FORM 3 - PART A

FILE Previous Pcm

ABA 992670.

APPLICATION FOR BUILDING CONSENT

Section 33, Building Act 1991

99 3045

TO Dunedin City COUNCIL

Complete Part A in all cases

(Insert a cross in each applicable box. Attach relevant documents in duplicate)

APPLICANT* 208983

Name: Kinetic Holdings Ltd

Mailing Address: [redacted]
Dunedin

Contact Name: Glen Johnson/Stuart 03 [redacted]

Position: Builder

Phone: 0 [redacted] Fax: 03 [redacted]

PROJECT

New or Relocated Building ☑

Alteration ☐

Intended Use(s) (in detail): Erect Student accommodation 8 units

Intended Life:

Indefinite, but not less than 50 years ☑

Specified as ..... years

Demolition ☐

Being stage ..... of ..... stages

Attach additional information if necessary to describe the project

PROJECT LOCATION

Street Address: 820-830 Cumberland St & 598 Castle St.

LEGAL DESCRIPTION

Property Number: 5105420

Valuation Roll Number:

Lot: DP:

Section: Pt Sec 42 Block: XXXIII

Survey District: T.N. of Dunedin

Rec 186315
OFFICIAL RECEIPT

C53594 08Nov99 13:35 CHEQ $2,495.00
BC 208983 $2,495.00

COUNCIL CHARGES

The Council's charges payable on the making of this application are based on the value of (GST inclusive):

Building	$
Plumbing & Drainage	$
Total:	$ 500,000.00

Sewers conn 20

* *Under Section 33 of the building Act 1991 the applicant must be the owner of the land on which building work is contemplated or a person who or which has agreed in writing, whether conditionally or unconditionally, to purchase the land or any leasehold estate or interest in the land, or to take a lease of the land, while the agreement remains in force.*

This application is for:

- [x] Building consent only, in accordance with project information memorandum no:. ABA 992670.
- [ ] Both building consent and a project information memorandum.

PART B: PROJECT DETAILS

(Complete part B only if you have not applied separately for a project information memorandum)

The project invoices the following matters *(cross each applicable box, if any, and attach relevant information in duplicate)*.

- [ ] Location, in relation to legal boundaries, and external dimensions of new, relocated, or altered buildings.
- [ ] New provisions to be made for vehicular access, including parking.
- [ ] Provisions to be made in building over or adjacent to any road or public place.
- [ ] New provisions to be made for disposing of stormwater and wastewater.
- [ ] Precautions to be taken where building work is to take place over existing drains or sewers or in close proximity to wells or watermains.
- [ ] New connections to public utilities.
- [ ] Provisions to be make in any demolition work for the protection of the public, suppression of dust, disposal of debris, disconnection from public utilities, and suppression of noise.
- [ ] Any cultural heritage significance of the building or building site, including whether it is on a marae.

PART C: BUILDING DETAILS

(Complete part C in all cases)

The application is accompanied by *(cross each applicable box, attach relevant documents in duplicate)*:

- [x] The drawings, specifications, and other documents according to which the building is proposed to be constructed to comply with the provisions of the building code, with supporting documents, if any, including:
  - [ ] Building certificates.
  - [ ] Producer statements.
  - [ ] References to accreditation certificates issued by the Building Industry Authority.
  - [ ] References to determinations issued by the Building Industry Authority.
- [ ] Proposed procedures, if any, for inspection during construction

FORM 3 - PART D: KEY PERSONNEL

FILE

(Complete Part D as far as possible in all cases. Give names, addresses, and telephone numbers. Give relevant registration numbers if possible)

Builder(s): 211589 Stella Pacific ~~Homes~~ Ltd

Registered Drainlayer: P.O. Box 1635 Sydenham Chch

Registered Plumber:

Registered Gasfitter: 377 8204

Registered Electrician:

Designer(s):

Building Certifier(s):

Other:

PART E: COMPLIANCE SCHEDULE DETAILS

E1: SYSTEMS NECESSITATING A COMPLIANCE SCHEDULE

(Complete part E1 for all new buildings and alterations, except single residential dwellings)

The building will contain the following *(cross each applicable box and attach proposed inspection, maintenance, and reporting procedures.)*

- ☐ Automatic sprinkler systems or other systems of automatic fire protection.
- ☐ Automatic doors which form part of any fire wall and which are designed to close shut and remain shut on an alarm of fire.
- ☐ Emergency warning systems for fire or other dangers.
- ☐ Emergency lighting systems.
- ☐ Escape route pressurisation systems.
- ☐ Riser mains for fire service use.
- ☐ Any automatic back-flow preventer connected to a portable water supply.
- ☐ Lifts, escalators, or travelators or other similar systems.
- ☐ Mechanical ventilation or air conditioning system serving all or a major part of the building.
- ☐ Any other mechanical, electrical, hydraulic, or electronic system whose proper operation is necessary for compliance with the building code.
- ☐ Building maintenance units for providing access to the exterior and interior walls buildings.
- ☐ Such signs as are required by the building code in respect of the above-mentioned systems.
- ☑ None of the above

E2: OTHER SYSTEMS AND FEATURES TO BE INCLUDED IN THE COMPLIANCE SCHEDULE

(Complete Part E2 only if the building contains one or more of the systems listed in Part E1)

The building will contain the following *(cross each applicable box and attach proposed inspection, maintenance, and reporting procedures.)*

- ☐ Means of escape from fire.
- ☐ Safety barriers.
- ☐ Means of access and facilities for use by persons with disabilities which meet the requirements of Section 25 of the Disabled Person Community Welfare Act 1975
- ☐ Hand-held hoses for fire fighting.
- ☐ Such signs as are required by the Building Code or Section 25 of the Disabled Persons Community Welfare Act 1975.

Signed by or for and on behalf of the applicant:

Name: R J Hay ..... Position: Owner ..... Date: 3/11/99 ....

PRIVACY ACT 1993

This information is required by The Building Act 1991 and is used to administer Councils obligations under that Act. It may be disclosed for the purposes specified in that Act, The Local Government Official Information and Meetings Act 1987 and the Privacy Act 1993. You may access and request correction of personal information held about you.

Please answer the following questions if they apply.

What material will be used for the: (tick boxes)

Floor

1 ☑ Timber
2 ☑ Concrete
3 ☐ Wood products
4 ☐ Other
5 ☐ 109 Floor Area M²

Framing

1 ☐ Timber
2 ☐ Concrete
3 ☐ Steel
4 ☐ Aluminium
5 ☑ Other

Energy

1 ☑ Electric
2 ☐ Gas
3 ☐ Solid fuel
4 ☐ Floor electrical
5 ☐ Ceiling electrical
6 ☐ Storage electrical

Outer Walls

1 ☐ Brick
2 ☐ Concrete
3 ☐ Concrete block
4 ☐ Cement board
5 ☑ Plaster
6 ☐ Timber
7 ☐ Steel
8 ☐ Aluminium
9 ☐ Other

Roof

1 ☑ Steel
2 ☐ Concrete tiles
3 ☐ Steel tiles
4 ☐ Shingles
5 ☐ Aluminium
6 ☐ Other

Insulation

1 ☑ Fibreglass
2 ☐ Masserated paper
3 ☐ Wool
4 ☐ Foil
5 ☑ Other

Cooking

7 ☑ Electric
8 ☐ Gas
9 ☐ Solid fuel

Internal Linings

1 ☐ Plaster board
2 ☐ Fibrous plaster
3 ☑ Wood products
4 ☐ Other

FOR OFFICE USE ONLY

BRANZ	TYPE CODE	IDENTIFIER CODE	OFFICER

		Checked By:	Date:
Building	2	Ele	1-12-99
Means of Egress			
Plumbing & Drainage	3	R Ludlam	7-12-99.
Design			
Roading		✓	✓
Water			
Dangerous Goods			
Health			
Planning	1	CL	10/11/99

Report:

Resource consent required

Approved for issue of Building Consent

Building Control Officer: J A Devan Date: 7.12.99

BUILDING CONSENT

Section 35, Building Act 1991

ISSUED BY: DUNEDIN CITY COUNCIL

Telephone No:	477-4000	Consent No:	ABA 993045	Reference No:	5105420

(Insert a cross in each applicable box. Attach relevant documents).

APPLICANT

Name: KINETIC HOLDINGS LIMITED
[redacted]
DUNEDIN 9001

PROJECT LOCATION

Street Address:

820 CUMBERLAND STREET, DUNEDIN 9001

LEGAL DESCRIPTION

Property Number: 5105420

Valuation Roll No:

Legal Description:
PT SEC 42 BLK XXXIII TN OF DUNEDIN (SO 1

COUNCIL CHARGES

The balance of Council's charges payable on uplifting of this building consent, in accordance with the tax invoice are:

Total: $

ALL FEES ARE GST INCLUSIVE

PROJECT

All ☒

Stage No ..... of an intended .....stages

New Building ☒

Alteration ☐

Intended Use(s) in detail:

ERECT STUDENT ACCOMMODATION/8 UNITS BD ONL

Intended Life:

Indefinite, not less than 50 years ☒

Specified as years

Demolition ☐

Estimated Value: $500000

Signed for and on behalf of the Council:

Name:.....

Position: AUTHORISED OFFICER

Date: 08/12/1999

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached ..... pages headed "Conditions of Building Consent No....."

Kinetic Holdings

Residential Development

Cumberland Street

DRAFT

DUNEDIN CITY COUNCIL
Plans and Specifications Approved in accordance with The New Zealand Building Code and Approved Documents. To be retained on works and produced on request

Building Date 1-12-99.
Drainage Date 7.12.99
Health Date
NOTE

Preliminary Scope of Works

Excavation

1. All excavation and fill to reduced levels is by separate Contractor.

Concrete work

1. Generally are standard Concrete slab and footing construction complete with reinforcing bars to footing and mesh to slab.

Timber Floor and Decks

1. Generally are standard Timber Floor and Deck construction.

Metalwork

1. Allow for 1 x Galvanised Mild steel roof mounted TV aerial bracket per block of units.

Carpentry

1. All timber framing to be Dry frame or similar
2. Exterior wall linings
    - Equus proprietary polystyrene and plaster, paint finished.
    - All flashings to be 55g Colorsteel
3. Handrail to the decks, to be as shown on the drawings.
4. Interior walls
    - All interior walls to be of Standard Triboard construction
5. All walls and ceilings are to be Paint Finish Level 4
6. Square stop all Non 90 degree ceiling junctions.
7. All internal and external corners on walls are to be square stopped.
8. All walls in bathrooms and ensuites and other wet areas shall be protected from moisture.
9. All inter unit walls shall be designed to achieve a minimum of
    - 30/30/30 FRR.
    - 60 STC sound rating

WC Pans, Close Coupled

Make and style: Dux Delmonte S Pan and Cistern Set

Vanity Tops

Make and style: 750mm Builders Special
Trap: std PVC

Shower Enclosures

Make and type: Bathroom works Sapphire
Material and colour: White
Dimensions: 900 x 900mm centre outlet
Trap: Easiclean

EA180M 270 litre Rheem fast recovery Electric HWC, complete with all trays, valves fixings and fittings and seismic restraint and flue.

Laundry

Rotec Supertub

Drainage

All site drainage and works outside the building line will be undertaken by separate Contractors, work within the building is part of the contract and to include connection to site drains.

Electrical

1. Incoming Mains and reticulation system into the complex is to be provided by a separate Contractor.
2. This Contract includes taking the separately supplied mains power and terminating in a main switchboard within each Unit.

3. Power and lighting services as follows, and connection of appliances.

    1. All wiring and fuse board as per attached plan
    2. All power outlets are double
    3. Wiring to Installation and connection of

        Refrigerator/freezer
        Microwave

Oven and Hobb
Range Hood and booster fan

4. Supply, Wire, Install and connect
To each Bathroom
1 x Creda fan heater wall mounted and operated by separate switch by light switch

1 x PDL Batten Holder

To each Bed Room

2 PDL Double Plugs
2 PDL Holders (Lights)

5. Allow for connecting outlets for the TV system into the following areas,
1 x to lounge

6. Allow for incoming telephone system cables and connecting outlets for the phone system into the following areas:
1 x Kitchen/breakfast bar

7. All power, TV and phone outlets in Inter unit walls are to be in proprietary PDL sound/fire rated boxes.

Finishes

1. All interior walls and ceilings are to be paint finished
Complete Interior and exterior painting to all surfaces:
Painters are to provide a full specification for this project from reputable Paint manufacturer allow for:

1 x interior colours per unit
Exterior colours with main entry door colours to be individual per unit.
Toilets and ensuites (Ceilings and Walls)
- Semi Gloss enamel system

Interior Doors – Architrave's and trim
- High Gloss enamel system

Walls - Lowsheen system
Ceilings - Lowsheen system

10. To all ceilings within 1000mm of an adjacent unit shall be designed to achieve a minimum of
    - 30/30/30 FRR
11. Skirting 190 x 18 MUF Colonial
12. Scotia shall be MUF

13. Flooring to be sanded and left ready for flooring. Allowance to be made for reticulation of Water, power and waste pipes. Ceilings shall be 1 x layer 12.5mm gib-bd stopped and finished.

Hardware

1. All doors are to be fitted with Lockwood 570 series latchsets with Lockwood Symphony or similar series handles, Note Hinges are to be finished the same as the door hardware (Front door to be latching Lockset).
2. To all toilets Premier Toilet roll holder
3. To all vanities and Wash hand basins Soap dish and toothbrush holder.
4. ***900 x 600 Mirror with polished edges over vanity units by others.***
5. Door stops to all doors shall be

Joinery and Joinery Fittings

1. Melamine on Particle Board with 3mm edge trim to all doors, drawer fronts and end panels.
2. All wardrobe doors to be paint quality Hollow core on Proprietary Henderson Sliding Track.
3. Laundry Doors shall be PQ Hollow core.
4. Internal Doors are to Standard Triboard
5. Architrave to all windows and doors to be high quality paint finished.

Appliances

- Atlas Neptune Stove or similar.

Exterior Windows and doors

1. Proprietary grade powdercoated aluminium windows and doors as per the drawings, all reveals are to be finger jointed pine, paint finished

Roofing

1. All roofing shall be .40g corrugated colorsteel fixed strictly in accordance with manufacturers instructions on galvanised wire netting, Fire retardant reflective

foil underlay and birdproofing, allow for R2.2 ceiling Batts all fixed to timber framing and trusses as per the drawings.

2. Allow for all .40 colorsteel flashings, ridging, fixings and the like to match the roofing.
3. All gutters shall be colorsteel fascia system complete with PVC downpipes.
4. Form roofing around and flashings to all penetrations.

Proprietary exterior systems

1. Where plaster finish has been detailed on the drawings to walls the finish shall be Equus Proprietary Polystyrene and plaster exterior coating system, allow for proprietary flashings at all window heads and sills and horizontal change of direction or materials.

Plumbing

Tap and Faucets

Fitting Location	**Tapset Type**	**Brand**
Wash hand basins	Faucets 15mm	Methven Promix basin
Showers	Rose	Methven Futura F115 Chrome
	Mixer	Methven Promix
Sinks	Faucets	Methven Promix Sink
WC cisterns	Stop taps 15mm	Methven
Urinal cisterns	Stop taps 15mm	Methven

Floor Coverings

Front Entry
All Toilets, Bathrooms, Kitchens s

Supply and lay vinyl to all these areas, vinyl to be coved up walls 100mm and capped with painted 15 x 15 timber bead. All laid in accordance with manufacturers specifications.

All other Areas

Allow the supply and laying of Cavalair Bremworth Concerto Carpets 100% wool carpet and underlay to the balance areas, Including stairs.

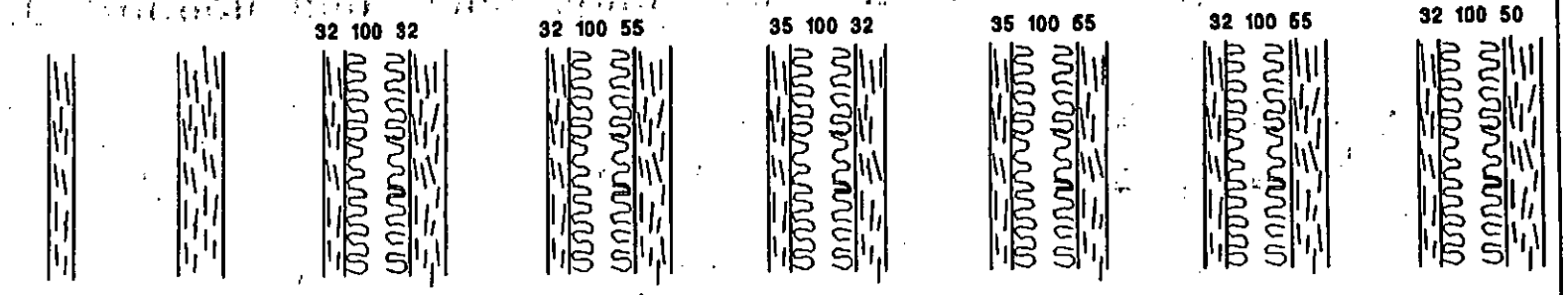
STC Rating (dB)

26	29	40	45	50	54	54-56	59

Triboard Wall

For construction details see Sheet 36

Note:
Ratings shown in bold are test values. Other values indicative only
If rating is critical contact Marshall Day Associates for further information



35 mm Triboard	38 mm Triboard	Two skins Triboard connected at edges	Two skins Triboard connected at edges	Two skins Triboard separated at edges	Two skins Triboard separated at edges	Two skins separated at edges with centre connection	Two skins Triboard separated at edges

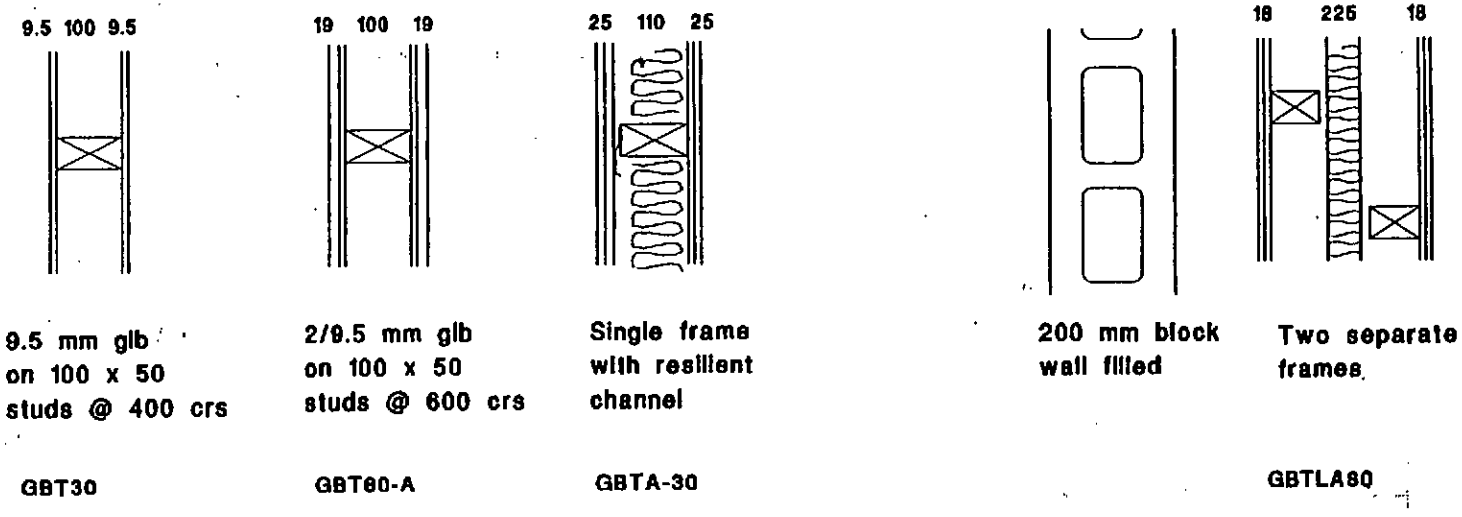
Marshall Day Report

140791RA

STC Rating (dB)

36	44	50	58	60

Alternative wall



9.5 mm glb on 100 x 50 studs @ 400 crs	2/9.5 mm glb on 100 x 50 studs @ 600 crs	Single frame with resilient channel	200 mm block wall filled	Two separate frames

Marshall Day pers comm:

Winstone Ltd catalogue:	GBT30	GBT60-A	GBTA-30	GBTLA80

Drawn for ACTRANZ by R F Gale & Associates
14 Apihai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard wall sound ratings

Board density 700kg/m3

Drawn RG
Checked
Date 24/2/94

Revised RG
Date 26/8

File No 93031
Sheet 39

STUD EQUIVALENT TABLES

PANELS FOR EXTERNAL LOAD BEARING WALLS

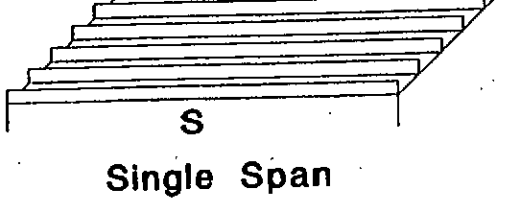
Referring to NZS 3604 Table 6.3 for studs in external loadbearing walls

Required by Table 6.3	Triboard equivalent
75 x 50 @ 600 75 x 50 @ 480	45 mm Triboard 36 mm LD Triboard 47 x 22 plywood battens @ 400
75 x 50 @ 400	24 mm Triboard 47 x 40 battens on flat @ 600
100 x 40 @ 600	32 mm Triboard 47 x 40 battens on flat @ 600
100 x 40 @ 480 100 x 50 @ 600	32 mm Triboard 47 x 47 battens @ 600
100 x 40 @ 400 100 x 50 @ 480	35 mm Triboard 47 x 47 battens @ 600
100 x 50 @ 400 100 x 75 @ 600 100 x 75 @ 480	35 mm Triboard 47 x 47 battens @ 400 or 47 x 69 on flat @ 600
100 x 100 @ 600 100 x 75 @ 400 100 x 100 @ 480	35 mm Triboard 69 x 47 battens @ 600
100 x 100 @ 400 150 x 50 @ 600	35 mm Triboard 69 x 47 battens @ 400
150 x 50 @ 480 150 x 50 @ 400	35 mm Triboard 96 x 47 battens @ 600
150 x 75 @ 600	35 mm Triboard 96 x 47 battens @ 480
150 x 75 @ 480	35 mm Triboard 96 x 47 battens @ 400
150 x 75 @ 400	45 mm Triboard 96 x 47 battens @ 400

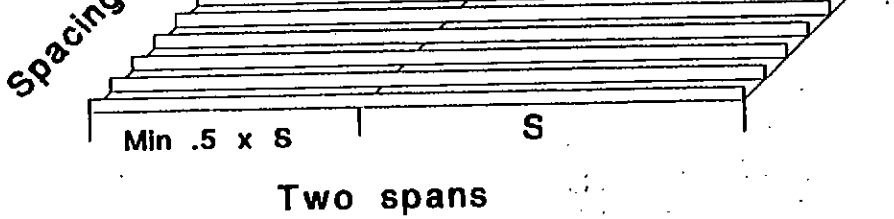
Table 6.3 D **Panels for internal loadbearing walls supporting floors**

Required by Table 6.3	Triboard equivalent
100 x 50 @ 600	35 or 38 mm without battens Engineering check required

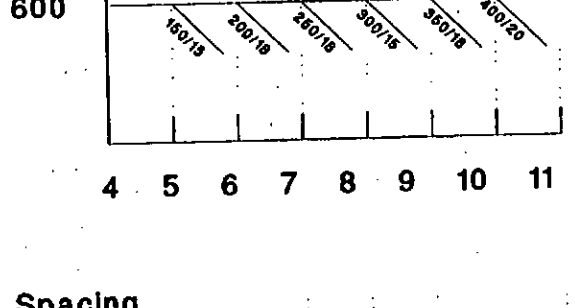
Steel C Section floor joist spans 1.5 kPa LL

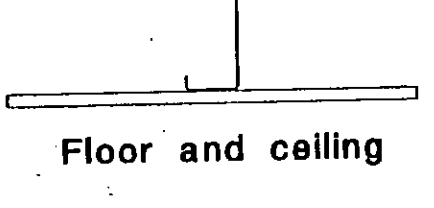


Single Span

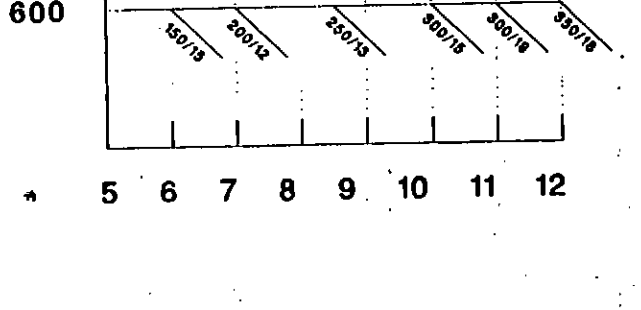


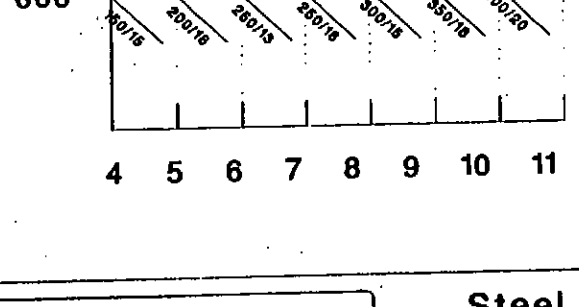
Two spans





Floor and ceiling





Floor only

For details see
Sheets 37 & 38

For details see sheets 38 & 39

Drawn for ACTRANZ by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Steel C section floor joists

Ex cold rolled purlins

Drawn RG
Checked
Date 24/2/94

Revised RG
Date 26/8

File No 93031
Sheet 36

Panel Bracing Values

Fixing	Panel width m	0.6	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
	S denotes screwed fixings, N nailed									
1.1 S		50	83	167	250	333	417	500	583	667
1.2 N		35	58	117	175	233	292	350	408	467

Lifting end of panel held down by 2 m length of external wall

2	30	60	100	150	200	250	300	350	400

Lifting end of panel held down by 6kN connection

P21									
3	21	35	70	105	140	175	210	245	280

1 m wide panels held down by screwed battens at 600 crs

4.1 S	4	12	49	109	194	304	438	595	778
4.2 N	3	9	36	82	146	228	328	447	583

External wall panel fixed to floor with battens at 600 crs

4.3	3	7	29	66	117	182	263	357	467
4.4	5	15	58	131	233	365	525	715	933

Type 4.3 has two nails into batten, 4.4 has four into board

External wall panel fixed to concrete floor with framing anchors at 600 crs

5	7	11	22	33	44	55	66	77	88

Lifting end of panel held down by weight of 2m length of internal wall

Fixing	Panel width m	0.6	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
6		4	7	15	22	29	36	44	51	58

Lifting end of panel held down by weight of trusses and ceiling crossing

7	1	2	11	25	45	70	101	137	170

Lifting end of panel held down by weight of trusses and ceiling parallel

8	1	2	9	20	36	57	82	111	146

Wall panel resisting overturning by its own weight

205	5	9	18	27	36	46	55	64	73

Lifting end of panel held down by weight of 2m of wall in floor above

206	2	5	19	42	75	117	169	230	300

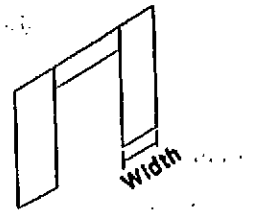
Lifting end of panel held down by weight of 2m of floor in floor above

207	15	25	50	75	100	125	150	175	200

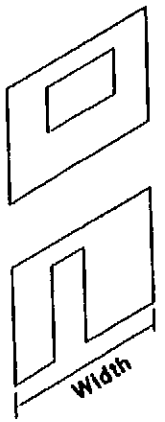
Lifting end of panel held down by weight of 2m of floor in floor above bearing on wall fixed at right angles

Bracing values for the same panel using various fixings may be added

Walls broken by large openings eg ranch sliders, with separate lintels are considered separate walls



Walls with small openings, eg windows up to 2m wide x 1200 deep and internal doors with continuous lintels 400 deep may be considered to be one length



All walls fixed to floor to prevent sliding. Use any detail on Sheet 1
Panels 2450 high

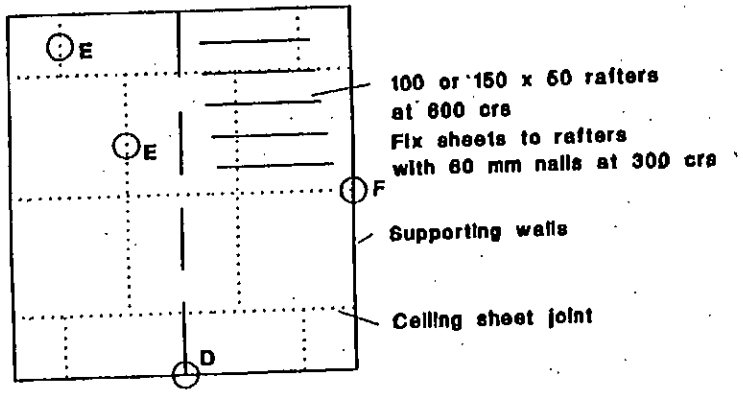
Drawn for ACTRANZ by R F Gale & Associates
14 Aphal St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Details
Panel bracing values

Drawn R G
Checked
Date 24/3/94

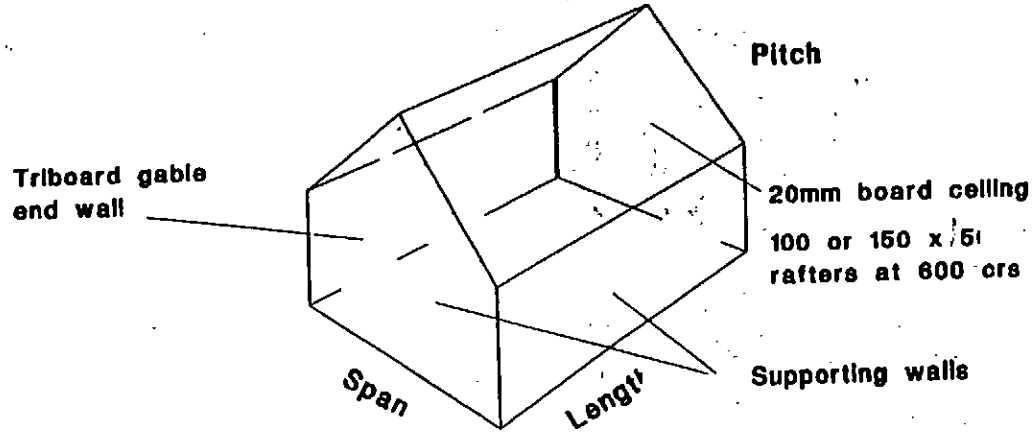
Revised RG
Date 29/8/95

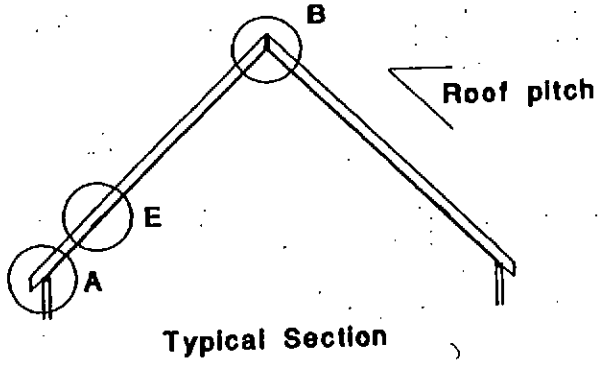
File No 93031
Sheet 30



Typical Plan

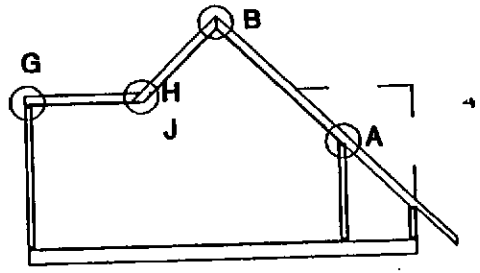
Showing sheet layout



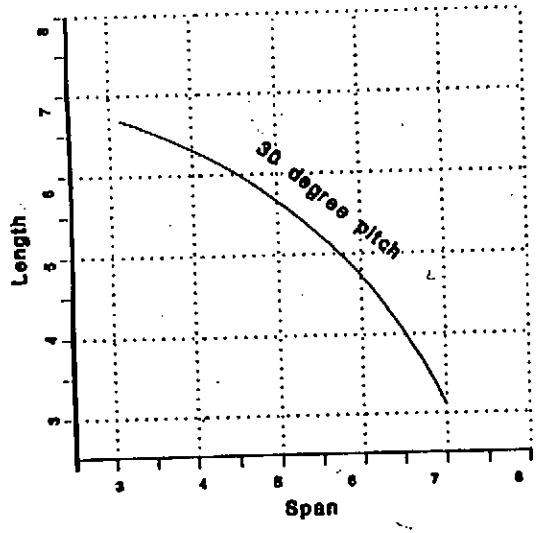


Typical Section

For details see Sheet 19



Section through dormer



Drawn for ACTRANZ by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

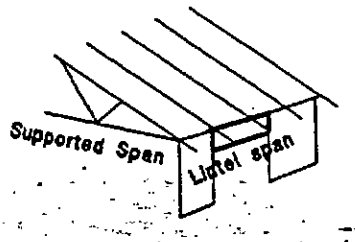
Triboard Details

Diaphragm roof general arr

Drawn R G
Checked
Date 28/1/94

Revised RG
Date 26/8

File No 93031
Sheet 28



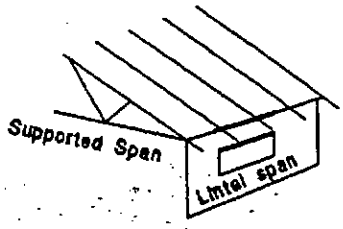
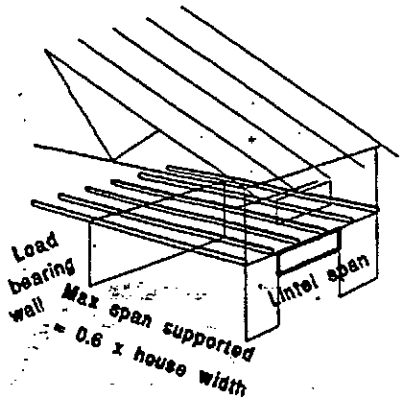


Table 6.7
Triboard Lintels Cantilevered Lintels see Page 31

Lintel Span	Maximum span of member supported	Roof only or roof and walls only where lintel thickness (mm) is			Roof only or roof and walls only where lintel thickness (mm) is		
		32	36	2 / 36	32	36	2 / 36
A Light roof		Separate lintel			Lintel integral with panel		
1.8	8	231	224	178	135	131	104
	12	264	256	204	155	150	119
2.1	8	284	275	218	166	161	128
	12	325	315	250	190	184	146
2.4	8	339	329	261	198	192	153
	12	388	376	299	227	220	175
2.7	8	396	385	305	232	225	179
	12	454	440	350	265	258	204
3.0	8	456	443	351	267	259	206
	12			402	305	296	235
3.3	8			399	303	294	233
	12			457	347	337	267
3.6	8			448	340	330	262
	12				389	378	300
4.2	8	400 + 2/2 angle brace					
6.0	8	400 + 50 x 8 flat bar					
B Heavy roof		Separate lintel			Lintel integral with panel		
1.8	8	285	277	220	167	162	129
	12	327	317	252	191	185	147
2.1	8	350	340	270	205	199	158
	12	401	389	309	235	228	181
2.4	8	419	406	323	245	238	189
	12			369	280	272	216
2.7	8			377	287	278	221
	12			432	328	318	253
3.0	8			434	330	320	254
	12				377	366	291
3.3	8				374	363	288
	12				429	416	330
3.6	8				421	408	324
	12						371



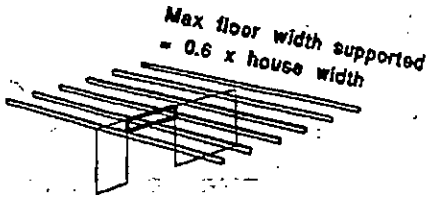
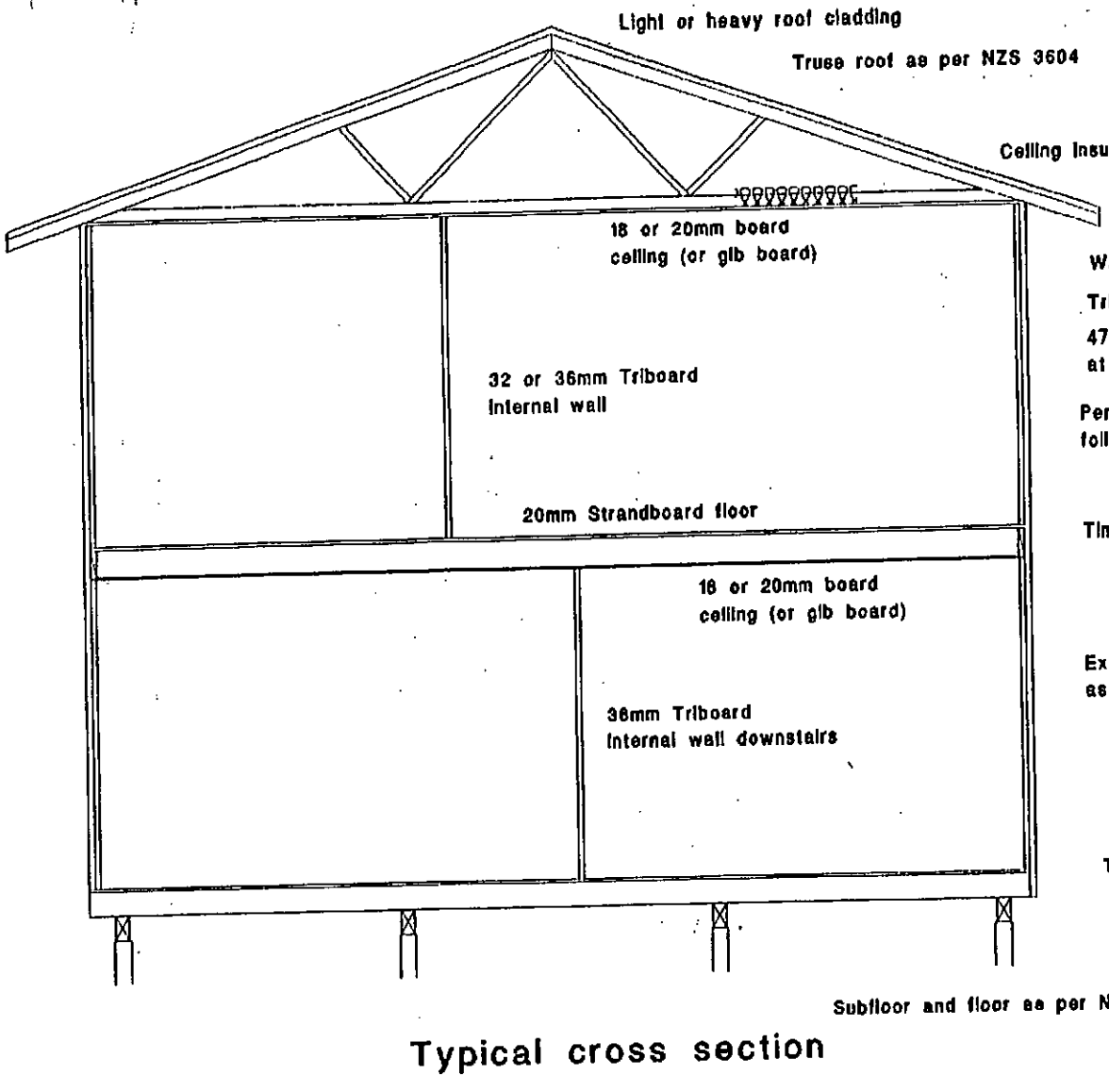


Table 6.7 D
Triboard Lintels Downstairs

Lintel Span	House width	Roof, wall and floor where lintel thickness (mm) is 36	2 / 36	Roof, wall and floor where lintel thickness (mm) is 36	2 / 36	Floor and partitions where lintel thickness (mm) is 36	2 / 36
Light roof		Separate lintel		Lintel integral with panel		Separate lintel	
1.2	6	239	189	140	111	213	169
	7	250	199	146	116	223	177
	8	260	207	152	121	233	185
	9	270	215	158	125	241	192
1.5	6	321	255	188	149	286	227
	7	337	267	197	156	300	238
	8	351	278	205	163	313	249
	9	364	289	213	169	325	258
1.8	6	410	325	240	190	365	290
	7	430	341	251	199	383	304
	8	447	355	261	208	399	317
	9		368	271	215	415	329
2.1	6		399	294	234	449	356
	7		419	309	245		373
	8		436	321	255		389
	9		452	333	265		404
2.4	6			352	279		425
	7			369	293		446
	8			384	305		
	9			398	316		
2.7	6			411	326		
	7			432	342		
	8			449	356		
	9				370		

2.5



Typical cross section

Wall R value 1.04

Triboard wall panel

47 x 47 battens at 600crs

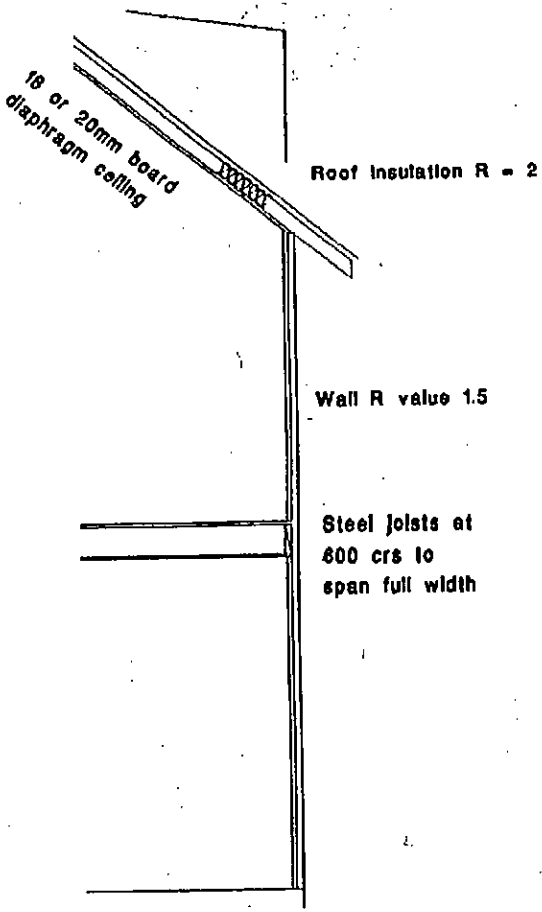
Perforated reflective foil

Timber joists

Exterior cladding as selected

Timber or concrete floor

Options



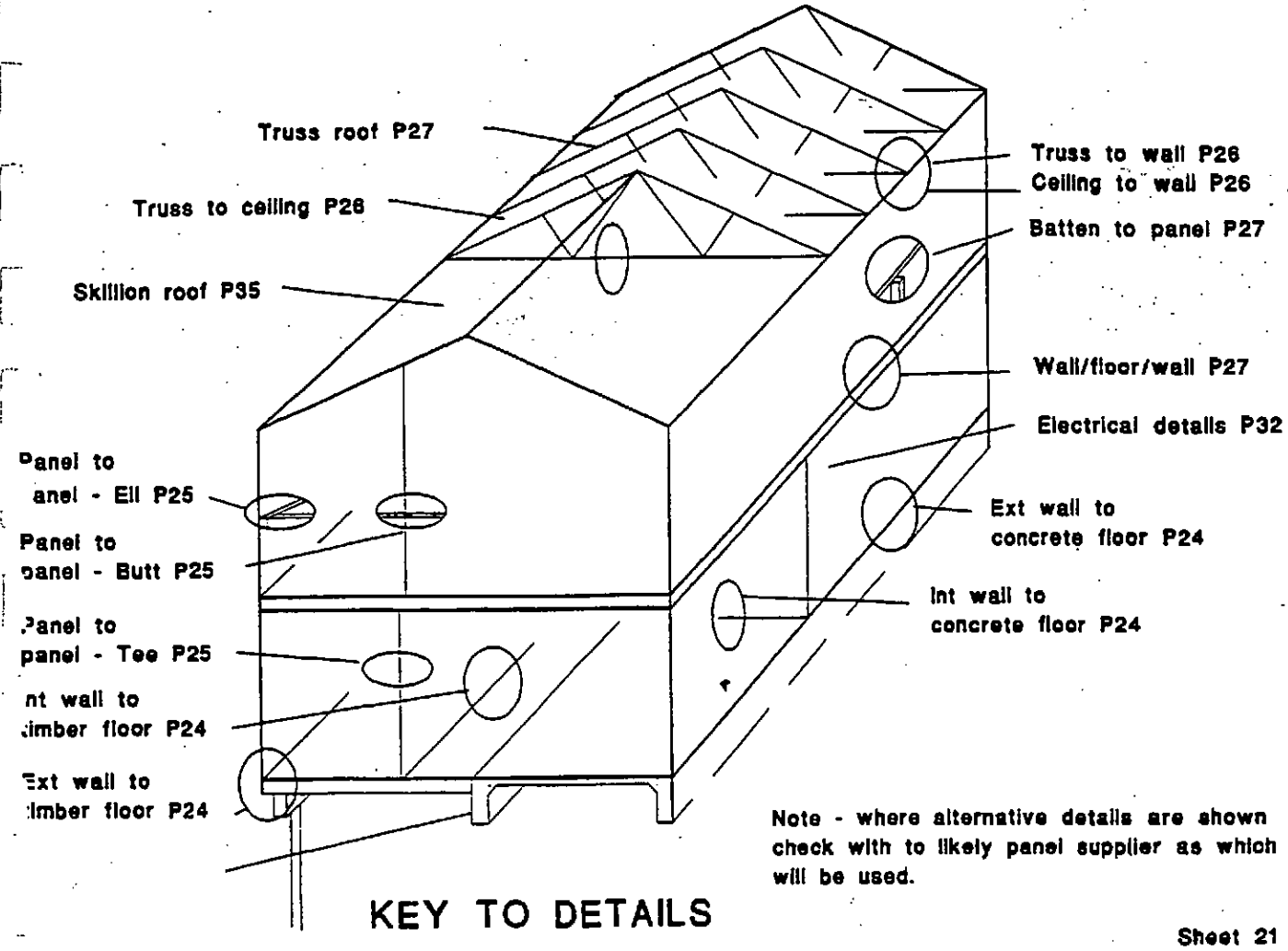
Drawn for ACTRANZ by Gale Clarke Associates
14 Aphai St Orakei Ph/Fax 09 521 0364
3 B Waterloo St Howick Ph/Fax 09 534 6772

Triboard Residential Details
Typical Cross section

Drawn R G
Checked
Date 21/1/94

Revised DT
Date 23/7/96

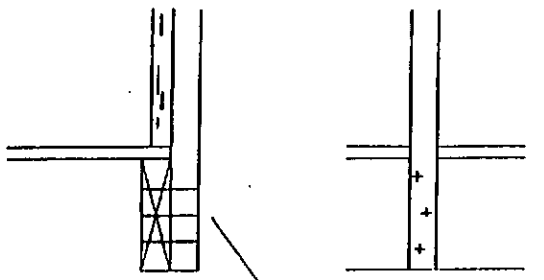
Job No 93031
Sheet 15



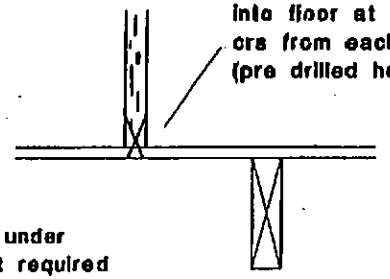
Note - where alternative details are shown check with to likely panel supplier as which will be used.

KEY TO DETAILS

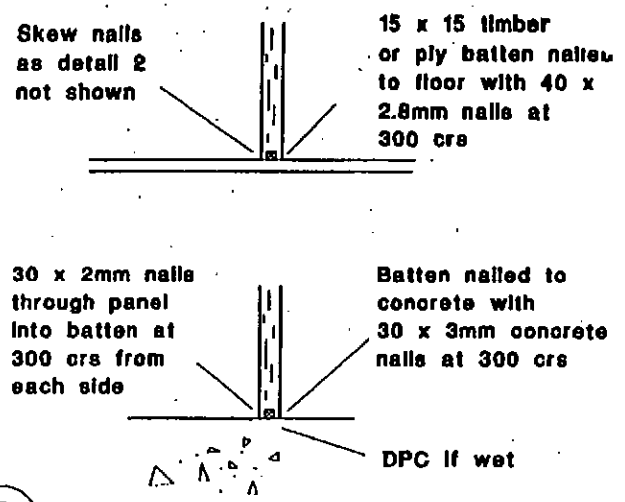
Sheet 21



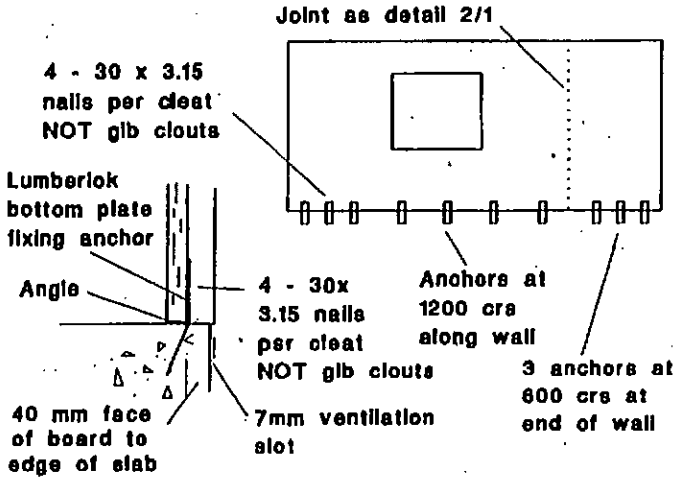
1 Exterior wall to timber



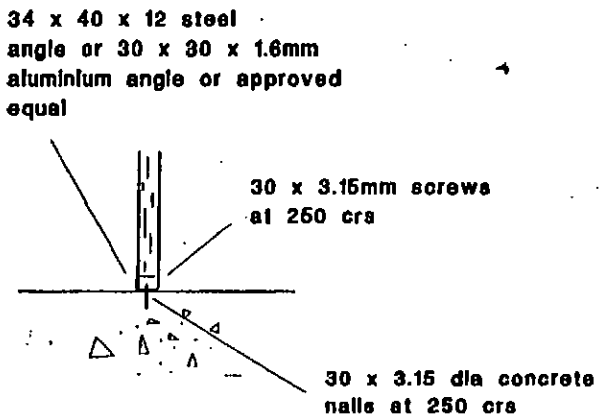
2 Interior wall to timber



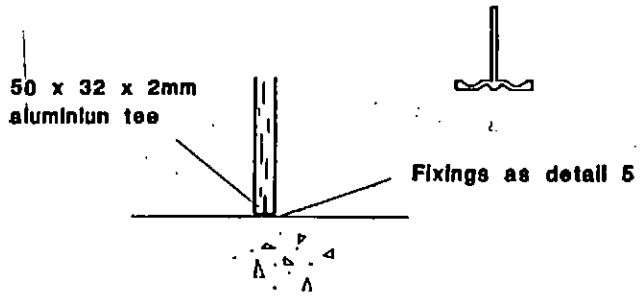
3 Interior wall using batten



4 Exterior wall to concrete



5 Interior wall to concrete



Exterior wall similar, use anchors as detail 4

6 Interior wall to concrete

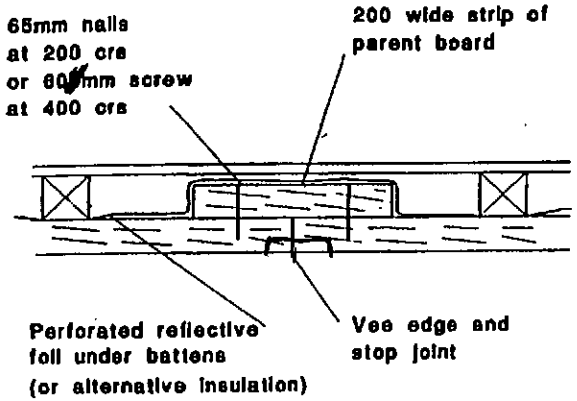
Drawn for ACTRANZ by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard details
Panel to floor fixings

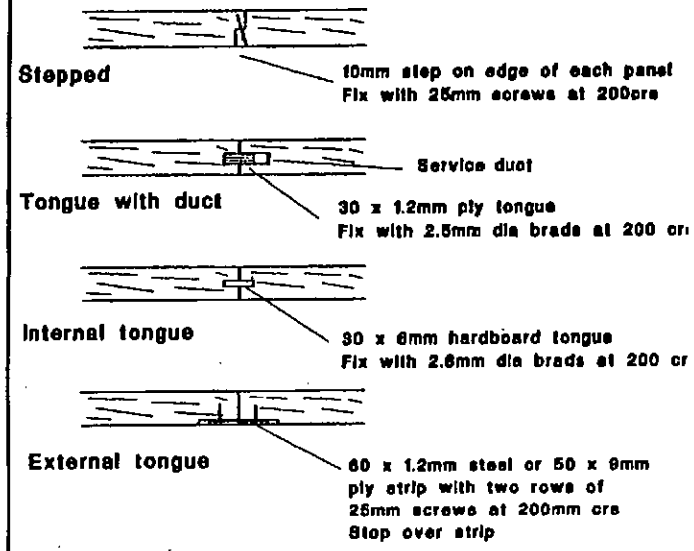
Drawn: D Ta
Checked: RG
Date: 14/3/94

Revised RG
Date 26/8

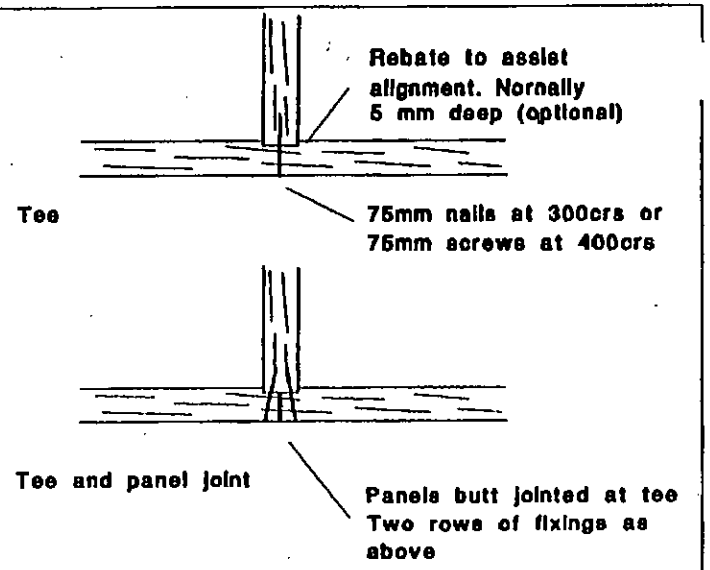
File No 93031
Sheet 1



1 Exterior wall butt joint

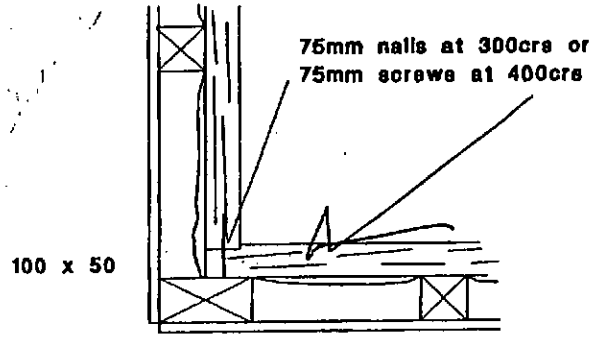


2 Interior wall butt joint

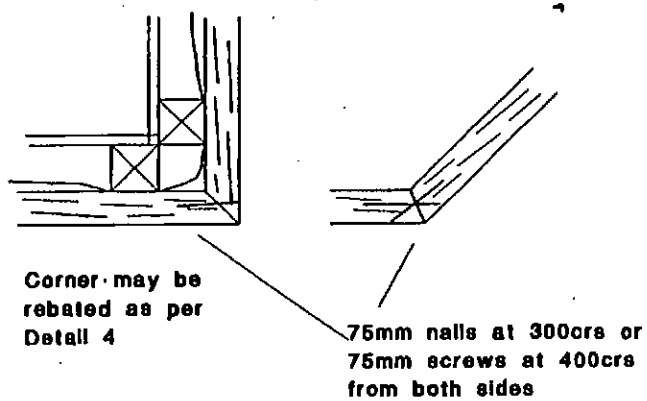


3 Tee joint

Note: PVA, Sturdiband, or similiar glue may be used to assit with site assembly if it is not structured.

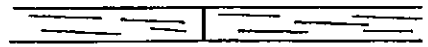


4 Outside corner



5 Inside corner mitred

Structural joints in panel may be factory glued using Polymer Developments Chemtec T88 or eqivalent (Epoxy). When sanded and painted they are not visible and may be ignored for normal structural and practical purposes. Further information on request.



6 Factory glued joints

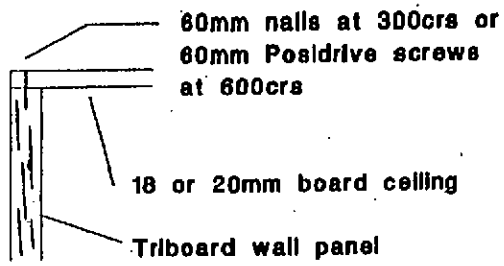
Drawn for ACTRAN by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Details
Panel to panel fixings

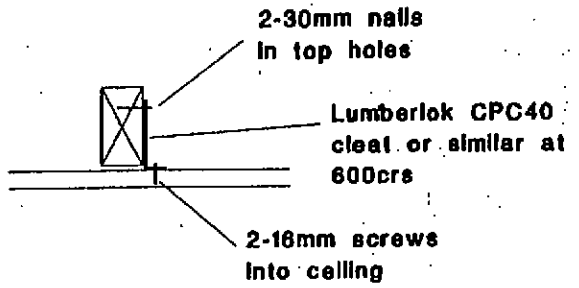
Drawn D Ta
Checked RG
Date 20/2/94

Revised RG
Date 6/10/94

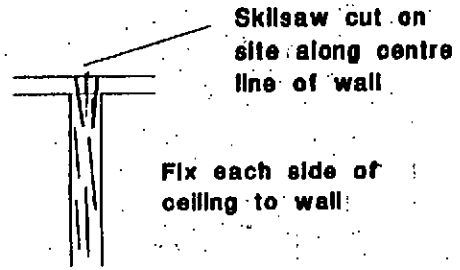
File No 93031
Sheet 2



1 Wall to ceiling

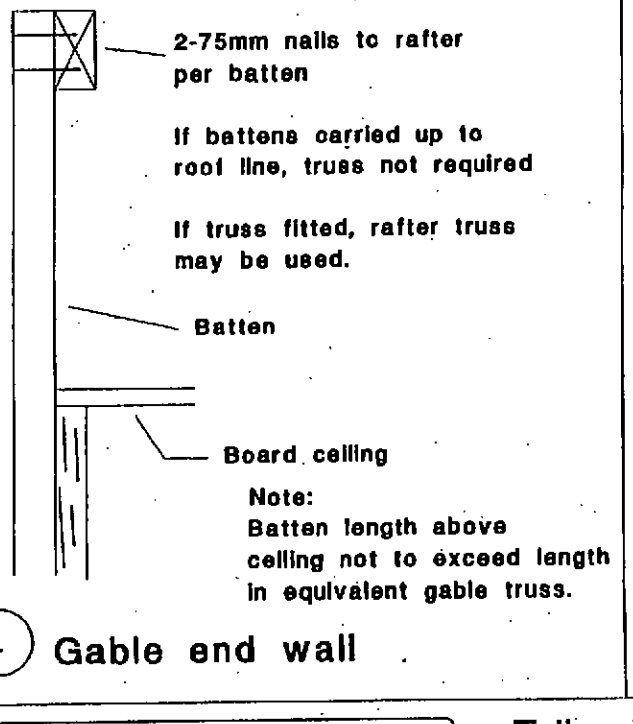


2 Ceiling to truss



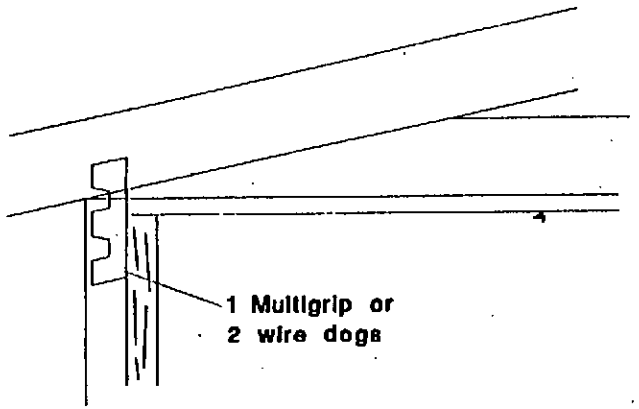
Max 4m apart or room size.

3 Ceiling movement joint



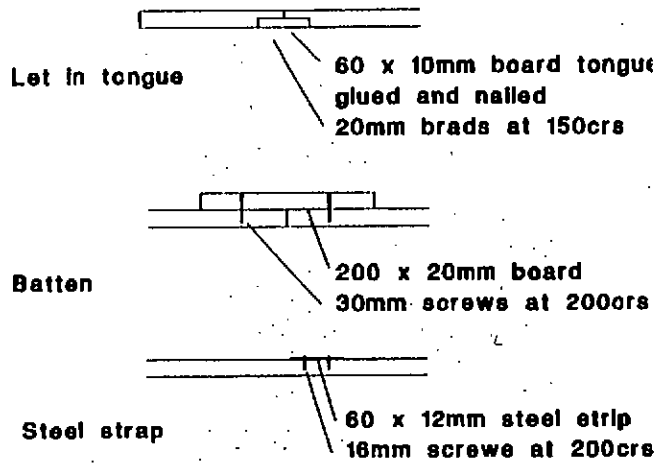
Note:
Batten length above ceiling not to exceed length in equivalent gable truss.

4 Gable end wall



Note:
Multigrip recommended as wire dog legs dimple inner face of board.

5 Truss to wall



Note:
Stop ceilings with flexible plaster to prevent cracking

6 Ceiling site butt joint

Drawn for ACTRAN by R F Gale & Associates
14 Aphel St Orakei AUCKLAND 5
Ph/Fax 09 521 0384

Triboard Details
Panel to roof fixings

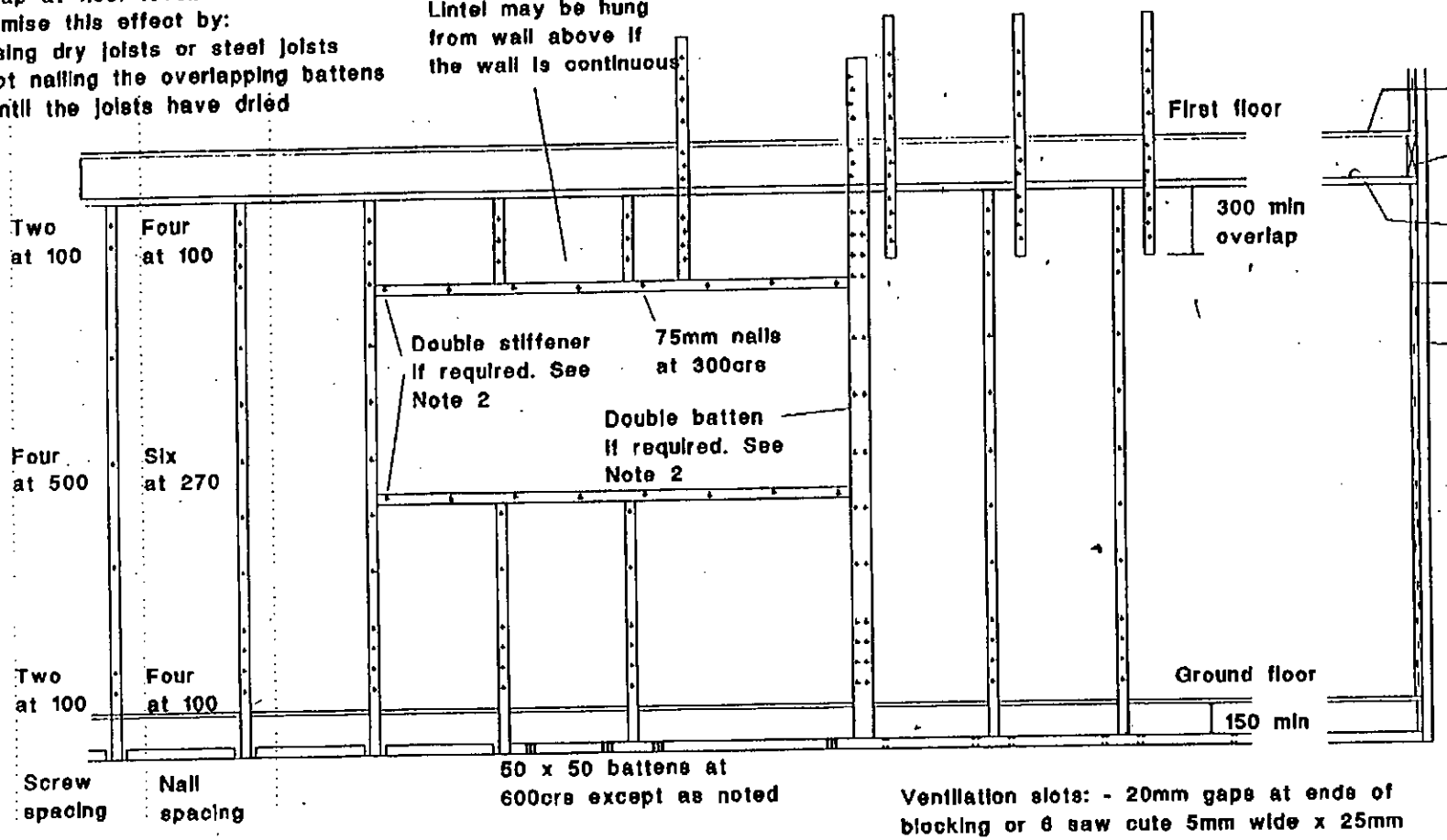
Drawn D.TA
Checked RG
Date 17/3/94

Revised RG
Date 26/8

Job No 93031
Sheet 3

Upper floor joist shrinkage
A wet 200 x 50 joist will shrink 6-8mm a it dries. This will create a gap at floor level.
Minimise this effect by:
- using dry joists or steel joists
- not nailing the overlapping battens until the joists have dried

For two storey construction extend battens to overlap the "other" panel by 300mm. Fix to the "other" panel with 4-75 mm nails.



Note 3
When fixing double battens to acheive R = 1.58 wall tack inner battens with 30 mm nails. Use nails or screws as shown to fix second battens

Note 1
Use double batten for 100 x 50) beside openings 2400 or more wide and more than 600 from a stiffening panel. (Panel at 90 degrees)
Use 100 x 50 beside lower floor windows 1000 or greater wide.

Note 2
Use double batten (or 100 x 50) stiffener on lintel and sill edge on windows more than 2000 wide in high wind areas.

Ventilation slots: - 20mm gaps at ends of blocking or 6 saw cute 5mm wide x 25mm deep or two 20mm dia holes per batten space.

Nails: 75mm hd galv skewed to prevent dimpling of surface
Screws: 75mm roofing screws 4.2mm dia

Note: On thie drawing nail fixings are shown. Sorewe may be ueed instead. Use two 75mm screws for every three nails shown.

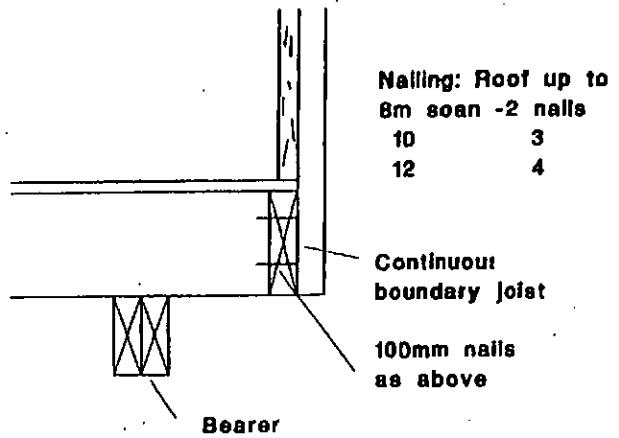
Drawn for ACTRANZ by R F Gale & Associates
14 Apihai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Details
Batten fixings

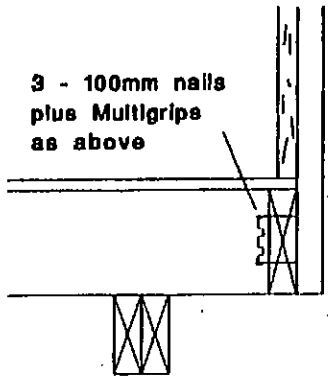
Drawn D.TA
Checked
Date 19/3/93

Revised RG
Date 22/7/96

Job No 93031
Sheet 4

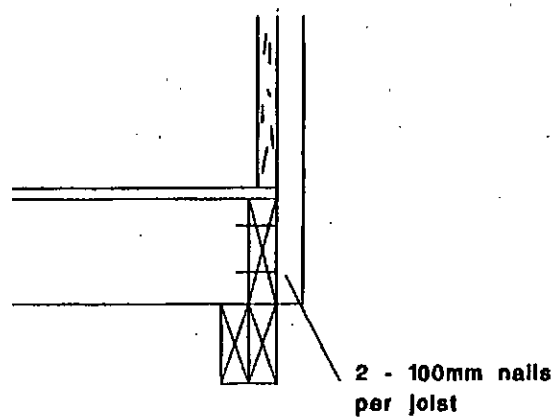


1 Cantilevered joists - light roof



Multigrips:
to 6m span
One Multigrip to
every second joist
to 10m span
One Multigrip per
joist
to 12m span
Two Multigrips per
joist

2 Cantilevered joists - heavy roof



3 Boundary joist supported on a bearer

Nail nogs as per NZS 3604

4 Nogs between joist:

5

6

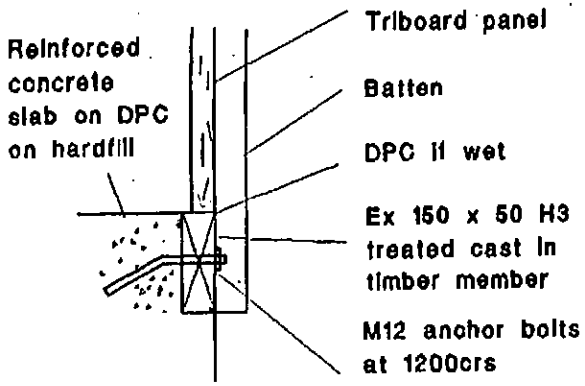
Drawn for ACTRANZ by R.E. Gale & Associates

Triboard Details

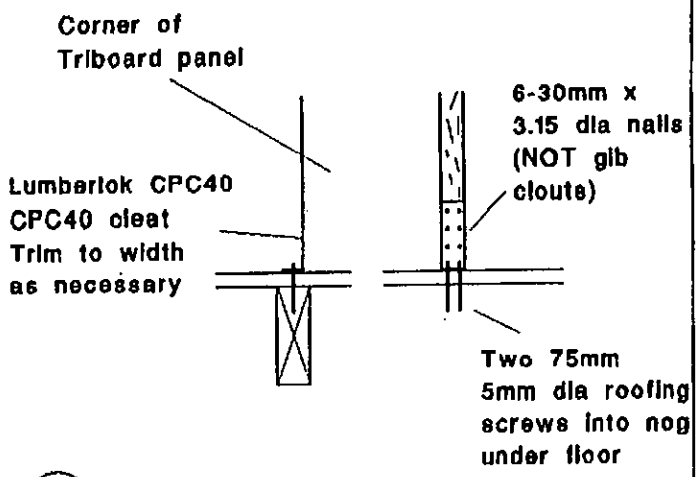
Drawn D.TA

Revised RG

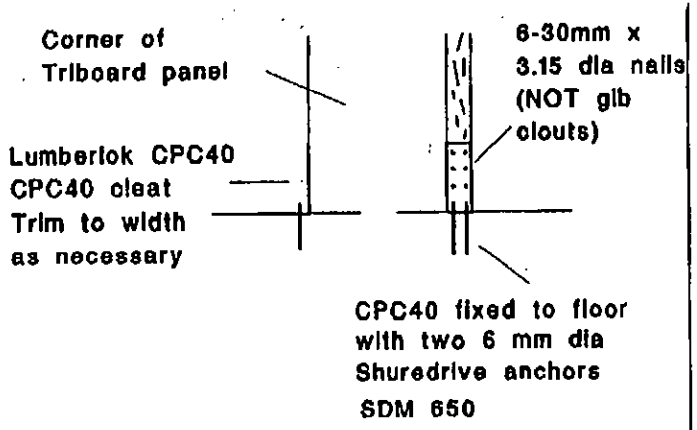
File No 93031



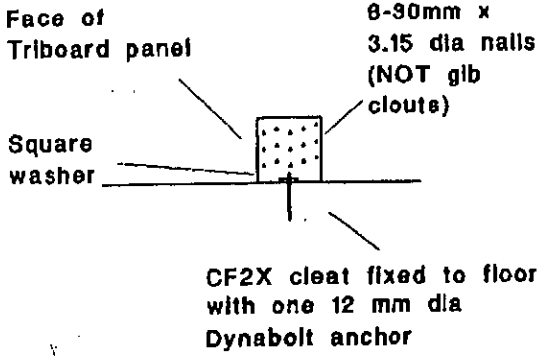
1 Concrete floor slab cast in boundary joist



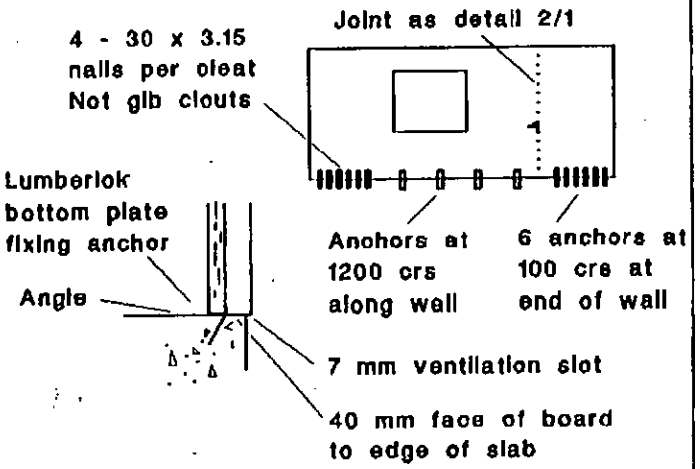
2 6 kN fixing to timber floor



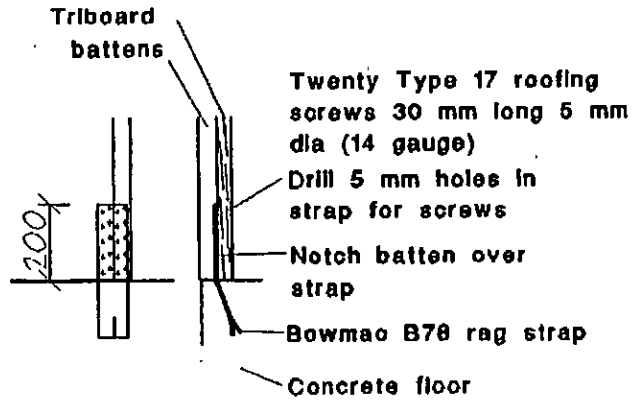
3 3 kN fixing to concrete floor



4 6 kN fixing to concrete floor



5 Exterior wall to concrete 28 kN fixing



6 Exterior wall to concrete 34 kN fixing

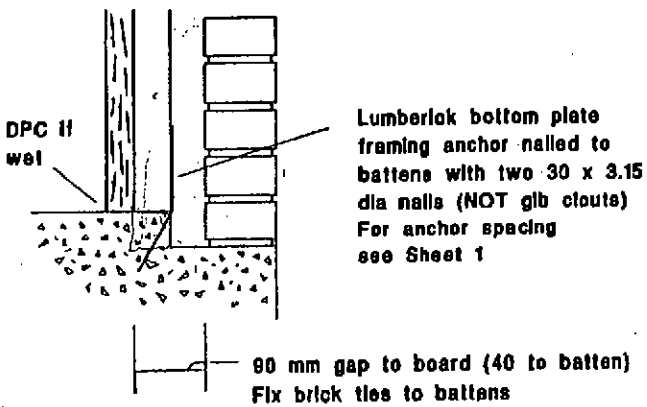
Drawn for ACTRANZ by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 6
Ph/Fax 09 521 0364

Standard Triboard Details
Special fixings I

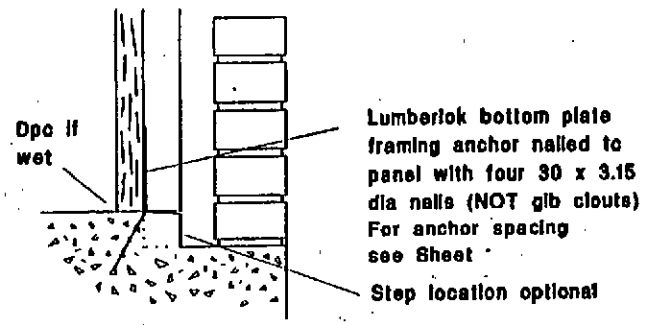
Drawn D.TA
Checked
Date 19/3/94

Revised DT
Date 23/7/96

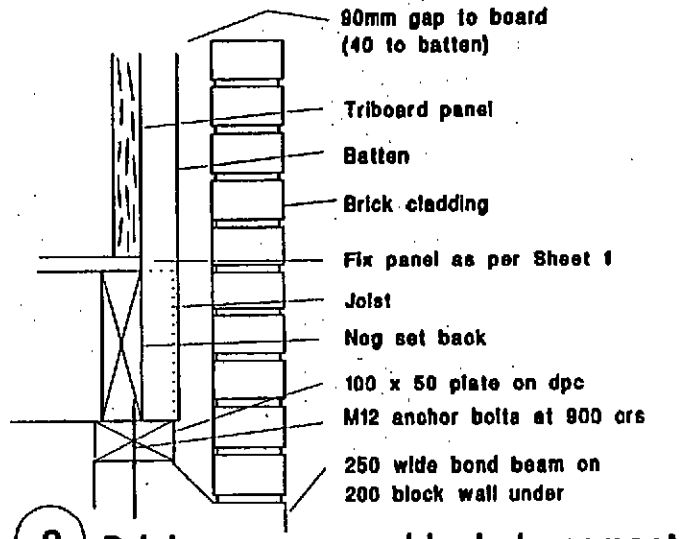
File No 93031
Sheet 6



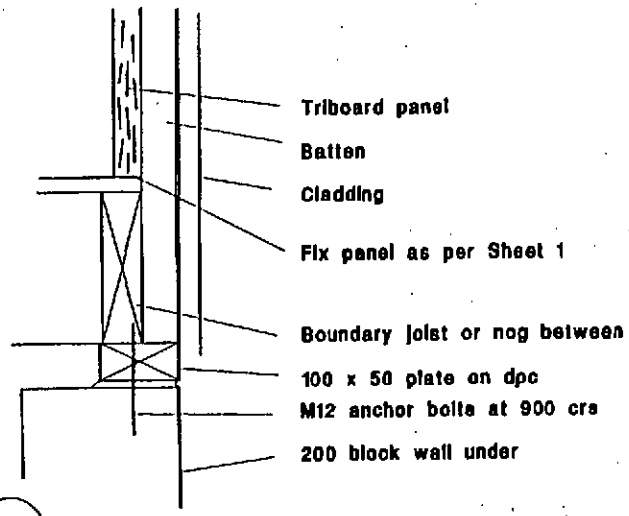
1 Anchor nailed to batten



2 Anchor nailed to panel



3 Brick veneer on block basement



4 Timber floor on block base

5

6

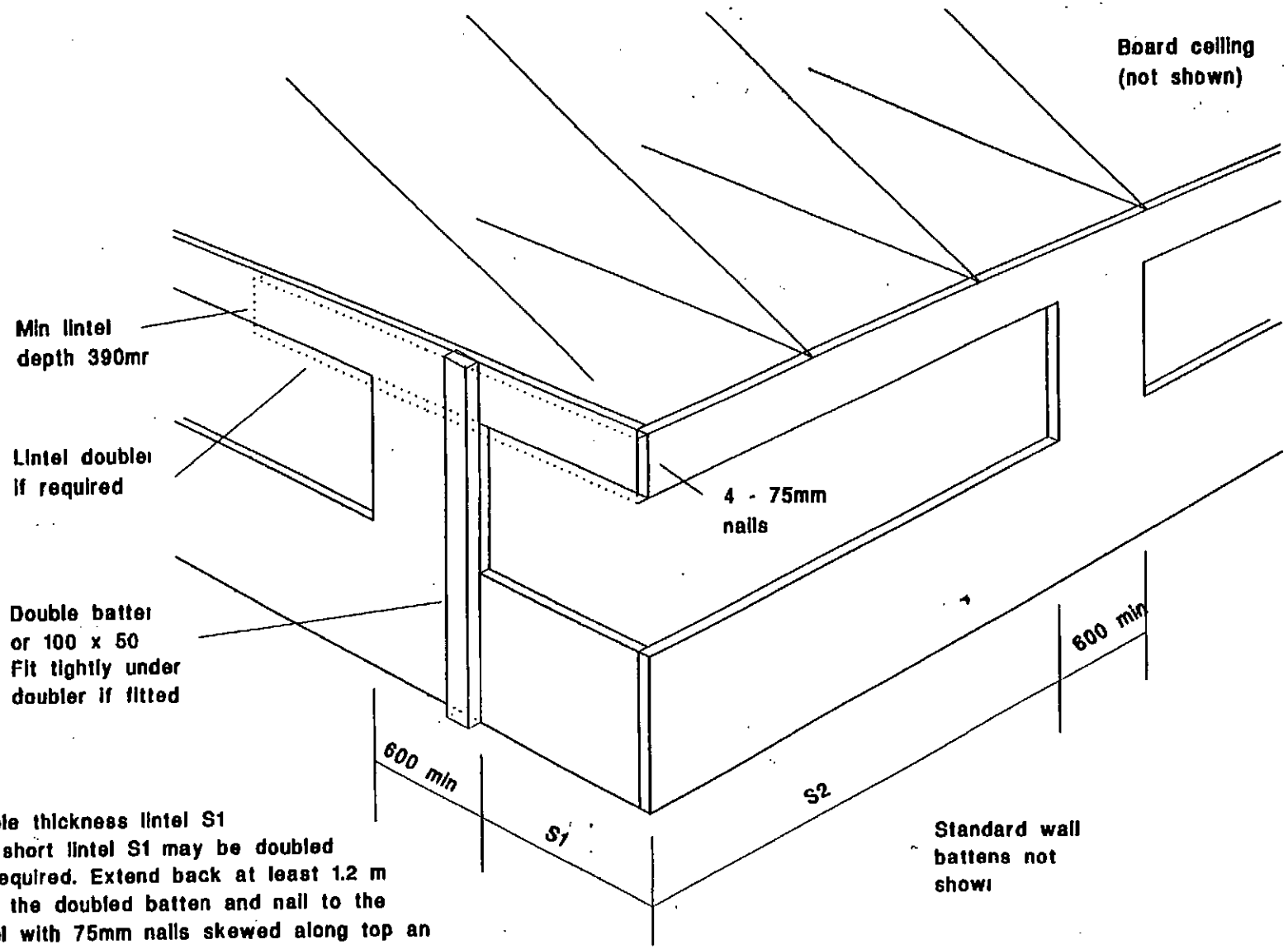
Drawn for ACTRANZ b R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Details
Panel to floor fixings - masonry

Drawn R G
Checked
Date 20/2/94

Revised RG
Date 26/8

File No 93031
Sheet 7



Double thickness lintel S1
The short lintel S1 may be doubled as required. Extend back at least 1.2 m past the doubled batten and nail to the panel with 75mm nails skewed along top an bottom edges.

Standard wall battens not shown

Span Table - gable end
Light roof
600mm overhang
Rafter truss span 8m max
Single thickness

S1	S2
1.0	2.8
1.2	2.2
1.4	1.9
1.6	1.7

Double thickness

1.6	3.0

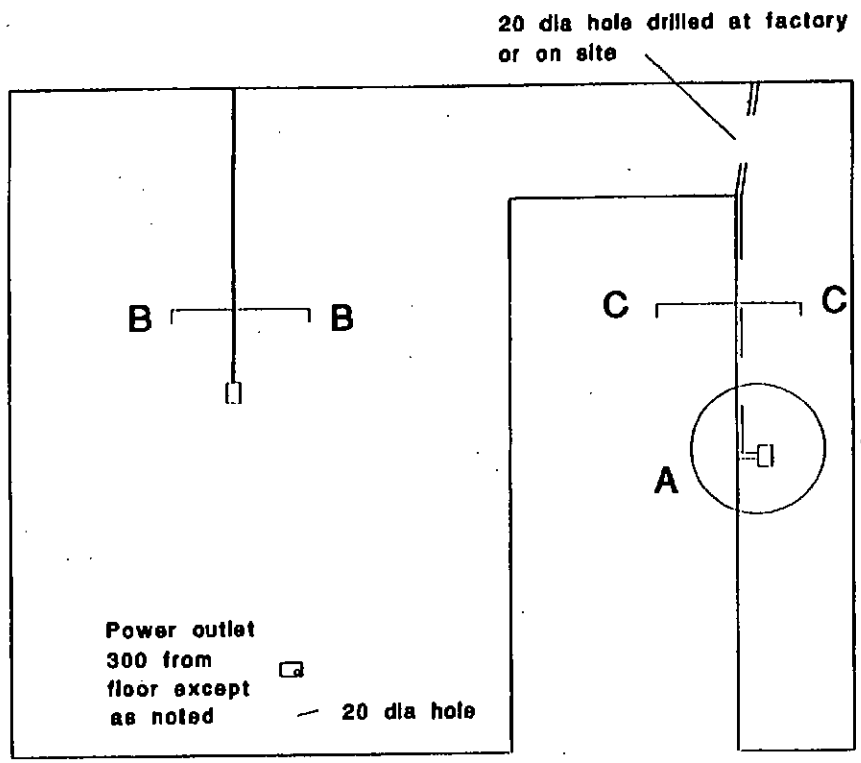
Drawn for ACTRANZ by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Details
Corner lintels

Drawn RG
Checked
Date 7/5/94

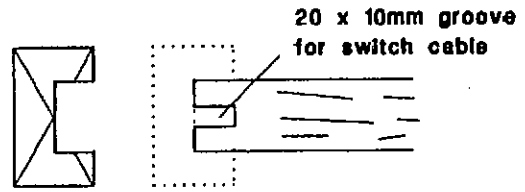
Revised RG
Date 26/8

File No 93031
Sheet 12

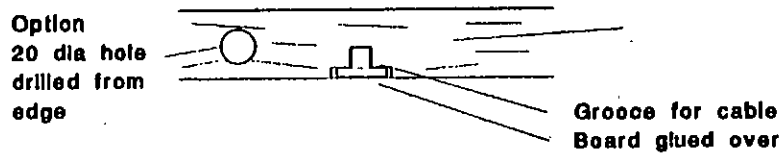


Wall Elevation - typical details

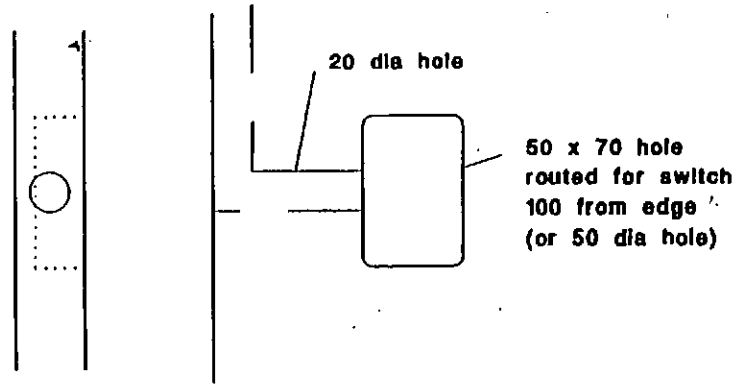
Notes: Save 30% of cable by running the live wire from light to light over the ceiling with a branch to each switch
Fixtures on outside walls do not require ducting
Switch boxes are not required
Ducts may be cut at factory or on site - check with manufacturer



Section C Duct behind door jamb



Section B Duct in mid wall



Detail A Switch beside door

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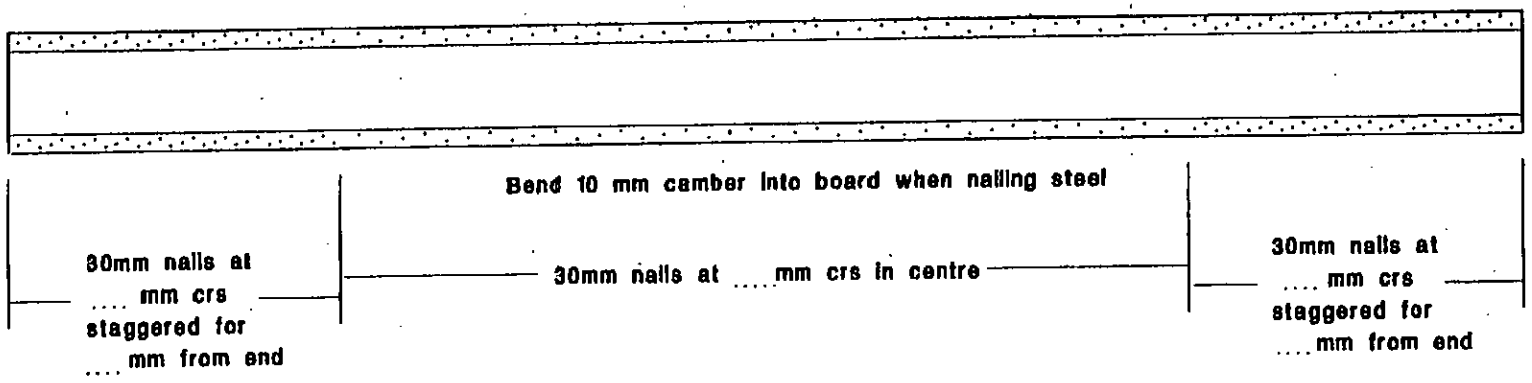
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

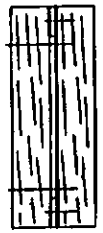
Standard Details
Electrical services

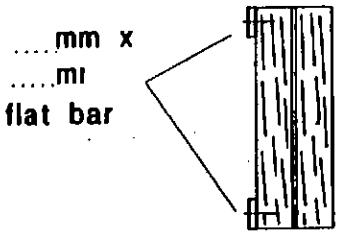
Drawn R G
Checked
Date 16/2/94

Revised RG
Date 26/8

File No 93031
Sheet 14







(1) Flat bar on side between two beams

(2) Flat bar on side at corners

(3) Flat bar on top and bottom edges

Note:
Nails to be 30 x 3.55 dia gutter bracket nails
NOT gib clouts

Alternative bar arrangements

Note: Bar size and nail spacing to be given by the designer

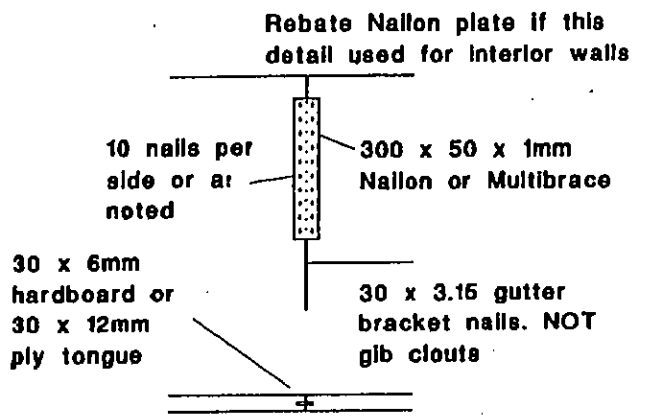
Drawn for ACTRANZ b R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Standard Details
Steel stiffened lintels

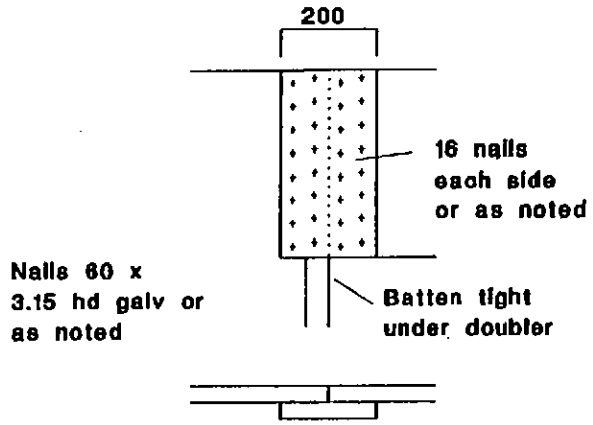
Drawn D.TA
Checked
Date 11/5/94

Revised RG
Date 26/t

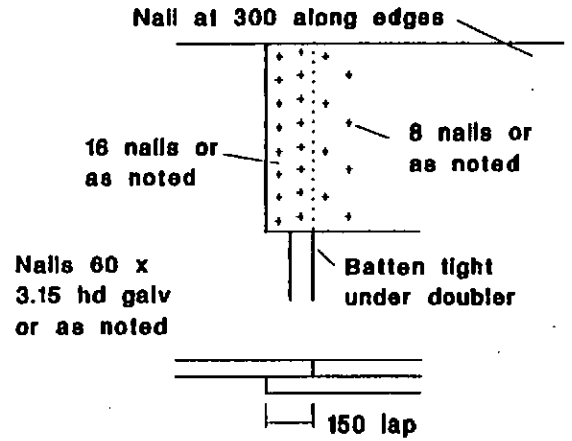
File No 93031
Sheet 16



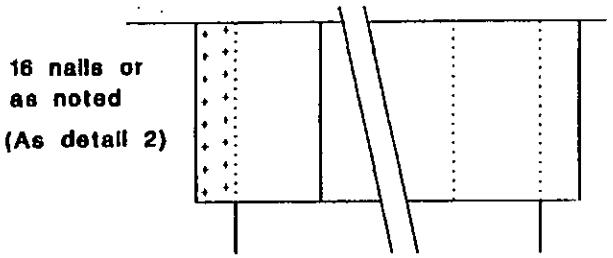
1 Separate lintel with Nailon splice plate



2 Separate lintel with Triboard blocking



3 Separate lintel with full length doubler



Lintels over 4m long factory glued to length using epoxy glue & plywood tongue.
Stagger joints when assembling layers on site.

4 Lintel (and doubler) over 4m long

Lintel as per Table 6.7
Angle Brace 2 or 4 lengths as specified.
Nail at 200crs with 30 x 3.15 dia gutter bracket nails at 100 crs for 1m from each end.

5 Lintel with angle brace stiffening

Lintel as Table 6.7 or as specified. Full length flat bar as specified. Nail to inner lintel with 30 x 3.55 dia gutter bracket nails at 150crs and 75crs from 1m from each end.
Prop 6m lintel up in centre to give 6mm camber before nailing bar to first layer of Triboard.

6 Lintel with steel stiffening

Drawn for ACTRANZ by R F Gale & Associates
14 Aphal St Orakei AUCKLAND 5
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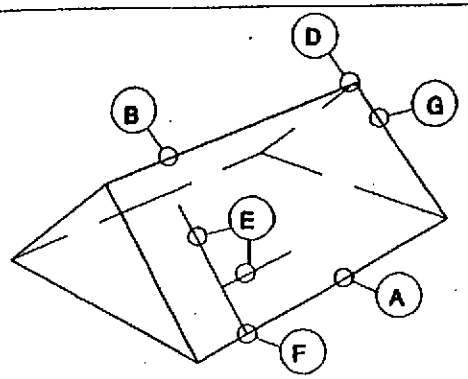
Triboard details
Lintel fixings

Drawn RG
Checked
Date 2/9/94

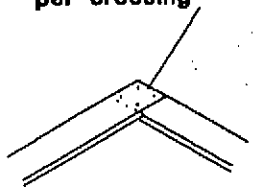
Revised RG
Date 26/

File No 93031
Sheet 18



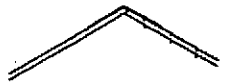
Key to details

4 - 100 mm nails per crossing



Detail B

Ridge



Nailon strip 2mm x 50 wide x 300 long. Nail with 30 x 3.5mm nails in 2 out of 3 holes evenly spaced Hammer to 20mm radius over apex.

Detail D

Ridge at support wall

Erection Sequence

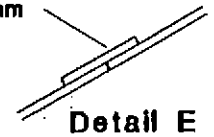
This roof is not self supporting until complete - Take care.

1 - Stand side and end walls.
2 - Join sheets to give one length from ridge to eaves
3 - Ereot temporary supports on ridge line and mid slope
4 - Fix battens to underside of ceiling sheet to prevent sliding
5 - Place sheets along full length both sides and fix sheets together
6 - Fix to gable end or hip and ridge
7 - Lay rafters and purlins over and fix
8 - Complete all fixings as per details
9 - Place insulation, wiring, roofing
10 - Remove props

Notes:

Nails - 30mm are 30 x 3.15 dia gutter bracket nails. NOT gib clouts.
- 60mm are 60 x 2.8mm hd galv flooring nails
Board - 18 or 20mm Triboard or equal

200mm wide strip of board. Fix with PVA and 30mm screws at 150crs to each edge

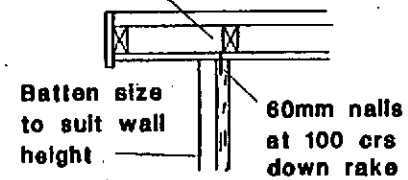


Detail E

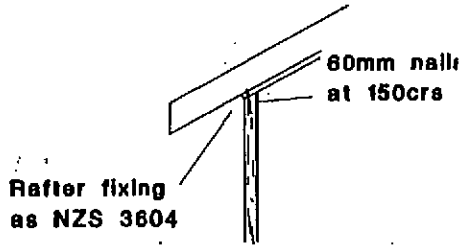
Horiz sheet joint

Sloping joints similar or as per Detail 6 Sheet 3 in Triboard Manual

Fix rafter to wall with CPC 40 cleats at 1200 crs
One 75 mm screw per cleat into wal



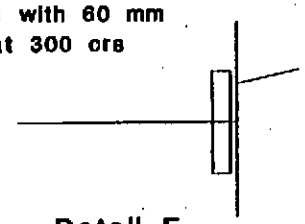
Detail G



Detail A

Eaves

Fix sheets to rafters with 60 mm nails at 300 crs



50mm wide x 1mm Nailon x 300 lon
Fill 2 of 3 holes with 30mm nails
Or all holes with 18mm screws

Detail F

Sheet eaves joint

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14 Aphai St Orakei AUCKLAND 5
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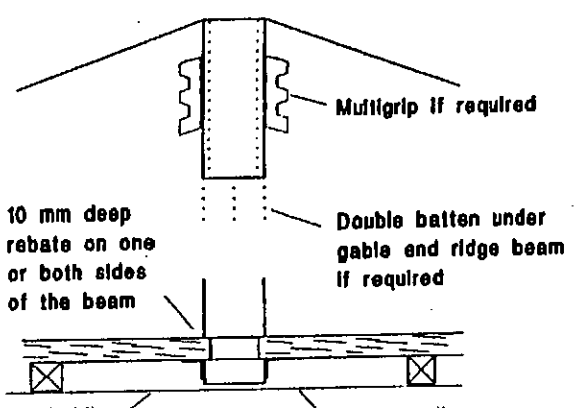
Triboard
Diaphragm roof details I

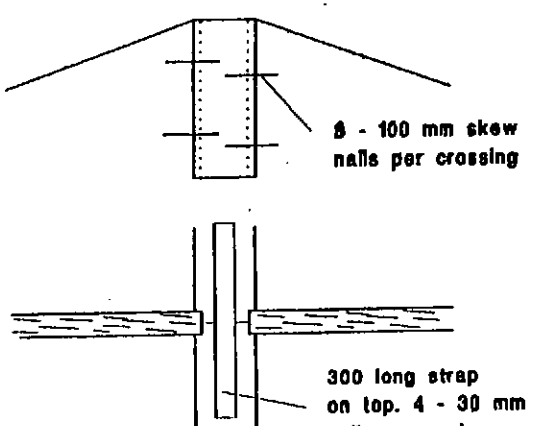
Drawn R G
Checked
Date 31/5/94

Revised RG
Date 26/8

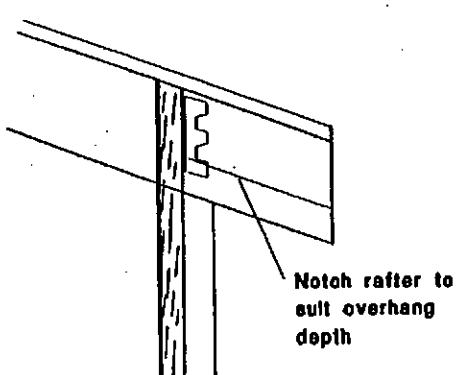
File No 93031
Sheet 19



1 Ridge beam fixing - ext wall



2 Ridge beam fixing - int wall



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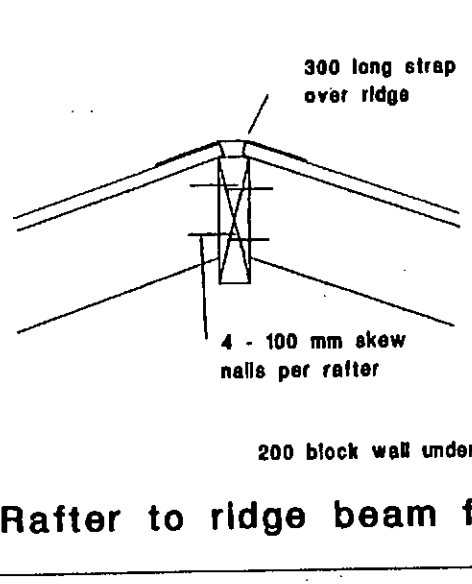
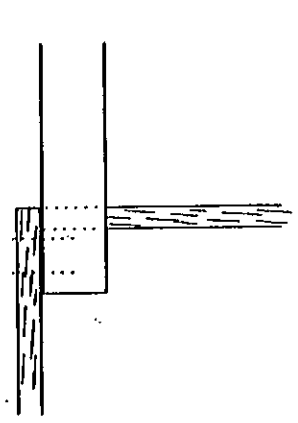
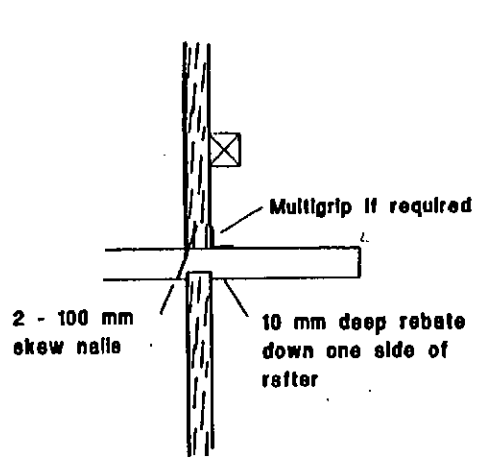


4 Rafter to ridge beam fixing



5 Beam onto wall at corner



6 Rafter to wall fixing

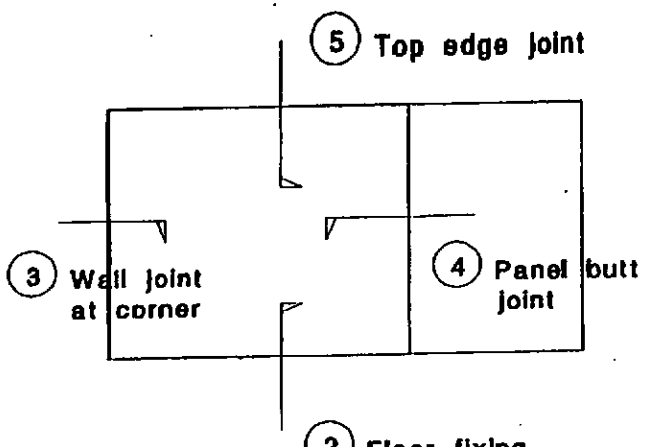
Drawn for ACTRANZ by R F Gale & Associates
14 Apihai St Orakei AUCKLAND 5
Ph/Fax 09 521 0384

Triboard Details
Ridge rafter & beam fixings

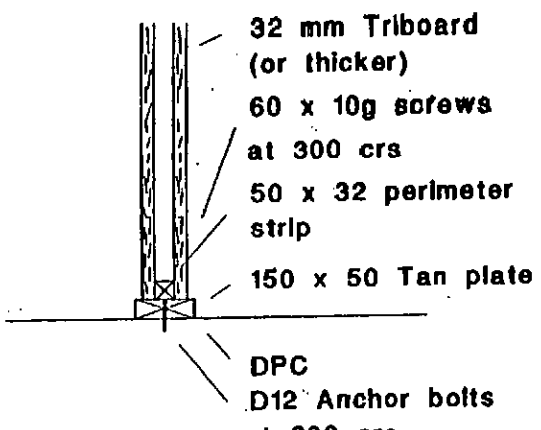
Drawn R G
Checked
Date 13/5/94

Revised RG
Date 26/8

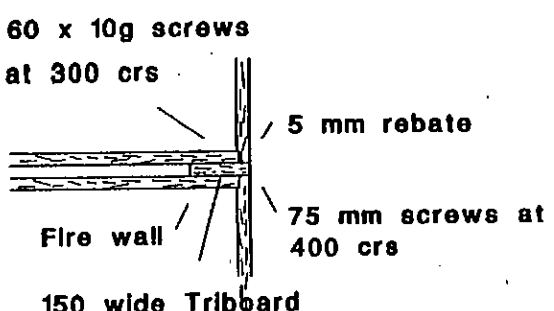
File No 93031
Sheet 11



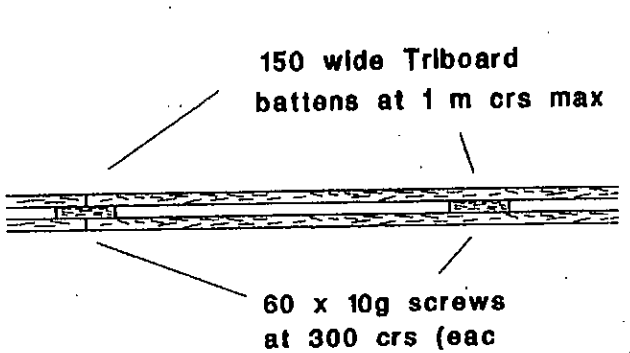
1 Wall elevation



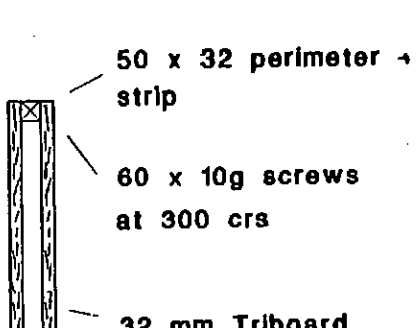
2 Floor fixing



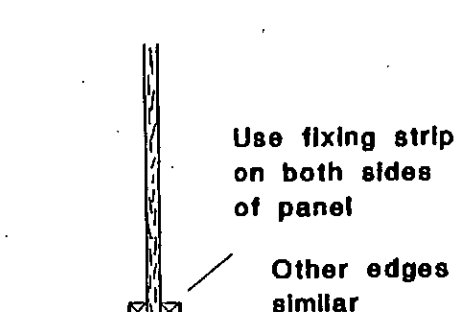
3 Wall joint at corner



4 Panel butt joint



5 Top edge joint



6 Single skin, strip two sides

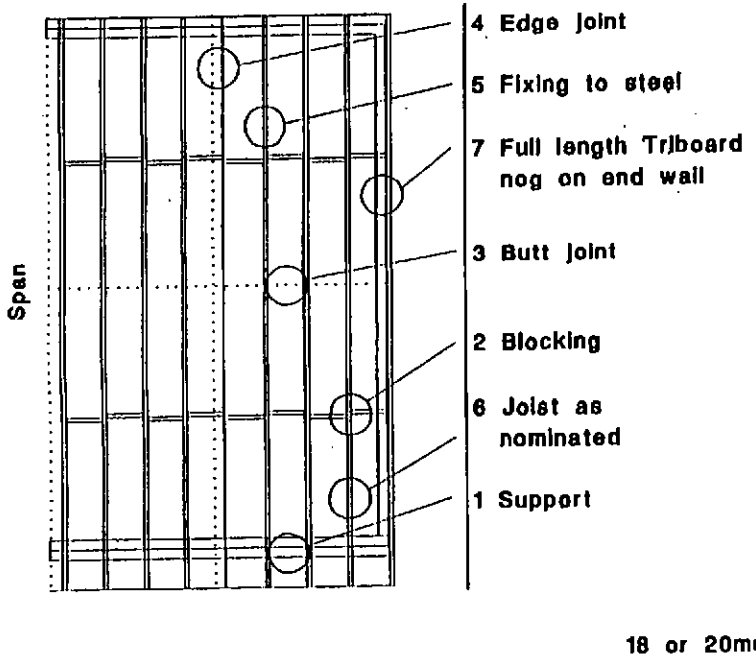
Drawn for ACTRANZ by R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Details
Fire rated wall fixings

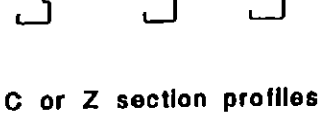
Drawn R G
Checked
Date 7/3/94

Revised RG
Date 26/8

File No 93031
Sheet 33



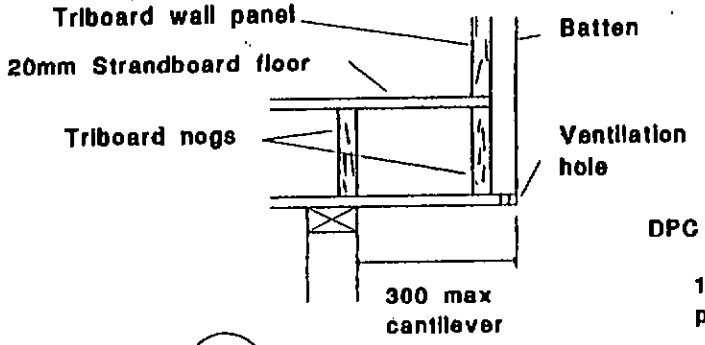
Typical Layout



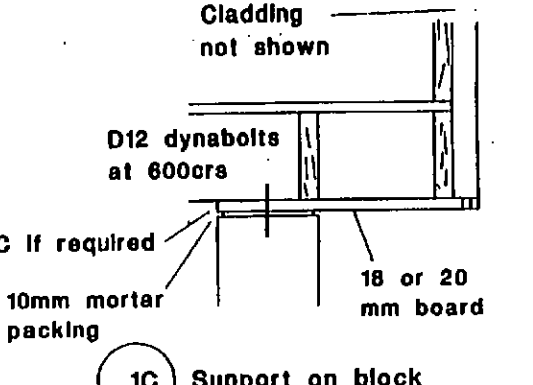
C or Z section profiles

Notes:

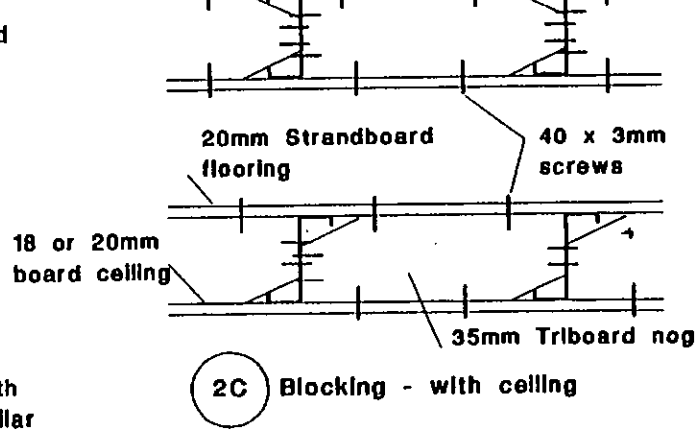
Section sizes are based on DHS profiles. Other profiles with similar section properties may be used.



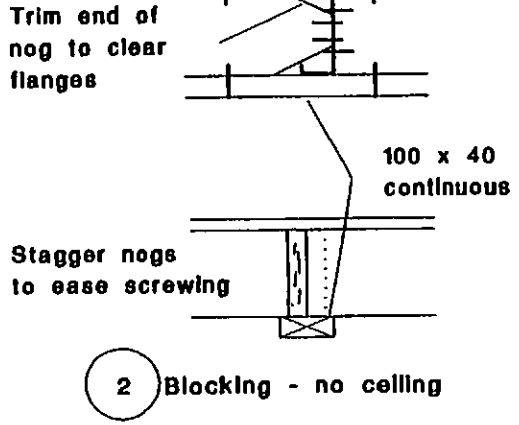
1T Support on timber



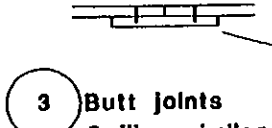
1C Support on block



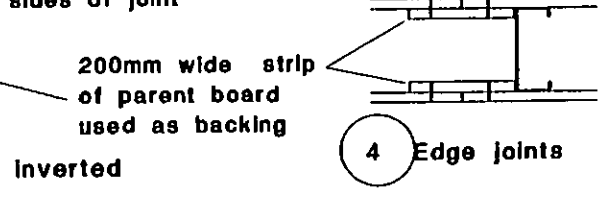
2C Blocking - with ceiling



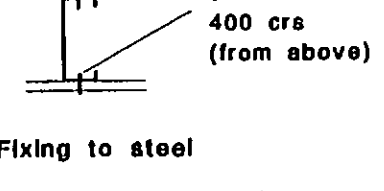
2 Blocking - no ceiling



3 Butt joints
Ceiling similar, inverted



4 Edge joints

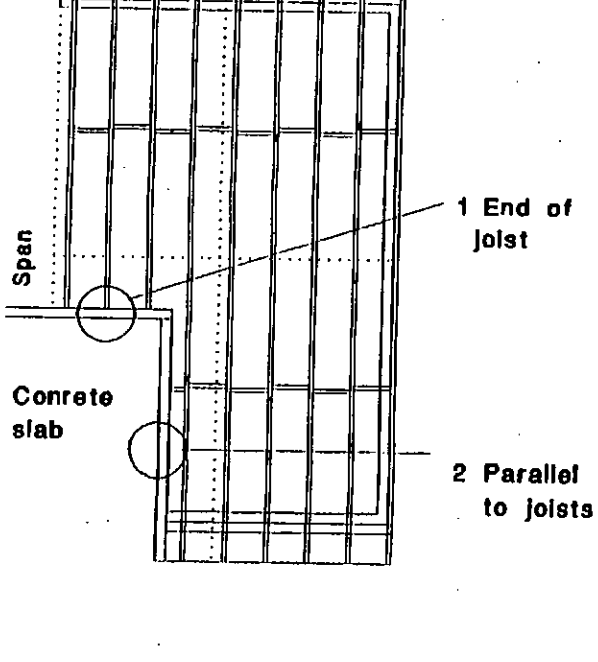


5 Fixing to steel

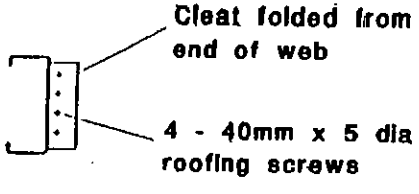
Drawn for ACTRANZ b R F Gale & Associates
14 Aphai St Orakei AUCKLAND 5
Ph/Fax 09 521 0384

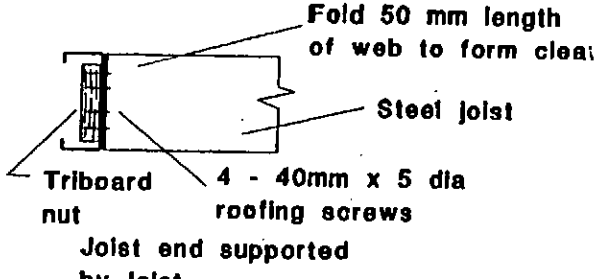
Steel joisted floor
Typical details 1

Drawn D.TA Revised RG File No 93031
Checked Date 26/t Sheet 37
Date 21/3/94

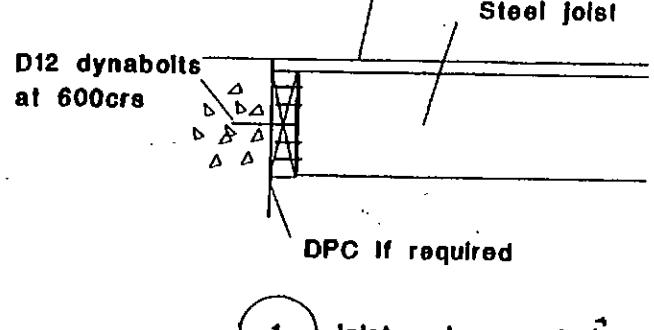


Typical Layout

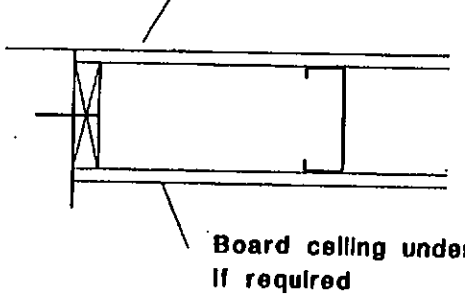




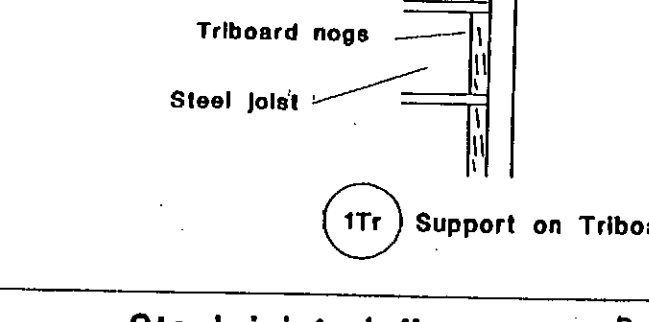
Joist end supported by joist



1 Joist end supported by conc. wall/found



2 Support parallel to joists



1Tr Support on Triboard

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14 Apihai St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Steel joisted floor
Typical details 2

Drawn D.T.
Checked
Date 21/3/94

Revised RG
Date 26/8

File No 93031
Sheet 38

Table 3: **Acceptable jointing methods**
Paragraph 3.5.2

Pipe material	Jointing method	Standard
Concrete	Rubber ring	NZS/BS 2494
Ceramic	Rubber ring or rubber sleeve	NZS/BS 2494, NZS 3302
Vitrified clay	Rubber ring or rubber sleeve	NZS/BS 2494, NZS 3302
Steel	Rubber ring, welded or flanged	NZS/BS 2494, NZS 4442, NZS/BS 1560
Ductile iron	Rubber ring or flanged	AS 2280
UPVC	Rubber ring or solvent welded	NZS/BS 2494, NZS 7643, AS 1254
HDPE	Heat welded or flanged	NZS/AS 2033
ABS	Solvent welded or flanged	NZS 7609

3.5.2 Acceptable jointing methods and the relevant standards are given in Table 3. Jointing of drains shall be subject to the tests called for in Paragraph 3.8.

3.5.3 Where a drain consists of concrete, ceramic, vitrified clay or rubber ring jointed steel or UPVC, a flexible joint shall be installed within 225 mm of the outside wall of any *access chamber* or *inspection chamber*, but outside the line of the base (see Figures 11 and 12).

Comment:

This allows for differential settlement between the access chamber, or the inspection chamber, and the pipe line while minimizing damage to the pipeline.

3.6 Surface water inlets to drains

3.6.1 *All surface water*, except that collected directly from a roof, shall enter the *drain* via a *sump* which has:

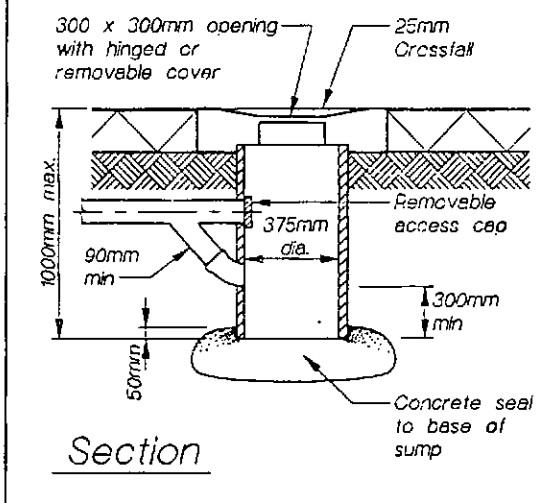
a) A grating, hinged or removable for maintenance access. The grating shall comprise at least 35 % openings. The smaller dimension of any individual opening shall not exceed 35 mm,

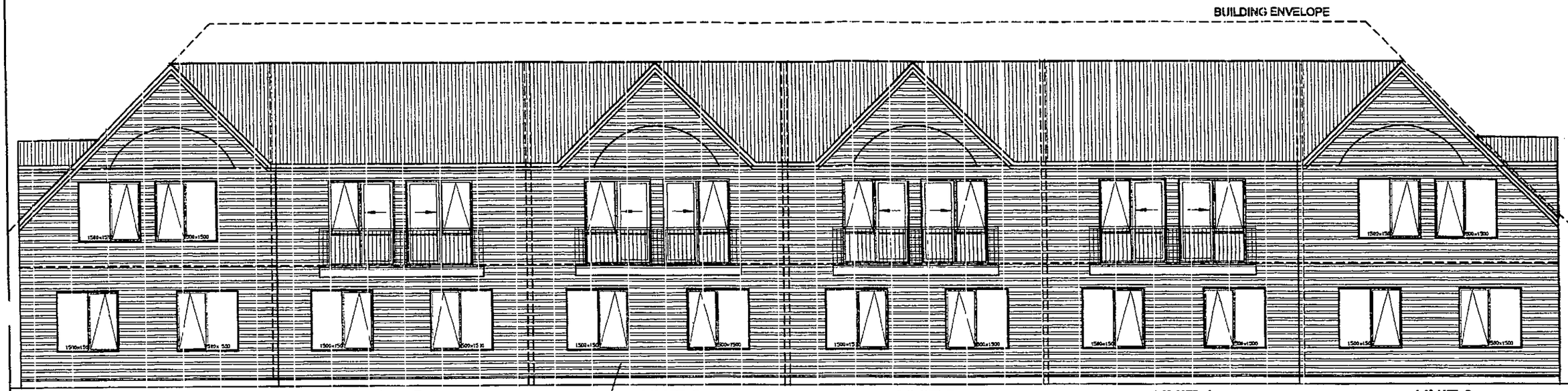
b) Capacity at the bottom for settlement of silt and debris, and

c) A submerged (or trapped) outlet which prevents floatable solids entering the *drain*.

3.6.2 Two different *sumps* are shown in Figures 8 and 9. The *sump* shown in Figure 8 is suitable for an area of up to 4500/I m^2 and the *sump* illustrated by Figure 9 is suitable for an area up to 40,000/I m^2, where I is the rainfall intensity for a storm with a 10 % probability of occuring annually. (See Paragraph 3.2.2).

Figure 8: **Type-one surface water sump**
Paragraph 3.6.2





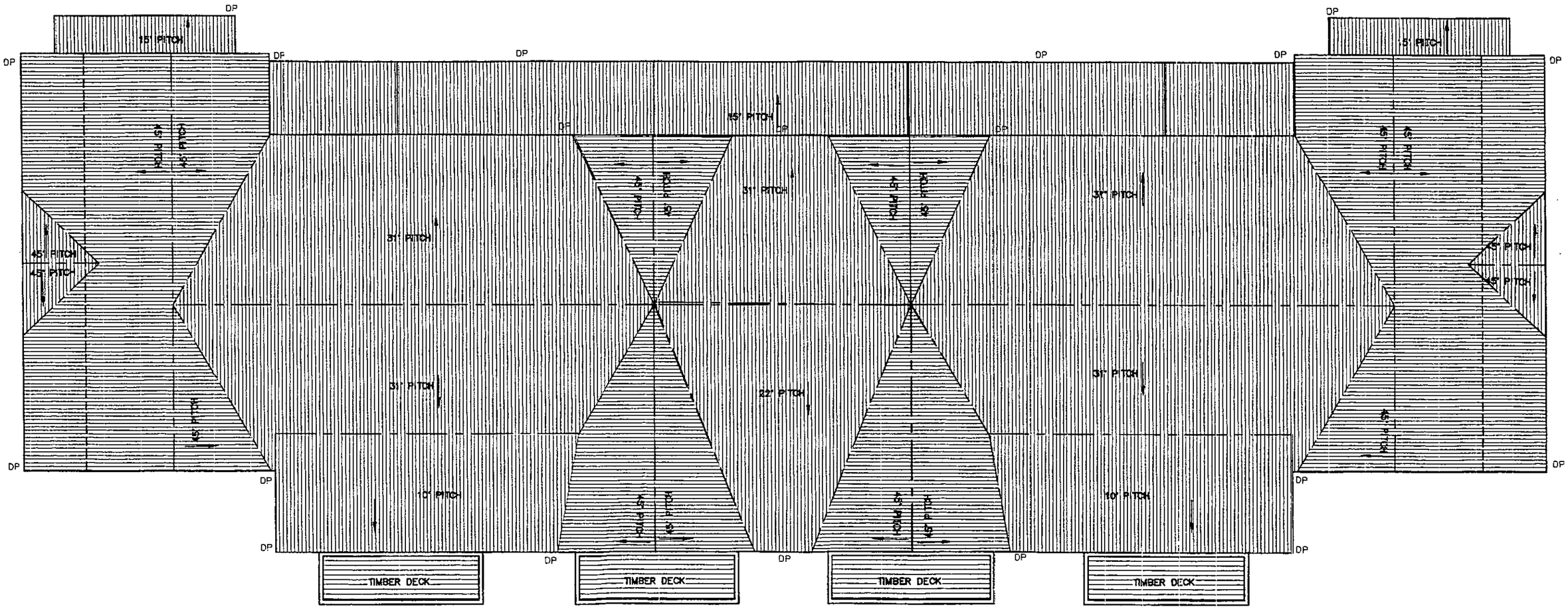
EAST

WEST

STELLA PACIFIC

STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

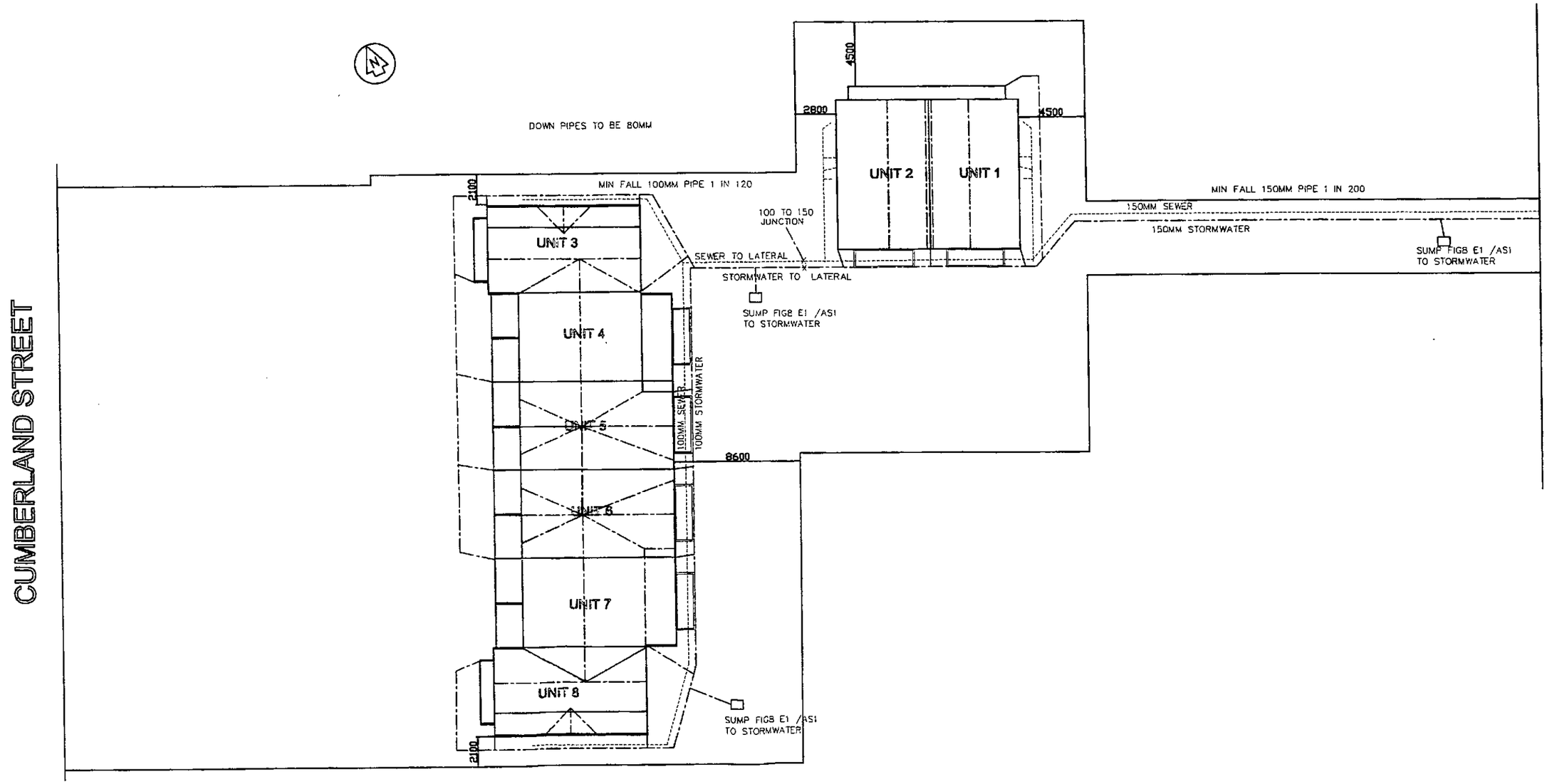
ELEVATIONS			SHEET 3
DRAWN MJC	AMEND'D R14,36	SCALE	SERIES OF 8
TRACED 98149	DATE 20\10\99	1 TO 100	



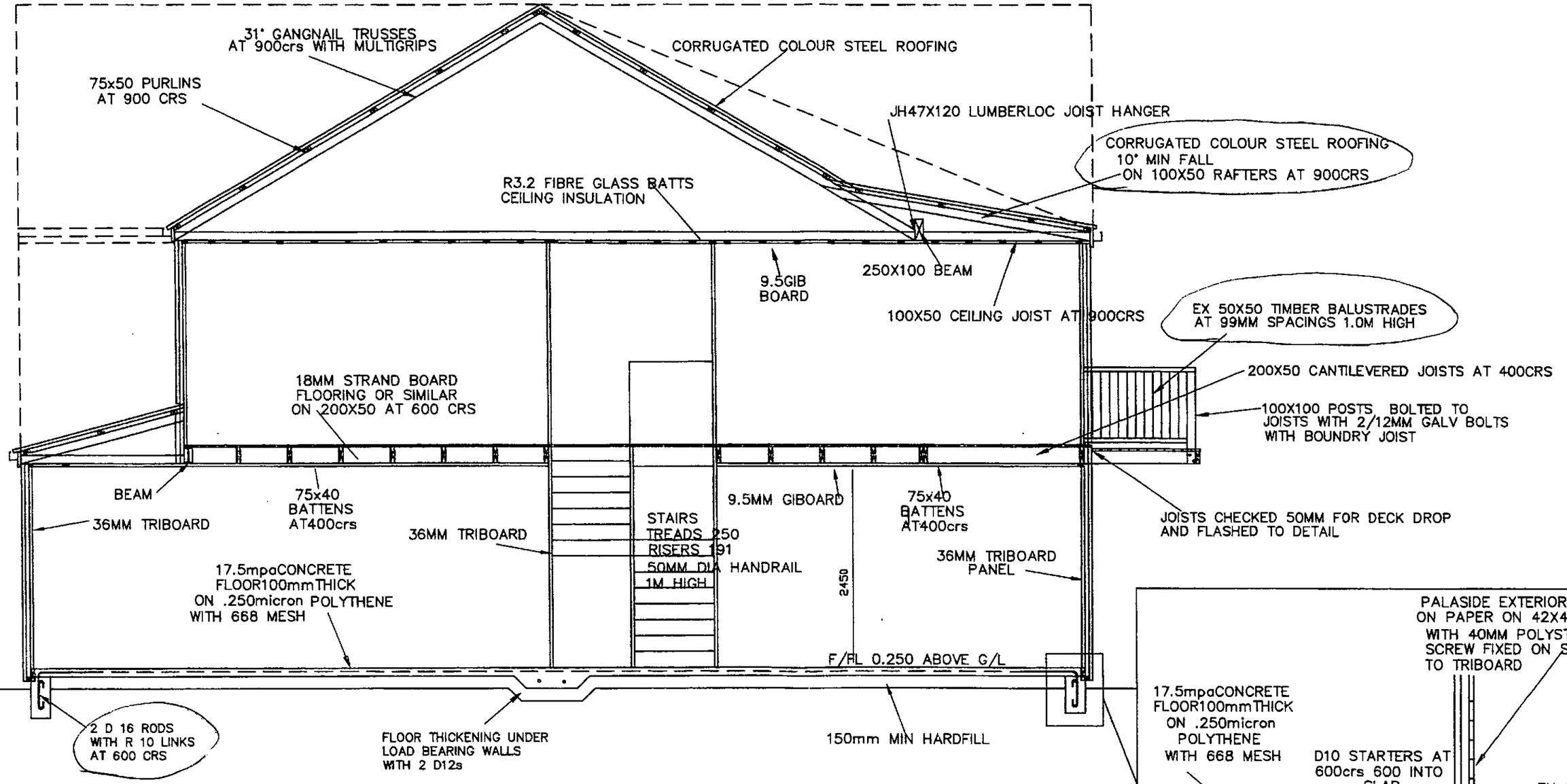
STELLA PACIFIC

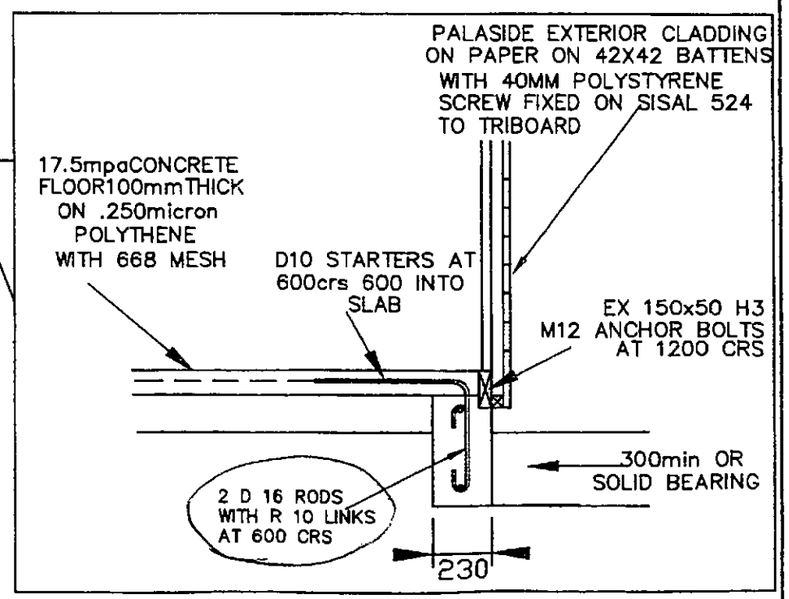
STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

ROOF		SHEET 5
DRAWN MJC	AMEND'D 22/11/99 SCALE	SERIES OF 10
TRACED 98149	DATE 20\10\99 1 TO 100	



STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	SITE PLAN	SHEET 10
		DRAWN MJC / AMEND'D R14,36 / SCALE	SERIES OF 10
		TRACED 98149 / DATE 20\10\99 / 1 TO 300	





NOTES

A. ALL WORKMANSHIP TO BE OF BEST TRADESMAN LIKE MANNER
B. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED BEFORE ANY CONSTRUCTION COMENCES.
C. ALL WORK TO CONFORM TO NZ BUILDING CODE 1991 AND ADMENDMENTS
D. ALL PRODUCTS USED ON THIS STRUCTURE MUST BE STORED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS

STELLA PACIFIC

STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

CROSS SECTION

DRAWN MJC	AMEND'D R14.36	SCALE	SHEET 9
TRACED 98149	DATE 20\10\99	1 TO 50	SERIES OF 10

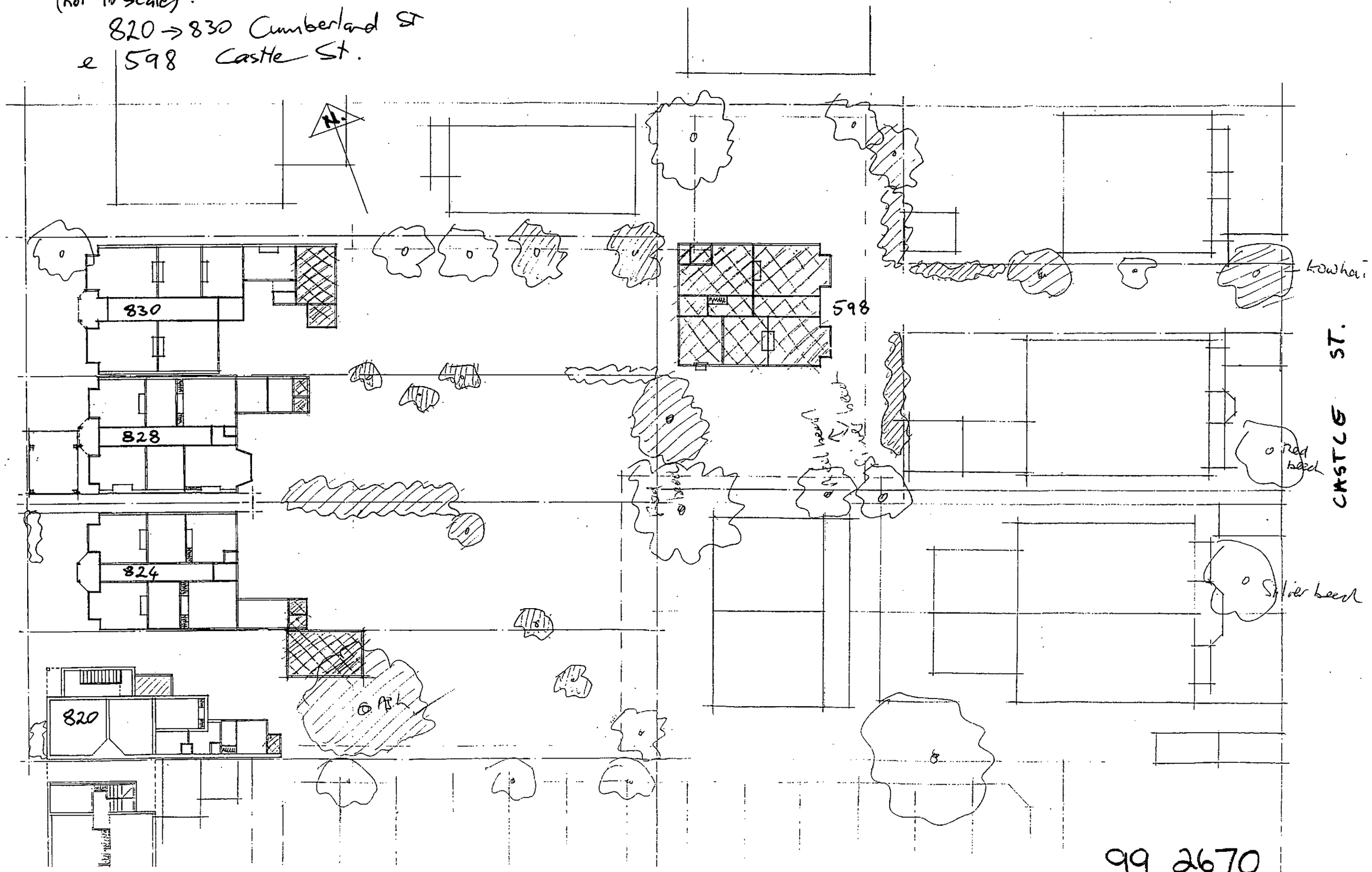
...ISTING PLAN.
...0.

= TREES, SHRUBS TO BE REMOVED.

= REMOVED BUILDINGS.

1.74

Existing Plan
(not to scale).
820 → 830 Cumberland St
& 598 Castle St.



99 2670

TEST REPORT

FR 1659

REPORT ON THE FIRE RESISTANCE PROPERTIES OF A LOADBEARING DOUBLE SKINNED WALL, WITH 38 MM TRIBOARD ON EACH SIDE

BRANZ
Test Report

CONDITIONS OF ISSUE

The issue of this report is subject to the conditions set out in the "CONDITIONS APPLYING TO TESTS CARRIED OUT BY THE ASSOCIATION" (BRANZ Cat. No 88-3 June 1988).

Attention is drawn in particular to the following clauses:

17. A Test Report does not imply approval by BRANZ of any item for any particular purpose and therefore no statement or advertisement shall state or imply approval by BRANZ.

18. If the client is the manufacturer or accredited agent of the manufacturer of the item, the client may publish:

    (a) the Test Report verbatim and in full.

    (b) a statement that the item has been tested by BRANZ provided the statement includes the Test Report No. and an offer to supply a full copy of the Test Report free of charge.

19. The Director's prior written consent must be obtained before:

    (a) any extract or abridgement of the report is published:

    (b) any statement (except as per 18b) that an item has been tested by BRANZ is published.

    (c) the Report is used in or referred to in connection with any company prospectus.

    (e) any client other than the manufacturer or accredited agent of the manufacturer, may refer to or publish the Test Report or any extract.

BRANZ
Test Report

REPORT ON THE FIRE RESISTANCE PROPERTIES OF A LOADBEARING DOUBLE SKINNED WALL, WITH 38 MM TRIBOARD ON EACH SIDE.

1. INTRODUCTION

1.1 Client

Juken Nissho Ltd.
P.O. Box 153
Kaitaia
NEW ZEALAND.

1.2 Test Specification

The test was conducted in accordance with Australian Standard 1530.4-1990 Fire Resistance Tests of Elements of Building Construction. This states that the fire resistance of a loadbearing test specimen shall be the time, expressed in minutes, to failure under one or more of the following criteria:

1.2.1 Structural Adequacy

Failure in relation to structural adequacy shall be deemed to have occurred when collapse occurs.

1.2.2 Integrity

For an element intended to separate spaces and resist the passage of flame from one space to another, failure in relation to integrity shall be deemed to have occurred upon collapse, or the development of cracks, fissures, or other openings through which flames or hot gases can pass.

1.2.3 Insulation

Failure in relation to insulation shall be deemed to have occurred when either:-

(a) The average temperature of the relevant thermocouples attached to the unexposed face of the test specimen rises by more than 140 K above the initial temperature ; or

(b) The temperature of any of the relevant thermocouples attached to the unexposed face of the test specimen rises by more than 180 K above the initial temperature.

PN

JJK

TELARC REGISTERED LABORATORY

2. DESCRIPTION OF THE TEST SPECIMEN

2.1 General

The test specimen consisted of a nominal 2.9 m high x 3.01 m wide x 114 mm thick loadbearing wall, with 38 mm Triboard panels on both sides and Triboard batten framing. The specimen was constructed in the centre of a nominal 3 x 3 m opening in a concrete lined specimen holder. All framing and panels were constructed with standard density Triboard.

Vertical joints between Triboard panels were formed over 150 x 38 mm Triboard battens, with additional battens of the same size at 1 metre spacing on each panel. Panel joints were staggered by at least 1 m between sides of the wall.

The Triboard edge battens were fixed flush with panel edges. Nominal 50 x 38 mm strips were used at the top and bottom of the wall and nominal 75 x 50 mm on the sides. The panels were fastened to the battens with 60 x 10 gauge screws at approximately 300 mm centres. The top and bottom perimeter battens were bolted to the specimen holder. 50 x 50 mm timber packers were located at 450 mm centres on the top of the wall specimen to simulate floor joist supported on the wall system. The packers were covered on the exposed side with 38 mm thick Triboard strip and the space between the packers were filled with mineral fibre wool. The sides of the specimen were not restrained.

Actual Triboard panels and battens used were as follows :

Thickness	38 mm
Average Density	660 kg/m^3
Average top plate dimension	97 x 47 mm

The layout of panels and battens are shown in Figure 5.

3. TEST PROCEDURE

3.1 General

The test was conducted on the 28th of November 1991, at the BRANZ laboratories at Judgeford, New Zealand, in the presence of representatives of the client.

The frame containing the test specimen was sealed to the furnace, and the temperature and pressure conditions controlled as specified in AS 1530.4-1990. The average ambient temperature at the beginning of the test was 14.7°C.

PN

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Test Report

3.2 Loading

At the request of the client a load of 20 kN per metre length was applied to the wall. The load was monitored using a load cell placed between each of the three jacks and the platen, connected to a continuously reading recorder. This load was applied one and a half hours before the commencement of the test. The test was carried out with the load applied to the wall for the first one hour. After this time the load was reduced correspondingly to maintain the vertical deflection of the panel at the same level as it was at the one hour mark and the test continued as for a non - load bearing wall.

3.3 Furnace Temperature Measurement

The temperature of the atmosphere within the furnace was measured using twelve chromel - alumel thermocouples distributed evenly on a vertical plane approximately 100 mm from the exposed face of the specimen.

3.4 Specimen Temperature Measurement

The temperature on the unexposed face of the test specimen was measured using chromel - alumel thermocouples in accordance with AS 1530.4-1990, Section 2.2.3.1. Five thermocouples were placed on the wall, one at the mid-point, and one at the approximate centre of each of the quarters as shown on Figure 5.

Additional thermocouples were placed on the cold face of the exposed side panels at the same points as the five standard thermocouples and in the cavities between battens at approximately the third points vertically along and at equal distances from either layer.

3.5 Temperature Recording

All the thermocouples described in sections 3.3 and 3.4 were connected to a computer controlled data logging system which sampled the temperatures at one minute intervals.

3.6 Pressure Measurements

The pressure difference between the furnace and laboratory atmospheres was adjusted such that it was greater than 8 Pa over the top two thirds of the specimen. The pressure was monitored using a micromanometer connected to a continuously reading recorder.

3.7 Deflection Measurements

3.7.1 Out of Plane Deflections

The deflection of the specimen was measured using a theodolite and rule. Measurements were taken at 10 minute intervals on all deflection points shown in Figure 3 and 4.

PN

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Test Report

3.7.2 Vertical Deflection

The vertical deflection of the loading platen was measured using two linear potentiometers, one at each side of the specimen. These potentiometers were connected to the computer controlled data logging system which sampled the deflections at one minute intervals.

4. OBSERVATIONS

4.1 Duration

The test was terminated after the specimen had been exposed to the standard fire resistance test for 92 minutes.

4.2 Severity

The severity of the fire resistance test can be established by comparison of the area under the curve of the mean furnace temperature with the area under the standard curve for the same period. Figure 1 shows the standard curve in relation to the actual mean furnace temperature. The severity of this test for 92 minutes was 101 %

4.3 Structural Adequacy

The specimen carried the applied load for the duration of the preload, and for the first 60 minutes for the test without failure. There was no structural failure for the remaining 32 minute duration of the test with corresponding reduction in load to maintain 60 minute deflection levels.

4.4 Insulation

4.4.1 Average Specimen Temperature Rise

The average specimen temperature rise measured by the relevant thermocouples did not exceed the failure criterion of 140 K for the duration of the test.

4.4.2 Maximum Specimen Temperature Rise

Insulation failure occurred at a hot spot on the right hand side of the right hand panel when the hand held thermocouple reading exceeded 180 K at 92 minutes.

Graphs of the average and maximum temperature rises measured by the five standard thermocouples are included as Figure 3.

4.5 Integrity

There was no failure of Integrity for the duration of the test.

PAF

JJK

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4.6 Behaviour of the Wall Specimen.

At 3.5 minutes, the exposed surface had started to blacken and there was flaming from the surface filling the furnace.

At 6.0 minutes, there was a lot of smoke coming out from the top and bottom edges of the wall specimen through gaps in the connection between the specimen and the specimen holder.

At 8.0 minutes, the exposed surface had begun to char. The joints were still intact at this time.

At 15.5 minutes, the wall panels on the exposed side had begun to shrink away from the joints and small gaps had formed.

At 18.0 minutes, the gaps at the joints on the exposed side had opened up further to about 10 mm.

At 45.0 minutes, the gaps on the exposed side had widened to about 25 mm.

At 70.0 minutes, parts of the Triboard covering at the top of the wall had fallen off allowing smoke to escape through the top right hand side of the wall on the unexposed side.

At 75.5 minutes, the left hand side panel on the exposed side had fallen off.

At 77.0 minutes, gaps had formed at the joints on the unexposed side allowing smoke to pass through them.

At 84.5 minutes, the exposed face of the unexposed side had began to char.

4.7 Deflections

4.7.1 Out of Plane Deflections

The positions of the deflection points are shown on Figure 5, and the measurements taken on the horizontal and vertical centrelines are shown on Figures 3 and 4 respectively.

The maximum deflection recorded was 43 mm and occurred at point G at 80 minutes.

4.7.2 Vertical Deflections

The maximum recorded vertical deflection of the loading platen was 50 mm upwards and occurred at 60.5 minutes read on the potentiometer on the left hand side of the specimen.

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5. SUMMARY

The fire resistance of the Triboard panel wall specimen lined on both sides with one layer of 38 mm thick Triboard density board is as follows :

Structural Adequacy:	60 minutes (Loaded, No Failure) 92 minutes (Unloaded, No failure)
Integrity:	92 minutes (No Failure)
Insulation:	92 minutes

6. ATTACHMENTS

Figure 1 Furnace Temperatures

Figure 2 Specimen Temperature

Figure 3 Horizontal Centreline Deflections

Figure 4 Vertical Centreline Deflections

Figure 5 Layout of specimen showing thermocouple and deflection points.

P. Narayanan
Fire Research Engineer

J.J. King
Fire Testing Supervisor
FOR THE ASSOCIATION

BRANZ
Test Report

Fig 1 Furnace Temperatures

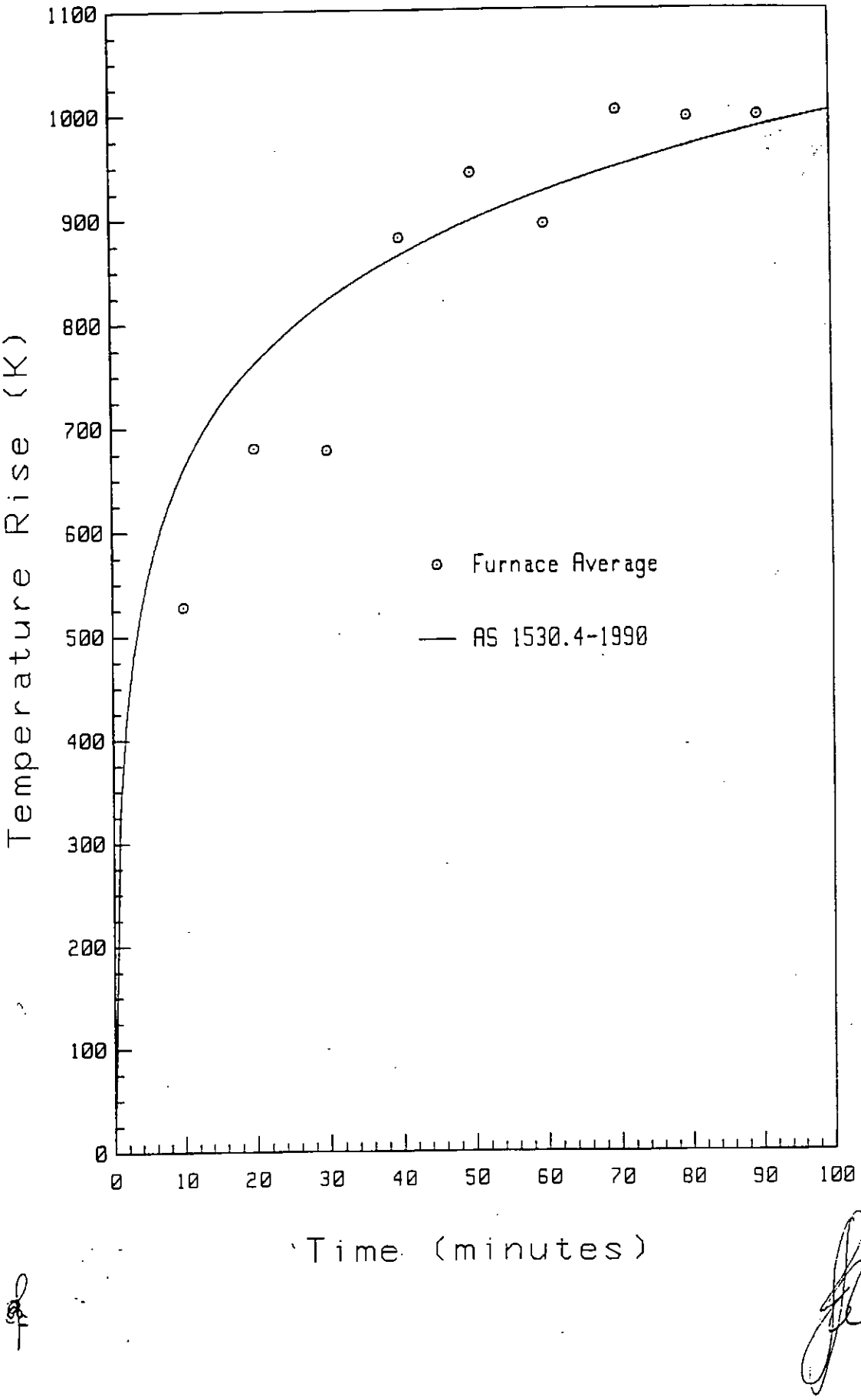

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Fig 2 Specimen Temperature

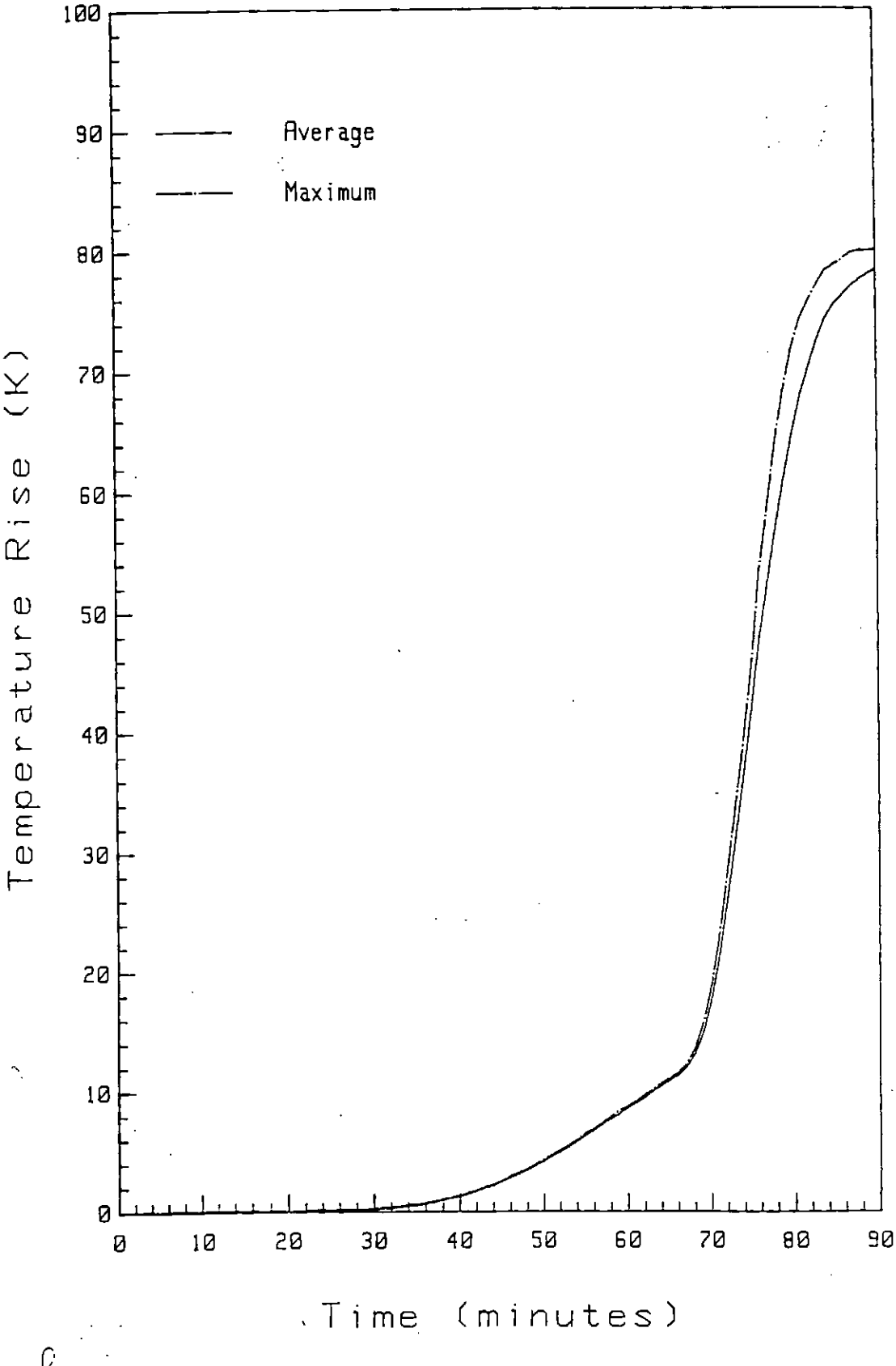

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Fig 3 Horizontal Centre Line Deflection

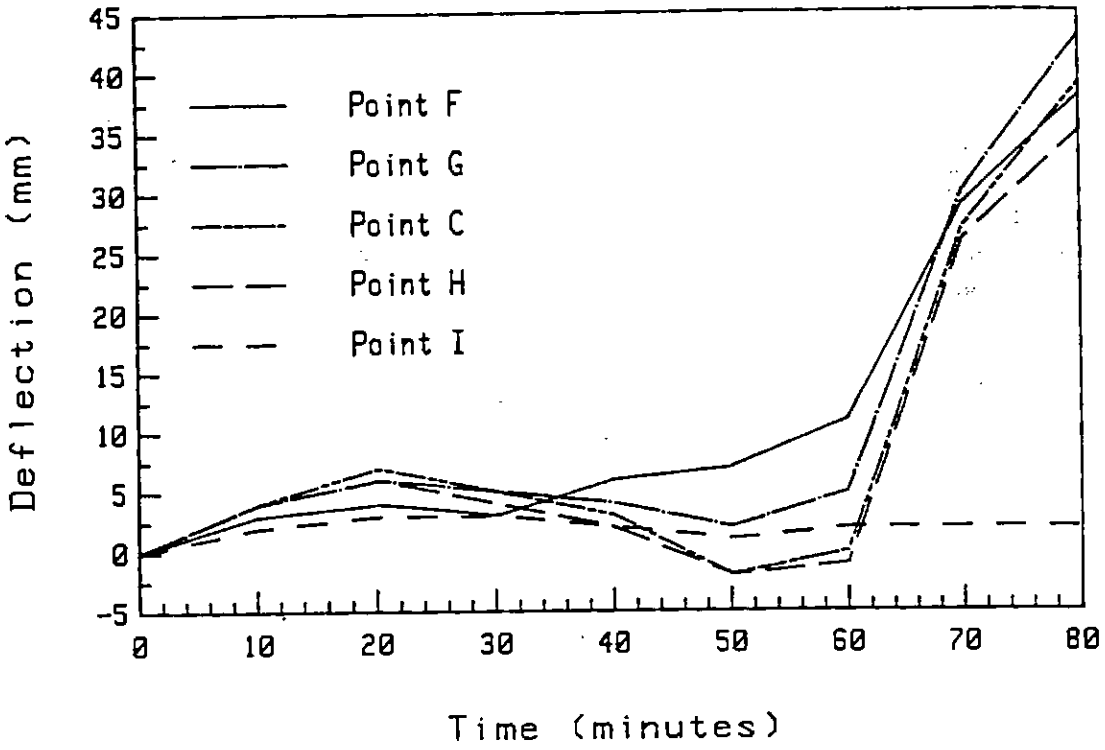
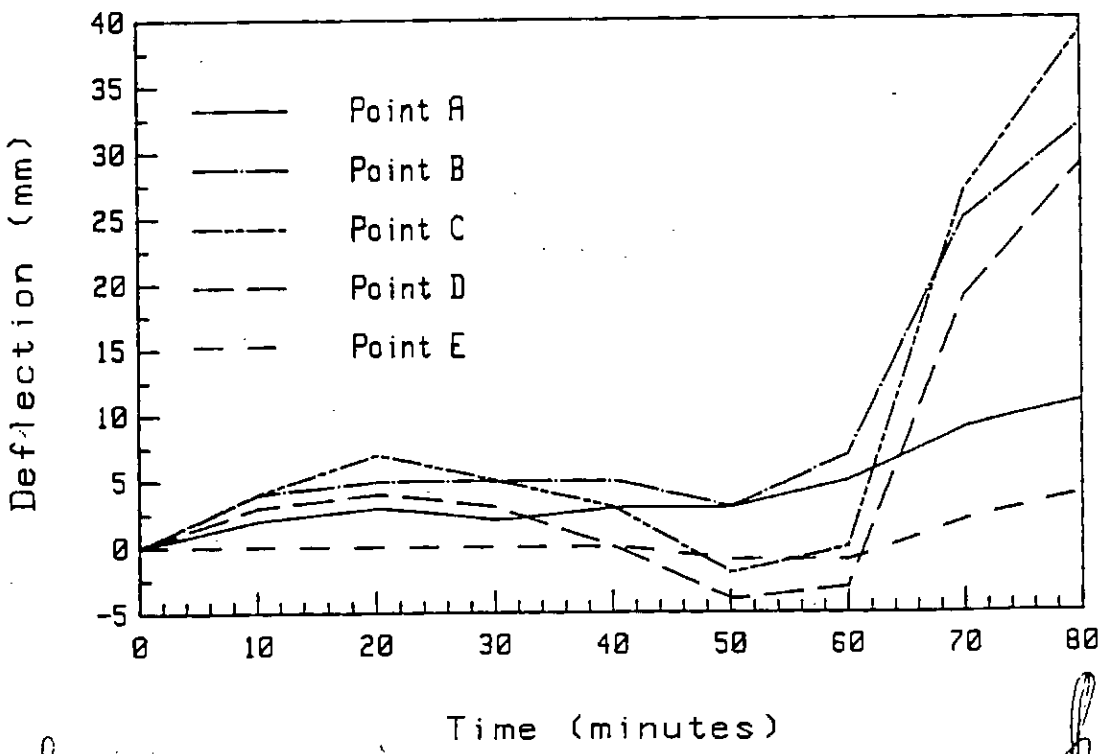
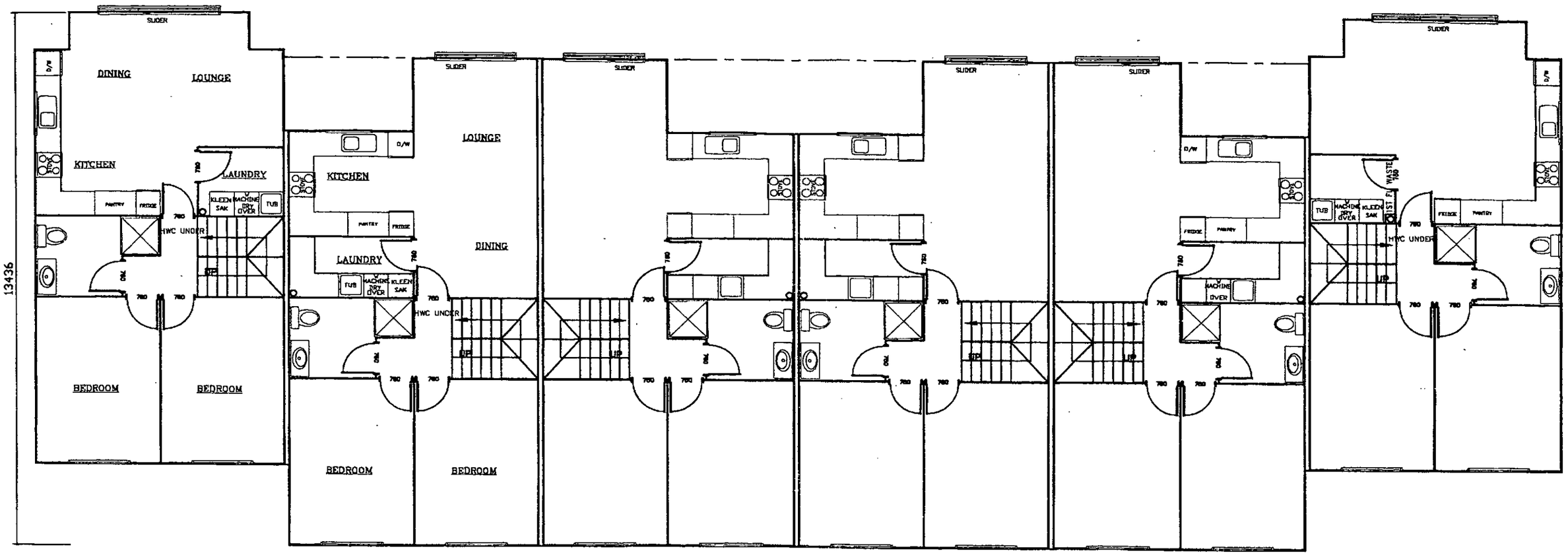


Fig 4 Vertical Centre Line Deflection





GROUND FLOOR PLAN 418M2

STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	GROUND FL/PLAN	SHEET 1
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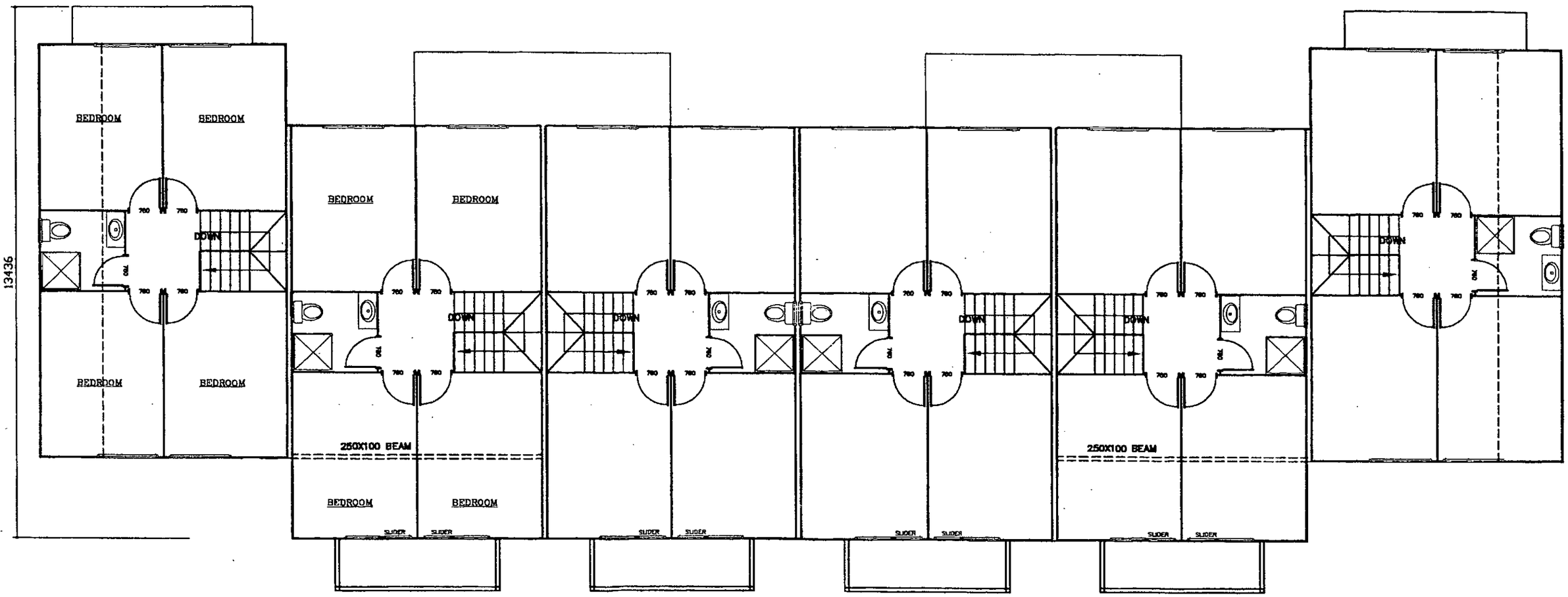
		TRACED 98149 / DATE 20\10\99 / 1 TO 100	



1ST FLOOR PLAN 388M2

STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	1ST FL/PLAN	SHEET 2
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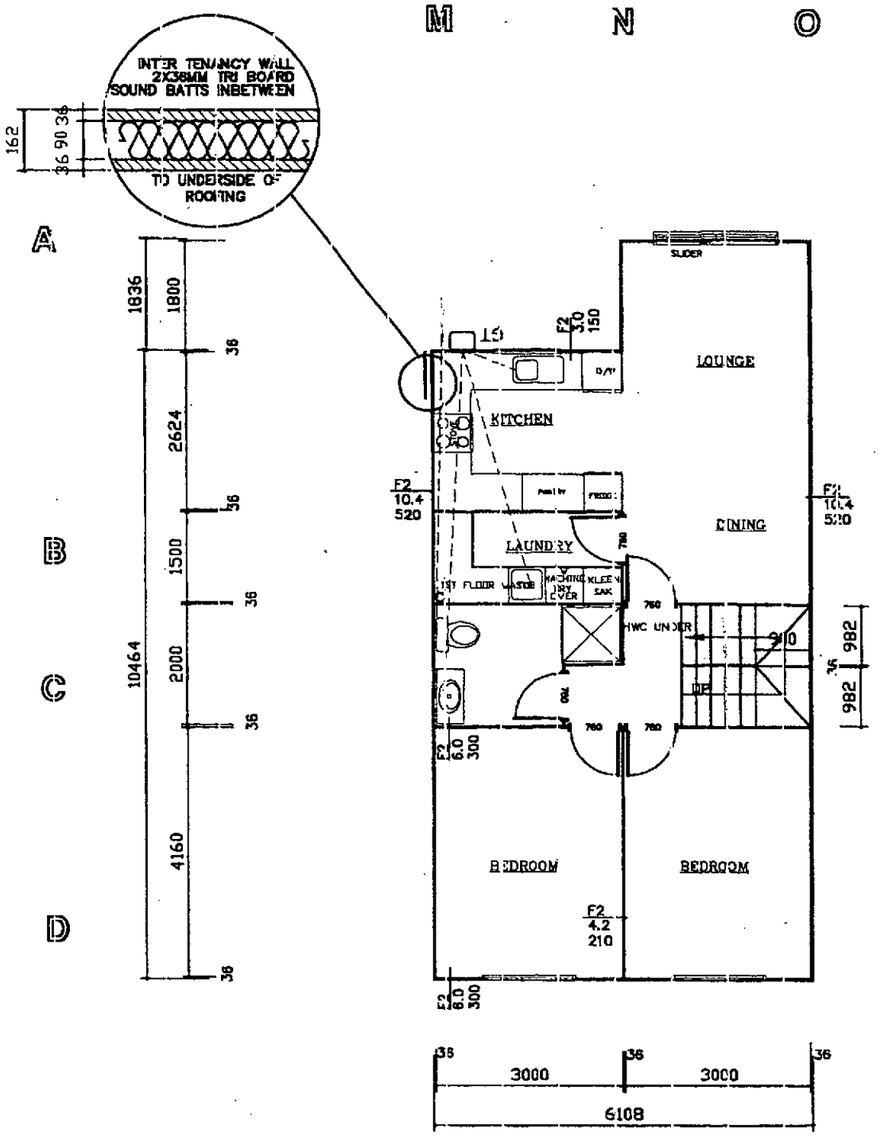
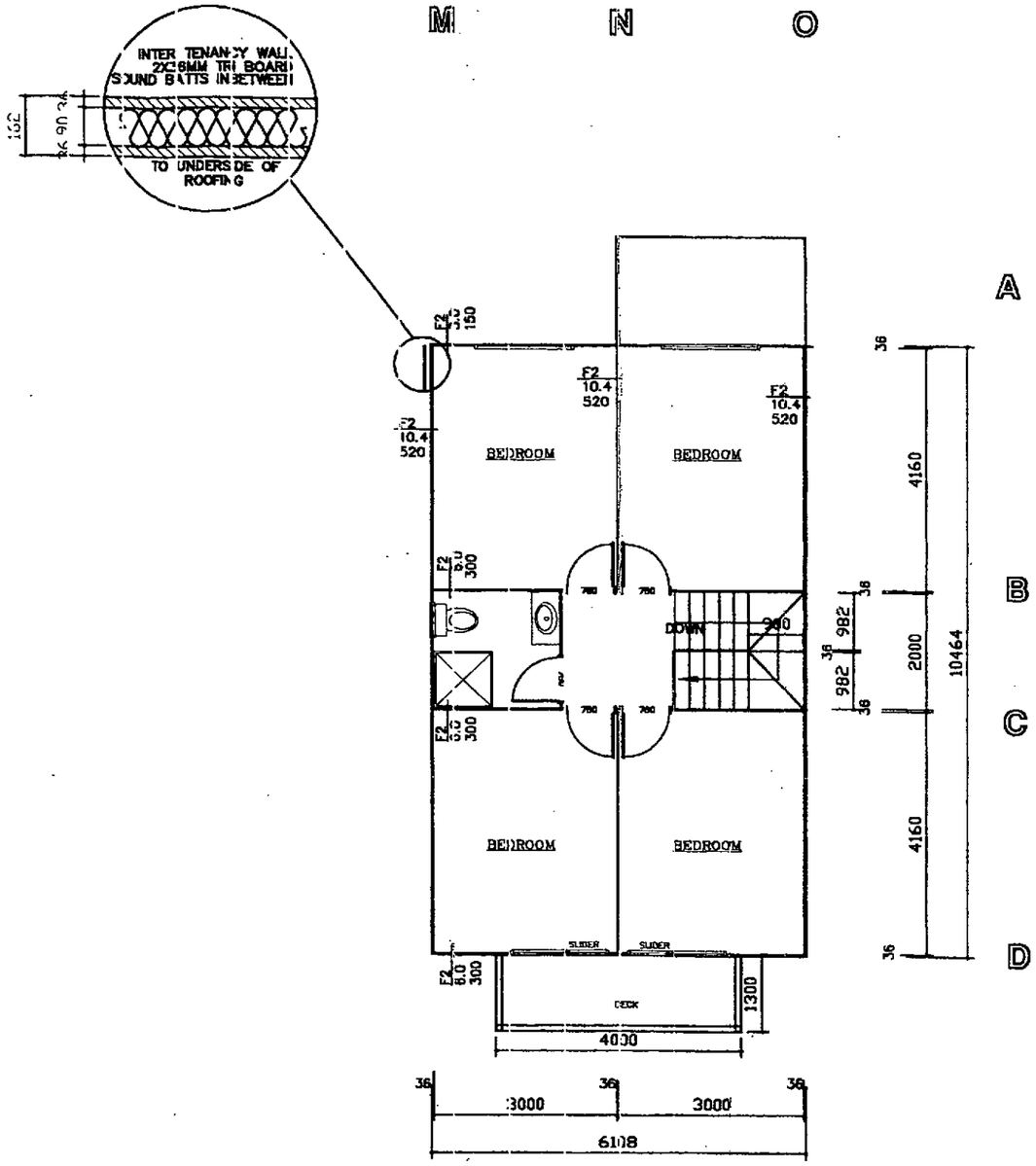
		TRACED 98149 / DATE 20\10\99 / 1 TO 100	



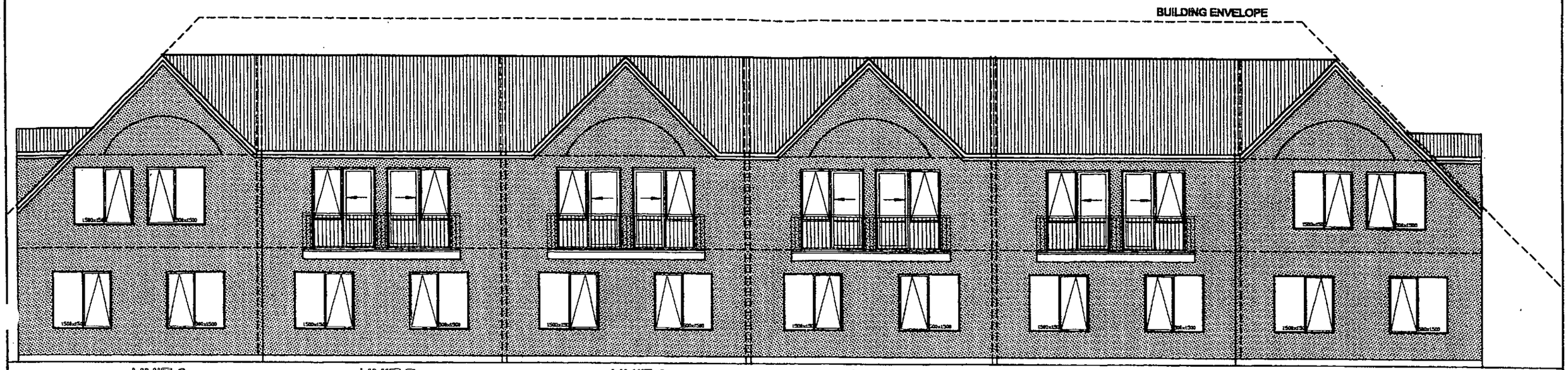
UNITS 4,5,6&7 G/F 69M2



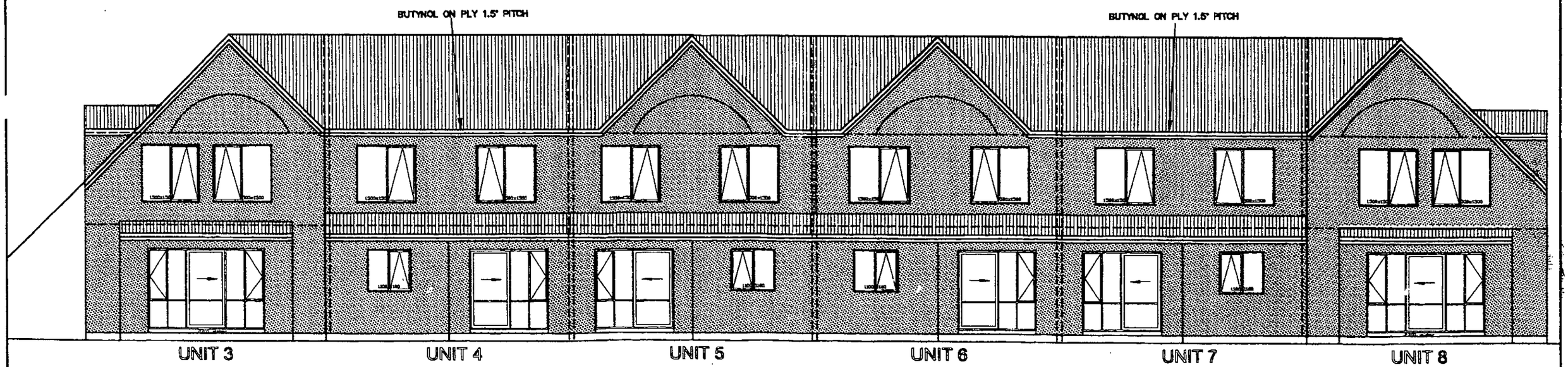
UNITS 4,5,6&7 1st/F 64M2

STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	PLAN UNITS 4,5,6&7	SHEET 2A
		DRAWN MJC / AMEND'D R14,36 / SCALE	SERIES OF 10
		TRACED 98149 / DATE 20\10\99 / 1 TO 100	

8



EAST



WEST

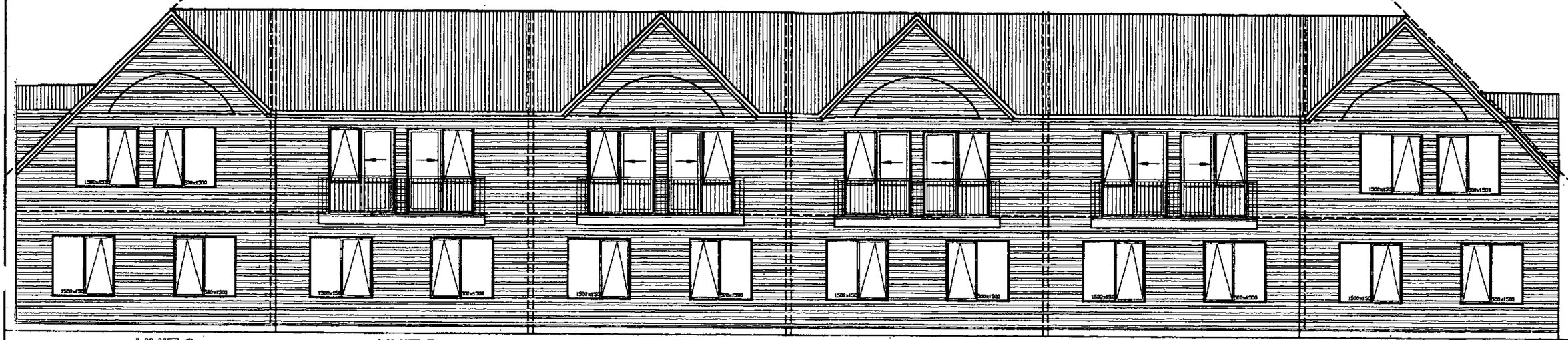
STELLAR PACIFIC

STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

ELEVATIONS			SHEET 3
DRAWN MJC	AMEND'D R14,36	SCALE	SERIES OF 8
TRACED 98149	DATE 20\10\99	1 TO 100	

Palliside

BUILDING ENVELOPE

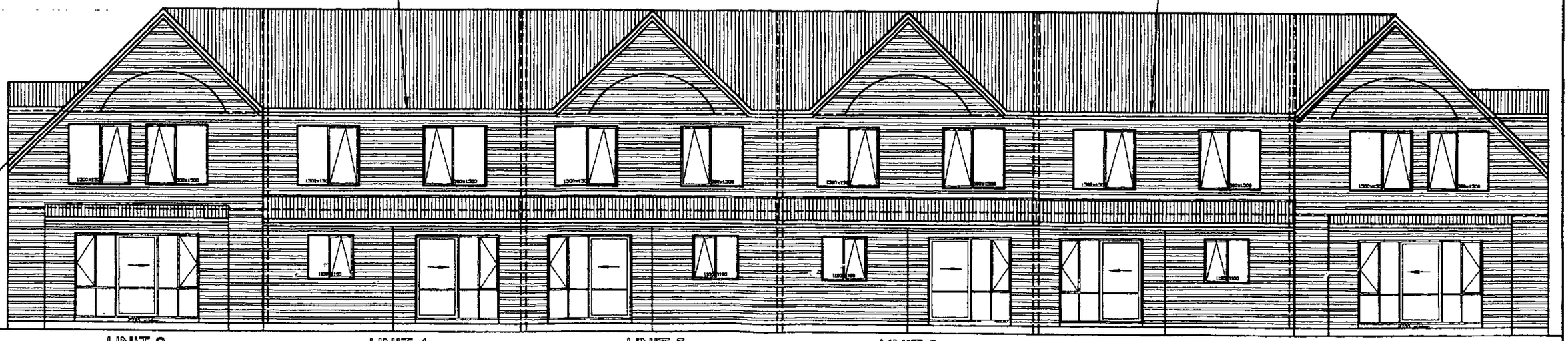


UNIT 8 UNIT 7 UNIT 6 UNIT 5 UNIT 4 UNIT 3

EAST

BUTYNOL ON PLY 1.5° PITCH

BUTYNOL ON PLY 1.5° PITCH



UNIT 3 UNIT 4 UNIT 5 UNIT 6 UNIT 7 UNIT 8

PALISIDE EXTERIOR CLADDING

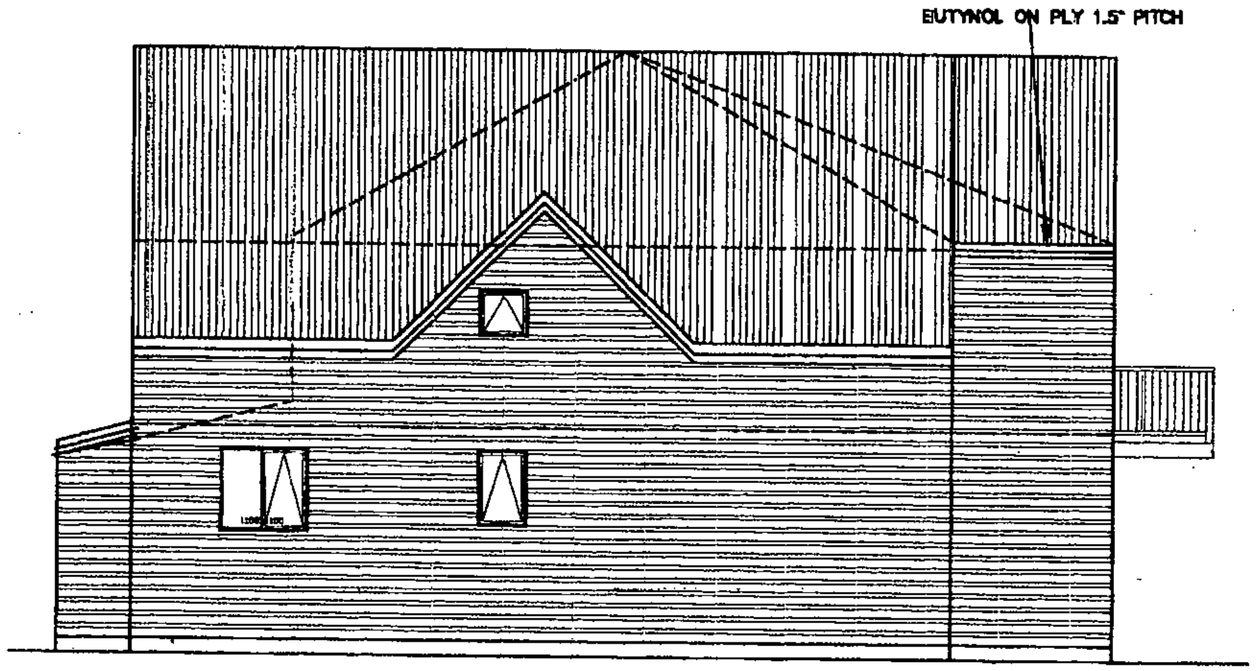
WEST

STELLA PACIFIC

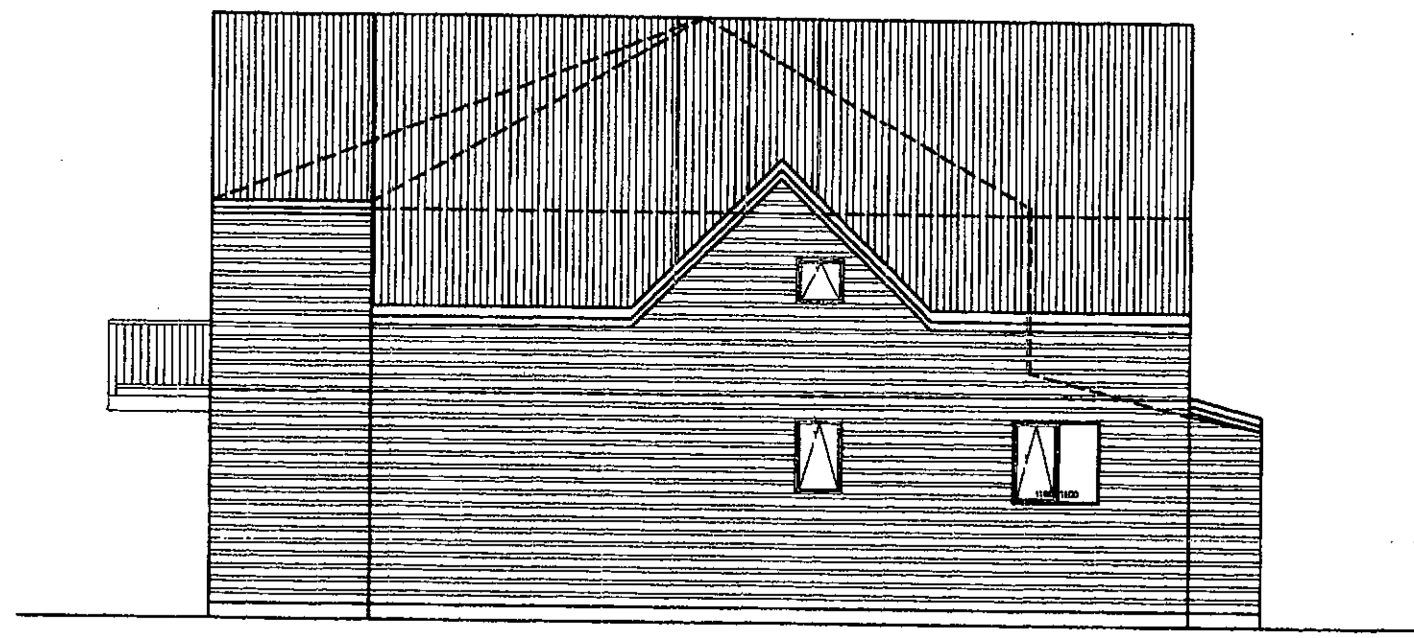
STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

ELEVATIONS Palliside			SHEET 3
DRAWN MJC	AMEND'D R14.36	SCALE	SERIES OF 8
TRACED 98149	DATE 20\10\99	1 TO 100	

Pallis side



SOUTH

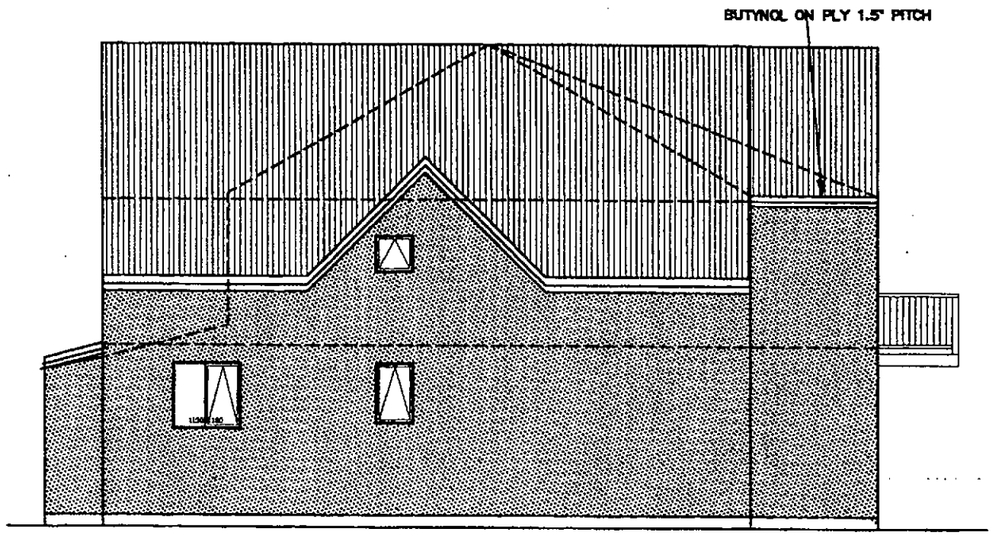


NORTH

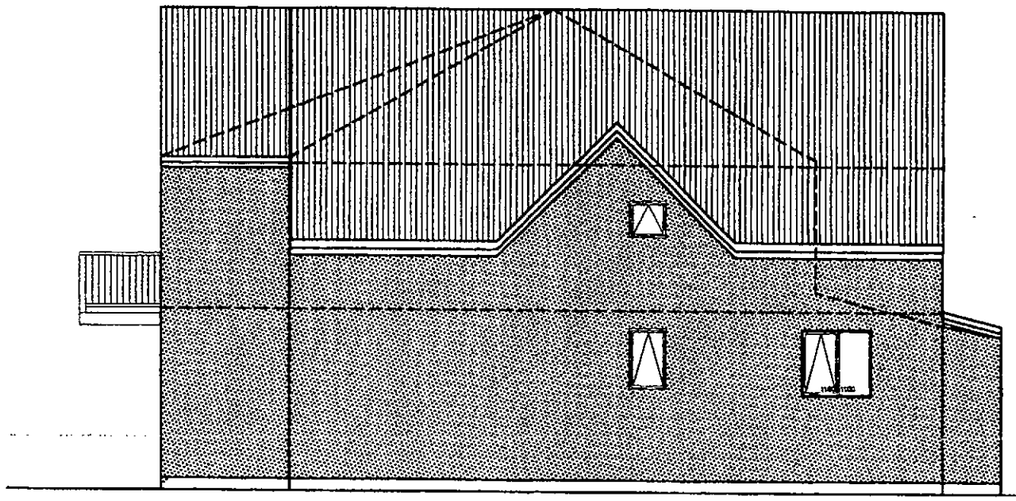
STELLA PACIFIC

STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

ELEVATIONS Pallis side			SHEET 3
DRAWN MJC	AMEND'D R14,36	SCALE	SERIES OF 8
TRACED 98149	DATE 20\10\99	1 TO 100	



SOUTH



NORTH

STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	ELEVATIONS	SHEET 4
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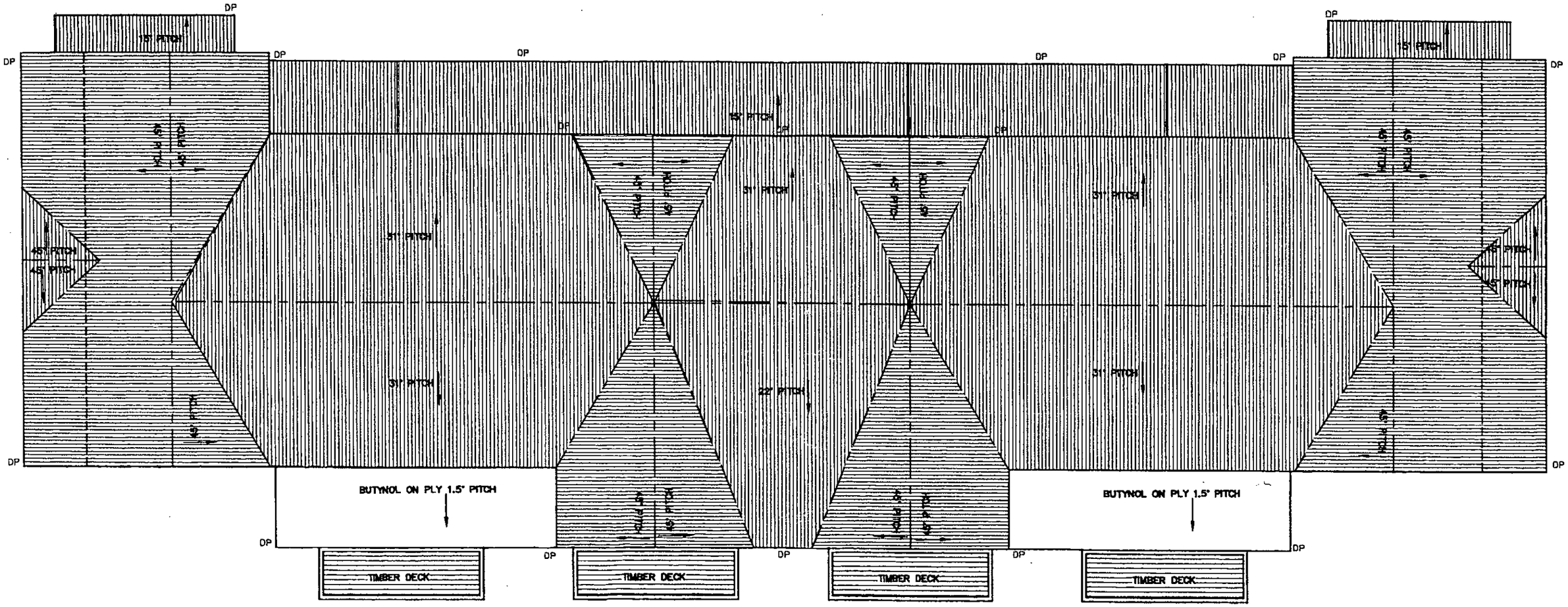
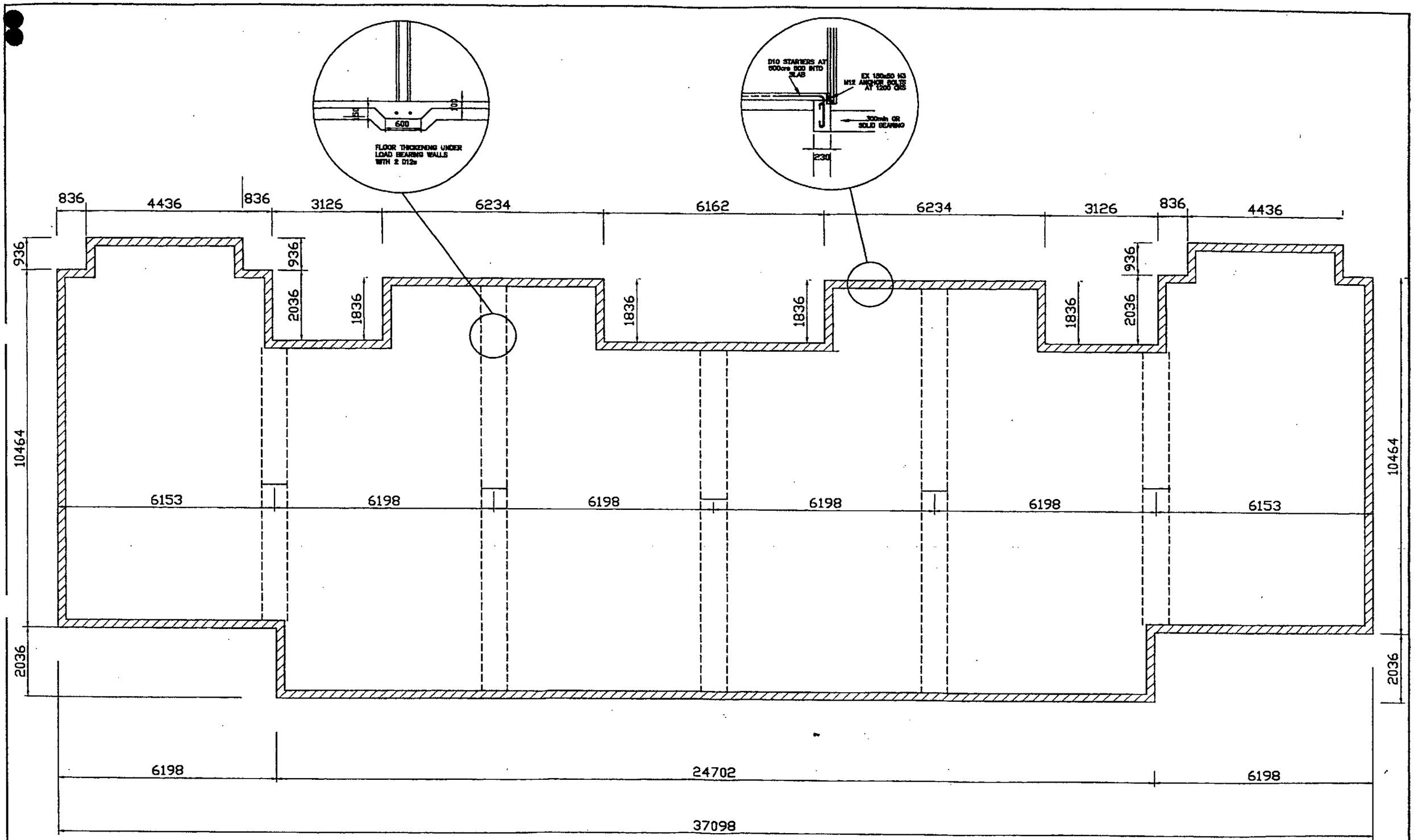


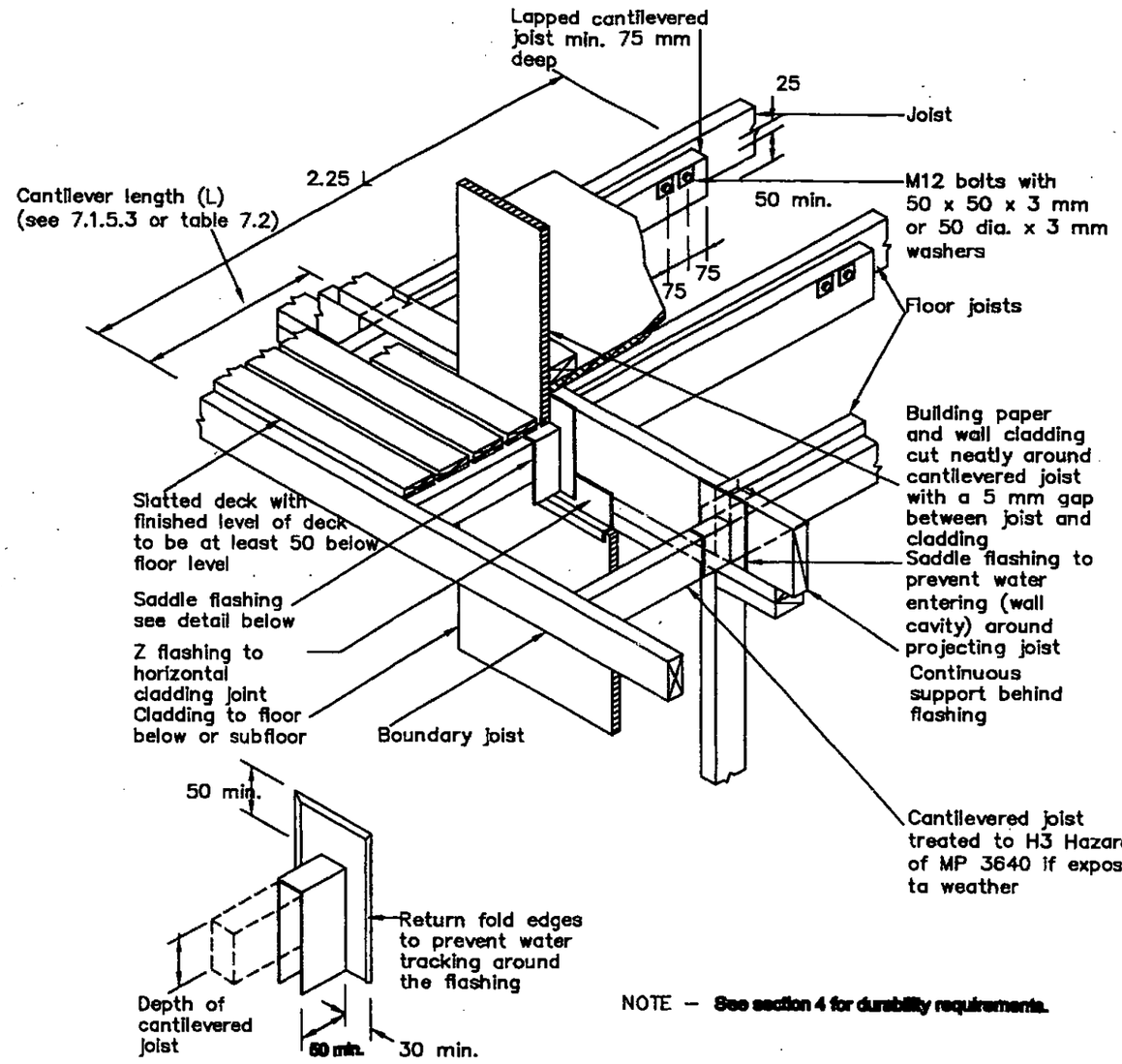
STELLA PACIFIC

STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

ROOF			
DRAWN MJC	AMEND'D R14,36	SCALE	SHEET 5
TRACED 98149	DATE 20\10\99	1 TO 100	SERIES OF 10



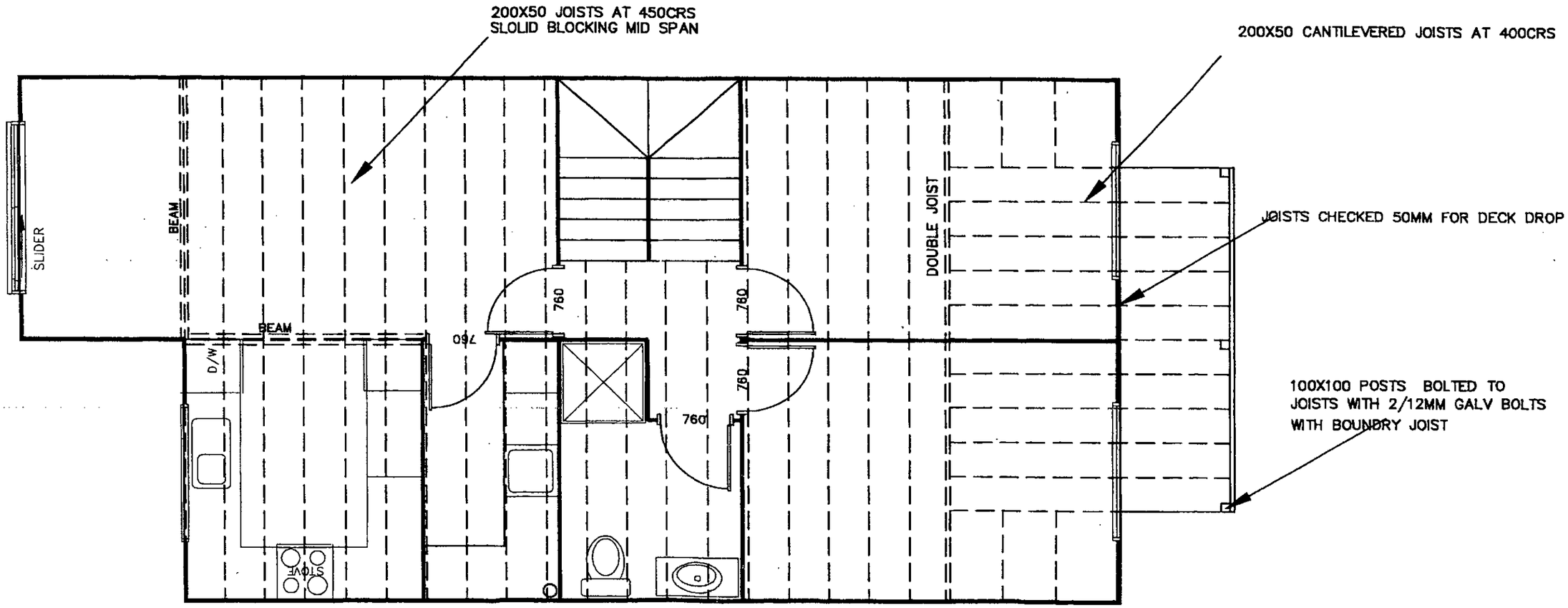
STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	FOUNDATION DETAIL	SHEET 6
		DRAWN MJC / AMEND'D R14,36 / SCALE	SERIES OF 10
		TRACED 98149 / DATE 20\10\99 / 1 TO 100	



SADDLE FLASHING DETAIL

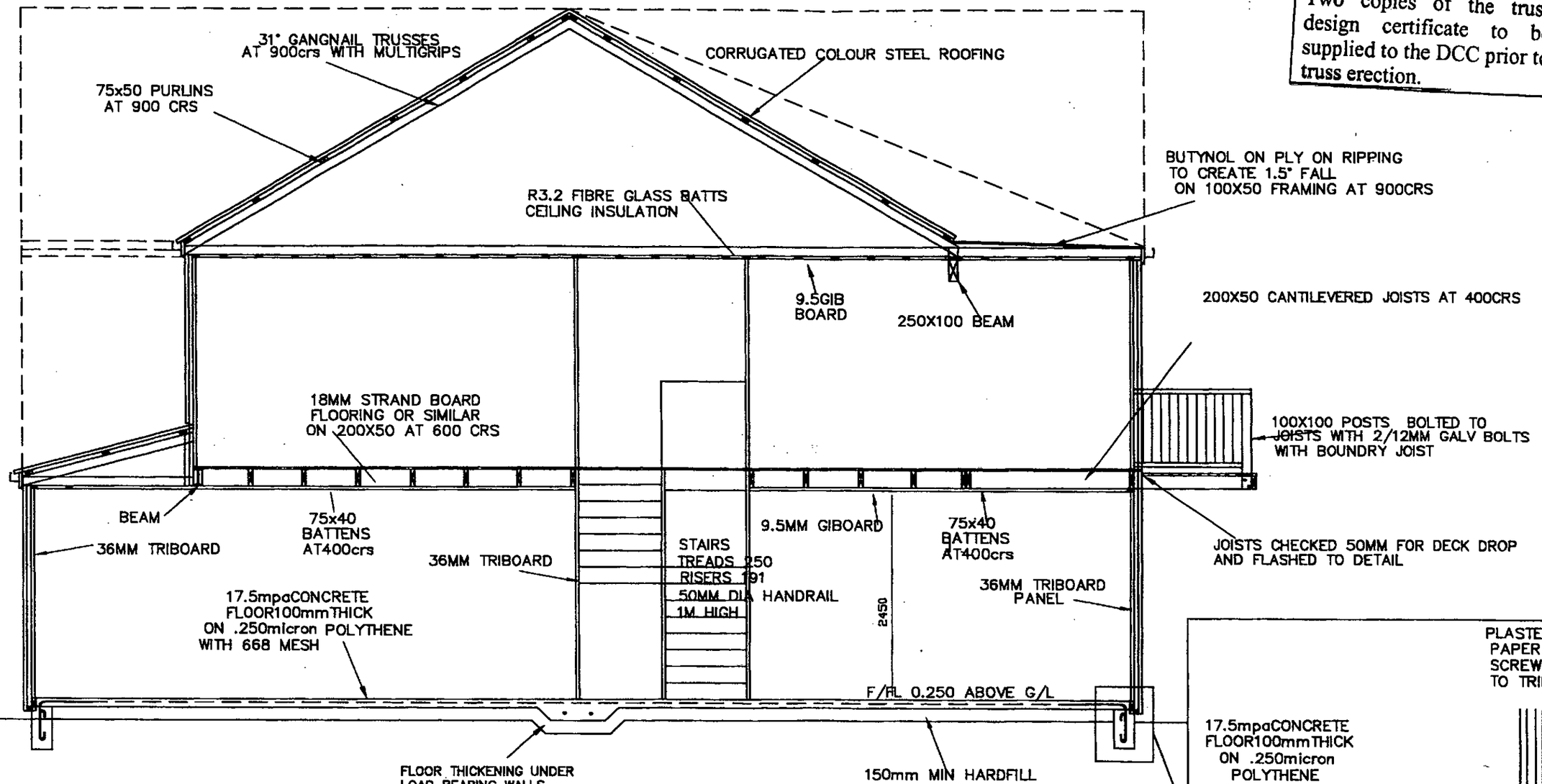
NOTE – **See section 4 for durability requirements.**

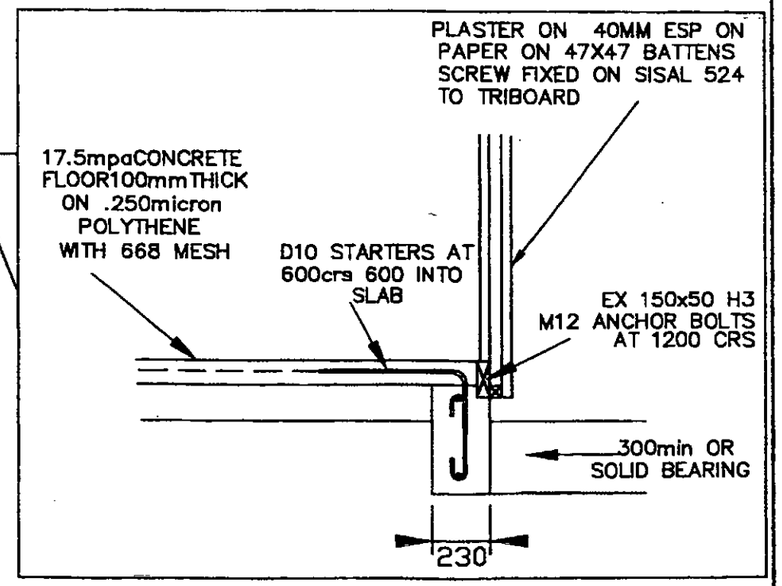
STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	DECK DETAILS	SHEET 7
		DRAWN MJC / AMEND'D R14,36 / SCALE	SERIES OF 10
		TRACED 98149 / DATE 20\10\99 / VARIES	



STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	JOIST LAYOUT	SHEET 8
		DRAWN MJC / AMEND'D R14,36 / SCALE	SERIES OF 10
		TRACED 98149 / DATE 20\10\99 / 1 TO 100	

Two copies of the truss design certificate to be supplied to the DCC prior to truss erection.





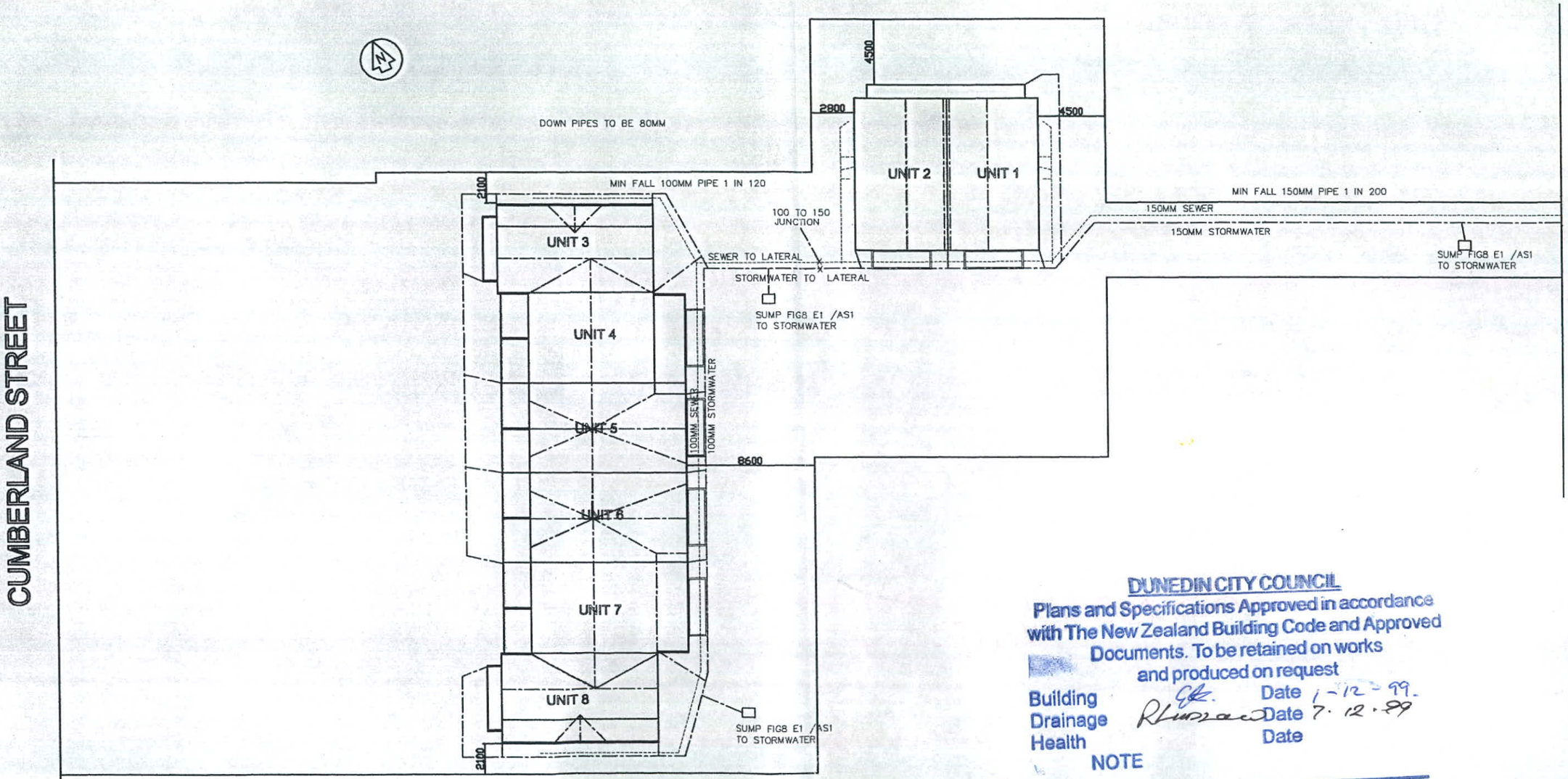
NOTES

A. ALL WORKMANSHIP TO BE OF BEST TRADESMAN LIKE MANNER
B. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED BEFORE ANY CONSTRUCTION COMENCES.
C. ALL WORK TO CONFORM TO NZ BUILDING CODE 1991 AND ADMENDMENTS
D. ALL PRODUCTS USED ON THIS STRUCTURE MUST BE STORED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS

STELLA PACIFIC

STUDENT ACCOMMODATION
CUMBERLAND STREET DUNEDIN

CROSS SECTION			SHEET 9
DRAWN MJC	AMEND'D R14,36	SCALE	SERIES OF 10
TRACED 98149	DATE 20\10\99	1 TO 50	

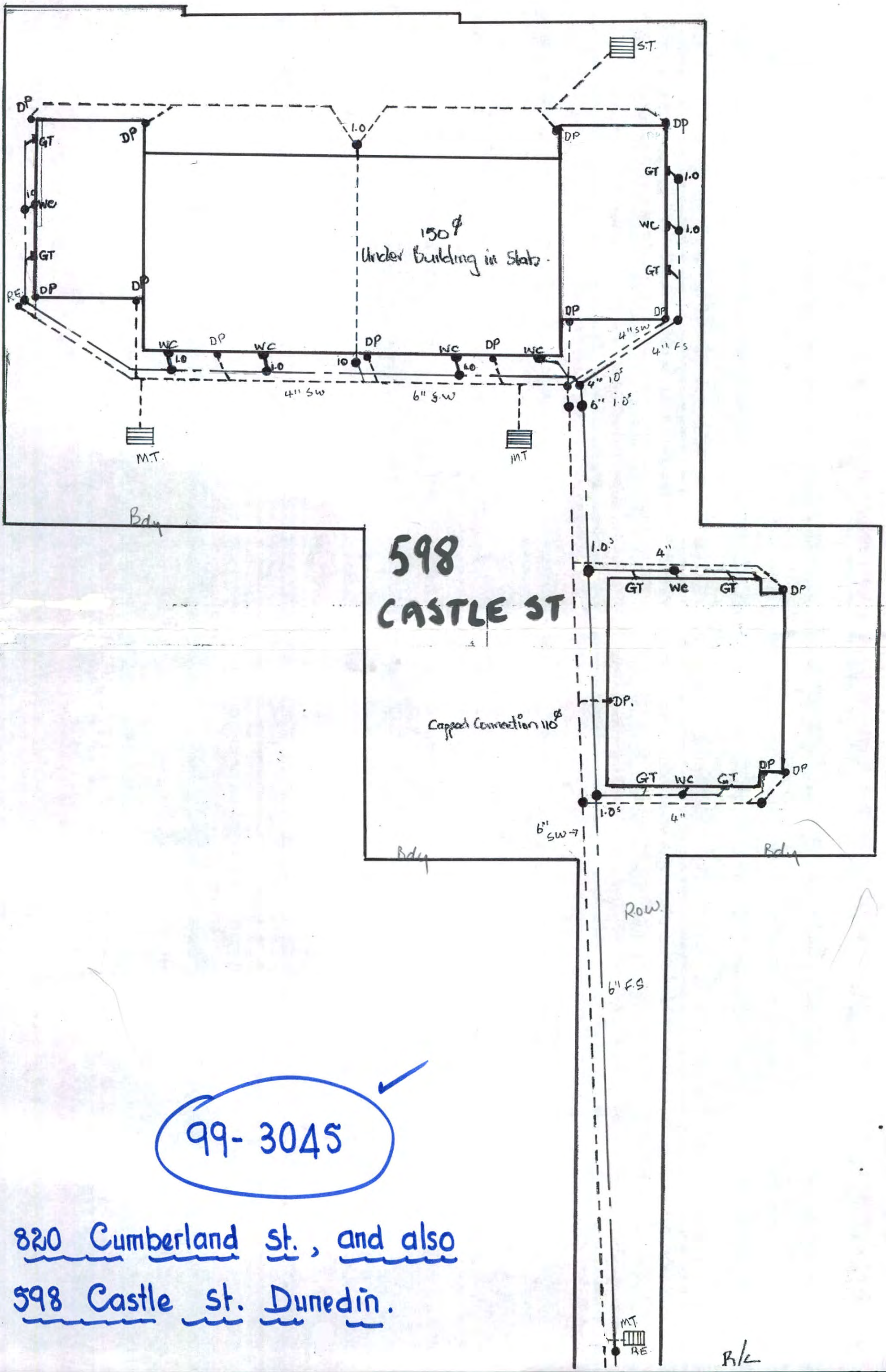


DUNEDIN CITY COUNCIL
Plans and Specifications Approved in accordance with The New Zealand Building Code and Approved Documents. To be retained on works and produced on request

Building — Date 1-12-99.
Drainage — Date 7.12.99
Health — Date

NOTE

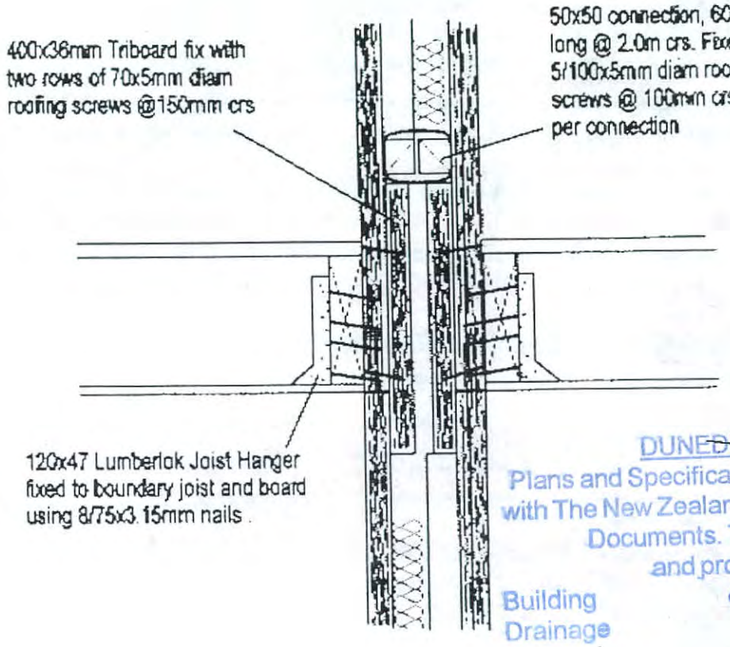
STELLA PACIFIC	STUDENT ACCOMMODATION CUMBERLAND STREET DUNEDIN	SITE PLAN	SHEET 10
		DRAWN MJC / AMEND'D R14,36 / SCALE	SERIES OF 10
		TRACED 98149 / DATE 20\10\99 / 1 TO 300	



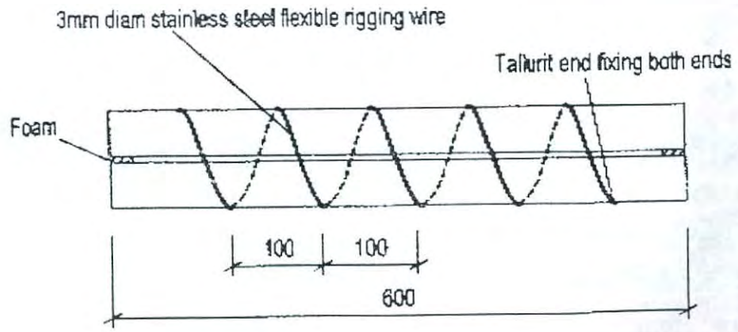
99- 3045

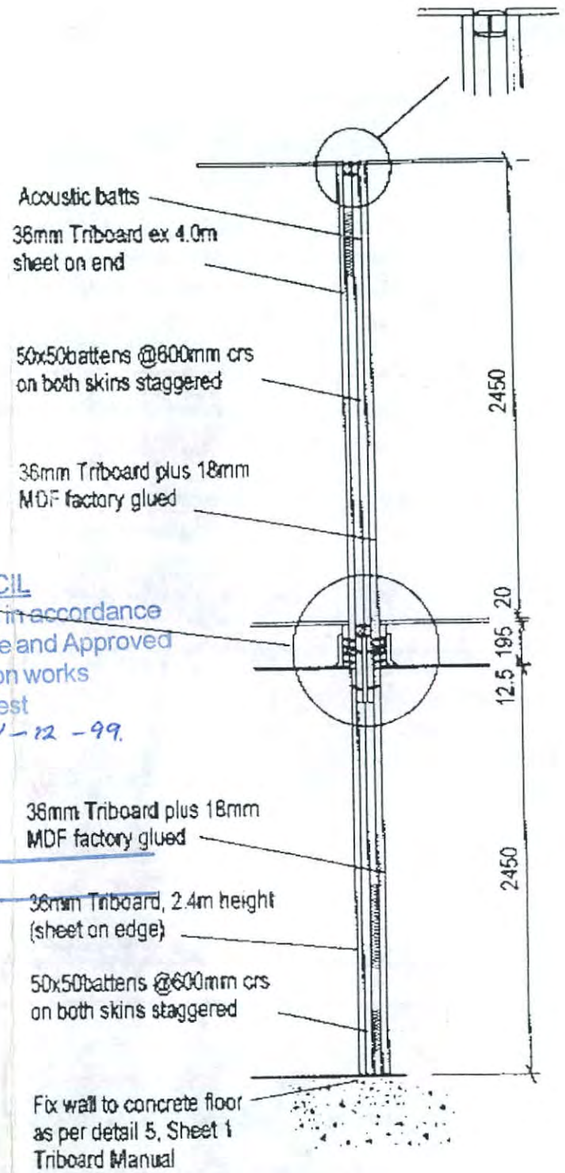
820 Cumberland st., and also

598 Castle st. Dunedin.



DETAIL A





DUNEDIN CITY COUNCIL
Plans and Specifications Approved in accordance with The New Zealand Building Code and Approved Documents. To be retained on works and produced on request
Building Date 1-12-99.
Drainage Date
Health Date
NOTE

Gale
R.F. GALE & Associates Ltd
Consulting Engineers
14 Apihai St
ORAKEI
AUCKLAND
PH / FAX: (09) 521 0364
email: gale@iconz.co.nz

NOTES
THE STC FOR A WALL (36 GAP 36 18) IS 56
FIRE RATING TO BE CALCULATED

PRELIMINARY

DRAWN BY : - Sam Yacoub
CHECKED BY :-
DATE DRAWN :- 25/11/99
REV. BY : -
REV. DATE : -

JOB TITLE
STUDENT ACCOMMODATION
CUMBERLAND STREET
DUNEDIN

DRAWING TITLE
UNITS 1-2
CROSS SECTION

SCALE ON A3 :	REVISION :
1 : 50	
JOB REF No : 99 323	DWG / SHT No : L 05

STELLA PACIFIC LIMITED

NEW ZEALAND ENGINEERED BUILDING SYSTEMS

TRIBOARD

CONSTRUCTION AND DESIGN

MANUAL

DUNEDIN CITY COUNCIL
Plans and Specifications Approved in accordance with The New Zealand Building Code and Approved Documents. To be retained on works and produced on request

Building (PART I) Date 1-12-99.
Drainage Date 7-12-99
Health Date
NOTE

48 BATTERSEA STREET
SYDENHAM
CHRISTCHURCH
NEW ZEALAND
PHONE: 03 377-8838
FAX: 03 377-0204
E-MAIL: stellapacific@xtra.co.nz

TABLE OF CONTENTS

INTRODUCTION

The Tables and Charts included allow for the design of simple two storey structures without engineering input. The details include a number of commonly used fixings which may be used by designers as appropriate. A design service for larger buildings is available.

The information in this manual has been arranged to follow the numbering system used in NZS 3604 and the relevant sections may be read as an alternative when using Triboard components.

GENERAL DESCRIPTION

The TRIBOARD Panel Construction System is based on sheets of Triboard 2.4m high and up to 4m wide, from 32 to 50 mm thick and 18mm thick Lakepine MDF for ceilings.

The panels are used as perimeter loadbearing and internal load or non-loadbearing walls in single storey or multi storey construction of (usually) houses.

The panels are fixed to each other using nails or screws and appropriate hardware and MDF ceiling panels to provide and integral wall and ceiling system. The joints may be glued and stopped to provide a flush finish if required.

The panels are normally factory painted on their faces and edges with a water resistant priming paint to minimise the effect of site wetting.

The exterior walls are insulated and finished as required, either with perforated reflective foil, battens and any conventional cladding system, or an alternative. Interior wall surfaces must be painted, papered or finished with any suitable lining material.

The ceiling may be constructed using 18 or 20 mm sheets of medium density fibreboard, nailed or screwed to the top of the wall panels and fixed to the truss bottom chords or rafters. Ceiling panels may be painted on one or both faces.

Alternatively a conventional framed gib board ceiling may be used.

The roof construction is conventional and in accordance with NZS 3604, using roof trusses or rafters. Any normal roof cladding may be used.

The foundations and building platform may be specifically designed, or constructed in accordance with NZS 3604 or NZS 4229.

Experience over a large number of houses indicates that the sound and thermal insulation performance of Triboard walls is excellent.

1. SCOPE AND INTERPRETATION

1.1 Scope

The TRIBOARD Panel Construction System has been specifically designed in accordance with NZS 4203 to comply with the appropriate design loadings for domestic buildings. The components have been designed using well established engineering methods. NZS 3604 and NZS 4229 can be used to specify the foundations, building platform and trussed roof structure.

The system as detailed in this manual is suitable for dwellings and similar buildings within the scope outlined in Clause 1.1.2 of NZS 3604 and with the following additional limitations:

1. Single storey or two storey construction.
2. Maximum roof pitch - 60 degrees.
3. Maximum eaves overhand - 600mm
4. Maximum wall height - as per Table on Page 11.
5. Maximum lintel spans - as per Table 6.7 on Pages 23 & 24.
6. Rafter or truss roof, maximum truss span 12m (roof dimension "S", NZS 3604 Figure 36B).
7. Snow loads as specified by NZS 4203 shall not exceed 0.5kPa on light roofs. Snow loads not allowed on heavy roofs without specific design.

TRIBOARD wall panels are intended to be used as internal walls, and as perimeter walls which are adequately protected against the weather using a properly detailed conventional cladding system.

TRIBOARD panels must be protected in any situation where frequent wetting occurs or where condensation is likely.

In bathrooms, laundries or kitchens, panels should be protected by water resistant linings or otherwise adequately sealed. Detailing should be such that no moisture can be trapped between the lining and TRIBOARD panels.

Painted timber or aluminium reveals are recommended at window and door openings in perimeter walls to protect the panels against the effects of repeated exposure to moisture.

1.2 Short Specification

For use by Architects and others who are using "TRIBOARD Panel Construction System" in their structures.

"TRIBOARD panels and site fixings shall be as per the current "Triboard Panel Construction System" Design and Construction Manual."

1.3 Recommended Design Procedure

When designing a TRIBOARD Panel house, it is recommended that the following general design approach is followed.

1. Draw the desired floor layout plan within the limitations of the relevant bylaw requirements.

2. Select the roof and wall cladding systems and choose the level of insulation required from Pages 12 & 13.
If a wall separating tenancies is require, choose a wall with the required fire and STC rating from Pages 17, 18.

3. Design the foundations and the building platform specifically or in accordance with NZS 3604 or NZS 4229, taking into account the specific site requirements.
A steel joisted floor or floor and ceiling system may be chosen from Page 19.

4. Using Table 6.3 in NZS 3604 choose a stud size and from Page 20 in this manual the Triboard equivalent.

5. Determine the total number and arrangement bracing units required in accordance with NZS 3604 990 Tables 6.1 & 6.2 and calculate the bracing available using the bracing values given for various panel widths and fixings on Page 21.
a bracing calculation service is available via panel remanufacturers.

6. Select a truss or rafter roof structure to span between the supporting walls and design the roof construction to comply with NZS 3604.
Alternatively choose a diaphragm roof from Page 22.

7. Check the lintels and their supports from Page 23.
Check the lower storey walls and lintels for vertical load from Page 24.

8. Select the appropriate connections and panel grade (normally B) from the standard details on Pages 27 to 29 and following.

Note: Different panel manufacturers use various versions of the details in this manual Check with your local panel supplier.

For bracing calculations it is recommended that you use the lower of the likely fix values so the detail actually used is not critical. Use the bracing values for all the panels in the building rather than special "bracing panels" to avoid special fixings.

2. GENERAL

1.1 Materials

2.1.1 *Grade, thickness and durability of board*

Panels shall be manufactured from strength grade A Triboard of the correct thickness. The surface finish shall be F (first grade for top quality paint) or L (for paint or laminating and veneer) or appropriate for the panel finishing.
F is recommended and will be supplied unless L is specially ordered and available.

The standard density for TRIBOARD used for panels shall be:

Thickness: 32 35 38 45 50 55 mm
Std density: 662 658 653 642 638 631kg/m3

Triboard sheets of various thicknesses have been tested by BRANZ and in their opinion will be durable for 50 years.
(See Related Documents)

2.1.2 *Ceiling board*

Board used for ceilings may be 18 or 20mm thick medium density fibreboard. Joints must be made with care to prevent cracking. The moisture content of the board at time of stopping must be 10% or less. Ceiling insulation must be installed prior to stopping. Movement control joints are recommended for large ceilings.

2.1.3 *Paint*

The paint used on the panel faces and edges shall prevent water entering the board during construction. A suitable test is that when a wet sponge is placed on the painted surface and kept wet in the same place for 3 days, there is no raising of the surface.

The paint shall also be suitable as an undercoat for any of the normal finishg coats or for wallpapering.

Comment
Paints which have been found satisfactory in practice are:

- Fountex Alkyd Board Sealer
- Mirotone 809 Isolating coat (white)
- 2 Pot Epoxy, e.g. Everdure
- Benjamin Moore 2030

- Levenes Architectural Series
- Santana Triboard Sealer
- Resene Acrylic

The paint used must be mixed and applied in accordance with the manufacturers instructions.

2.4 Workmanship and Tolerances

Panels manufactured for use in the TRIBOARD Panel Construction System shall be accepted provided they comply with the criteria in this manual. The quality table gives three quality options.

2.4.1 *Edge Profiling*

Grooves for tongues - the tongue shall be a firm fit in the groove and must not wobble. The step between adjacent panels when fitted together shall be less than 0.5mm.

2.4.2 *Grooves for the Flooring Fixing Batten*

The groove and tongue may be eased to allow easier erection by tapering the edge of the batten. The panel must be tight on the batten when in its final position.

2.4.3 *Painted Panels*

The paint coating must be over the entire face of the panel without skips or holidays.
or holidays.
If factory sanded the entire surface must be sanded to a "smooth to the touch" feel with a 120 grit sandpaper.
Outside wall surfaces need not be sanded.

2.4.4 *Painted Edges*

In areas where there is likelihood of frequent wetting such as bathrooms, kitchens and laundries, panels must be protected with an approved water repellent paint. The paint shall be liberally applied to seal the surface and the joints.

2.4.5 *Marking*

All panels shall be clearly marked on an edge with an identification number to assist with erection.
Some manufacturers provide a job identification plate for fixing in a suitable place, e.g. hot water cupboard.

3 SITE REQUIREMENTS

3.1 Site Preparation Prior to Erection

Check that:

- The floor plan dimensions are correct and that the panel locating hardware has been fixed to the floor in the correct positions.

- The floor is level.

- The truck can park in a position that allows convenient lifting of panels off the truck and onto the floor. It is well worthwhile marking the panel number on the floor in the correct position prior to commencing erection.

3.1.1 *Site Storage and Handling*

If board is stored for any period of time the usual precautions should be taken, i.e. it must be kept flat and dry. As colour changes caused by gluts can be difficult to hide and may show through paint, it is recommended that cover sheets be kept on the bottom of a pack.

3.2 Weather Exposure

As prolonged exposure to water causes the panel to swell and this will delay internal finishing, panels should be kept dry. The trusses and roof should be fitted as soon as practicable and if delay is expected, the building covered with tarpaulins or similar to keep it dry. Any Triboard panel that is likely to be exposed to weather or moisture must be adequately sealed.

3.3 Formaldehyde Emission

The surfaces and edges of all boards, floor, walls and ceiling, exposed inside the building must be sealed to reduce formaldehyde emissions from those surfaces.

3.4 Assembly of Components

3.4.1 *General*

The assembly of panels on site is a simple process but care must be exercised to put the right panels in the right place and in the right way round.

"If it doesn't fit, check the plan; if it doesn't figure, pick up the phone, NOT the saw"
Panels must <u>not</u> be cut on site without the permission of the remanufacturer.

It is strongly recommended that erectors visit the site of a house under construction and discuss their proposed method with people who have already erected panels.

TRIBOARD marketing staff will be pleased to assist and to provide suitable contacts.

3.4.2 *Identification of Components*

All panels are individually marked on an edge with an identifying number.

3.4.3 *Panel Erection Sequence*

It is recommended that erection start from the "far" side of the building and that panels are assembled so that each is fixed to one already in place. Check that the panel remanufacturer knows the proposed sequence so that the panels are stacked in the order they are required.

3.4.4 *Bracing of Panels*

Provided panels are fixed to each other little or no temporary bracing is required.

3.4.5 *Alignment*

Before the joints are fixed together, care should be taken to ensure that the panels are plumb and that their top edges are level. Minor adjustments to panel locations may be made prior to fixing them to the floor. Gaps 3mm or wider at joints are not acceptable and must be closed. The strops used to tie the load on the truck make excellent come along.

3.4.6 *Joinery*

Joinery may be fitted directly into the openings, the 10mm clearance used for stick framing is not required.

3.4.7 *Ceiling Panels*

Ceiling panels may be erected similarly to wall panels. Erect temporary supports in rooms where the panels are required to span more than 2.4m. Care must be taken to prevent damage to the panels during erection and to keep the panels correctly aligned and tightly butted.

3.4.8 *Specialist Equipment*

Some panel remanufacturers offer an erection service. Alternatively panels may be erected using a crane or by hand. Note that a 4m panel weighs over 200kg.

3.4.9 *Cleanliness*

Personnel working on the panels during erection should ensure that they avoid marking or dirtying the finished surfaces.

3.4.10 *Trussed Roofs - Camber*

Roof trusses are supplied with a built in camber to allow for deflection under load. About half of this deflection occurs immediately the truss is loaded and the other half occurs slowly over the next year. When concrete tiles are used the camber can be up to 15-20m for large spans and the resulting deflections say 10mm when the tiles are laid and 10mm when the the tiles are laid and 10mm subsequently. In the majority of cases with a truss span of say 8m and a camber of 10mm the deflection on loading will be of the order of 5mm with a creep deflection to follow of a further 5mm.
As the ceiling panels are fixed to the tops of the wall panels during erection and propped level from the floor over the larger spans the ceiling will be level when installed. The trusses when erected with full camber will span clear above the ceiling panels. It is recommended that the CPC cleats be fixed to the ceiling in their correct position but not fixed to the trusses until the roofing has been laid and the trusses have settled. The cleats near the truss supports, where movement is small, may be fixed before the roof is laid, but where movement is significant, i.e. near the centre of the span, leave the temporary props in place and do not fix the cleats until the roof has been in place for a few days.

With light metal roofs the deflection is much less, the camber is small, and in most cases the cleats may be fixed immediately.

3.4.11 *Diaphragm Roof Erection*

A diaphragm roof is built by connecting each ceiling sheet to form a stiff panel and the various panels lean on each other for support. Until the roof is complete the free edges have little or no strength and must be supported. Temporary support must be provided, usually along the ridge line, until all panels and fixings are in place. A recommended camber may be shown in the design.

Rafters provide the stiffness to prevent each panel sagging out of plane and it is suggested that each ceiling panel is cambered upwards slightly while the rafters are being fixed to the panels.
The table includes pitches of 30 degrees and over, lower pitches can be built but are not included as deflections are greater and are not recommended without prior experience.

3.5 *Maintenance Period*

As the board used is dry and the panels stiff, no maintenance is normally required.

5 FLOORS REFER TO NZS 3604

Note that double joists are not required under continuous Triboard walls.

6 WALLS

6.1 General

All perimeter and internal wall panels are TRIBOARD panels. Walls are normally 2.45m high but may be up to 4m high using the table in this manual. Higher walls must be specifically designed.
Panels may be mixed with conventional light timber frame construction as required.

6.2 Systems to resist vertical loads

Wall panels chosen from Table 6.3 in this manual as an equivalent to studs chosen from NZS 3604 Table 6.3 will resist equivalent loads

6.3 Systems to resist horizontal loads

6.3.1 *Bracing*

Sufficient bracing elements shall be incorporated to comply with the requirements of the NZS 3604, Tables 6.1 & 6.2. All full height panels without large openings, having a minimum length of 600mm and fixed in the building in accordance with the appropriate details may be used as bracing elements.

Bracing elements should be evenly distributed throughout the building.

6.3.2 *Panel Brace Values*

As the panel will not deform i.e. remains square and as it is fixed to the floor so that it will not slide, the brace value for a panel is largely dependent on preventing it overturning. wide panels have much more bracing value than narrow panels.

Small openings have little effect and windows up to 2000mm wide x 1200mm high may be ignored. Internal door openings up to 850mm wide may also be ignored provided the lintel is continuous on one or both sides of the opening. Walls joined to length using either the exterior or interior joining details shown may be measured as one panel.
The values in the table for each type of fixing preventing overturning may be added.

4.0 CONSTRUCTION REQUIREMENTS

4.1 Foundation and Floor Construction

All foundation and floor platform or lower floor construction shall be specifically designed or constructed in accordance with NZS 3604 or NZS 4229 as appropriate. The following additional requirements apply.

4.1.1 *Timber Floor*

Perimeter wall panels shall be supported by joists and bearers in accordance with the requirements of NZS 3604 for loadbearing walls. Perimeter wall panels supporting lintels exceeding 2.2m span must be supported by a pile at no more than 200mm measured between the centreline of the pile and the edge of the panel edge adjacent to the lintel opening.

4.1.2 *Concrete Floor*

Concrete floors may have a timber member cast in around the entire perimeter or have framing anchors cast in. Refer to Detail Sheets 1 & 7 for details.

4.1.3 *Steel Floor Joists*

Light rolled steel joists can be used as floor joists in place of timber and the stiffness may be increased by fixing to the floor above and a board ceiling below.

Either a C (channel) or a Z (zed) section can be used. Fixings, blocking etc. must be as per the details shown.

4.1.4 *Damp Floor Materials*

If the panels are erected onto a damp concrete or timber floor a suitable moisture barrier is required.

4.2 Basement or Lower Storey of Triboard

The erection of the TRIBOARD Panel System lower storey is essentially identical to the erection of a single storey. The intermediate floor may use either timber or steel joists.

6.3.3 *Walls without bracing*

A board ceiling has similar diaphragm stiffness to a floor. This can be used to design bracing walls up to 12m apart and buildings without bracing on one exterior wall by using the torsion stiffness of the walls at right angles to it. Buildings of this nature should be specifically designed.

6.4.1 *Panel Thickness*

External wall panels shall be a minimum of 32mm thick TRIBOARD, with battens fixed to the outer face as per Table 6.3
Internal wall panels shall be a minimum of 32mm thick TRIBOARD. Where an internal wall spans more than 3m between lateral supports such as walls at right angles to it, 35 or 38mm panels shall be used.

6.6 Lintels

6.6.1 *Lintels*

Table 6.7 shows the lintel depth (mm) required for use with the TRIBOARD Panel Construction System. The truss span shall be taken as the roof dimension "S" in accordance with NZS 3604, Figure 36B.

6.6.2 *Lintel supports*

Lintels may be butt jointed to the adjacent wall panels using the appropriate detail. Panels supporting lintels shall be a length no less than 600mm or 200mm when fixed to another panel at right angles.

7 **POSTS** REFER TO NZS 3603

8.0 EXTERIOR WALL COVERINGS

8.1 Cladding

Any conventional cladding may be used.

8.2 Installation of external joinery

Install windows and doors to provide a watertight seal between the cladding and the perimeter of the frame in accordance with the manufacturer's instructions. Details which allow water to run down behind the external cladding are not recommended.

9 WALL LININGS

9.3 Stopping of joints between panels

Joints between panels must be firmly fixed using one of the joint details shown in this manual. Joints may be stopped using normal GIB stopping materials as follows:

Both sheet edges bevelled 3mm deep x 50 - 75 wide, bevels not painted. Use bedding compound to fix paper tape (NOT glass tape) Finish with finishing compound. Stop ceiling panels similarly.

10 - 11 REFER TO NZS 3604

12 CEILINGS

12.1 Board ceiling - 18 or 20mm board

The maximum distance between parallel bracing lines shall be no more than 8m centre to centre.

Each perimeter bracing line shall contain no less than 70BU's, provided walls longer than 7m measured between building corners, shall contain no less than 10BU's per meter of wall length.

12.2 Strapped gib ceiling

A conventional gib ceiling as per Section 12 of NZS 3604 may be used. In this case the distances between bracing lines must be those from NZS 3604.

APPENDIX M

M1 Ventilation

As TRIBOARD panel houses have very low air leakage it is necessary to provide a small amount of permanent ventilation to prevent mould growth and the possibility of an accumulation of moisture. Ventilation requirements for housing are specified in NZBC G4.
Triboard is made using a low formaldehyde resin and meets the European E2 standard for formaldehyde content. When the panels are painted the emission from the surfaces is further reduced. In practice the ventilation required to prevent dampness and mould growth in houses is ample to prevent any accumulation of formaldehyde.

M2 Insulation

A number of combinations of wall and ceiling materials may be used to achieve the insulation level required. Chart M shows the values required by NZS 4218P.
The values required for a Medallion home are easily achieved.

APPENDIX N - SERVICES

N1 Electrical

Grooves and ducts to accommodate electrical wiring are normally cut at the factory. If necessary they may be cut on site using a router and drill. Refer to Detail Sheet 14 for typical details. check with your local panel supplier as to his standard practice.

N2 Plumbing

Plumbing

Plumbing and drainage are normally accommodated in each fitting and connected from the floor.

PANEL SUPPLIERS

Panel Manufacture

In order to maintain a satisfactory standard of quality and to meet the Triboard remanufacturers warranty requirements only panels manufactured by an accredited remanufacturer may be used as building components.

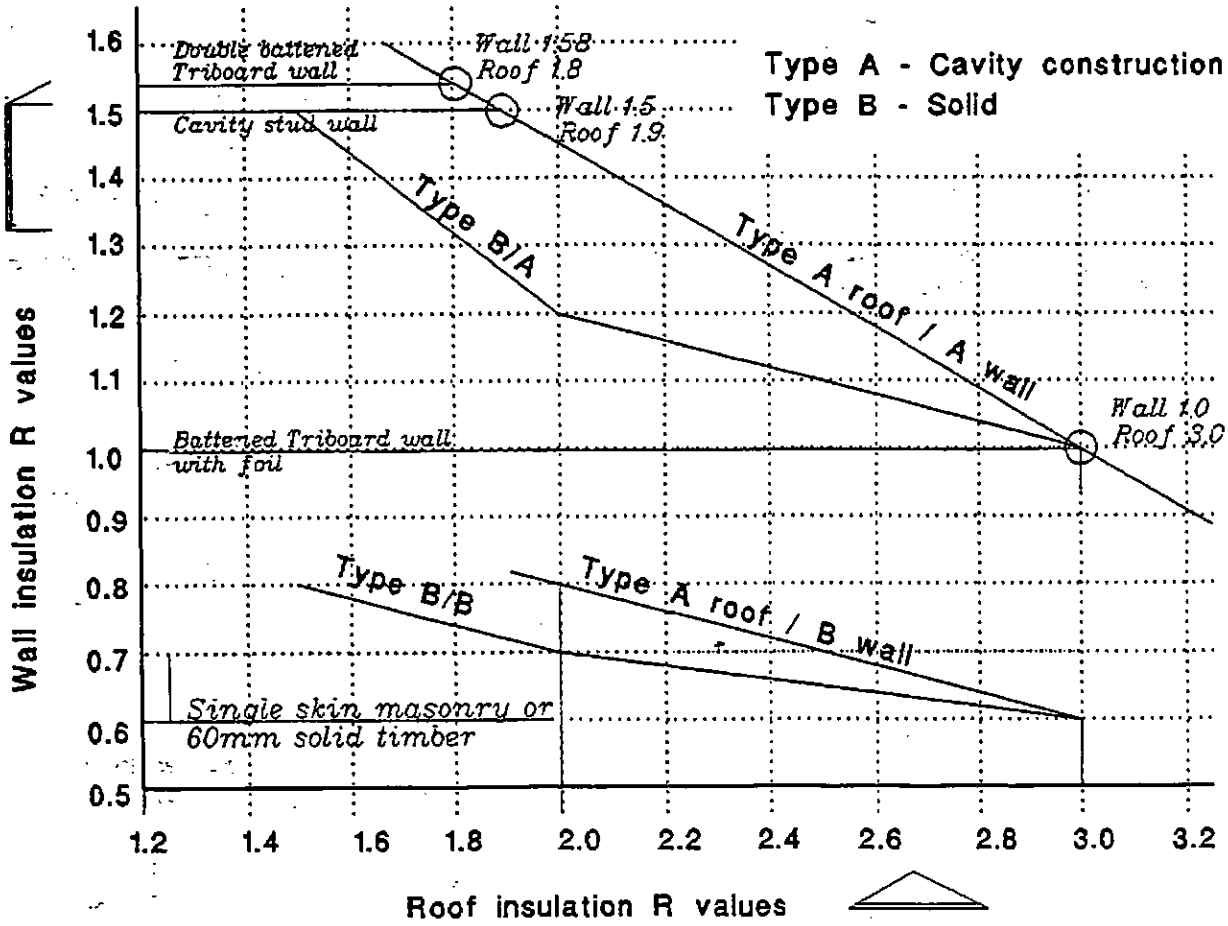
The tolerances for panel manufacture and erection are included in Section 2 of this manual.

Accredited Remanufacturers

Companies which have been accredited by ACTRANZ as panel remanufacturers and from whom panels may be purchased directly are listed in the back of this manual.

Insulation of Walls and Ceilings

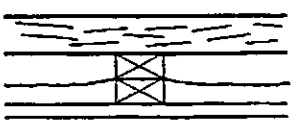
Wall and Ceiling R-Value Combinations from NZS 4218P



R Values for various wall cross sections

Building paper not shown - refer to cladding mfrs specification

36 mm Triboard
Batten
Reflective foil (non perforated)
Batten
Cladding



1.58

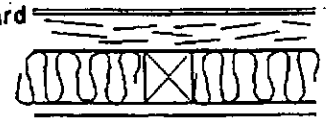
Notes for doubled batten wall R = 1.58

1 - Use non perforated foil, not perforated as for other walls

2 - Battens must be dry to prevent trapped moisture

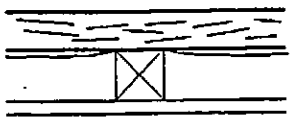
3 - Seal both cavities at top and mid height with horizontal battens similar to that shown at the bottom on Sheet 4 Staple the foil edges to the horizontal battens to seal the air space

36 mm Triboard
F/glass
Batten
Cladding



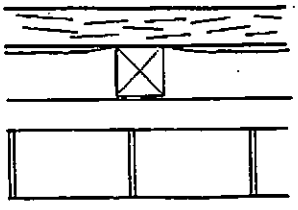
1.5

36 mm Triboard
Refl foil
Air gap
Batten
Cladding



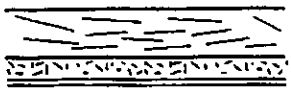
1.0

36 mm Triboard
Refl foil
Air gap
Batten
Building paper
Brick



1.12

45mm Triboard
18mm polystyrene
Cladding



1.0

\R values 96 revision

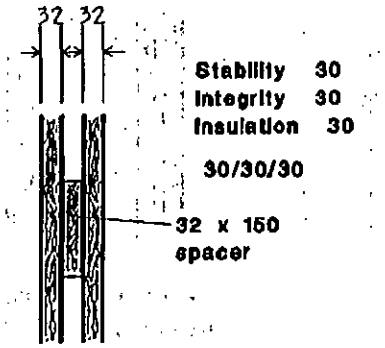
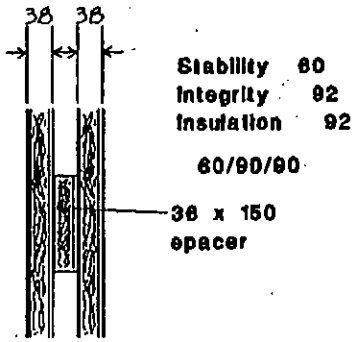
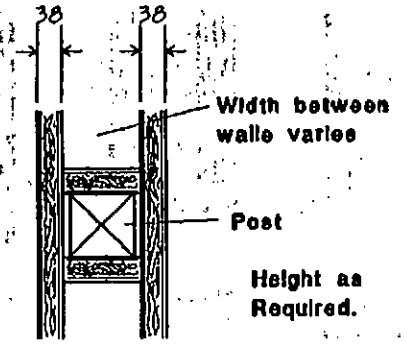
INSULATION CALCULATIONS FOR TRIBOARD WALL PANEL AND ROOF COMBINATIONS

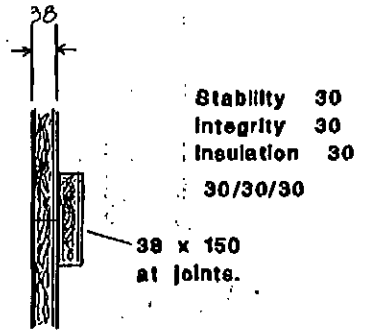
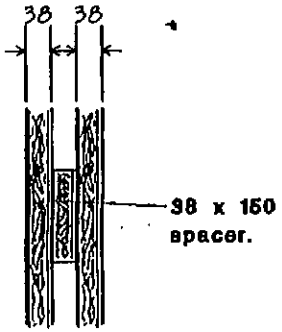
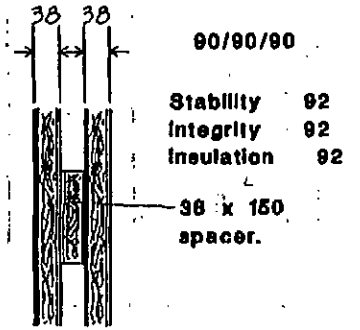
Refer to N Z S 4218 P and Acceptable solution E3/AS1 for the required insulation values
These are shown in graphical form on the preceding page

With greater insulation in the walls there can be less in the roof

Combination			W1	W2	W3	W4	W5	W6
Board mm			36	45	36	45	60	36
Insulation			f/glass	olystyren	refl foil	olystyren	none	refl foil x 2
Cladding			H/planks	H/planks	H/planks	ply	board	H/planks
Wall Item		R value						
Inside surface Rsi		0.09	0.09	0.09	0.09	0.09	0.09	0.09
Triboard	36 mm	0.33	0.33		0.33			0.33
	45	0.41		0.41		0.41		
	50	0.46						
Refl air gap	20	0.55						1.10
	40	0.57			0.57			
Polystyrene	18	0.50				0.50		
	37	1.02		1.02				
	40	1.10						
50 mm f/glass batts		1.00	1.00					
50 mm Rocwool		1.60						
12 mm ply		0.11						
Hardiplanks		0.03	0.03	0.03	0.03	0.03	0.03	0.03
Outside surface Rso		0.03	0.03	0.03	0.03	0.03	0.03	0.03
Total wall R value			1.48	1.58	1.05	1.06	0.15	1.58

Combination			R1	R2	R3	R4
Roofing mm			iron	iron	iron	iron
Insulation			f/glass	f/glass	olystyren	rocwool
Ceiling			board	board	board	board
Roof		R value				
Inside surface Rsi		0.09	0.09	0.09	0.09	0.09
75 mm f/glass batts		1.80				
100 mm f/glass batts		2.40		2.40		
150 mm f/glass batts		3.40	3.40			
75 mm Rocwool		1.90				
100 mm Rocwool		2.70				
125 mm Rocwool		3.00				3.00
100 mm polystyrene		2.75			2.75	
18 mm board ceiling		0.17	0.17	0.17	0.17	0.17
20 mm board ceiling		0.18				
Outside surface Rso		0.03	0.03	0.03	0.03	0.03
Total roof R value			3.69	2.69	3.04	3.29

Fire Rating (minutes)	30 (TFW 30/2)	60 (TFW 60/1)	60 (TFW 60/1) Post load as designed
Load Bearing Walls (10 kN/m) Height 3m max. or as designed with post			
BRANZ Ref No:	92/232	92/234	92/234
SANZ/MP9 Ref No:	02.4.6.6 92/13	02.4.6.6 92/14	

Fire Rating (minutes)	30 (TFW 30/1)	60	90 (TFW 90/1)
Non Load Bearing Walls Height 3m max. For construction details see Sheet 33		 As for 90 mins	
BRANZ Ref No:	92/233		92/289
SANZ/MP9 Ref No:	03.2.5.2 92/1		03.2.5.2 92/2

Drawn for ACTRANZ by R F Gale & Associates
14 Aphal St Orakei AUCKLAND 5
Ph/Fax 09 521 0364

Triboard Firewall Selection

Board density 700kg/m3

Drawn JG/RG Revised RG File No 93031
Checked RY Date 26/8 Sheet 32
Date 14/1/94

BRANZ
THE RESOURCE CENTRE FOR BUILDING EXCELLENCE

BRANZ Technical Opinion on the Durability of Juken Nissho Triboard and Strandboard

9 December 1993

Moonshine Road, Judgeford. Private Bag 50908, Porirua City, New Zealand

Telephone +64 4 235 7600 Fax: +64 4 235 6070

BRANZ
THE RESOURCE CENTRE FOR BUILDING EXCELLENCE

BRANZ TECHNICAL OPINION ON THE DURABILITY OF JUKEN NISSHO TRIBOARD AND STRANDBOARD

9 December 1993

SUMMARY

Triboard

Factory primed Triboard used for interior walls (load-bearing and non-load bearing) of houses will be durable for 50 years and meet the NZBC B2 requirements with the following provisos:

1. Exposure to the weather is limited to 2 weeks or less.
2. All site cut edges are sealed.
3. A cladding system is installed which prevents water from contacting the Triboard panels.
4. Water is prevented from contacting the bottom edges of the panels in wet rooms.
5. The walls in wet rooms must be finished with coating with low water vapour permeability (e.g. oil/alkyd enamel, polyurethane, epoxy) and the room must have an adequate level of ventilation as described in NZBC E3/AS1.
6. The edges of cut-outs for windows should be sealed with epoxy (or similar) paint and flashing details must be such that water entry through to the Triboard does not occur.
7. Saunas must not be installed in Triboard houses.

Strandboard

Strandboard used as a flooring material in houses will meet the NZBC B2 requirements with the following provisos:

- exposure to the weather is limited to 2 months or less
- ground drainage must be in accordance with NZBC E2
- sub-floor spaces must be ventilated as required by NZS 3604:1990
- a 300 mm gap must be left between the flooring and the ground or, a damp proof membrane installed
- no hot air vents (eg from driers), steam vents or overflow pipes are to be directed into the sub floor area
- foil floor insulation should be used in areas in localities where rainfall is high

When used in wet rooms (such as laundries or bathrooms) Strandboard must be protected with a finish which is both waterproof and has a low water vapour permeability. The Durability of Strandboard in these situations is totally dependent on the finish being maintained. Strandboard should not be used in saunas or steam rooms.

Moonshine Road, Judgeford, Private Bag 50908, Porirua City, New Zealand
Telephone +64 4 235 7600 Fax: +64 4 235 6070

BASIS of OPINION

1. BIA Requirements

Triboard

It is our opinion that the durability requirements under section B2 of the NZBC for Triboard used in houses are:

- where Triboard is used as load-bearing walls as given in B2.3(a) - 50 years or the specified intended life.
- where Triboard is used as load-bearing walls as given in B2.3(c) and B2/AS1 - 15 years or the specified intended life.

Strandboard

It is our opinion that the durability requirements under section B2 of the NZBC for Strandboard are:

- where Strandboard is used as the flooring under the framing in houses - 50 years or the specified intended life as given in B2.3(a).
- where Strandboard is used as a flooring but laid subsequent to the erection of the house frame as given in B2.3(c) and B2/AS1 - 15 years or the specified intended life.
- where Strandboard is used as a diaphragm ceiling lining between the walls and trusses - 50 years or the specified intended life as given in B2.3(a).

2. History of use

Urea formaldehyde (UF) resins date from 1870 but commercial use started from about 1930.

Urea formaldehyde resin has been used for construction purposes for more than 50 years. Over this period it has been used for laminating timber (including beams and plywood), finger jointing timber and manufacturing wood composites such particleboard (PB) and medium density fibreboard (MDF). The performance of UF over this period has been proven to be satisfactory subject to certain restrictions on the environmental conditions where it may be used. Particleboard manufacture using UF resins started in the 1950s and was introduced to New Zealand toward the end of that decade. The number of houses with particleboard floors installed is conservatively estimated at over 300,000. During this time the number of failures reported to BRANZ has been relatively few. Many of these have related to incorrect installation (e.g. inadequate sub-floor ventilation) and abuse in service.

3. Assessment of Triboard Durability

3.1 General

Durability of the resin

UF bonded products perform poorly when exposed for long periods to wet conditions and when fully exposed to the weather. The reasons for this is that urea-formaldehyde undergoes hydrolysis in the presence of water. The rate of the hydrolysis reaction is dependent on the temperature and is generally held to take place quite rapidly when the temperature exceeds 40 °C. At normal ambient temperatures in New Zealand the hydrolysis rate is very slow. Short-term exposure to cold water (eg. 20 °C) does not cause appreciable breakdown of the resin, but immersion in warm or hot water rapidly causes breakdown (Dinwoodie 1983). Historically most problems with UF bonded PB

flooring recorded at BRANZ have been in bathrooms and laundries in tenanted houses. MUF bonded particleboards have a higher resistance to water than UF and when formulated correctly can be classified as boil resistant to BS 1204. These adhesives are generally accepted as suitable for use in protected exterior applications and high hazard interior situations (BRE Digest 340).

The resin in current production of Triboard and Strandboard results in lower formaldehyde emissions compared to resins used in older flooring particle boards. These resins use a lower formaldehyde to urea ratio. Several studies have been carried out to assess whether these resins perform as well as earlier higher formaldehyde materials. Roffael (1993) discusses the properties of low emission (E1/E2))UF resins and their influence on particleboard properties. He concluded that resin performance was dependent on a number of factors including formaldehyde ratios. A well formulated low emission resin was shown to be stable under cyclic humidity testing for 30 weeks between 30% RH and 85% RH at 20 °C.

Data has been provided by Dynochem NZ who manufacture the resin used in Triboard. They have compared the hydrolytic stability of samples of particleboard using the newer E1/E2 resins to samples of older particleboard using older E2/E3 resins. The change in properties during the testing to date suggest that the newer resins are performing similarly to the older ones.

Use in Particleboards and fibreboards

Particleboards bonded with most adhesives show some sensitivity to moisture with a decrease in strength properties at high moisture contents. This is due to the properties of the timber particles, the adhesive, and the manufacturing process.

Timber shows a reduction in stiffness as its moisture content increases (Panshin and de Zeeuw, 1970). The same phenomenon occurs to wood particles in particleboards. This process is reversible and when the moisture content drops the strength is regained.

Particleboard adhesives including UF, are considered stable at normal temperatures when exposed intermittently to moisture. The individual wood particles in particleboard swell when they absorb moisture (as does timber). This swelling is believed to cause stress on adhesive bonds between wood fibres which can result in bond breakage in rigid adhesives such as urea formaldehyde (Dinwoodie 1977).

Particleboards are subject to heat and pressure during manufacture which results in a degree of compression set in the manufactured sheet. When the PB absorbs moisture it expands (primarily in the thickness direction) releasing some of the compression induced during manufacture. This phenomenon called springback is irreversible. A proportion of this strength loss is recovered when the PB dries out.

With UF particleboards therefore, a loss in strength is observed when the material is subject to increased moisture contents from wetting or when exposed to high relative humidities for extended periods (eg 95% RH for several months). Watkinson and van Gosliga have demonstrated this for a range of NZ wood based composites (1990). Similar behaviour is observed with MUF bonded particleboards.

Use in Triboard

Triboard manufacture has many similarities to the manufacture of particleboard and medium density fibreboard (MDF). One major difference is the use of steam injection to cure the mat rather than

heated plattens as in conventional PB or MDF manufacture. This difference is not expected to result in any adverse effects on durability.

Durability of the timber particles

The wood particles included in Triboard are not treated so are potentially subject to biological attack. In NZ the only common causes of timber deterioration are rots and boring insects. Rots only occur when high timber moisture contents (in excess 20% by weight) are sustained for extended periods. For Strandboard or Triboard to reach this moisture content the building would have reached non-compliance with NZBC E2 and E3 or the sub floor ventilation requirements of NZS 3604:1990. It is unlikely that such an excessive moisture content could be sustained without some degradation of the physical properties of the Strandboard or Triboard. A 50 year durability cannot be reached under these circumstances.

The common house borer (anobium punctatum) will under some circumstances attack untreated radiata. BRANZ is aware of less than 10 cases where this has been reported for particleboard in thirty years. At an estimated probability of severe attack of 0.003% (based on 300,000 houses and 10 cases) this a level of risk which must be considered favourably alongside many commonly used and accepted building products. The chances of borer attack are reduced by the use of a sealer coat on the Triboard.

The native long horn borer is not reported as attacking UF bonded products.

3.2 Laboratory testing

Cyclic humidity testing

Triboard (both UF and MUF) and Strandboard samples bonded were subjected to cyclic humidity testing at 20±2 °C as outlined in Table 1. After each cycle, samples were tested for modulus of elasticity (MOE) and modulus of rupture (MOR).

Table 1. Cyclic humidity cycling regime

Testing	Conditioning *
6 of each board type tested	65% RH
6 of each board type tested	65% -95% RH
6 of each board type tested	65% -95%-65% RH
6 of each board type tested	65% -95%-65%-95% RH
6 of each board type tested	65% -95%-65%-95%-65% RH

* samples were conditioned at each RH until the samples reached constant weight (< 0.1% weight change over 24 hours)

This testing was carried out to evaluate whether high humidities and humidity cycling would cause a loss in strength properties of the Triboard and Strandboard, and if so, how much. It should be noted that the regime used is much more severe than would be expected in a well built and maintained house. In practice the Triboard is factory primed to provide protection during construction. The coating will also slow the uptake and release of moisture by the panels.

The results of the testing are summarised below in Table 2. These show that Triboard (both UF and MUF bonded) and Strandboard perform very well under humidity cycling. A drop of approximately

30% in MOR and MOE is recorded at 95% RH but when reconditioned back to 65% RH, almost all of the original strength is regained. These results are better than one would expect for particleboard which typically loses about 50% of MOE and MOR at 95% RH (Watkinson and van Gosliga, 1990). While figures have not been published in New Zealand showing what percentage of the 50% strength loss for particleboards would be recovered, overseas results suggest it would be less than 100% (Dinwoodie 1983). The 30 year plus successful history of use of particleboard flooring in New Zealand indicates that Triboard should perform well in the recommended environments.

Table 2. MOR and MOE values for 38 mm Triboard and 20 mm Strandboard after cyclic humidity exposure

		Controls (65% RH)	65-95% RH	65-95-65% RH	65-95-65-95% RH	65-95-65-95-65% RH
UF Triboard	MOR (MPa)	20.0	15.0	19.1	16.4	19.7
UF Triboard	MOE (MPa)	3133	2216	3056	2492	3078
MUF Triboard	MOR (MPa)	25.4	17.1	24.6	20.0	25.4
MUF Triboard	MOE (MPa)	3234	2250	3069	2614	3225
Strandboard	MOR (MPa)	29.1	21.1	28.8	21.9	27.8
Strandboard	MOE (MPa)	3720	2662	3670	2800	3550

A very conservative estimate of 85% strength retention seems reasonable over 50 years when the performance of particleboard flooring over 30 years is considered.

3.3 Effect of sealing Triboard

Triboard used in houses is sealed in the factory. The sealer provides temporary protection against the weather during construction and a barrier to rapid moisture content changes induced by changes in humidity. Samples of sealed UF and MUF bonded Triboard were subjected to conditioning at 95% RH for 8 weeks and the weight monitored weekly. Uncoated samples were also included as controls. The results are shown in Figure 1. The acrylic sealer slowed the uptake of water vapour, particularly over the first three to four weeks compared to the uncoated samples.

3.4 Old samples of Triboard

Samples of old stock Triboard (both UF and MUF bonded) which had been sitting in a sheltered but uncontrolled factory environment for 3 years were conditioned to 95±5% RH and tested for MOE and MOR (BRANZ Test Report MTR 985). The results are shown in Table 3. Although initial strength figures are not available for comparison, it can be seen that the Triboard samples have maintained a high level of strength.

Table 3. Results of testing MOR and MOE for UF and MUF Triboard

Sample	MOE (MPa)	Std Dev	MOR (MPa)	Std Dev
UF Triboard	34.2	2.8	3517	62
MUF Triboard	28.1	0.9	2421	46

3.5 Exposure to the weather of Strandboard.

Water must be prevented from reaching the edges of the Triboard. The provisions of NZBC E3 must be complied with to ensure that the Triboard remains dry (note BRANZ recommends that to prevent water from being absorbed through the bottom edges of the walls in wet rooms; a water proof finish should be applied to the floor and coved up the edges of the Triboard and a drain should also be installed so that water can be rapidly removed from the surface). The edges of the Triboard in window openings are likely to be a sensitive area and should be sealed (e.g. with a quality high-build product such as an epoxy paint) prior to installation of the windows. This opinion does not cover the use of Triboard for saunas and steam rooms in houses. If these are to be installed, Juken Nissho must be consulted for design recommendations.

Strandboard

Strandboard is intended for use as a flooring material and a ceiling lining. When used as a flooring material exposure to the weather should be limited to 2 months and ponding of water on the surface avoided. The moisture content of the Strandboard must be maintained at 18% or less in service. To ensure that this is achieved, the sub-floor must be ventilated as per the requirements of NZS 3604:1990 and ground drainage must be in accordance with NZBC E2 to ensure that water does not pond in the sub-floor region. A minimum clearance of 300 mm must also be allowed or a damp proof membrane used to cover the ground surface. The use of foil floor insulation in areas of high rainfall will assist in keeping the flooring warmer and drier.

The durability of Strandboard is dependent on it being maintained in a dry state. The provisions of NZBC E3 must be complied with to ensure that it is protected from wetting in bathrooms, laundries etc. Hot air vents (eg from driers), steam vents or overflow pipes must not be directed into the sub-floor area. Strandboard should not be used in saunas or steam rooms.

When Strandboard is used as a ceiling lining over walls and under roof trusses, the moisture content must be maintained below 18%. To protect the Strandboard from high temperatures which can arise in roof spaces, insulation must be installed over the Strandboard in the roof space. Flues from heating devices (e.g. solid fuel stoves etc.) must be either insulated or separated such that the Strandboard does not exceed 60°C.

5. References

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Watkinson P. J. and van Gosliga N. L. 1990. Effect of humidity on physical and mechanical properties of New Zealand wood composites. Forest Products Journal, Vol. 40, No. 7/8. pp 15-20. Madison.

A F Bennett
Durability Section Leader

DUNEDIN CITY COUNCIL

9 November 1999

RFS Number: ABA993045

50 THE OCTAGON. P.O. BOX 5045, DUNEDIN 9031, NEW ZEALAND. TELEPHONE: (03) 477-4000. FACSIMILE: (03) 474-3594

KINETIC HOLDINGS LIMITED
[redacted]
DUNEDIN 9001

Dear Sir/Madam

Regarding your building consent application to ERECT STUDENT ACCOMMODATION/8 UNITS BC ONLY
at 820 CUMBERLAND STREET, DUNEDIN 9001.

Under Section 34(2) Building Act 1991, there will be delay in processing your documents because :

we require the following information so your application can be processed for the plumbing and drainage .. dia of downpipes, size and position of the stormwater sumps for the sealed areas,dia and gradient of foul and storm drains and plan to sewers,p/d design/code to be used

↖ Drainage Plan to show fittings

Further information may be obtained by contacting Building Control, Consents Issuing Section, Telephone 474-3483 at your earliest convenience.

a Schematic Sanitary Drainage Plan.
for internal layout

Yours Faithfully

MICHAEL LARSON
HANDLING OFFICER

4 2 specifications

STELLA PACIFIC LIMITED

New Zealand Engineered Building System
Phone: 03 377-8838 Fax: 03 377-8204
P O Box 7635 – 48 Battersea Street, Sydenham, Christchurch
e-mail: stellapacific@xtra.co.nz

25 November 1999

Dunedin City Council
P O Box 5045
Dunedin

Attention: Neil McLeod

Dear Neil

Re: Building Consent 820 Cumberland Street, Dunedin

In response to your letter dated 18 November 1999;

Downpipe diameters 80mm

Drainage and Stormwater are shown on new Site Plan.

Plumbing and Drainage Code AS3500

Schematic: All 1st Floor wast to 100mm pipe to sewer

Plywood Specification: Replaced with C.G.I., see new Plan

Foundation Design: See new Plan

Equus Plaster now replaced with Marley WeatherBoard.

Barrier details for deck are shown on Plan

FRR Details are as per Manual 90 90 90. Included is a copy of new detail to be used. Detail. gives a better Sound Rating and will improve Fire Rating.

If any further information is required, please do not hesitate to contact the writer.

Yours faithfully

Stuart Chadwick
Cost Engineer

ABA 99 3045

any Problems please call Chris Adams
025 33 / 656

820 Cumberland St

[Land and Deeds—10/.

NEW ZEALAND.

24/7/98

Reference: Land Transfer (Compulsory Registration of Titles) Act, 1924. Deeds Index. T.655 Application No. C.10643

Register-book, Vol. 278, folio 177

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

LIMITED AS TO PARCELS AND TITLE

This Certificate, dated the Twenty-eighth day of November, one thousand nine hundred and thirty-six under the hand and seal of the District Land Registrar of the Land Registration District of Otago Witnesseth that THE OTAGO FINANCE AND AGENCY COMPANY LIMITED a duly incorporated Company having its registered office at 179 Princes Street Dunedin

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon bordered green, be the several admeasurements a little more or less, that is to say: All that parcel of land containing Twenty (20) perches more or less situated in the City of Dunedin being part Section Forty-two (42) Block XXXIII TOWN OF DUNEDIN.

OTAGO DISTRICT LAND REGISTRAR NEW ZEALAND

S.R.C. Livingstone

Assistant. ~~District Land Registrar.~~

EQUIVALENT METRIC AREA IS 506m²

DISCHARGED Subsisting Mortgage No. 154633 (217/221) dated 5th July 1933 to (now) The State Advances Corporation.

S.R.C. Livingstone A.L.R.

Outstanding Variation No. 154134 (273/240) dated 9th September 1931 of Mortgage No. 130633.

S.R.C. Livingstone A.L.R.

Pt Sec 42 Blk XXXIII Tn of Dunedin

Transfer No 145154 The Otago Finance and Agency Company Limited to John Mitchell Davidson of Dunedin Carpenter and Joiner produced 10th November 1944 at 3 o'c.

N. McAlevey A.L.R.

Mortgage No 120293 John Mitchell Davidson Eleanor Mary Johnson produced 9th July 1943 at 3 o'c. N. McAlevey A.L.R.

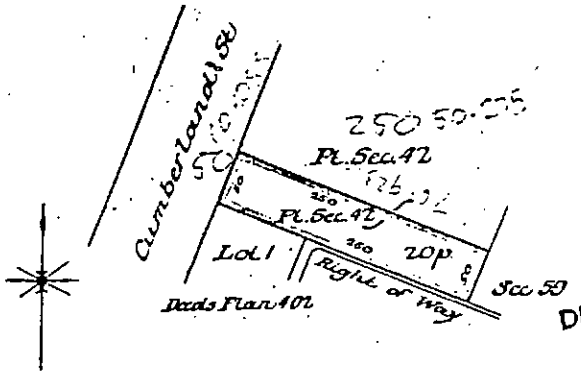
DISCHARGED

Mortgage No 120293 John Mitchell Davidson to ~~Eleanor Mary Johnson~~ produced 10th November 1944 at 3 o'c. N. McAlevey A.L.R.

DISCHARGED

Variation of Terms of Mortgage 120293 produced 3rd September 1949 at 10 30 o'c [illegible] A.L.R.

Variation of Mortgage 120293 produced 11th July 1956 at 11 30 o'c N. McAlevey A.L.R.



Scale 10 chains to an inch.

993045

C.T. 278/177

DISCHARGED

262625 Mortgage to The Dunedin Savings Bank ...

DISCHARGED

302553 Transmission to ... Dunedin ...

This Certificate of Title has ceased to be Limited as to Title

Entered 7th February 1968

322194 Transfer to Russell Vincent Gibson of Dunedin Insurance Agent and Margaret Chalmers Gibson his wife - 7.2.1968 at 9.42 am

A.L.R.

DISCHARGED 24 JUL 1981

324193 Mortgage to The Northern Co-operative Terminating Building Society ... at 2.26 pm

A.L.R.

A.L.R.

552986 Change of Name of the Mortgagee in Mortgage 324193 to Northern United Building Society - 23.4.1981 at 2.03 pm

A.L.R.

DISCHARGE OF MORTGAGE ... JUL 1988

573111 Mortgage to Australian Mutual Provident Society - 1.4.1982 at 9.51 am

A.L.R.

DISCHARGE OF MORTGAGE 23 JUL 1988

582877/1 Mortgage to Northern United Building Society - 16.9.1982 at 11.45 am

A.L.R.

582877/2 Memorandum of Priority ranking mortgage 582877/1 as a first mortgage and mortgage 573111 as a second mortgage - 16.9.1982 at 11.46 am

A.L.R.

The memorial of discharge of Mortgage 573111 has not been endorsed on the outstanding copy thereof production of same having been dispensed with in terms of Section 111(3) Land Transfer Act 1952

A.L.R

719436 Transfer to Joanna Maria Hill of Auckland Company Director - 9.1.1989 at 9.16 am.

A.L.R

730196/1 Mortgage to Foy & Halse Solicitors Nominee Company Limited - 7.6.1989 at 9.06am

A.L.R.

730196/2 Mortgage to Foy & Halse Solicitors Nominee Company Limited - 7.6.1989 at 9.06am

A.L.R.

774507/3 Transfer to Heriot Holdings Limited - 7.3.1991 at 10.07am

A.L.R.

774507/4 Mortgage to Bank of New Zealand - 7.3.1991 at 10.07am

A.L.R

24.7.98

993045

824 Cumberland St

24.7.98

[Land and Deeds—104.

NEW ZEALAND.

Reference: Land Transfer (Compulsory Registration of Titles) Act, 1924.
Deeds Index. L 3
Application No. C.10844

Register-book, Vol. 278, folio 178

5.10.37

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

LIMITED AS TO PARCELS AND TITLE.

Undivided moiety as to land edged red

This Certificate, dated the Twenty-eighth day of November, one thousand nine hundred and thirty-six under the hand and seal of the District Land Registrar of the Land Registration District of Otago Witnesseth that

FREDERICK TANNER of Dunedin Baker

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) firstly in the land hereinafter described, as the same is delineated by the plan hereon bordered green, be the several admeasurements a little more or less, that is to say: All that parcel of land containing nineteen decimal four nine (19.491) perches more or less situated in the City of Dunedin being part Section Forty-two (42) Block XXXIII TOWN OF DUNEDIN, And Secondly in one undivided moiety of the land bordered red on the plan hereon be the several admeasurements a little more or less that is to say:- All that parcel of land containing One decimal nought three (1.03) perches more or less being another part of said Section 42 and part Section 43 Block XXXIII TOWN OF DUNEDIN.

EQUIVALENT METRIC AREA IS 493m²

Assistant District Land Registrar.

Pt. Secs 42 & 43 Blk XXXIII Tn. of Dunedin

This Certificate of Title has ceased to be Limited as to title Entered 5th October 1937

Mortgage 100509 Frederick Tanner to The Pacific Starr-Bowkett Building [illegible] produced [illegible] February 1938 at 2.45 o'c

DISCHARGED

A.L.R.

Transfer 103320 Frederick Tanner to Victor Smith of Dunedin [illegible] produced [illegible] December 1950 at 12.10 o'c

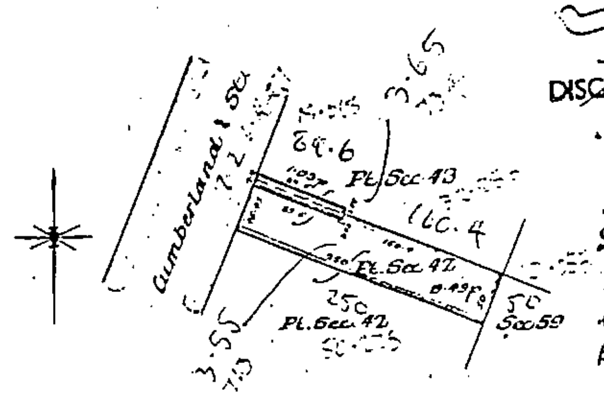
DISCHARGED A.L.R.

Mortgage 139207 [illegible] Dunedin Savings Bank produced 7 December 1950 at [illegible]

A.L.R.

THIS REPRODUCTION (ON A REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTER FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952.

D.L.R.



Scale 1 chain to an inch

856053 Transmission to The Public Trustee entered 19.5.1994 at 9.43am

A.L.R.

2.846 + 468.563
22.998
491.561

= 504.407

over

993045

866836/1 Transfer to Heriot Holdings Limited - 7.10.1994 at 9.46am

A.L.R.

866836/2 Mortgage to Trust Bank Otago Limited - 7.10.1994 at 9.46am

A.L.R.

946000.7 Mortgage to The National Bank of New Zealand Limited 7.4.1998 at 11.18

for DLR

24.7.98

993045

828 Cumberland St

[Land and Deeds—104.

24.7.98

NEW ZEALAND.

Reference: Land Transfer (Compulsory Registration of Titles) Act, 1924.
Deeds Index. V.386
Application No. C.10845

Register-book,
Vol. 278 , folio 179

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

LIMITED AS TO PARCELS AND TITLE

Undivided moiety as to land edged red

COPY

This Certificate, dated the Twenty-eighth day of November , one thousand nine hundred and thirty-six Witnesseth that under the hand and seal of the District Land Registrar of the Land Registration District of Otago

ANDREW THOMAS WILSON of Dunedin Nightsoil Contractor

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) firstly in the land hereinafter described, as the same is delineated by the plan hereon bordered green , be the several admeasurements a little more or less, that is to say: All that parcel of land containing Nineteen decimal four eight (19.48) perches more or less situated in the City of Dunedin being part Section Forty-three (43) Block XXXIII TOWN OF DUNEDIN And Secondly in one undivided moiety of the land bordered red on the plan hereon be the several admeasurements a little more or less that is to say:- All that parcel of land containing one decimal nought three (1.03) perches more or less being another part of said Section 43 and part of Section 42 Block XXXIII TOWN OF DUNEDIN.

OTAGO DISTRICT LAND REGISTRAR NEW ZEALAND

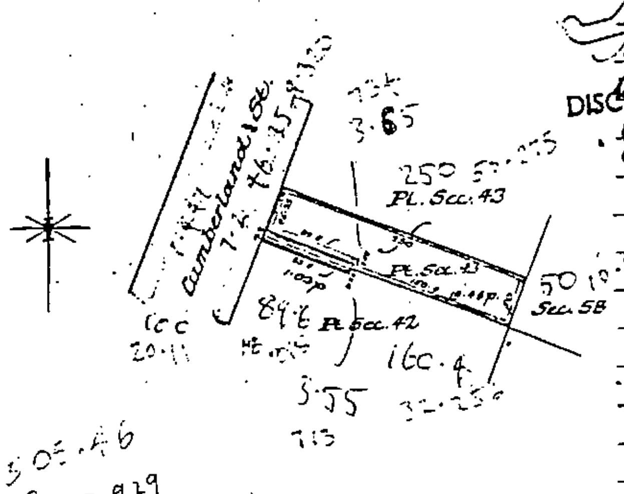
[signature]

Assistant ~~District~~ Land Registrar.

EQUIVALENT METRIC AREA IS 493 m² + 26 m²

493 = 1019 m²

Pt. Secs 42 & 43 Blk XXXIII Tn. of Dunedin



Scale, 1 chain to an inch

This Certificate of Title has ceased to be Limited as to Title Entered 18th January 1938.

Mortgage 100255 Andrew Thomas Wilson to Gibson (attorney) and Thomas Joseph Culling produced 18th January 1938 at 12 o'c.

DISCHARGED

Transmission No. 26449 of Mortgage No. 100255 to Thomas Joseph Culling as survivor Entered 21st December 1944 at 12 o'c

Transfer 145708 of Mortgage No. 100255 Thomas Joseph Culling to The Trustees Executors and Agency Company of New Zealand Limited produced 21st December 1944 at 12 o'c

Transmission 364419 to Sarah Ann Wilson of Dunedin Widow as Administratrix Entered 23rd August 1954

— over —

505.46
+ 2
= 1010.929

450.553
23.675
492.238

+ 13.225

993045

1009.870

C.T. 278/179

Transfer 194514 of Sarah Ann Wilson to the said Sarah Ann Wilson Andrew Thomas Wilson of Dunedin Machinist and Ethel Ernestine Wilson of Dunedin Typiste as Tenants in Common in equal shares produced 27th June 1962 at 3.5 p.m.

A.L.R.

252859 Notice of Marriage of Ethel Ernestine Wilson to Ross McKittrick Smith of Dunedin Railways Employee Entered 26.11.1962 at 3.24 p.m.

252860 Transfer of ½ share Andrew Thomas Wilson to Ethel Ernestine Smith wife of Ross McKittrick Smith of Dunedin Railways Employee - 26.11.1962 at 3.26 p.m.

470577/1 Transmission of the 1/3 share of Sarah Ann Wilson to Ethel Ernestine Smith abovenamed and John Hall Ravenwood of Dunedin, Chartered Accountant as Executors entered 13.12.1976 at 12.13 pm

A.L.R.

470577/2 Transfer of their 1/3 share Ethel Ernestine Smith and John Hall Ravenwood to Ethel Ernestine Smith abovenamed - 13.12.1976 at 12.13 pm

A.L.R.

~~[illegible]~~

Settled under the Joint Family Homes Act 1964 on Ross McKittrick Smith of Dunedin Railway Employee and Ethel Ernestine Smith his wife abovenamed entered 13.12.1977 at ~~12.11 pm~~

~~Application 489387~~

A.L.R.

492146 Caveat by Australian Guarantee Corporation (NZ) Limited entered 22.2.1978 at 2.45 p.m.

A.L.R.

659038 Transmission to Ethel Ernestine Smith of Dunedin Widow as Survivor - 8.7.1986 at 10.08 am.

A.L.R.

831667 Transmission to The Public Trustee - 11.6.1993 at 9.47am

A.L.R.

881659/1 Transfer ~~to~~ Heriot Holdings ~~Limited - 9.5.1995 at 9.19am~~

A.L.R.

881659/2 Mortgage to Bank of New Zealand ~~- 9.5.1995 at 9.19am~~

A.L.R.

86.L.42

993045

830 Cumberland St

[Land and Deeds—104.

NEW ZEALAND.

24.7.98

Reference: Land Transfer (Compulsory Registration of Titles) Act, 1924. Deeds Index. T.8 Application No. 610846

Register-book, Vol. 278, folio 180

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

LIMITED AS TO PARCELS AND TITLE

This Certificate, dated the Twenty-eighth day of November, one thousand nine hundred and thirty-six under the hand and seal of the District Land Registrar of the Land Registration District of Otago Witnesseth that

GRAHAM CAMPBELL DICKEL of Oamaru Clerk

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon bordered green, be the several admeasurements a little more or less, that is to say: All that parcel of land containing Twenty-one decimal eight (21.8) perches more or less situated in the City of Dunedin being part Sections Forty-three (43) and Forty-four (44) Block XXXIII TOWN OF DUNEDIN.

DISTRICT LAND REGISTRAR COLONIAL NEW ZEALAND

F.R. Gateway

Assistant District Land Registrar

EQUIVALENT METRIC AREA IS 551 m²

DISCHARGED Mortgage No. 156796 (279/515) dated 4th December 1934 to William Allan.

Pt Secs 43 & 44 Blk XXXIII Tn of Dunedin

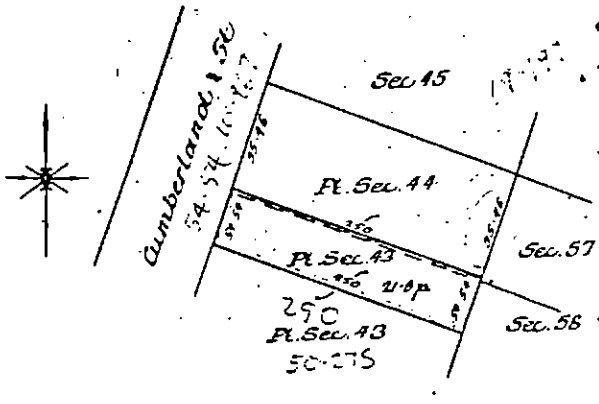
This Certificate of Title Assessed to be Limited as to Title Entered 3rd December 1937.

Increase of Principal Sum of Mortgage No. 156796 produced 3rd December 1937 at 2·30 pc

Transmission No. 220860 of Mortgage No. 156796 to Charles Lime Marshall John Macfellan Bates Harold Hay Walther and Eric James Anderson as Executors Entered 19 April 1938 at 11 pt

Increase of Principal Sum of Mortgage 156796 produced 3rd May 1939 at 3 pc

Increase of Principal Sum of Outstanding Mortgage 156796 produced 13th September 1949 at 11/10 pc



Scale 1 chain to an inch

993045

C.T. 278/180

278/180

Mortgage 152737 Graham ... to Harold ... Williamson ... Anderson ... 11.23 a.m.

DISCHARGED 29 MAR 1972

A.R.

Settlement ... Joint Family Home under the Joint Family Homes Act 1950 ... Campbell Dickel abovenamed and Marguerite Ida Dickel his wife (See Dealing 9052 Application 2664 Certificate 2664) Entered 28 October 1958 at 11.33 a.m.

A.L.R.

Variation of Mortgage 152737 produced 20th October 1959 at 11.46 a.m.

A.L.R.

Variation of Mortgage 152737 produced ... at 12.10 ...

A.L.R.

261672 Transfer of Mortgage 152737 to Colin George Kay and Eric James Anderson. 16/8/1963 at 2.40 p.m.

No. 335521 Transfer to Colin George ... and Peter Wing Ho Chin: December 12th 1963 at 2.55 p.m. (Affects Mortgage No. 152737) ... D.L.R.

356638 TRANSFER OF MORTGAGE 152737 TO WEBB & ... SECURITIES LIMITED — 26.6.1970 at 10.45 a.m.

D.L.R.

Variation of Mortgage 152737 - 28.7.1970 at 1.45 p.m.

ALR

369815 Transmission to Marguerite Ida Dickel as survivor produced 5/5/1971 at 11.47 a.m.

ALR

THIS REPRODUCTION (ON A REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTER FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952

A.L.R.

382749 Transfer to John Cameron Stirling of Milton Farmer and Jocelyn Marion Stirling his wife -8.3.1972 at 10.8 am

A.L.R.

382750 Mortgage to Solomon Gascoigne & Co. Nominees Limited -8.3.1972 at 10.9 am

DISCHARGED

A.L.R.

382751 Mortgage to Solomon Gascoigne & Co. Nominees Limited -8.3.1972 at 10.10 am.

DISCHARGED 8 MAR 1976

A.L.R.

553959/3 Mortgage to Gladys Amelia Parry and Roy Francis Rumble ... - 13.5.1981 at 9.30 am

A.L.R.

575125/2 Transfer to Stanislaus Olendzki of Dunedin Railway Employee - 10.5.1982 at 11.23 am

A.L.R.

575125/3 Mortgage to James Hunter Williamson, Clement Nicolson Williamson - 10.5.1982 at 11.23 am

DISCHARGED

A.L.R.

642889 Transfer to Ian Albery Stewart of Dunedin Surgeon and Alison Louise Stewart of Dunedin, School Teacher - 20.9.1985 at 10.01am

A.L.R.

677733/2 Transfer to Rakanui Properties Limited - 30.4.1987 at 10.03 am

A.L.R.

677733/3 Mortgage to De Courcy & Kendall Clients' Securities Limited - 30.4.1987 at 10.03 am

DISCHARGED

A.L.R.

677733/4 Mortgage to Wilkinson Rolfe and Wilson Securities Limited - 30.4.1987 at 10.03 am

A.L.R.

683239 Change of Name of Mortgagees in Mortgages 677733/3 and 677733/4 to Mirkin & Kendall Solicitors Nominee Company Limited - 22.7.1987 at 9.39 am

P Hanrahan for A.L.R.

689871/24 Mortgage to DFC Financial Services Limited - 30.10.1987 at 9.40am

A.L.R.

744042 Mortgage to Bank of New Zealand - 7.12.1989 at 9.32 am

DISCHARGED 1990

A.L.R.

A.L.R.

993045

OVER

24.7.98

769159/4 Transfer to Safari Properties Limited - 7.12.1990 at 10.49am

DISCHARGED A.L.R.

770549 Mortgage to BNZ Bank Limited - 21.12.1990 at 1.39pm

A.L.R.

772617 Mortgage to Mirkin & Kendall Solicitors Nominee Company Limited - 8.2.1991 at 10.47am

DISCHARGE OF MORTGAGE
07 JAN 1997
A.L.R.

DISCHARGED
A.L.R

787337/6 Mortgage to The National Bank of New Zealand Limited - 2.9.1991 at 9.27am

A.L.R.

787337/7 Memorandum of Priority ranking Mortgage 787337/6 as a first mortgage and Mortgage 772617 as a second mortgage 2.9.1991 at 9.27am

A.L.R.

931773 Mortgage to Calvert Solicitors Nominee Company Limited - 19.6.1997 at 11.47am

07 APR 1998
A.L.R.

A.L.R.

946000.6 Transfer to Heriot Holdings Limited

946000.7 Mortgage to The National Bank of New Zealand Limited

All 7.4.1998 at 11.18

for DLR

993045

1-6-99

[Land and Deeds—104.

NEW ZEALAND.

Reference: *Land Transfer (Compulsory Registration of Titles) Act, 1924.* *Deeds Index.* T.794 *Application No.* C.11742

Register-book, *Vol.* 287 *folio* 61

287/61

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

LIMITED AS TO PARCELS AND TITLE.

SPECIMEN

This Certificate, dated the Fourteenth day of March, one thousand nine hundred and thirtyeight under the hand and seal of the District Land Registrar of the Land Registration District of O.T.A.G.O Witnesseth that

CHRISTINA ROSS of Dunedin, Widow

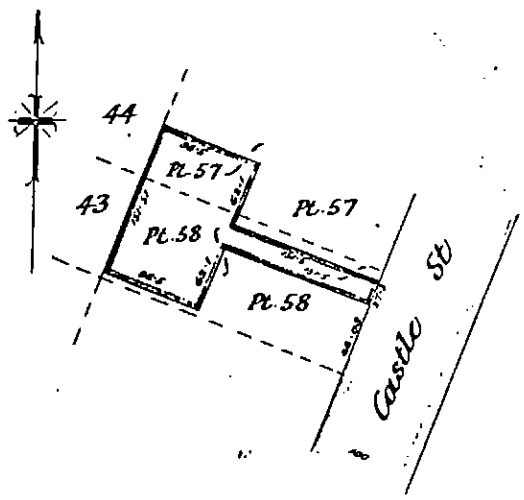
is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon bordered green, be the several admeasurements a little more or less, that is to say: All that parcel of land containing Thirty decimal five (30.5) perches more or less situated in the City of Dunedin being part Sections Fiftyseven (57) and Fiftyeight (58) Block XXXIII TOWN OF DUNEDIN.

Asst. *District Land Registrar.*

EQUIVALENT METRIC AREA IS 771m²

Pt. Secs. 57 & 58
Blk. XXXIII Tn. of Dunedin

Oa. Or. 30·5p.



Scale, 1 chain to an inch

This Certificate of Title has ceased to be Limited as to Title Entered 17 April 1942 [illegible]

Transfer No. K24156 to The Perpetual Trustees Estate and Agency Company of New Zealand Limited Entered 17 April 1942 at 2.30 o'c [illegible] A.L.R.

Transfer No. 136641 The Perpetual Trustees Estate and Agency Company of New Zealand Limited to Margaret Ellen Potts and Millicent Bardson Potts both of Dunedin Spinsters produced 17 April 1942 at 2.30 o'c [illegible] A.L.R.

THIS REPRODUCTION (REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTERED FOR THE PURPOSES OF SECTION 216A LAND TRANSFER ACT 1952.

[illegible] A.L.R.

372785 Transmission to Margaret Ellen Potts as Survivor entered 9.7.1971 at 12.18 pm

A.L.R.

OVER....

993045

C.T. 287/61

16.6.99

499594/1 Transfer to Anne Margaret McMahon of Dunedin Medical Technologist - 11.7.1978 at 1.44 pm

A.L.R.

DISCHARGED

499594/2 Mortgage by Richard Barry & Thomson Nominees Limited - 11.7.1978 at 1.44 pm.

A.L.R.

534435/2 Transfer to Robin Rodrick Day of Karitane Male Nurse and Faye Lynne Day his wife - 12.5.1980 at 9.42 am

A.L.R.

537461 Mortgage to Otago Savings Bank - 4.7.1980 at 3.01 pm

A.L.R.

602187 Transfer to Robin Rodrick Day above-named - 26.9.1983 at 11.39 am

A.L.R.

690866/2 Transfer to Ronald Charles Julius of Dunedin Bank Officer - 16.11.1987 at 1.54 pm.

A.L.R.

690866/3 Mortgage to Wright, James & Co Securities Limited - 16.11.1987 at 1.54 pm.

DISCHARGED - 5 MAR 1992

A.L.R.

DISCHARGED

809081 Mortgage to Public Nominees Limited - 8.7.1992 at 9.47 am

A.L.R.

A.L.R.

DISCHARGED

913803/2 Mortgage to ASB Bank Limited - 8.8.1996 at 2.30 pm

A.L.R.

A.L.R.

959878.2 Transfer to Raymond John Harpur and Karen Margaret Harpur

959878.3 Mortgage to The National Bank of New Zealand Limited
all 23.12.1998 at 11.17

for DLR

993045

1 · 6 · 99 First issue of title fee paid on Abstract 704628 15/6/85. [illegible] N.R.

271/219

NEW ZEALAND.

Land Transfer (Compulsory Registration of Titles) Act. 1921.

Reference: Deeds Index. 3.1...
Application No. C.10469

Register-book Vol. 271 , folio 219

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

LIMITED AS TO ~~PARCELS AND TITLE~~

This Certificate, dated the Thirtieth day of May one thousand nine hundred and thirty-six under the hand and seal of the District Land Registrar of the Land Registration District of Otago **Witnesseth** that DANIEL THOMAS BOYD of Dunedin Builder

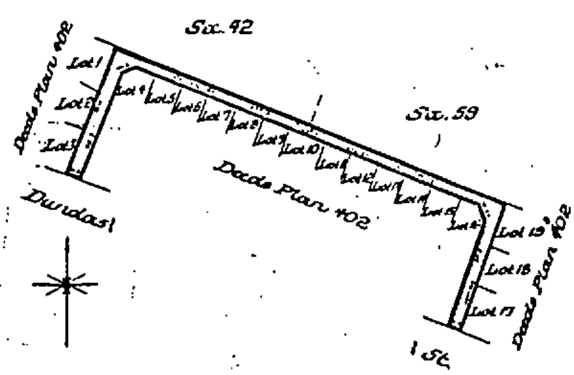
is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon bordered green , be the several admeasurements a little more or less, that is to say: All that parcel of land containing Seven decimal nought four (7.04) perches more or less situated in the City of Dunedin being "Right of Way" on Deeds Plan No. 402 and being part Sections 41 and 60 Block XXXIII TOWN OF DUNEDIN.

S.B.O. Murray

Assistant ~~District Land Registrar.~~

EQUIVALENT METRIC AREA IS 178m²

Deeds Plan 402
Pt. Secs. 41 & 60 Blk XXXIII Tn of Dunedin



Scale 80 links to an inch

Subject to Rights of Way appurtenant to Lots 19 (C.T. 271/220) 1 (C.T. 271/221) 3 (C.T.271/222) 8 (C.T.271/223) 5 (C.T.271/224) 11 (C.T.271/225) 12 (C.T.271/226) 14 (C.T.271/227) 6 (C.T.271/228) 7 (C.T.271/229) 13 (C.T. 271/230) 15 (C.T.271/231) 16 (C.T.271/232) 18 (C.T.271/233) 17 (C.T.271/234) 9 (C.T.271/235) 2 (C.T.271/236) 10 (C.T. 271/237) 4 (C.T.271/238) Deeds Plan 402 granted by Conveyances Nos. 139553 (234/568) 141154 (240/274) 141531 (241/165) 147257 (256/208) 138927 (234/347) 138930 (235/164) 138933 (235/173) 138936 (234/356) 138942 (236/72) 138945 (236/82) 138948 (236/90) 138951 (236/98) 138954 (236/109) 138957 (236/117) 139449 (237/260) 139556 (234/575) 139730 (237/294) 139901 (237/366) and 142538 (245/27).

S.B.O. Murray A.L.R.

Conditions contained in Council's Consent to Rights of Way created by above Conveyances are endorsed on Deeds Plan No. 402.

S.B.O. Murray A.L.R.

THIS REPRODUCTION (ON A REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL [illegible] FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952.
[illegible] A.L.R.

OVER

993045

C.T. 271/219

704628 Transmission to Josephine Patricia Burgett of Geraldine, Widow, Wynne Archdall Raymond of Timaru, Solicitor and Peter John Woodnorth of Timaru, Chartered Accountant as executors - 15.6.1988 at 9.38am

16-99

D.L.R.

This Certificate of Title has ceased to be limited as to title. 23.6.1988 at 9.00

713184 Transfer to Richard John Hatherly of Dunedin Businessman - 5.10.1988 at 11.14 am

A.L.R

877715/3 Mortgage to Calvert Solicitors Nominee Company Limited - 10.3.1995 at 9.45am

DISCHARGED 26 OCT 1995 A.L.R.

A.L.R.

889320 Variation of Mortgage 877715/4 - 18.8.1995 at 9.40 am

A.L.R.

894154/3 Transfer of a 1/13 share to David John Galloway of Dunedin Lichenologist and Patricia Katherine Payne of Dunedin Singer - 26.10.1995 at 9.54am

A.L.R.

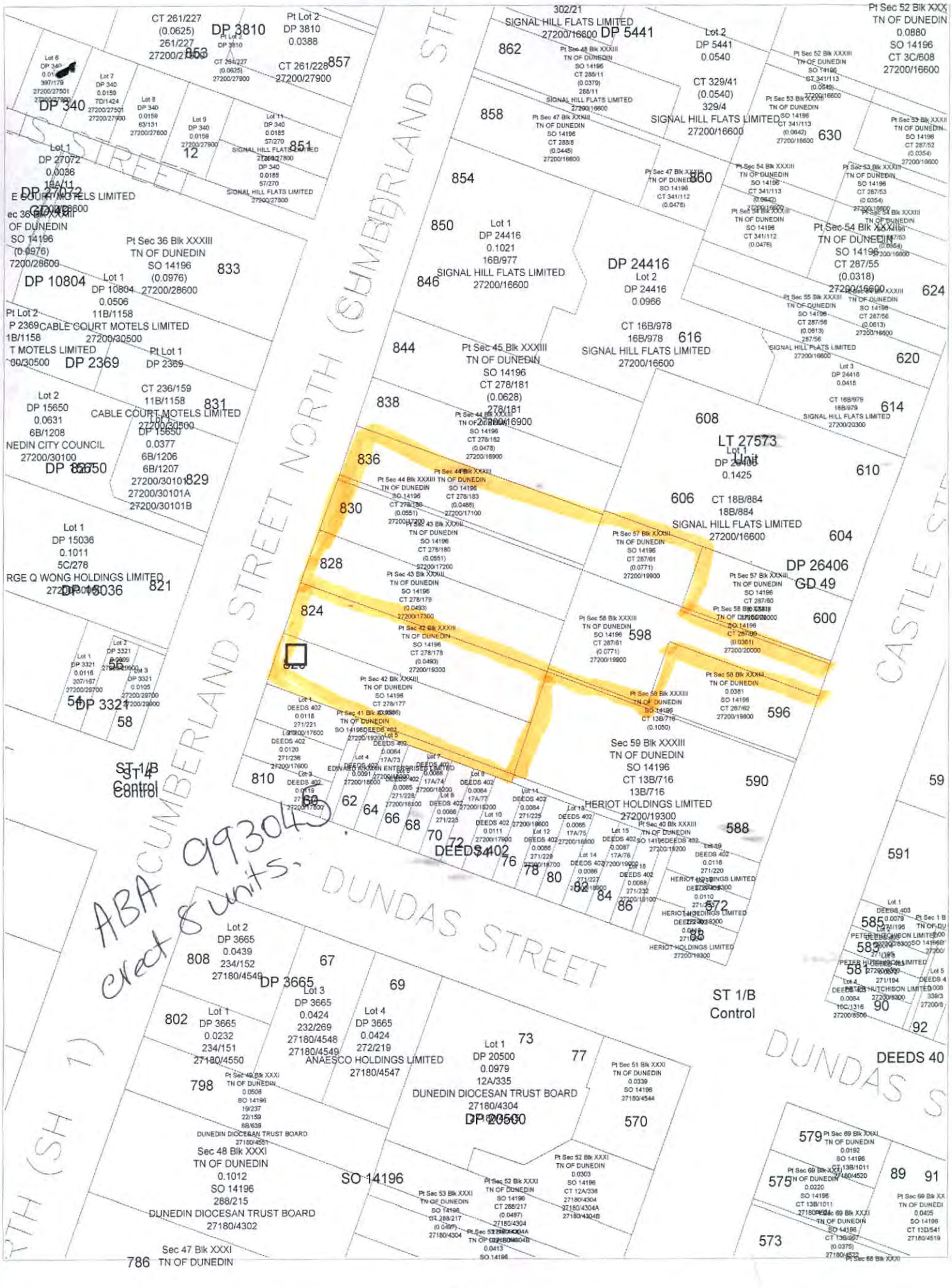
903590/3 Transfer of a 3/13th share Richard John Hatherly to Fernbridge Investments Limited - 14.3.1996 at 9.40am

A.L.R.

903590/4 Transfer of their 3/13th share Fernbridge Investments Limited to Kirsten Margaret Holst of Palmerston North doctor, Alistair Evans Broad and Hilary Jane Calvert both of Dunedin solicitors - 14.3.1996 at 9.40am

A.L.R.

993045



TERRALINK NZ LTD(Terraview)-DCDB Data as at 7.01.2000Title & Valuation data as at 7.01.2000Geodetic data as at 11.10.97.
Cadastral Information from LINZ Digital Cadastral Database (DCDB). CROWN COPYRIGHT RESERVED.

Building Consent Application
820 Cumberland Street

Please provide the following:-

- Down pipe diameters.
- Size and position of stormwater sumps for the sealed areas.
- Diameter and gradient of foul and storm drains, and plan to sewers.
- Plumbing and drainage design / code to be used.
- Drainage plan to show fittings.
- A schematic sanitary drainage plan for internal layout.
- Plywood specification for roofing substrate
- Specific design for the foundation, as it does not comply with NZS 3604.
- Provide a summary of the design as per the Triboard manual clause 1.3
- A second set of both the Triboard manual and the specification.
- Equuis exterior wall cladding details
- Barrier details for the decks
- FRR details for all fire rated walls.

PROJECT INFORMATION MEMORANDUM NUMBER 992670

CLEAR SITE - ERECT 8 RESIDENTIAL UNITS - PIM ONLY

820 CUMBERLAND ST, DUNEDIN 9001

Departmental Information for this project is as follows

Date last updated Tue 28 Sep 1999 16:13:55 by JOHN DEWAR

Building Admin

WARNING. The Dunedin City Council's private drainage records (plans) prior to 1 January 1993 may be incomplete or not clearly recorded. Owners therefore are advised to carry out work with due care to avoid damage to any private drain not detailed because of the lack of information filed in the Council's records.
Medium wind zone.
WARNING. Please note that public sewer reticulation sheets are scaled in either Imperial feet or Metric metres. Please check with the Area Drainage Inspector if in doubt.
To comply with the New Zealand Building Code.
JD1
cumberland st & castle st house plans attached
castle st retic sheets attached

Date last updated Thu 07 Oct 1999 10:49:21 by JOHN DEWAR

City Consultants

No record found of land instability.
MG1
Date last updated Wed 29 Sep 1999 15:41:25 by MARCH GRAHAM

Contract & Asset Management

ANY damage to Council's Street Frontage will be reinstated at the Applicant's cost
A vehicle entrance will be required. Council's requirements for this work and a list of the Contractors registered to carry it out will be forwarded.
JME
I have visited the site at 820 Cumberland Street,and checked the footways kerb & channel carriageway also the frontage Castle Street frontage.All are in good condition.
A light commercial vehicle crossing is required to be constructed Cumberland Street frontage. The crossing to be constructed by council approved contractor.

Jim Mears.

Date last updated Fri 01 Oct 1999 10:46:13 by JIM MEARS

Planning

Zoning: Residential 3 in the proposed district plan incorparing decisions to submissions 1999 and Residential C in the Dunedin section of the transitional district plan. The proposed activity does not comply with the district plan rules in terms of building envelope line restriction and car parking requirements. A resource consent is therefore required and has been applied

for.

Date last updated Mon 04 Oct 1999 15:13:23 by UELI SASAGI

Water

An application form, price schedule and trench specification for an Urban Water Supply is attached. The property may already have water laid on. However applicants should check that the supply is adequate for intended use.
NB - Every separate residential unit on a single property allotment shall have a separate water supply pipe incorporating a standard Dunedin City Council Water Department manifold box in a readily accessible location at the roadside boundary of the property.
A copy of fire hydrant's flow test data is attached.
Each unit must have a separate water supply pipe incorporating a standard Dunedin City Council Water Department stopcock installation in a readily accessible location. Each unit must also be within 135 metres of a fire hydrant.
All watermains, service pipes and associated fittings are to be located on site and if necessary protected by the applicant prior to starting construction.No building shall be constructed within 2 (two) metres of the centreline of a public watermain.
4 (four) metre wide easements for the conveyance of water are required to protect watermains in new land subdivisions.
Property owners are requested to check the relevant deposited plans, certificates of title and memoranda of transfer at the Lands and Deeds office for information relating to these easments so that they can be accurately drawn on site plans for building consent applications.
If water is required, a supply shall be given in accordance with Council's Terms and Conditions. A copy of these can be made available to the applicant if required.
A copy of the water reticulation plans for the area is attached.
A water service (if any exists) can be permanently plugged out at no charge.
Please complete and return the attached form to the Water Department.
Note: If a water service is required at a future date, then a new service will need to be applied for and the applicable connection fee paid.
PC1
Date last updated Wed 29 Sep 1999 13:19:11 by PETER CASWELL

Date last printed Thu 07 Oct 1999 11:31:19 by CAROLE BEZETT