150 × 75 SCA Purlin

3 Struts Struts @ 1·84m c/c (6ft c/c)

3 SCC 6ft 6"

3 SCC 2·17 7ft 1"

175 × 75
3 Struts A 2·17 7'-1"
" B 2·34 7'-8"
2 Struts C 2·53 8'-4"

225 × 75
2 Struts A 2·63 8'-7¾"
2 " B 3·04 10'-0"
2 " C 3·16 10'-4"

12/6/72 DPC + Dpg OK

20/8/72 Four drains OK except vent pipes regd on SVP + lower branches in WC which requires plastering

41K

DUBLIN COUNTY COUNCIL

Personal Callers/
[redacted]s to:
Liffey House
24/28 Tara Street
Dublin 2
Telephone 773066

BUILDING BYE LAWS

APPROVAL NOTICE

Address for
Correspondence:
Building Control Section
Planning Dept.
Block 2
Irish Life Centre
Lower Abbey Street
Dublin 1

Application received: 10/12/91

Applicant: K. Hand 94167

Submitted by: Deegan Architects, 155 Monalea Grove, Firhouse, D.24

Reg. No.: 91A/1945

Order No.: BBL/403/92

Proposal: House

Location: 174A Carrigwood, Firhouse, Tallaght.

Notice is hereby given that the Council has approved the plans submitted by you for the work described above subject to the following conditions:

(1) That the applicant submits the statutory notice of commencement and completion of work in accordance with Bye Law no's 114 and 117. Premises should not be occupied until the requirements of these Bye Laws have been fulfilled.

(2) The applicant must comply with the requirements of the Chief Fire Officer where applicable.

Note A The Chief Fire Officer's requirements include the provisions of Parts, N, P, Q and R of the Proposed Building Regulations issued by the Department of the Environment.

Note B The Applicant is advised to comply with the provisions of the Proposed Building Regulations issued by the Department of the Environment.

(3) That the structural work be carried out in accordance with the Consulting Engineers calculations, specifications, sketches and instructions.

(4) That an adequate pitch be provided to single storey roof of rear to suit the proposed tiles.

(5) That the roof constructions be adequate to ensure due strength and stability.

(6)a) That the structural timber be in accordance with SR11:1988 Structural Timber for Domestic Construction published by the National Standards Authority of Ireland, Dublin 9.

b) That bridging be provided to first floor joists at 1350 mm maximum centres.

(7) That all habitable rooms, without fireplaces, be provided with permanent ventilation to the open air.

(8) That the areas of windows and opening sashes to habitable rooms be at least equal to 10% and 5%, respectively, of the floor areas.

(9) That the materials, design, fabrication and erection of the timber trusses should be in accordance with IS 193:1986 Timber Trussed Rafters for Roofs published by the National Standards Authority of Ireland, Dublin 9.

(10) That the application complies with B.S. 5572 : 1978 in relation to the single stack system.

Cont'd/...

Important (1) It is illegal to proceed with the approved work until permission or exemption under the Local Government (Planning & Development) Acts has been obtained.

(2) At least two clear days notice in writing must be given to the Building Control Section,
(a) of the date on which execution of the work will be commenced.
(b) before proceeding with the covering up of any drain or the filling in any foundation.

(3) Any liability or consequential loss arising from the omission or misrepresentation of existing services, which affect the site, on the lodged plans is the responsibility of the applicant.

Date: - 2 MAR 1992

J. CARSON
Senior Administrative Officer

N.B. Inspection forms are attached for completion and return to Senior Engineer, Dublin County Council, Building Control Section, Block 2, Irish Life Centre, Lr. Abbey Street, Dublin 1, when the work reaches the stage set out in the relevant forms, not less than 2 clear days before the inspection is to be made. Where appropriate, Architects should pass inspection forms to Builders.

(11) That the building be a minimum distance of 5 metres from any main sewers.
(12) That all works be carried out in accordance with the requirements of Dublin County Council's Building Bye Laws.

NOTE: All necessary rights and permissions to be obtained by the applicant in respect of properties and services not in his ownership.

NOTE: The freestanding walls are not covered by the Building Bye Laws. However, the applicant's attention is drawn to the requirements of I.S.325 Code of Practice for the Structural Use of Unreinforced Masonary, produced by the National Standards Authority of Ireland, Dublin 9.

403

SC

COMHAIRLE CHONTAE ATHA CLIATH

DUBLIN COUNTY COUNCIL

REG. NO.: 914/1945 DATE:

APPLICATION LODGED: 10/12/91

PROPOSAL: House

LOCATION: 1747 Caeirgwood, Firhouse, Tallaght.

APPLICANT: K. Hand.

Notice of approval under the Building Bye-Laws may be issued provided work is carried out to comply with the following conditions:

1) That the structural work be carried out in accordance with the Consulting Engineers calculations, specifications, sketches and instructions.
2) That an adequate gutter be provided to single storey roof at rear to suit the proposed tiles.
3) That the roof constructions be adequate to ensure due strength and stability
4) a) * Timber
   b) That bridging be provided to first floor joists at 1350 m maximum centres.
5) * Hot. Rooms
6) * Windows
7) * Truss
8) * Stack
9) That the building be a minimum distance of 5 metres from any main sewers
10) * All Work

* Note All
* Free Walls

A. Dixon 20/2/92

24/2/92.

Register Reference : 91A/1945 Date : 13th December 1991

Development : House

LOCATION : 174A Carrigwood, Firhouse, Tallaght

Applicant : K. Hand

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning Officer : G.BOOTHMAN

Date Recd. : 10th December 1991

Attached is a copy of the application for the above development .Your report would be appreciated within the next 28 days.

Yours faithfully,

Date received in Sanitary Services ..... DUBLIN Co. COUNCIL -6 JAN 1992 SAN SERVICES ..... DUBLIN CO. CO... SANITARY SE... for PRINCIPAL OFFICER -7 FEB 1992 Returned.

FOUL SEWER

Available - existing system.

No. of dwellings a single combined drain to be referred to S.D.L. Dept.

SURFACE WATER

Available - existing system.

As per form.

SENIOR ENGINEER,
SANITARY SERVICES DEPARTMENT,
46/49 UPPER O'CONNELL STREET,
DUBLIN 1

31/1/92.

J.K. 4/2/92

S. AP 12/2

Register Reference : 91A/1945 Date : 13th December 1991

ENDORSED _____ DATE _____

WATER SUPPLY Available for ~~zoned~~ use. 24 hour storage to be provided. L.J. Spa 29/1/92

28/1/92

ENDORSED _____ DATE 4/2/92

DUBLIN COUNTY COUNCIL

PLANNING AND BUILDING CONTROL DEPARTMENTS

Register Reference : 91A/1945 Date Received : 10th December 1991

Applicant : K. Hand Appl.Type : PERMISSION/BUILDING BYE-LAW

Development : House

LOCATION : 174A Carrigwood, Firhouse, Tallaght

PLEASE INDICATE THE DEPARTMENTS/PUBLIC BODIES TO WHICH THIS APPLICATION SHOULD BE REFERRED.

SANITARY SERVICES DEPT.	[ ]	WATER [ ] FOUL SEWER [ ] SURFACE WATER [ ]	
ROADS DEPT.	[ ]	ENVIRONMENTAL HEALTH OFFICER	[ ]
PARKS DEPT.	[ ]	DEVELOPMENT PLAN TEAM	[ ]
FIRE OFFICER	[ ]	DEVELOPMENT DEPT.	[ ]
AN TAISCE	[ ]	BORD FAILTE	[ ]
AN COMHAIRLE EALAOIN	[ ]	OFFICE OF PUBLIC WORKS	[ ]
DEPARTMENT OF DEFENCE	[ ]	DUBLIN CORP.WATERWORKS DEPT.	[ ]
FORWARD PLANNING	[ ]	OTHER [SPECIFY]	[ ]
ZONING	[ ]	HISTORY REQUIRED	[ ]

REFER TO ..... EXECUTIVE PLANNER. REFER TO ..... EXECUTIVE ENGINEER

NOTES.....

.....

.....

SIGNED ..... SIGNED .....

S.E.D.C. S.E.E.

DATE...18/12/91

AD
18/12.

EHD
13/12.

BYE - LAW - APPLICATION - FEES

REF. NO.: 91A | 1945 CERTIFICATE NO.: 17009 B

PROPOSAL: House

LOCATION: 1749 (Edgewood) Firhouse

APPLICANT: K. HAND

10/12/91

1	2	3	4	5	6	7
CLASS	DWELLINGS/AREA LENGTH/STRUCTURE	RATE	AMT. OF FEE REQUIRED	AMT. LODGED	BALANCE DUE	RED. FEE APPL.	AMT. OF RED. FEE
A	Dwelling (Houses/Flats)	@ £55	£55	£55			
B	Domestic Ext. (Improvement/ Alts.)	@ £30					
C	Building for office or other comm. purpose	@ £3.50 per M^2 or £70					
D	Building or other structure for purposes of agriculture	@ £1.00 per M^2 in excess of 300 M^2 Min. £70					
E	Petrol Filling Station	@ £200					
F	Dev. of prop. not coming within any of the forgoing classes	£70 or £9 per 1 hect. whichever is the greater					

Column 1 Certified: Signed: Grade: Date:

Column 1 Endorsed: Signed: Grade: Date:

Columns 2,3,4,5,6 & 7 Certified: Signed: Grade: Date: 12/12/91

Columns 2,3,4,5,6 & 7 Endorsed: Signed: Grade: Date:

D U B L I N C O U N T Y C O U N C I L

PLANNING AND BUILDING CONTROL DEPARTMAENT

Senior Environmental Health Officer,
33 Gardiner Place.

Register Reference : 91A/1945 Date : 11th December 1991

Development : House

LOCATION : 174A Carrigwood, Firhouse, Tallaght

Applicant : K. Hand

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning Officer :

Date Recd. : 10th December 1991

Attached is a copy of the application for the above development .Please ensure that your report is received within 5 weeks from 10th December 1991.

Yours faithfully,

.....

for PRINCIPAL OFFICER

D U B L I N C O U N T Y C O U N C I L

PLANNING AND BUILDING CONTROL DEPARTMAENT

Senior Engineer,
Sanitary Services Dept.

Register Reference : 91A/1945 Date : 11th December 1991

Development : House

LOCATION : 174A Carrigwood, Firhouse, Tallaght

Applicant : K. Hand

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning Officer :

Date Recd. : 10th December 1991

Attached is a copy of the application for the above development .Your report would be appreciated within the next 28 days.

Date received in Sanitary Services .....

.....

FOUL SEWER

.....

SURFACE WATER

.....

Register Reference : 91A/1945 Date : 11th December 1991

ENDORSED_____ DATE_____

WATER SUPPLY.....

.....

ENDORSED_____ DATE_____

Dublin County Council
Comhairle Chontae Atha Cliath

Planning Application Form
By - Law Application Form

PLEASE READ INSTRUCTIONS AT BACK BEFORE COMPLETING FORM. ALL QUESTIONS MUST BE ANSWERED.

1. Application for Permission [✓] Outline Permission [ ] Approval [ ] Place ✓ in appropriate box.
Approval should be sought only where an outline permission was previously granted. Outline permission may not be sought for the retention of structures or continuances of uses.

2. Postal address of site or building ..... 174A CARRIGWOOD
(If none, give description sufficient to identify) ..... FIRHOUSE TALLAGHT DUBLIN 24

3. Name of applicant (Principal not Agent) ..... MR. K. HAND

Address ..... 174 CARRIGWOOD FIRHOUSE DUBLIN 24 Tel. No .....

4. Name and address of ..... DEEGAN ARCHITECTS
person or firm responsible for preparation of drawings ..... 155 MONALEA GROVE Tel. No 934675

5. Name and address to which ..... FIRHOUSE
notifications should be sent ..... DUBLIN 24

6. Brief description of ..... DETACHED HOUSE
proposed development .....

7. Method of drainage ..... SEPERATE ..... 8. Source of Water Supply ..... MAINS.

9. In the case of any building or buildings to be retained on site, please state:-
(a) Present use of each floor or use when last used. .....

Grid Refs 3/12/91

(b) Proposed use of each floor .....

10. Does the proposal involve demolition, partial demolition or change of use of any habitable house or part thereof? ..... NO

11. (a) Area of Site ..... 1/6 th acre ..... Sq. m.

(b) Floor area of proposed development ..... 1,500 sq ft. ..... Sq. m.

10 DEC 91

(c) Floor area of buildings proposed to be retained within site ..... Sq. m.

12. State applicant's legal interest or estate in site ..... FREEHOLD
(i.e. freehold, leasehold, etc.) .....

13. Are you now applying also for an approval under the Building Bye Laws?
Yes [✓] No [ ] Place ✓ in appropriate box.

14. Please state the extent to which the Draft Building Regulations have been taken in account in your proposal:
TOTALLY

15. List of documents enclosed with ..... 4 COPIES DRAWINGS ENGINEERS CALCULATIONS
application. ..... " " OUTLINE SPECIFICATION

CO. DUBLIN Permission sought for house at 174A Carrigwood, Firhouse, Tallaght, Dublin 24 for K. Hand.

16. Gross floor space of proposed development (See back) ..... Sq. m.

No of dwellings proposed (if any) ..... Class(es) of Development .....

Fee Payable £ 87. ..... Basis of Calculation £32 PLANNING + £55 BYE LAW
If a reduced fee is tendered details of previous relevant payment should be given

.....

Signature of Applicant (or his Agent) ..... Marion - Deegan ..... Date 6/12/91

FOR OFFICE USE ONLY

Application Type ..... P/B
Register Reference 91A/1945
Amount Received £ 1.16.4.4
Receipt No .....
Date .....

OUTLINE SPECIFICATION

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Section 1 GENERAL

1.1 Conditions of Contract

This Specification is merely an OUTLINE Specification and should be carefully adapted to local conditions in each case. For general conditions and stipulations, see Conditions of the Building Contract which should be drawn up or approved by a Solicitor engaged by the Employer. Provision should be made in the Contract for the following:

1.2 Maintenance Period

The Contractor shall be held responsible for defects, shrinkage or other faults due to materials and workmanship not in accordance with this specification which appear during the period of 12 months after completion of the work. A sum of not more than 5% of the total price for the work shall be retained by the Employer during the period of 12 months after completion of the work and shall be paid to the Contractor on the expiration of this period provided all defects which have been notified to the Contractor have been remedied.

1.3 Structural Guarantee

The Contractor shall be responsible for structural defects which reveal themselves during a period of 24 months after completion of the work. The Employer's right to require the Contractor to remedy structural defects under this clause are in addition to any similar right(s) he may have under Common Law.

1.4 Insurance

The Contractor shall, in the joint names of the Employer and Contractor, insure the works to their full value against loss or damage by fire, storm or tempest from a period beginning at the commencement of the work and ending on the handing over of the completed house to the Employer. The Contractor shall produce evidence of such insurance at the request of the Employer.

1.5 Statutory Requirements

The Contractor must provide for paying all contributions required under the Social Welfare Acts and other statutes for the protection of workmen. The Contractor must also comply with the Building (Safety, Health and Welfare) Regulations, 1959.

1.6 Approved Materials

For the purpose of this specification, the term "approved materials" shall mean approved as suitable by the Department of Local Government.

1.7 Provide Everything

The Contractor shall be responsible for providing all materials, plant, scaffolding, etc. necessary for the proper execution of the work.

1.8 Water

The Contractor shall be responsible for the provision of a proper supply of clean water for the works.

1.9 Notification

The Contractor shall notify the local authority at the appropriate stages of the work and arrange for all inspections.

Section 2 EXCAVATOR

2.1 Generally

Excavate the site of all buildings, roads, footpaths, yards, etc., removing all vegetable soil and spread and level. Excavate trenches for foundations, and services, spread and level.

Foundations shall be taken down to a good natural bottom, minimum of 700 mm below finished ground level.

2.2 Existing Drains, etc.

All ditches, field drains and other waterways, wherever encountered during the progress of the work shall be suitably diverted around the works.

2.3 Keeping Excavations Free from Water

All water that may accumulate on the site during the progress of the works, or in trenches and excavations, from springs, rain, drains or other causes is to be baled or otherwise removed at the contractor's expense.

2.4 Planking and Strutting

The Contractor shall provide any planking and strutting required for the safe support of all excavations.

2.5 Hardcore

Hardcore shall be properly compacted and shall form a freely draining bed. It shall consist of hard broken brick, coarse gravel, hard stone or slag and shall be free from dust and any deleterious materials.

2.6 Backfill

Backfilling to foundations, walls, trenches, etc., shall be spread in layers not exceeding 150 mm thick and each layer shall be well compacted and consolidated. Filling around pipes not concreted and for a depth of 300 mm over the pipes shall be fine material free from stones, and placed and consolidated by hand.

Section 3 DRAINLAYER

3.1 Concrete Beds

Lay in trenches under drain pipes, gulleys, junctions, etc., layer of Mix C concrete, as described at 4.4 below. The concrete under pipes to be of a minimum thickness of 100 mm laid to falls, and of a width equal to twice the external diameter of the pipe resting thereon and benched half-way up pipe.

3.2 Drain Pipes

Drain pipes to be used generally may be either of p.v.c., salt glazed stoneware or concrete to Irish Standard 6 (1949). All pipes under roadways to be cased in concrete, minimum 150 mm thick all round. Concrete or stoneware pipes to have joints packed with tar gaskin and filled with cement mortar, executed neatly. Alternatively, concrete or glazed stoneware pipes may be jointed with flexible joints and laid on a 50 mm minimum bed of a granular round gravel and backfilled with a similar material to haunching height. Consolidated p.v.c. pipes jointed with rubber ringed plastic couplers may be used laid on a granular bed as a base, 50 mm thick and backfilled to top of pipes, and finally covered to a depth of 150 mm over barrel of pipes with similar material.

3.3 Laying Drains

Lay all drains to the necessary falls and connect them to the gulleys, junctions, soil pipes and manholes, in such a manner that every line of drain is straight and true from point to point with a regular gradient throughout its length.

3.4 Armstrong Junctions

To be 225 x 225 mm glazed stoneware with galvanised heavy cast iron cover and frame set on and surrounded with 150 x 150 mm thick concrete Mix A as described at 4.4 below.

3.5 Gulley Traps

To be 150 x 150 mm salt glazed stoneware back inlet type gulleys with outlet jointed to drain and fitted with heavy galvanised gratings and set on and surrounded with concrete Mix A well dished down to grating.

3.6 Manholes

Form manholes, 750 x 600 mm inside concrete measurements, with 200 mm solid concrete block walls bedded in cement mortar and finished with 25 mm cement plaster, well haunched down to half round white glazed channels. Roofs of manholes to be Mix A, reinforced concrete 150 mm thick. Where manholes exceed 1·5 m deep, they are to be 900 x 600 mm inside and fitted with galvanised heavy cast iron foot irons built into walls. The bottoms to be benched in fine concrete finished in pure cement, average 200 mm thick.

3.7 Manhole Covers

Over each manhole set in the roof slab an approved deep seal pattern galvanised cast iron airtight cover and frame, weighing a minimum 114kg to B.S.497 (1967)–Grade" B". Frame to be bedded in mastic and seal 25 x 25 mm to be filled with tallow and grease.

3.8 Septic Tank

The Septic Tank shall be built to the Department of Local Government's Plan S.I. (a copy of which is supplied with the set of working drawings) or other approved drawings.

Section 4 CONCRETOR

4.1 Cement

Cement to be Portland Cement in accordance with I.S. 1 (1971) delivered to site in properly sealed bags clearly marked with the brand name and stored, clear of the floor, in a dry waterproof store and protected from damp.

4.2 Water

Only clean fresh water free from impurities to be used.

4.3 Aggregate

Coarse and fine aggregate shall be in accordance with I.S. 5 (1949).

4.4 Concrete Mixes

Mix A: This mix should have a minimum works cube strength of 14 N/mm² after 7 days or 21 N/mm² after 28 days. The nominal proportions of this mix are 0·07 m³ of suitably graded dry fine aggregate and 0·14 m³ of suitably graded coarse aggregate per 50 kg cement. The maximum size of coarse aggregate should not exceed 20 mm. The water/cement ratio should be kept to a minimum to ensure reasonable workability but should not exceed 30 litres per 50 kg of cement.

Mix B: This mix should have a minimum of works cube strength of 10 N/mm² after 7 days or 14 N/mm² after 28 days. The nominal proportions of this mix are 0·1 m³ of suitably graded dry fine aggregate and 0·21 m³ of suitably graded coarse aggregate per 50 kg cement. The maximum size of coarse aggregate should not exceed 40 mm. The water/cement ratio should be kept to a minimum to ensure reasonable workability but should not exceed 35 litres per 50 kg of cement.

Mix C: This mix should be in the proportion of 8 parts of suitably graded "all in" aggregate to 1 part cement with the minimum addition of water to ensure reasonable workability.

4.5 Transporting and Placing

Transport concrete to avoid adulteration, segregation or loss of ingredients. Clean out and remove all free water from formwork and excavations immediately before placing concrete. Deposit in final position as a continuous operation so that between construction joints fresh concrete is not placed against concrete which has set. Concrete to be finally placed within 30 minutes of discharge from mixer or (if agitated during transporting) from delivery vehicle. Level the upper surfaces of concrete so that components and elements will be suitable for subsequent surface working. In cold weather, place concrete with an initial temperature of at least 5° C and do not place against frozen surfaces. Concrete laid when frost is likely shall be protected immediately after laying with tarpaulins, sacks, straw or other suitable material.

4.6 Curing

During initial setting and curing concrete to be protected from excessive heat, frost, shock or vibration and no traffic must be allowed on it until properly hardened.

4.7 Solid Flooring (Mix B)

Lay 150 mm thick concrete slab on 150 mm thickness of hardcore and cover with 1,000 gauge approved polythene membrane dressed under d.p.c. in walls to a minimum of 150 mm.

4.8 Perimeter Paving

Paving around the house, as shown, shall be 100 mm thick concrete paving laid to falls on a 150 mm thickness of hardcore and finished smooth from a wood float. Provide expansion joints at 2·5 m centres.
Provide steps as necessary in pavings and to front and rear doors and out offices. Finish smooth and neat on all exposed surfaces.
Provide concrete spud stones to feet of frames of external doors.

4.9 Concrete Lintels

The concrete lintels to window and door openings are to be reinforced for every 100 mm of thickness with two 10 mm diameter mild steel bars. Lintels are to be constructed as shown on the drawings and to have a minimum bearing of 200 mm at each end.

The concrete lintels to the inner leaves of external cavity walls are to be splayed as shown. The splay to occur on the cavity side.
Alternatively, precast, prestressed concrete lintels conforming to B.S. 1239 (1956) and produced by an approved manufacturer may be used.

4.10 Chimney Caps

Provide cast in situ chimney caps, throated on underside, weather on tops in cement and sand 1:3 and flaunch up around flue liners.

4.11 Precast Concrete Cills

Precast concrete cills are to be finished extra smooth and to be rebated, weathered and throated. Cills are to have 100 mm minimum wall hold at each end, to project 100 mm beyond the outer face of blockwork and to be rounded at edge. All cills are to be reinforced with two 10 mm diameter mild steel bars and set on d.p.c. turned up full height at back and ends.

Section 5 BRICK AND BLOCKLAYER

5.1 Blocks

Solid concrete blocks are to comply with I.S. 20 (1971).

5.2 Bricks

Bricks are to be sound, hard and well burnt and shall comply with I.S. 91 (1958).

5.3 Mortar

Cement mortar to be composed of one part cement to three parts of sand well mixed in small quantities and used fresh. Cement mortar shall be used for all brickwork and blockwork below damp proof course.
Gauged mortar (plasticised mortar) to be composed of one part cement to six parts of sand with liquid mortar plasticiser added in the proportions recommended by the manufacturers, and to be used for *brickwork* and *blockwork* over damp proof course.

5.4 Blockwork and Brickwork Generally

All walls shall be carried up regularly not leaving any part more than 1 m lower than another. Walls left at different levels to be properly raked back. Walls and partitions are to be bonded one to the other at right angles. 'L' shaped blocks are to be used in the external leaf at jambs of openings.
All perpends, quoins, etc., in walling are to be kept strictly true and square and the whole properly bonded together. No half bricks or bats are to be used except where necessary for bonding.
The joints are to be raked out for flashings, aprons, etc., and afterwards pointed in cement mortar 1:3.

5.5 Damp Proof Courses

The damp proof course shall be three ply bitumen on jute or canvas base to I.S. 57 (1953) or polythene to B.S.743 (1970). Damp proof course to be lapped 150 mm at joints and angles and bedded on a layer of cement mortar. Damp proof course to be a minimum of 150 mm above finished ground level.
Provide horizontal damp proof course to each leaf of cavity walls, under blockwork partitions, to chimney breasts and to chimney stack over roof level all as shown.
Provide d.p.c. over all lintels to external opes of cavity wall construction stepped from top inner lintel to under outer lintel.
" " to all vertical joints at abutting of inner and outer leaves of cavity walls at reveals.
" " under window cills, turned up at ends and back.
" " to outer leaf of cavity wall under blockwork closing cavity at head.

5.6 Cavity Walls

Build cavity walls as shown on the drawings. Inner and outer leaves to be tied together with galvanised mild steel wall ties or plastic ties approved by the Department of Local Government at 1 m intervals horizontally and 0·5 m vertically.
Closure of cavity at foot to be a minimum of 150 mm below d.p.c. level. Provide temporary openings at base of cavity for cleaning out after each day's work and brick up on completion. 50 mm laths to be placed on ties to catch mortar droppings and

lifted out and cleaned off before inserting new row of ties. Every possible care to be taken to keep cavities free from mortar droppings. Provide drainage opes at bottom of cavity in cavity walls.

5.7 Block Partitions
Build block partitions on ground floor in blocks bonded to external walls as the work proceeds.

5.8 Chimney Breasts and Flue Liners
Build chimney breasts where shown in solid blockwork. Form opening to take fireback for fireplace, insert tapered lintel, gather to fireclay flue and flaunch around same. Build in 230 mm diameter fireclay flue liners to I.S. 51 (1953). Flue to be carried up in easy bends, and to be cleaned and swept as work proceeds. Flue liners to be wrapped around with 12 mm thickness of lime mortar before building in.

5.9 Beam Fillings and Closing Cavity
Perform all beam filling in concrete blockwork or mass concrete between timbers built into or resting on walls. All cavities to be sealed with concrete tiles or slates.

Section 6 ROOFER AND EXTERNAL PLUMBER

6.1 Pitched Roof with Concrete Roof Tiles

6.1.1 Concrete Roof Tiles
To be interlocking or pantiles. Interlocking tiles to comply with I.S. 4 (1950). For pitches below 30°, low pitch tiles to be used in accordance with manufacturer's instructions.

6.1.2 Fixing
Hang tiles to 44 x 35 mm or 44 x 22 mm sawn softwood battens as indicated on drawings and nail in accordance with manufacturer's instructions.

6.1.3 Felt
Cover rafters with untearable bituminous sarking felt to comply with I.S. 36 (1951). Felt to be lapped 150 mm at joints and at ridges. Felt to be carried over the tilting fillet and fascia sufficiently to give a drip into the gutter

6.1.4 Ridges
Ridge tiles to be approved concrete tiles "A" or half round to match colour of tiling bedded in sand and cement 3:1. Rake out and point all exposed fair edged and vertical joints with the coloured sand and cement to match tiles.

6.1.5 Lead Flashings
Lead to be No. 5 best sheet milled lead to comply with B.S. 1178 (1969). At sides and front of chimney neatly dress No. 5 lead for a width of 150 mm over tiles and 160 mm up against stack. Cover flash in No. 5 lead. Form chase in chimney and return lead cover flashing into same, secure with lead wedges and point with cement mortar. When plastering, form bell cast over chase. Where chimney stack is not astride ridge, provide lead gutter at back in No. 5 lead laid on 19 mm boarding carried up under tiles to a height of 150 mm vertically back over sole board and dressed 150 mm up against back of stack and cover flashed in No. 5 lead.
Provide No. 5 lead collar to vent pipe where passing through roof, neatly dressed into tile form and into joint in vent shaft.

6.2 Pitched Roof with Asbestos Cement Slates

6.2.1 Asbestos Cement Slates
Asbestos Cement slates to be through colour type in accordance with I.S. 7 (1950).

6.2.2 Fixing
All absestos cement slates to be fixed with bronze nails in strict accordance with manufacturer's instructions. For pitches of 30°, asbestos cement slates to be on battens and felt as specified above. For pitches of 22½°, asbestos cement slates to be on battens on felt on counter battens on felt fixed to rafters.

6.3 Flat Roofs

6.3.1 Covering

Flat roofs to be covered with 3 layers of roofing felt on 18 mm flooring grade chipboard or other approved decking. Decking to be stored in a dry shed and covered with a layer of felt immediately after fixing to avoid trapped moisture. All felting to be laid by approved specialists.

6.3.2 Insulation

Chipboard to be laid on 25 mm glass fibre quilt on 1,000 gauge polythene vapour barrier on firring pieces to give a fall of 1 in 80.

6.4 Rainwater Goods

Gutters to be 125 mm half round P.V.C., galvanised heavy gauge steel to comply with I.S. 59 (1953) or other approved gutters secured on brackets to falls.
Rainwater pipes to be 75 mm diameter P.V.C. or galvanised heavy gauge steel pipes or other approved pipes secured with holderbats or fitted lugs so as to stand 25 mm clear of the finished wall and having all necessary toes, etc.

Section 7 CARPENTER AND JOINER

7.1 Timber

Timber used throughout the work to be well seasoned dry and free from sap, shakes, large or loose knots and waney edges and with a moisture content not exceeding the permitted maxima set out in I.S. 96 (1958). Structural timber for trusses to be of a quality as specified at 7.4 below.
Softwood for Carpentry to be *white deal.*
Timber for joinery to be *red deal* free from all defects. Joinery units to be delivered on job prepared, knotted, stopped and primed.

7.2 Preservative

Wall plates, ends of joists and feet of rafters or feet of trusses, back of fascia, framed supports for fascias ans soffit, barge board supports and back of barge boards to be treated with an approved preservative applied in an approved manner. The preservation of timber shall be carried out in accordance with B.S.C.P.98 (1964).

7.3 Glue

All glue to comply with B.S. 745 (1969).

7.4 Timber for Trussed Rafters

The timber used in the construction of timber trussed rafters may be European redwood or whitewood, commercial western hemlock or Canadian spruce having a quality not inferior to composite grade as defined in B.S.C.P. 112 (1967).

7.5 Connector Plates for Trussed Rafters

The steel for connector plates for timber trussed rafters shall in accordance with B.S. 1449 (1962)-Part 1B. The plates shall be protected by a zinc coating in accordance with B.S. 2989 (1967)-Class B for thickness and with properties of Class F. Penetration of all plate projections shall be at least half way through timber members.

7.6 Wind Bracing of Trussed Rafters

Fix 44 x 35 mm battens as wind bracing as shown on drawings:

A. diagonally under rafters
B. diagonally across struts and ties
C. diagonally across tops of ceiling joists.

7.7 Transport, Storage and Handling of Trussed Rafters

Timber trussed rafters shall be transported and stored in a vertical position. Care shall be taken in the handling of trusses to avoid distortion.

7.8 Traditional Roof Construction

Where traditional roof construction is used for double pitched roofs, rafters shall be 125x35 mm at 450 mm centres on 150x75 mm purlins. Tile battens shall be 44x22 mm.

Where single pitch roofs are used, rafters shall be 125 x 35 mm at 400 mm centres on 150 x 75 mm purlins. Ceiling joists shall be 100 x 35 mm at 400 mm centres supported from 75 x 35 mm ceiling hangers at 2·1 m centres. Rafters shall be spiked to 100 x 75 mm wall plates.

7.9 Tank Bearers and Housing on Flat Roofs
Construct support framework for water tanks and frame wall as shown on drawings all securely fixed to roof joists. Provide 2 hasps to removable lid.

7.10 External Doors
To be 50 mm thick wrot red deal two panel glazed doors size 900 x 2,100 mm comprising 100 x 50 mm top rail and styles; 200 x 50 mm lock and bottom rails with both panels rebated all round and slipped for glazing.
Doors to be hung on 1½ pairs steel washer brass butt hinges to 100 x 75 mm frames fixed to spud blocks with strong iron spuds and rings. Fix weatherboard to all external doors as shown on drawings and weather bar to threshold.

7.11 Internal Doors
To be 50 mm thick flush panel plywood doors to I.S. 48 (1965) to the sizes shown on the drawings. Permanent ventilators to be provided over internal doors to all rooms without an open fireplace. Standard door sets complying with the above specification may be used.

7.12 Windows
Standard timber windows to be used throughout with red deal window board ex 150 x 22 mm.

7.13 Skirtings
To be 100 x 25 mm moulded red deal neatly mitred at all corners.

7.14 Architraves
To be 50 x 25 mm moulded red deal neatly mitred at corners and nailed to door frames. All nails to be well punched home.

7.15 Cover Slips
Provide 12 x 12 mm red deal cover slips to doors and windows as required.

Section 8 PLUMBER

8.1 Soil and Vent Pipes
Shall be 100 mm diameter P.V.C. or cast iron jointed in accordance with manufacturer's instructions with all the necessary bends, etc., and connected to drain and w.c. Provide all vent pipes with cowls.

8.2 Traps and Waste Pipes
Traps to sinks, bath and wash-hand basin to be solid copper deep seal with cleaning eyes 38 mm diameter for bath and sink and 32 mm diameter for wash-hand basin where wastes do not discharge directly to gully traps, otherwise traps to be standard pattern. Waste pipes to be manufactured from unplasticised P.V.C. conforming to B.S. 3506 (1962).

8.3 Water Services
Provide and connect 16 mm heavy gauge P.V.C. pipe 600 mm deep in ground from water supply source to storage tank complete with ball valve and 32 mm overflow. Fit stop cock over floor level where supply enters house and provide connection to kitchen sink. Storage tanks to be approved type P.V.C. or galvanised steel to B.S. 417 (1964). Minimum total capacity to be 360 litres.

8.4 Cold Water Supply
Run 22 mm copper supply from storage tank to cylinder.
Run 22 mm separate copper supply to bath with 15 mm branches to w.c. and w.h.b.
Fit 22 mm full way screw down stop cocks in accessible positions to 22 mm cold feeds to cylinder and bath etc.

8.5 Water Heating
Where boiler is provided, run 22 mm copper flow and return to cylinder (with high and low connections). Fit draw off cock in suitable position to empty system.

8.6 Hot Water Supply
Provide 150 litre copper cylinder to comply with I.S. 161 (1968); run 22 mm copper expansion pipe, carry up and turn down over storage tank. Take off 22 mm copper supply to feed bath with 15 mm branches to wash-hand basin and sink.

Section 9 ELECTRICIAN

9.1 General
The electrical installation shall be carried out by competent, experienced electricians. All electrical work shall comply with the latest regulations of the Institute of Electrical Engineers.

9.2 Notice to E.S.B.
The Electricity Supply Board shall be consulted at an early stage to arrange service and meter position.

9.3 Wiring
All wiring to be on ring main system using 13A plugs fusable type.
Provide proper identification system for each fuse unit.
Every light outlet shall be fitted with approved ceiling rose flex and lampholder.
Switches shall be flush type make and break.
Switches outside bathrooms.
Socket outlet shall be flush type bakelite 13 amp. all 3 pin shutter type and fusable with earth wire.
Wiring shall be concealed and carried in walls in plastic conduit.
Wiring shall be C.T.S. 1/1·78 (3/·036) for lighting circuits and 7/0·85 (7/·029) for power circuits.
All joints shall be in proper bakelite joint boxes.

Section 10 PLASTERER

10.1 Cement
The Portland cement shall be as described in clause 4.1.

10.2 Sand
The sand shall be natural or crushed stone and to comply with B.S. 1198 (1952) for plastering, and graded to Class "A" requirements for both under-coats and finishing coats of "Gypsum" plasters only.

10.3 Cement Lime Mortar
Cement lime mortar to be composed of 6 parts of sand, one part of lime putty and one part of Portland cement well mixed for wall above damp proof course.

10.4 Water
The water used for mixing shall be clean and free from set plaster and other impurities.

10.5 Internal Plastering
All internal walls are to be scudded 3 to 1 sand and cement, scratch coat to be 1 lime to 3 sand gauged with 10% cement and finished in hard wall plaster.
Alternatively, internal walls to be lined with approved proprietary dry lining executed in strict accordance with manufacturer's instructions. Alternatively, other approved plastering specifications may be used.
Ceiling plaster board where fixed to joists at 600 mm centres to be 12 mm thick; where fixed to joists of 450 mm centres or less, to be 9 mm thick.

10.6 Floor Screeds
Lay 50 mm thick cement and sand (1:3) screed to all rooms and hall.
Finish screed perfectly smooth with a steel float to receive thermoplastic tiling, or other floor covering. Floor screed must be laid at least two months before laying vinyl floor tiles and must be carefully protected until then.

10.7 External Plaster

Scud in cement and coarse sand (1:3) and render in 1 part hydrated lime, 1 part cement and 3 parts sand finished 12 mm thick smooth and even. Finished coat to be 12 mm 1:2:6 lime, cement, sand to a fine nap finish. Alternatively, 12 mm rough cast finish in 3:1 sand and cement may be applied. Form true edges and arrises, etc. Reveals to be finished as above keyed into rebates and finishing 25 mm thick and 25 mm proud of plaster work.

Section 11 GLAZIER

11.1 General

Glass to be the best of its respective kind and conform to B.S. 952 (1964). Glass is to fit accurately into rebates, after priming and is to be well back puttied sprigged and puttied. Outside putty is to finish the full depth of rebate. Putty to be linseed oil putty to B.S. 544 (1969).

11.2 Clear Glass

Clear glass to be sheet glass 3 mm for areas up to 0·56 m^2, 4 mm glass for all areas up to 1·12m^2, and 6 mm for larger panes. Glass to conform to B.S. 952 (1964) and shall be the best of its kind, clear of all specks, waves, air bubbles and defects of every kind.

11.3 Obscured Glass

Obscured glass to be small white arctic glass.

11.4 Glazing to Doors

Glass in panels to doors to be bedded in putty and held in position with glazing slips and bedded in mastic putty.

Section 12 PAINTER

12.1 Generally

None other than skilled workmen, except apprentices, to be employed on the works. All paint, etc. is to be prepared and applied strictly in accordance with the manufacturer's instructions.

12.2 Workmanship

All surfaces to be thoroughly dry before knotting, stopping, or painting.
No paint shall be applied externally in foggy or inclement weather and all necessary precautions are to be taken to prevent damage to paint by frost, etc.
The surfaces of all new priming coats and undercoats are to be properly filled and sanded down and dusted off between coats as required.
Painting shall not be proceeded with in any room unless it is free from dust and washed out.
Walls to be rubbed down, filled and free of all blisters and blemishes before decoration.
On no account is emulsion paint to be used as a primer to woodwork.

12.3 Materials

All painting materials to be the best of their respective kinds. Approved proprietary brands to be applied in accordance with manufacturer's instructions.

12.4 Internal Painting

All ceilings and walls to be painted a minimum of 2 coats proprietary wall finish. All woodwork to be prepared, knotted, stopped, and painted 2 undercoats and one finish coat of high gloss enamel.

12.5 External Painting

All external woodwork to be prepared, knotted, stopped, primed, and painted 2 undercoats and one finish coat of high gloss enamel.
Where external ironwork is used it is to be cleaned and painted 2 undercoats and one finish coat of high gloss enamel.

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PROPOSED HOUSE AT 174A CARRIG WOOD

FIRHOUSE, TALLAGHT, DUBLIN 24

STRUCTURAL CALCULATIONS

PATRICK JOYCE ASSOCIATES,
CONSULTING ENGINEERS,
4 BODEN WOOD,
RATHFARNHAM,
DUBLIN 14.

28TH NOVEMBER 1991

PROPOSED HOUSE AT 174 A CARRIG WOOD FIRHOUSE, TALLAGHT, DUBLIN 24

STRUCTURAL CALCULATIONS

1. LOADINGS

(i) Pitched Roofs: Covered with tiles.

Dead Load:	1·00 kN/m²
Live Load	1·00 kN/m²
	2·00 kN/m²

(ii) First Level Floors

Dead Load:	0·30 kN/m²
Live Load:	1·50 kN/m²
	1·80 kN/m²

(iii) Timber sted Partitions 0·48 kN/m²

2. FIRST FLOOR - TIMBER JOISTS

Internal walls at ground floor level - load bearing solid concrete block walls

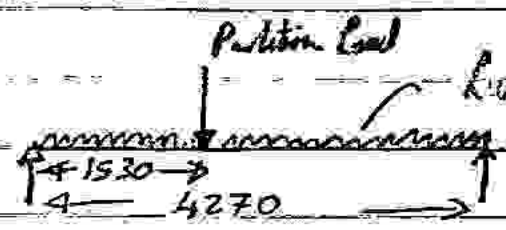
Timber: Strength class A

Maximum span for joists: 4270mm

From SR 11 : 1988 [Table 5]

44 mm X 225 mm joists @ 400 mm centres adequate

* Check adequacy of joists for partitions running perpendicular to joists - worst case as follows



Deflection - limiting constraint - limited to 0·003 x span

Loading : per joist 1·8 x 0·4 = 0·72 kN/m

Partition - Point Load : 0·4 x 2·45 x 0·48 = 0·47 kN

δ_1 = Deflection Uniform Load = $\frac{5 \times F \times L^3}{384\ EI}$

$= \frac{5 \times 0.72 \times 4270 \times (4270)^3}{384\ EI}$

$= \frac{3.12 \times 10^{12}}{EI}$

δ_2 = Point Load Using Table 23 Reynolds (Concentrated Load)

$a = 0.36$ $x = 0.5$

$\delta_2 = \frac{[0.47 \times (4270)^3 \times 0.36 \times 0.5][0.5[2-0.5]-(0.36)^2]}{6\ EI}$

$= 6.8 \times 10^8 / EI$

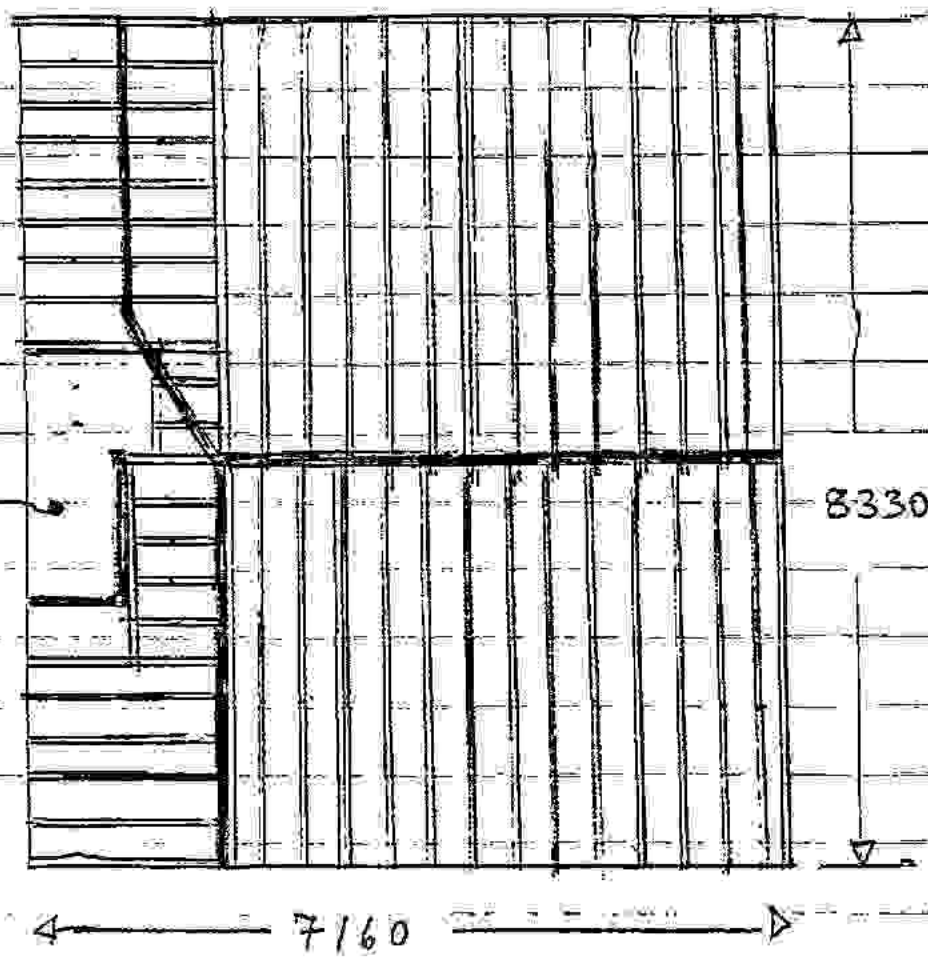
$\delta_1 + \delta_2 = \delta_{TOTAL} = \frac{3.12 \times 10^{12}}{EI}$

$E_{mean} = 7000\ N/mm^2$ for Class A Timber

$\Rightarrow I \geq 3.48 \times 10^6\ mm^4$

$\Rightarrow$ 44 mm x 225 mm timber joists adequate

FLOOR JOISTS LAYOUT :



Use: 44 mm x 225 mm joists @ 400 mm centres

Bridging:

Provide 35 mm x 225 mm solid strutting at intervals not exceeding 1350 mm

Stairs opening:

Provide 75 mm x 225 mm trimmer and trimming joists at stairs opening.

Timber stud partitions:

Timber joists shall be doubled up under non-loadbearing timber stud partitions when partitions are running parallel to joists. The pair of timber joists shall be suitably spiked together.

A 75 mm deep timber sole piece shall be provided under timber stud partitions running perpendicular to floor joists.

Joints:

Joints between trimmer and trimming joists shall be tusk tenon joints. Joints between trimmed joists and trimmer shall be dovetailed housed joints

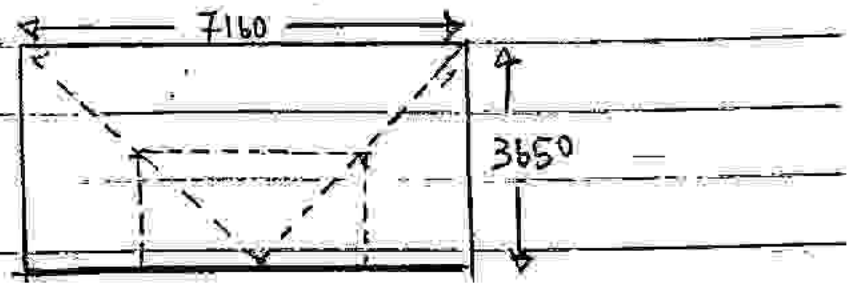
Floor joist supports:

The floor joists shall be supported by pressed steel joist hangers or built into the external walls. Where built into walls, the ends of the floor joists shall be treated with suitable preservative.

Floor joists supported on internal solid walls shall bear on 100 mm x 75 mm wall plates

External walls shall be strapped to floor joists at 1200mm centres using 30mm x 5mm galvanised milled steel straps

3. SINGLE STOREY ROOF Slope: $17\frac{1}{2}^{\circ}$



Refer Architect's drawings

Max Span of Roof: 7160 mm [23'-6"]

From SR 11 : 1988 Timber Strength Class A

Rafter with intermediate support [Table 7] Span: 1825 mm

35 X 115 mm @ 400 mm centres adequate

Purlins [Table 10]

Use: 75 x 150 mm purlins with supports @ centres not greater than 1850 mm [6'-0"]

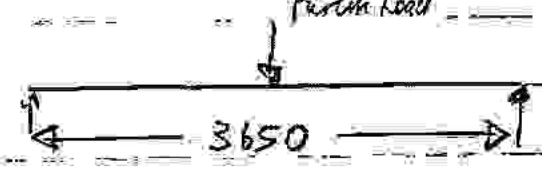
Ceiling joists [Table 6] Span: 1825 mm

Assuming ceiling joists supported at mid point with hangers and binders

Use: 35 X 125 mm @ 400 mm centres

Provide 44 X 150 mm binders supported by 35 x 75 mm hangers @ centres not exceeding 1825 mm

Purlin Supports:



Max Purlin Load 1·825 x 1·825 x 2·0 kN/m² = 6·7 kN

Deflection limiting constraint – limited to 0·003 x 3650 = 11 mm

$$\delta = \frac{F \times L^3}{48 E I} = \frac{6.7 \times 10^3 \times (3650)^3}{48 E I}$$

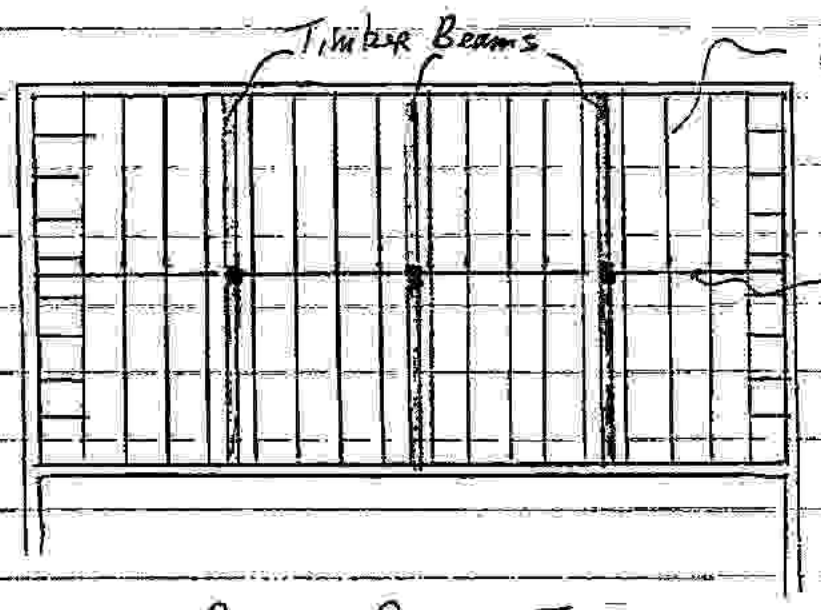
$$= \frac{6.8 \times 10^{12}}{E I} = 11$$

$E_{mean} = 7000\ N/mm^2$ for Class A Timber

$$\Rightarrow I \geq \frac{6.8 \times 10^{12}}{11 \times 7000} = 88.4 \times 10^6\ mm^4$$

Use 100 x 225 mm timber beams $I = 94.9 \times 10^6\ mm^4$

L 3 No.



ROOF – CEILING JOISTS

Roof Timbers : Summary

Rafters:	35 mm x 115 mm @ 400 mm centres	
Purlins	75 mm x 150 mm	
Studs (to Purlins)	75 mm x 100 mm @ centres n.e. 1850 mm	
Hip Rafters	35 mm x 175 mm	
Ceiling joists	35 mm x 125 mm @ 400 mm centres	
Binders	44 mm x 150 mm	
Hangers	35 mm x 75 mm @ centres n.e 1825 mm	
Wall Plates	100 mm x 75 mm	
Purlin Support Beams	100 mm x 225 mm	[3 No.]

Wallplates to be bolted down to top of walls at 1000 mm centres and bolted to side of wall at 750 mm centres. Rafters to be notched & securely fixed to wallplates. Ends of rafters to be suitably tied back along all ends. Ceiling joists to be properly secured / anchored at wall of house.

4. MAIN ROOF TIMBERS:

Refer Architect's Drawings - hip ended pitched roof covered with tiles

Slope: 30°

Roof Span (Clear)	7160 mm
Roof Length (Clear)	8330 mm

Standard fink trussed rafters shall be provided to the roof area containing the ridge.
Flat top trusses with extended rafters shall be provided to the top half of the hip area. The bottom half of the hip area infilled with traditional cut timbers.
Alternative solutions to the hipped area must be approved by the Architect / Engineer.

All truss details and structural calculations to be submitted for approval prior to commencement of manufacture.

Timber trusses shall be designed in accordance with I.S. 193 : 1986 and B.S. 5268

Standard trusses: I.S. 193 : 1986 Table 4

Home Grown Timber Timber Grade M 75

Rafters: 34 x 112 mm } Internal ho members
Ceiling Ties: 34 x 112 mm } to be braced

All infill ties and stud members shall be 34 x 72 mm minimum.

Bracing:

Trusses shall be braced in accordance with I.S. 193 : 1986 Clause 5.6

Infill Timbers:

From SR 11 : 1988 Timber: Strength Class A

Rafters: [Table 7] Max span: 1800 mm

35 mm x 125 mm @ 600 mm centres adequate

Ceiling Joists: [Table 6] Max span: 1800 mm

35 mm x 125 mm @ 600 mm centres adequate

Ceiling joists to be adequately secured to the girder trusses

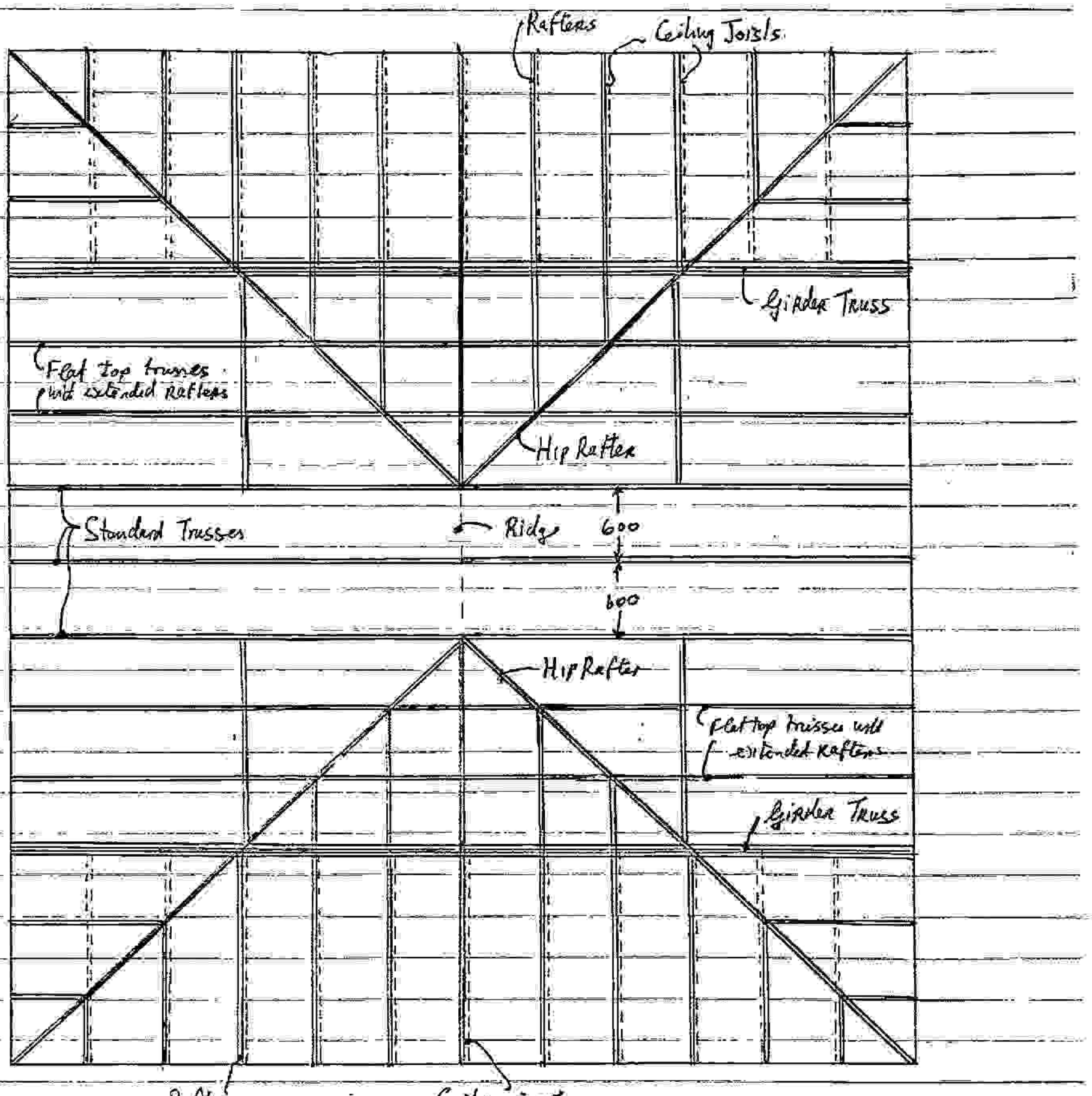
Hip Rafters

Use: 35 mm x 175 mm hip rafters

Wall Plates:

Use: 100 mm x 75 mm wallplates

Wallplate to be bolted down to top of walls @ 1000 mm centres.



ROOF LAYOUT

Patrick C. Joyce B.E.

28/4/91