



HERITAGE EARTHQUAKE PRONE BUILDING
STRENGTHENING COST STUDY

Prepared For:
CHRISTCHURCH CITY COUNCIL

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Prepared By:

A handwritten signature in blue ink, appearing to read 'John Hare'.

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1. INTRODUCTION
2. SCOPE OF WORK
3. LIMITATIONS
4. STATUTORY REQUIREMENTS
5. DEVELOPMENT OF COST ESTIMATES
6. STRENGTHENING LEVELS
7. REVIEW OF BASE RATE
8. STRENGTHENING ESTIMATE
9. ADDITIONAL COSTS
10. CHURCHES AND THEATRES
11. ACCURACY
12. COMMENT ON RESULTS
13. CITY COUNCIL DATABASE

APPENDICES:

- APPENDIX A: Building Breakdown by Categories
- APPENDIX B: Strengthening Costs by Categories
- APPENDIX C: Strengthening Cost Breakdown
- APPENDIX D: Base Cost Modification Factors
- APPENDIX E: Potentially Earthquake Prone Protected Buildings CCC Register
- APPENDIX F: Potentially Earthquake Prone Protected Buildings Sample Group
- APPENDIX G: Potentially Earthquake Prone Buildings
Banks Peninsula Schedule IV Protected Buildings
- APPENDIX H: Potentially Earthquake Prone Buildings
Banks Peninsula Schedule V Notable Buildings



REPORT

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PREPARED FOR

CHRISTCHURCH CITY COUNCIL

June 2009

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1. INTRODUCTION

The Christchurch City Council (CCC) engaged Holmes Consulting Group to provide an update of the November 2005 report, estimating the cost of strengthening buildings listed in the City Plan as protected heritage buildings that are potentially earthquake prone. Estimates had been prepared for strengthening to both 33% and 67% of full current code load levels.

Level 5

Subsequently several events have prompted this review:

123 Victoria Street

- The Christchurch City Council has amalgamated with the Banks Peninsula District Council, adding a considerable number of potentially affected properties.
- The Christchurch City Council Earthquake Prone Building (EPB) Policy has been adopted, which sets timeframes and confirms load levels for the affected buildings.
- In the 3 years since the original report, several more buildings have either been strengthened, or had detailed costs studies, allowing a review of the strengthening costs to be completed

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2. SCOPE OF WORK

The overall scope of work for this project (incorporating the earlier study) included the following:-

1. Determining the age, number of stories and construction type (in categories to be determined) for the whole group of potentially earthquake prone heritage buildings provided by the Christchurch City Council.
2. Selecting a representative sample of approximately 50 buildings out of the list of so that the proportion of buildings of different construction types and number of stories was approximately the same for the sample group and the whole group of buildings.
3. Using data from previous strengthening projects, infer dollar rates per square metre for buildings of different construction type, height and footprint area for 33% and 67% of full current code strengthening levels.
4. Apply the inferred rates to the sample buildings.
5. Extrapolate the total for the sample buildings to the whole group of potentially earthquake prone heritage buildings.
6. Report on our findings.

3. LIMITATIONS

Findings presented as a part of this project are for the sole use of the Christchurch City Council. The findings are not intended for use by other parties, and may not contain sufficient information for the purposes of other parties or other uses. Our professional services are performed using a degree of care and skill normally exercised, under similar circumstances, by reputable consultants practicing in this field at this time. No other warranty, expressed or implied, is made as to the professional advice presented in this report.

The cost information provided in this report does not relate to any specific individual building but rather assumes variations between buildings will average out over the whole group of buildings. Estimates for the strengthening of individual buildings would need to be specifically prepared from strengthening concept information for those buildings.



4. STATUTORY REQUIREMENTS

A. The Building Act

In considering the structure of existing buildings, the relevant sections of the Building Act 2004 are:-

Section 112 – Alterations

Generally strengthening an earthquake prone building would be considered an alteration.

Section 112 of the Building Act requires that the provisions for means of escape from fire, and disabled access and facilities comply “as nearly as is reasonably practicable” with the provisions of the building code. Other provisions of the Building Code need to be complied with to the same extent as before the alteration.

Section 115 – Change of Use of a Buildings

“Change of use” is defined in the Building Regulations as changing the use of all or part of the building, where the building code requirements for the new use are more onerous than the old use. A list of the uses and their definitions is given in the Building Regulations.

Section 115 of the Building Act requires that in the event of a “change of use” the provisions for means of escape from fire, fire rating performance, protection of other property, structural performance, sanitary facilities, and disabled access and facilities comply “as nearly as is reasonably practicable” with the provisions of the building code. Other provisions of the Building Code need to be complied with to the same extent as before the alteration.

With respect to structural performance, “as nearly as is reasonably practicable” is often accepted as having a seismic strength of at least 67% of the full current code loads.

Therefore if a change in use is taking place strengthening to at least 67% of the full current code loads is likely to be required.



Section 122 – Meaning of earthquake prone building

This section deems a building earthquake prone if its ultimate strength capacity would be exceeded, and the building would be likely to collapse, in a “moderate earthquake”. This is irrespective of the materials used for the building construction. Residential buildings are exempt unless they are of two or more storeys and contain 3 or more units.

The Building Regulations define the size of a “moderate earthquake” as one third the size of the earthquake used to design a new building at that site.

Previously, for any building the Christchurch City Council suspects may be earthquake prone they requested a structural engineers report at the time a building consent is applied for work in the building. Where a building falls below the required strength level, the Council may serve notice on the owner requiring the building to be strengthened or demolished.

B. Christchurch City Council Earthquake Prone Building Policy
The Christchurch City Council EPB Policy, adopted 25 May 2006, is essentially the accepted means of compliance with the Building Act, so does not vary from it substantially, although it sets the detail of how the Christchurch City Council will act on their responsibility for the identification and assessment of EPBs.

5. DEVELOPMENT OF COST ESTIMATES

Overview

The City Council provided a list of protected buildings scheduled in the City Plan and in appendices IV and V of the Banks Peninsula District Plan (BPDPlan), that were also considered to be potentially earthquake prone.

The main factors in determining the cost of strengthening a building were considered the construction material and form, and the floor area. The Council from existing records provided information regarding the construction types and number of stories for the majority of buildings.

Floor areas were not available for the buildings so a sample of around 50 buildings was selected so that the proportions of buildings in each construction type category and number of stories category were similar for the sample and the whole group of buildings.

The footprint area of the sample buildings was measured using the City Councils Web Map system. The area calculation tool was used to measure the area off



either the aerial photo or the footprints shown on the land parcel information, whichever was deemed most appropriate for each building. The floor area for the sample buildings was determined from the footprint area and the number of stories.

For the 2005 study, a hypothetical building was developed to reflect the most common type of protected building in the City Plan namely a two storey unreinforced masonry building. A base strengthening rate per square metre of floor area was agreed as suitable with Rawlinsons, Quantity Surveyors for this building. Modification factors to allow for construction types, building heights and footprint areas were also debated and agreed.

This cost data has subsequently been reviewed in light of more recent experience of actual strengthening work and detailed cost studies performed on a number of buildings, covering a representative range of the affected buildings. The base strengthening rate and modification factors used are in Appendix D.

A strengthening estimate was determined for the sample group using the construction type, floor area, the base strengthening rate and modification factors. This estimate was extrapolated out to the whole group of buildings. This approach assumes the footprint areas of the sample are proportional to footprint areas of the whole group of buildings.

Although residential buildings are in general excluded from the EPB definition unless they are of 2 or more stories and contain 3 or more units, there is still a significant number of such buildings on the register. From our review, there are at least 13, 60 and 106 residential or other exempt structures on the Christchurch City Council, Banks Peninsula District Plan schedule IV and V lists respectively. Although all of these buildings could equally benefit from seismic strengthening, there is no legal requirement for it to be done and so these have been extracted from the figures.

The proportion of buildings in each construction type, number of stories, heritage group and construction date category are given in Appendix A, for both the Christchurch City Council register only, and for the combined register.

Buildings that had securing or strengthening work performed under the 1991 Building Act have not been excluded from the total list of buildings. These buildings will have typically been secured to only 10% of full current code loads and therefore may still be earthquake prone under the new definition in the current Act. The proportion of buildings strengthened to a higher level is so small as to be negligible.

Lists of the whole group, the sample group of buildings, and the two schedules from the Banks Peninsula District Plan are given in Appendices E, F, G and H respectively.



Base Strengthening Rate

Available information on strengthening costs for earthquake prone buildings generally relates to unreinforced masonry buildings and to strength levels of 10% and 67% of full current code load levels (%FCC). This information relates to the work common under the Building Act 1991. There is very little information regarding the costs for strengthening to 33%FCC. In addition, the recent release of the new standard for determining design loadings on buildings (NZS1170.5) has increased the base loads for determining 33% and 67%FCC. The increase in base load proportionally increases the strengthening loads increasing the cost.

The above changes have resulted in almost no direct information giving strengthening costs for strengthening to 33% or 67% of the load levels derived from NZS1170.5. Therefore it has been necessary to use a substantial amount of judgement and experience in determining the rates to be applied. Existing cost information has been used and scaled to be relevant to the new load levels. However previous information shows that strengthening costs vary wildly from building to building over a range from about \$250/m² to \$700/m². For this exercise variations in the costs to strengthen individual buildings are assumed to average out over the whole group of buildings.

The base strengthening rate adopted for the two storey unreinforced masonry building in 2005 was \$450/m² of floor area to strengthen to 33%FCC. This rate included allowances for preliminary and general construction costs, professional fees and a contingency. This rate has been reviewed in 2009 – refer below.

Modification Factors Categories

Cost modification factors to allow for different construction types, number of stories and footprint areas were developed. The categories and the factors used are in Appendix D.

6. STRENGTHENING LEVELS

Strengthening buildings to 33%FCC as required by Section 122 of the Building Act is seen as sufficient to reduce the risk to life to an acceptable level. However, in order to protect the fabric of heritage buildings a strengthening level of 67%FCC may be more appropriate where practical even when a change in use is not taking place.

Generally strengthening to a level of 67%FCC could only be enforced if a change of use of a building was taking place. However, under the definition of Change of Use in the regulations it is likely that for some buildings strengthening could not be a requirement of the Change of Use. This is a change from the 1991 Building Act where strengthening a under strength building could be enforced.



Table 1 below shows the relative risk levels for buildings of different strengths.

The cost of strengthening buildings is not directly proportional to the strengthening level. For example, a building may have existing wall strengths of 40%FCC load levels and therefore require no work on the walls to strengthen the building to 33%FCC. However to strengthen the same building to 67%FCC may require expensive new concrete shear walls to augment the existing wall strengths.

The cost estimate indicates this non-proportionally by the factor of 2.5 adopted between 33% FCC strengthening costs and 67%FCC strengthening costs.

Building Strength Relative To A New Building	Relative Risk Level
100%	1
67%	3
33%	10 to 20
10%	20 to 40

Table 1: Relative Risk Levels to Different Strength Buildings

7. REVIEW OF BASE RATE

Since the original study, Holmes Consulting Group have been involved in several seismic strengthening projects or detailed studies, including:

- The strengthening of the Old Arts College at the Arts Centre.
- A seismic study of St Pauls Church, Madras Street
- A seismic study of the Smiths Bookshop complex, Manchester Street
- A seismic Study of the Woods Mill and grain store.

In the case of the Old Arts School, the total value of the contract for structural work only (including fees), comes to approximately \$1,000/m² of plan footprint area (the basis for calculating costs). When the strengthening level factor E is extracted, this equates to a base rate of approximately \$400/m², which is 90% of the base rate used for this study.

The other projects were all subject to studies followed by a full Quantity Surveyor's cost estimate. Once again, when the adjustments are made to allow for



the factors B,C,D&E, the average rate calculated is \$330/m², with a range from \$270/m² to \$400/m².

In consideration of the buildings that were included in this part of the study, we feel that the Woods Mill grain store building in particular is an easier than normal building to strengthen. However, it is clear that the actual costs determined from the strengthening and detailed studies justify a value approximately 10% lower than the previous study. Given the current construction cost climate, we therefore have revised the base cost to \$400/m² for 33% FCL.

A further adjustment is possible to all of the figures when extrapolating from the sample group to the populations, by considering the proportions of buildings in the various construction categories. By weighting the total numbers in each category by the cost factor, a weighted percentage cost factor can be calculated, which can then be compared to the same factor for the sample group to give a further adjustment factor.

Further adjustments would also be possible in respect of the other cost factors, but with the quality of information available on the overall groups, we do not have a sound basis to determine the adjustment. It is felt however that the buildings in the sample group may be greater in plan area than the balance of the group, particularly the Banks Peninsula District Plan schedules.

It is also worth noting that the quality of the information contained within the Banks Peninsula District Plan schedules is generally not very extensive. Consequently a large proportion of the information has been estimated based on judgement and experience.

8. STRENGTHENING ESTIMATE

The resulting cost estimate to strengthen all 351 buildings in the Christchurch City Council base listing to 33%FCC is \$133M and to strengthen all buildings to 67%FCC is \$333M. In reality, it could be assumed that only one third of the buildings would be strengthened to 67%FCC. This indicates a likely strengthening cost for the 367 buildings in the order of \$200M. These figures include an adjustment for the fact that the overall spread of building types varies from the sample group to the overall heritage list.

The estimated floor area of the 351 buildings (scaled from the sample group of 45 buildings) is 500,000 square metres.

A breakdown of the estimated strengthening cost for the buildings in each construction type, number of stories and heritage group category are given in Appendix B and Appendix C.



The strengthening cost estimate is very sensitive to the base strengthening rate and the strengthening level modification factor adopted as it is directly proportional to these values.

The Banks Peninsula District Plan has two schedules of buildings. Appendix IV lists protected buildings, objects and sites, and Appendix V lists notable buildings, objects and sites. There are 115 buildings listed in Appendix IV, with a further 190 buildings listed in Appendix V (after non-buildings were removed from the list. Removing the residential buildings reduced the overall numbers to 55 and 84 respectively.

The estimates to strengthen the buildings in the Banks Peninsula District Plan to 33% FCL are \$13M and \$22M for schedule IV and V respectively, including an adjustment for the building type profile being different to the sample group, as noted above.

All of the costs may be tabulated as follows:

	CCC sample list	CCC Heritage List	BPDP schedule IV	BPDP schedule V	Total
No of buildings	45	351	55	84	490
Cost for 33% FCL	\$19M	\$133M	\$13M	\$22M	\$169M
Cost for 67% FCL	\$46M	\$333M	\$35M	\$54M	\$421M
1/3 to 67% FCL, remainder to 33% FCL	\$28M	\$200M	\$21M	\$32M	\$253M

Table 2 : Costs for Different Areas of Study

9. ADDITIONAL COSTS

Architectural

Costs associated with the tidying and making good after strengthening a building to 33%FCC can vary greatly. Estimates of these costs are shown in Table 3 as a proportion of the strengthening cost.

It has been assumed that if higher strengthening levels are being targeted (e.g. 67%FCC) that architectural upgrading of the building is also taking place.



Estimates of these costs are also shown in Table 2. They exclude tenant fitout work as it is assumed to be the tenant's cost.

Fire Egress and Protection

When alterations are undertaken to a building, the Building Act requires that the means of escape from fire meets the Building Code requirements as near as reasonably practical. When a change of use is being undertaken to a building the Building Act requires that both the means of escape from fire and the fire rating performance meet the Building Code requirements as near as is reasonably practical.

The costs associated with alterations have been included in the architectural cost allowance. An estimate of the cost of upgrading the fire protection is given in Table 3 as a proportion of the strengthening cost.

Disabled Access and Facilities

The requirement of the Building Act to provide for people with disabilities are the same for when alterations are taking place as they are for when a change in use occurs. In both cases the building must meet the requirements of the Building Code as near as is reasonably practical

The costs associated with disabled access and facilities are allowed for in the architectural cost allowance proposed above with the exception of lift installations. Lifts would be required at least wherever the building footprint area was greater than 400m² and are likely to cost around \$100k for the ground floor and \$20k for every other floor.

Additional Cost Items	Strengthening Level	
	33%FCC	67%FCC
Architectural and Disabled requirements (excluding lifts)	20% – 100%	50% – 150%
Fire Egress and Protection	Included above.	~10%

Table 3: Allowances for Other Costs as a Proportion of the Strengthening Cost



10. CHURCHES AND THEATRES

There are over 40 church and theatre buildings in the potentially earthquake prone heritage building group. These buildings have a high strengthening cost compared to the floor area due to the high open spaces.

The number of stories reported for the churches is a mixture of one storey or the number of equivalent stories for the building height. Where they have been reported as having one storey this will have the effect of under-reporting the total costs of strengthening. This is considered negligible as the number of buildings is minimal compared to the total number being considered.

Generally the theatres have the number of stories reported as the equivalent for the building height giving a reasonable correlation to costs.

11. ACCURACY

A number of factors affect the accuracy of the strengthening estimate some of which are:-

- variations in existing cost data
- the large number of churches as noted above
- how representative the sample group is of the whole group of buildings
- the accuracy of footprint area measurements

Considering the methodology used and the number of cumulative assumptions involved we anticipate the estimate to be within $\pm 25\%$.

12. COMMENT ON RESULTS

Comment is provided below on two issues that appear as apparent anomalies in the cost estimate data.

1. Some building categories, although represented by buildings in the whole group, are not represented in the costs for the whole group. This has occurred where a particular category of building was not represented in the sample group. Where this has occurred the number of buildings within that category for the whole group is sufficiently small not to influence the overall result.
2. While group 1 heritage buildings make up only 17% of the total number of buildings (fig. A5) they account for 39% of the strengthening cost (fig. B3).



Further analysis indicated that group 1 buildings are more likely to be bigger and constructed of unreinforced masonry than buildings in the other categories. Unreinforced Masonry is the most expensive construction material to retrofit. The result is that group 1 buildings appear to account for a disproportionate amount of the strengthening cost.

13. CITY COUNCIL DATABASE

We recommend the City Councils building characteristics database accessible from the web map system be updated to reflect the information gathered during this study. Also that the Banks Peninsula District Plan schedules should be updated to a similar quality of information to the Christchurch City Council database.

Report Prepared by:-

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103650RS2206.001.DOC



APPENDIX A

Building Breakdown by Categories

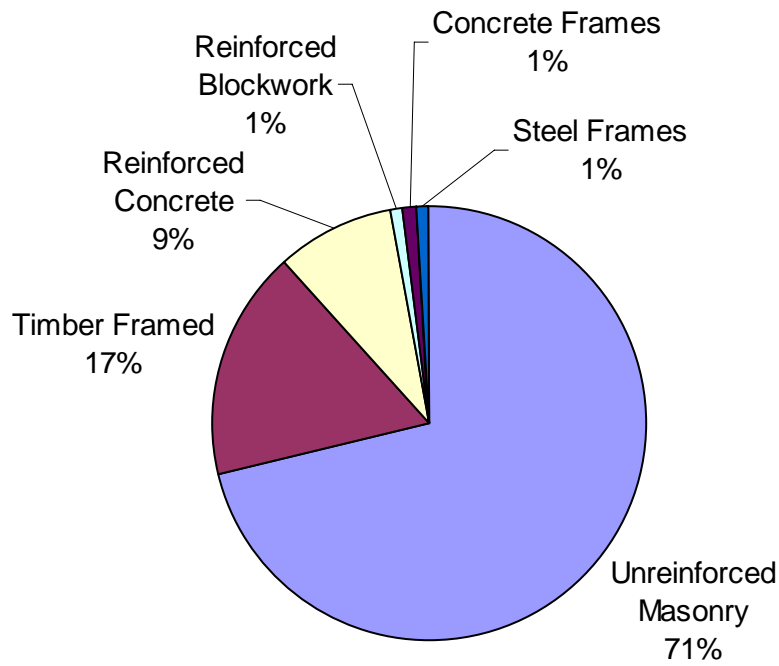


Figure A1 – Buildings in Each Construction Type Category (CCC listings)

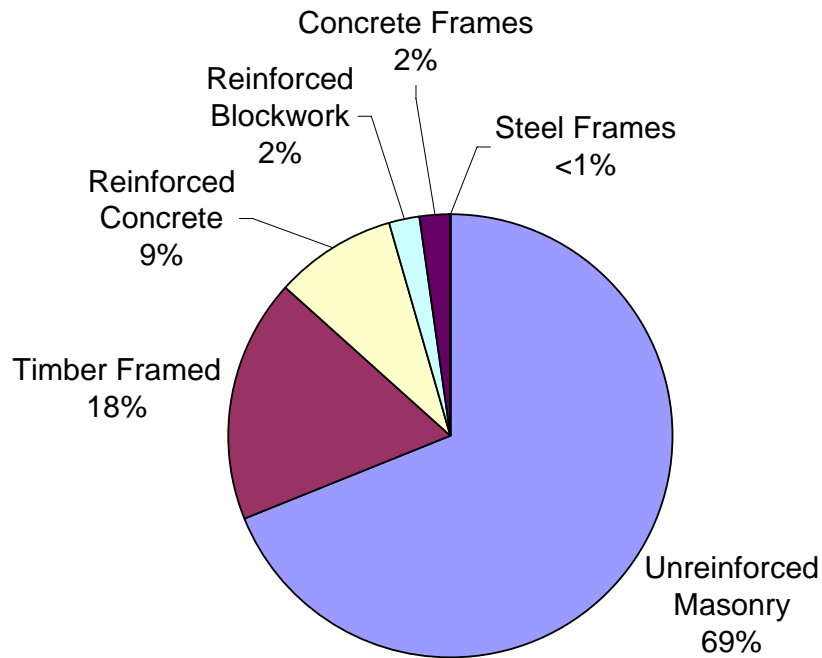


Figure A2 – Buildings in Each Construction Type Category (Representative Sample)

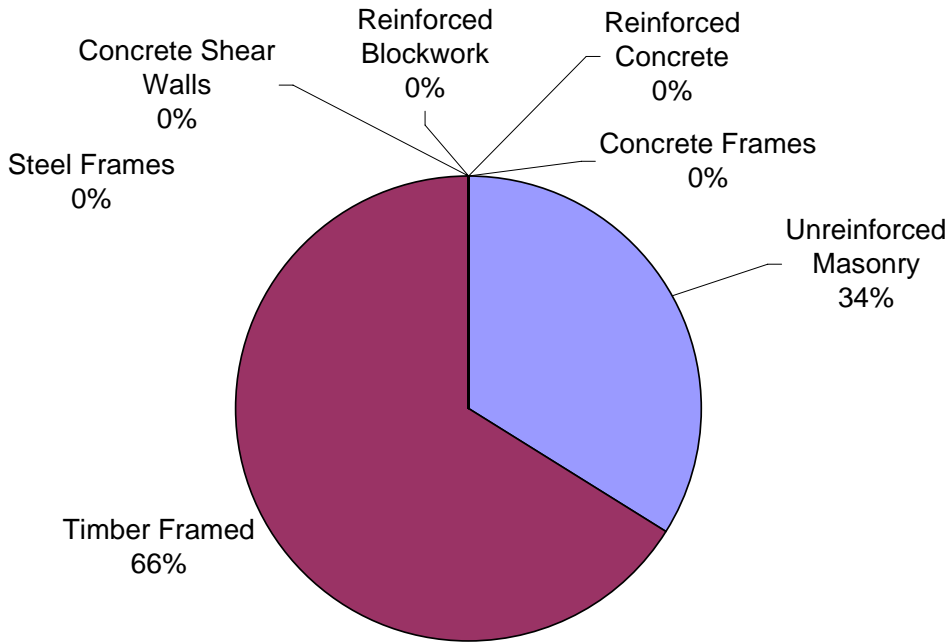


Figure A3 - Buildings in Each Construction Type Category (BPDC Schedules IV & V)

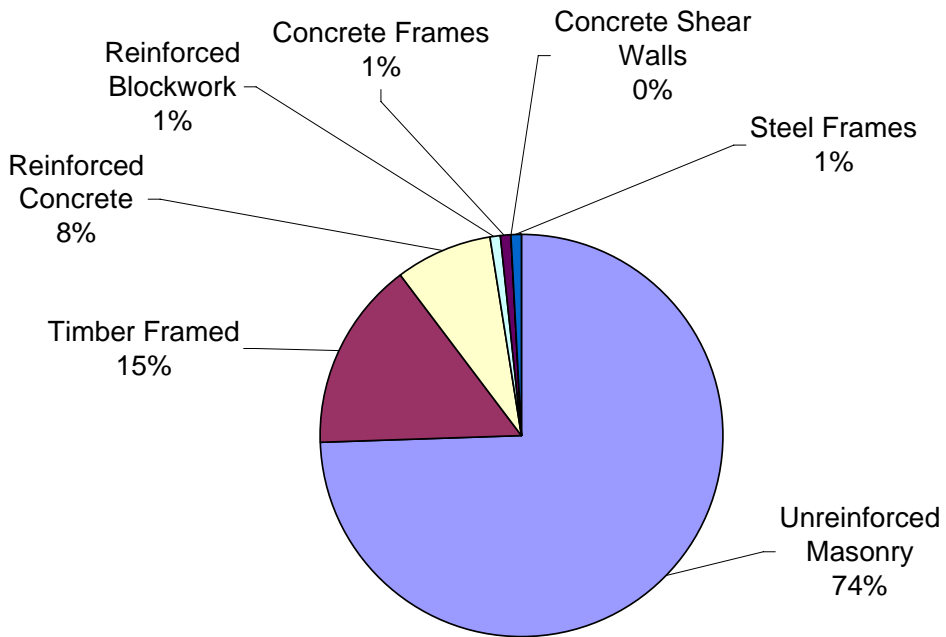


Figure A4 - Buildings in Each Construction Type Category (All Buildings - CCC & BPDC)

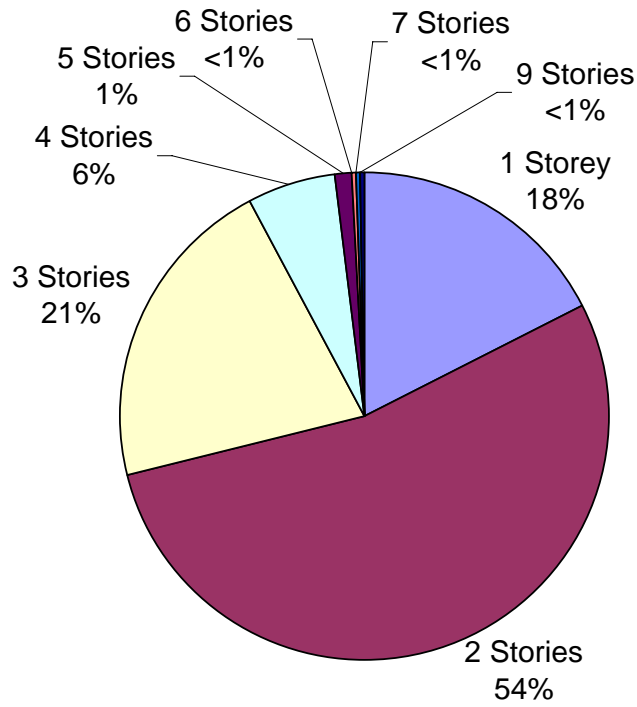


Figure A5 – Buildings in Each Height Category (CCC Listings)

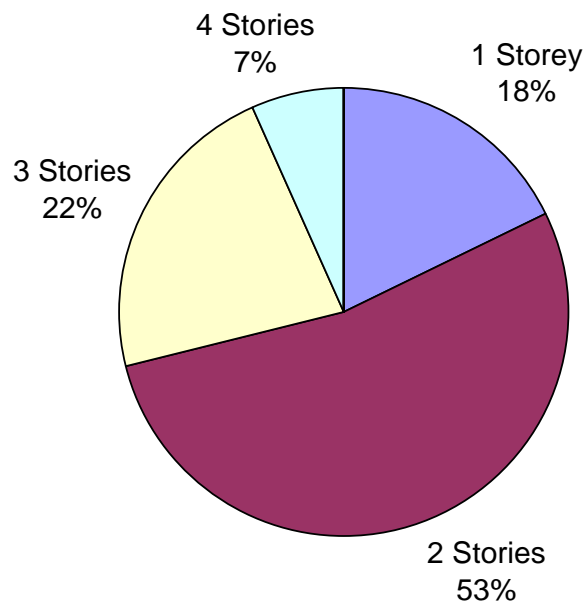


Figure A6 – Buildings in Each Height Category (Representative Sample)

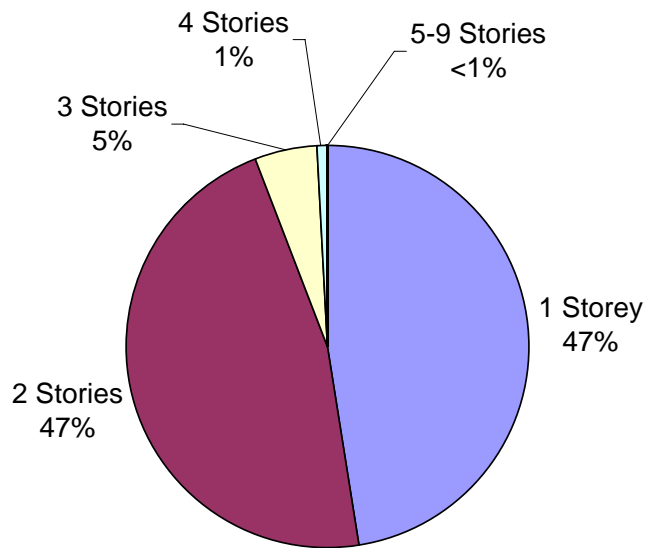


Figure A7 - Buildings in Each Height Category (BPDC Schedules IV & V)

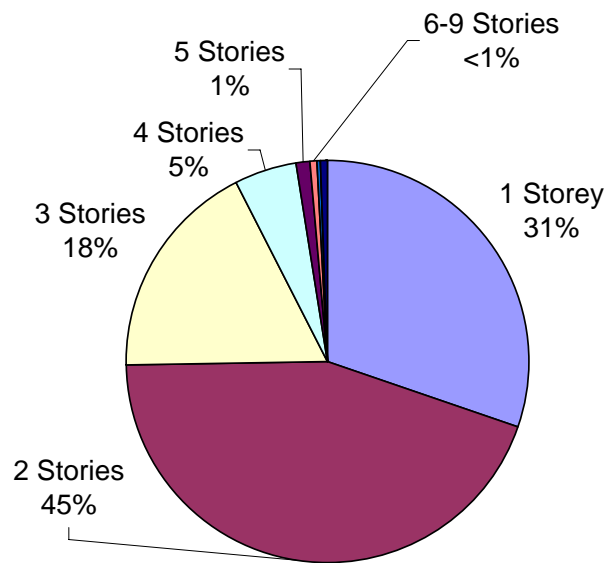


Figure A8 - Buildings in Each Height Category (All Buildings - CCC & BPDC)

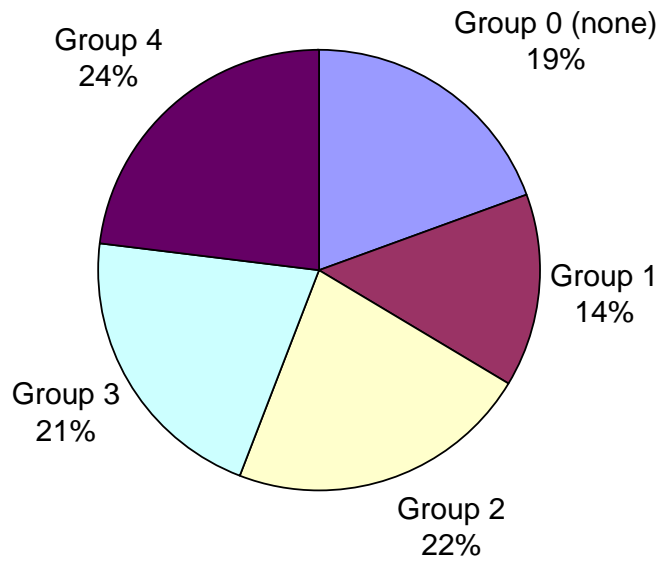


Figure A9 - Buildings in Each Heritage Group (All Buildings)

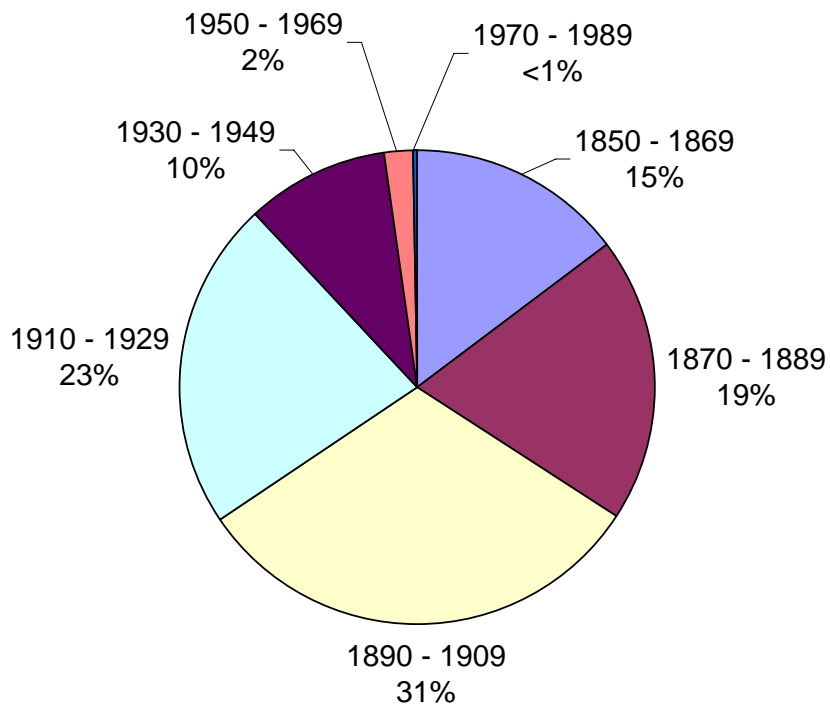


Figure A10 - Buildings in Each Construction Date Category (All Buildings)



APPENDIX B

Strengthening Costs by Categories

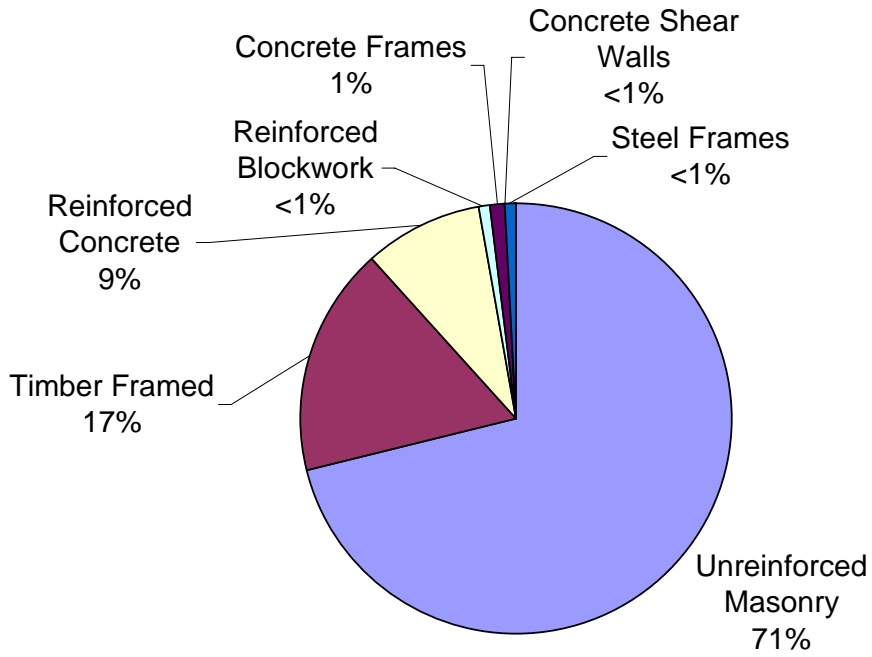


Figure B1 - Strengthening Cost by Construction Type - CCC only

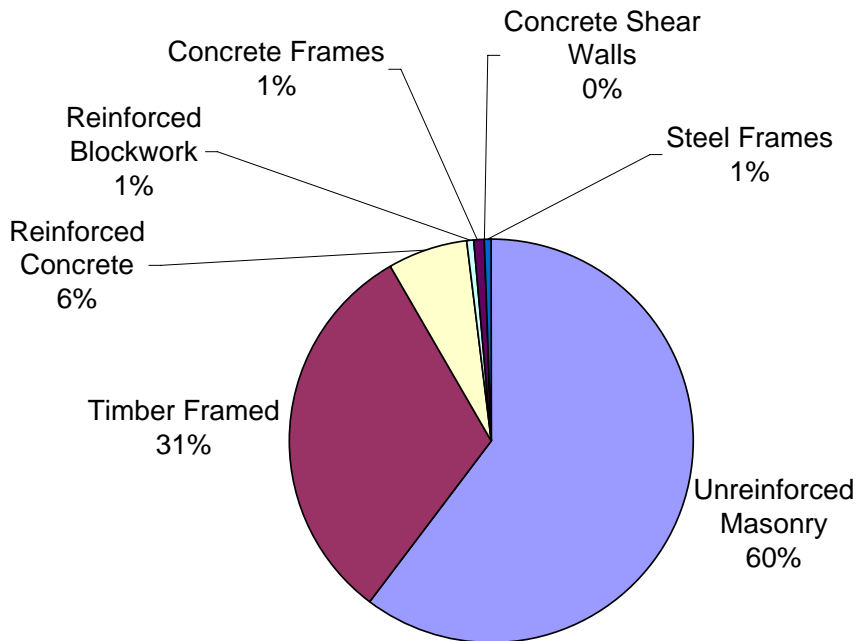


Figure B2 - Strengthening Costs by Construction Type - CCC & BPDC

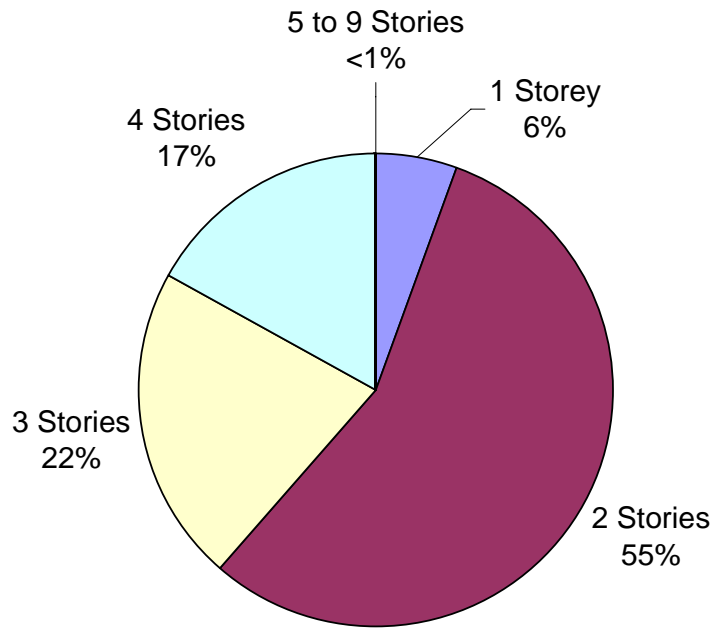


Figure B3 - Strengthening Cost by Number of Stories - CCC only

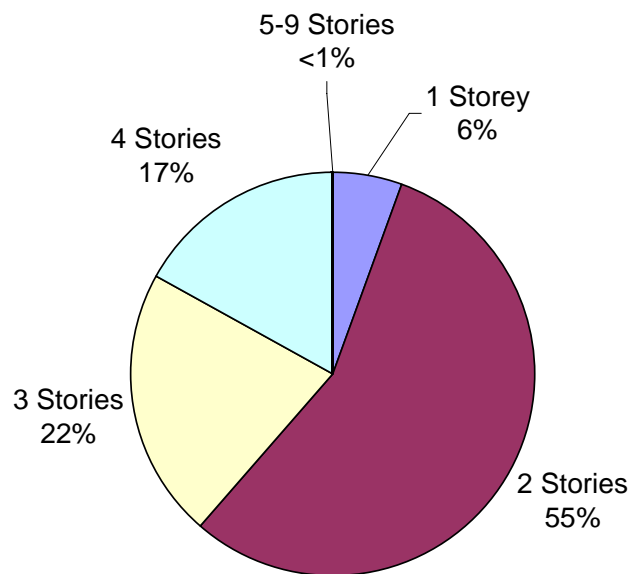


Figure B4 - Strengthening Costs by Number of Stories (CCC & BPDC)

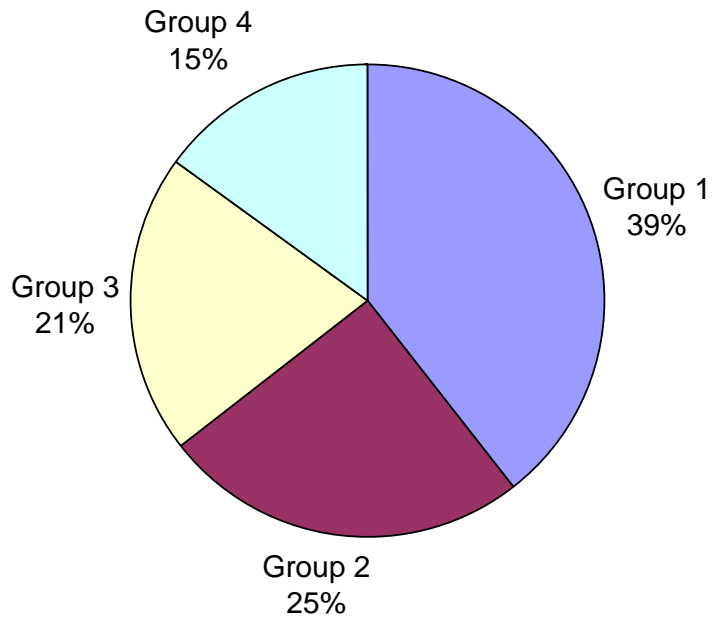


Figure B5 - Strengthening Cost by Heritage Group - CCC only



APPENDIX C

Strengthening Cost Breakdown

Table 1 : Strengthening Costs by Construction Type

Construction Type	Strengthening Level		
	33%FCC	66%FCC	%
	(000,000's)	(000,000's)	
Unreinforced Masonry	\$137	\$344	82
Timber Framed	\$7	\$17	4
Reinforced Concrete	\$23	\$57	13
Reinforced Blockwork	\$1	\$2	0
Concrete Frames	\$1	\$3	1
Concrete Shear Walls	\$-	\$-	0
Steel Frames	\$-	\$-	0
	<u>\$169</u>	<u>\$421</u>	<u>100</u>

Table 2 : Strengthening Costs by Number of Stories

Number of Stories	Strengthening Level		
	33%FCC	66%FCC	%
	(000,000's)	(000,000's)	
1 Storey	\$10	\$24	6
2 Stories	\$94	\$235	56
3 Stories	\$37	\$91	22
4 Stories	\$29	\$71	17
	<u>\$169</u>	<u>\$421</u>	<u>100</u>

Table 3 : Strengthening Costs by Heritage Group

Heritage Group	Strengthening Level		
	33%FCC	66%FCC	%
	(000,000's)	(000,000's)	
Group 0 (none)	\$22	\$54	13
Group 1	\$58	\$145	34
Group 2	\$37	\$92	22
Group 3	\$30	\$76	18
Group 4	\$22	\$55	13
	<u>\$169</u>	<u>\$421</u>	<u>100</u>

Table 4 : Strengthening Costs by Footprint Area

Footprint Area	Strengthening Level		
	33%FCC	66%FCC	%
	(000,000's)	(000,000's)	
< 250m2	\$16	\$40	9
250 - 500m2	\$26	\$64	15
500 - 1000m2	\$76	\$190	45
> 1000m2	\$51	\$128	30
	<u>\$169</u>	<u>\$421</u>	<u>100</u>

NB – tables 2-4 are all based on extrapolation of the sample data over the whole population. It is noted that the sample may not be fully representative, especially for the Banls Peninsul Distrcit Council data.



APPENDIX D

Base Cost Modification Factors

Table 1 : Base Strengthening Cost and Cost Modification Factors

Base Cost (A)	
Base Cost (for a two storey unreinforced masonry building strengthened to 33%FCC)	\$400/m ²
Construction Type Factors (B)	
Unreinforced Masonry	1.00
Timber Framed	0.33
Reinforced Concrete	0.50
Reinforced Blockwork	0.75
Concrete Frames	0.50
Concrete Shear Walls	0.50
Steel Frames	0.75
Storey Factors (C)	
1 Storey	1.00
2 Stories	0.80
3 Stories	0.70
4 Stories	0.60
5 Stories	0.60
6 Stories	0.60
7 Stories	0.60
8 Stories	0.60
9 Stories	0.60
Footprint Area Factors (D)	
< 250m ²	1.25
>250m ²	1.00
Strengthening Level Factors (E)	
33% FCC	1.00
67% FCC	2.50



APPENDIX E

Potentially Earthquake Prone
Protected buildings
CCC Register

Table E1 –Potentially Earthquake Prone Protected Buildings

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
50	Acacia	Middleton Grange School former dwelling	1855	TF	2	2
25	Armagh	Cranmer Bridge Club	1864	UM	2	1
40	Armagh	former Christchurch Girls' High School	1879	UM	2	2
85	Armagh	former Magistrates Court	1880	UM	2	1
217	Armagh	Girl Guides National Headquarters former wooden dwelling	1865	TF	2	2
93-107	Armagh	former Union Centre Building	1923	RC	2	4
122	Avonside	Holy Trinity Anglican Church, lychgate, graveyard and setting	1874	UM	1	1
136	Barbadoes	Roman Catholic Cathedral	1899	UM	2	1
140	Barbadoes	A. Music Centre of Christchurch/former Convent of the Sisters of Our Lady of the Missions Sacred Heart Convent	1877	UM		1
140	Barbadoes	B. Music Centre of Christchurch/former Chapel of the Sisters of Our Lady of the Missions Sacred Heart Convent Chapel	1907	UM		1
181	Barbadoes	Community of the Sacred Name including 1894 corrugated iron structure and chapel	1894	UM	3	1
21	Bealey	Carlton Hotel - 1906 building	1906	UM	2	2
28	Bealey	Knox Church	1902	UM	1	2
80	Bealey	Bishop's House former Deanery	1920	UM	2	2
82	Bealey	'Eliza's Manor House'/former dwelling	1860	TF	2	3
12 to 20	Bealey	Maisonettes	1939	TF	2	3
	Botanic	Moorhouse Statue	1885	UM	2	2
1	Bowhill	Ozone Stores	1923	UM	2	4
	Bowhill	Ozone Hotel	1920	UM	2	4
0	Bridle Path	Lyttelton Tunnel Control building	1962	RC	2	3
220	Brougham	Nazareth House Chapel	1938	UM	1	3
	Browns	dwelling 'Chippenham Lodge'	1862	UM	2	3
49	Bryndwr	St John's Church	1927	UM	2	4
2	Cambridge	Antigua Boat Sheds	1882	TF	2	2
107	Cambridge	former Library Chambers and Children's Library	1893	UM	2	2
107	Cambridge	former Library Chambers	1875	UM	2	1
109	Cambridge	former Librarian's House	1894	UM	2	2
129	Cambridge	Canterbury Club	1873	UM	2	2
137	Cambridge	Harley Chambers	1928	RC	3	3
267	Cambridge	Theosophical Society building	1926	UM	2	2
93	Cashel	former Twentyman & Cousins	1880	UM	2	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
		Store				
109	Cashel	former Press and Weekly Press building	1881	UM	3	2
111	Cashel	Whitcoulls	1906	UM	3	2
173	Cashel	Highlight House	1890	UM	3	3
178	Cashel	PGG building	1920	CF	2	4
236	Cashel	St Paul's Trinity Pacific Church	1877	UM	1	1
124-126	Cashel	former Bell's Arcade/Guthrie Centre	1881	UM	3	1
146-150	Cashel	Arthur Barnett Ltd former Beath's Department Store including Lichfield Street facade	1900	UM	3	3
154-58	Cashel	former DIC/Cashfields Arcade	1907	UM	3	3
88-92	Cashel	former Zetland Lodge	1903	UM	3	3
151	Cashmere	Girl Guides Association/former Cracroft Homestead and setting	1854	UM	2	2
15	Cathedral	former Chief Post Office/1877-79 facade only	1877	UM	2	1
32	Cathedral	The Press building	1909	UM	4	1
37	Cathedral	Regent Theatre/former Royal Exchange building	1904	UM	3	1
50	Cathedral	Warners Hotel	1905	UM	4	3
51	Cathedral	Sevicke Jones building	1913	UM	4	2
56	Cathedral	former Lyttelton Times (Star) building	1902	UM	4	2
100	Cathedral	Christ Church Cathedral	1864	UM	1	1
8	Chester	Cathedral Grammar School	1928	UM	3	1
22	Cholmondeley	'Risingholme' community centre and setting former dwelling	1864	TF	2	2
24	Church	St Mary's Church	1927	TF	2	2
6	Circuit	Elizabeth House	1914	UM	2	3
	Clarence	Water Tower	1881	RC	3	2
109	Clyde	former two storey wooden dwelling/Medbury School	1900	TF	2	4
71	Colombo	former Malt House/Canterbury Children's Theatre	1867	UM	2	2
146	Colombo	Baptist Church	1930	UM	1	2
340	Colombo	former Sydenham Post Office/Cafe de la Poste	1912	UM	2	3
343	Colombo	Samoan Congregational Christian Church	1878	UM	1	2
386	Colombo	Ayrshire Bakery	1900	UM	2	4
388	Colombo	brick commercial building	1900	UM	2	4
390	Colombo	second hand bookshop	1900	UM	2	4
398	Colombo	Sydenham Stationery	1900	UM	2	4
400	Colombo	brick commercial building	1900	UM	2	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
402	Colombo	Ascot TV Sales and Service	1900	UM	2	4
456	Colombo	The Frame Workshop	1880	UM	2	4
646	Colombo	Lorraine Day Bridal Salon	1915	UM	2	4
751	Colombo	three storey commercial building	1880	UM	3	3
779	Colombo	National Bank	1926	CF	4	3
876	Colombo	S. Mary's Chapel	1910	UM	1	2
392-396	Colombo	Sydenham Photographers	1900	UM	2	4
461-469	Colombo	Two storey brick commercial building	1895	UM	2	4
603-615	Colombo	Austral Buildings	1910	UM	2	4
624A-626	Colombo	former Montgomery building/Drummond's Pharmacy/Superior Sleep	1876	UM	2	3
625-629	Colombo	Tony Morris Cycles/Sucklings/Playboy Suit Hire	1890	UM	2	4
753-57	Colombo	two storey commercial building	1905	UM	2	4
5	Cracroft	St Augustine's Church	1908	TF	1	3
	Cracroft	former WWII bunkers	1942	CF	1	4
25	Cranmer	former St Margaret's/Cathedral Grammar	1914	TF	2	3
12	Dorset	concrete block apartments	1956	RB	1	3
31	Dundas	two storey brick factory 'Wraggs'	1900	UM	2	4
101	Durham	S. Michael's School Hall	1877	TF	1	2
116	Durham	Former NZ Loan & Mercantile Woolstore	1881	UM	2	2
280	Durham	Canterbury Provincial Council Provincial Buildings former children's court	1925	UM	2	1
280	Durham	Canterbury Provincial Council Buildings and setting	1858	UM	2	1
280	Durham	Canterbury Provincial Council Buildings courtyard/grounds	1858	UM	2	4
309	Durham	Durham Street Methodist Church	1864	UM	2	1
435	Durham	dwelling 'Turret House'	1885	TF	2	4
282-286	Durham	former Canterbury Society of Arts Gallery	1890	UM	1	1
63-81	Durham	Blackheath Terrace houses	1876	UM	2	2
34B	Dyers Pass	Rhodes Memorial Convalescent Home	1866	UM	2	3
	Dyers Pass	Sign of the Kiwi and setting	1917	UM	1	2
63	Fendalton	Mona Vale Homestead, glasshouse and setting	1899	UM	2	1
145	Fendalton	St Barnabas Church, Sunday School, Parish Hall and setting	1926	UM	2	1
580	Ferry	A & T Burt building/former Nugget factory	1924	UM	2	3
650	Ferry	two storey brick commercial	1890	UM	2	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
		building				
689	Ferry	Woolston Community Library	1900	UM	2	2
697	Ferry	Woolston Law Centre	1908	UM	2	2
229	Fitzgerald	Ward's Brewery buildings	1881	UM	3	2
229	Fitzgerald	Ward's Brewery buildings	1881	UM	1	2
229	Fitzgerald	Ward's Brewery buildings	1881	UM	2	2
229	Fitzgerald	Ward's Brewery buildings	1881	UM	3	2
229	Fitzgerald	Ward's Brewery buildings	1881	UM	5	2
2	Gloucester	Christ's College, 'Rolleston House'	1890	TF	2	2
53	Gloucester	Art Deco style apartments	1930	RC	2	4
144	Gloucester	Coachman Inn	1902	UM	3	2
194	Gloucester	commercial building 'Wave House'	1905	UM	3	3
202	Gloucester	former Canterbury Television Building	1927	UM	4	4
134-140	Gloucester	Star building Former Star/Lyttelton Times Building	1884	UM	4	2
143-147	Gloucester	Theatre Royal	1906	UM	3	1
148-154	Gloucester	Old Theatre Royal	1876	UM	2	2
94-96	Gloucester	two storey commercial/ former Gas Co. building	1890	UM	2	3
200	Hackthorne	Sign of the Takaha and setting	1918	UM	2	1
510	Hagley	Hagley High School	1923	UM	2	3
329	Halswell	St Mary's Church, Anglican	1863	TF	1	2
1	Harewood	St Paul's Anglican Church and graveyard	1876	TF	1	1
750	Harewood	St James Church including lychgate and Churchyard	1935	UM	1	3
50	Hawke	St Faith's Church	1924	UM	1	2
	Heathcote	Tunnel Portal	1867	RC	1	3
41	Hereford	former Student Union building/Dux de Lux	1883	UM	2	3
88	Hereford	Shand's Emporium	1860	TF	2	2
90	Hereford	Gough House	1933	UM	2	3
93	Hereford	former Post Office	1941	TF	2	4
116	Hereford	Hereford Court	1920	RC	4	4
118	Hereford	four storey commercial building/Atlantic and Pacific Holiday Shop	1910	RC	4	3
120	Hereford	ASB	1920	RC	4	3
198	Hereford	two storey commercial building	1920	UM	2	4
202	Hereford	Avon House	0	UM	2	4
203	Hereford	former Interiors House/Eastside Saloon	1910	UM	3	4
206	Hereford	Occidental Hotel	1865	TF	2	3

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
234	Hereford	Church of St John the Baptist	1865	RB	1	1
190-192	Hereford	Kenton Chambers/former Tand G building	1929	RC	6	3
84-86	Hereford	former NZ Trust and Loan building	1866	UM	2	3
59	Hewitts	former dwelling 'Te Koroha'/Rangi Ruru School	1884	TF	2	2
59	Hewitts	St Andrew's Church (Rangi Ruru School)	1857	TF	2	1
146	High	Para Building	1900	UM	3	4
158	High	Cotter's Electrical	1900	UM	3	4
179	High	McKenzie & Willis former A J Whites	1882	UM	3	2
209	High	Kennet's Jewellers	1890	UM	2	3
222	High	Stewart Dawson building/Jean Jones	1910	UM	4	3
226	High	Southland Building Society	1890	UM	3	3
230	High	Hannah's	1890	UM	3	4
281	High	Triangle Chambers/KFC	1930	RC	2	4
135-165	High	Duncan's Buildings	1905	UM	3	3
160-68	High	two storey brick commercial building	1890	UM	2	4
167-175	High	Billen's Camping three storey brick commercial	1906	UM	3	4
170-172	High	two storey brick commercial building	1890	UM	2	4
180-184	High	former ANZ Bank building	1908	UM	3	2
201-203	High	Watson's Auctioneer	1900	UM	2	4
211-213	High	Excelsior Hotel Bottle Shop including commercial premises	1890	UM	2	4
219-225	High	former Stranges Building including Winnie Bagoes	1900	UM	3	2
225-227	High	three storey commercial building	1890	UM	3	3
276-278	High	Pacific Jewellers/Tokyo Express/Hanafin's Clinic	1880	UM	2	3
280-282	High	former Fisher's Building /Hanafin's Photographics Ltd	1880	UM	3	1
	Ilam	former Ilam homestead/University Staff club	1910	UM	2	2
	Ilam	University of Canterbury Extension Studies building 'Okeover'	1865	TF	2	3
12	Kahu	Riccarton House and setting including Riccarton Bush	1856	TF	1	1
3A	Karitane	former Karitane Mother and Baby cottage	1925	UM	2	4
100	Kilmore	Christchurch Town Hall	1965	RC	2	1
135	Kilmore	Caledonian Hall	1923	UM		3
146	Kilmore	Repertory Theatre	1929	UM	2	2

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
185	Kilmore	St Luke's Church, bell tower, and setting	1908	UM	3	1
185	Kilmore	St Luke's Vicarage and setting	1867	UM	3	2
229	Kilmore	Piko Whole foods	1900	UM	2	3
230	Kilmore	two storey brick building retail/residence	1900	UM	2	3
226-228	Kilmore	two storey wooden building retail/residence	1895	TF	2	3
31-33	Kilmore	former Normal School/Cranmer Court	1876	UM	2	2
50	Kirk	St Saviour's Church	1868	TF	1	2
158	Leinster	former dwelling/Leinster Restaurant	1900	TF	2	4
80	Lichfield	Harald's building	1888	UM	3	2
82	Lichfield	Fazazz Motor Sports	1890	UM	3	4
84	Lichfield	Bain's	1890	UM	3	2
92	Lichfield	former Sargood Son and Ewen building	1900	UM	3	3
110	Lichfield	former Bell's Motor Works	1920	UM	2	4
113	Lichfield	Park Lane Handbags	1900	UM	3	4
141	Lichfield	former horse auction warehouse	1903	UM	1	4
112-116	Lichfield	three storey commercial/John Bull Cycles	1900	UM	3	4
140-142	Lichfield	four storey commercial building	1910	UM	4	4
96-98	Lichfield	former Wellington Woollen Mills building	1919	RC	4	2
1	Lincoln	Sunnyside Hospital (Mountfort Buildings) Administration Block	1891	UM	3	2
	Lincoln	Addington Prison	1872	RC	2	2
	Linwood	MED substation public utility building	1935			4
2	MacMillan	Cashmere Hills Presbyterian Church	1929	UM	1	3
192	Madras	former Nurse Maud District Nursing building	1919	UM	2	3
268	Madras	former YWCA Hostel/Charlie Brown Backpackers	1913	UM	3	4
186	Main	former shop 'Mother Hubbard's'	1880	TF	2	3
0	Main North	Scanes Store	0	TF	1	4
831	Main North	St David's Church	1903	TF	1	1
24	Main South	St Peter's Church, graveyard, and setting	1876	UM	1	1
52	Manchester	Coker's Hotel	1879	UM	3	4
105	Manchester	Former H Pannell's Boot Emporium	1885	UM	2	4
107	Manchester	Budapest Restaurant	1885	UM	2	4
109	Manchester	John Darby Menswear	1885	UM	2	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
120	Manchester	Excelsior Hotel	1881	UM	3	1
120	Manchester	Excelsior Hotel	1881	UM	2	1
149	Manchester	Nuttalls two storey commercial building	1905	UM	2	4
158	Manchester	MLC Building/ former New Zealand Express Co	1906	UM	7	2
180	Manchester	Manchester Unity	1965	RC	9	3
198	Manchester	former City Council Offices	1899	UM	2	2
218	Manchester	former MED building/Southpower	1937	UM	2	3
218	Manchester	former MED building Armagh Street/Southpower	1928	UM	2	4
387	Manchester	McLean's Mansion/'Holly Lea', and setting	1900	TF	3	1
122-126	Manchester	former Majestic Theatre/New Life Centre	1930	UM	3	2
127-139	Manchester	three storey commercial building	1905	UM	3	3
25-A6027	Manchester	George Henry	1930	UM	1	4
68-76	Manchester	two storey commercial building	1877	UM	2	3
69-75	Manchester	Cecil House	1905	UM	3	3
	Marine	New Brighton Clock Tower	1934	UM	1	4
768	Marshland	'Pataka' Fruit Storage Shed	1880	UM	1	3
	Matai	Pumphouse public utility building	1926	UM	2	4
37	Maunsell	'Bloomsbury' dwelling	1896			4
24	McDougall	former dwelling 'Fitzroy'/Nurse Maude Medical Hospital	1898	TF	3	2
279	Montreal	West Avon Flats	1930	RC	2	3
288	Montreal	St Elmo Courts	1930	RC	5	3
311	Montreal	two storey wooden residence	1905	TF	2	4
180	Moorhouse	PGG Grain and Wool Store	1927	UM	2	4
192	Moorhouse	Crown Hotel	1906	UM	2	2
367	Moorhouse	Grosvenor Tavern	1876	UM	2	3
375	Moorhouse	Christchurch Polytechnical Assembly Hall	1934	UM	2	3
392	Moorhouse	Christchurch Railway Station - plans drawn c1930	1960	SF	4	3
	Nash	St John of God Hospital Chapel including farm buildings	1910	UM	2	2
	New Regent	all 1931 shops	1931	UM	2	2
14	Oxford	Pegasus Arms	1852	TF	1	3
90	Oxford	S. Michael and All Angels Church and setting	1872	TF	2	1
90	Oxford	S. Michael and All Angels Belfry	1860	TF	2	1
90	Oxford	S. Michael's School - stone building	1913	UM	1	2
95	Oxford	'Tudor House'/'Tiffanys'	1907	TF	1	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
		Restaurant				
159	Oxford	Information Centre former Municipal Chambers	1887	UM	2	1
210	Oxford	The Allan McLean Building	1950	RC	4	4
211	Oxford	former Fire Station/Plunket Society Rooms	1880	UM	2	3
288	Oxford	Baptist Church	1881	UM	1	1
128-128A	Oxford	former Canterbury Jockey Club building	1910	UM	2	4
152-156	Oxford	Public Trust Office building	1922	UM	5	3
176-178	Oxford	Midland Club	1934	CF	3	3
	Oxford	Pumping Station public utility building	1907	UM	1	3
20	Papanui	W Holliday and Sons Ltd	1870	TF	2	4
85	Papanui	Christchurch Girls' High Hostel Acland House	1893	TF	2	3
106	Papanui	former residence of artist Louise Henderson	1933	TF	2	4
121	Papanui	former dwelling/'Highway Lodge'	1905	UM	2	4
163	Papanui	St Alban's Church (Methodist)	1894	UM	1	2
195	Papanui	Barrow's Buildings	1909	UM	2	4
249	Papanui	St George's Private Hospital	1926	RC	3	4
347	Papanui	St Andrew's College 'Strowan'	1855	TF	2	2
26	Park	former St Saviour's Church Lyttelton/relocated Cathedral Grammar	1855	TF	1	2
100	Park	Bishopspark/former Bishop's residence, chapel and setting	1927	UM	2	1
126	Park	former dwelling/'Rosary House'	1915	TF	2	3
21	Peterborough	former Teachers' College/Peterborough Centre	1924	UM	2	2
38	Phillips	Church of the Good Shepherd Vicarage	1884	TF	1	2
340	Prestons	St Mark's Church	1926	RC	1	3
171	Racecourse	Tea House	1903	TF	1	3
	Racecourse	Public Grandstand	1902	RC	2	4
	Restell	former Papanui Railway Station	1900	TF	1	3
	Retreat	MED substation public utility building	1927	UM	1	4
2	Riccarton	Nurses' Memorial Chapel	1927	UM	1	2
7	Riccarton	Dalley's Fruit, Grain and Produce Ltd	1895	UM	2	4
265	Riccarton	former Kincaid Homestead, Coachhouse & Seminary Chapel/'Antonio Hall'	1909	UM	2	3
340	Riccarton	Bush Inn Hotel	1865	TF	2	3
359	Riccarton	Old Saddlery	1895	UM	2	3

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
101A	Riccarton	Butcher's Shop	1900	UM	2	4
	Riccarton	The Umpires Pavilion, Hagley Oval	1864	TF	1	1
	Riccarton	Band Rotunda Botanical Gardens	1924	RC	1	3
	Riccarton	Former Nurses' Home	1931	UM	1	3
	Riccarton	St James' Church	1923	UM	1	3
7	Rolleston	Curator's House, Botanic Gardens	1920	UM	2	3
9	Rolleston	McDougall Art Gallery	1932	UM	1	1
11	Rolleston	Canterbury Museum	1870	UM	2	1
33	Rolleston	Christ's College, School House	1909	UM	3	3
33	Rolleston	former Mountfort classrooms/Harper - Julius Houses	1886	RC	3	2
33	Rolleston	Christ's College 1925 Corner Tower	1925	UM	2	2
33	Rolleston	Christ's College Big School remodelled 1970 1863 section only	1863	UM	1	2
33	Rolleston	Christ's College Chapel	1867	UM	1	2
33	Rolleston	Christ's College Condell's House	1879	TF	2	1
33	Rolleston	Christ's College Dining Hall	1925	UM	3	1
33	Rolleston	Christ's College Hare Memorial Library and Classrooms	1915	UM	2	2
33	Rolleston	Christ's College Jacob's House	1936	UM	3	3
33	Rolleston	Christ's College Open Air Classrooms	1930	TF	2	2
33	Rolleston	Christ's College, Administration Building	1986	UM	3	2
190	Russley	wooden barn	1890	TF	2	3
32	Salisbury	former dwelling/'Ironsides House'	1890	TF	2	4
15	Shalamar	Old Stone House (Cracroft Community Centre)	1871	UM	2	2
102	Springfield	'Springfield Manor' two storey brick and stone residence	1910	UM	2	4
	Springs	former Canterbury Aviation Company Barracks	1917			2
	Springs	former Wigram Air Base control tower	1939	RC	3	2
	Springs	former Wigram Air Base Government Hangar	1920	SF	3	3
	Springs	former Wigram Air Base No. 1 Officers' Mess, Squash Courts, Brevet Garden and Garages	1939	UM	1	3
	Springs	former Wigram Air Base No. 2 Officers' Mess, WO and SNCO Mess	1936	UM	1	3
	Springs	former Wigram Air Base Workshop	1920			4
	Springs	Nos 4 and 5 hangars (split up)	1934	SF	3	4
204	St Asaph	P & D Duncan Ltd	1903	UM	3	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
210	St Asaph	R Buchanan & Sons building	1904	UM	2	4
121	Straven	Boys' High classrooms/former Deans estate farm buildings	0	UM	2	2
121	Straven	Christchurch Boys' High School, original 1926 block	1923	UM	2	2
2	Truscotts	St Mary's Church (relocated to present site 1870)	1885	TF	1	2
180	Tuam	Fuller Brothers Ltd	1906	UM	3	4
210	Tuam	Former Lawrie & Wilson Auctioneers	1910	UM	2	4
214	Tuam	Former Odeon Theatre/Assembly of God	1877	UM	4	2
230	Tuam	Edison Hall	1900	UM	2	4
232	Tuam	Two storey brick/stone commercial building	1880	UM	3	3
236	Tuam	Former A J White's/Rose and Heather Panache/Barbara Lee Corporate Design	1879	UM	3	2
238	Tuam	Former A J White's/McKenzie and Willis	1882	UM	3	2
544	Tuam	Waterworks Pumping Station	1882	UM	2	3
163-173	Tuam	Civic Offices former Miller's Department Store	1938	RC	5	2
	Tuam	Former Post Office/Alice in Video Land	1930	RC	4	4
24	Turners	Dalraith Dairy	1923	TF	1	4
37	Valley	Ngaio Marsh House and setting	1906	TF	2	2
137	Victoria	Former dwelling/commercial building	1905	TF	2	4
169	Victoria	Former dwelling 'Santa Barbara'/Victoria Black	1935	RC	2	3
179	Victoria	Former Carlton Butchery	1900	UM	2	4
89-91	Victoria	Victoria Mansions	1935	RC	4	3
92-96	Victoria	Former bakery - commercial building	1900	UM	2	4
	Victoria	Queen Victoria Statue	1901	UM	2	2
	Victoria	Victoria Clock Tower	1897	UM	3	3
100	Waimairi	College House (refer App. 2a)	1964	RB	3	2
30	Wairarapa	Wooden villa	1910	TF	1	4
129	Waitara	Ex Fendalton School Open Air Classroom/relocated to Canterbury College of Education	1920	TF	1	4
	Wakefield	former Sumner Borough Council Chambers	1907	UM	2	3
4	Webb	dwelling 'Roseneath House'	1891			4
14	Wise	former Wood Brothers flour mill including chimney and brick silo	1891	UM	4	2
2	Worcester	former Clock Tower block/Arts Centre	1876	UM	2	1

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
2	Worcester	Arcading	1917	UM	1	1
2	Worcester	former Biological and Physics Lab additions/gallery and studios	1915	UM	2	1
2	Worcester	former Biological Lab and Observatory/Arts Centre	1895	UM	2	1
2	Worcester	former Boys' High extensions/Arts Centre	1895	UM	2	1
2	Worcester	former Boys' High Gymnasium/Academy Cinema	1908	UM	2	1
2	Worcester	former Boys' High/Arts Centre	1879	UM	2	1
2	Worcester	former Canterbury College Hall/the Great Hall Arts Centre	1881	UM	2	1
2	Worcester	former Chemical Lab/Epicentre	1908	UM	2	1
2	Worcester	former Classics lecture room/Architects lounge	1887	UM	2	1
2	Worcester	former College Library/McDougall Annex	1914	UM	2	1
2	Worcester	former Electrical Engineering/Court Theatre	1921	UM	2	1
2	Worcester	former Electrical Engineering/Southern Ballet, Theatrette	1901	UM	2	1
2	Worcester	former Hydraulics Lab/Court Theatre	1903	UM	3	2
2	Worcester	former Mechanical Engineering Dept/Arts Centre	1890	UM	2	2
2	Worcester	former men's Common Room/craft studios	1915	UM	2	2
2	Worcester	former Registry, excluding 1955-65 additions/Family Planning	1915	UM	2	2
2	Worcester	former School of Art additions/Elizabeth Kelly Room; Annies	1902	UM	2	2
2	Worcester	former West Block Lecture Theatre/University Theatre, residences	1915	UM	3	3
5	Worcester	YHA Hostel	1890	TF	2	3
23	Worcester	single storey villa	1890	TF	1	4
69	Worcester	Worcester Chambers	1928	UM	2	3
78	Worcester	former Clarendon Hotel - facade only remains	1903	UM	3	4
88	Worcester	Avon Theatre	1935	RC	4	3
98	Worcester	former Government Building	1911	UM	3	1
116	Worcester	State Insurance Building	1934	RC	6	2
119	Worcester	Mayfair Building	1910	UM	3	4
124	Worcester	former Trinity Congregational Church including Church Hall	1874	UM	3	1
133	Worcester	Worcester Chambers	1905	UM	3	4
143	Worcester	Hare Krishna cafe 'Gopals'	1910	UM	2	4

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
145	Worcester	ABC Finance 2 storey commercial	1930	UM	2	4
154	Worcester	Christchurch Club	1862	TF	2	1
388	Worcester	former Linwood Library	1885	TF	1	1
107-113	Worcester	former Cinerama Theatre - Worcester Street facade	1905	UM	3	4
115-117	Worcester	Bus Stop Arcade		UM	3	4



APPENDIX F

Potentially Earthquake Prone Protected Buildings Sample Group

Table F1 –Potentially Earthquake Prone Protected Buildings Sample Group

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
85	Armagh	former Magistrates Court	1880	UM	2	1
93-107	Armagh	former Union Centre Building	1923	RC	2	4
122	Avonside	Holy Trinity Anglican Church, lychgate, graveyard and setting	1874	UM	1	1
21	Bealey	Carlton Hotel - 1906 building	1906	UM	2	2
107	Cambridge	former Library Chambers and Children's Library	1893	UM	2	2
267	Cambridge	Theosophical Society building	1926	UM	2	2
173	Cashel	Highlight House	1890	UM	3	3
154-58	Cashel	former DIC/Cashfields Arcade	1907	UM	3	3
50	Cathedral	Warners Hotel	1905	UM	4	3
402	Colombo	Ascot TV Sales and Service	1900	UM	2	4
12	Dorset	concrete block apartments	1956	RB	1	3
31	Dundas	two storey brick factory 'Wraggs'	1900	UM	2	4
116	Durham	Former NZ Loan & Mercantile Woolstore	1881	UM	2	2
0	Dyers Pass	Sign of the Kiwi and setting	1917	UM	1	2
650	Ferry	two storey brick commercial building	1890	UM	2	4
2	Gloucester	Christ's College, 'Rolleston House'	1890	TF	2	2
134-140	Gloucester	Star building Former Star/Lyttelton Times Building	1884	UM	4	2
200	Hackthorne	Sign of the Takahe and setting	1918	UM	2	1
50	Hawke	St Faith's Church	1924	UM	1	2
198	Hereford	two storey commercial building	1920	UM	2	4
59	Hewitts	former dwelling 'Te Koroha'/Rangi Ruru School	1884	TF	2	2
226	High	Southland Building Society	1890	UM	3	3
211-213	High	Excelsior Hotel Bottle Shop including commercial premises	1890	UM	2	4
100	Kilmore	Christchurch Town Hall	1965	RC	2	1
185	Kilmore	St Luke's Church, bell tower, and setting	1908	UM	3	1
158	Leinster	former dwelling/Leinster Restaurant	1900	TF	2	4
113	Lichfield	Park Lane Handbags	1900	UM	3	4
268	Madras	former YWCA Hostel/Charlie Brown Backpackers	1913	UM	3	4
120	Manchester	Excelsior Hotel	1881	UM	3	1
25-27	Manchester	George Henry	1930	UM	1	4
279	Montreal	West Avon Flats	1930	RC	2	3
14	Oxford	Pegasus Arms	1852	TF	1	3
90	Oxford	S. Michael and All Angels Church	1872	TF	2	1
176-178	Oxford	Midland Club	1934	CF	3	3

Number	Street	Name	Construction Date	Construction Type	Number Stories	Heritage Group
163	Papanui	St Alban's Church (Methodist)	1894	UM	1	2
11	Rolleston	Canterbury Museum	1870	UM	2	1
33	Rolleston	Christ's College, School House	1909	UM	3	3
33	Rolleston	former Mountfort classrooms/Harper - Julius Houses	1886	RC	3	2
214	Tuam	Former Odeon Theatre/Assembly of God	1877	UM	4	2
230	Tuam	Edison Hall	1900	UM	2	4
37	Valley	Ngaio Marsh House and setting	1906	TF	2	2
2	Worcester	former Clock Tower block/Arts Centre	1876	UM	2	1
5	Worcester	YHA Hostel	1890	TF	2	3
69	Worcester	Worcester Chambers	1928	UM	2	3
388	Worcester	former Linwood Library	1885	TF	1	1



APPENDIX G

Potentially Earthquake Prone
Buildings
Banks Peninsula Schedule IV
Protected Buildings

Table G1 –Potentially Earthquake Prone Protected Buildings - Banks Peninsula District Plan Schedule IV Protected Buildings

Note that much of the information in this table has been inferred from incomplete records and satellite mapping. As such, the accuracy of this information is limited.

Number	Street	Town	Name	Construction Date	Construction Type	Number Stories	Heritage Group
99	Beach Road	Akaroa	Oinako	1862/1895	TF	2	2
3	Church Street	Akaroa	Shipping Office (former)	1895	TF	1	2
1	Rue Balguerie	Akaroa	Customhouse	1852	TF	1	2
10	Rue Balguerie	Akaroa	St Peter's Church (Anglican)	1863/1876	TF	3	1
14	Rue Balguerie	Akaroa	Former Shop (Akaroa Photography)	1880	TF	1	2
103	Rue Jolie	Akaroa	Coronation Library	1875	TF	1	2
105	Rue Jolie	Akaroa	Gaiety Hall	1877-1878	TF	2	2
160	Rue Jolie	Akaroa	Masonic Hall (Phoenix Lodge)	1876-1877	TF	1	2
25	Rue Lavaud	Akaroa	St Patrick's Church (Catholic)	1864	TF	2	1
39	Rue Lavaud	Akaroa	Trinity Church (Presbyterian)	1886	TF	2	2
47	Rue Lavaud	Akaroa	Cottage (McCrostie Real Estate Office)	1877	TF	1	2
50	Rue Lavaud	Akaroa	Chez La Mer	1871	TF	2	2
58	Rue Lavaud	Akaroa	Akaroa Pharmacy	1883	TF	2	2
66	Rue Lavaud	Akaroa	Shops (including rear portion)	1863/1870's	TF	2	2
69	Rue Lavaud	Akaroa	Courthouse (former)	1878-1870	TF	1	2
71	Rue Lavaud	Akaroa	Museum (Langlois-Etevenaux House)	1841-1845	TF	1	1
73	Rue Lavaud	Akaroa	Bank of New Zealand Building	1903-1905	TF	2	2
1	Rue Pompallier	Akaroa	Art Gallery (former Power House)	1911	UM	2	2
6	Rue Viard	Akaroa	Pompallier House (former Convent)	1907	TF	1	2
	Beach Road	Akaroa	Akaroa Lighthouse	1878-1879	TF	4	2
	Onuku Road	Akaroa	Mt Pleasant Station Stables	1857	UM	2	2
	Onuku Road, The Kaik	Akaroa	Onuku Church (Anglican)	1878	TF	1	1
	Cnr of Little Akaloa & Chorlton Roads	Charteris Bay	Post Office Depot (former)	1919	TF	1	2
	Orton Bradley Park	Charteris Bay	Charteris Bay School (former)	1878	TF	1	2
	Purau Avenue	Diamond Harbour	Godley House	1880	UM	2	2
	Purau Avenue – The Domain	Diamond Harbour	Stoddart House	1861	TF	1	1
	Governors Bay Road	Governors Bay	St Cuthbert's Church (Anglican)	1860	UM	2	1

Number	Street	Town	Name	Construction Date	Construction Type	Number Stories	Heritage Group
	Main Road	Governors Bay	Governors Bay School	1868	TF	1	2
	Main Road	Governors Bay	Governors Bay School House	1868	TF	2	2
		Le Bons Bay	Peace Memorial Library	1919	TF	1	2
	St Luke's Road	Little Akaloa	St Luke's Anglican Church	1905-1906	UM	2	1
		Little River	Little River Library	1911	UM	1	2
	Church Road	Little River	St Andrew's Church (Anglican)	1878	TF	1	2
	State Highway 75	Little River	St John the (Catholic) Evangelist Church	1924	UM	2	2
		Lyttelton	Forbes Building	1863	UM	2	2
5	Norwich Quay	Lyttelton	Old Harbour Board Office	1880	UM	2	2
7	Norwich Quay	Lyttelton	Post Office	1875	UM	2	2
2	Reserve Terrace	Lyttelton	Timeball Station	1876	UM	3	1
2	Sumner Road	Lyttelton	Former Library and Fire Station	1902	UM	3	2
3	Sumner Road	Lyttelton	Lyttelton Police Station	1880	UM	2	2
1	Ticehurst Road	Lyttelton	Islay Cottage (Former Mclellan's House)	1851	TF	2	2
17	Winchester Street	Lyttelton	Church of the Most Holy Trinity (Anglican)	1859-1860	TF	2	1
18	Winchester Street	Lyttelton	St Joseph's Church (Catholic)	1865	UM	2	2
44	Winchester Street	Lyttelton	St John's Church (Presbyterian)	1864	UM	2	2
	Cnr of Oxford & Winchester Streets	Lyttelton	Warder's House	1875-1876	TF	2	2
	Sumner Road	Lyttelton	Lodge on Unanimity	1876	UM	2	2
	Okains Bay Road	Okains Bay	Church of St John the Evangelist (Anglican)	1863	UM	2	2
	Okains Bay Road	Okains Bay	Library	1868	TF	1	2
	Okains Bay Road	Okains Bay	Okains Bay Store & Post Office	1878/1892/1900	TF	1.5	2
	Pigeon Bay	Pigeon Bay	Former Kukupa Side School	1878	TF	2	2
	Pigeon Bay Road	Pigeon Bay	Knox Church (Presbyterian)	1889	TF	2	2
	Pigeon Bay Road	Pigeon Bay	Pigeon Bay Store	1881	TF	1	2
	Port Levy	Port Levy	St Paul's Church (Anglican)	1887-1888	TF	1	2
	Purau Farm	Purau	The Whare	1850-1860	TF	1	2
	Ripapa Island	Purau	Fort Jervois	1886-1895	UM	2	1
	Sumner Road	Lyttelton	Lodge on Unanimity	1876	UM	2	2



APPENDIX H

Potentially Earthquake Prone
Buildings
Banks Peninsula Schedule V
Notable Buildings

Table H1 –Potentially Earthquake Prone Protected Buildings - Banks Peninsula District Plan Schedule V - Notable Buildings

Note that much of the information in this table has been inferred from incomplete records and satellite mapping. As such, the accuracy of this information is limited.

Number	Street	Town	Name	Construction Date	Construction Type	Number Stories	Heritage Group
65	Beach Road	Akaroa	Shop	unknown	TF	1	n/a
67	Beach Road	Akaroa	Shop	unknown	TF	1	n/a
69	Beach Road	Akaroa	Harbour View	unknown	TF	1	n/a
73	Beach Road	Akaroa	Astrolabe/Ship 'n' Shore	unknown	TF	2	n/a
81	Beach Road	Akaroa	Brassell's Building	unknown	TF	2	n/a
6	Church Street	Akaroa	Fire and Ice Building Brown's Bakery	unknown	TF	2	n/a
6	Rue Lavaud	Akaroa	Grand Hotel	unknown	TF	2	n/a
12	Rue Lavaud	Akaroa	Mon Desir	unknown	TF	2	n/a
31	Rue Lavaud	Akaroa	Local Crafts	unknown	TF	1	n/a
33	Rue Lavaud	Akaroa	C'est La Vie	unknown	TF	1	n/a
40	Rue Lavaud	Akaroa	Picturesque Gallery	unknown	TF	1	n/a
42	Rue Lavaud	Akaroa	Mrs Eteveneaux's Sweet Shop	unknown	TF	1	n/a
43	Rue Lavaud	Akaroa	Cottage	unknown	TF	1	n/a
45	Rue Lavaud	Akaroa	Artisan's Gallery	unknown	TF	1	n/a
46	Rue Lavaud	Akaroa	Madeira Hotel	unknown	TF	1	n/a
47	Rue Lavaud	Akaroa	McCrostie's Office	unknown	TF	1	n/a
54	Rue Lavaud	Akaroa	Faultline Gallery (Old Butchery)	unknown	TF	1	n/a
60	Rue Lavaud	Akaroa	Potpourri	unknown	TF	1	n/a
62	Rue Lavaud	Akaroa	Old Police Stables (Woodstock Garden Centre)	unknown	TF	1	n/a
62	Rue Lavaud	Akaroa	Snuggle Inn Police House	unknown	TF	1	n/a
67	Rue Lavaud	Akaroa	Butcher's House and Shop	unknown	TF	1	n/a
84	Rue Lavaud	Akaroa	War Memorial	unknown	TF	1	n/a
84	Rue Lavaud	Akaroa	Whale Pot	unknown	TF	1	n/a
91	Rue Lavaud	Akaroa	Shops/dwelling	unknown	TF	1	n/a
49	Rue Lavaud (55 Rue Lavaud)	Akaroa	Bon Accord	unknown	TF	1	n/a
	Beach Road	Akaroa	Bus Shelter	unknown	TF	1	n/a
	Beach Road	Akaroa	Rowing Club Clubrooms & Boat House	1914	TF	2	n/a
	Rue Jolie	Akaroa	Plunket Rooms	unknown	TF	1	n/a
	Rue Lavaud	Akaroa	Post Office	unknown	TF	1	n/a
	Rue Lavaud	Akaroa	War Memorial	unknown	UM	0	n/a
	Highway 75	Duvauchelles	Sale Yard Building	unknown	TF	1	n/a
	Highway 75	Duvauchelles	Hotel de Pecheurs	unknown	TF	2	n/a

Number	Street	Town	Name	Construction Date	Construction Type	Number Stories	Heritage Group
	Highway 75	Duvauchelles	Old Post Office	unknown	TF	1	n/a
	Kaituna Saddle	Kaituna	Sign of the Packhorse Hut	1916	UM	1	n/a
	State Highway 75	Little River	Little River Railway Station	1886	TF	1	n/a
16	Canterbury Street	Lyttelton	Lyttelton Workingmen's Club	1880	TF	1	n/a
26	Canterbury Street	Lyttelton	Kilwinning Lodge	1902	UM	2	n/a
4	Donald Street	Lyttelton	Former Council Stables	1914	UM	2	n/a
19	Exeter Street	Lyttelton	Convent	1881	TF	2	n/a
1	Gladstone Quay	Lyttelton	Museum	1912	UM	3	n/a
26	Godley Quay	Lyttelton	Dampier House	1858-1860n	TF	1	n/a
2	London Street	Lyttelton	Former Noko's	1912	UM	2	n/a
6	London Street	Lyttelton	Mazeys	1870	UM	2	n/a
8	London Street	Lyttelton	Smails	1870	TF	2	n/a
9	London Street	Lyttelton	Empire Hotel	1915	UM	2	n/a
14	London Street	Lyttelton	Shop	1870	TF	2	n/a
15	London Street	Lyttelton	Bundy's Real Estate	1880	TF	2	n/a
16	London Street	Lyttelton	Headwaves	1924	TF	1	n/a
18	London Street	Lyttelton	Voyces/Deluxe Café	1870	TF	2	n/a
24	London Street	Lyttelton	Harbour Light Theatre	1916-1917	UM	3	n/a
33	London Street	Lyttelton	Bundy's Butchers	1924	UM	1	n/a
33	London Street	Lyttelton	Lyttelton Barbers	1870's?	TF	1	n/a
36	London Street	Lyttelton	Buffalo Lodge	1902	UM	1	n/a
42	London Street	Lyttelton	Volcano Lava Bar	1930	UM	1	n/a
44	London Street	Lyttelton	Tunnel Vision Backpackers	1860	UM	2	n/a
47	London Street	Lyttelton	Changs Fruiterers	1888-1890n	TF	2	n/a
47	London Street	Lyttelton	Chans Café	unknown	TF	2	n/a
6	Norwich Quay	Lyttelton	Canterbury Hotel	unknown	UM	2	n/a
10	Norwich Quay	Lyttelton	Minster House	unknown	UM	1	n/a
16	Norwich Quay	Lyttelton	Norwich Chambers	1878	UM	2	n/a
17	Norwich Quay	Lyttelton	Forbes Building	1860's	UM	2	n/a
18	Norwich Quay	Lyttelton	Thomas Building	unknown	UM	2	n/a
20	Norwich Quay	Lyttelton	Independent Provedoring Co. Ltd	1850's (Front)	TF	2	n/a
24	Norwich Quay	Lyttelton	Quayside Kwizine	1871-1875	UM	2	n/a
30	Norwich Quay	Lyttelton	Royal Hotel	unknown	UM	2	n/a
40	Norwich Quay	Lyttelton	Mitre Tavern	1927	UM	2	n/a
26	Norwich Quay	Lyttelton	Lyttelton Hotel	unknown	UM	2	n/a
10	Oxford Street	Lyttelton	British Hotel	unknown	UM	3	n/a
14	Oxford Street	Lyttelton	"Tin Palace"	unknown	TF	2	n/a
16	Oxford Street	Lyttelton	Taylor's Plumbers	unknown	UM	1	n/a
17	Oxford Street	Lyttelton	Former Port Gallery	unknown	TF	2	n/a
20	Oxford Street	Lyttelton	Information Centre	1900	TF	1	n/a

Number	Street	Town	Name	Construction Date	Construction Type	Number Stories	Heritage Group
15	Oxford Street (changed from #13)	Lyttelton	Nortons Building	1913	UM	2	n/a
1	Sumner Road	Lyttelton	Library (Former Council Office)	1887	UM	2	n/a
2	Sumner Road	Lyttelton	Former Library & Fire Station	1902	UM	3	n/a
	Gladstone Quay	Lyttelton	Signal Box	1880	TF	2	n/a
	Sumner Road	Lyttelton	Masonic Lodge	unknown	UM	2	n/a
	(off old Sumner Road)	Lyttelton Heads	associated buildings, structures and terraces (1885-1945)	1885-1945	UM	0	n/a
	Adderley Scenic Reserve	Lyttelton Heads	Adderley Head Signal Station	unknown	TF	1	n/a
	Little Port Cooper	Lyttelton Heads	Former School Little Port Cooper	unknown	TF	1	n/a
	SH5	Makanuatu	Former Takamatua School	unknown	TF	1	n/a
	Okains Bay Road	Okains Bay	Old Okains Bay School (Recreation Reserve)	unknown	TF	1	n/a
	Sawmill Road	Robinsons Bay	Pavitts Sawmill	unknown	TF	1	n/a
	Gebbies Pass Road	Teddington	St Peter's Church	unknown	TF	1	n/a