairs to give 40 mm cover to both faces; H12 U-bars with 500 mm long legs at 200 mm centres around the whole slab perimeter (approx. 400 no.). Quantities are approximate; the contractor is to check them against the SE's drawings. Cure for at least 7 days.

4.4A Saw-cut joints. Form two saw-cut joints in the slab, 20 mm deep, at the positions the SE sets. Cut within 24 hours of pouring; late cutting will let the slab crack in an uncontrolled way. Wash out the joints and fill them with a suitable externally rated joint filler (Tec 7 or similar).

4.4B Cast-in services. Setting out and casting in all services, ducts, pop-ups and sleeves through the raft is the contractor's responsibility. Coordinate with the M&E drawings (26D0780–26D0786) and below-ground drainage before the pour, and get the ER's approval of the set-out.

4.5 Thermal blocks and floor insulation. Lay thermal blocks (Thermablock or equal approved) as the first course under the perimeter and internal walls, to the manufacturer's details. Over the radon barrier, lay rigid PIR or EPS floor insulation with a 25 mm perimeter upstand to all external walls, to achieve a floor U-value of no more than 0.18 W/m²K. Confirm the thickness with the energy assessment.

4.6 Screed. Sand-cement or liquid screed over a separating layer, set so the extension FFL matches the adjoining existing floor level, with no step at the junction.

4.7 Existing floors. Where floors are opened up for the platform lift (3.14) or new services, reinstate with matching construction, DPM lapped to the existing, and insulation where reasonably possible.

4A Retaining walls

4A.1 General. Build all new and rebuilt retaining walls to the SE's design. Prop and support retained ground at all times during the work.

4A.2 Drainage. Provide weep holes at the spacing the SE sets, free-draining granular backfill and a perforated land drain behind every retaining wall, discharging to the surface water system.

4A.2A SE details. Build to the SE's Tender Structural Specification (T0.2):

- next to the existing house foundations: 215 mm blockwork on flat on a concrete base, with Ø12 bars at 500 mm centres resin-anchored into the existing slab (Hilti HIT-RE 200 or equal, 90 mm embedment), weep holes at 1 m centres and expansion joints at 8 m centres
- masonry retaining walls up to 1.125 m high: stepped 675 / 440 / 215 mm masonry on a 900 × 300 mm concrete footing with A393 mesh, weep holes at the base, and a perforated drain in drainage stone behind

Any retaining wall over 1.125 m is to a separate SE design.

4A.3 North-west wall. Cut back approximately 3 m of the existing retaining wall at the north-west corner (26D0731). Build the new retaining wall shown blue on 26D0738.

4A.4 Curved wall (west). Build the new low-level curved retaining wall between the new path and the existing lawn (26D0738, note S6).

4A.5 Low-level walls (south). Remove the existing low-level retaining walls along the south side, set them back and rebuild them to allow the 1500 mm footpath (26D0738, note S7).

4A.6 New retaining wall (south). Provide the new retaining wall alongside the south footpath where shown on 26D0738.

4A.7 Stone retaining wall (south). Remove the section of stone retaining wall shown, to allow for the wider footpath.

- Prop and support the retained ground. Agree the line and extent on site with the ER.
- Take down the stone by hand and set aside sound stone for reuse in making good.
- Rebuild the new end of the wall to a neat return.
- Build the new or set-back retaining wall to the SE's design.

4A.8 Render repairs. Carry out localised repairs to the render of the low-level retaining wall on the north side. Cut out defective render and re-render to match.

5 External walls, insulation and render

The extension walls are 225 mm solid blockwork laid on flat with an NSAI Agrément-certified external wall insulation (EWI) system. Existing walls keep their render, repaired and repainted.

5.1 Blockwork. 225 mm solid dense concrete blocks to I.S. EN 771-3, laid on flat in mortar to I.S. EN 998-2, strength class and bond to the SE's design. Fill all joints. Build no more than 1.5 m height in one day.

5.2 Tying to existing. Tie new walls to existing walls with stainless steel wall starter ties at maximum 450 mm vertical centres, or tooth into the existing where shown. Provide a vertical movement joint at the junction if the SE requires it.

5.3 DPC. Polymer DPC at least 150 mm above finished ground level, lapped to the floor DPM and radon membrane. Provide stepped cavity trays and DPCs at all openings and junctions with the existing.

5.4 External wall insulation. NSAI Agrément-certified EWI system, installed by a contractor approved by the system holder, comprising:

- adhesive and mechanical fixings to the system certificate
- insulation boards to achieve a wall U-value of no more than 0.18 W/m²K, confirmed by the energy assessment
- starter track, corner beads, stop beads and movement joints from the same system
- basecoat with embedded reinforcing mesh, with extra diagonal mesh at opening corners
- acrylic render topcoat, colour to be confirmed

Insulate window and door reveals with the system's reveal boards. Seal all junctions with windows, sills and roof edges as the system details require.

5.5 EWI fire performance. Insulation and render to the reaction-to-fire class required by TGD B and the Fire Safety Certificate, with fire breaks if required.

5.6 Existing rendered walls. Carry out localised repairs to cracked and spalled render. Cut out defective areas, key back to sound substrate and re-render to match. Apply a fungicidal wash and two coats of exterior masonry paint throughout, colour to be confirmed.

5.7 Making good. Make good render at altered and blocked-up openings, and where the lean-to is removed, to match the existing finish and texture.

6 Structural steelwork and lintels

All beams, lintels, padstones and connections are to the SE's design. The locations below come from 26D0732 and 26D0736.

6.1 Beam locations.

- Over the removed corridor wall, supporting the flat-roof joists
- Over the removed masonry wall in the south-west living area, supporting the flat-roof joists
- Over the new opening into the platform lift and widened stair area
- Over the new opening in the north-east wall, supporting the flat-roof joists
- At the activity room (courtyard roof): 203 × 203 UC46, approx. 5.3–5.5 m long, to the SE's specification (7.4)

6.2 Steel. Structural steel to I.S. EN 10025, grade S355 unless the SE specifies otherwise. Fabricate and erect to I.S. EN 1090-2, execution class set by the SE. Supply CE marking and mill certificates.

6.3 Bearings. Bed beams on concrete padstones or steel spreader plates sized by the SE. Pack with non-shrink grout or dry-pack mortar. Do not load until the bedding has cured.

6.4 Corrosion protection. Shot-blast and apply a primer and paint system suited to an internal dry environment. Galvanise any steel within the external envelope or exposed to moisture.

6.5 Fire protection. Protect steelwork to the fire resistance required by the Fire Safety Certificate, using intumescent paint or fire-rated board encasement with third-party certification. Submit the product data and installer's certificate to the ER.

6.6 Lintels. New lintels to the SE's design at every new or widened opening. Lintels in external walls to be insulated or thermally broken, with cavity trays and stop ends where required.

6.7 Joist connections. Where joists are supported off new beams, use galvanised joist hangers or timber plates bolted to the beam, to the SE's detail.

7 Roofs, rooflights and rainwater goods

Every flat roof, existing and new, becomes a warm-deck roof with tapered PIR to falls and a guaranteed membrane. The courtyard gets a new solid roof falling to the south with rooflights, two of which are automatic smoke vents.

7.1 Warm-deck system. One manufacturer's complete system, installed by an approved contractor and carrying the manufacturer's guarantee. Build-up, from the deck up:

- deck: existing boarding where sound, or new 18 mm OSB3 or WBP plywood where replaced
- vapour control layer, fully sealed at laps, upstands and penetrations
- tapered PIR insulation to falls, minimum finished fall 1:80, to achieve a roof U-value of no more than 0.20 W/m²K (confirm with the energy assessment)
- single-ply membrane or reinforced bituminous membrane, mechanically fixed or bonded to suit the wind-uplift calculation

The roof covering must achieve the external fire classification required by TGD B (B ROOF(t4) unless the FSC states otherwise).

7.2 Existing flat roofs (P3). Upgrade to the warm-deck system in 7.1. Insulated upstands at least 150 mm above finished roof level. Make good the deck where the chimney is removed (P16).

7.3 Extension roof (P2). Warm-deck roof as 7.1 on joists to the SE's design.

7.4 Courtyard roof (P4). New solid warm-deck roof to the SE's Tender Structural Specification (T0.2), falling to the south, with the rooflights in 7.6 and 7.7. Strip the glazed roof back to the original blockwork and rebuild the gables and eaves in blockwork. The structure comprises a sloping 203 × 203 UC46 beam (approx. 5.3–5.5 m) strapped to the blockwork; 100 × 75 C16 treated wall plates held down with 30 × 5 galvanised straps at 2.0 m centres; 225 × 44 C16 joists at 600 mm centres with 225 × 44 bridging at third points; and double 225 × 44 C16 trimmers to the modular rooflight. Strap the gables, eaves and purlins to the SE's details, and trim every rooflight and AOV opening.

7.5 Rooflight upstand walls (P6). Rebuild with:

- 175 × 50 mm timber studs, with 125 mm PIR insulation between
- externally: 18 mm OSB3, breather membrane, 50 × 25 mm vertical battens, 12.5 mm cement board and acrylic render
- internally: airtight barrier and 37.5 mm insulated plasterboard

7.6 Modular rooflights. VELUX HVC SL0063 modular longlights (four modules of 2000 × 1000 mm: two fixed, two electrically operated), with flashings, vapour barrier connection, rain sensor and VELUX Integra control pad. Window marks W20–W23.

7.7 Other rooflights (P5). Flat-glass rooflights, double or triple glazed with a laminated inner pane. Sizes to the window schedule (W16–W19).

7.8 Automatic opening vents (AOVs). Rooflights W17 and W19 are AOVs. They open automatically on a signal from the fire alarm system, with a certified free area as required by the FSC. They need a manual override at a location agreed with the fire officer and a battery-backed power supply. Test and certify with the fire alarm (Section 11).

7.9 Roof details. Provide insulated upstands at rooflights and abutments, proprietary outlets and overflows sized to the drained area, and lead-free or proprietary flashings. Fall all roofs away from the existing walls. Allow for the soil and vent pipes to terminate through the flat roofs (4 no., 26D0785) with the roof system's proprietary weathered collars, positioned clear of joists, rooflights, AOVs and the MVHR intake.

7.10 Fascias and rainwater goods (P14). New powder-coated aluminium fascias, edge trims, gutters and downpipes, colour to be confirmed. Connect downpipes to the surface water system (Section 17).

7.11 Ceilings below roofs. See Section 9 for the vapour control layer, service cavity and fire-rated plasterboard to the underside of the roof joists.

8 Windows and external doors

All windows and external doors are replaced with new units to the schedules on 26D0736 (Appendix A). Every opening is to be measured on site before manufacture.

8.1 Windows (P7).

- Maximum whole-unit U-value 1.4 W/m²K.
- Safety glazing in critical locations to TGD K and I.S. EN 12600.
- Lockable restrictors to all opening lights.
- Background ventilation to TGD F, by trickle vents in the frame or as the ventilation strategy requires (Section 15).
- Frame material and colour to be confirmed.

8.2 Fire-rated windows (P8). Windows W12, W13, W14 and W15 (marked FW30) are fire-rated units giving at least 30 minutes' integrity, tested as complete assemblies (frame, glass, seals and fixings) to I.S. EN 1364-1 or BS 476-22. Install to the test evidence and supply the certificate.

8.3 External door sets (P9). Thermally broken, powder-coated aluminium door sets to the door schedule.

- Level threshold with a maximum 15 mm upstand, chamfered or rounded.
- Linear drainage channel outside, connected to the surface water system.
- Clear opening widths to TGD M.
- Multi-point locking. Escape doors fitted with ironmongery to I.S. EN 179 or I.S. EN 1125 as the FSC requires, openable from inside without a key.

8.4 Main entrance door (P10). New main entrance door on the west elevation, minimum 1000 mm effective clear width, with level access from the new 1500 × 1500 mm landing (18.6).

8.5 French doors (P11). New open-out French doors in the altered existing opening on the west elevation, with a new lintel where required to the SE's design.

8.6 Installation. Fix with stainless steel frame fixings at the spacings set by the manufacturer. Seal the perimeter with an airtight membrane internally and a vapour-open weather membrane externally, overlapping the EWI or render. Insulate the gap between frame and reveal. Fit insulated cavity closers where the frame meets a cavity.

8.7 Sills. New aluminium or precast sills with drips, projecting at least 40 mm beyond the finished wall face, with stop ends and a DPC under.

9 Internal walls, linings and ceilings

Ceilings throughout are two layers of 12.5 mm Type F plasterboard on a battened service cavity below an airtight layer. New partitions are plasterboard on studs, fire-rated where the FSC requires.

9.1 New partitions. Walls marked “New Wall” on 26D0736 are to be either:

- 89 × 38 mm C16 timber studs at 400 mm centres, or
- a proprietary metal stud system,

with head and sole plates, noggins at board joints and fixing points for fittings, grab rails and wall-hung sanitaryware.

9.2 Partition linings. 12.5 mm plasterboard each side as a minimum. Where a wall must be fire-resisting, use the board manufacturer’s tested system for the required period (typically two layers of 12.5 mm Type F each side for 60 minutes, or one layer of 15 mm Type F each side for 30 minutes). Build these walls full height to the underside of the fire-rated ceiling or the structure above, as the tested system requires.

9.3 Acoustic insulation. 50 mm mineral wool (minimum 10 kg/m³) in all new partitions around WCs, showers, pods and bedrooms.

9.4 Wet areas. Use moisture-resistant plasterboard in the WC and shower, ensuite and kitchen areas, as the substrate for the hygienic wall cladding (14.3). Apply a tanking system to I.S. EN 14891 behind the cladding in the shower area where the cladding manufacturer requires it.

9.5 Ceilings (all rooms).

- Airtight barrier and vapour control layer fixed to the underside of the joists, all laps and penetrations taped and sealed to the walls.
- 50 × 35 mm timber counter-battens to form a service cavity, so services do not puncture the airtight layer.
- Two layers of 12.5 mm Type F (fire-rated) plasterboard, joints staggered, fixed with screws at the manufacturer’s centres.
- Taped and skimmed finish.

9.6 Fire-rated ceiling. Where the ceiling forms part of a fire-resisting construction, build it exactly to the manufacturer’s tested system for the required period. This covers batten size and centres, board orientation and fixings. Provide fire-rated downlights or hoods, and fire-rated access hatches. Seal all penetrations with tested fire-stopping (Section 11).

9.7 Existing walls. Hack off loose or hollow plaster. Make good with plaster or dry-lining to match, and form flush junctions where walls are removed.

9.8 Corner protection. Fit metal angle beads to all external corners. Where the use needs it, fit impact-resistant corner guards in corridors to a height of 1200 mm.

9.9 Skirtings and architraves. New MDF skirtings and architraves, primed, profile to be confirmed.

10 Internal doors and ironmongery

All internal doors are FD30S pre-hung fire door sets: 30 minutes' fire resistance with smoke seals. Corridor doors are held open on electromagnetic devices linked to the fire alarm, and room doors have free-swing closers.

10.1 Door sets. Complete factory-made door sets (leaf, frame, intumescent and smoke seals, hinges and glazing) tested to I.S. EN 1634-1 or BS 476-22. Each set carries third-party certification such as Q-Mark or BWF-Certifire, with a label on the leaf and frame. Sizes to the door schedule (Appendix A).

10.2 Installation. Install by a trained installer to the certificated installation instructions. Gaps between leaf and frame of 2–4 mm. Seal the frame-to-wall gap with a tested intumescent or fire-rated sealant system. Do not trim leaves beyond the manufacturer's tolerances.

10.3 Closers and hold-open devices.

Door group	Number	Device
Corridor doors	8	Electromagnetic hold-open devices linked to the fire alarm, releasing to close on alarm or power failure, with closers to I.S. EN 1154
Doors to rooms	10	Free-swing closers to I.S. EN 1155, linked to the fire alarm
Doors to WCs	—	No closers

Set closer opening forces to meet TGD M (no more than 30 N at the leading edge from 0° to 30°).

10.4 Ironmongery. CE-marked and tested for use on fire doors:

- three hinges per leaf to I.S. EN 1935, grade 13
- lever handles on roses, with a return to the door and contrasting with the door face
- sashlocks or latches to I.S. EN 12209
- WC and shower doors with a privacy indicator and emergency release, outward-opening or on lift-off hinges where the WC is accessible
- kick plates where specified
- fire door signage to I.S. ISO 7010 on both faces

10.5 Vision panels. Fire-rated vision panels to corridor doors and cross-corridor doors as TGD M requires, glazed to the door set's test evidence.

10.6 Clear widths. The door schedule gives leaf sizes. Check that every door on an accessible route gives the effective clear width TGD M requires before ordering.

10.7 Handover. Give the ER each door set's certificate, installer's certificate and a door register listing location, rating and ironmongery.

11 Fire safety

11.1 Compartmentation and fire-resisting construction. Build fire-resisting walls, ceilings and the platform lift enclosure to the ratings and extents on the FSC drawings, using tested systems (9.2, 9.6, 12.3). Carry fire-resisting walls continuously to the fire-rated ceiling or the structure above with no gaps.

11.2 Fire stopping. Seal every penetration through fire-resisting construction with a fire-stopping product tested for that service type and substrate. This includes pipes, cables, ducts and trays. Use pipe collars for plastic pipes, wraps or batts for cable bundles, and fire dampers or fire-rated ductwork for ventilation ducts. Install by a third-party-certified installer. Label each seal and record it with photographs.

11.3 Cavity barriers. Provide cavity barriers in the roof voids, wall cavities and EWI as required by TGD B and the FSC, including along the line of fire-resisting walls and around openings.

11.4 Fire detection and alarm. Design, supply, install, commission and certify an analogue addressable fire detection and alarm system to I.S. 3218:2024, Category L1, as drawing 26D0781 Panel and repeater: C-TEC XFP or Morley-IAS (Honeywell), at the tenderer's choice; state the make and model in the tender. Detectors, call points and sounder/VADs to be the panel manufacturer's own or approved compatible devices (e.g. Apollo XP95 / Discovery), all on one protocol. Any other make must be offered separately in a schedule of alternatives with full compatibility details and is accepted only with the ER's written approval. Include:

- the control panel at a location agreed with the fire officer
- interfaces to release the corridor door hold-open devices and room door closers (10.3)
- interfaces to open the AOV rooflights (7.8)
- interfaces to the platform lift and to shut down the MVHR, to the cause-and-effect matrix on 26D0781
- enhanced fire-resisting cable (PH120 enhanced, e.g. FP200 Gold or equal) throughout, on steel clips or tray, with no joints other than at device terminations
- a dedicated supply from the distribution board through a red, lockable isolator labelled "FIRE ALARM: DO NOT SWITCH OFF"
- remote monitoring: connect fire, fault and pre-alarm signals to the digital communicator on the intruder alarm panel (16.8) for 24-hour monitoring by an alarm receiving centre (client to appoint the monitoring provider)
- a framed zone chart at the panel and repeater, and remote LED indicators below any void detectors
- device removal and test tools and the panel software handed over on completion
- a provisional allowance of 5 extra smoke detectors, 5 call points and 5 sounder/VAD bases for fire officer or design changes, priced separately and used only on the ER's instruction

11.5 Emergency lighting. Design, supply, install, commission and certify emergency lighting to I.S. 3217:2023 and I.S. EN 1838, as drawing 26D0781. Cover escape routes, exits, the platform lift and the external escape routes to a place of safety. Use 3-hour self-contained LED luminaires from a single manufacturer, with exit signs maintained and to I.S. ISO 7010. Feed each luminaire from the unswitched supply of the local lighting circuit, with a lockable local isolator to exit signs. Provide a test facility: either a lockable key switch for each lighting circuit, or self-test luminaires to I.S. EN 62034 with test results recorded at the panel or fitting. Approved suppliers: Profile Lighting, Ventilux, Light Solutions, Eaton, or equal approved. Include a provisional allowance of 5 extra emergency luminaires, priced separately. Issue the I.S. 3217 commissioning certificate and logbook at handover.

11.6 Fire safety signage. Provide exit and fire safety signs to I.S. ISO 7010 and I.S. 3217.

11.7 Fire extinguishers and blankets. A protective fire equipment specialist supplies, installs, commissions and certifies portable extinguishers to I.S. 291:2015, as the FSC or the ER requires. Positions on the drawings are indicative; the specialist confirms final types and positions before installation. Allow for 6 L fluorine-free (PFAS-free) foam extinguishers rated at least 27A/144B on escape routes and near exits, 2 kg CO2 extinguishers at the distribution board, comms cabinet and Plant 24, and a fire blanket to BS EN 1869 in the kitchen. Mount on brackets with fire point signs, carrying handles no more than 1 m above floor level.

11.8 Escape doors. Final exit doors are openable from inside without a key (8.3). Keep escape routes clear throughout the works.

11.9 Fire safety during the works. Follow a hot-works permit system. Maintain fire detection and escape routes during the works where any part of the building is occupied.

11.10 Records. Hand over certificates for the alarm, emergency lighting, AOVs, fire doors, fire-stopping and fire-rated construction. Hand over as-built drawings showing all fire-resisting elements.

12 Platform lift and stair

A new vertical platform lift links the two internal floor levels, beside a widened stair. The levels are at FFL 13.416 and FFL 14.119, a rise of about 700 mm to be confirmed on site.

12.1 Platform lift. A vertical lifting platform for people with impaired mobility, designed and supplied by a specialist lift contractor to I.S. EN 81-41 and the Machinery Directive.

- Rated load at least 250 kg, enough for a wheelchair user with a companion.
- Platform size, door widths and controls to TGD M and the DAC, at least 1100 × 1400 mm unless the DAC states otherwise.
- Pit, low-pit or pit-less installation to the manufacturer's requirements and the SE's floor detail (3.14).

12.2 Controls and safety.

- Hold-to-run or automatic controls as specified by the manufacturer, at a height and contrast to TGD M, with tactile and visual indication.
- Emergency alarm with two-way communication to a monitored point.
- Emergency lowering and battery backup on power failure.
- Safety edges or light curtains, and interlocked landing doors or gates.

12.3 Enclosure. Enclosure and landing doors to the manufacturer's system. If the FSC requires a fire-resisting enclosure, build the walls and lid to the required rating (9.2, 9.6), and use landing doors with the matching fire rating.

12.4 Power. Provide a dedicated supply from the distribution board to a lockable isolator next to the lift, and a socket and light in any pit, to the lift supplier's data sheet (Section 16).

12.5 Builder's work. Allow for forming the floor opening and pit, installing any steel framing, and making good floors and finishes. Install a level threshold at each landing with a maximum 5 mm step.

12.6 Testing and handover. The lift contractor tests and commissions the lift. A competent person carries out a thorough examination before use, and the report goes to the ER. Include a 12-month maintenance contract, operating instructions and training for the client's staff.

12.7 Stair. Widen the stair opening and the stair to the SE's design. Build the new stair to TGD K and TGD M:

- uniform rise and going on every step, with no open risers
- slip-resistant treads with contrasting nosings on every step
- handrails on both sides, 900–1000 mm above the pitch line, extending at least 300 mm beyond the top and bottom steps
- a contrasting, tactile warning surface at the top of the stair if the DAC requires it

13 Accessibility

The building is to be accessible and usable to TGD M and the conditions of the Disability Access Certificate, from the site entrance to every room. Where the DAC sets a higher standard, the DAC governs.

13.1 Approach. Gently sloped footpaths, no steeper than 1:20 and at least 1500 mm wide, firm, even and slip-resistant, with level landings (18.5). No steps on the accessible route.

13.2 Entrance. Main entrance on the west elevation with a 1500 × 1500 mm level landing and a door giving at least 1000 mm effective clear width (8.4). Level threshold with a maximum 15 mm upstand. The door and its frame must contrast visually with the surrounding wall.

13.3 Internal circulation. Corridors kept to the widths shown on 26D0736 with no projections. Door clear widths to TGD M (10.6). Changes of level served by the platform lift and stair (Section 12).

13.4 Accessible WC and shower. Fit out the accessible WC, and the WC and shower room, to TGD M layouts. This covers:

- the WC position and transfer space
- fixed and hinged grab rails
- a basin within reach of the WC
- lever taps and thermostatic mixing valves set to the outlet temperatures in 14.7
- an emergency assistance alarm with a pull cord reaching to floor level and a reset within reach
- contrasting fittings
- an outward-opening door with an emergency release

13.5 Visual contrast. Walls, floors, doors and ceilings in contrasting tones, with a light reflectance value (LRV) difference of at least 30 points between adjacent surfaces.

13.6 Switches and sockets. Light switches, sockets and controls between 450 mm and 1200 mm above floor level, contrasting with their background.

13.7 Floor finishes. Firm, slip-resistant floor finishes with flush transitions between rooms (Section 14).

13.8 Signage and wayfinding. Room, WC and exit signs in clear text and contrasting colours, with tactile and pictogram signs on accessible WC doors.

14 Finishes, kitchen and sanitaryware

Finishes are durable, cleanable and slip-resistant. Final products and colours are to be confirmed with the client before ordering (1.12).

14.1 Floor preparation. Level existing floors with a smoothing compound so that variations are no more than 3 mm under a 2 m straightedge. Test screeds for moisture before laying finishes and lay only within the flooring manufacturer's limits.

14.2 Floor finishes.

Area	Finish	Slip resistance
WC and shower, ensuite, WCs	Safety sheet vinyl, welded seams, coved 100 mm up the wall	Wet: PTV ≥ 36
Kitchen	Safety sheet vinyl, welded seams, coved skirting	PTV ≥ 36
Entrance lobby	Entrance matting in a recessed well, then safety vinyl	PTV ≥ 36
Corridors, activity room, pods, breakout room	Commercial luxury vinyl tile or sheet vinyl (to be confirmed)	PTV ≥ 36

Use flush threshold strips at every change of finish.

14.3 Hygienic wall cladding. Whiterock PVC-U hygienic wall cladding (2.5 mm, to EN 13245-2), or equal approved, in place of wall tiling: full height in the WC & shower room, ensuites and WCs, and as splashbacks to basins and kitchen worktops. Fix to a flat, sound, moisture-resistant plasterboard substrate (9.4) with the manufacturer's adhesive, using the system's jointing strips, corner and edge trims and sealants, so that the finish is continuous and watertight. Seal all penetrations, and seal to sanitaryware, worktops and the coved floor finish (14.2). Colour to be confirmed. Install to the manufacturer's instructions by an approved installer.

14.4 Kitchen. New kitchen in the south-west room to a layout agreed with the client. This includes:

- units, worktops and upstands, a stainless steel sink and mixer
- appliance spaces and connections
- a lowered section of worktop and knee space for wheelchair users, if the client requires it
- an extract hood ducted to outside (Section 15)

14.5 Sanitaryware. Vitreous china WCs, basins and fittings to I.S. EN 997 and I.S. EN 14688, with water-efficient fittings. Accessible WC and shower fittings are as 13.4. Showers have a level-access floor former laid to falls to a linear or point drain, with a thermostatic mixer.

14.6 Joinery. Window boards in moisture-resistant MDF or solid-surface material. Hot press and storage shelving in slatted or melamine-faced board. Built-in furniture only where shown or instructed.

14.7 Hot water safety. Fit TMV3-approved thermostatic mixing valves (I.S. EN 1111 or I.S. EN 1287) at all basins and showers that service users can reach. Valves must fail safe if the cold supply fails, have strainers and non-return valves on both inlets, and have lockable temperature settings; hand the keys to the ER. Set blended outlet temperatures to no more than 41 °C, as the sanitary schedule on 26D0785. Thermostatic showers are factory-set to a maximum of 41 °C, with flow limiters where pressures are high or unequal. Supply one spare shower head per shower, with a different colour insert.

15 Mechanical services

The oil heating system is removed and replaced by an air-to-water heat pump with low-surface-temperature radiators, a radial hot water system and whole-building mechanical ventilation with heat recovery (MVHR), as drawings 26D0783–26D0786. The systems are to meet TGD F, TGD L and the clauses below.

15.1 Design responsibility. The M&E drawings are for pricing. The specialist mechanical contractor designs the heating, hot water, ventilation and plumbing installations, with calculations and drawings, for the ER's approval before installation, keeping to the design intent, equipment and quantities shown.

15.2 Heating. Monobloc air-to-water heat pump, sized by room-by-room heat-loss calculation to I.S. EN 12831 (indicative total about 13.2 kW), meeting the renewable energy requirement of TGD L. Outdoor unit on a plinth where shown on 26D0738, clear of the MVHR exhaust, with condensate to a soakaway. Indoor unit with integral cylinder in Plant 24 (26D0784). It includes:

- low-surface-temperature radiators (surface no more than 43 °C), sized at a flow/return of 45/40 °C, with chrome towel rails on the heating circuit in sanitary rooms
- 16 mm multilayer (MLCP) flow and return pipes run radially in floor chases from a heating manifold in Plant 24, one pair per emitter, zoned as 26D0784
- weather compensation, zoned time and temperature control, and TRVs with lockshields
- expansion, buffer and safety equipment to the installer's design

15.3 Hot water. Integral unvented cylinder of at least 200 L in the heat pump indoor unit, sized by the installer to the demand (three ensuites, WC & Shower, WC 1 and kitchen), with immersion back-up, G3 safety kit and D1/D2 discharge through a tundish to a safe point. Store at 60 °C, using the immersion or heat-pump boost where needed, with a weekly 60 °C cycle as the Legionella risk assessment requires. Distribute by radial 16 mm MLCP runs from a hot manifold in Plant 24, one run per outlet, with no secondary return. The installer demonstrates by calculation and on commissioning that hot water reaches at least 50 °C (target 55 °C) at the inlet to every TMV or outlet within 1 minute.

15.4 Cold water. Retain the existing incoming main in the Utility. Confirm its size, material (replace if lead or galvanised), static pressure and flow before selecting the booster. Fit a new stopcock, double check valve and drain-off. Provide a booster set with a Type AB break tank (I.S. EN 1717) in the Utility full-height unit (26D0735), supplying the cylinder, WCs and showers. Feed the kitchen sink and every wash hand basin cold tap direct from the mains, so that all drinking points are wholesome. Fit a 75 × 50 mm "DRINKING WATER" label (black on white) at the kitchen sink. Fit an isolating valve (Ballofix type with screwhead, or Pegler 808 or equal) to every outlet, and isolation on every manifold port.

15.5 Pipework. Multilayer PE-X/Al/PE-X barrier pipe (MLCP) to ISO 21003, WRAS approved, with pipe and press-fit fittings from one manufacturer; fittings with a viewing window, made with the manufacturer's calibrated tools by trained fitters. Copper to I.S. EN 1057 where used. All fittings dezincification-resistant (DZR). Install to I.S. EN 806. Run pipes in floor chases in the existing slab and in the extension screed, sleeved and insulated, in continuous lengths with no joints buried in the floor. Insulate all pipework in chases, voids and ceilings to BS 5422, including cold pipes against condensation. Pressure-test to I.S. EN 806-4 before chases are filled or any pipework is covered, record the results for the ER, then make good to suit the floor finish. Where pipes run in the ceiling service cavity (9.5), never pass through the airtight layer without a sealed grommet.

15.6 Ventilation (MVHR). Whole-building MVHR to TGD F, as 26D0783, with the unit in Plant 24 (ceiling-mounted if needed to fit the plant space). Design flow about 220 l/s, with the unit capable of at least 300 l/s at boost. It includes:

- supply to habitable rooms and extract from the WCs, shower room, ensuites, utility and kitchen, each room balanced locally, with no air transfer across fire doors
- CO2-controlled boost in the main rooms and humidity boost in wet rooms, with boost switches
- crosstalk attenuators on branches to pods, ensuites and WCs, and noise levels of NR25–30 in occupied rooms
- branches in the joist zone above the ceiling, with holes or notches only as the SE approves
- intake on the north wall and exhaust on the east wall, at least 2 m apart, through-wall louvres, ducts insulated and vapour-sealed; no MVHR roof penetrations
- shut-down on fire alarm (11.4), fire dampers or fire-stopping where ducts cross fire-resisting construction (11.2), and the cooker hood ducted separately to outside

Ductwork to DW/144, leakage-tested to DW/143 and installed clean to TR/19, with flexible connections no longer than 500 mm, a backdraught damper on the unit inlet, and labels showing purpose and flow direction. A specialist commissioning engineer balances the system and records the readings in the O&M manual.

15.7 Airtightness. Achieve an air permeability of no more than 5 m³/(h·m²) at 50 Pa, or the target set by the energy assessment. Carry out an airtightness test by an accredited tester at completion.

15.8 Commissioning. Pressure-test, flush and commission all systems. Water services: flush and disinfect to I.S. EN 806-4, take samples for microbiological analysis by an accredited laboratory before handover, and supply the disinfection certificate and results. Heating: flush with a cleaning agent, dose with inhibitor (Fernox or equal), fit a magnetic system filter, and record a final system water pH of 7.0–8.0. Commission the heat pump to the manufacturer's procedure and balance the radiators. Balance the MVHR room by room and record the flow rates in a ventilation validation report to TGD F. Record the 1-minute hot water test and outlet flow rates at every outlet (15.3). Supply the commissioning certificates, a Legionella risk assessment and the operating manuals.

16 Electrical services

The building is completely rewired with a new distribution board, LED lighting and dedicated supplies for the life-safety systems. All work is to I.S. 10101 by a Safe Electric registered contractor.

16.1 Design. The electrical designer or contractor produces a layout of lighting, power, data and controls for the ER's approval before first fix.

16.2 Supply and distribution. Confirm the incoming supply capacity with ESB Networks, allowing for the heat pump, lift and other new loads. New metal-clad distribution board with:

- RCBO protection to each final circuit
- Type 2 surge protection at the board, and Type 3 protection at the comms cabinet
- labelled circuits and spare ways for at least 20% future capacity
- a lockable enclosure, with all spare ways blanked using the manufacturer's blanking plates
- sub-metering of the heat pump, EV charger and lighting to TGD L
- assembly by Parkmore, Quandri or Alpine, or equal approved, with Eaton, Hager, Schneider, ABB or Siemens components

16.3 Wiring. Run cables in the ceiling service cavity (9.5) and in walls in safe zones. Use low-smoke zero-halogen cables on escape routes. Fire-stop all penetrations through fire-resisting construction (11.2).

16.4 Lighting. LED luminaires to suit each room, as drawing 26D0780, with fire-rated fittings where they penetrate a fire-rated ceiling (9.6). Presence or absence detection in WCs and corridors. External lighting at entrances, the footpaths and the platform landing, on photocell and timer. Approved suppliers: Thorn, Philips, Eaton, Tegral, Disano, Roxo, Regent, or equal approved. Submit a sample of each fitting for the ER's approval before ordering. Where a different fitting is offered, submit full lighting calculations showing the same lux levels and uniformity.

16.5 Power. Double sockets in each room to the agreed layout, as drawing 26D0782, with USB outlets where requested. Dedicated circuits for the kitchen appliances. Sockets and switches at heights to TGD M (13.6). All wiring accessories by one manufacturer (MK, Legrand or Click Mode, or equal approved), in white for general outlets, red for life-safety and essential supplies, and graphite with white inserts in circulation and public areas to give the visual contrast required by TGD M. Twin sockets with outboard rockers and neon indicators.

16.6 Dedicated supplies. Provide fused or isolated supplies to:

- the heating plant
- the platform lift (12.4)
- the fire alarm panel
- emergency lighting (11.5)
- the AOV control panel (7.8) and modular rooflight controls (7.6)
- the electromagnetic door hold-open devices and closers (10.3)
- the MVHR unit (15.6), the cold water booster set (15.4) and the EV charger
- the accessible WC emergency assistance alarm (13.4): basis of design Sigtel stainless steel accessible toilet alarm kit (NC951), or equal approved

16.7 Data and communications. Cat 6A U/UTP structured cabling to Class EA (I.S. EN 50173 and I.S. EN 50174), with all components from a single manufacturer. The installer must be approved by that manufacturer, and the system must carry the manufacturer's 25-year system performance warranty. Approved systems: Brand-Rex, Excel, Belden, CommScope, or equal approved. Provide the comms cabinet with patch panels and a UPS, Wi-Fi access points, and a telecoms connection to the incoming line. Test every link and hand over the test results.

16.8 Security. Intruder alarm to I.S. EN 50131 (Grade 2 unless the client's insurer requires otherwise), installed by a contractor holding both an NSAI licence and a PSA licence. Provide dual-technology PIRs, door contacts to perimeter doors, internal and external sounders, and a digital communicator for 24-hour monitoring by an alarm receiving centre, also carrying the fire alarm signals (11.4). Access control at the main entrance, with 20 mm steel conduit from each door point back to the containment. Door locks must release fail-safe on fire alarm, power loss and the green break-glass (26D0781 cause-and-effect matrix). The 230 V supplies are included under 16.6.

16.9 Testing and certification. Test and inspect to I.S. 10101 and issue the Safe Electric completion certificate. Hand over as-installed circuit charts and drawings. Give two demonstrations of the fire alarm, emergency lighting, security and lighting controls to the client, at times the client agrees, by staff who know the systems.

16.10 Pricing. Price the electrical works in the element breakdown and complete the unit rates in Appendix C. The provisional allowances in 11.4 and 11.5 are priced separately and used only on the ER's written instruction. The unit rates are used to value variations.

17 Drainage

About 23 m of the existing sewer is replaced in 100 mm uPVC with new manholes, and all new and replaced drains are tested to I.S. EN 1610. Foul and surface water stay as separate systems throughout.

17.1 General. Below-ground drainage to TGD H and I.S. EN 752. Any new connection to or change at the public sewer to be agreed with Uisce Éireann before work starts.

17.2 Sewer replacement (S11). Break out and remove the existing sewer line shown on 26D0738. Replace with 100 mm uPVC pipe to I.S. EN 1401:

- laid on a 100 mm granular bed with a surround of the same material, 150 mm above the crown
- laid to falls of at least 1:80 where serving a WC, or as designed
- with new manholes at the locations shown

17.3 New drain runs (S13). New 100 mm uPVC drain runs (orange dashed on 26D0738) with access junctions (AJ) as shown. Maximum distance between access points 12 m, to TGD H. Connect rainwater downpipes and gullies as shown.

17.4 Rising manhole (S12). Raise the existing chamber to the new finished level using engineering brick or precast concrete sections on a sound base. Fit a new ductile iron frame and cover to I.S. EN 124, set flush with the finished surface.

17.5 Surface water. Connect downpipes (7.10), threshold channels (8.3) and retaining-wall land drains (4A.2) to the surface water system. Connect shower and other sanitary wastes to the foul system. Discharge surface water to the existing outfall or soakaway. Confirm its condition and capacity before connecting new areas, including the widened driveway.

17.6 Manhole covers. Adjust existing manhole covers within new paved and tarmac areas to the new finished levels. Covers to I.S. EN 124, class B125 in footpaths and class D400 in trafficked areas.

17.7 Pipes near and under buildings. Where pipes pass under or through the raft or walls, sleeve them and fit flexible joints within 150 mm of the face. Protect pipes near foundations with concrete as TGD H requires.

17.8 Testing (S14). Air- or water-test all new and replaced drains to I.S. EN 1610 before backfilling, and again on completion. Carry out a CCTV survey of all retained drains and give the report to the ER. Repair defects found as instructed.

17.9 Soil stacks and below-slab connections. Soil and vent pipes as 26D0785, venting through the flat roofs (7.9). Connect the ensuite stacks below the slab to the sewer as shown, with access at the base of each stack, and coordinate the runs with the raft and cast-in services (4.4B).

17.10 Above-ground sanitary pipework. To I.S. EN 12056-2, pipe and fittings from one manufacturer (PVC-U to I.S. EN 1329-1, MuPVC wastes). Traps with 75 mm seals: 32 mm to basins, 40 mm to sinks, appliances and showers; 100 mm WC connections. Provide cleaning eyes at changes of direction, accessible after completion. Air admittance valves (I.S. EN 12380) only where shown. Support to the manufacturer’s spacings with expansion allowance, using steel brackets on soil stacks. Fit intumescent fire collars to plastic pipes over 40 mm passing through fire-resisting construction (11.2). Air-test to TGD H (38 mm water gauge held for 3 minutes) before boxing in, and again on completion. The mechanical contractor fits the sanitaryware and makes all final connections.

18 External works

The external works give a widened driveway, a step-free route of gently sloped 1500 mm footpaths to a new west entrance, and a 1500 mm footpath along the south of the house. Locations are as shown on 26D0731 and 26D0738.

18.1 Levels. All levels are in metres to site datum. Finished ground levels to be at least 150 mm below DPC, except at level thresholds where a linear drainage channel is provided. Paths must not bridge the DPC or block wall vents.

18.2 Driveway and entrance (S1). Widen the existing entrance and road (shown hatched blue). Build-up:

- 225 mm Clause 804 sub-base
- 60 mm dense bitumen macadam binder course
- 40 mm surface course

Saw-cut and seal joints to existing surfaces. Fit new kerbs where shown. The drawings give the area as approximately 38 m² (note S1) and 42 m² (plan annotation); confirm on site.

18.3 Paving, footpath and concrete steps (west). Break out and remove the existing paving slabs, footpath and concrete steps to the west of the house, including their bedding and bases. Excavate to formation for the new paths, landing and slopes. Do not undermine the house foundations. If foundations are exposed, stop and notify the ER.

18.4 Existing kerbing and new 1500 mm footpath (south). Remove the existing kerbing along the south side of the house, as noted. Build a new 1500 mm wide footpath (S8):

- 150 mm Clause 804 sub-base
- 100 mm C25/30 concrete with a brushed finish
- cross-fall of 1:40 away from the building
- new precast concrete kerbs to I.S. EN 1340, bedded and haunched in C16/20 concrete

Set the footpath at least 150 mm below the house DPC, except where level access is formed. Retaining walls along this path are as 4A.5–4A.7.

18.5 Gently sloped footpaths (S3, S4). New footpaths down to the lower level and up to the higher level, as shown. Maximum gradient 1:20, minimum width 1500 mm, with a firm, even, slip-resistant surface. Construction as 18.4. Provide level landings at the top and bottom and at intermediate intervals to TGD M.

18.6 Entrance landing (S5). New level landing of at least 1500 × 1500 mm at the relocated main entrance on the west elevation. Level threshold with a linear drainage channel.

18.7 Patio (S9). New patio outside the new double doors, laid to falls away from the building. Finish to be confirmed.

18.8 Existing paving slabs (S10). Take up the existing concrete paving slabs on the east side, clean them down and relay them on new bedding to falls. Repoint, and replace broken slabs to match.

18.9 Retaining walls. As Section 4A.

18.10 Boundaries. Retain and protect all timber ranch fencing (1.10). Make good the hedge line and fence ends at the widened entrance.

18.11 Reinstatement (S15). Reinstate disturbed lawns with 150 mm of topsoil and seed. Make good planting beds. Reuse stockpiled topsoil (2.8) where suitable.

19 Painting and decorating

All new and made-good surfaces get a full paint system in low-VOC, washable finishes, in colours chosen to give the visual contrast in 13.5.

19.1 Preparation. Make good cracks and holes, sand, and dust down. Allow new plaster and skim to dry fully before painting. Knot and prime bare timber. Remove all ironmongery and fittings before painting and refit afterwards.

19.2 Paint systems.

Surface	System
New plaster and plasterboard walls	Mist coat, then two coats of washable vinyl matt or eggshell (scrubbable class 1 to I.S. EN 13300 in corridors and wet rooms)
Ceilings	Mist coat, then two coats of vinyl matt (anti-mould in wet rooms and the kitchen)
Timber skirtings, architraves and window boards	Primer, undercoat and two coats of water-based satin
Fire door frames	Finish as the door set's certification allows; do not paint over intumescent or smoke seals
Exposed steelwork	As 6.4, or a compatible topcoat over intumescent coating
Existing external render	As 5.6

19.3 Colours. Colour schedule to be agreed with the client and checked against the light reflectance value (LRV) contrast in 13.5 before work starts.

19.4 Workmanship. Apply to the manufacturer's coverage rates and drying times. The finish must be even, with no runs, holidays or brush marks, and clean cut-in lines.

20 Testing, completion and handover

Practical completion is certified only when all tests have passed, all certificates are with the ER, and the building is clean and safe to occupy.

20.1 Tests before completion.

Test	Standard	Clause
Drainage air or water test, and CCTV of retained drains	I.S. EN 1610	17.8
Electrical test and inspection	I.S. 10101	16.9
Fire alarm commissioning, including door release and AOV interfaces	I.S. 3218	11.4
Emergency lighting commissioning	I.S. 3217	11.5
Platform lift test and thorough examination	I.S. EN 81-41	12.6
Heating, hot water and ventilation commissioning	TGD F, TGD L	15.8
Airtightness test	TGD L	15.7
Radon barrier installation certificate	TGD C	4.3
Hot water 1-minute outlet test	HPSC guidance	15.3
Cat 6A link test	I.S. EN 50174	16.7
Intruder alarm commissioning and monitoring test	I.S. EN 50131	16.8

20.2 Snagging. Inspect with the ER and correct all defects before practical completion.

20.3 Cleaning. Clean the building inside and out, including glazing, floors, sanitaryware and drainage gullies. Remove all temporary works, waste and protection.

20.4 Handover documents. Supply a safety file and operation and maintenance manual containing:

- as-built drawings, including fire-resisting elements, drainage runs and services routes
- certificates for fire doors, fire-stopping, fire-rated windows, fire-rated construction and steel fire protection
- fire alarm, emergency lighting, AOV, electrical, lift and commissioning certificates
- product guarantees for the roof membrane, EWI, windows, doors and rooflights
- NSAI Agrément and ETA certificates for certified products used
- the BER and energy assessment, and the airtightness test report
- operating instructions for the heating, ventilation, lift, rooflights and AOVs

20.5 Statutory completion. Provide all inputs the ER or Assigned Certifier needs for the Certificate of Compliance on Completion and any FSC or DAC compliance sign-off.

20.6 Training. Demonstrate the heating controls, lift, rooflights, fire alarm and door hold-open systems to the client's staff.

20.7 Defects period. Return to correct defects that appear during the defects liability period stated in the contract.

Appendix A: Door and window schedules

Sizes are taken from 26D0736 and are nominal (mm). Check every opening on site before manufacture (1.7).

Door schedule

Mark	Height	Width
D01	2450	2600
D02	2100	1800
D03	2100	1640
D04	2100	1640
D05	2110	2000
D06	2100	1640
D07	2030	1050
D08	2030	1050
D09	2030	1050
D10	2110	1350
D11	2134	915
D12	2134	915
D13	2110	1180
D14	2030	1050
D15	2110	1510
D16	2030	1050
D17	2030	900
D18	2030	1050
D19	2030	900
D20	2030	1050
D21	2030	900
D22	2030	1050
D23	2134	915
D24	2030	1050
D25	2030	1050
D26	2110	1180
D27	2134	915

All internal doors are FD30S pre-hung sets (Section 10). Corridor doors (8) have electromagnetic hold-opens, room doors (10) have free-swing closers, and WC doors have no closers.

Window and rooflight schedule

Mark	Height	Width	Notes
W01	1170	3030	
W02	900	1640	
W03	900	1640	
W04	1400	1640	
W05	1400	1640	
W06	1270	1200	
W07	1270	1200	
W08	1270	1200	
W09	1270	1200	
W10	1270	1200	
W11	1270	1200	
W12	1952	1100	FW30 (8.2)
W13	1952	1100	FW30 (8.2)
W14	1220	1641	FW30 (8.2)
W15	1952	1100	FW30 (8.2)
W16	1000	1000	Rooflight (7.7)

Mark	Height	Width	Notes
W17	1250	1250	Rooflight, AOV (7.8)
W18	1000	1000	Rooflight (7.7)
W19	1250	1250	Rooflight, AOV (7.8)
W20	2000	1000	Modular longlight (7.6)
W21	2000	1000	Modular longlight (7.6)
W22	2000	1000	Modular longlight (7.6)
W23	2000	1000	Modular longlight (7.6)

Appendix B: Electrical and mechanical pricing schedules

Price each element in full. Items not listed but needed for a complete, certified installation are to be priced under “Other items” with details.

Element	Includes	Amount (€)
E1 Preliminaries	Attendance, builder’s work marking-out, labelling and charts, as-installed drawings, O&M manuals, client demonstrations	
E2 Power and general services	Distribution board, sub-mains, power circuits and accessories, isolators and fused spurs, EV charger supply, earthing and bonding	
E3 Lighting and emergency lighting	Lighting circuits, luminaires, controls and sensors, external lighting, emergency luminaires and test facility	
E4 Fire detection and alarm	Panel, repeater, devices, enhanced cabling, interfaces (hold-opens, AOV, lift, access control, MVHR), commissioning	
E5 Data and communications	Cat 6A cabling and outlets, comms cabinet, UPS, Wi-Fi points, testing	
E6 Security and assistance alarms	Intruder alarm, monitoring communicator, access control, accessible WC alarm	
E7 Mechanical services wiring	Heat pump, MVHR, booster set, heating controls, extract fans, AOV and rooflight actuators	
E8 Provisional allowances	5 smoke detectors, 5 call points, 5 sounder/VAD bases, 5 emergency luminaires (11.4, 11.5)	
E9 Other items	Give details	
Total (excl. VAT)		

Unit rate (supply, install, test; per item)	Rate (€)
Light point and luminaire (Type R)	
Light switch	
Presence / absence detector	
Emergency luminaire	
Exit sign	
Smoke / heat detector	
Manual call point	
Sounder / VAD	
Double switched socket outlet	
Fused connection unit	
Isolator	
Cat 6A data outlet (single)	
Door hold-open device	

Price the mechanical works in the element breakdown below, on the same basis as the electrical schedule.

Mechanical pricing schedule

Element	Includes	Amount (€)
M1 Preliminaries	Attendance, builder’s work marking-out, labelling, as-installed drawings, O&M manuals, client instruction	
M2 Heating	Heat pump and indoor unit, manifold, MLCP floor-chased pipework, LST radiators and towel rails, controls, flushing and dosing	
M3 Water services	Main and stopcock works, booster set and break tank, hot and cold manifolds and MLCP pipework, TMVs, isolating valves, insulation, disinfection	
M4 Soils and wastes	Above-ground soil and waste pipework, stacks and roof terminations, traps, fire collars, testing	
M5 Sanitaryware fixing	Fixing sanitaryware and final connections	

Element	Includes	Amount (€)
M6 Ventilation	MVHR unit, ductwork, valves, attenuators, louvres, fire dampers, commissioning and validation	
M7 Protective services	Fire extinguishers and fire blanket (11.7)	
M8 Testing and commissioning	Pressure tests, disinfection and sampling, 1-minute outlet tests, balancing	
M9 Other items	Give details	
Total (excl. VAT)		