



An Ghníomhaireacht
Tithíochta
The Housing Agency

Works Requirements: Specification of Works and Materials

for

Pyrite Remediation Works

at

Notional Project in North County Dublin

for

Housing and Sustainable Communities Agency (The Housing Agency)

August 2026

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GENERAL DESCRIPTION OF THE WORKS

Introduction

This Notional Project of 2 Blocks comprising of a total of 17 Houses can be assumed to have been completed in 2005. Sometime after completion, they exhibited cracks that were subsequently attributed to heave related to the development of ground sulphates contained in imported crushed stone fill. These works are to remove approx. 1.0m of stone fill from the houses and reinstate the houses to their original condition. The houses are currently occupied, but vacant possession will be given for the works. External works shall include removal of stone to footpaths around the houses and reconstruction of the concrete footpaths within the curtilage of the gardens.

Instructions to Tenderers

The Instructions to Tenderers are included under separate cover

Pricing Document

The Pricing Document is based on Drawings and Specifications, with a schedule of works provided for which rates are required.

General Items and Notes

Contractors are advised to read carefully all general items and notes in the various contract documents.

The tenderer's costs and charges are to be spread over the items in the Pricing Document in a balanced manner so that the rate or price for each item fairly represents the costs and charges for the work etc. described therein. The Priced Document is to be priced in ink as are the rates, extensions and totalled in Euro to two decimals. Should any item herein be left unpriced, it shall be held to be included in the prices given for other items of the work.

PROJECT, PARTIES AND CONSULTANTS PROJECT

The Project

These works are to remove approx. 1.0m of stone fill from the houses and reinstate the houses to their original condition. External works shall include removal of stone to footpaths around the houses and reconstruction of the concrete footpaths.

Parties and Consultants

EMPLOYER:	Housing and Sustainable Communities Agency (Housing Agency), 53 Mount Street Upper Dublin 2. Telephone: +353 (0)1 6564100 For the attention of: Martin Lynch, Programme Manager
EMPLOYERS REPRESENTATIVE:	Design Professional To be appointed by Employer
STRUCTURAL/CIVIL ENGINEER:	To be appointed by Design Professional
MECHANICAL AND ELECTRICAL: ENGINEER:	To be appointed by Design Professional
PSDP:	To be appointed by Design Professional
QUANTITY SURVEYOR:	To be appointed by Design Professional

Services

At present there are underground services nearby and they are: Gas, ESB, Eircom, Mains Water and Drainage. No roadworks are proposed as part of these works, and existing connections shall be reused.

DRAWINGS AND OTHER DOCUMENTS

Existing Services

The Tenderers' attention is drawn to the Mechanical and Electrical specification included.

Information and specification

It is proposed to reinstate the houses to an equivalent specification as the original. Particular attention is drawn to the following which are a feature of these remedial works:

- The condition of the buildings at the close of tender shall be deemed to be the existing condition for the purposes of this tender. It is essential for tendering contractors to visit the site. As this is a Notional Project contractors to have assumed they have visited the site. Any assumptions unclear from the Drawings and Specification to be raised when noticed with Design Team and noted on pricing document if there is a cost implication.
- Remedial Works Plan (RWP) for the works – see Appendix A.
- Disposal of removed stone fill (Preliminaries page 8).
- Source, physical and chemical characteristics of replacement stone.
- Treatment of cut DPM and DPC (Concrete work page 27)
- The use of a water-reducing admixture for the concrete floor slabs (Concrete work page 29).
- Repair of external wall cracks
- Interface with householders in respect of taking possession of the house, removal, storage and reinstatement of householder's possessions
- Schedule and drawing of finishes and other matters peculiar to each house

Note that while additional notes have been provided at each section of the specification that refer to the unusual features of these works, the specification shall be read in its entirety.

TESTING SCHEDULE

Contractors must include for tests in the following categories and for charges of Testing Agencies as may be designated by the Employer's Representative. Include for facilitating site access by all testing agencies and for all attendances required by them. All testing personnel shall be given the same indemnities and be subject to the same requirements as other persons present on site by authority of the Employer.

The works shall include a sum for the testing of Materials, which may be the subject of a Change Order when the exact amounts due are known. This shall be payable for all testing carried out on site in the categories as listed hereunder. The Contractor shall be responsible for promptly paying all fees and charges to the respective Testing Agencies.

Concrete testing: including cubes, moulds, storage and delivery, slump tests and otherwise, as may be directed by the ER. Two cubes to be taken from the floor slab per house, to be tested at 7 and 28 days respectively. Two cubes to be taken from external paths per house to be tested at 7 and 28 days respectively.

Coring of rising walls: One No 100mm concrete core to be taken from the rising walls at the

direction of the ER. Cores to be given to the ER representative on Site who will arrange testing.

Arrangements for testing of aggregates, sands and filling materials will be made by the ER representative. Contractor to facilitate the taking of such samples.

Checking and testing of electrical and mechanical services to comply with required standards is not included in the Sum to be allowed but this does not exempt the contractor from complying in full with all requirements of the Mechanical and Electrical Services Specifications.

SCHEDULE OF NOTIONAL TENDER DRAWINGS

Reference	Format	Description	Scale
NP-01	PDF	Site Layout Plan	1:500
NP-02	PDF	House Type A Repairs	1:50
NP-03	PDF	House Type B Repairs	1:50
NP-04	PDF	House Type C Repairs	1:50
NP-05	PDF	Repair Details	As Shown

PRELIMINARIES

General preliminaries: **General Preliminaries are covered within the separate Preliminaries Works Requirement Document**

Specific Attention Should be given to the following.

Survey of buildings Prior to commencement of works, the condition of houses, external walls, footpaths and boundary walls shall be recorded with photographs and drawings giving crack widths, extents, and locations. The survey shall exceed the requirements of IS398 Part 1 – 2017 insofar as it shall record first floor defects.

Remedial works Procedure A Remedial Works Plan has been prepared and forms part of this Specification (Appendix 1). No deviation from this Plan shall be permitted without the permission of the ER.

Disposal of Filling At the time of tender, the stone filling to be removed is not considered to constitute hazardous or toxic waste. Nevertheless, filling which will be found beneath the floor slabs and paved areas shall be disposed of in the following manner (see also Remedial Works Plan in Appendix 1):

- The removed filling material shall be disposed of in identified Quarry not more than 50KM away from the location of the site.
- The contractor shall establish the chemical content of the material and obtain written confirmation from the receiving waste facility that it is acceptable
- All loads shall be tracked using a “cradle to grave” system and such documentary evidence shall be provided to the ER.
- The removed filling material may not be re-used for any purpose without the express permission of the ER in writing

The provisions for the disposal of pyritic underfloor filling material described above relate to the Notional Project only and Tenderers should price the disposal of the material accordingly in the pricing document. These provisions may not apply to actual projects which will be the subject of mini-tenders under the Framework. Requirements for disposal of pyritic underfloor filling material will be detailed in mini-tender documents.

EXCAVATION AND EARTHWORK

Note the particular requirements in respect of removal of fill, and disposal of same.
Note the specification for physical and chemical properties of replacement stone.

Preparation:

Prior to commencement of excavation, the location, function, and condition of any existing services is to be recorded including CCTV, photographs, and levels as appropriate.

Pumping:

Include for providing and performing all pumping, baling, and temporary drainage, etc. that may be necessary to keep excavations, including drain trenches and manholes, site and buildings, free from water during progress of the works.

Backfilling:

Backfill shall not be placed against walls within 10 days of completion of newly constructed walls. Building debris and standing water shall not be placed against walls until the first floor construction is in place, or the walls are otherwise braced as may be required to resist backfill pressure without damage. Backfill shall be in granular fill where the ground floor slabs are floating slabs. The granular fill to be deposited in horizontal layers not more than 250mm deep and each layer to be compacted with a vibrating roller; frog hammer or similar to the specified dry density. The filling shall be placed at approximately equal levels on each side of the rising wall in order to minimise differential horizontal pressure on the walls.

Planking and Strutting:

Provide and perform all planking, strutting, casing and timbering as may be required to uphold sides of excavations, including drain trenches and manholes.

Granular material Beneath slabs

Granular material shall be used to fill beneath concrete floor slabs and external slabs. The fill material shall be deposited in horizontal layers not more than 250mm deep and each layer to be compacted with a vibrating roller; frog hammer or similar to the specified dry density. The filling shall be placed at approximately equal levels on each side of rising walls in order to minimise differential horizontal pressure on the walls. Granular material beneath floor slab shall be vibrated with a plate compactor and sand blinded prior to placing the damp proof membrane.

Formation beneath ground floor slabs shall be backfilled as follows: SR21:2014 Annex E granular material from directly under floor slab blinding to cleaned formation level

The contractor shall ensure that the supplier of granular material can meet these requirements. Should documentary evidence of this be unavailable, Housing Agency representatives shall require access to the source of granular material, and to remove samples for testing. No granular material shall be provided without the prior approval of the ER, and such approved material shall be stored in a separate stockpile pending delivery to site.

Tests shall be carried out when and where the ER considers necessary but in general a dry density test shall be carried out every 600 sq. m of compacted material per 250mm layer and the test repeated until the required degree of compaction is achieved. The utmost care is to be taken to ensure that the required degree of compaction is achieved and the Contractor's attention is particularly drawn to the importance of this clause.

Note: The depth of granular material beneath the floor slab requires a degree of compaction that should be achievable using SR21:2014 Annex E granular material. No substitute stone to be used without the prior approval of the ER (which may require additional testing and/or petrographer's reports)

**Tests for Granular
Fill:**

Tests shall be carried out when and where the ER considers necessary but in general a dry density test shall be carried out every 600 sq. m of compacted material per 250mm layer and the test repeated until the required degree of compaction is achieved. The utmost care is to be taken to ensure that the required degree of compaction is achieved and the Contractor's attention is particularly drawn to the importance of this clause.

In addition to the dry density test described above the Contractor shall supply and deliver when directed during the progress of the work ten samples of the graded gravel aggregate which he proposes to use as fill material. Each sample, consisting of not less than 45 kg. of material shall be sent by the Contractor on the instructions of the ER, to a nominated and approved Testing Laboratory, before delivery and the results of the test shall be sent to the ER.

Traceability

All replacement granular fill shall be accompanied by a certificate from the supplier confirming the SR21:2014 Annex E specification of the stone, and an original delivery docket bearing the name of the quarry from which the stone was sourced, the address of the site (XXX), and the name of the Contractor.

CONCRETE WORKS AND FLOOR SLAB PREPARATION

Note the treatment of the cut DPM and DPC.
Note also the use of an additive within the concrete floor slabs.

General:

Contractors tendering must note that the design and specification of Structural concrete in this contract is to be all as per the specifications and details prepared by Design Professional / Structural Engineering Section and included in the contract documentation.

DIMENSIONS AND TOLERANCES

Dimensions:

Figured dimensions on detailed drawings of concrete indicate measurements to actual concrete faces and do not include for any plaster or other finish which will be additional to such dimensions.

Permitted Tolerances:

On all setting out dimensions of 3,000 mm and over a tolerance of plus or minus 6mm will be allowed.

On all setting out dimensions under 3,000 mm a tolerance of plus or minus 3mm will be allowed.

A tolerance of plus or minus 3mm will be permitted on the cross section dimensions of structural members unless otherwise required by the drawings.

The top surface of concrete floor slabs and beams shall be within 6mm of the nominal level and line shown on the drawings. Where a power floated finish is used a maximum of +/-3mm. will be permitted on nominal level.

Columns and walls shall not be more than 6mm out of plumb in their storey height.

The Contractor will be responsible for the cost of all corrective measures required by the ER to rectify work that is not constructed within the tolerances set out above.

MATERIALS

Cement:

Portland cement used in concrete, concrete products and other cement based products, shall be certified as complying with I.S.EN 197, in accordance with the Irish Standard Mark Licensing Scheme of the N.S.A.I. Manufacturers or suppliers certificates of compliance with the Standard shall be provided when requested by the ER.

Aggregates:

All fine aggregate (sand) and coarse aggregate shall be washed and well graded and shall conform to I.S. EN 12620. Run of pit material will not be permitted to be used for concrete work.

Mixing Water:

The municipal supply only shall be used. No surplus water shall be visible on the surface of the concrete until it has been thoroughly rammed and compacted.

TESTS

General:

Every facility shall be provided to enable the ER to obtain samples and carry out tests on the materials and construction -(whether such tests show that any of the materials or construction comply with the requirements of this Specification or not, the Contractor will be responsible for the costs of the tests and the replacement of any defective materials and/or construction).

Samples

For grading tests, the Contractor shall supply and deliver, when directed, during the progress of the work, samples of the aggregate which he proposes to use, each consisting of not less than 25 kg. of fine aggregate, and not less than 50 kg. of coarse aggregate. The samples shall be sent by the Contractor on the instructions of the ER, to the appointed Housing Agency Testing Laboratory,

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For grading tests, the Contractor shall supply and deliver, when directed, during the progress of the work, samples of the aggregate which he proposes to use, each consisting of not less than 25 kg. of fine aggregate, and not less than 50 kg. of coarse aggregate.

The samples shall be sent by the Contractor on the instructions of the ER, to the appointed Housing Agency Testing Laboratory, Each sample is to be clearly labelled and given an identification number by the ER e.g.:

Test results to be sent to the office of the Housing Agency as above or as instructed. Each sample is to be clearly labelled and given an identification number by the ER e.g.:

XXXXX

Test No. Scheme Date sent for Testing

Concrete Cubes

The Contractor shall supply at least three approved cast iron moulds for making 150 x 150 mm concrete cubes for testing, together with all rammers, mixing plates, trowels, and all labour and materials required for the making of concrete test cubes, in accordance with B.S. 1881: Part 108.

Facilities for storing the cubes, under the conditions laid down in BS 1881: Part III, shall be provided by the Contractor until sent for testing. This means that along with the other apparatus described therein a thermostatically controlled water tank capable of maintaining temperature at 20 ± 2 degrees C shall be provided on site for cube storage and curing prior to transmission to the laboratory. The cubes shall be given an identification mark, and shall be sent for tests to the appointed Housing Agency Testing Laboratory, on the instructions of the ER.

Minimum four cubes per house shall be taken, two at 7 days and two at 28 days, total eight cubes for the project.

Slump cone

The Contractor shall also provide a complete slump cone apparatus for the use of the ER or his representative.

Cement Store:

Cement is to be stored on the site in a properly roofed weatherproof dry shed, having a wooden floor with a well-ventilated clear space of not less than 150 mm between timber and ground. The shed to be sufficiently large to contain such stocks of cement as the ER may direct, and is to be provided with partitions or such means as may be necessary to ensure the effective separation of the various consignments. Cement is to be used in the order in which it is received.

Alternatively, with the ER's permission, an approved type of cement silo may be used, subject to tests by a competent authority of the accuracy of the weighing mechanism.

Certificates of such accuracy shall be obtained immediately after the erection of the silo on the site, and thereafter at monthly intervals.

**Storage of
Other Materials:**

Should the Contractor use a silo for the storage of cement he shall be responsible for, make good, and renew all damage caused to the works or any adjoining buildings by the use of such silo.

Aggregate shall be stored on concrete paved areas with dividing walls between each type of aggregate. All materials shall be used in

Should the Contractor use a silo for the storage of cement he shall be responsible for, make good, and renew all damage caused to the works or any adjoining buildings by the use of such silo.

Aggregate shall be stored on concrete paved areas with dividing walls between each type of aggregate. All materials shall be used in the order in which they are received. No materials shall be stored or stacked on suspended floors without the prior approval of the ER. Reinforcement shall be stored in properly constructed racks above ground level.

**Rejected
Materials**

All materials which have been damaged, contaminated, or do not comply in any way with the requirements of this Specification, shall be rejected, and shall be removed immediately from the site at the Contractor's own expense.

FORMWORK

Formwork:

All forms shall be designed and constructed so as to interpret accurately the Contract drawings. Formwork shall be constructed, erected, and maintained entirely to the ER's satisfaction. Notwithstanding the above, it is the Contractor's responsibility to ensure that in striking the shuttering, the structure is not distorted, damaged or overloaded in any way.

Forms shall be of approved type steel, glass reinforced plastic (g.r.p.) or timber. Timber forms shall be constructed of suitable timber, free from loose knots and other defects, and all boards used for panels for exposed faces of concrete shall be wrought all over and thickened.

Formwork shall be water tight, substantial and rigid and shall not deflect during construction under the weight of the wet concrete or other loading.

The forms shall be set true to line and level and shall be strutted and securely braced so as to withstand without displacement or movement of any kind the weight of the construction and movement of men, materials, plant and all loads incidental to the operations. The strutting must not transmit any load on to concrete which is insufficiently strong to support it.

In the event of the contractor not using telescopic support system on walls, the vertical shoring shall be carried down to such construction as is sufficiently strong to afford the required support without injury and shall remain in position until the newly constructed work is able to support itself.

All joints in formwork must be tight to prevent the escape of liquid from the concrete.

Whenever practicable wedges, clamps and other similar devices shall be used in preference to nails or screws. Bolts and rods shall be used for internal ties where ties are necessary. On removal of bolts the holes in the concrete shall be thoroughly grouted up with a stiff paste composed of one part of cement to one part of sand, finished off smooth at face.

Wire ties will be permitted only through hidden surfaces where discoloration would not be objectionable and where water tightness is not essential. Where wire ties are permitted, immediately after the panels have been removed the ends of the wires must be cut off one inch in from the concrete face and any holes thus formed neatly plugged with one to one cement paste.

Forms before reuse shall be thoroughly cleaned and shall be treated with mould oil or other approved preparation to prevent adhesion of the concrete. Forms shall be maintained at all times in good condition as to

accuracy of shape, strength, rigidity, water tightness and smoothness of surface.

Striking of Forms:

The method and system of formwork which the Contractor proposes to use shall be approved by the ER and Engineer before concreting commences.

In no circumstances shall forms be struck until the concrete reaches a cube strength of at least twice the stress to which the concrete may be subjected at the time of striking. The cube strength referred to shall be that of concrete using the same cement and aggregate and proportions, and cured at the same temperature as the work. All formwork shall be removed without such shock or vibration as would damage the concrete. Before the soffit and struts are removed, the concrete surface shall be exposed where necessary, in order to ascertain that the concrete has sufficiently hardened.

The minimum striking times will be in compliance with Table I.

TABLE I		MINIMUM PERIOD BEFORE STRIKING FORMWORK	
Surface Temperature of Concrete	16°C and above	7°C	Any temperature 't' between 0°C and <u>25°C</u>
Type of Formwork			
Vertical formwork to column walls and large beams	12hours	18hours	<u>300hrs.</u> t+10
Soffit formwork to slabs	4 days	6 days	<u>100 days</u> t+10
Soffit formwork to beams and props to slabs	10 days	15 days	<u>250 days</u> t+10
Props to beams	14 days	21 days	<u>360 days</u> t+10

Foundation/Rising Walls:

A minimum period of 48 hours shall elapse between the pouring of concrete strip footings and the construction of rising walls. This period may be extended in frosty weather at the discretion of the ER.

Permanent Shuttering:

Permanent shuttering shall be laid with close butt joints broken in one direction. Soffits shall be level and without lipping. Traffic of any kind over the surface shall be avoided as far as possible, and all dust and debris shall be removed from the shutters prior to concreting.

REINFORCEMENT

Reinforcement:

Reinforcement shall be steel conforming to BS 4449 - specification for carbon steel bars for the reinforcement of concrete or BS 4483 - specification for steel fabric for the reinforcement of concrete as required. All reinforcement shall be scheduled, dimensioned, cut and bent to B.S.8666.2000.

Reinforcement Cleansing:

All steel reinforcement shall be free from loose mill scale, loose rust, oil and grease or other harmful matter immediately before placing the concrete.

Reinforcement Bending:

All reinforcement shall be accurately bent cold as required by structural drawings and bending schedules. Notwithstanding the provision of detail bending schedules the contractor shall be responsible for checking those and shall be considered to have checked same before any steel is cut, bent or placed to position in the work.

Reinforcement: Placing and Support:

The number, size, form and position of all steel bars, ties, links, stirrups and other reinforcement shall be in exact accordance with the structural drawings and bending schedules. Nothing shall be allowed to interfere with the specific disposition of the reinforcing bars. The Contractor shall make a particular point of seeing that they are laid out correctly in every respect and are temporarily fixed as necessary by means of annealed iron wire to prevent displacement before or during the process of concreting. No springing of bars into position will be allowed. The ties or links connecting the longitudinal bars in columns or other members shall be taut, so that the main bars shall be properly braced in every direction.

The horizontal bars and horizontal portion of bent bars in beams shall be straight and laid parallel to each other and the sides of the beam forms

Steel reinforcement shall be held in position in the formwork by means of purpose made concrete pads with tying wire or by approved chairs or spacers. The use of pieces of brick, tile or timber will not be permitted. Upper layers of reinforcement which are not self-supporting shall be maintained in position by means of approved chairs, spacers or fixing bars. Reinforcement to foundation slabs shall be temporarily supported and kept clear of screed concrete mat by precast, wedge shaped concrete blocks. The cost of supplying and fixing all pads, blocks, chairs, spacers or fixing bars will be the responsibility of the Contractor.

The disposition of all reinforcement shall be approved by the ER or his representative before concreting commences.

**Cover to
Reinforcement:**

The utmost care shall be taken by the Contractor to ensure that the minimum cover shown on the drawings is everywhere attained. In general, the reinforcement cover shall be in accordance with I.S. 326.

GAUGING, MIXING AND PLACING CONCRETE

General:

Concrete shall be produced and tested in accordance with B.S. 5328.

**Gauging and Mixing
of Concrete:**

Quantities of cement shall only be measured by weight, the unit bag of 50 kg except where cement is supplied from a silo, and the constitution of each batch shall be such that the cement required per batch is in units of 50 kg. Dry aggregates for concrete shall be measured by weight in an approved weight batching mixing plant.

All proportioning must be carried out in such a manner that the proportions of the materials may be easily and readily checked. The batches of concrete shall be proportioned to the size of the mixer, to produce the best results. The entire contents of the hopper shall be completely discharged each time a batch is mixed.

Concrete which has been mixed for more than one half hour, shall on no account be placed in permanent work without the sanction of the ER.

In the case of ready-mixed concrete, concrete shall be placed in permanent work within two hours of loading when transported in truck mixers or agitators or within one half hour of loading when non-agitating equipment is used.

The cement and aggregate shall be mixed in an approved mechanical batch mixer. Mixing shall continue until the mix is uniform in texture but in any event for not less than two minutes. The mixer shall be equipped with an accurately functioning water measuring device. Water shall be added only after the drum is fully charged with the other materials.

The volume of mixed materials shall be washed out thoroughly whenever work ceases which includes meal breaks. Properly constructed catch-pits shall be provided on the site to take the washing effluent which in no circumstances will be permitted discharge into the municipal sewers.

The weight of cement specified per cubic metre of finished concrete in Table II shall be maintained as a weekly average. A daily tolerance of $\pm 3\%$ will be permitted. The quantity of mixing water to be used shall be determined in each case by the ER and no change in that quantity shall be made without his consent.

In measuring the water for each batch of concrete, allowance shall be made for the water content of the aggregates. The Contractor shall supply apparatus for rapid estimates of the latter.

The characteristic strengths shown in Table II are to be regarded as absolute minima. In the event of any portion of the structure giving characteristic strength tests less than the stated minima, the ER may require the Contractor to carry out a loading test in the manner outlined in EC2 2.5 Section 5 and Annex D EN 1990 and should such a test prove unsatisfactory the Contractor will be required to take down the defective structure and replace it at his own expense. Whether or not the loading test is satisfactory the cost of such test is to be borne by the Contractor.

**TABLE II :
CONCRETE MIXES**

Mix Class	Concrete Grade	Nominal Maximum Size of Agg. (mm)	Max. W/C ratio.	Cement conten compacted	Characteristic Strength N/ mm sq kg/m cu.
A	C25	20	0.65	300	25
B	C30	20	0.56	350	30
C	C35	20	0.45	380	35
D	C30	40	0.55	350	30
E	C30	20	0.58	400	30
F	-----	14	-----	150	-----

GENERAL LOCATION OF CONCRETE CLASSES FOR HOUSING SCHEMES

- CLASS A** Bedding, haunching and surrounds to sewers, pipes and ducts, bedding to Armstrong junctions and gullies. Bases for fencing posts, stays ,clothes lines and concrete hearths.
- CLASS B** Unreinforced concrete foundations. All unreinforced concrete floor slabs, walls, platforms steps, copings, kerbs, thresholds, chimney caps, spud blocks and bollards.
- CLASS C** This is the minimum strength class which is permitted for use in Reinforced work. Where required by the Engineer or his representative other specifications must be used.
- CLASS D** Mass concrete retaining walls, floors to gullies and manholes.
- CLASS E** Single course footpaths.
- CLASS F** Screed concrete mats.

Ready Mixed Concrete:

Ready mixed concrete from an approved supplier may be used provided it is equal in all respects to the concrete specified for the works and complies with IS EN 206: Concrete – Part 1: Specification, performance, production and conformity. The Contractor shall provide Certificate of Mix for each batch of ready-mixed concrete supplied to the site.

The concrete shall be obtained from a depot approved by the ER who may visit it at any time to assure himself that the provisions of this Specification are complied with. The Contractor shall make written application to the ER stating the name of the supplier and the address of the particular depot. Written approval must be obtained prior to the commencement of concreting. Such approval will be in respect of one depot only and supplies shall not be obtained from any depot other than that approved without the written consent of the ER.

In all respects, including mixing, transport and delivery, the concrete shall comply with the recommendations of IS EN 206 as Designed Mixes. Composition of the mixes shall conform to this specification. Concrete for exposed work shall be of uniform colour and texture consistent with the appropriate approved sample and the Contractor shall inform the supplier whenever any batch is required for such work. The appropriate Mix Designation, as shown in Table II shall, without exception, be quoted in all documentation relating to the concrete specified in this Contract. Delivery tickets in accordance with IS EN 206 shall be provided by the supplier for each batch. In addition to the requirements of IS EN 206 each ticket shall state the actual cement content of the batch. The Contractor shall retain all delivery tickets until the end of the Maintenance Period. When a truck or agitator is used for the delivery of concrete, no water from the truck water system or elsewhere shall be added after the initial introduction of the mixing water for the batch.

The concrete shall be placed and compacted in its final position within 2 hours after the introduction of the mixing water to the cement and aggregates or the introduction of the cement to the aggregates. The time at which this occurs shall be recorded on the delivery note accompanying each load. At all times the mixed concrete shall be kept agitated at the speed recommended by the manufacturers which shall be capable of maintaining the mixed concrete in a thoroughly mixed and uniform mass. Truck mixers and agitators should be equipped with means by which the number of revolutions of the drum, blades or paddles may be readily verified.

Sampling and Testing of Concrete Cubes

A minimum of one sample per pour, per day or for every 50 cubic metres of concrete produced shall be taken in accordance with IS EN 206. Three test cubes shall be made from each sample and marked, stored, cured and delivered for testing as specified. A slump test shall be carried out on each sample and the result sent to the laboratory for inclusion in its report.

WORKMANSHIP

Placing Concrete:

Before any concrete is placed all moulds and shuttering shall be carefully examined and carefully cleared of all sawdust, wood, dirt, or other foreign matter and inside surfaces thoroughly wetted with water shortly before placing the concrete. Where a piped water supply is available, a hosepipe should be used for wetting formwork. No concreting shall however, commence until this work and the fixing of formwork and reinforcement has been examined and passed by the ER or his representative.

Concrete shall be placed before setting has commenced and shall not be subsequently disturbed. The concrete shall be transported from the place of mixing to the place of final deposit as rapidly as possible by methods which will prevent segregation or loss of ingredients. It shall be deposited as near to its final position as practicable to avoid rehandling or flowing. Defective concrete shall be removed and replaced as directed by the ER, all at the Contractor's expense.

The use of long chutes for conveying concrete from the mixing plant to the forms will be permitted only on the written authority of the ER. If chutes are allowed and the quality of the concrete as it reaches the forms or the methods of placing or working it therein are not satisfactory, the Contractor shall upon orders from the ER discontinue the use of chutes and re-equip his plant for placing the concrete in a satisfactory manner.

Troughs, pipes or short chutes used as aids in placing concrete shall be arranged and used in such a manner that the ingredients of the concrete are not allowed to separate. Where steep slopes are required, the chutes shall be equipped with baffle boards, or be in short lengths that reverse the direction of movement.

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When pipes are used in placing concrete they shall be kept full of concrete and have their lower ends kept buried in fresh concrete in the same manner as when using a tremie.

All chutes, troughs and pipes shall be kept clean and free from coatings of hardened concrete by thoroughly flushing with water and brushing after each use. Water used for flushing shall be discharged clear of the concrete in place. Open troughs and chutes shall be either of metal or metal lined and shall extend as nearly as possible to the point of deposit. When the discharge must be intermittent a hopper or other device for regulating the discharge shall be provided.

Dropping the concrete a distance of more than 2 metres or depositing a large quantity at any point and ramming or working it along the forms will not be permitted.

Pumping

The placing of concrete by pumping is generally not approved but in special circumstances and on the written authorisation of the ER, who must be satisfied that adequate measures to ensure the quality of the concrete will be taken, pumping of concrete may be permitted.

**Compacting
Concrete:**

The whole of the concrete shall be thoroughly compacted during the operation of placing by means of suitable mechanical vibrators and be well packed and worked around the reinforcement, around embedded fixtures and into corners of the formwork.

Vibrators may only be operated by personnel trained in their use under careful supervision. The greatest care shall be taken to prevent displacement of reinforcement or disturbance of the formwork.

**Concrete
Curing:**

All concrete shall be covered with a layer of sacking canvas, hessian or similar absorbent material, and kept constantly wet for seven days after placing. Alternatively, the concrete having been thoroughly wetted, may be covered by a layer of approved waterproof material which should be kept in contact with it for seven days. The Contractor shall employ workpeople in addition to security during weekends and holidays to ensure that the above conditions are strictly complied with.

As an alternative to the foregoing, the Contractor may use a proprietary liquid applied waterproof membrane, subject to the ER's approval and in accordance with the manufacturer's instructions.

**Construction
Joints:**

When work has to be resumed on a surface which has hardened such surface shall be removed by hacking. The freshly exposed surface so formed shall then be swept clean, thoroughly wetted and covered with 12 mm layer of mortar composed of cement and sand in the same ratio as the cement and sand in the concrete mixture. This 12 mm layer of mortar shall be freshly mixed and placed immediately before the placing of the concrete. Construction joints shall also be arranged to minimise the effect of shrinkage.

**Concrete Work in
Cold Weather:**

No concrete of any kind may be placed during a falling temperature of 4°C or less or until after the rising temperature exceeds 1°C unless precautions as outlined hereunder are carefully observed. When depositing concrete at or near freezing temperatures, approved precautions shall be taken to ensure that the temperature of the concrete is maintained at above 4½°C until it has thoroughly hardened.

Concrete materials shall be heated before mixing and carefully protected after placing. Dependence shall not be placed on salt or other chemicals for the prevention of freezing. No frozen materials or materials containing ice shall be used.

All concrete damaged by frost shall be removed and replaced by the Contractor at his own cost. A continuous daily record of the maximum and minimum air temperature shall be maintained in an approved manner on the site.

**Surface
Finishes:**

The operation of compacting the concrete shall be conducted so as to form a compact, dense, impervious concrete which shall show a smooth face on all exposed surfaces. Where concrete surfaces are to be plastered, rendered or scudded, the surface of the concrete shall be prepared in accordance with the specification for plastering. Concrete floor slab surfaces shall be finished by power floating using an approved power machine or by the application of a 3:1 sand/cement screed in accordance with BS 8000: part 9. Power floating shall commence at a suitable time interval after the concrete has been laid, when all surface moisture has disappeared and the concrete has developed sufficient strength and stiffness to bear the weight of the operator and machine without any disturbance of the surface.

Fairface Concrete

All concrete surfaces required to be left unplastered shall have a smooth fair face unless otherwise indicated on the drawings. The formwork to fair faced concrete surfaces less than 225mm wide shall be clean and wrought timber to which oil-based emulsion type mould oil has been applied uniformly, but not excessively. The formwork to fair faced concrete surfaces 225mm wide and over shall be lined with oil tempered hardboard. Any voids or honeycombing to any

surface when the formwork is removed shall be made good to the requirements of the ER. All undesired fins or other projections shall be carefully removed.

Fixing Blocks and Chases and Holes:

The Contractor shall be responsible for the co-ordination with sub-Contractors for incorporating any electrical conduit pipes, fixing blocks, chases, holes, etc., in concrete members as required. The Contractor shall submit full details of those items to the ER for approval, before the work is put in hand. All fixing blocks, chases, holes, etc., to be left in the concrete shall be of the sizes required and shall be accurately set out and cast with the concrete. No holes or chases shall be cut in the concrete without the approval of the ER.

Fixing to Walls:

Generally fittings are to be rawl plugged to concrete work unless otherwise specified.

Details of Contractor's Plant:

Before construction commences the Contractor shall supply to the ER for his approval drawings showing the general detailed arrangement for the concreting plant, system of formwork and all other devices proposed to be used for the construction of the structural framework.

Foundations:

Foundations shall be to the sizes shown on Drawings or otherwise directed by the ER.

Where excavation is timbered, the timber must be removed as soon as the concrete is deposited, so that the latter may be rammed close against the face of the excavation. Where this cannot be done, the runners or poling boards must be left in, and not subsequently removed.

Preparation for Damp Proof Membranes (D.P.M):

In the case of floating ground floor slabs, the surface of the graded gravel or other approved base shall be blinded with 50mm sand and rolled with a vibrating roller to ensure the absence of hard projections which might puncture or damage the damp proof membrane or insulation.

Adequate precautions must be taken to protect the insulation and D.P.M./D.P.C. when fixing steel reinforcement or placing concrete. Lapping of membrane sheets where necessary shall be 300mm minimum and sealed in accordance with the manufacturer's instructions.

Treatment of Damaged DPM

During the removal of the existing floor slab, existing DPM will be cut, leaving a 200mm lap. Repair Details Drawing shows a remedial detail using 70mm double sided radon resisting sealant tape which shall be installed in accordance with the detail drawing and the Manufacturer's instructions.

**D.P.M. and
Radon Barrier:**

The damp proof membrane (D.P.M.) under ground floor slabs shall consist of a layer of reinforced Radon resisting membrane, min 0.35mm thick, laid on a 12mm layer of soft sand blinding. To obviate the need for joints, sheets shall be provided of the most appropriate widths. Where possible, a single width of sheet shall extend from the back to the front of each block so that the D.P.M. may be without joint. Where joints have to be made (including at lap with existing cut DPM), these shall be as made using a proprietary double sided tape in accordance with the manufacturer's printed instructions.

In all cases, the damp proof membrane shall be turned up to floor level and extend over the inner leaves of the external walls and over the party walls (i.e. it shall be laid under the wall D.P.C.) The damp proof membrane of every house is to be inspected and passed by the ER.

Radon Sump:

All dwellings having floating ground floor slabs shall include for one or more blockwork or proprietary sumps set below the D.P.M. as shown on the drawings and vented to front and rear walls with 100mm PVC pipe. At the rear wall provision shall be made for future connection to an extract stack by an AJ with secure cover.

**Radon Barrier and:
Seals**

All rising pipes or services penetrating this barrier shall be fitted with collar seals. Multiple penetrations in clusters shall be sealed using a proprietary flexible bund and liquid Radon sealant. Proprietary products to be installed in accordance with the manufacturer's instructions and to be compatible with radon barrier.

**Floating
Floor Slabs**

Ground floors to houses to be reinforced concrete.

Lay over area of floor slab on insulation of max. U-value $0.18W/m^2 K$ (with phenolic foam this requires a minimum of 90 mm) and over the D.P.M. a 175mm concrete bed in Class C concrete, reinforced in 2 layers A252 mesh (1 top, 1 bottom) to engineer's detail. Insulation to be high density and approved for sub-floor use. Slab edges to all external sides of slab shall be insulated minimum 25mm thick.

Note the particular requirements for an additive in this mix, details of which are given at the end of "Concrete works"

SUNDRY CONCRETE WORK

Chases, Holes Etc.

Form or leave all holes, chases, grooves, etc. in concrete as required by all trades, including Electricians and Gas Fitters. The Contractor shall set out full details of these items for approval by the ER before the work is put in hand, and no holes or chases shall be cut in the concrete without his approval.

**Concrete to floor
Slabs and screeds**

Mix to concrete floor slabs shall incorporate the following additive or equivalent approved. No substitute additive to be used without the prior approval of the ER.

SIKA Viscocrete 10 @ 2.5litres / m³
SIKA Sikacrete PP1 @ 20kg/m³

Min cement content = 360kg/m³
Water Cement ratio = 0.45
Slump = 200+

The purpose of these additives is to enable finishes to be laid at an early stage. All products to be added at the concrete supplier's plant, and recorded on the dockets, copies of which shall be supplied to the ER. Additives to be used in accordance with Manufacturer's instructions.

**Preparation
for Timber
floors**

The Surface of the concrete shall be primed with Sika Primer MB or equivalent in accordance with the manufacturer's instructions.

BRICKWORK AND BLOCKWORK

Note: crack repair; chimney flue surveys; strapping of gables
 This blockwork specification is provided in the event that the contractor requires to demolish a block wall to facilitate site operations and rebuild it afterwards.

Applicable Standards & Codes of Practice: The Standards and Codes of Practice listed below form part of this Specification, and are referred to elsewhere by the basic description.

IS EN	197	Portland Cement.
IS EN	12620	Building Sands from Natural Sources
IS EN	459	Hydrated Lime for Building Purposes
IS EN	771	Concrete Building Blocks
IS EN	771	Clay Building Bricks
BS	1014	Pigments for Portland Cement Products
IS EN	845	Metal Ties for Cavity Wall Construction
IS EN	325	Brick and Block Masonry Walling
BS	8000 Part3	ditto (Workmanship)
IS EN	57 & 325	Damp-Proof Course.
IS EN	998	Mortar

MATERIALS

Concrete Building Blocks:

Solid concrete and hollow concrete building blocks shall be made natural aggregates, and shall be of Type A (5) of IS EN 771 and shall comply generally with that Specification.

Concrete Bricks:

Concrete bricks where specified shall be first quality to selected colours and of approved manufacture and shall comply with IS EN 771.

Lime and Sand:

Lime and sand for mortar shall be as specified for Plastering herein

Cement Mortar:

All cement mortar, except where otherwise specified, shall be composed of three parts clean sharp sand, well washed in clean fresh water in a tank made for the purpose, all loam and other organic impurities being thoroughly removed, and one part of Portland cement mixed in small quantities.

Gauged Mortar:

Gauged mortar is to be composed of seven parts of a mixture of hydrated lime and sand (1:6) and one part of cement. The mortar is to be thoroughly turned over before use in small quantities, to avoid partial setting in a heap.

Lime to be hydrated lime, as specified for plastering. The sand to be clean sharp sand. All proportioning of materials is to be done using properly constructed gauge boxes and in no circumstances shall the materials be proportioned by shovel.

Coloured Waterproof Gauged Mortar:

Coloured waterproof gauged mortar shall be as specified for gauged mortar, with approved proprietary waterproof additive used strictly in accordance with the Manufacturer's instructions. The mortar shall be coloured by the incorporation of approved pigments to obtain the required shade.

Approved Wall Ties:

All ties to be 250mm long stainless steel vertical twist wall ties conforming to IS EN 845 with locating lugs for retaining insulation in position. The use of ties of steel wire, galvanised steel or plastics will not be permitted. The ties shall be 'Ancon Staifix' RT2 stainless steel 250mm long with insulation board restraints or equal and approved.

WORKMANSHIP

All masonry work and workmanship must comply with B.S. 8000 Part 3 and IS325.

Laying of Bricks and Blocks:

Blockwork in rising walls and any work above roof level to be laid in cement mortar. Elsewhere brickwork and blockwork to be gauged mortar as specified previously with 10mm horizontal and vertical joints throughout. The brickwork and blockwork to be carried up level and plumb. The cavity between inner and outer leaf up to finished ground level shall be filled with cement mortar (1:10).

Cold Weather

During cold weather, when the temperature is falling, no brickwork or blockwork may be executed in a temperature of 2 degrees C or lower, neither shall such work be executed when the temperature is rising until the temperature will have exceeded 1° C.

LOCATION

Rising Walls:

Rising walls where ground floor slabs are floating slabs are to be cavity walls built with 100 mm solid block outer leaves and 215mm inner leaves of solid block set in cement mortar and 100 mm cavity filled with cement mortar to 150 mm below DPC.

Cavity Walls:

The external walls are to be cavity walls built with 100 mm solid (no voids) block to outer leaves. Inner leaves shall be generally in 100mm solid blockwork set in gauged mortar

The two leaves to be bonded together with approved twist pattern ties spaced 750mm apart horizontally and 450mm vertically and staggered. Provide additional ties every 225mm vertically at sides of openings and control joints.

The cavity to be kept clear of all rubbish or mortar droppings by movable boards or other means. Leave opes for this purpose at the base of each run of cavity. At completion build up these opes uniform with surrounding work.

The cavity at jambs of all door and window opes to be closed with cavity closer blocks backed by 100mm wide vertical DPC, behind which batts of 50mm PIR foilbacked insulation shall close the residual cavity. The rear face of windowsills and sill bricks shall also have 50mm PIR insulation and steel lintels where used shall be similarly insulated. The cavity at eaves to be closed with a course of slates lapped and bedded in 3 to 1 sand cement mortar

Insulation of Cavities

Insulate cavity walls with phenolic foam insulation boards to give a maximum u-value of 0.18 w/sq.m./deg.C Heads, jambs and sills of all openings in external walls to be similarly insulated. Joints between boards and at returns shall interlock at board edges.

Control Joints Blockwork:

Vertical control joints to be formed in outer skins of cavity walls where shown on drawings and no further apart than 6 metres. A continuous vertical joint to be formed from damp proof course to eaves level. The mortar joint to be raked out 20mm depth, and pointed with gun applied sealant to BS 5215 or BS 5889..

Tolerances:

The above dimensions are nett actual sizes, subject only to the tolerances allowable in I.S. EN771 or permitted in the specification.

Fixing Plugs:

Provide fixing plugs to take all timber fixtures, such as skirtings, etc. and for securing any door and window frames as may be necessary. For long fixtures, set plugs at 600mm centres.

Screed and Point:

Bed and point external door and window frames with mastic. Bed and point timber window cills in mastic.

Chases for Bonding Holes, Etc.:

Form or leave all bonding chases, grooves for flashing, door window and vent opes, etc. holes for passage of drainage, plumbing, gas and electric supplies etc.

Damp Proof Courses:

All D.P.C.s to comply with I.S. 57 and I.S. 325. The damp proof courses under walls at ground floor level shall be Agreement approved for multi-storey use Grooved polythene may be used in all other locations both horizontally and vertically.

Damp proof course to be laid on a bed of mortar on all external and party walls to be full width of rising walls and structural partitions and lapped 150mm at junctions. The walls at this point to be finished off in a dead level plane with true arrises and to be thoroughly set before the damp proof course is laid.

D.P.C.s in cavity walls to be all in separate strips and laid as before to full width of each leaf. Where adjoining site or access gallery finishes are less than 150mm below DPC level a stepped DPC shall be provided crossing both leaves of the external cavity walls in addition to the internal leaf DPC.

**D. P.C. over
Lintols**

A stepped damp proof course is to be provided over R.C. and steel lintols in external cavity walls as shown on drawings. The damp proof course to be dressed down over sloping inner face of lintol and over timber weather fillet on window frame and to extend at least 150mm beyond each side of lintols.

Chimney Flues:

Chimney flues to be camera surveyed and smoke tested by a competent person engaged by the contractor, and a report on their integrity provided to the ER. Any subsequent works to the chimneys required as a result of the report, shall be the subject of a Change Order.

**Repair of
Cracks**

Where cracked walls are to be retained, cracks shall be repaired in the following manner (this operation shall take place after the houses have settled upon after the houses have settled upon removal of stone. Principal cracks are identified on the survey drawings supplied for both houses. All cracks are to be repaired, including hairline cracks not specifically shown on the drawings.

Crack Types

Crack type 1: Internal walls (Blue lines on survey drawings)

Expose blockwork to 200mm each side of crack
Clean crack of any loose mortar, dust and debris
Cut crack with grinding disc to give a square edged crack approx 5mm wide
Apply "Sikadur-33" or equivalent in accordance with manufacturer's instructions
Fix 300mm wide strip of expanded metal around crack
Repair undercoat and skim

Crack type 2: Separation crack between wall and ceiling, and ceiling cracks (Magenta lines on survey drawings)

Rake off loose material and skim plaster to approx 50mm from crack
Expose ceiling plasterboard and wall undercoat plaster
Apply scrim tape to separated joint
"Cork" open joint with skimcoat Gypsum plaster
Finish repair with skimcoat Gypsum plaster.

Crack type 3: Internal walls –hairline cracks (Orange lines on survey drawings)

These cracks do not require exposure of the substrate.
Fill crack with a proprietary flexible cement based filler prior to redecoration.

Crack type 4: External walls - dry dash or render

These cracks are in the vicinity of the window
Expose blockwork to 200mm each side of crack
Clean crack of any loose mortar, dust and debris
Cut crack with grinding disc to give a square edged crack approx 5mm wide
Apply "Sikadur-33" or equivalent in accordance with manufacturer's instructions
Fix 300mm wide strip of expanded metal around crack
Repair undercoat plaster and dry dash or render

Crack type 5: Other cracks

Refer to Notional Project drawings which show details of extensive crack stitching, repair, and replastering required in a number of locations.

BRICKWORK AND BLOCKWORK QUALITY CONTROL

Site Tests The Contractor shall maintain on site the following apparatus, which shall be kept in good repair throughout the Contract and shall remain the property of the Contractor.

- a) A maximum and minimum thermometer to be kept in position close to the Works for measuring the atmospheric shade temperature.
- b) Soil thermometer for measuring mortar and ground temps.
- c) Apparatus for carrying out the test described in IS EN 772
- (i) Syphon can, Gammon Morgan or Speedy apparatus for measuring the moisture content of aggregate.
- (ii) Apparatus for carrying out the test described in IS EN 772
- (iii) Apparatus for making mortar cubes or prisms in accordance with IS EN 772.
- (iv) Apparatus for measuring the air content of the mortar in accordance with IS EN 772

TESTING OF AGGREGATES

General All sampling and testing of aggregates shall be carried out in accordance with BS 812.

Preliminary Tests

The Contractor shall obtain samples of the proposed aggregates and arrange for the following tests to be carried out:

- (a) Sieve analysis.
- (b) Tests for clay, silt and dust.
- (c) Tests for salts and minerals.
- (i) Tests (a) and (b), with the moisture content of the aggregate, shall also be carried out on the samples used for each trial mix.

Works Tests The Contractor shall carry out such tests on the aggregate as are necessary for the production of the specified mortar.

Salts

Tests for soluble salt content, carried out in accordance with IS EN 772, shall be made on wet or hardened mortar specimens or samples of aggregate if so directed.

Testing of Mortars

General All tests on wet or hardened mortar specimens shall be carried out in accordance with IS EN 772.

- (i) Samples shall be taken at the point of mixing or use as directed. The frequency of sampling shall not be less than that specified in Table 1. At least two samples shall be taken each week from each grade of mortar in each building.
The Contractor shall allow for additional tests and frequency of sampling should the mortar not fully comply with this Specification.

Trial Mixes

Subject to the test results, the specified nominal mix proportions may be adjusted, and tested, as directed.

- (i) The approved mortar mix and test results will become a requirement of this Specification.

Crushing Strength Half of the samples shall be tested at 7 days. The remainder at 28 days.

The minimum 28 day crushing strength of the cubes shall not be less than the following: The test results shall not exceed 1.5 times the relevant specified strength, shown in Table 2.

TABLE 2

Mortar Grade	Preliminary Test (N/mm²)	Work Test (N/mm²)
3	3.5	2.5

Consistency

Unless the Contractor can provide satisfactory evidence to the contrary the consistency of fresh mixed mortar shall be the standard of consistency recommended in IS EN 772.

Air Content

The air content of each sample shall be checked and compared with the results of the trial mix for that mortar grade.

Test Failure of Works Mortar

Any work containing mortar which does not comply with the requirements of the tests will not be accepted.

If the results of any 28 day test fail to comply with this Specification the mix proportions shall be modified.

Setting Out and Tolerances

Unless otherwise directed by the ER structural members shall be set out from the references and constructed such that the dimension between any two points on the structure as built between any point on the structure and any reference shall agree with the required dimension,

whether shown on or calculable from the drawings, with the degree of accuracy indicated In Table 3. (see overleaf.)

TABLE 3

Maximum deviation in millimetres from required dimension						
Position To Member	Up To 300mm	Over 300mm To 2mm	Over 2m to 5m	Over 5m to 10m	Over 10m to 30m	Add For Each Additional 30m
In Foundations	10	15	25	25	25	10
Other than in Foundations	3	5	10	15	20	10

The figures given in Table 3 apply to such variables as:

- (a) Position of plan of any point from nearest grid line.
- (b) Plumb
- (c) Cross section and other linear dimensions of member.
- (d) Clear dimension between members.
- (e) Twist (the distance of any corner from a plane containing the other three corners).
- (f) Squareness of corners (the longer of two adjacent sides shall be taken as the base line). Deviation is related to the length of the shorter side.
- (g) Level (measured from the nearest datum)

The Contractor shall advise the ER when the tolerances in Table 3 are exceeded.

Testing of Blocks

The contractor shall take the ERs selection of 10 blocks from every 1000 (or part thereof) and shall arrange for them to be tested at an approved independent testing laboratory with regard to physical dimensions and compressive strength. The selection of blocks, testing and reporting on results shall be in accordance with IS EN 771 except that the Routine Rapid Control Test shall be used to determine whether or not the blocks meet the specified strength.

Manufacturers certificates shall be forwarded to the ER for all deliveries of blocks, giving details specified in IS EN 771.

CARPENTRY AND JOINERY

Any demolitions (stud walls etc) that must be reinstated shall comply with the Timber specification. Roofwork, other than additional strapping, is not envisaged.

General:

All timber materials used shall be of good quality, properly seasoned to its particular end use and generally free from defects as defined in the applicable standards.

Defective timbers showing decay, heavy sap stain, active insect attack, distortion, high moisture content or other defects shall be rejected and removed from the site.

Moisture Content:

The moisture content of all timbers shall not exceed the permitted maxima set out in IS 96. Tests will be carried out on delivery and during the progress of the work in accordance with the recommendations of the foregoing standard Specification.

The specification requires that at the time of fabrication or erection the moisture content shall not exceed the values set out below:-

- | | |
|--|-------------|
| 1) Structural Timbers (including roof trusses) | 20% |
| 2) Internal Joinery Timbers | 12% $\pm$ 2 |
| 3) External Joinery Timbers | 17% $\pm$ 2 |

Storage:

All timber for use on site must be kept in a dry and secure storage area. Timber in storage must be maintained at the required moisture content throughout the Contract. Provision must be made on the site to provide a permanent structure for the storage of all joinery timbers (flooring; door frames; architraves; skirting; fascia, barge; soffit; internal and external doors; windows; door screens; etc.)

Care shall be taken to ensure that all timbers are stored on level bearers, free of ground contact, allowing free access of air to all surfaces.

Preservative Treatment:

All timber components shall be treated with an approved wood preservative solution containing active fungicidal and insecticidal ingredients. The selection and method of treatment shall be in accordance with the following standards and the required service life for the components shall be not less than 60 years.

EN 335 'Definitions of Hazard Classes'

EN 350 'Natural Durability Classes'

EN 460 'Natural Durability Requirements'

EN 599 'Performance Tests for Preservatives'

EN 351 'Penetration and Retention Classes'

<u>External Joinery.</u>	External Joinery shall receive a double vacuum treatment in accordance with Clause 6. 2. 2. of I.S.63. with an organic solvent wood preservative complying with B.S. 5707: part 1.
<u>Internal Joinery.</u>	Internal joinery and flooring shall receive a preservative treatment by Double Vacuum Process. The Preservative agent shall be an approved Borate solution or approved organic wood preservative.
<u>All Other Timbers :</u>	All other timbers shall receive either a Double Vacuum preservative treatment or Pressure Treatment, all as above specified.
<u>Moisture Content:</u>	All timbers which are pre-tested, whether on the site or in specialist treatment plants, shall comply with IS 96 before treatment. All timbers shall be free from surface moisture at the time of treatment.
<u>Double Vacuum and Pressure Treatments:</u>	All such treatments shall be carried out in specialist treatment plants approved by the relevant preservative Manufacturer (see Directory of Preservation Plants in Ireland,) All deliveries of treated timber to the site shall be accompanied by a treatment charge sheet showing data regarding the type of treatment, etc. The charge sheets shall be given to the ER on the same day the material is delivered.
<u>Testing:</u>	Samples for all tests shall be regularly and randomly selected for analysis. Samples of any wood preservative used on site shall be also sampled for testing. These samples shall be tested by an appointed Housing Agency approved Testing facility.
<u>Handling of Treated Timber</u>	1) Treated external joinery shall not be machined, drilled, etc. under any circumstances. 2) Treated timbers shall not be reduced in size 3) Where treated timbers <u>are</u> cut, e.g. bird's mouthing, notches, etc., these exposed areas shall receive two liberal brush coats of a preservative complying with BS 5707. The colour of this preservative shall be markedly different from that of the original preservative. If this different colour is not readily seen, it will be assumed that no supplementary treatment took place and that timbers shall be re-treated.

MATERIALS

Scantlings: The specified scantlings of unwrought carpentry are to be in all cases the finishing sizes. For joinery work the sizes specified are nominal.

Workmanship All joiners work is to be properly wrought and framed together and finished in a workmanlike manner. All framing to be morticed and tenoned. Tonguing to be crossgrained. All joinery is to be finished die square, and when in work is to hold the full dimensions shown on drawings. Work is to be prepared and framed up as soon as possible after the order to commence work is given, and stored dry under cover so that the air will circulate freely around it. Any timber splitting or opening to the extent of 1mm within the Contract maintenance period shall be replaced. No work is to be glued or wedged up until required for use, unless otherwise specified or directed.. No piecing, lengthening or unnecessary joining will be permitted.

Door Saddles: Fix approved hardwood saddles 150 x 22mm twice splayed and returned at the end around door frames.

Skirting: It is not anticipated that the skirting board can be salvaged for re-use. Replacement skirting boards to be provided equivalent to the existing. Shall be red deal 100 x 22mm mitred at angles, splayed at joints & nailed to treated plugs as specified under Brickwork and Blockwork.

Duct Covers Duct panelling and access panels shall be fixed with brass screws and cups to 50 x 50 mm timber framing. Any access panels fitted in structures having a rated Fire Resistance shall be certified as having no less resistance than the rated resistance of the surrounding structure.

Window Board: Provide 225 x 32 mm red deal bull nosed window boards to project 35mm over plaster and returned 50mm at ends.

Internal Doors: Solid Core Doors – Re-use existing doors.

Internal non-loadbearingPartitions:

Any timber stud partitions damaged or requiring reconstruction shall be formed in 75 x 44 Grade C18 treated timber studs at max 350mm centres. Soleplate, headers, cripple studs and noggins all ex. 75 x 44 timbers as main stud. Studs shall be twice nogged at approximately third points. Doorframe locations shall be provided with a full height stud. Sockets shall be provided with grounds for support.

Ducts:

Where vertical or horizontal ducts carry piped services they shall be formed with studding and faced with 2 layers of 12.5 mm fire resistant plasterboard to give a certified fire resistance of 1 hour.

Kitchen Cabinets:

Existing kitchen cabinets to be re-used where possible.
All kitchen cabinet doors to be retained.
Kitchen wall cabinets to be carefully removed and stored for refitting.
Kitchen base cabinets are damaged, and will require replacement with equivalent cabinets.
All ironmongery to be retained for re-use. Doors to base cabinets to be retained for re-use.
Countertops are damaged and will require replacement with an equivalent countertop.
Contractors must include for fixing of all units complete with all timber grounds, fixing screws and carpentry attendances required

Construction of kitchen cabinets units to be as per B.S. 6222: Part 2: 1990, level 'H'.

All units to have full backing panels in not less than 10mm. board which shall be fixed in 6mm. deep rebates formed in all adjoining panels. Shelves in all units shall be securely fixed. Fit 180 degree hinges on door to all kitchen units.

Wall hung units to have backs as above and to be screwed to timber bearers screwed to plugs in block walls. Where unit lengths exceed 600mm a centre support shall be fitted.

Plastic handles or pulls shall not be used. Drawer trays shall be formed in one piece of metal or plastics.

Doors to have front and edge finish wrapped from a single skin without the use of lipping. A typical floor unit shall be supplied to the ER for approval.

Provide 40mm. worktop to the above floor units.
Include for cutting out and fitting inset sink and taps.

All dimensions to be checked on site prior to commencement of manufacture. Heights of worktops to be generally 900mm above f.f.l., and wall units to be fixed at 1350mm above f.f.l..

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Wall hung units to have backs as above and to be screwed to timber bearers screwed to plugs in block walls. Where unit lengths exceed 600mm a centre support shall be fitted.

Plastic handles or pulls shall not be used. Drawer trays shall be formed in one piece of metal or plastics.

Doors to have front and edge finish wrapped from a single skin without the use of lipping. A typical floor unit shall be supplied to the ER for approval.

Provide 40mm. worktop to the above floor units.

Include for cutting out and fitting inset sink and taps.

All dimensions to be checked on site prior to commencement of manufacture. Heights of worktops to be generally 900mm above f.f.l, and wall units to be fixed at 1350mm above f.f.l.

TIMBER STRUCTURES

MATERIALS

Structural Timbers

In those elements where the use of Irish timber is permitted the Contractor shall make provision in his rates for timber for investigating sources of suitable Irish timber and arranging for inspection.

Species and Grade

Imported Whitewood (or approved Irish timber equivalent) to be special structural grade. All timber to be grade C16 minimum in accordance with IS EN 338, IS EN 1995 and BS 4978.

Stress Grading

Supplier's timber stress grading certificate to be forwarded by the contractor to the ER in advance of works.

The Contractor shall make provision for segregating and storing the graded material in secure compounds, pending fabrication.

The timber shall be stress graded in accordance with IS EN 1912 or to an alternative acceptable standard to which the ER's approval has to be given.

Grading shall be carried out by persons deemed qualified to do so by Trada or mechanically in accordance with IS EN 1912.

The marking of the graded timber shall conform to the requirements of Trada or NSAI.

Connectors

All connection details shall be designed in accordance with IS EN 1995.

Metal Fasteners and Connections

The material used shall be hot-dip zinc coated steel sheet or coil and Connections conforming to Class 2A BS 2989, or equivalent approved. The plate shall be so manufactured that it conforms with the characteristics of the fastener on which the calculations were based. The minimum thickness of plate shall be 0.91mm. All nails shall be galvanised to the relevant British Standard.

Patent Connectors

Patent connectors, where used, shall carry an Agreement Board Certificate, either No. 73/232 or 76/358, and shall be designed and fixed in accordance with the stipulations and conditions of these certificates. All metal plate fasteners shall be stamped with the manufacturers, identification mark.

The fasteners shall be at least the size specified and shall be located to ensure that the correct number of teeth as required by the design are embedded in each member.

Metal plate fasteners shall not project beyond the upper or lower edges of the connecting members.

Fasteners shall be fully embedded to ensure full penetration of teeth only, and plate to a maximum depth of one quarter of its thickness.

All nails, screws, and bolts, in joints likely to be exposed to the weather, shall be galvanised or sherardised or otherwise treated to the Engineer's satisfaction.

Where necessary nails shall be driven into pre-bored holes of diameter not greater than four fifths of the nail diam. Nails shall never be driven into splits.

Spacing of nails, screws and bolts shall conform to IS EN 1995 and in no case shall be so spaced as to induce splitting.

Plywood Gusset Plates: Plywood gusset plates shall comply with IS EN 1995 and shall be designed in accordance with correct, relevant standard structural engineering analytical methods for direct, bending and shear forces. Plywood shall be suitably protected against damp and the type used shall be appropriate to the exposure condition.

STRUCTURAL COMPONENTS

Rafters and Ceiling Ties Rafters and ceiling ties shall be graded as beams. No increase in the size of knots outside the middle of their length shall be allowed.

Internal Struts and Ties When visually graded these members shall be graded as compression and as tension members in their respective classes.

Battens Joints in battens shall be sawn square ended and not more than 25% of battens shall be jointed on any one rafter. Fixing nails shall be 10 gauge round wire and 38mm longer than the batten thickness. At joints the nails shall be skew driven on each side of the joint.

FAULTS

Notwithstanding the stress graded standard of any timber the following stipulations shall be adhered to:-

<u>Wane</u>	Wane shall not be permitted within 100 mm of the edge of metal plate fasteners, nor within the area of any joint at the time of fabrication.
<u>Fissures</u>	Fissures shall not be permitted within 100mm of the edge of metal plate fasteners at the time of fabrication.
<u>Dead Knots</u>	Dead knots or knotholes shall not be permitted within 100mm of any plate fastener.
<u>Live Knots</u>	Live knots shall be allowed within the plate area provided that nails and teeth can be embedded satisfactorily in the material of the knots.
<u>Moisture Content</u>	The moisture content of timber at erection and in service shall not exceed the requirements of table IS EN 1995. Timber shall not be exposed to conditions likely to increase moisture content or otherwise induce deterioration.
<u>Inspection and Testing</u>	The ER shall have access at all reasonable times to the fabricators yard and works, and shall be provided with the necessary facilities to inspect and test materials at the ER's discretion and at no expense to the Employer.
<u>Transport and Handling</u>	Fabricated structures shall be transported to site in such a manner that undue stresses and vibrations are not induced. Similarly, erection and handling procedures shall be such that the structures are not over stressed during these various stages. When erected, the structural element shall be braced and fixed in position until the unit is complete. The Contractor shall provide for all anchorages, ties and bracing for maintaining stability during all phases of erection, and during the serviceable life of the structure.

TIMBER DIMENSIONS AND LIMITING DISTORTIONS

Timber Dimensions

The dimensions of the various structural elements shall conform to the ER's drawings or otherwise the specialist supplier's approved drawings, subject only to those permissible deviations given in IS EN 336. However, in the case of trussed rafters, the maximum difference in thickness permissible between abutting elements shall not be greater than 1mm.

Limiting Distortions

In all members of trussed rafters the following distortion limits shall not be exceeded:-

If the fabricator utilises distorted timber under this clause then the members shall be orientated in such a manner that the distortions are compensating rather than cumulative.

Spring:	5mm/4 linear meters
Bow:	10mm/3 linear meters
Twist:	3mm/3 linear meters
Cup:	2mm/100mm width of face

ASSEMBLY & WORKMANSHIP

In the case of patent metal plate connectors being used the fabricator's assembly procedure shall utilise the plant and equipment and written instructions of the manufacturer of those connectors.

Workmanship

All timber shall be sawn, planed, drilled or otherwise machined in accordance with the detailed drawings and specifications. Dimensions and spacing shall not be scaled from drawings or prints.

Joints

Surfaces at any joint in the structure shall have a good sawn or planed finish. Bearing surfaces of notches shall be true and smooth in relation to the other surfaces of the assembly. Surfaces at any joint will be such that the parts may be brought together over the whole area of the joint before connectors are inserted or any pressure of restraint from fastenings is applied.

PREPARATION OF CONNECTIONS

Preparation of nailed or screwed joints shall be in accordance with IS EN 1995. Bolted joints, toothed plate connector joints, split ring connector joints, shear plate connector joints and glued joints shall be in accordance with IS EN 1995.

MECHANICAL AND ELECTRICAL

Introduction

All Electrical, plumbing, gas and heating works must be in accordance with the Irish Building Regulations, Irish and British Standards, Local Authority Regulation and Codes of Practice.

A high level of workmanship and coordination with other trades is expected from the successful contractor. Costs incurred due to lack of coordination with other trades of poor workmanship will be borne by the contractor and will not be entertained on site.

Standards, Codes & Authorities

All work shall meet all the Requirements of National and Local Statutory Authorities and shall be in accordance with, and not limited to, the following: -

1. Current Irish Building Regulations and Amendments.
2. Bord Gais Regulations.
3. All Applicable Irish, British and European Standards.
4. All Health and Safety Authority Requirements.
5. All Local Council Rules and Regulations.
6. CIBSE - Chartered Institution of Building Services Engineers -
7. Safety, Health and Welfare at Work Act, (General Applications) Regulations, latest additions
8. Electrical Supply Board Regulations.
9. IEE Wiring Regulations (Current Edition).
10. ET 101 (Current Edition)

Quality of Equipment and Materials

All equipment and materials shall be new unless otherwise noted.

Unless otherwise specified, all materials, plant and equipment, and the installation thereof, shall comply with the Irish Standards and Codes of Practice, Institutional Regulations, Statutory Requirements, National and Local By-laws where applicable.

Allow for proper packaging and delivery of all equipment and materials and for returning re-useable packaging to the suppliers as appropriate.

Allow for proper storage and protection of all equipment and materials on Site. Workmanship shall be of the best quality, and shall be produced by skilled and responsible craftsmen fully experienced in their respective trades.

All equipment shall be installed only to manufacturer's recommendations.

Existing Services

The Mechanical & Electrical Sub-Contractors shall be responsible for ensuring that all existing services on the site, such as gas, communications, water and electricity are undamaged during the works.

The Mechanical & Electrical Sub-Contractors shall be liable for any compensation claimed by unrelated parties in the event of an inadvertent break in the existing services that occurs as a result of the construction work. The mechanical & electrical contractor must cover and protect all existing M & E services during the works.

Heating Installation

Pre- Works

The existing boiler and radiators must be turned on and assessed for correct operation. The controls for the heating system must be operated and assessed for correct operation. The client must be notified before the works commence, if there any deficiencies in the existing system.

Works

The following works are required:

- The existing boiler and radiators must be drained down
- Each radiator must be removed, flushed out and left empty. Each radiator must be wrapped and stored safely

Underground Heating / Gas Pipework

- The existing underground heating pipework must be stripped out and replaced with an approved (insulated) multilayer PEX pipe. There must be no joints in the floor.
- The existing underground gas pipework (in the screed), from the external meter to the boiler and gas fire, must be protected during the works. If the existing gas pipe is brazed copper or damaged, it must be replaced with a stainless steel semi-rigid corrugated, plastic coated gas piping system. There must be no joints in the floor.
- The mechanical contractor must be a registered RGII installer and must certify & test the new / existing gas pipework installation

Overground Heating / Gas Pipework

- The existing overground heating pipework must be flushed out and capped during the works. The existing heating pipework will be reused. Any heating pipework damaged during the works must be replaced with brazed copper pipework above ground.
- The existing over ground copper gas pipework must be protected during the works.

After the building works are complete the following must be carried out:

- The existing radiators must be installed complete with new TRV's and Myson lock shield valves
- The system must be filled with the correct amount of Fernox / Sentinel or equivalent inhibitor and leak sealer
- All exposed heating pipework (including the hot press pipework) is to be insulated with 19mm Class O Armaflex
- The heating expansion vessel must be checked for correct pressure and operation
- The existing boiler must be re-commissioned.

(c) Hot & Cold Water Services Installation

Pre- Works

- The existing items of sanitary ware (hot & cold water services) must be operated and assessed for correct operation. The client must be notified before the works commence, if there are any deficiencies in the existing system.
- The existing items of sanitary ware must be removed and stored safely during the project.
- The existing underground mains water pipework (in the screed), from the external stopcock in the footpath must be protected during the works. If the existing mains water pipe is damaged, it must be replaced with a sleeved service pipe and should be of blue polyethylene to I.S. EN 12201 and buried 750mm min below ground. There must be no joints underground.

Works

The following works are required:

- The existing water services pipework & cold water storage tank in the attic is to be drained, flushed and cleaned out.
- On completion of the works the system and the water tank is to be filled and sterilised with a sterilisation tablet.
- All exposed water services pipework (including the hot press & attic pipework) is to be insulated with 19mm Class O Armaflex
- The existing water services pipework will be reused. Any water services

pipework damaged during the works must be replaced with copper pipework above ground.

- The existing sanitary ware must be re-fitted, connected and checked for correct operation.

Above and Below Foul Drainage Services

Pre- Works

- The existing items of sanitary ware (waste & traps) must be operated and assessed for correct operation. The condition of the existing items of sanitary ware is to be recorded in advance and noted to the client. The client must be notified before the works commence, if there are any deficiencies in the existing system.
- The existing underground foul drainage pipework within the dwelling must be protected during the works. If the existing underground foul drainage pipework is damaged, it must be replaced with UPVC pipe complying with BS4514 with fittings generally in PVC complying with BS 5255 and installation comply with BS EN 12056-2:2000 Gravity Drainage Systems Inside Buildings.

Works

The following works are required:

- All above ground drainage shall comply with BS 8000 Pt. 13 and with Appropriate Councils Waterworks regulations.
- On completion of the works the system must be tested with water & air
- The test is passed when the required holding time is met before the air pressure in the test section drops more than, 1 psi.
- We suggest a test pressure of 5.0 mbar for 1 hour
- Also a water test would be carried out after the completion of the air test.

Electrical Services Installation

General Electrical Works

Pre- Works

- The existing electrical services, lights, equipment etc. must be turned on and assessed for correct operation. The client must be notified before the works commence, if there are any deficiencies in the existing system.
- The existing electrical power to the supply to the dwelling must then be disconnected and made safe. A temporary site power supply can be made from a designated location in a safe manner.
- All electrical equipment located on the ground floor shall be removed by the

main contractor. The electrical contractor is to ensure that all of this equipment is disconnect and re-connected on completion.

Works

The following works are required:

- The existing electrical accessories, faceplates, lights, panels etc. must be protected during the works
- Allow for the existing conduit and wiring on the walls where remedial works are being carried out to be protected. Also allow for the removal of the existing faceplates and re-instatement after completion of the works on these walls.
- Allow for a new 13amp fused spur to be located at the fireplace for an electrical effect fire. Install a new 2.5sq T&E cable (dedicated circuit) from the existing distribution board (20amp MCB with RCD) complete with plastic conduit and fixings etc.
- The existing electrical external earth rod is to be tested to confirm its working correctly.
- All earth bonding damaged or removed during the remedial works to be reinstated and tested to latest edition of ETCI rules.
- On completion, the complete electrical installation must be checked for correct operation including sockets, switches, lighting equipment etc.

Fire Alarm

Pre- Works

- The existing fire alarm must be protected during the works. The existing fire detection heads located in the entrance hall, kitchen and upstairs landing are to be removed.

Works

The following works are required:

- The existing fire alarm system must be fitted with 3 new detector heads. A smoke detector head (Ei166RC) in the entrance hall and upstairs landing and a heat detector (Ei164RC) head in the kitchen.
- The Ei166RC is an Optical Smoke Alarm that runs on 230V AC mains power, and has built in tamper-proof rechargeable Lithium cells that act as a battery back-up in the event of mains failure.
- The Ei164RC is a Heat Alarm that runs on 230V AC mains power, and has built in tamper-proof rechargeable Lithium cells that act as a battery back-up in the event of mains failure
- On completion of the works, the fire alarm system must be re-commissioned

Security Alarm

Pre- Works

- The existing security alarm must be protected during the works including the external bell box.

Works

The following works are required:

- The existing security alarm system must be disconnected during the works.
- The existing bell box shall be removed to facilitate the crack repair works
- On completion of the works, the security alarm system external bell box must be reinstated and the system re-commissioned.

FLOOR, WALL AND CEILING FINISHES

Plastering:

In general external plastering shall comply with BS 5262 . All wall surfaces to be well wetted before each operation. Each coat, including scud coat, should be kept damp for three days then allowed to dry out thoroughly to permit most of the initial shrinkage to take place before application of the next coat. All proportioning is to be done using properly constructed gauge boxes, and in no circumstances shall the materials be proportioned by shovel.

Cement: **Sand:**

The cement to be as for "Concrete Work" unless otherwise described. The sand to be clean and sharp and should comply where possible with BS 1199 graded within the limits given in that standard

BS SIEVE OPE	PERCENTAGE BY WEIGHT PASSING BY SIEVE
5 mm (3/16 in)	100
2.36 mm (No.7)	90 - 100
1.18 mm (No.14)	70 - 100
600 um (No.25)	40 - 80
300 um (No.52)	5 - 40
150 um (No. 100)	0 - 10

Coarse Aggregates:

Coarse aggregate for roughcast finishing coats shall comply with the appropriate clause of BS 88.

Lime:

The lime to be hydrated lime to comply with I S 8 A certificate indicating a compliance with the Irish Standard Specification must be supplied by the manufacturer with each consignment.. The hydrated lime is to be mixed in strict accordance with the manufacturer's written instructions.

Ready-Mixed Rendering Materials:

Ready mixed lime sand for mortars should comply with BS 4721 and should be mixed with cement on site. Such materials may be supplied with colouring pigments if required which should comply with BS 1014. For the guidance of the Contractor, when ordering ready mixed lime - sand mortar, the table hereunder is given.

Mixing Ratio

Finish	readymix of 1 lime to 9 sand, with 1 part cement to 4½ of readymix
Drydash	
Plain	readymix of 1 lime to 6 sand, with 1 part cement to 6 of readymix

Scudding (Spatterdash): The mix to consist of 1 part of cement to two parts of coarse sand (by volume) mixed with sufficient water to give the consistency of a fat mortar or thick slurry and kept well stirred. An SBR or other approved bonding admixture may be used in accordance with the maker's instructions, subject to the ER's permission in writing. The background should be cleaned and dampened and the mix dashed on with a trowel or scoop to give a coating of between 3 and 5 mm in thickness. The spatterdash should be dampened periodically and permitted to dry out slowly before the application of the undercoats.

Undercoats: Two undercoats (total thickness 20 mm) as specified below shall be applied, the first to be 10 mm in thickness and in any event not less than 8 mm nor more than 16 mm in any part. When set it shall be combed or scratched sufficiently deeply to provide a key for the subsequent coat. The second and subsequent undercoat shall be similar to the first except that where the finishing coat is specified as machine applied finish the second undercoat will not be scratched.

Finishing Coat: The finishing coat shall be one or other of the following:
(1) Plain finishing coat - shall be of a finished thickness of not less than 6 mm nor more than 10 mm and applied with a laying trowel and finished with a wooden float. (used for plinths etc.)
(2) Dry dash finish shall be thrown on by means of a trowel or scoop as described below. (used for external walls which are not brickfaced.)

Dry Dash composition In the case where the finishing coat is to be dry dash, the of undercoats and pebble dash finish shall be as follows:-
The first undercoat shall consist of 1 part of cement, 1 part of hydrated lime and 4 parts sand - the second undercoat shall consist of 2 parts coloured cement 1 part hydrated lime and 5 parts sand. The combined thickness of the undercoats shall be not less than 20 mm.
While the second coat is still soft a straight or feather edge should be drawn over the face to obtain a regular surface and a selected aggregate - such as calcined flint, spar or pea shingle - graded from 14 mm and 6.3 mm in size (previously well washed and drained) should be dashed on the surface. The aggregate thus applied should be lightly tapped with the face of a wood float to ensure a good bond.

Fireplaces: See special requirements in relation to Houses, fireplace hearth shall be removed to storage and re-instated after works are complete. Any damage to the hearth or other parts of the fire surround shall be the responsibility of the Contractor, who shall replace any damaged hearth with an identical one. Contractor shall protect any fire surround left in place for the duration of works.

Patent Reveals & Soffits: Jambs and heads of all door and window opes are to have reveals and soffits carried out in plain finish as previously specified 22 mm

thickness in two coat work finished fine with wood float projecting from walling to stop dashing or brickwork.

Mortar Plasticisers: The use of mortar plasticisers in external rendering is not permitted.

Plinths: To consist of a coat of scudding, three undercoats of two parts cement, one part lime, and five parts sand and a nap finishing coat of one part cement and one part lime and six parts sand wood floated. The combined thickness of the plinth to be approximately 30 mm finished neatly to line of ground floor level. Plinths are not to be used with brickwork finished walls.

INTERNAL WALLS AND CEILINGS

Concrete Block Walls: Apply two coats plaster to inner face of all external walls and to party walls, the floating coat to consist of Gypsum pre-mixed lightweight undercoat plaster to a thickness of 11.0 mm, ruled to an even surface and lightly scratched to form a key. The finishing coat to consist of Gypsum pre-mixed lightweight finish plaster applied to a thickness of 2 mm and steel trowelled to a smooth surface. Scrim all angles formed by walls and ceilings with 110 mm wide jute scrim bedded in floating coat as above specified. Fix to all external angles a galvanised angle reinforcement before plastering.

Chases and cracks: Cracks and chases to socket drops and similar shall be covered with expanded metal prior to repair of the undercoat plaster and finishing.

Stud Partitions: Plasterboard generally shall be faced out on the ivory side, jointed, filled and taped overall. All stud walls enclosing entrance halls or hot presses shall be faced both sides in 12.5 mm F.R. grade plasterboard and any door sets in these shall be F.D.20 doors with approved mechanical closers. If partitions are to be faced in fire retardant or moisture resistant board the jointing and finishing shall be in strict accordance with the manufacturers requirements for that application.
Stud walls to bathroom shall be faced with 12,5mm moisture resistant plasterboard

Fire Stopping Ducts: Provide and fix approved intumescent fire collars around any pipes which pass through party walls or duct covers. Provide mineral wool packing with mesh wire reinforcement around Soil Vent Pipe and other pipes in ducts passing through floor or ceiling zones.

Ceiling finish. Provide noggings fixed between ceiling joints where exposed joints occur. Ceilings to be dry jointed and skim finished by the plasterer including kitchen and bathroom ceilings, which shall be skim finished and painted two coats emulsion as specified. Ceilings to be fully boarded before the erection of the timber framed partitions. Ceilings in all six houses to be replaced in their entirety.

Any ceilings over protected entrance halls or around service ducts shall be constructed in 12.5 mm FR grade plasterboard to give a certified Fire Resistance of 30 Minutes. Include 1 no. access panels having 30 min. certified FR in the ceiling duct of every house.

Nailing:

Boards to be nailed with 38 mm galvd steel nails at 150 mm centres across each board on each support. Fix boards across supports, lightly butt paper bound edges and leave 3mm gap at cut end joints.

Noggings:

All four edges of the boards should be supported and 100 x 44 noggins inserted where necessary between the main framing.

Jointing:

Joints and angles to be filled using joint filler, finisher and paper jointing tape and left ready to receive selected finish. Fixing of boards and finishing of joints to be carried out in accordance with manufacturers instructions.

FLOOR FINISHES TO CONCRETE FLOORS.

Ground Floor:

Ground floor slab to be powerfloated to form a level surface. Provide suitable primer and protection to finished slabs until floor tiling has been laid.

PAINTING AND DECORATING

MATERIALS AND WORKMANSHIP

General:

All painting shall be executed in colours or combination of colours in accordance with the finishes and colours schedules in Appendices 2 and 3, and associated drawings

All paint tins containing aluminium wood primer, undercoat paint and gloss paint must be clearly marked by the paint manufacturer with the relevant Standard number, shown below. Any such paint found on site without this information will be rejected immediately by the ER.

The Building Contractor shall issue copies of the paint specification to all those involved in the painting operation, i.e. Painting Foreman, Painting Contractor and Paint Manufacturer.

Materials:

Knotting to IS 16.

Stopping: Internal Woodwork - linseed oil putty to IS 28.

Stopping: External Woodwork - waterproof material, as selected by the ER.

Specific approval of the ER must be obtained to use any proprietary product.

Paint must be delivered to the site in sealed tins of 5 litre capacity unless otherwise agreed to by the ER.

Primer, undercoat and finish paint must be obtained from the same manufacturer. Wood primer shall be to BS 4756: Type 2 (Aluminium)

Gloss paint and undercoat shall be to IS 32 or alternatively to a water-based solvent-free formulation approved by the ER

Emulsion paint to be IS 129 or water-based interior emulsion to BS7719

Galvanised steelwork shall be cleaned with a high pressure water wash and painted as later specified.

Primer for other metalwork to be to BS3698 or as approved by the ER.

Exterior use of woodstains and finish coats shall only be as specified by the ER and as per approved samples.

Clear polyurethane lacquers and varnishes must be approved by

the ER.

Masonry and stabilising sealers shall be approved by the ER.

Testing:

Samples of paint will be taken during the progress of the painting by the ER or his representative.

Samples will be taken from the sealed tin and the 'working pot' (the paint tin which the painter is using at time of sampling). Any paint tin (primer, undercoat or gloss) which has not its relevant Standard number, indicating quality of manufacture, printed on it, will be immediately rejected and removed from the site. Samples will be taken from the paint store and also in houses where painting is in progress.

Samples of applied paint will be taken for paint coat sequence and dry film thickness measurements. The areas from which such samples are taken must be touched up during the final inspection stage ('snagging').

Wet paint samples for test and samples for Dry Film Thickness Measurements shall only be taken in specially labelled sample containers, supplied by the Testing Authority. The relevant information shall be inserted on the labels.

All samples for testing are to be sent by the Contractor on the instruction of the ER to Housing Agency's testing authority. Each sample is to be clearly marked and given an identification number by the ER's Representative

Test Results to be sent to:-
ER's, Designated Office

Workmanship:

Prepare surfaces in strict accordance with manufacturer's recommendation.

Use all paint materials in strict accordance with manufacturer's instructions. Any deviation must be approved by the ER.

Brush down all surfaces to remove dust, dirt and loose material.

Ensure that all holes, cracks, joints and other surface defects are made good before decorating.

Paint shall be only kept in clean tins. Discard old paint cans after use.

Do not intermix different coating materials.

Keep all brushes, tools and equipment in a clean condition.

Keep all surfaces clean and free from dust during coating and drying. Protect freshly applied surface coatings from damage.

Remove ironmongery from surfaces to be coated and replace undamaged on completion. Protect as necessary where this is impractical.

Metal surfaces shall be primed the same day as they have been cleaned.

Do not paint surfaces affected by damp or frost or when temperature is below 5°C, or when heat is likely to cause blistering or wrinkling.

Paint shall be applied in even films, avoiding brush marks, sags, runs etc. Cut in paint neatly and cleanly, avoiding splashing adjacent surfaces.

All the surfaces of external joinery must be primed before being exposed to the weather. Priming shall be carried out at an early stage on the site and before the joinery is exposed to weather. No priming is to be done prior to the end of the pre-painting period specified by the preservative applicator.

Primers to be applied by brush unless otherwise approved by the ER. Ensure that any pre-primed surfaces which have deteriorated on site, or in transit, are touched up or re-primed. Prime and paint top and bottom edges of all doors before hanging. Allow surfaces to dry out before decorating.

Where more than one coat of undercoat paint is applied, the first coat shall be tinted to differentiate it from the second undercoat. The painting of external woodwork shall be rubbed down between coats.

SUBSTRATES

Woodwork:

Ensure that timber at time of decorating has a moisture content appropriate to its end-use in the building.

All internal softwood woodwork shall be knotted, primed, stopped, filled and painted with two coats of differently tinted undercoat paint and one coat of gloss paint of approved colour. Apply knotting to knots in all timber used both internally and externally. Ensure that after priming all nails and screws are countersunk and all nail holes suitably stopped. Finish off level with surface.

Hardwood used internally shall be de-greased with White Spirit and then sanded to a smooth finish. It shall then be stained to a shade

approved by the ER; then three coats of clear (two-pack) polyurethane lacquer applied, in accordance with manufacturer's instructions.

All external woodwork shall be knotted, primed, stopped and filled, two coats of undercoat paint of different tints shall be applied, followed by one coat of gloss paint of approved tint. Where instructed by the ER an approved proprietary tinted woodstain and top coating may be applied in lieu of paints, all in strict accordance with the Manufacturer's instructions.

Metalwork:

All new external steelwork is to be galvanised. All galvanised metalwork shall be painted as follows:

1. Before painting all damaged areas and welds to be carefully wire brushed and cleaned and given a coat of zinc rich paint having a zinc content not less than 92%. and D.F.T. approx. 100 microns.
2. Power wash all surfaces and allow to dry. Painting should commence within two or three days of cleaning.
3. Apply two coats of 3 two-component acryl-polyurethane paint (or equal paint if specifically approved in writing by the ER). If applying Cotech in dark colours a single coat application may be acceptable if approved by the ER.
A total D.F.T. of not less than 70 microns must be achieved whether in one or 2-coat systems.

Paint to be applied by brush only

Internal Walls:

Ensure that all gypsum plaster walls are sealed with one coat of thinned emulsion paint, followed by two coats of emulsion paint of specified quality. The colours to be selected by the ER.

Ceilings:

All ceilings shall be skim plastered and painted two coats of white emulsion paint.

External Cement:

Where instructed by the ER patent reveals, concrete cills, plinths, ceiling and walls of porches and all other plastered areas shall receive one coat of masonry stabilising fluid, followed by two coats of cement paint, to approved colour. The stabilising fluid and cement paint to be made by the same manufacturer, whose instructions are to be followed carefully.

EXTERNAL WORKS

External works to include removal of stone to concrete driveways and perimeter footpaths within the curtilage of the individual houses, and subsequent reinstatement of the driveways and footpaths.

HARD AND SOFT LANDSCAPING

Soft Landscaping:

Protect any landscaping, features, walls etc for the duration of works. Any damage to existing planting and grassing to be rectified at the Contractor's expense to the satisfaction of the ER.

Top soil:

All top soil to be of good quality and free of stones and vegetation

Concrete driveways:

Driveways to be reconstructed as 150mm concrete slab with one layers of A252 mesh (top) on 225mm SR21:2014 Annex E granular material with joints at 3 metre centres maximum. Fill below this Annex E stone to formation to be in accordance with Clause 616 of the NRA Specification.

Footpaths:

Concrete footpaths shall be reconstructed as min 100mm unreinforced concrete, in 3metre bays, on min 225 SR21:2014 Annex E granular material.

E SUNDRIES

Cleaning:

Remove all rubbish and superfluous materials from the site with all reasonable speed from time to time. Keep the roads passing through and or adjoining the site free from mud, and leave the site, roads, and adjoining ground absolutely clear.

Remove rubbish and debris from houses. Clean out gutters, clean glass. Wash floors and stairs and leave all houses internally and externally clean and fit for occupation on completion. House drains are to be rodded and flushed out immediately prior to the handover of houses to the Housing Agency

DRAINAGE

It is not anticipated that any work will be required to drainage. All drain runs shall be protected during works, and flushed clean prior to handover of the houses.

General:

The design and construction of foul and surface water drainage to this scheme is to be in accordance with the specifications and details of the ER and under their supervision. Contractors shall note the special requirements to provide attenuation to the surface water drainage and the need to preserve and connect to existing main drains crossing the site.

Workmanship:

All work to the drains shall comply with BS 8301 (drainage). Any sewers proposed to be taken in charge must be constructed in accordance with the latest version of Local Councils Region Code of Practice for Drainage Works.

Drain Pipes:

The concrete and vitrified clay pipes are to be in accordance with current Irish or British Standard Specification. They shall be free from all imperfections and of true form and uniform thickness.

Pipes are to be in 900 mm lengths with spigot and socket or other approved joints and of the diameter marked on plan, and to have all necessary bends or junctions shown or required.

Glazed vitrified clay pipes shall comply with BS 65 :1997 and are to be used for foul drains and for 100 mm diameter surface water drains. The interior of socket and the exterior at spigot end are not to be glazed for a length equal to depth of socket.

Concrete drain pipes shall comply with IS 6 and are to be used for foul and surface water drains 150 mm diameter and over. Pipes for surface water and foul drains to have spigot and socket joints.

In general the use of PVC pipes on runs of drains or sewers is not permitted. Where the tails of soil stacks from the dwellings are in PVC they may be taken as far as the first Armstrong Junction or similar but must be cased in concrete of at least 100mm thickness

APPENDIX 1 : Remedial Works Plan

(All works described to be executed by Contractor unless otherwise noted)

Introduction

Following observation of certain defects, and the subsequent discovery of defective stone fill to 5 dwellings in Block 2 and 12 Dwellings to Block 1 (at XXX,XXX NORTH DUBLIN, it is proposed to remove all defective stone fill and repair the dwellings. The dwellings are 2 storey Terrace houses of loadbearing masonry construction with timber trussed rafter roofs. Ground floors are concrete on stone fill. Type A floors are suspended reinforced concrete Ground Floor Slabs, all others are floating concrete slabs as per Detail.

It is proposed to remove the stone from external footpaths as part of these works. No work will take place in public areas.

All discarded material to be recycled where practicable, except removed stone filling. Note the requirements in the Specification in respect of disposal of stone filling.

It is proposed to refit the units to an identical specification. See drawings for details.

It is a matter for the contractor how the work will be organised. However, the following sets out an envisaged work sequence for internal works, with certain constraints that will affect any works programme.

Method Statement

The contractor shall submit a method statement to the ER prior to commencing work. This shall adequately reflect his understanding of the nature of the remediation process and adherence to the remedial works plan (RWP).

The contractor is responsible for the protection of any part of the building in the vicinity of the working area, but not the subject of the works. E.g. ceilings, plastered wall surfaces, electrical sockets. Any damage to these items shall be made good at the contractor's expense.

It is a matter for the contractor as to whether certain items are removed to facilitate his system of working. E.g. staircase, stud walls, removal of a window to facilitate a conveyor, removal of a patio door to facilitate machine access. The contractors price shall include for the reinstatement, reconstruction, or replacement of these items.

Arrangements for removal and storage of householder's belongings for duration of works

~~Occupant will be ready to move out at an agreed date (probably a Monday morning).~~

~~Contractor (or his removals sub-contractor) shall make arrangements to:-~~

- ~~— Supply removal boxes to each householder approx. 3 weeks in advance of moving out date at no cost to the householder. Nominal agreed cost may apply, should the householder require to keep some boxes following completion of works. Labels and heavy markers to be provided with the boxes. Boxes shall be of sufficient quality to protect contents.~~
- ~~— Remove certain boxes (identified by householder) to the householder's alternative accommodation.~~
- ~~— Record condition of items of furniture prior to removal.~~
- ~~— Record number of boxes and details of furniture to be removed to alternative accommodation.~~
- ~~— Remove all other boxes and furniture to off site storage facility.~~
- ~~— Safely store all belongings off site for the duration of the works, in a secure, weatherproof, dry facility within 10 miles of the site. Householder's property to be insured during removal, transit and storage. Arrangements shall be made to allow the householder to access his stored belongings if necessary, by arrangement from 9am to 5pm any day, at reasonable notice, and at no cost to the householder (other than his own transport costs). It should be assumed that this may happen twice for each house.~~
- ~~— Upon completion of the works, at a date agreed with the contractor and the householders, remove all boxes and furniture from both locations and return to the original address. Responsibility shall rest with the contractor/removal firm until the householder has returned and the keys to the house returned.~~

~~Contractor to make arrangements for insurance of all householder's belongings in transit and in storage and provide documentary evidence of this to each householder and to the Employer's Representative.~~

Stage 1 – Site establishment, Decommissioning and Clearance

Contractor to familiarise himself with location and site, and shall implement whatever measures he considers necessary to adequately secure the site.

Contractor will have vacant possession of the house for the duration of the works, with the following transition arrangements at the beginning of the works. A similar, reversed transition will apply at the end of the works.

Initial transition

Occupant moves out at an agreed date (probably a Monday morning)

Contractor inspects and records (photographically) the condition of all sanitaryware, and fixtures that will be refitted upon completion of works.

Contractor inspects and records details of fixtures that cannot be reused, and for which a replacement is required.

Contractor reads meter readings (gas electricity) in presence of the householder.

Contractor replaces barrel in front door lock and rear patio door lock with his own locks that shall remain for the duration of the works. Original locks and keys to be given to householder.

Internal:

Ensure that all services have been disconnected

Facilitate further photographs and recording of cracks and levels by ER representative. Record exact position of all internal walls, fittings, radiators etc.

External

Clear external areas of any debris that may interfere with the site operations Establish site offices, stores and facilities as required by contractor.

Stage 2: Demolitions

Internal:

Carefully remove the following, protect and place in secure, dry storage:-

Kitchen cabinets (note any provision for replacement of damaged cabinets on finishes drawings)

Doors

Sanitaryware

Note profile and material of architraves and skirting boards. Remove skirting boards and dispose of same. Protect architraves and doorframes in place. Should Contractor opt to remove architraves and doorframes, this shall be done carefully so that they can be re-used, or they shall be replaced with an equivalent.

Carefully remove any built-in wardrobes to facilitate inspection of wall behind by Engineer and subsequent repair, if deemed necessary.

Install any temporary bracing requires to maintain stability during the works. Note that the bracing shall not inhibit other works or prevent settlement of the building upon removal of stone.

Facilitate further photographs and recording of cracks and levels by ER representative.

Concrete floor slab to be saw cut into sections for removal, and dispose of same. No water to be used in the cutting operation. Remove concrete slab and dispose of same.

Concrete slab shall not be broken up unless a strip of slab has been removed around the perimeter of the external walls and the main internal dividing wall to relieve lateral forces.

Saw cut to allow for 200mm lap of DPM with replacement DPM.

Remove insulation and dispose of same.

Remove DPM to within 200mm of external walls (to allow for future lapping) and dispose of same. Facilitate inspection and sampling of stone fill.

Remove stone fill until reduced level is visible (up to 1.3m of fill is anticipated). Care to be taken to reduce level of stone equally at each side of rising wall to avoid retaining situation.

This will require the stone to be removed in both houses simultaneously. Note the requirements of the Specification in respect of disposal of stone fill. Facilitate measurement and recording by ER representative.

Clean all rising walls using a stiff brush. No water to be used for this procedure.

Clean subgrade to satisfaction of Engineer. Note that no remnants of the original stone fill can be permitted to remain, including small particles.

Facilitate inspection and recording of cleared substructure by ER representative.

External:

Saw cut external concrete slab around perimeter of houses and where in contact with walls or manholes. External slab to be cut at same time as internal slab. Slab shall not be broken up pneumatically unless a strip of slab has been removed around the perimeter of the external walls. Remove external concrete slab and footpaths and dispose of same.

Remove crushed stone fill to external slab at same rate as removal of internal stone, and to same depth (or formation, if encountered earlier), and dispose of same. Note the requirements of the Specification in respect of disposal of stone fill.

Clean all rising walls using a stiff brush. No water to be used for this procedure.

Stage 3: Repair

Internal:

A minimum of one week shall be allowed pass between the removal of the subfloor stone to a house and repair work to any area within that house or externally in the immediate vicinity of the house. This is to allow horizontal cracks to close. Reduction of that timeframe shall be at the discretion of the ER.

Two 100mm diameter cores of rising walls to be taken at location identified by ER representative. Rake out loose mortar in exposed rising walls. Remove any fill or dust arising from fill, from rising walls. No water to be used for this cleaning. Reposition or replace any displaced damp proof course. Rising walls may be damaged, although the full extent is not known at this time. If repairs are deemed necessary by the ER, this shall be carried out by pointing cracks and open joints with 1:1:6 (cement:lime:sand) mortar. Repair locations previously cored. Assume that two cores will be taken from each house, four repairs in total. Place replacement stone in excavation in layers not exceeding 225mm, ensuring that each layer is compacted. Do not allow more than 225mm differential in level between adjoining filled areas to avoid creating retaining situations. The stone shall be in accordance with the specification for remedial stone, including any testing regime associated with this.

~~Provide additional strapping to gables of detached, semi-detached and end of terrace houses as indicated on drawings.~~

External:

Place replacement stone in excavation in layers not exceeding 225mm, ensuring that each layer is compacted. Not more than 225mm differential in level between adjoining filled areas to avoid creating retaining situations. The stone shall be in accordance with the specification for remedial stone, including any testing regime associated with this.

Repair cracks as described in specification and shown on drawings.

Stage 4: Re-construction

Internal:

Replace stone with graded crushed stone to specification.

Contractor shall facilitate the sampling and testing of stone samples by ER's representative. Compact stone in 225mm layers. Compaction tests may be carried out as works progress. Not more than 225mm differential in level between adjoining filled areas to avoid creating retaining situations. Reinstate services as necessary in floor fill.

Provide new radon barrier to specification. Provide new insulation to specification.

Replace any services within new floor slab as appropriate

Drill and fix dowel bars to any remaining projections of floor slab to receive new slab.

Place reinforcement and cast new 175mm r.c. floor slabs. Slab to be reinforced with two layers of A252 mesh, 1 top, 1 bottom, min 400mm lap. Replace any services within new concrete slab as appropriate. Cast floor slab in min. 35N concrete with admixtures to Specification.

Refit doorframes

External:

Repair or replace any damaged manholes, or AJ's gulley traps and drain runs that may have been damaged or removed during the works.

Repairs any damaged garden walls

Reinstate concrete driveways (front yards) on drawings Reinstate footpaths (to side and rear of houses)

Stage 5: Finishing

Internal:

Plaster repairs to internal walls and ceilings to specification Fit doors, architraves, skirtings, ironmongery

Second fix mechanical and electrical installation Install kitchen cabinets to specification

Floor finishes reinstated. Commission services for certification

Re-decorate to agreed colours and finishes

Fix replacement floor coverings as agreed with householder

External:

Remove hoarding

General

Handover procedure and snagging, read meters, replace original lock barrels Re-connect domestic appliances and fixtures as appropriate to each house

APPENDIX 2 : Finishes and special items for House Type A

See Finishes and colours for House Type A

All finishes shall be reinstated to an equivalent quality and standard as the existing unless otherwise noted. Contractor shall record the existing finishes, retaining samples where appropriate. Householder shall sign off the agreed colours prior to commencement of works.

Variations in paint colour shall be permitted provided that each room has only one wall colour, one ceiling colour and one colour for painted timber fixings (architraves, skirtings etc). All rooms in the house shall be fully redecorated to an equivalent standard as the existing. ~~Wallpaper shall be replaced with wallpaper to an equivalent standard.~~ No Wallpaper

Floor finishes shall be equivalent to the existing finishes and shall be replaced. Variation may be permitted in grain of timber or laminate, or in tile colour and/or pattern, provided that the floor finished are replaced to an equivalent standard to the existing. Contractor to retain samples of the existing for later comparison. See Notional Pricing Document for supply cost of floor fittings, etc.

A MINIMUM OF 8 DIFFERENT NEW FLOORING AND WALLING SAMPLES MUST BE PRESENTED TO EACH HOMEOWNER, FOR EACH FLOOR AND WALL FINISH THAT REQUIRES REPLACEMENT.

Smoke alarms (2 No) and heat alarm to be replaced with new equivalent.

Bedrooms 1 and 2 – built-in wardrobes to be carefully removed to expose gable wall behind for inspection, and reinstated later.

Pyrite Damage Summary Type B

Floor Summary

Suspended Floors to are existing to ground floor plan

Floors to be removed and reinstated as per detail 05

300x300x12mm tiles cracked in Kitchen Floor to be replaced

Floor bulged in living room - wooden floor to be replaced

Wall Crack Summary

Crack Type 1 - 2 No. - 8.0m Total Length

Crack Type 2 - 4 No. - 10.0m Total Length

Crack Type 3 - Various Nos. - 25m Total Length

Crack Type 4 - 3 No. - 6.0m Total Length

Crack Type 5 - Specific - Refer to Detail

Fireplace hearth cracked - to be replaced

3 No. Internal doorframes damaged - to be replaced - reuse existing doors

Rear PVC Double Glazed Double Door Set Damaged - to be Replaced

Kitchen units to be removed to repair crack between Kitchen/Living Room

Painting to all GF rooms

Painting to all external walls

APPENDIX 3 : Finishes schedule House Type B

See Finishes and colours drawing for House Type B

All finishes shall be reinstated to an equivalent quality and standard as the existing unless otherwise noted. Contractor shall record the existing finishes, retaining samples where appropriate. Householder shall sign off the agreed colours prior to commencement of works.

Variations in paint colour shall be permitted provided that each room has only one wall colour, one ceiling colour and one colour for painted timber fixings (architraves, skirtings etc). All rooms in the house shall be fully redecorated to an equivalent standard as the existing. Wallpaper shall be replaced with wallpaper to an equivalent standard.

Floor finishes shall be equivalent to the existing finishes and shall be replaced. Variation may be permitted in grain of timber or laminate, or in tile colour and/or pattern, provided that the floor finished are replaced to an equivalent standard to the existing. Contractor to retain samples of the existing for later comparison.

A MINIMUM OF 8 DIFFERENT NEW FLOORING AND WALLING SAMPLES MUST BE PRESENTED TO EACH HOMEOWNER, FOR EACH FLOOR AND WALL FINISH THAT REQUIRES REPLACEMENT.

Smoke alarms (2 No) and heat alarm to be replaced with new equivalent.

Bedrooms 1 and 2 – built-in wardrobes to be carefully removed to expose gable wall behind for inspection, and reinstated later.

Pyrite Damage Summary Type B

Floor Summary

Ground Bearing Floors to are existing to ground floor plan

Floors to be removed and reinstated as per detail 01

Marmolium Floor in Kitchen damaged - to be replaced

300x300x12mm tiles cracked in Hallway to be replaced

Floor Damaged in living room - wooden floor to be replaced

Kitchen Units damaged - to be removed and replaced with new

Wall Crack Summary

Crack Type 1 - 4 No. - 12.0m Total Length

Crack Type 2 - 4 No. - 10.0m Total Length

Crack Type 3 - Various Nos. - 35m Total Length

Crack Type 4 - 6 No. - 9.0m Total Length

Crack Type 5 - Specific -None

Fireplace hearth ok - remove, store and reuse

3 No. Internal doorframes damaged - to be replaced - reuse existing doors

Rear PVC Double Glazed Double Door Set Damaged - to be Replaced

Painting to all GF rooms

Painting to all external walls

APPENDIX 4 : Finishes schedule House Type C

See Finishes and colours drawing for House Type C

All finishes shall be reinstated to an equivalent quality and standard as the existing unless otherwise noted. Contractor shall record the existing finishes, retaining samples where appropriate. Householder shall sign off the agreed colours prior to commencement of works.

Variations in paint colour shall be permitted provided that each room has only one wall colour, one ceiling colour and one colour for painted timber fixings (architraves, skirtings etc). All rooms in the house shall be fully redecorated to an equivalent standard as the existing. Wallpaper shall be replaced with wallpaper to an equivalent standard.

Floor finishes shall be equivalent to the existing finishes and shall be replaced. Variation may be permitted in grain of timber or laminate, or in tile colour and/or pattern, provided that the floor finished are replaced to an equivalent standard to the existing. Contractor to retain samples of the existing for later comparison.

A MINIMUM OF 8 DIFFERENT NEW FLOORING AND WALLING SAMPLES MUST BE PRESENTED TO EACH HOMEOWNER, FOR EACH FLOOR AND WALL FINISH THAT REQUIRES REPLACEMENT.

Smoke alarms (2 No) and heat alarm to be replaced with new equivalent.

Bedrooms 1 and 2 – built-in wardrobes to be carefully removed to expose gable wall behind for inspection, and reinstated later.

Pyrite Damage Summary Type C

Floor Summary

Suspended Floors are existing to ground floor plan
Floors to be removed and reinstated as per detail 05
150x150x12 tiles in Kitchen damaged - to be replaced
300x300x12mm tiles in Hallway damaged - to be replaced
Floor Damaged in living room - wooden floor to be replaced

Wall Crack Summary

Crack Type 1 - 2 No. - 5.0m Total Length
Crack Type 2 - 2 No. - 5.0m Total Length
Crack Type 3 - Various Nos. - 15m Total Length
Crack Type 4 - 3 No. - 5.0m Total Length
Crack Type 5 - Specific -None

Fireplace hearth ok - remove, store and reuse
3 No. Internal doorframes damaged - to be replaced - reuse existing doors
Rear PVC Double Glazed Double Door Set Damaged - to be Replaced
Painting to all GF rooms
Painting to all external walls

NOTE :- Strike thorough items above do not form part of this notional pricing tender. However, these items may form part of future mini tenders under the framework. Item are for information purposes.