OUTLINE SPECIFICATION

CLONLEA LODGE

Alterations and extensions
to the existing cottage

&

Construction of a
new two-storey dwelling

Issue : February 2017

TENDER ISSUE

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Section 1:
PREAMBLES

DESIGN TEAM

Architects:
The House Architects Ltd.
Father Mathew Hall
131 Church Street
Smithfield
Dublin 7

Structural Engineers:
Andrew Riley
Consulting Engineer
23 Summerseat Court
Clonee
Co. Meath

Quantity Surveyors:
Eoin Darby
Darby Associates
Creative Dock
Malahide Marina Village
Malahide
Co. Dublin

Mechanical Services:
N/A

Landscape Architects:
N/A

Health & Safety (design stage):
Maguire Doyle Architects/ Project Managers
Father Mathew Hall
131 Church Street
Smithfield
Dublin 7

Fire Consultant:
N/A

Form of contract
The Form of Contract will be the RIAI Standard Form of Contract - Blue form.

Important Note: ***The phrase "or equivalent" in all tender documentation and drawings hereafter shall mean, the material or product named or a similar product of equal quality which has been approved by the Architect. No substitution of materials shall be accepted without the architect's prior approval.***

Section 2:
GENERAL SPECIFICATION

ACCESS & SITE MANAGEMENT:

Access & Set-up:
Access for the works is available from Ballinteer Road only. The Contractor must not access the works across the open green space adjoining the site, or park vehicles on this grass.

The Contractor must submit a Construction Management Plan which complies with the Outline Construction Management Plan approved by Dun Laoghaire Rathdown County Council, prior to commencement of construction.

Parking is restricted in the vicinity of the site which may necessitate early morning or late deliveries. Prior to the commencement of any work at the property the site is to be secured with hoardings and 'Restricted access' warning signage erected to ensure control of trespass. Contractor's and consultant's signs will be permitted on hoardings.

Protection of Existing:
The existing concrete footpath paving on Ballinteer Road is to be protected and retained, except where it is specifically required to be removed to accommodate new paving finishes. Damage to the existing retained paving during construction must be rectified at the Contractor's expense.

The existing landscape around the site, including the grass and hedgerows are to be protected throughout the works. The Contractor must provide for reinstatement of any disturbed landscape upon completion of the project, including the hedgerow, to the satisfaction of the Council Parks Department.

HEALTH & SAFETY:
It is proposed to appoint the Contractor to the role of Project Supervisor Construction Stage under the Safety, health & Welfare at work (Construction) Regulations 2013.

The Contractor will be required to nominate an appropriate person within their organization who can demonstrate suitable experience and/or qualifications to perform this role, and who will be responsible for implementation of health & safety practices on site.

COMPLIANCE:
The project is governed by the Building Control Regulations 2014.

The Contractor will be required to liaise with the Assigned Certifier, to provide a statutory undertaking in the prescribed form to the Building Control Authority, to provide a Certificate of Compliance on Completion and to co-operate with the Assigned Certifier in preparing and collating all necessary third party/sub-contractor Ancillary Certificates of Compliance on completion.

PHASING / PROGRAMME:

The project involves partial demolition and extension of the existing cottage on the site, in order to create a site for the new house. It is envisaged that the project will be phased by the Contractor so that the extension to the cottage will be completed and handed over to the client prior to demolition of the existing kitchen wing, and commencement of construction on the new house.

The client will be in occupation of the existing cottage for the duration of the extension works, except for the period during final transfer of power & water. Contractor to allow for maintaining services, access and carparking for the client for the duration of the works.

The Contractor will be required to submit a detailed Construction Programme prior to commencement of the works identifying all key activities and milestone dates.

EXISTING COTTAGE - Alterations & extensions

DEMOLITIONS:

General Demolitions:

Carefully remove the existing rear roof tiles, where required to join the new extension roof, in a sequential and controlled manner, and carefully store the tiles for re-use. Provide suitable weathering to the existing internal finishes at all times during roof re-covering operations.

Remove existing rear windows and external doors, at a suitable time in the works, to facilitate breaking-out of new structural opes. Provide appropriate precast concrete or structural steel lintels & beams over all new openings in masonry walls in accordance with best practice and Structural Engineers recommendations.

Carefully disconnect and remove the existing plumbing & heating system, including radiators, incoming water mains and waste pipe work, as necessary. Disconnect the electrical system at the mains to facilitate the works. Retain and protect all recently installed electrical components and cabling, including existing fuse board and cabling. Maintain electrical supply to the existing cottage, for the client, for the duration of the works, subject to agreed 'black-out' periods.

Remove all redundant existing drains to the rear, concrete paving and other underground services in the vicinity of the new rear extension.

Retain garden topsoil from excavated areas and store at the end of the garden in a protected heap for re-use on completion of the works.

Materials arising from demolitions are not to be stored in the front or rear garden for extended periods and are to be removed from site using skips or alternative equivalent means promptly.

Engage a specialist contractor for safe removal of any asbestos sheet material encountered. Remove asbestos sheet from site and dispose strictly in accordance with current legislation. Certification of disposal method and final disposal site evidence to be provided to the Architect.

Kitchen / Garage Demolition:
Demolition of the existing garage and kitchen is to be phased to allow for handover and occupation of the new extension first. Provide suitable weathering to the existing internal finishes at all times during demolition and reconstruction operations.

Grub up all existing foundations, floor slabs and services within the footprint of the new house and provide lean mix fill, as necessary to stabilize the disturbed ground for new foundations, in accordance with the Engineers recommendations.

Protection of Existing:
Carry out a video camera survey of the existing drains to be retained, passing beneath the house, prior to excavations and following formation of final connections. Verify operation of all drains prior to covering-up. Existing clay drains falling within the area of the works to be replaced with new PVC drains.

Take special care when removing fixtures in the existing house to minimize damage. Any damage incurred whatsoever to existing floors, walls, etc. during the course of the works to be made good by the Contractor, or the client to be compensated appropriately.

Lay temporary covering of 6mm plywood over all floor and wall finishes left in-situ for the duration of the works as protection. All existing doors and/or joinery retained for re-use to be stored within locked weather-tight rooms until required for incorporation in the works.

Provide suitable sealed weathering to the existing house, as necessary, to suit the stage of the construction works to ensure that existing internal finishes are not damaged by intrusion of rainwater at any stage.

SUBSTRUCTURES :

Foundations:
Foundations for the new rear extension to be typically 900x300 deep strip foundations with A393 reinforcing mesh, minimum 600mm below finished ground level, suitably dowelled into existing foundations at junctions, strictly in accordance with Structural Engineer's recommendations, as required.

Rising Walls:
Rising walls to be 440mm walls built in solid 7.5N concrete blockwork to one course below DPC level, with one course of Quinnlite B5 blocks at floor slab level, to the dimensions indicated by the Engineer. DPC to be “Hy-load” pitch polymer laid in strict accordance with manufacturers’ detail. Radon barrier to be dressed over DPC as indicated on drawings and in accordance with DoE/SEAI Approved Construction Details. Provide approved concrete lintels over all piped penetrations in the rising walls.

Where external finished ground level will be above finished floor level (FFL) the rising wall must be tanked using Bituthene System 4000 waterproofing membrane, complete with Bituthene liquid membrane termination, Hydroproduct 220 protection board and Bituthene surface conditioner as necessary to ensure a perfect tanked solution.

Ground Floor Construction:
Provide Easi-sump Radon sump below the new concrete floor of the rear extension, piped to the perimeter, and terminated with Easi-sump cap-link system at the rear patio.

Provide minimum 225mm well compacted and blinded hardcore over the full extent of the new concrete floor. DPM/Radon barrier to be laid on 50mm sand blinding to hardcore. DPM / radon barrier to be Monoflex RMB Radon System, with Monoflex radon membrane jointing system laid strictly in accordance with manufacturer's instructions, including careful taping around all service penetrations and joints, suitable overlapping of sheets and correct dressing of barrier into cavities.

Cast continuous 150mm GGB concrete sub-floor slab on the Monarflex Radon Barrier/DPM. On top of sub floor lay 150mm foil backed polyurethane insulation (Kingspan Therma TF70 or equivalent) laid in 2-3 layers, on 1000 gauge polythene (Visqueen or equivalent). In living rooms and other areas with no obstructions lay 2 layers of Kingspan (75mm + 75mm) or equivalent with staggered joints.

In bathroom, en-suites, utility and kitchen where there are first fix plumbing pipes use 75mm Kingspan TF70 or equivalent under the first fix pipes, with 50mm Kingspan TF70 around the plumbing pipes. Separate the hot and cold first fix pipes with 75mm insulation. Lay 25mm Kingspan TF70 or equivalent over the area without interruptions and stagger joints, where possible.

Underfloor Heating
Lay underfloor heating pipework on a second layer of 500 gauge polythene, laid over the insulation. UFH should be designed to run with a maximum water temperature of 35°C.

Underfloor heating pipework layout:

- 100mm space between the pipes in areas with lots of glass, bathroom, en-suites, vaulted areas, hallway and all high demand areas.
- 150mm space between the pipes in all other normal heat demand areas.
- UFH pipes should be at 16-17mm diameter.
- Pipes should be laid in “spiral” layout and not in “snake” pattern.
- The maximum length of one UFH loop should be 120m.

Screed
Lay a 35N wet mix 100mm deep concrete screed (sand/cement/stone), incorporating Sika Viscocrete 1060 plasticiser (www.curtis-enterprises.com) with brushed finish, over under-floor heating pipes, with 25mm laser-levelled Kingspan perimeter insulation around all walls.
(Note: Semi-dry sand/cement screed is not acceptable. Power float finish is not acceptable.)

Floor edge joints finished to DoE approved Construction Details (ACDs), sealed with polymer sealer (CT1, Tex7, Stixall, Fix All) to help achieve long-term air-tightness at critical junctions. Standard mastic or silicone sealers are not suitable for long-term air-tightness and should not be used.

SUPERSTRUCTURES - WALLS :

Existing External Wall Finishes:
Existing external wall finishes (nap-finished sand/cement render) are generally to be protected though-out the works.

Where necessary for integration of new opes or services the render should be locally repaired, to match the existing exactly. The extent of feathering existing render finishes must be sufficient to achieve no discernible difference between the existing and the in-filled sections.

Provide 22mm nap-finished sand/cement render to the full extent of the newly-exposed gable wall, following demolition of the existing kitchen & garage. Hack of the existing gypsum plaster and fill all significant holes with block-work & mortar, in order to provide a stable background for the render coat.

New External Walls - Rear extension:
New external walls to the rear extension to be 22mm nap finished sand/cement render, with Dulux Weathershield paint finish, on 100mm 7.5N concrete block outer skin, 200mm cavity, with Teplo thermally insulated basalt fibre wall ties (www.magmatect.co.uk) - Type 2, 6mm diameter, 325mm long, @ 450mm centres and 100mm 7.5N concrete block inner leaf finished with 13mm sand/cement render with 3mm gypsum plaster skim coat.

Services to be chased into blockwork walls and run in approved plastic conduits with galvanised steel junction boxes, fully sealed behind with sand/cement render. Standard DPCs, vertical DPC, cloaking details and stepped DPCs at abutments in accordance with best practice.

Details at floor and wall junctions to be in accordance with DoE 'Acceptable Construction Details' to prevent cold-bridging, to ensure continuity of radon membrane and to ensure that an air permeability of less than **1 m3/hr.m2** is achieved. Use Isocell Airstop Flex or equivalent airtight membranes and tapes at window surrounds, floor/wall junctions and ceiling/roof junctions to ensure air-tightness. (Ref. Appendix 1)

Use 2 layers of 75mm Kingspan insulation, with L-blocks, to all reveals in new walls at the side of the window/ door frames and between heads.. One row of Quinnlite B5 thermal blocks are required at floor level on the inner skin of the cavity wall and on all internal walls. Use 25mm Kingspan between the side of Quinnlite blocks and the floor screed to further reduce cold bridging on all walls at ground floor level. Wall cavity to be closed at the top with a 6mm cement fibre board, bedded in mortar. 100% closure is important.

Cavity Wall Insulation
Fully fill the cavity with 200mm Agrement Certified grey bead expanded polystyrene pumped insulation, with glue (200mm Ecobead Platinum or equivalent).

To ensure 100% filling of the cavity selected cores will be taken at low level around external walls on completion. Upon commissioning of the heating system the Contractor will be required to commission a thermal image study of the dwelling to ensure 100% of the cavity of filled.

New window cills in the rear extension blockwork walls to be square edge 100mm deep precast concrete cills to match the existing as closely as possible. Contractor to provide a sample cast in-situ and/or precast concrete cill for review and approval by the Architect before general installation.

Partitions:
All new ground floor partitions to be constructed of 100mm 7.5N concrete blockwork, with precast concrete heads over doorways, or as otherwise indicated on drawings, finished with 13mm traditional sand/cement render with plaster skim finish.

New first floor partitions, if required, to be constructed of 75x44mm studs at 400 centres, insulated with 100mm Rockwool acoustic roll for soundproofing, with 12.5mm gypsum wallboard both sides, skimmed and painted.

Stud partitions to be provided with 12mm plywood reinforcement and/or additional cross studs as grounds for fixings where required. Gypsum moisture resistant 'green' board to be used for internal walls of bathroom/shower/utility room areas, suitably sealed to manufacturer's instructions to take tiled finishes.

Existing internal wall/ceiling finishes:
Existing internal wall surfaces within the hallway, and any other areas impacted by the works to be stripped of wallpaper, prepared/bonded, patched and finished with new skim coat to match new walls on completion of modification works. All existing skirtings damaged or disrupted by the works to be replaced with profiles to match and repainted to match specification of new joinery.

Existing ground floor ceilings impacted by the extension to be re-slabbed with 12.5mm foil-backed plasterboard with 3mm skim finish, properly tied to wall finishes at junctions. Existing ground floor ceilings in the Living Room, Bedroom 1, Bedroom 3 and Hallway to be retained, patched and re-skimmed, as necessary. Form new ceilings to new Kitchen/Dining room, Utility room and Bathroom, to specification.

SUPERSTRUCTURES - ROOFS :

Pitched Roof Finishes:
Inspect the existing pitched roof in detail with particular emphasis on flashings with abutments such as chimneys, valleys and gutters. Carefully remove existing roof tiles from the rear slop of the main roof, to facilitate interface works and store for re-use. Allow for 30% wastage in salvaged roof tiles. Contractor to provide for sourcing and supplying additional concrete roof tiles to match the existing to make up for the deficit in quantities required for re-roofing, due to wastage. Existing roof structure to be locally repaired as necessary to ensure longevity.

New pitched roof elements to be constructed of planed and treated structural timbers in accordance with the Engineers specification and applicable current Codes of Practice. All new and existing roof timbers to be preservative treated in-situ on completion. Lay concrete roof tiles on Tegral Ventex HT spun-bonded polyester underlay with min. 150mm laps, with 50mm clear ventilation gap below, with new 44x25mm vacum impregnated battens, spaced to suit tile size, using approved non-ferrous fixings, strictly in accordance with manufacturer's instructions. Provide for replacement and reforming of all flashings and abutments with Code 5 lead to approved details.

Continuous 10mm eaves ventilation to be achieved using Glidevale proprietary vents fixed over rafters at the eaves and Glidevale proprietary ridge vents, to meet regulations. Glidevale in-line slate ventilators for vent pipe terminations. Glidevale FV fascia ventilators giving equivalent of 10mm free ventilation along the entire length.

Valleys formed with 25mm WBP plywood lined with Code 5 lead, with tilting fillets at slate edges. All flashings soakers and chimney trays to be traditional Code 5 lead, or equivalent approved.

Existing rainwater gutters and downpipes to be retained and protected. New rainwater gutters and downpipes to the rear extension to be White uPVC fascia and soffit cladding on 19mm WBP plywood or softwood grounds to match existing house. White uPVC gutters and rain water downpipes to match existing house.

White uPVC fascia and soffit cladding on 19mm WBP plywood or softwood grounds to match existing house. White uPVC gutters and rainwater downpipes to match existing house.

Roof Insulation:
In unheated attic spaces, provide 150mm Rockwool batts over 150mm Rockwool batts laid between joists.

In warm roof sloped sections above the Kitchen/Dining Room provide 120mm Quinn-Therm Easi-Dorm/ Quinn-Therm QW friction-fitted between rafters with 60mm Quinn-Therm QL Kraft liner boards fixed across the rafters, with Pro-clima Intello-plus vapor control layer between.

Rooflights:
Pitched roof roof-lights (R02, R03) to be 940x1600mm manually operated Velux Integra triple- glazed central-pivot low energy units with proprietary covers, flashing and fixings with maximum U-value 1.0 w/m2K, as shown on drawings. (GGL 006621U)

SUPERSTRUCTURE - COMPLETIONS

New Windows & External Doors:
New windows & external doors to be selected Alu-clad triple-glazed Argon-filled units (2 x 18-20mm voids). U-Value min. 0.85 w/m2K (centre pane 0.6 w/m2k)

Allow a **PC sum of €8,000** for supply & fitting of windows to the new extension.

New windows to bedrooms to have minimum opening sections to comply with Building Regulations requirements for fire escape. All glazing occurring less than 800mm below adjoining finished floor level to be comprised of toughened glass.
Existing front door and existing windows unaffected by the extension works to be retained, and protected for the duration of the works.

Airtightness around Windows and Doors
The window installer should completely fill the space between the opening and the frame with expanding foam from the DPC at the outside to the inside. There should be no voids. When the foam has fully cured trim off surplus foam with a sharp knife. Then seal the foam with polymer sealer (CT1, Tex7) and Multisolve (a C-Tec product) to achieve a good finish. Use Isocell Airstop Flex airtight membranes and tapes at window surrounds, floor/wall junctions and ceiling/roof junctions to ensure air-tightness. Architect to be permitted to view and approve proposed techniques for compliance prior to implementation

Ventilation:
Supplemental background ventilation to the Kitchen/Dining Room to be provided by Passivent STM-SR self-regulating humidity-controlled through-wall vents, concealed and mounted at high level.
Mechanical extract vent to be provided to the new Bathroom and the new Utility Room, directly switched separately from the light switch.

SUPERSTRUCTURES - INTERNAL :

Timber Floor/Ceiling Structure:
Steel beams, where required by the Structural Engineer, to be provided within the depth of the structural floor/ceiling construction and fireproofed using proprietary plasterboard or spray-on intumescent systems. Existing and new joists to be notched into beam flanges as necessary to ensure continuous flat ceilings.

Internal Joinery:
Existing painted timber doors, door frames, architraves and skirtings generally to be protected and retained in the existing rooms. Where necessary existing doors should be re-hung with 3no. pairs of new stainless steel hinges, eased and adjusted to achieve perfect fit and existing latches and latch-plates refurbished.

New ground floor internal doors (D0X, D0X, D0X) and door frames to be shaker style engineered doors. (PC sum €300 per door-set, including ironmongery). New skirtings and architraves within the Kitchen/Dining, Bathroom, Utility Room and Hallway to be selected rebated painted Red Deal skirtings to complement the door. Alterations and modifications to internal skirtings or architraves within the existing rooms to match the existing as closely as possible.

New skirtings, doorframes and architraves throughout to be properly affixed to grounds and perfectly mitred at internal and external corners, caulked and finished with undercoat and 2no. finishing coats of selected Dulux satinwood paint, or lacquer.

Internal sand/cement render to be continued to floor slab level and sealed behind skirtings in accordance with ACDS, to ensure air-tightness standard is maintained.

Floor & Wall Finishes:
Supply only allowance of €60 per square metre to be provided for engineered Oak self-finished floorboards to the Kitchen/Dining Room, existing Living Room and Hallway, to be laid and finished by the Main Contractor.

Contractor to provide for floor and wall tiling in the utility and bathroom areas, to be selected by the Client. Allow €60 per square metre, supply only, for floor tiles as shown on plan. Allow €60 per square metre for wall tiles 450mm high above counter level in the utility room and 100% coverage of all walls in the new ground floor bathroom.

Two coats of Dulux vinyl matt emulsion to all wall and ceiling surfaces generally.

Provide an acrylic backsplash wall panel above kitchen/utility counters (450mm high).

ELECTRICAL INSTALLATION :

Scope of Work:
The existing house has been recently rewired, complete with a new fuse-board with expansion capacity for the new extension.

Provide for extension of the existing electrical installation to supply the new extension in accordance with current Building Regulations and to comply with ECTC regulations. All electrical works to be certified on completion. Existing electrical fixtures and fittings to be retained generally.

Provide separate circuits within the extension for lighting & sockets, kitchen fittings, alarm, fire/smoke alarms, security access control, water circulation pump, etc. Provide power for cooker extract hood, as necessary.

Provide power for supplementary extract ventilation from the Bathroom and the Utility Room.

Provide for extension of the Burglar Alarm installation, including wiring for contacts and vibration sensors at all accessible opening windows.

Provide for new smoke & heat detection fittings to meet current Building Regulations for a new house, including a smoke detector in the Hallway and a heat detector in the Kitchen/Dining Room and a carbon Monoxide alarm in the Kitchen/Dining Room and the existing Living Room.

Fixtures & Fittings:
All new sockets to be standard MK white bakelite type, positioned typically 450mm above FFL, unless otherwise directed. All new light switches to be standard MK white bakelite type at 1200mmm above FFL in accordance with Part M recommendations. Exact locations of sockets and light switches to be agreed with the client.

Sockets & Outlets

Kitchen	-	10no. double switched sockets (2 low level) / 2no. CAT 6/ TV
Dining	-	4no. double switched sockets / TV
Utility room	-	3no. double switched sockets (1 @ low level)
Hallway	-	1no. double switched socket
Patio area	-	Exterior grade insulated switched socket
Bathroom	-	Shaver socket

Provide 2xDVB-S and 1xDVB-T at each TV point wired back to the aerial location in the attic.

Provide for comprehensive lighting installation throughout the new extensions, including an allowance for under-cupboard kitchen lights, brushed steel trim LED down-lighters as shown in the reflected ceiling plans and provision for a feature pendant over the dining room table.

Provide moisture resistant bulkhead lights to the bathroom/utility room (Dakota 300/ Dakota 180 or similar). Standard pendant light fittings in all other rooms, unless indicated otherwise on the drawings.

Provide for 2no. security intruder lights to the side and rear, mounted on the external wall of the extensions, plus 3 no. switched decorative stainless steel external light fittings.

MECHANICAL/PLUMBING INSTALLATION :

Scope of Work:

Remove the existing oil-fired boiler. Provide for a new oil-fired boiler (New Heat Solutions or similar) to serve the existing house and the extension, using the existing mild steel radiators in the existing house and new underfloor heating in the extension. All existing radiators to be fitted with thermostatic controls and balanced with the new underfloor heating system.

Provide for a new factory insulated double-skinned dual-coil stainless steel cylinder, fitted with compressions fittings, and a suitable thermostat pocket, with pump (New heat Solutions or similar). All heating pipework to be insulated copper pipes or Pexal insulated aluminium pipes. Cold water storage tank to be relocated to the roof space above the new GF bathroom, with a sealed attic access hatch from the Utility Room ceiling. All associated pipework to be relocated to suit new water tank location.

Allow a **PC sum of € 2,500 plus vat** for supply and installation of new underfloor heating system in the extension by a nominated subcontractor (New Heat Solutions or similar) , including all piping, manifold, circulating pump, motorized valves, thermostats and fixture/fittings. Underfloor heating system to extend over the full area of the new Kitchen/Dining Room and be laid in a spiral pattern.

Heating system to be suitably zoned with digital thermostats in each zone and central digital controller suitable for the system.

Detailed proposal for heating system to be subject to approval by Architect. Heating systems and components all to be Agrement certified and approved by SEAI for housing grants

Provide for re-use of the existing radiator in the new GF bathroom, including all associated plumbing.

Sanitary Fittings:

Provide for re-use of the existing sanitary fittings in the new GF bathroom. Main contractor to provide for installation/plumbing of all sanitary fixtures and fittings.

Supply and fit new insulated external brass tap to rear garden at a location to be agreed with the client.

Kitchen:
Allow a **PC sum of €6,000** (plus vat) for supply and fitting of selected kitchen fixtures and fittings, including cooker extract fan and hood, to be selected by the client from an approved supplier.

Main contractor to provide all mains services and attendances, including ducting of cooker extract hood to outside, weathering of extract hood cowl, plumbing and waste pipes to prescribed locations, wiring for cooker, sockets and cabinet lighting to prescribed locations as necessary.

Utility Room:
Provide for re-use of the existing kitchen cupboards and fittings in the new Utility Room. Contractor to provide for modification and additions to exisitng caracasses to suit room layout.

Main contractor to provide all mains services and attendances, plumbing and waste pipes to prescribed locations, wiring for sockets and cabinet lighting to prescribed locations as necessary.

Stoves:
Provide a new built-in recessed contemporary wood-burning stove in the new kitchen, as shown.

Allow a **PC sum of €3,000** for supply and installation of the stove and flue, to be selected by the client.

Provide for a new built-in recessed contemporary wood-burning stove in the existing Living Room fireplace. Contractor to provide for modifications to the existing chimney and fire breast, to suit, including, removal of the existing back-boiler and provision of an air-intake on the southern wall. Make good all finishes on completion.

Allow a **PC sum of €3,000** for supply and installation of the stove, to be selected by the client.

DECORATION / FINISHING :

Plaster Skim:
All new and existing wall surfaces affected by the works to be suitably prepared and plaster skimmed on completion to achieve a perfect flat, even finish.

Painting:
Painting and decoration works to include the following:

- Preparation and application of 2no. coats of white emulsion, or selected client colour, to all new internal wall surfaces and all wall surfaces impacted by the works.

- Preparation and application of 2no. coats of selected satinwood gloss to new painted woodwork. (doors, architraves, skirtings)

- Apply 2no. coats of selected Dulux Weathershield exterior paint to all external walls of the existing house and new extension.

DRAINAGE

New Drainage:
New drains to be PVC pipes, sized and bedded in accordance with Engineer's specification. New manholes to be formed in accordance with Engineer's specification to take connections from new appliances.

Existing Drains:
Existing drainage pipes under the new extension to be protected at boundaries with neighboring properties and replaced with new PVC pipe as required, in accordance with Engineer's details.

Existing drains connecting to public sewers through the property to be surveyed by camera to final connection and jetted as necessary to ensure proper operation on completion. Copies of the camera survey report to be supplied to the Architect before completion.

SITE DEVELOPMENT / LANDSCAPING :

Services:
All new underground services to be completed strictly in accordance with Dun Laoghaire Rathdown County Council standards, industry best practice and Structural Engineers recommendations, inspected and signed-off prior to commencement of any site development finishing. All new manhole and AJ covers to be provided with suitable galvanized steel lockable covers to take vehicular traffic.

Boundaries:
Existing rear garden side boundary hedges and walls/fences are to be protected and retained. Where existing boundaries are disturbed or damaged by the works they must be made good on completion at the expense of the contractor.

Provide new 'hit & miss' dividing garden fence, with precast concrete posts bedded in concrete, between the new house garden and the existing rear garden. Provide for a 900mm wide ledged and braced timber plank gate in the fence between the two gardens.

Provide new hardwood (Iroko or Teak) 'hit & miss' side fence, with a ledged and braced matching gate, complete with lockable stainless steel ironmongery to the side boundary, as shown.

Provide new bespoke hardwood (Iroko or Teak) 'hit & miss' front fence, with a ledged and braced matching manual sliding gate, complete with lockable stainless steel ironmongery to the front boundary, as shown.

Apply suitable preservative finish to all external timber on completion.

Paving:

New paving to side passageway, front garden/driveway indicated on drawings and rear bin/shed area to be 80mm Acheson Glover Country Cobble paviors, or equivalent permeable paving blocks, laid to falls and cross falls on minimum 225mm 804 sub-base and 50mm sand, to ensure continual run-off of rainwater., in accordance with Engineers details. Provide a 150mm Aco drain with cast iron grating at the driveway entrance, connected to the surface water outfall.

Rear patio paving to be selected 50mm Sandstone paving slabs, with moulded sandstone edging, laid strictly in accordance with manufacturer's instructions on minimum 225 Clause 804 sub-base, on geotextile layer with 50mm sharp sand. All paving to be laid to falls to discharge rainwater to grassed areas to the rear or gullies at maximum 4 metre centres along the side passageway.

Landscaping:
Make good all disturbed areas on completion, including provision of 150mm good quality topsoil and grass seed over all grassed areas to the rear impacted by the works.

External fixtures:
Re-use the existing water butt at the side passageway, properly connected to the rainwater downpipe from the main roof in accordance with manufacturer's instructions.

COMPLETION :

On completion the contractor must ensure that all the works are 100% complete and fit for purpose before handover. All areas of the houses, both internal and external, are to be handed back to the clients cleaned and free of any builder's waste or debris.

The Contactor must attend to snags notified at completion within a short period (4-6 weeks), and provide all necessary Certification and technical commissioning tests to the client, within two weeks of handover to enable draw-down of grants and verify compliance of the works with Building Regulations.

NEW HOUSE CONSTRUCTION:

AIRTIGHTNESS:

The new house will be a low energy house, with a high standard of airtightness.

Minimum standard required under Building Regulation - 10m³/hr/m²

Target airtightness standard for this house - 1m³/hr/m²

The Contractor will be required to perform 'Blower Door' Airtightness testing after 'first fix' stagE, prior to closing up to verify that the target Airtightness standard has been achieved, and again on Practical Completion. if the target Airtightness standard is not achieved on the first test the Contractor will be required to identify the sources of any leaks and to upgrade the airtight seals, as necessary, to achieve the standard prior to closing-up.

Note:

- Cast concrete is airtight.
- Sand / cement render is airtight.
- Blocks and mortar are not airtight (without sand/cement render or airtight membrane)
- Skimming is not airtight. (without airtight membrane)
- Plasterboard and skimming are not airtight. (without airtight membrane)

Use polymer sealer (CT1, Tex7, Stixall, Fix All) to help achieve long-term airtightness at critical junctions. Standard mastic or silicone sealers are not suitable for long-term airtightness and must not be used.

Airtightness – Plumber & Electrician :
The main Contractor is responsible for ensuring that all personnel on the site are adequately briefed on the airtightness standards required.
The electrician should understand that conduits which go through the airtight envelope should be closed to prevent air flows through the 13 amp sockets.
The plumber needs to know to seal any penetration of the airtightness system. Sealing is achieved with approved airtightness tapes or polymer sealer such as CT1 / Tex7 – a long life is required.
The Main Contractor must ensure that the responsibility for sealing of services penetrations is allocated at an early stage to ensure continuity of detailing throughout the build.

Air-tightness Detailing:
All junctions within the construction to be constructed in accordance with DoE/SEAI Acceptable Construction Details to minimise risk of cold bridging and achieve high levels of air-tightness. This should be achievable through good traditional construction techniques and the use of sealants and Isocell Airstop Flex airtight membranes at relevant junctions. (Ref. Appendix 1)

Architect to be permitted to view and approve proposed techniques for compliance prior to implementation.

SUBSTRUCTURES:

Foundations:
Foundations for the new house to be typically 900x300mm deep strip foundations with A393 reinforcing mesh, minimum 600mm below finished ground level, and detailed strictly in accordance with Structural Engineer's recommendations, as required.

Rising Walls:
Rising walls to be 440mm walls built in 7.5N solid concrete blockwork to one course below DPC level to the dimensions indicated by the Engineer, with one course of Quinnlite B5 thermal blocks at floor level, to minimize cold bridging. DPC to be "Hy-load" pitch polymer laid in strict accordance with manufacturers' detail. Radon barrier to be dressed over DPC as indicated on drawings and in accordance with DoE/SEAI Approved Construction Details.

Provide approved concrete lintels over all piped penetrations in the rising walls.

Where external finished ground level will be above finished floor level (FFL) the rising wall must be tanked using Bituthene System 4000 waterproofing membrane, complete with Bituthene liquid membrane termination, Hydroproduct 220 protection board and Bituthene surface conditioner as necessary to ensure a perfect tanked solution.

Ground Floor Construction:
Provide Easi-sump Radon sump below the new concrete floor of the new house, piped to the perimeter, and terminated with Easi-sump cap-link system at the rear patio.

Provide minimum 225mm well compacted and blinded hardcore over the full extent of the new concrete floor. DPM/Radon barrier to be laid on 50mm sand blinding to hardcore. DPM / radon barrier to be Monoflex RMB Radon System, with Monoflex radon membrane jointing system laid strictly in accordance with manufacturer's instructions, including careful taping around all service penetrations and joints, suitable overlapping of sheets and correct dressing of barrier into cavities.

Cast continuous 150mm GGB concrete sub-floor slab on the Monarflex Radon Barrier/DPM. On top of sub floor lay 150mm foil backed polyurethane insulation (Kingspan Therma TF70 or equivalent) laid in 2-3 layers, on 1000 gauge polythene (Visqueen or equivalent). In living rooms and other areas with no obstructions lay 2 layers of Kingspan (75mm + 75mm) or equivalent with staggered joints.

In bathroom, en-suites, utility and kitchen where there are first fix plumbing pipes use 75mm Kingspan TF70 or equivalent under the first fix pipes, with 50mm Kingspan TF70 around the plumbing pipes. Separate the hot and cold first fix pipes with 75mm insulation. Lay 25mm Kingspan TF70 or equivalent over the area without interruptions and stagger joints, where possible.

Underfloor Heating
Lay underfloor heating pipework on a second layer of 500 gauge polythene, laid over the insulation. UFH should be designed to run with a maximum water temperature of 35°C.

Underfloor heating pipework layout:

- 100mm space between the pipes in areas with lots of glass, bathroom, en-suites, vaulted areas, hallway and all high demand areas.

- 150mm space between the pipes in all other normal heat demand areas.
- UFH pipes should be at 16-17mm diameter.
- Pipes should be laid in “spiral” layout and not in “snake” pattern.
- The maximum length of one UFH loop should be 120m.

Screed

Lay a 35N wet mix 100mm deep concrete screed (sand/cement/stone), incorporating Sika Viscocrete 1060 plasticiser (www.curtis-enterprises.com) with brushed finish, over under-floor heating pipes, with 25mm laser-levelled Kingspan perimeter insulation around all walls.
(Note: Semi-dry sand/cement screed is not acceptable. Power float finish is not acceptable.)

Floor edge joints finished to DoE approved Construction Details (ACDs), sealed with polymer sealer (CT1, Tex7, Stixall, Fix All) to help achieve long-term air-tightness at critical junctions. Standard mastic or silicone sealers are not suitable for long-term air-tightness and should not be used.

Floor coverings and UFH

Tiles or stone will give the quickest response but a range of coverings gives acceptable response times. Natural or engineered timber flooring can be used provided the wood is properly dried and not more than 22mm thick. When installing natural wood or laminated flooring these should be glued directly to the screed.

SUPERSTRUCTURE:

New External Walls :

New external walls to the new house to be 22mm nap finished sand/cement render, with Dulux Weathershield paint finish, on 100mm 7.5N concrete block outer skin, 200mm cavity, with Teplo thermally insulated basalt fibre wall ties (www.magmatect.co.uk) - Type 2, 6mm diameter, 325mm long, @ 450mm centres and 100mm 7.5N concrete block inner leaf finished with 13mm sand/cement render with 3mm gypsum plaster skim coat.

Services to be chased into blockwork walls and run in approved plastic conduits with galvanised steel junction boxes, fully sealed/airtight behind with sand/cement render. Standard DPCs, vertical DPC, cloaking details and stepped DPCs at abutments in accordance with best practice.

Details at floor and wall junctions to be in accordance with DoE 'Acceptable Construction Details' to prevent cold-bridging, to ensure continuity of radon membrane and to ensure that an air permeability of less than **1 m3/hr.m2** is achieved. Use Isocell Airstop Flex or equivalent airtight membranes and tapes at window surrounds, floor/wall junctions and ceiling/roof junctions to ensure air-tightness.

Use 2 layers of 75mm thick Kingspan insulation, with L-blocks, to all reveals in new walls at the side of the window/ door frames and between heads. One row of Quinnlite B5 thermal blocks are required at floor level on the inner skin of the cavity wall and on all internal walls. Use 25mm Kingspan between the side of Quinnlite blocks and the floor screed to further reduce cold bridging on all walls at ground floor level. Wall cavity to be closed at the top with a 6mm cement fibre board, bedded in mortar. 100% closure is important.

Window cills in the new house blockwork walls to be square edge 220mm deep polymer-coated high density polystyrene ‘Passive Sill’ window cills, smooth finish. Contractor to provide a sample Passivesill cill for review and approval by the Architect before general installation. www.passivesills.com

Cavity Wall Insulation:
Fully fill the cavity with 200mm Agrement Certified grey bead expanded polystyrene pumped insulation, with glue (200mm Ecobead Platinum or equivalent).

To ensure 100% filling of the cavity selected cores will be taken at low level around external walls on completion. Upon commissioning of the heating system the Contractor will be required to commission a thermal image study of the dwelling to ensure 100% of the cavity is filled.

Windows:
Selected Alu-clad triple-glazed Argon-filled units (2 x 18-20mm voids). Bi-fold kitchen door/screen to be Alu-clad construction to match windows. U-Value min. 0.85 w/m2K (centre pane 0.6 w/m2k) Allow a **PC sum of €25,000** for supply & fitting of windows. Main contractor to provide for attendances, airtightness sealing and finishing of reveals.

All new windows to bedrooms to have minimum opening sections to comply with Building Regulations requirements for fire escape. All glazing occurring less than 800mm below adjoining finished floor level to be comprised of toughened glass.

Airtightness around Windows and Doors:
The window installer should completely fill the space between the opening and the frame with expanding foam from the DPC at the outside to the inside. There should be no voids. When the foam has fully cured trim off surplus foam with a sharp knife. Then seal the foam with polymer sealer (CT1, Tex7) and Multisolve (a C-Tec product) to achieve a good finish. Use Isocell Airstop Flex airtight membranes and tapes at window surrounds, floor/wall junctions and ceiling/roof junctions to ensure air-tightness.

Architect to be permitted to view and approve proposed techniques for compliance prior to implementation.

Partitions:
All new ground floor and first floor partitions to be constructed of 100mm 7.5N concrete blockwork, with precast concrete heads over doorways, or as otherwise indicated on drawings, finished with 13mm traditional sand/cement render with plaster skim finish.

New Attic level partitions, if required, to be constructed of 75x44mm studs at 400 centres, insulated with 100mm Rockwool acoustic roll for soundproofing, with 12.5mm gypsum wallboard both sides, skimmed and painted.

Stud partitions to be provided with 12mm plywood reinforcement and/or additional cross studs as grounds for fixings where required. Gypsum moisture resistant 'green' board to be used for internal walls of bathroom/shower/utility room areas, suitably sealed to manufacturer's instructions to take tiled finishes.

First Floor construction
First floor construction will be 150mm precast concrete floor slabs, installed in accordance with Engineers details, and sealed at all edges. Ground floor supporting walls to be thickened as necessary in accordance with Engineer's specifications. Lay 50mm Kingspan TF70 or equivalent on top of precast floor slabs.

Lay underfloor heating pipework on a second layer of 500 gauge polythene, laid over the insulation. UFH should be designed to run with a maximum water temperature of 35°C, on a separate circuit form the ground floor, laid out in accordance with stated rules.

Lay a 35N wet mix 75mm deep concrete screed (sand/cement/stone), incorporating Sika Viscocrete 1060 plasticiser (www.curtis-enterprises.com) with brushed finish, over under-floor heating pipes, with 25mm laser-levelled Kingspan perimeter insulation around all walls.

Hollow Cores in Slabs:
If first floor hollow core concrete slabs terminate within the house (e.g. at a stairwell) then the cores must be sealed with blockwork and mortar. Alternatively drill a 12mm hole into each hollow core and use expanding foam to seal each core.

Ceiling finishes:
New ceilings to be 12.5mm foil-backed plasterboard, with skrin sacking and polymer sealer at junctions with internal walls, skimmed and painted. Where a vapor barrier is critical for the performance of the construction build-up provide an Intello Plus vapor barrier over.

Ground floor level ceilings to be suspended below the precast concrete first floor slabs, to achive a 175mm void for HVAC ductwork.

Airtightness in the Ground floor ceiling void
A 175mm ceiling void should be formed below the first floor precast concrete floor slabs, using a MF metal system or timber battens, to accommodate heat recovery ventilation ductwork.

The joint between the external wall and the first floor precast concrete slab is an air leakage point. A continuous “fillet” of polymer sealer should be inserted in the right angle joint between the wall and the slab around the perimeter of all rooms.

The section of blockwork below the floor slab, within the ceiling void, must be sealed around the full perimeter of the building either by the application of sand/cement internal render, two coats of external masonry paint (in distinct colours) or Foamlok spray-in foam.

Roof Finishes:
Lagan Building Systems 450x290mm 'Snowdon' slate-effect clay roof tiles on 44x25 impregnated battens @ 350mm centres double-fixed with non-ferrous nails, with proprietary matching Lagan Elite ridge capping.

Glidevale RV rafter ventilators across rafters at eaves, where required. Glidevale in-line slate ventilators for vent pipe terminations. Glidevale FV fascia ventilators, where required, giving equivalent of 10mm free ventilation along the entire length.

Powder-coated aluminium fascia and soffit cladding on 19mm WBP plywood or softwood grounds. Profiled seamless aluminium gutters and matching powder-coated seamless aluminium rainwater downpipes.

Warm Pitched Roof
Install 100mm Kingspan Thermaroof K7 or equivalent on top of the rafters over the full area of the sloped roof, with 38x38mm battens over aligned with the rafters below fixed at 300mm centres using Timco Classic Plus 6mm X 200mm Torx drive screws. (Construction Fastners, (048 8776 7981)

Spray 125-150mm Foamlok open-cell spray-in foam between the rafters.
(Econ Insulation, Dublin - 003531 4019729)

Affix 12.5mm foil-backed plasterboard, tightly fitted below rafters, with Pro-clima Intello-plus vapour control layer as vapour barrier.

Use 50mm Kingspan Thermaroof K7 insulation boards to close the gap between rafters at th eaves to contain Foamlok spray-in foam. Use 450mm wide DPC as an eaves skirt at the guttering.

Attic Airtightness Details - Warm Roof:
Any raw blocks on external walls in the attic e.g. gable walls must be made airtight. Either plaster with sand / cement or apply two coats of exterior masonry paint or spray with Foamlok foam.

Valleys, if required, formed with 25mm WBP plywood lined with code 5 lead, with tilting fillets at slate edges. All flashings soakers and chimney trays to be traditional Code 5 lead, or equivalent approved.

Recessed Lights:
Where downlighters are placed in sloping ceilings set an airtight box over the new light fitting. (Thermahood downlighter covers - www.thermahood.com)

Warm Flat Roofs & Feature Cladding:
Feature flat roofs and cladding to the rear canopy, side overlap, feature windows and entrance canopy, to be finished with NedZinc or equal approved Agrement Certified zinc roofing system laid to minimum 1:40 falls, with proprietary zinc rainwater outlets, as shown, with all necessary proprietary fixings, flashings, formed gutters, rainwater outlets and seamless downpipes installed strictly in accordance with manufacturer's instructions, on proprietary underlay or battens on 22mm T&G boarding.

Boarding laid on 100mm Kingspan Thermaroof TF70, or equivalent, insulation, on 18mm WBP plywood laid on softwood firrings to falls, on 225x50 rafters, to detail. 150mm Foamlok open cell spray-in insulation applied between rafters. Pro-clima Intello-plus vapor barrier to be fitted below rafters and sealed with DA-S proprietary tape around all junctions with walls, rooflights and window penetrations.

Cedar cladding:
100x22mm thick Western Red Cedar feature vertical T & G cladding to side bay and rear canopy secret-nailed with stainless steel nails, to 50x50mm pressure impregnated timber battens screw-fixed to the concrete block wall, finished with 22mm sand/cement render, @450 horizontal centres. Timber cladding to be closed with pressed zinc profile across full width, providing continuous 10mm ventilation gap to and bottom.

Concrete block walls to be rendered with 22mm sand/cement render prior to fixing of battens for Cedar cladding to maintain air-tightness.

100x22mm thick Western Red Cedar feature T & G cladding to the rear canopy soffit, secret-nailed with stainless steel nails, to 225x50mm rafters above. Timber cladding to be closed with pressed zinc profile across full width, providing continuous 10mm ventilation gap to and bottom.

Applied finish to boards to be Sadolin, Sikkens or Owatrol Textrol, subject to approval of samples.

Rooflights:

Flat roof roof-light (R01)to be a 1400 x 5000mm proprietary Rhum 'Economy Flush Rooflight', tripled-glazed with timber lining, fitted strictly in accordance with manufacturer's instructions and details.

Timber Floor Structure:
Attic floor structure to be comprised of trimmers and beams in accordance with Engineer's recommendations, current Building Regulations and good practice. Typically new floor joists to be 225x50mm timbers at 400 centres, with 225x75mm trimmers, and blocking between at 1200 centres. Provide 22mm WBP plywood finished, screw-fixed to joists, to take laminate flooring by client.

Provide 150mm Rockwool acoustic roll between floor joists for sound insulation.

Steel beams, where required by Structural Engineer, to be provided within the depth of the structural floor construction, notched into beam flanges as necessary to ensure continuous flat ceiling.

Internal Joinery:
New ground floor internal doors to be selected 'shaker' style self-finished engineered doors with stainless steel hinges and selected chrome ironmongery. Architraves and frames to be red deal, painted.

Allow a PC sum of € 300 per door-set for supply of the door leaf, frame and brushed stainless steel ironmongery. Main contractor to provide for supply of frames, architraves and fitting of all doors. Two coats of Dulux satinwood selected paint finish to all painted woodwork.

Full height toughened glass to kitchen door and utility room door. Recessed sliding doors where shown on plans with Eclisse concealed 'pocket door' sliding system.

New skirtings, doorframes and architraves throughout the house to be approved softwood with rebate detail , properly affixed to grounds and perfectly mitred at internal and external corners, caulked and finished with undercoat and 2no. finishing coats of selected Dulux satinwood paint.

Internal sand/cement render to be continued to floor slab level and sealed behind skirtings in accordance with ACDs, to ensure air-tightness standard is maintained.

New staircase of traditional timber construction with red deal threads/risers, ballustrades and profiled oak handrail and newel posts, newel cappings. Softwood finished with selected Dulux satinwood paint. Oak handrails, newel posts & cappings finished with clear lacquer.

Floor Finishes:
Tiled floor finishes to bathrooms and Utility Room where shown on plans. Allow €60/sq.m for supply of tiles, adhesives & trims. Proprietary bathroom tanking system to be used under tiles at first floor level.

Engineered timber floor finishes where shown on plans, glued to concrete screed in accordance with suppliers recommendations for under-floor heated concrete floors. Allow €60/sq.m for supply of Engineered flooring, including all fixture, fittings and trims.

At Attic level provide 25mm T&G OSB / Plywood or similar to take laminate finish.

Internal Wall/Ceiling Finishes:
Two coats of selected Dulux vinyl matt emulsion to all wall and ceiling surfaces generally.

Provide for 250mm wide recessed shelving in the ensuite shower partition wall, including 4no. toughened glass inset shelves.

Tiled wall finishes above kitchen/utility counters (450mm high) and to all walls in bathrooms. Allow €60/sq.m for supply of tiles, adhesives & trims.

ELECTRICAL INSTALLATION

Scope of Work:
Provide a complete electrical installation including distribution board, fixtures and fittings in accordance with current Building Regulations and to comply with ECTC regulations. All electrical works to be certified on completion by a registered ETCI electrician.

Provide separate circuits for lighting & sockets, kitchen fittings, smoke alarms, security access control, water circulation pump, etc. Provide power for cooker extract hood, as necessary.

Provide wiring for a burglar alarm to all accessible opening windows. Alarm control panel to be installed by the client's appointed specialist, with a keypad in the Hallway and a keypad in the Utility Room.

Provide for mains-wired smoke detectors in all bedrooms, the attic and all circulation areas, mains-wired heat detector in the Kitchen/Dining Room, plant room and mains-wired Carbon Monoxide detectors in all rooms with combustion appliances.

Fixtures & Fittings:
All new sockets to be white bakelite, positioned typically 450mm above FFL, unless otherwise directed. All new light switches to be white bakelite at 1200mmm above FFL in accordance with Part M recommendations. Exact locations of sockets and light switches to be agreed with the client.

<u>Sockets & Outlets</u>

Entrance hallway	-	3no. double switched sockets
Living Room	-	8no. double switched sockets/ 2no. CAT 6 / TV
Playroom/Family room	-	6no. double switched sockets/ CAT 6/ TV
Kitchen	-	10no. double switched sockets (2 pair @ low level)/ CAT 6
Dining Area	-	4no. double switched sockets/ CAT 6
Lounge Area	-	4no. double switched sockets/ CAT 6 /TV
Utility room	-	4no. double switched sockets (2 pair @ low level)
First floor landing	-	1no. double switched socket / Cat 6
Linen Store	-	1no. double switched socket / Cat 6
Bedroom 1	-	10no. double switched sockets/ 4no. CAT 6 / TV
Ensuite	-	1no. shaver socket
Bedroom 2	-	6no. double switched sockets/ CAT 6 / TV
Bedroom 3	-	6no. double switched sockets/ CAT 6 / TV
Attic level	-	12no. double switched sockets/ CAT 6
Patio area	-	2no. Exterior grade insulated switched sockets

Provide 2xDVB-S and 1xDVB-T at each TV point wired back to the central 'plant' area.

Provide for CAT6 cabling back the the ‘plant room’ area in the attic.

Lighting:
Provide for comprehensive lighting installation throughout the house, including an allowance for under-cupboards kitchen lights, in accordance with layouts and specifications by WINK (ref. Appendix 4)

Provide for 3no. additional sensor-activated security intruder lights to side and rear.

MECHANICAL / PLUMBING INSTALLATION :

Air to Water (A2W) Heat Pump

Supply and install a new pressurized space heating and hot water system comprising an Agrement Certified (Pansonic Aquarea 5Kw) 'Air to Water' (A2W) heat pump, with an Eco 8 twin-coil stainless steel 500 litre hot water cylinder, in the 'plant room' area of the attic, serving an Agrement Certified under-floor heating system, at both ground floor and first floor levels, complete with all necessary valves and controls.

Heating system to be zoned with 5 zones - (first floor, front ground floor, rear ground floor, attic rooms, hot water), with digital thermostats in each zone and a central digital controller, as necessary. All heating pipe work to be insulated copper pipes or Pexal insulated aluminium pipes.

Allow a **PC sum of € 12,000 plus vat** for supply and installation of the A2W primary heating system, and all related components and controls by a nominated subcontractor. (New Heat Solutions or similar). Main Contractor to provide a base/mount for the heat exchanger on the side gable of the house, a mains water supply, 6 square electrical cable, Datatherm control cable, supply & return outlet pipes and a RECI certified electrician in attendance for connection/commissioning. (Ref. Appendix 2)

Detailed proposal for heating system to be verified by calculations supplied by a registered RGI plumber and subject to approval by the Architect. Heating systems and components all to be Agrement certified and approved by SEAI for housing grants, where relevant.

Water & Wastes:

Provide a new mains water connection with new hydrodare to Dun Laoghaire Rathdown Council standards. Provide for necessary permissions and Road Opening Licences.

Supply and fit new insulated external brass tap to rear garden. Location to be agreed with the client.

Min Contractor to provide for installation of water supply and wastes to all fixtures and fittings, as necessary.

Rainwater recycling:

Provide for a 500 litre Water Butt to the side passageway, connected to the rainwater downpipe.

Heat Recovery Ventilation

HRV heat recovery ventilation system to be fitted to provide fresh air and extract for all rooms.

Two potential suppliers / installers :
Beam www.beamcentralsystems.com (028 7963 2424)
Homecare Villa-vent www.homecaresystems.biz (028 8776 9111)

Allow **PC sum of € 5,000 plus vat** for supply and installation of the HRV system, including heat exchanger, controls, ductwork, filters & grilles. (Ref. Appendix 3)

Main Contractor to provide a base/mount for the ventilation unit, a 13 amp power supply, CAT5 cable between controller & unit, condensate drain, and all builders work (cores, boxing, trimming.)

The heat exchanger is to be located at attic level, adjacent to the hot water storage tank and ducted to the required locations using standard PVC ducting. The exhaust of the HRV is to exit adjacent to the A2W heat exchanger at the side of the house. The main risers for the HRV system will be at the back of the Linen Store. Main contractor to provide a removal false back to the Linen Store to provide maintenance access, as necessary.

Ventilation Openings

The heat recovery ventilation system requires a fresh air in-duct and a stale air out-duct. These should a specialized slate, gable wall or via the soffit. The only other ventilation openings are for the kitchen extractor fan.

Cooker Hoods

Separate the cooker and the fan by at least 3m using 150mm flexible duct and an external fan capacity 550m3/hr from fastlec.co.uk. The system will also require a Domus 694 connector for the 150mm duct with a non-return valve to stop back draughts.

Sanitary fittings:

Allow supply only **PC sum of € 9,000 plus vat** for new bathroom sanitary fixtures in ground floor WC, main bathroom and Ensuite bathroom, to be selected by the client. Main contractor to provide for installation/plumbing of all sanitary fixtures and fittings.

Fireplace:

Main living room fireplace to be a stand-alone wood-burning stove with a sealed flue, on a feature cast in-situ concrete bench, by the a nominated subcontractor.

Allow **PC of €6,000 plus vat** for supply and fitting of the stove and the concrete bench, to be selected by the client.

Kitchen:

Allow a **PC sum of € 10,000 plus vat** for supply and installation of kitchen fixtures & fittings.

Main contractor to provide all mains services and attendances, including ducting of cooker extract hood to outside, weathering of extract hood cowl, plumbing and waste pipes prescribed locations, wiring for cooker, sockets and cabinet lighting to prescribed locations as necessary.

Utility Room:

Allow a **PC sum of € 2,000 plus vat** for supply and installation of utility room fixtures & fittings. Main contractor to provide all attendances, including plumbing and waste pipes, wiring for sockets and cabinet lighting to prescribed locations as necessary.

Wardrobes:

Allow a **PC sum of € 4,000 plus** vat for supply and installation of bedroom wardrobes fixtures & fittings. Main contractor to provide all attendances, including wiring for sockets and cabinet lighting to prescribed locations as necessary.

DECORATION / FINISHING

Plaster Skim:
All new internal wall and ceiling surfaces to be suitably prepared and plaster skimmed on completion to achieve a perfect flat, even finish.

Painting:
Painting and decoration to include preparation and application of 2no. coats of white emulsion to all internal wall surfaces, 2no. coats of selected satinwood paint to painted woodwork (doors, skirting, architraves)

External sand/cement render wall finishes to be sprayed with 2no. coats of Dulux Weathercoat or equivalent selected external paint finish.

DRAINAGE

New Drainage:
New drains to be PVC pipes, sized and bedded in accordance with Engineer's specification. New manholes to be formed in accordance with Engineer's specification to take connections from new appliances.

New soak-away build up to be constructed strictly in accordance with the Engineer's details.

Existing Drains:
Existing drainage pipes in the vicinity of the new house to be protected at boundaries with neighboring properties and replaced with new PVC pipe as required, in accordance with Engineer's details.

Existing drains connecting to public sewers through the new property to be surveyed by camera to final connection and jetted as necessary to ensure proper operation on completion. Copies of the camera survey report to be supplied to the Architect before completion..

SITE DEVELOPMENT AND LANDSCAPING

Services:
All new underground services to be completed strictly in accordance with Dun Laoghaire Rathdown County Council standards, industry best practice and Structural Engineers recommendations, inspected and signed-off prior to commencement of any site development finishing. All new manhole and AJ covers to be provided with suitable galvanized steel lockable covers to take vehicular traffic.

Boundaries:
New rear garden boundary to be constructed of 1800mm high proprietary concrete post and 'hit & miss' treated Larch or Spruce timber plank fencing , as shown on drawings, complete with lockable hardwood side access gates. Contractor to provide a quality control sample on site for approval prior to installation.

New front garden boundaries to be constructed of proprietary post and plank treated Larch or Spruce timber fencing , as shown on drawings. Contractor to provide a quality control sample on site for approval prior to installation.

Paving:
Front footpath to be re-cast with 100mm brushed concrete, including formation of a dishing for the new vehicular entrance, to Dun Laoghaire Rathdown County Council standards. Liaise with Local Authority as necessary to ensure compliance.

New front driveway to be built-up with compacted 804 blinded hardcore, minimum 225mm thick, on approved geotextile layer, to achieve level access from garden entrance to front door entrance and side passageway Provide new 100mm deep Acco drain , with cast iron heel guard grating at the entrance gate, and ancillary surface water gullies, as necessary to dispose of surface water.

Paving to front entrance/porch area to be Tobermore Roma Bracken 160x160x90, 160x240x90, 160x120x90 or equal equivalent laid strictly in accordance with manufacturer's instructions on minimum 225mm deep compacted 804 sub-base and 50mm sand.

Side passageway paving to be Tobermore Roma Bracken 160x160x90, 160x240x90, 160x120x90 or equal equivalent laid strictly in accordance with manufacturer's instructions on minimum 225mm deep compacted 804 sub-base and 50mm sand blinding.

Rear patio paving to be Acheson Glover Terrapave 400x400x50 or equal equivalent paving slabs laid strictly in accordance with manufacturer's instructions on minimum 225 Clause 804 sub-base, on geotextile layer with 50mm sharp sand.

All paving to be laid to falls to discharge rainwater to grassed areas to the rear or gullies at maximum 4 m centres along side passageways.

Soft Landscaping:
Make good all disturbed areas on completion, including provision of 150mm good quality topsoil and grass seeding of disturbed lawn areas.

COMPLETION

On completion the contractor must ensure that all the works are 100% complete and fit for purpose before handover. All areas of the houses, both internal and external, are to be handed back to the clients cleaned and free of any builder's waste or debris.

The Contactor must attend to snags notified at completion within a short period (4-6 weeks), and provide all necessary Certification and technical commissioning tests to the client, within two weeks of handover, to enable draw-down of grants and verify compliance of the works with Building Regulations.

Appendix 1

Depart of Environment ACDs - Acceptable Construction Details

Appendix 2

Primary Heat Source - New Heat Solutions

Appendix 3

Heat Recovery Ventilation - Homecare Systems Ltd.

Appendix 4

Reinco - Renewable Energies & Insulation Report

Appendix 5

WINK - Lighting Layout