Before an Independent Hearings Panel
Appointed by Christchurch City Council

under: the Resource Management Act 1991

in the matter of: proposed Plan Change 14 to the Christchurch District Plan

and: **Daresbury Limited**
(Submitter 874)

Statement of evidence of Stewart Harrison for Daresbury Limited (Quantity Surveying)

Dated: 20 September 2023

Reference: Jo Appleyard (jo.appleyard@chapmantripp.com)
Annabel Hawkins (annabel.hawkins@chapmantripp.com)

chapmantripp.com
T +64 3 353 4130
F +64 4 472 7111

PO Box 2510
Christchurch 8140
New Zealand

Auckland
Wellington
Christchurch

chapman tripp

STATEMENT OF EVIDENCE OF STEWART HARRISON FOR DARESBURY LIMITED

INTRODUCTION

1 My full name is Stewart Menzies Harrison.

2 I am the director and shareholder of SMH Ltd trading as Stewart Harrison Quantity Surveyors + Project Managers (*SHQS*). Previously I was the managing director and shareholder of Stewart Harrison Ltd (*Harrisons*), and a director and shareholder of Ian Harrison & Associates Ltd (*IH&A*).

3 I obtained a New Zealand Certificate of Quantity Surveying in 1992. I am a Registered Quantity Surveyor; a Fellow of the New Zealand Institute of Quantity Surveyors; and a Member of the New Zealand Institute of Building.

4 I have over 30 years' experience in the quantity surveying profession.

5 My areas of expertise and activities carried out at SHQS include the pricing of repair and rebuild scopes for all types of property damaged as a result of the Canterbury earthquakes of 2010 and 2011.

6 Following the Canterbury earthquakes SHQS, Harrisons, and IH&A, have been involved with the preparation of some 5,000 repair and replacement estimates for residential and commercial properties.

7 Personally, I have been involved with over 2,000 repair and replacement estimates. This typically involves reviewing geotechnical and structural reports; visiting, inspecting, and photographing the dwellings/structures; preparing estimates (generally in accordance with the relevant New Zealand Standard, NZS4202 and ANZSMM); liaising with the concerned parties; attending settlement meetings; negotiation with/for interested parties; and preparation for/appearing as an expert witness.

8 I have previously given evidence in the District Court and High Court as an expert on repair and rebuild costings in relation to residential and non-residential buildings damaged by the Canterbury Earthquake Sequence.

9 I attach a copy of my CV outlining my professional qualifications and experience (**Appendix 1**).

10 I was first involved with the subject property in February 2019. At that time Milne Construction engaged Harrisons to peer review its repair quotation dated 18 February 2019 and provide any recommendations as to the rates used and the pricing contained within it.

SCOPE OF EVIDENCE

11 My evidence will address the comments made by Mr Gavin Stanley in his Statement of Primary Evidence for Christchurch City Council relating to Daresbury Limited's submission.

12 In preparing this evidence I have:

12.1 Reviewed the submission by Daresbury Limited;

12.2 Reviewed the Structural Assessment Report dated 17 May 2019 prepared by Quoin Structural Consultants;

12.3 Reviewed the Statement of Primary Evidence prepared by Mr Gavin Stanley including the various appendices;

12.4 Reviewed the Milne Construction estimate dated 18 February 2019, and the comments made by Harrisons regarding that estimate;

12.5 Reviewed the Milne Construction estimate dated 3 July 2019 (relied on by Mr Stanley) to check if the recommendations made by my firm were incorporated;

12.6 Reviewed the existing ground floor, first floor and second floor plans titled "Condition Report Room Numberings" to determine the gross floor area (*GFA*) (**Appendix 4**);

12.7 Had Mr Milne measure several exterior wall lengths and internal door widths to confirm the accuracy of the plans I used to measure and confirm the GFA; and

12.8 Re-visited the property to re-familiarise myself with it.

CODE OF CONDUCT

13 While this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for Expert Witnesses contained in Part 9 of the Environment Court Practice Note 2023. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where I state that I am relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SUMMARY OF EVIDENCE

14 A summary of my evidence includes:

14.1 My comments on Appendices A, B, C, D, E and F that form part of the Repair Quotation Review at Appendix B of Mr Stanley's Statement of Primary Evidence.

(a) For clarity I have followed the appendix numbering on each appendix as the appendix referencing in Mr Stanley's Statement of Primary Evidence is incorrect.

14.2 My amendments to Mr Milne's 3 July 2019 costings including a summary of my workings (**Appendix 2**).

MR STANLEY'S REPAIR QUOTATION REVIEW – APPENDIX A

15 Appendix A refers to the floor plans prepared by DPA Architects.

16 The floor plans refer to a scale of 1:50 on sheet size A1, and 50% reduced if the sheet size is A3.

17 Mr Stanley encapsulates the GFA he has measured using a thicker line. He has done this on all three plans.

18 Mr Stanley concludes the GFA per floor as:

18.1	Ground floor	800m2
18.2	First floor	599m2
18.3	Second floor	244m2
18.4	Total GFA	1643m2

19 Within Appendix B, under the heading "Building Description", Mr Stanley states he has measured the GFA *in accordance with NZIQS guidelines*.

20 For the avoidance of any doubt, NZIQS defines GFA in its publication "Elemental Analysis of Costs of Building Projects" as:

20.1 **Gross Floor Area** - The area used for the calculation of element costs is the gross floor area, measured over all the exterior walls of the building, over partitions, columns, interior structural or party walls, stair wells, lift wells, ducts, enclosed roof top structures and basement service areas. All exposed areas such as balconies, terraces, open floor areas and the like are excluded. Generally, projections beyond the outer face of the exterior walls of a building such as

> projecting columns, floor slabs, beams, sunshades and the like shall be excluded from the calculation of gross floor areas. Where the outer face of the exterior walls of a building are not regular vertical surfaces, the overall measurements shall be taken at floor levels and note made of the vertical profile of the wall line. Where mezzanine floors occur within a structure the gross floor area of this mezzanine shall be added to all other complete floor areas and become a constituent part of the gross floor area.

21 I consider Mr Stanley has incorrectly included in his GFA external areas that are outside the building envelope; exposed areas such as balconies & terraces; and projecting columns.

22 I have measured the plans Mr Stanley used and found the scale on this to be incorrect.

23 As I stated earlier, I used the "Condition Report Room Numbering" plans, and had Mr Milne confirm using a tape measure several dimensions for me to confirm these plans were accurate.

24 My GFA per floor is:

24.1	Ground floor	554m2
24.2	First floor	341m2
24.3	Second floor	194m2
24.4	Total GFA	1089m2

25 The difference between the two GFA's is 554m2.

26 The effect of this incorrect measure by Mr Stanley is significant. I comment more on this error within my comments under Mr Stanley's Repair Quotation Review - Appendix B.

MR STANLEY'S REPAIR QUOTATION REVIEW – APPENDIX B

27 Mr Stanley refers to "bespoke" items having a higher value of work than he would anticipate and concludes this may be as a result of the number of hours allowed which may contain additional risk.

28 I disagree with this assumption. This is a complicated repair involving the demolition and rebuilding of the ground floor perimeter walls and the support of the first and second floor structures above it. The interior and exterior of the house is largely replaced. When I reviewed the initial estimate prepared by Mr Milne, it contained a number of quotations from subcontractors and suppliers thus reducing the element of risk to Mr Milne.

29 Mr Stanley refers to the excessive time allowed by Mr Milne to remove and dispose of the chimneys and cites 810 hours or 18 weeks. What Mr Stanley fails to mention is the 18 weeks is for one person. In all reality, there would be at least four to six people required to complete that task, thus the duration would be three to five weeks, which is reasonable.

30 In terms of the percentages applied:

30.1 Margins:

(a) Mr Stanley confirms 7.5% is reasonable.

(b) I disagree and suggest 10% was more in line with the market then, and remains so in today's market.

30.2 Contingencies:

(a) I disagree with Mr Stanley's comment that the rates include a good element of risk and the contingency could be reduced.

(b) I agree that a 10% allowance is reasonable.

30.3 Professional Fees:

(a) I agree with Mr Stanley that the professional fees allowed by Mr Milne are too low at 5%.

(b) Mr Stanley states a range of 10% to 15% and adopts 10% for his calculations.

(c) I disagree with 10% and allow 20% to cover the heavy involvement of project management, design and observation from both the heritage architect, the structural engineer, and other engineers such as geotech, mechanical etc. There will be input required from an archaeologist, as well as heritage consultants from the Council etc.

30.4 Project Management:

(a) On the basis the allowance made for PM by Mr Milne is better described as a site or construction manager, and not an external PM, then I agree with Mr Stanley that this should be included in the P&G.

30.5 P&G:

(a) I agree with Mr Stanley's allowance of 12%.

31 Betterment:

31.1 I disagree with Mr Stanley as to the degree of betterment he believes Mr Milne has included in his estimate.

31.2 Due to the methodology and materials required to repair and reinstate the interior of the dwelling, the result is the interior must change in its layout and appearance to accommodate the recommendations made by Mr Gilmore.

31.3 Mr Stanley specifically identifies the following items as being betterment:

(a) HVAC (Heating, ventilation & air conditioning) – supply and install ducted central heating:

(i) The dwelling contained 14 fire places (not chimneys).

(ii) Mr Milne makes allowance in his estimate to remove all 14 fireplaces and reinstall only five of them, on the assumption they can be salvaged and reused.

(iii) I suggest the cost of HVAC versus reinstalling 14 salvaged fire places is neutral.

(b) Fire System – supply & install:

(i) The dwelling contained three plumbed up fire hose reels within cabinets each serving an entire floor.

(ii) Mr Milne simply replaces these with a modern system.

32 In terms of the replacement cost:

32.1 As I have stated, I consider Mr Stanley has incorrectly measured the GFA as being 1643m2. According to my measure, the GFA is 1089m2 (**Appendix 4**).

32.2 This significantly adjusts Mr Stanley's replacement costs estimates as follows (**Appendix 3**):

(a) Replacement replica:

(i) Based on 1643m2 x $8,000/m2 is $13,144,00.

(ii) **Corrected** to 1089m2 x $8,000/m2 is $8,712,000.

(b) Replacement modern high end multi-level:

(i) Low end - based on 1643m2 x $7,000/m2 is $11,501,00.

(ii) High end - based on 1643m2 x $10,000/m2 is $16,430,000.

(iii) Low end - **corrected** to 1089m2 x $7,000/m2 is $7,623,000.

(iv) High end – **corrected** to 1089m2 x $10,000/m2 is $10,890,000.

MR STANLEY'S REPAIR QUOTATION REVIEW – APPENDICES C & D

33 Mr Stanley states in his Appendix B that he adopts the cost fluctuation adjustment by indexation to escalate Mr Milne's 2019 estimate to the end of 2023Q2.

34 I agree with the use of this method to escalate costs.

35 Mr Stanley states that the Statistics NZ indices for 2023Q2 and 2023Q3 had not been published at the time of his report, and he estimated the indices for these two periods.

36 At the time of writing, Statistics NZ has produced its results for the 2023Q2 period.

37 To summarise, and referring to Appendix D:

37.1 Labour Cost Index:

(a) Mr Stanleys 2023Q2 estimate 1369

(b) Actual result 1380

(c) The movement in the Index is 19 and not 8.

(d) As Mr Stanley had assumed a similar movement in index for 2023Q3, that being 8, I have followed his logic and assumed the 2023Q3 will be similar to the 2023Q2 result, ie a movement of 19 to 1399.

37.2 Producers Price Index:

(a) Mr Stanleys 2023Q2 estimate 1481

(b) Actual result 1490

(c) The movement in the Index is 16 and not 7.

(d) As Mr Stanley had assumed a similar movement in index for 2023Q3, that being 7, I have followed his logic and assumed the 2023Q3 will be similar to the 2023Q2 result, ie a movement of 16 to 1506.

37.3 The result of the 2023Q2 actual index and the assumption the 2023Q3 index will follow the same trend, means the formula adopted results in an inflation increase of 21.35 per cent rather than the 19.73 per cent allowed for by Mr Stanley.

37.4 With reference to Mr Stanley's Appendix C, the three options noted can be revised as follows:

(a) Option 1:

(i)	V = Valuation	$5,419,124
(ii)	C = Cost fluctuation	$1,156,983
(iii)	Adjusted Value	$6,576,107

(b) Option 2:

(i)	V = Valuation	$5,560,854
(ii)	C = Cost fluctuation	$1,187,242
(iii)	Adjusted Value	$6,748,096

(c) Option 3:

(i)	V = Valuation	$5,742,905
(ii)	C = Cost fluctuation	$1,226,110
(iii)	Adjusted Value	$6,969,015

MR STANLEY'S REPAIR QUOTATION REVIEW – APPENDIX E

38 Mr Stanley suggests items allowed for within Mr Milne's estimate be removed as he believes these are included within Mr Milne's P&G allowance.

39 I agree with four of the items Mr Stanley refers to, namely storage containers, site office, environmental controls and for the sake of argument the $120.87 noted against a locksmith.

40 However, I disagree with three of the items he refers to, namely contract works insurance, mobile scaffolding and scaffolding during the works:

40.1 Contract works insurance – it is my experience that the owner would usually seek contract works insurance and pay this cost themselves.

40.2 Mobile scaffolding – it is my experience that when mobiles are needed for work to stair wells or areas where scaffolding is difficult to achieve or is cost prohibitive, then the contractor will hire mobile scaffolds and platforms.

40.3 Scaffolding – in my experience scaffolding now forms its own trade, much like plumbing or painting, and is rarely included within the P&G.

41 Mr Stanley has re-ordered Mr Milne's estimate to better align with how he would have formatted it. I agree with the order Mr Stanley has adopted which is:

41.1 Net cost

41.2 P&G

41.3 Margin

41.4 Contingencies

41.5 Professional Fees

42 To this order I would conclude with:

42.1 Resource and Building Consent Fees

42.2 GST

MY REVIEW OF MILNE CONSTRUCTION'S ESTIMATE DATED 3 JULY 2019

43 In June 2019, my office reviewed an estimate prepared by Milne Construction dated 18 February 2019, and recommended that some of the rates be reviewed and adjusted.

44 I have reviewed Milne Construction's estimate dated 3 July 2019 and confirm the recommendations my office made at the time were followed and the earlier estimate was updated.

45 Adopting the Option 3 format Mr Stanley uses at his Appendix E, and adjusting for items I believe do not form part of the P&G, the percentages I believe are reasonable for P&G, Margin, etc, and

adjusting for escalation, my estimate of the Milne Construction – Reduced Repair Option is $8,127,788 plus GST.

46 This is summarised in **Appendix 2**.

CONCLUSIONS AND SUMMARY

47 By various means, Mr Stanley has adjusted Mr Milne's *Reduced Repair* estimate and increased it by $1,456,657 from $5,419,124 to $6,875,781.

48 As I have indicated in my brief, Mr Stanley has not allowed sufficient escalation.

49 Adopting Mr Stanley's figures, but using an inflation percentage of 21.35, Mr Stanley's adjustment of Mr Milne's *Reduced Repair* estimate increases it by $93,234 to $6,969,015.

50 When comparing Mr Stanley's inflation adjusted Milne Construction estimate of $6,969,015 with his two replacement options, namely a *Replica* at $13,144,000 and a *Modern Equivalent* at an average of $13,965,500, one would assume it was economic to repair the dwelling:

	Replica	Modern equivalent
Rebuild	$ 13,144,000	$ 13,965,500
Repair	$ 6,969,015	$ 6,969,015
Difference	$ 6,174,985	$ 6,996,485

51 However, Mr Stanley has over measured the GFA of the dwelling by circa 50 percent.

52 Using Mr Stanley's square metre rates and applying those to the actual GFA, the corrected *Replica* replacement is $8,712,000 and the corrected *Modern Equivalent* replacement is $9,256,500 (average), the economics change considerably:

	Replica	Modern equivalent
Rebuild	$ 8,712,000	$ 9,256,500
Repair	$ 6,969,015	$ 6,969,015
Difference	$ 1,742,985	$ 2,287,485

53 Adopting the percentages I suggest for Margin (10%), Professional Fees (20%), and Inflation (21.35%), my adjustment of Mr Milne's *Reduced Repair* estimate increases it to $8,127,788.

54 Adopting my adjustment of Mr Milne's estimate, and Mr Stanley's *Replica* and *Modern Equivalent* replacement figures calculated using the actual GFA:

	Replica	Modern equivalent
Rebuild	$ 8,712,000	$ 9,256,500
Repair	$ 8,127,788	$ 8,127,788
Difference	$ 584,212	$ 1,128,712

55 The difference between repair and replacement of $584,212 suggests a repair is uneconomic.

Stewart Menzies Harrison

20 September 2023

Appendix 1

Stewart Harrison

|SH|QS|PM|

QUANTITY SURVEYORS
+ PROJECT MANAGERS

CURRICULUM VITAE

Name:

Stewart Menzies Harrison
FNZIQS, Reg. QS
MNZIOB

Professional Qualifications:

1992	New Zealand Certificate Quantity Surveying
2003	Member New Zealand Institute of Quantity Surveyors Inc.
2006	Registered Quantity Surveyor
2010	Member New Zealand Institute of Building
2016	Fellow New Zealand Institute of Quantity Surveyors Inc.

Directorships/Trustee:

Director of: -

- SMH Limited t/a Stewart Harrison Quantity Surveyors + Project Managers
- Stewart Harrison Limited t/a HARRISONS Quantity Surveyors

Trustee of: -

- The Halberg Foundation (Canterbury/Westland)
- The Canterbury Cricket Trust
- The Otautahi Education Development Trust

Experience:

Quantity Surveying and Project Management experience of: -

- 19 years in a professional office
- 5 years in a shop-fitting contractors office
- 9 years in a main-contractors office

Current Roles:

NZIQS National Board Member
NZIQS Canterbury Branch Interview Panel member

Recent Roles:

NZIQS Canterbury Branch Board Chair
NZIQS National Marketing Committee Convenor
NZIQS National Insurance Working Group member
NZQA Approval and Accreditation Panel
NZIOB Southern Chapter Board Member

Employment History:

My employment history todate is: -

SMH Limited t/a Stewart Harrison Quantity Surveyors + Project Managers (2020 – current)
Consulting Quantity Surveyors and Project Managers
Director

Stewart Harrison Limited t/a HARRISONS Quantity Surveyors (2014 – current)
Consulting Quantity Surveyors
Managing Director

Ian Harrison & Associates Ltd (2006 – 2014)
Consulting Quantity Surveyors
Director

Form Shopfitting & Fixtures Ltd (2001 – 2006)
Commercial Shop-fitters
Quantity Surveyor
Project Manager

Building and Plant Contracting (1998 – 2001)
Building Contractors (Commercial/ Residential)
Director

Calder Stewart Industries Ltd (1996 – 1997)
Building Contractors (Commercial/ Industrial)
Project Manager

Hanham & Philp Contractors Ltd (1993 - 1996)
Building Contractors (Commercial/ Industrial)
Quantity Surveyor

Ian Harrison & Associates Ltd (1990 - 1993)
Consulting Quantity Surveyors
Cadet Quantity Surveyor

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Description		Option 3		SHQS	Diff	Comments			
Milne Construction		$ 4,179,704.89		$ 4,179,704.89	$ -		*Using the total including Margin*		*$ 5,074,095.51*
Establishment - Storage Containers		-$ 50,000.00		-$ 50,000.00	$ -	Agree	*10.00%*	*Heritage architect*	*$ 507,409.55*
Establishment - Site Office		-$ 6,000.00		-$ 6,000.00	$ -	Agree	*3.00%*	*Structural engineer*	*$ 152,222.87*
Insurance Contract Works		-$ 45,000.00		$ -	*$ 45,000.00*	Disagree	*0.50%*	*Geotech engineer*	*$ 25,370.48*
Mobile Scaffolding		-$ 5,000.00		$ -	*$ 5,000.00*	Disagree	*1.25%*	*Mechanical engineer*	*$ 63,426.19*
Environmental		-$ 5,000.00		-$ 5,000.00	$ -	Agree	*1.25%*	*Electrical engineer*	*$ 63,426.19*
Scaffolding for duration of works		-$ 126,556.00		$ -	*$ 126,556.00*	Disagree	*1.00%*	*Fire engineer*	*$ 50,740.96*
Locksmith		-$ 120.87		-$ 120.87	$ -		*5.00%*	*Project manager*	*$ 253,704.78*
Subtotal		**$ 3,942,028.02**		**$ 4,118,584.02**	***$ 176,556.00***				*$ 1,116,301.01*
Preliminary & General	12%	$ 473,043.36	12%	$ 494,230.08	*$ 21,186.72*	Agree			
Subtotal		**$ 4,415,071.38**		**$ 4,612,814.10**	***$ 197,742.72***				
Margins	7.50%	$ 331,130.35	10%	$ 461,281.41	*$ 130,151.06*	RA 7.5% and SHQS 10%			
Subtotal		**$ 4,746,201.74**		**$ 5,074,095.51**	***$ 327,893.78***		**Labour Cost Index**		
Contract Contingencies	10%	$ 474,620.17	10%	$ 507,409.55	*$ 32,789.38*	Agree	2023Q2	actual index (RA estimate 1369)	1380
Subtotal		**$ 5,220,821.91**		**$ 5,581,505.06**	***$ 360,683.15***		2023Q3	forecast index (RA estimate 1377)	1399
Other Development Costs (Prof Fees)	10%	$ 522,082.19	20%	$ 1,116,301.01	*$ 594,218.82*	RA 10% and SHQS 20%			
Subtotal		**$ 5,742,904.10**		**$ 6,697,806.08**	***$ 954,901.98***		**Producers Price Index**		
							2023Q2	actual index (RA estimate 1481)	1490
Cost fluctuation adjustment	19.73%	$ 1,132,876.00	21.35%	$ 1,429,981.60	*$ 297,105.60*	RA 19.73% and SHQS 21.35%	2023Q3	forecast index (RA estimate 1488)	1506
Total		$ 6,875,780.10		**$ 8,127,787.67**	***$ 1,252,007.57***				
							Change is 21.325% not 19.73%		
Corrected Cost fluctuation	21.35%	$ 1,226,110.03				RA % adjusted			
Total		**$ 6,969,014.13**		**$ 8,127,787.67**	***$ 1,158,773.55***				

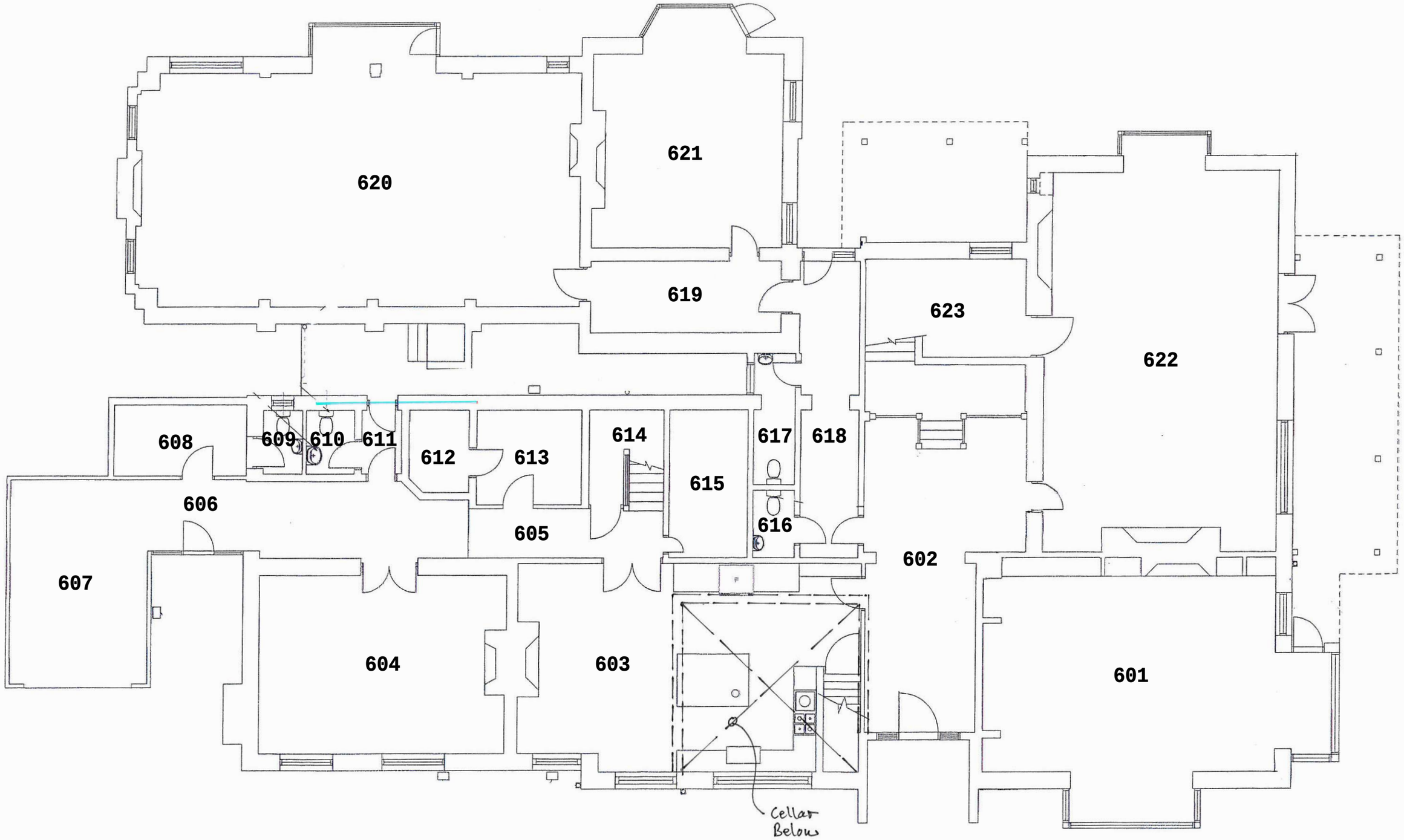
Appendix 2

Appendix 3

	Rhodes					Rhodes corrected GFA					Error in GFA
	Qty	Unit	Rate / m2	Total		Qty	Unit	Rate / m2	Total		
Rebuilding a Replica	1643	m2	$ 8,000.00	**$ 13,144,000.00**		1089	m2	$ 8,000.00	**$ 8,712,000.00**		$ 4,432,000.00
Rebuilding but modern high end	1643	m2	$ 7,000.00	$ 11,501,000.00		1089	m2	$ 7,000.00	$ 7,623,000.00		
	1643	m2	$ 10,000.00	$ 16,430,000.00		1089	m2	$ 10,000.00	$ 10,890,000.00		
			ave	**$ 13,965,500.00**				**ave**	**$ 9,256,500.00**		$ 4,709,000.00

Appendix 3

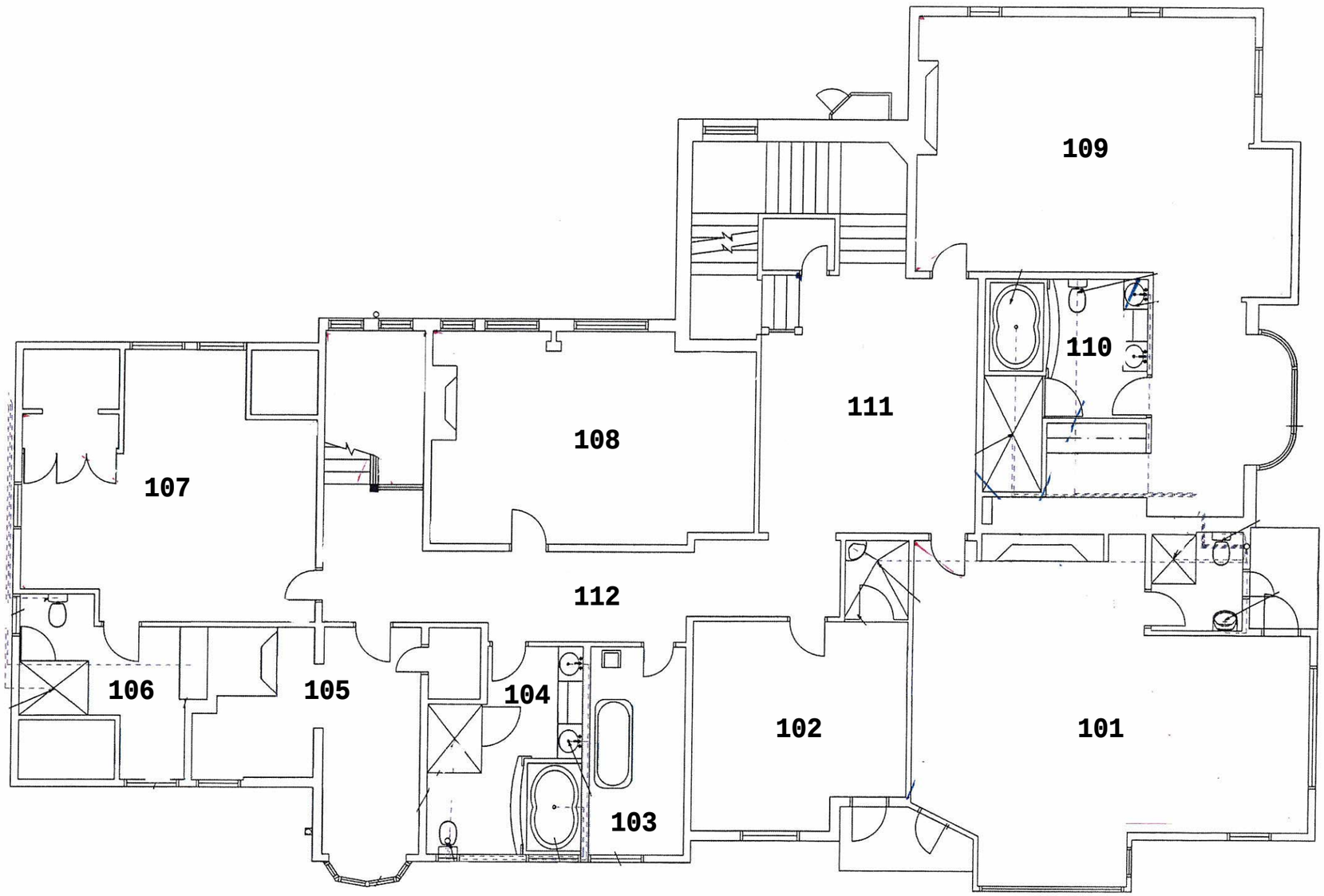
Appendix 4



EXISTING
GROUND FLOOR
1:100 (A3) 0 1 2 3 4 5 (m)

546.62 m²

Condition Report Room Numbering



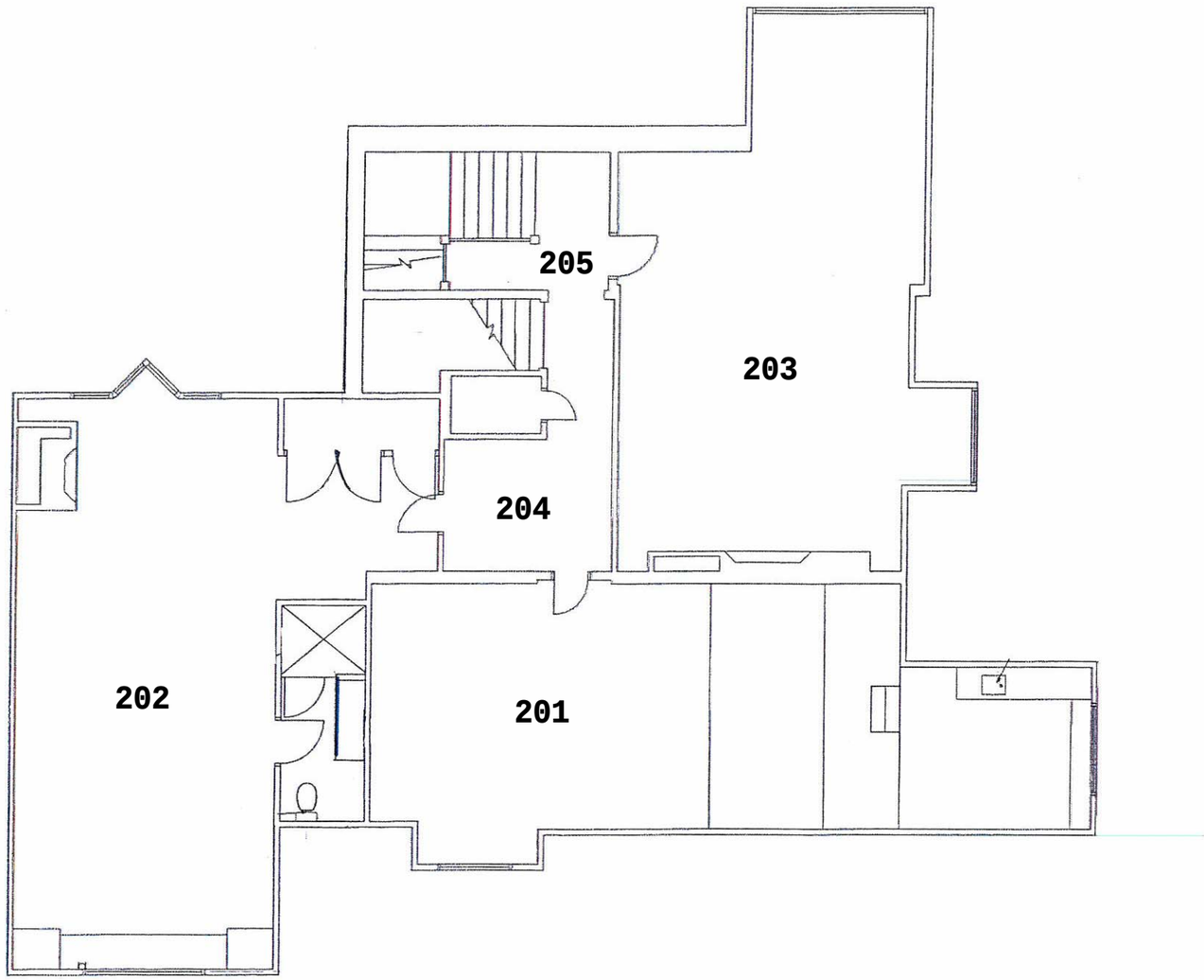
EXISTING

FIRST FLOOR

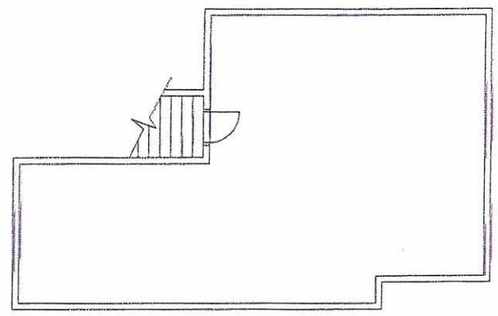
1:100 (A3) 0 1 2 3 4 5 (m)

343.64 m²

Condition Report Room Numbering



EXISTING
SECOND FLOOR
1:100 (A3) 0 1 2 3 4 5 (m)
199.03 m²



EXISTING
ROOF DECK
1:100
31.15 m²

Condition Report Room Numbering