

4 February 2020

MOTORSPORT NEW ZEALAND HOUSE
69 HUTT ROAD
WELLINGTON

ENGAGEMENT

We have been engaged by Motorsport NZ to assess the EQ strength of the building and to provide a strengthening solution and costing to bring it up to 70%NBS.

EXISTING STRUCTURE

The building today is the result of four distinct stages of construction.

- 1920s Original warehouse.
- 1970s Lean-to add over original yard.
- 2004 Addition of mezzanine and modernisation.
- 2007 Strengthening of south brick party wall shared with 67 Hutt Road.

PREVIOUS EQ ASSESSMENT AND OUTCOMES

The building was assessment by CPG Engineers in 2012 using the IEP methodology. Their conclusion was that the building was:

- Not an EQ prone building
- Potentially an EQ Risk building

Separately they assessed the building to be 66% NBS longitudinally and 79%NBS transversely with the lower value controlling, – ie marginally under the threshold for not being EQ risk.

CPG report stated that:

They had not been able to locate the calculations for the 2004 additions. However, we have located these calculations. See Appendix D.

They were unaware of any strengthening of the building at 67 Hutt Road, in particular of the party wall. However, we have located the strengthening design for this wall. See Appendix D.

DETAILS OF EXISTING STRUCTURE

See APPENDIX A to locate numbered features:

1. 1920 ORIGINAL BUILDING was a single storey warehouse with a gable roof supported by trusses with the ridge parallel to Hutt Road. The original property had a driveway on the north side leading to a yard at the back on the west side.

2. 1970 LEAN-TO ROOF OVER THE YARD PLUS BLOCKS TO WEST AND NORTH WALLS
Subsequently the yard was roofed over with steel rafters spanning west to east, falling towards the centre of the property. The south wall was a brick party wall shared with the building to the south.

3. 2004 ADDITIONS Architect: Perry Architect
Engineer D N Undrill

A timber mezzanine with raised roof was added over 2/3 of the original building. This comprised a light weight floor and walls and gang-nail timber roof trusses plus a modernised front elevation. The remaining 1/3 was left has a high-stud office space. After this work little of the original warehouse remained.

4. 2007 STRENGTHENING OF 67/69 HUTT ROAD PARTY WALL Designed by Dunning Thornton Consultants.

BUILDING TODAY January 2020 – See Appendix A.

WALLS

5. NORTH WALL
200 Concrete blocks.
Pilaster columns at west end.
No pilaster east end – loading bay.

6. SOUTH WALL
250mm bricks
Party wall shared with adjoining building.
Other side has been strengthened (some details available – extract see Appendix D.)
Recommend adding horizontal member at mid-height, also at roof line to upgrade to 70%NBS.

7. WEST WALL
200 Concrete blocks.
Pilaster columns forming frames with UB rafters.

8. EAST WALL GRID Z
Front of building facing Hutt Road.
Extensively glazed.
EQ loads are resisted by steel frame action.
Steel frame members are undersized for current requirements because of deflection.

To meet current EQ requirements, may require:

Either: Larger rectangular frame members,
Or K-brace or X-braces.

OTHER STRUCTURAL FRAMES

9. GRID Y
See section E-E.
This Grid is braced from mezzanine floor level to ground level by K-braces (inverted V braces) which are unsymmetrically placed to leave doorways clear.
Above mezzanine floor level (in all walls) bracing is provided by sheet bracing (as for light timber construction.)
10. GRID X
The lean-to rafter meets the wall of the raised roof area.
The internal columns supporting the lean-to are tied together by steel beams at the lean-to eaves and at the mezzanine eaves. These lightweight frames are thought to be braced by cross-bracing concealed in the walls (shown in drawings but not visible).

EQ LOADS

The site is located at the foot of the Ngaio hill and accordingly is Type C or D soil. Taking other factors into account, the EQ factor C would be 0.45. At 70%NBS, the building should be assessed with C = 0.32.

However, most of the weight of the building is in the masonry (brick and block) walls on the north, south and west boundary. As these walls are themselves reinforced or braced, and are braced by the roofs and mezzanine floors they are stable under EQ.

The EQ load generated by the lightweight mezzanine floor is small and can be resisted by the following :

EXISTING STRUCTURAL ELEMENTS

- | | | |
|-----|-----------|---|
| 11. | East wall | Steel frames But require extra cross bracing in front elevations. |
| 12. | Grid Y | Existing cross-bracing. |
| 13. | Grid X | Existing steel cross-bracing. |

14. West wall Blockwork.
15. South wall Brick wall with bracing at mid-height and eaves.
16. Grid 1 Sheet bracing (Gib board).
17. Grid 2 Sheet bracing (Plywood).
18. Grid 3 Block wall (lower) and timber framing (upper).

ADDITIONAL BRACING TO ACHIEVE 70+%NBS See Appendix B.

A	Ceiling over loading bay
B	Struts from north wall
C	Wall cross braces
D	Roof cross braces
E	Store cross brace
F	Street K brace
G	South wall brace to bricks

See Appendix B for location and costing.

CONCLUSIONS

The original building has been extended and altered at least twice in the 1970s and in 2004.

Full documentation, including calculations for the 2004 alterations are available.

The party wall shared with 67 Hutt Road was strengthened in 2007. Calculations are available and we have consulted with the design engineer.

The building was assessed in 2012 by CPG using IEP approach with the conclusion that the building was 66%NBS (controlled by the lower longitudinal assessment – but without access to the details of the strengthening in 2007.)

Since 2012, there have been changes to the EQ evaluation process, but these do not have a greatly negative effect on what is effectively a single storey building - which has little remaining of its original 1920s structure. We assess the building to be currently 60%NBS.

We have identified the remaining weaknesses in the building and designed extra structure to address these.

We have costed the strengthening work and estimate that the building can be brought up to 70%NBS at an estimated cost of \$70,000 as per the attached Appendix C.

DISCLAIMER

Currently the requirements for EQ assessment and strengthen of existing building are in a state of flux following major EQs in the period 2010 – 2016 with regulations still evolving.

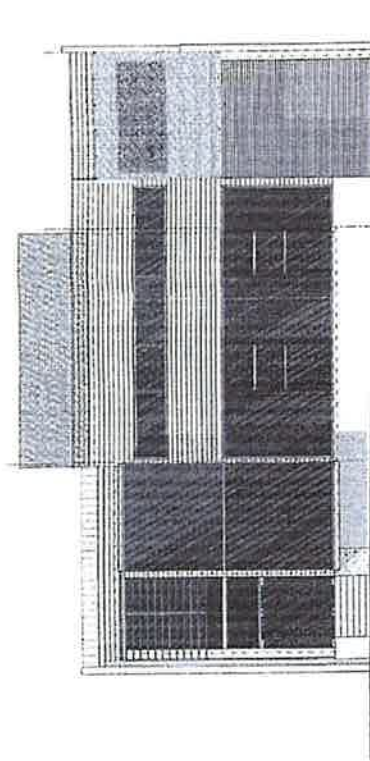
Our report is to Motorsport New Zealand Ltd and we do not accept responsibility to others who may have access to this report.

REPORT BY: STEVEN YOUNG ME CMEngNZ
REVIEWED: ANGELA LIU PhD CPEng 216892

STEVEN YOUNG & ASSOCIATES LTD
Consulting Engineers
syoung@stevenyoung.co.nz
021 932 352

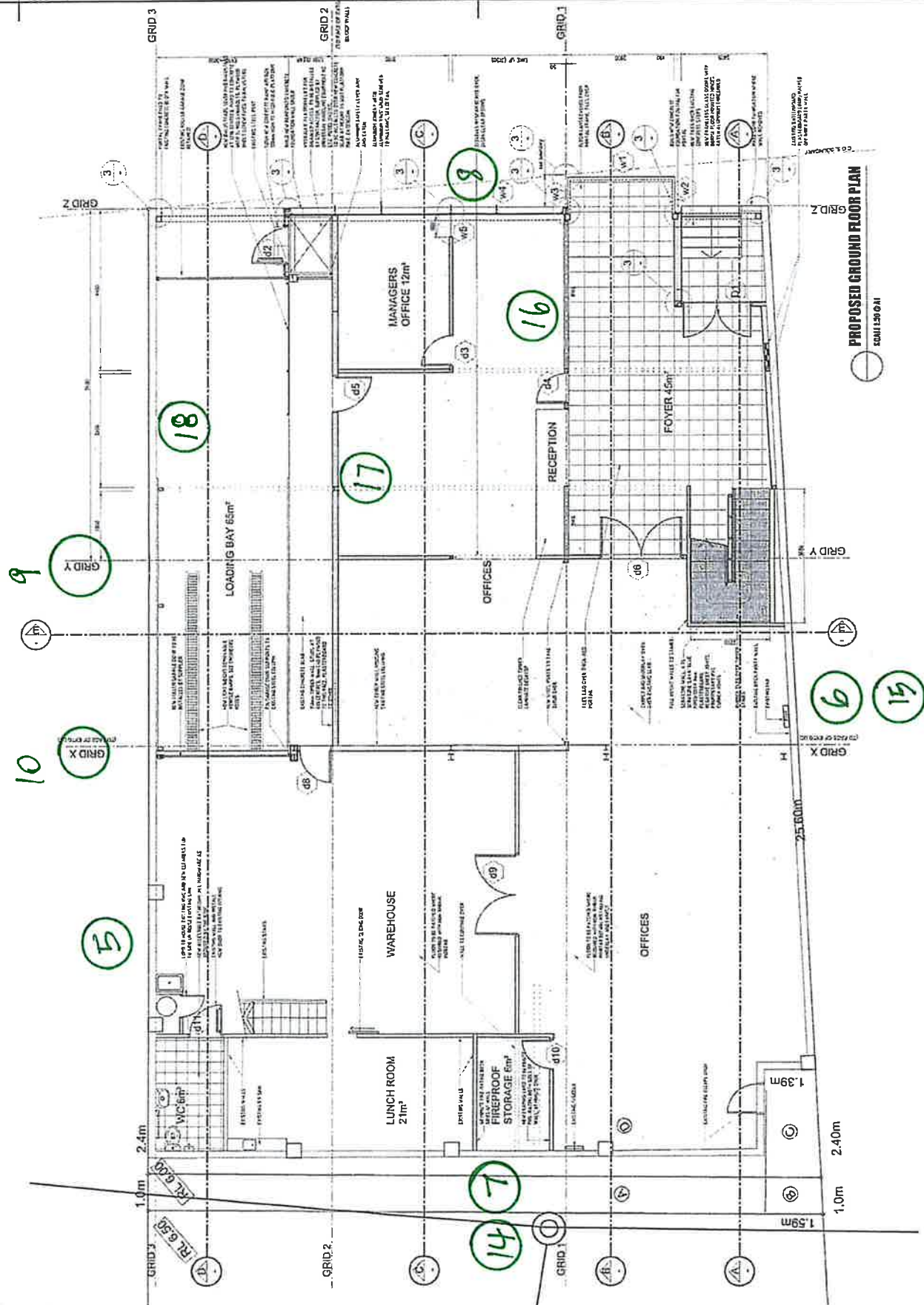
APPENDIX "A"

STRUCTURE



WD 01 R0 existing/demolition plan. services plans
 WD 02 R0 proposed ground floor plan
 WD 03 R0 proposed first floor plan
 WD 04 R0 sections AA & BB, stairs
 WD 05 R0 sections CC & DD
 WD 06 R0 section EE, main elevation
 WD 07 R0 details
 WD 08 R0 details
 WD 09 R0 details
 WD 10 R0 details
 WD 11 R0 details
 WD 12 R0 window & door schedule

Engineers Calculations



PERRY ARCHITECTS

4. BATHING TERRACE
P. 04 0000000
C. 04 0000000
P.O. BOX 11000 NASH

NOTES.



PROJECT:
MOTOR SPORT HOUSE

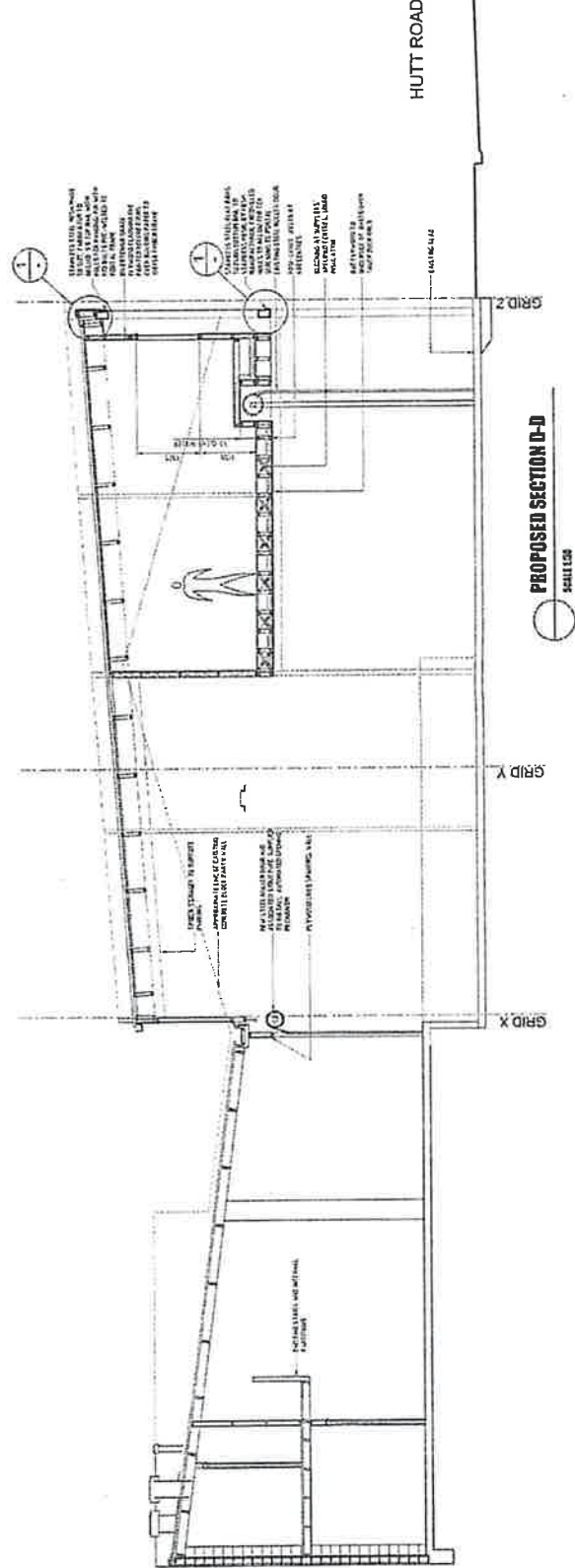
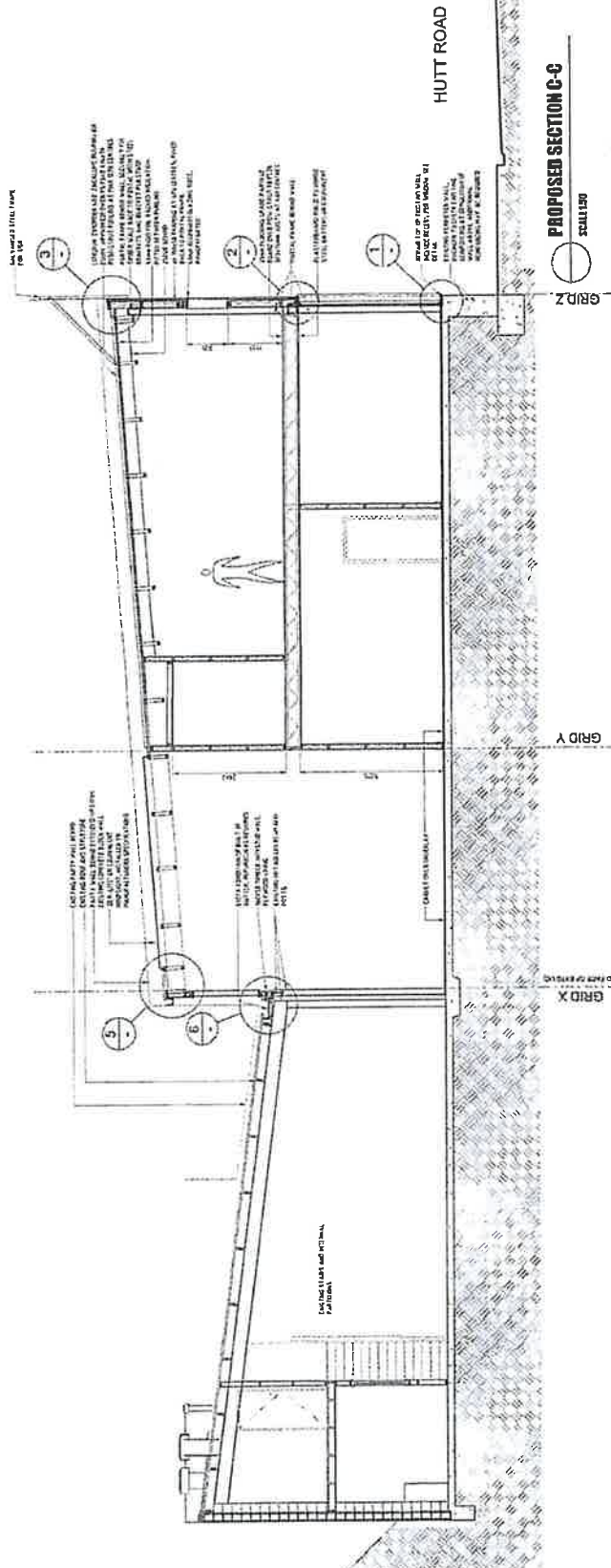
6749 HUTT ROAD

DRAWING:
SECTIONS

DATE: 14/07/04
REVISION: 001
DRAWN BY: M
SCALE: 1:100 @ A1, 1:100 @ A2

WD 05 R0

THE CONSTRUCTION SHALL COMPLY WITH ALL CURRENT BUILDING AND
CONSTRUCTION STANDARDS AND ALL APPLICABLE REGULATIONS. THE
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WITH THE BUILDING ACT 1984 AND THE BUILDING REGULATIONS 1984.



PROPOSED SECTION D-D

SCALE 1:100

GRID 2

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GRID 0

GRID -1

GRID -2

GRID -3

GRID -4

GRID -5

GRID -6

GRID -7

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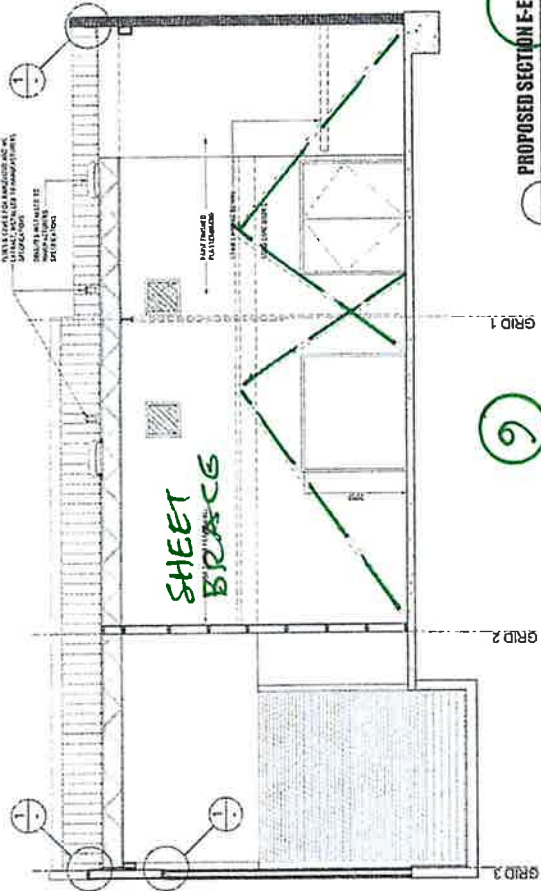
GRID -73

11

PERRY ARCHITECTS

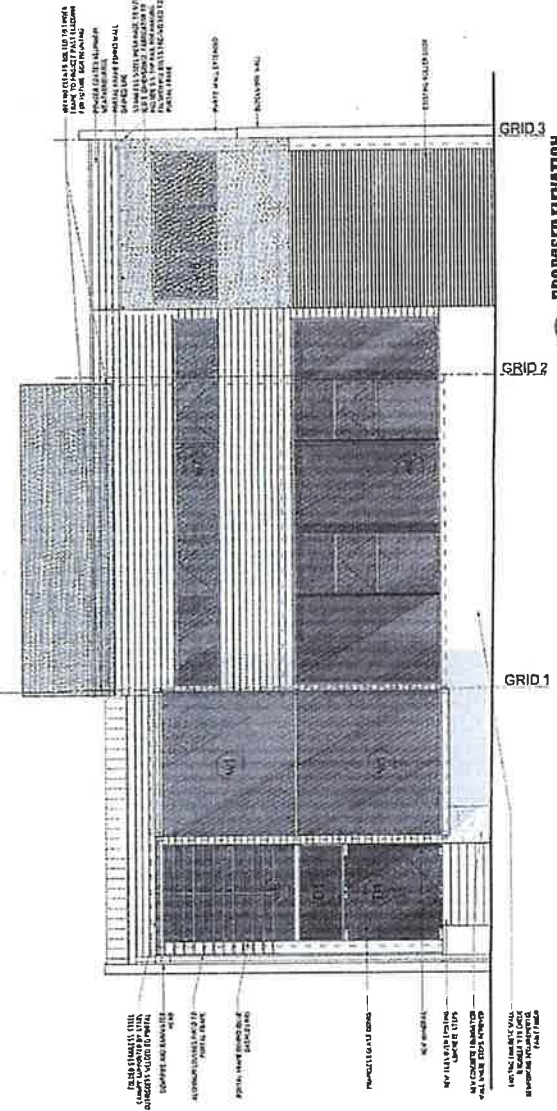
A. JAMES PERRY
P. 04 488 2118
F. 04 488 2119
P.O. BOX 10855 WAIK
P.O. BOX 10855 WAIK

NOTES.



PROPOSED SECTION E-E

SCALE



PROPOSED ELEVATION

SCALE 1:500



PROJECT:
MOTOR SPORT HOUSE
87-89 HUTT ROAD

DRAWING:
SECTIONS & ELEV

DATE: 10/10/2014
REVISION: 01
DRAWN BY: J.P.
SCALE: 1:100 & 1:100 & 1:100

WD 06 R0

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY
CONSENTS FROM THE RELEVANT AGENCIES AND
AUTHORITIES AND SHALL BE RESPONSIBLE FOR
OBTAINING THE NECESSARY CONSENTS AND
FOR THE COST OF THE SAME. THE CONTRACTOR
SHALL BE RESPONSIBLE FOR THE COST OF THE
NECESSARY CONSENTS AND FOR THE COST OF
THE NECESSARY CONSENTS.



12 December 2019

MOTORSPORT HOUSE
69 HUTT ROAD

DOCUMENT REVIEW

We have located the following documents:

01/04/2004 PERRY ARCHITECTS
Full set of drawings.
Full set of DN Undrill calculations

09/09/2004 PERRY ARCHITECTS
Transmittal of further drawings.

14/09/2004 DN UNDRILL
Engineering design of alterations including bracing, ramp, comment on shared brick wall. Approx. 20 pages.

29/04/2005 PS4 BY DN UNDRILL
This certifies the completion of the engineering work in the *Additions to existing building*.

29/06/2005 PS1 BY DN UNDRILL
This certifies the engineering design of *Alterations and additions*

18/07/07 CMG ARCHITECTS
Transmittal

17/072007 DUNNING THORNTON
Assessment of 61 Hutt Road (neighbouring building)
Relevant to shared brick wall

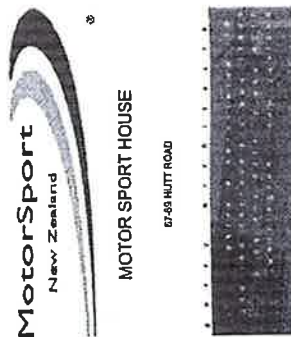
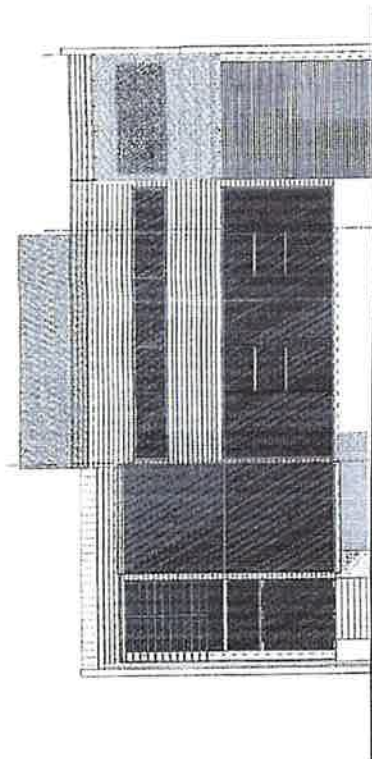
01/01/2012 CPG Consulting Engineers
EQ assessment 55%NBS.
Original building 1920, modified 1970s, 2005

22/02/2016 WCC
Building no longer considered EQ prone

END
SYAL

APPENDIX 'B'

STRENGTHENING



- WD 01 R0 existing/demolition plan, services plans
- WD 02 R0 proposed ground floor plan
- WD 03 R0 proposed first floor plan
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- WD 12 R0 window & door schedule

Engineers Calculations

APPENDIX C

31-Jan-20

Motorsport House
69 Hutt Road
Wellington

Estimate of cost to upgrade to 70%NBS

ITEM	DESCRIPTION	Numb	Length m	Width m	Weight kg	Rate \$/unit	Cost \$
A	Ceiling over loading bay	1	5	10	1		
B	Struts from north wall	4	5	1	15		
C	Wall cross braces	2	4	1	12		
D	Roof cross braces	4	6.5	1	12		
E	Store cross brace	4	8	1	12		
F	Street K brace	2	8	1	25		
G	South wall brace to bricks	2	8	1	25		
H	Access	4	1	1	1		
I	Make good	1	1	1	1		
J	Design and construction review	1	1	1	1		
K	Insurance	1	1	1	1		
L	Set-up costs	1	1	1	1		
M	Consents	1	1	1	1		
N	Contingency						63,204.00
							6,320.40

TOTAL

69,524.40
+GST

NOTE: Estimate based on a review of documents and site inspection.
All inspections were non-invasive - ie no breaking into linings

STEVEN YOUNG & ASSOCIATES LTD
Consulting Engineers
syoung@stevnyoung.co.nz



APPENDIX D

P.I.M. No.

119870

Building Regulation Clause(s) B1

PRODUCER STATEMENT - RS4 - CONSTRUCTION REVIEW

(Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: D. N. UNDRILL

(Suitably qualified Design Professional)

TO: MOTORSPORT NEW ZEALAND

(Owner)

TO BE SUPPLIED TO: WELLINGTON CITY COUNCIL

(Territorial Authority)

IN RESPECT OF: ADDITIONS TO EXISTING BLDG

(Description of Building Work)

AT: 69 HUTT ROADTHORNDON

(Address)

LOT 2 DP 866221 SOUNDRILL

(Design Firm)

has been engaged by

(Owner/Developer/Contractor)

to provide DESIGN & OBSERVATION services

(Extent of Engagement)

in respect of clause(s) B1 of the Building Regulations 1992 for the building work described by thedrawings and specifications prepared by PERRY ARCHITECTS

(Design Firm)

titled MOTORSPORT HOUSE and numbered CN451 WD01 TO WD 15Authorised variation(s) No. (copies attached) have been issued during the course of theworks. I have sighted Building Consent No. 119870 and the attached conditions of building consent.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$1,000,000, I or personnel under my control have carried out periodic reviews of the work appropriate to the engagement and based upon these reviews and information supplied by the contractor during the course of the works

I BELIEVE ON REASONABLE GROUNDS that ☐ All ☐ Part only as specified in the attached particulars

of the building work under the above Building Consent with respect to Clause(s) B1 of the Building Regulations 1992 has been completed to the extent required by that Building Consent.

[Signature]
(Signature suitably qualified Design Professional)

Date 29-4-2005

.....BE (Civil), MIPENZ (Structural), CPEng.....
(Professional Qualifications)

CPEng.No: 27756Member ACENZ ☒IPENZ ☒ NZIA

.....18 Hathaway Avenue, LOWER HUTT.....
(Address)

This form to accompany Form 9 of the Building Regulations 1992 for the issue of a Code Compliance Certificate.

199 8215, ANTEN, 1 PAGE, 9-9-04, 3 PAGES 28-9-04



P.I.M. No.....
Building Regulation Clause(s) **B.1**

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: D. N. UNDRILL
(Suitably qualified Design Professional)
TO: MOTORSPORT NEW ZEALAND INC.
(Owner)
TO BE SUPPLIED TO: WELLINGTON CITY COUNCIL
(Territorial Authority)
IN RESPECT OF: ALTERATIONS & ADDITIONS
(Description of Building Work)
AT: 67 TO 69 HUTT ROAD
THORNDON
(Address)

LOT _____ DP _____ SO _____
UNDRILL has been engaged by PERRY ARCHITECTS
(Design Firm) (Owner/Developer/Contractor)
to provide DESIGN & SUPERVISION services in respect of the
(Extent of Engagement)
requirements of Clause(s) B.1 of the Building Regulations 1992 for
☒ All ☐ Part only as specified

of the building work. The design has been prepared in accordance with B1 / A51
(Verification method(s)/acceptable solution(s))
(respectively) of the approved documents issued by the Building Industry Authority and the work is described on
PERRY ARCHITECTS drawings titled MOTOR SPORT
(Design Firm) WDO1 TO 15 HOUSE
and numbered EN451 and the specification and other documents according to which the
building is proposed to be constructed.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$1,000,000. I BELIEVE ON REASONABLE GROUNDS that subject to:

- (i) the site verification of the following design assumptions _____
and (ii) all proprietary products meeting the performance specification requirements, the drawings, specifications, and other documents according to which the building is proposed to be constructed comply with the relevant provisions of the building code.

[Signature]
(Sign as suitably qualified Design Professional)

Date 29.6.04

...BE (Civil), MIPENZ (Structural), CPEng.....
(Professional Qualifications)

CPEng No: 27756

Member ACENZ ☐
IPENZ ☐ NZIA

18 Hathaway Avenue, LOWER HUTT.....
(Address)

This form to accompany Form 3 of the Building Regulations 1992 for the application of a Building Consent.

MotorSport House
69 Hutt
Road

CPG Ref:

705316

Date

Jan-12

Upper Bound

Summary Initial Evaluation Procedure

Based on NZSEE Assessment and Improvement of the Structural Performance of Buildings in Earthquake, June 2006

Factor	Description	Longitudinal Perp to Hutt Rd	Transverse Para to Hutt Rd	Comments
Code	1992			Strengthened 2005
Soil	Type D			Refer Wgtn Seismic Subsoil Class Map
Estimated Period		0.4	0.4	1/2 storey
%NBS		22	22	
Note 1		1	1	
Note 2		1	1	
Note 3		1	1	
%NBS (modified)		22	22	
Factor A	Near Fault	1.00	1.00	T<1.5s
Factor B	Hazard Scaling	2.50	2.50	Z = 0.40
Factor C	Return Period	1.00	1.00	IL = 2
Factor D	Ductility	1.00	1.00	$\mu = 1.0, \mu = 2.0$ Post 1976, $K_u=1.0$
Factor E	Structural Performance	1.00	1.43	$S_p = 1.00 (\mu = 1.0)$ $S_p = 1.43 (\mu = 2.0)$
Baseline %NBS		55.0	78.7	
Critical Structural Weaknesses				
Factor A	Plan irregularity	1.0	1.0	Assessed as insignificant as upper floor is lightweight
Factor B	Vertical irregularity	1.0	1.0	N/A
Factor C	Short Columns	1.0	1.0	N/A
Factor D1	Pounding Potential	1.0	1.0	Large gap. Party wall
Factor D2	Height Difference	1.0	1.0	Large gap. Party wall
Factor E	Site Characteristics	1.0	1.0	Moderate liquefaction potential unlikely to create a hazard
Factor F	Other Factors	1.2	1.0	Max allowed = 2.5
Strengthening factor		1.0	1.0	
PAR	Performance Achievement Ratio	1.20	1.00	
Baseline %NBS x PAR		66	79	
Governing %NBS		66		
Potentially Earthquake Prone (<33%)		No		
Potentially Earthquake Risk (<67%)		Yes		
Seismic Grade		C		
Relative Risk		5 x		

Other Notes:

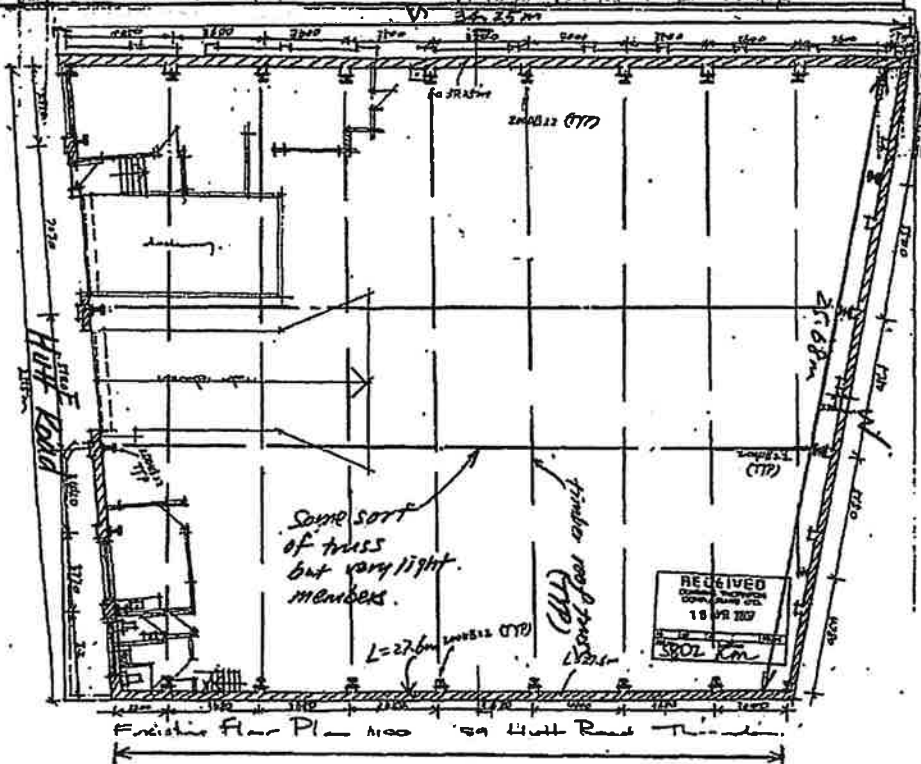
Outside of Hazard (ground shaking) area, GWRC map.

Dunning Thornton Consultants Ltd
 Consulting Engineers
 Ph: (644) 385-0019
 Fax: (644) 385-0312
 PO Box 27-153, Wellington, NZ
 Email: dth@dtc.dunningthornton.co.nz



CALCULATIONS

JOB NAME	61 Hutt Road, Wellington		
JOB NO	22-802	CALC'D BY	AZL
DATE	02-05-02	PAGE	2



plan

BRUCE MATHIAS



DISCLOSURE STATEMENT

1. The following information has been supplied to Capital Commercial (2013) Limited ("Bayleys") to be made available for distribution on the vendor's behalf to potential purchasers to assist purchasers with their due diligence and to use at the purchaser's discretion.
2. Bayleys and the Vendor do not warrant the accuracy or completeness of the information and recommends that all recipients undertake their own due diligence, obtain their own reports to their satisfaction and seek independent advice prior to committing to purchaser.