Christchurch City Council

Burnside Park Toilets

PRK 0275 BLDG 003 EQ2

Detailed Engineering Evaluation

Quantitative Assessment Report

Christchurch City Council

Burnside Park Toilets

Quantitative Assessment Report

Prepared By

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Date: February 2013
Reference: 6-QUCC1.63
Status: Final

Summary

Burnside Park Toilets
PRK 0275 BLDG 003 EQ2

Detailed Engineering Evaluation
Quantitative Report - Summary
Final

Background
This is a summary of the quantitative report for the Burnside Park Toilets, and is based on the Detailed Engineering Evaluation Procedure document (draft) issued by the Structural Advisory Group on 19 July 2011 and includes visual inspections and measurements taken during July, September & November 2012, and calculations.

Key Damage Observed
No major damage was observed.

Critical Structural Weaknesses
No critical structural weaknesses have been identified.

Indicative Building Strength
Based on the information available, and from undertaking a quantitative assessment, the structure's capacity has been assessed as a minimum of 45% NBS, and is considered to be a moderate earthquake risk building.

Recommendations
The following recommendations have been made for the building:

1. Strengthening options be developed to increase the seismic capacity of the building to at least 67%NBS.
2. The cracking and impact damage be repaired.

Contents

1 Introduction

Opus International Consultants Limited has been engaged by Christchurch City Council to undertake a detailed seismic assessment of the Burnside Park Toilets, Avonhead Road, Burnside, Christchurch following the Canterbury Earthquake Sequence since September 2010.

The purpose of the assessment is to determine if the building is classed as being earthquake prone in accordance with the Building Act 2004.

The seismic assessment and reporting have been undertaken based on the qualitative and quantitative procedures detailed in the Detailed Engineering Evaluation Procedure (DEEP) document (draft) issued by the Structural Engineering Society (SESOC) [3] [4].

2 Compliance

This section contains a brief summary of the requirements of the various statutes and authorities that control activities in relation to buildings in Christchurch at present.

2.1 Canterbury Earthquake Recovery Authority (CERA)

CERA was established on 28 March 2011 to take control of the recovery of Christchurch using powers established by the Canterbury Earthquake Recovery Act enacted on 18 April 2011. This act gives the Chief Executive Officer of CERA wide powers in relation to building safety, demolition and repair. Two relevant sections are:

Section 38 – Works

This section outlines a process in which the chief executive can give notice that a building is to be demolished and if the owner does not carry out the demolition, the chief executive can commission the demolition and recover the costs from the owner or by placing a charge on the owners' land.

Section 51 – Requiring Structural Survey

This section enables the chief executive to require a building owner, insurer or mortgagee to carry out a full structural survey before the building is re-occupied.

We understand that CERA require a detailed engineering evaluation to be carried out for all buildings (other than those exempt from the Earthquake Prone Building definition in the Building Act). CERA have adopted the Detailed Engineering Evaluation Procedure (DEEP) document (draft) issued by the Structural Engineering Society (SESOC) on 19 July 2011. This document sets out a methodology for both initial qualitative and detailed quantitative assessments.

It is anticipated that a number of factors, including the following, will determine the extent of evaluation and strengthening level required:

1. The importance level and occupancy of the building.

2. The placard status and amount of damage.
3. The age and structural type of the building.
4. Consideration of any critical structural weaknesses.

Christchurch City Council requires any building with a capacity of less than 34% of New Building Standard (including consideration of critical structural weaknesses) to be strengthened to a target of 67% as required under the CCC Earthquake Prone Building Policy.

2.2 Building Act

Several sections of the Building Act are relevant when considering structural requirements:

Section 112 - Alterations

This section requires that an existing building complies with the relevant sections of the Building Code to at least the extent that it did prior to the alteration. This effectively means that a building cannot be weakened as a result of an alteration (including partial demolition).

The Earthquake Prone Building policy for the territorial authority shall apply as outlined in Section 2.3 of this report.

Section 115 – Change of Use

This section requires that the territorial authority is satisfied that the building with a new use complies with the relevant sections of the Building Code 'as near as is reasonably practicable'.

This is typically interpreted by territorial authorities as being 67% of the strength of an equivalent new building or as near as practicable. This is also the minimum level recommended by the New Zealand Society for Earthquake Engineering (NZSEE).

Section 121 – Dangerous Buildings

This section was extended by the Canterbury Earthquake (Building Act) Order 2010, and defines a building as dangerous if:

1. In the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause injury or death or damage to other property; or
2. In the event of fire, injury or death to any persons in the building or on other property is likely because of fire hazard or the occupancy of the building; or
3. There is a risk that the building could collapse or otherwise cause injury or death as a result of earthquake shaking that is less than a 'moderate earthquake' (refer to Section 122 below); or
4. There is a risk that other property could collapse or otherwise cause injury or death; or

5. A territorial authority has not been able to undertake an inspection to determine whether the building is dangerous.

Section 122 – Earthquake Prone Buildings

This section defines a building as earthquake prone (EPB) if its ultimate capacity would be exceeded in a 'moderate earthquake' and it would be likely to collapse causing injury or death, or damage to other property.

A moderate earthquake is defined by the building regulations as one that would generate loads 33% of those used to design an equivalent new building.

Section 124 – Powers of Territorial Authorities

This section gives the territorial authority the power to require strengthening work within specified timeframes or to close and prevent occupancy to any building defined as dangerous or earthquake prone.

Section 131 – Earthquake Prone Building Policy

This section requires the territorial authority to adopt a specific policy for earthquake prone, dangerous and insanitary buildings.

2.3 Christchurch City Council Policy

Christchurch City Council adopted their Earthquake Prone, Dangerous and Insanitary Building Policy in 2006. This policy was amended immediately following the Darfield Earthquake on 4 September 2010.

The 2010 amendment includes the following:

1. A process for identifying, categorising and prioritising Earthquake Prone Buildings, commencing on 1 July 2012;
2. A strengthening target level of 67% of a new building for buildings that are Earthquake Prone;
3. A timeframe of 15-30 years for Earthquake Prone Buildings to be strengthened; and,
4. Repair works for buildings damaged by earthquakes will be required to comply with the above.

The council has stated their willingness to consider retrofit proposals on a case by case basis, considering the economic impact of such a retrofit.

If strengthening works are undertaken, a building consent will be required. A requirement of the consent will require upgrade of the building to comply 'as near as is reasonably practicable' with:

- The accessibility requirements of the Building Code.

- The fire requirements of the Building Code. This is likely to require a fire report to be submitted with the building consent application.

Where an application for a change of use of a building is made to Council, the building will be required to be strengthened to 67% of New Building Standard or as near as is reasonably practicable.

2.4 Building Code

The Building Code outlines performance standards for buildings and the Building Act requires that all new buildings comply with this code. Compliance Documents published by The Department of Building and Housing can be used to demonstrate compliance with the Building Code.

On 19 May 2011, Compliance Document B1: Structure was amended to include increased seismic design requirements for Canterbury as follows:

- increase in the basic seismic design load for the Canterbury earthquake region (Z factor increased to 0.3 equating to an increase of 36 – 47% depending on location within the region);
- Increased serviceability requirements.

2.5 Institution of Professional Engineers New Zealand (IPENZ) Code of Ethics

One of the core ethical values of professional engineers in New Zealand is the protection of life and safeguarding of people. The IPENZ Code of Ethics requires that:

Members shall recognise the need to protect life and to safeguard people, and in their engineering activities shall act to address this need.

1.1 Giving Priority to the safety and well-being of the community and having regard to this principle in assessing obligations to clients, employers and colleagues.

1.2 Ensuring that responsible steps are taken to minimise the risk of loss of life, injury or suffering which may result from your engineering activities, either directly or indirectly.

All recommendations on building occupancy and access must be made with these fundamental obligations in mind.

3 Earthquake Resistance Standards

For this assessment, the building's earthquake resistance is compared with the current New Zealand Building Code requirements for a new building constructed on the site. This is expressed as a percentage of new building standard (%NBS). The loadings are in accordance with the current earthquake loading standard NZS1170.5 [1].

A generally accepted classification of earthquake risk for existing buildings in terms of %NBS that has been proposed by the NZSEE 2006 [2] is presented in Figure 1 below.

Description	Grade	Risk	%NBS	Existing Building Structural Performance
Low Risk Building	A or B	Low	Above 67	Acceptable (improvement may be desirable)
Moderate Risk Building	B or C	Moderate	34 to 66	Acceptable legally. Improvement recommended
High Risk Building	D or E	High	33 or lower	Unacceptable (Improvement required under Act)

Improvement of Structural Performance	
Legal Requirement	NZSEE Recommendation
The Building Act sets no required level of structural improvement (unless change in use) This is for each TA to decide. Improvement is not limited to 34%NBS.	100%NBS desirable. Improvement should achieve at least 67%NBS
	Not recommended. Acceptable only in exceptional circumstances
Unacceptable	Unacceptable

Figure 1: NZSEE Risk Classifications Extracted from table 2.2 of the NZSEE 2006 AISPBE Guidelines

Table 1 below compares the percentage NBS to the relative risk of the building failing in a seismic event with a 10% risk of exceedance in 50 years (i.e. 0.2% in the next year).

Table 1: %NBS compared to relative risk of failure

Percentage of New Building Standard (%NBS)	Relative Risk (Approximate)
>100	<1 time
80-100	1-2 times
67-80	2-5 times
33-67	5-10 times
20-33	10-25 times
<20	>25 times

3.1 Minimum and Recommended Standards

Based on governing policy and recent observations, Opus makes the following general recommendations:

3.1.1 Occupancy

The Canterbury Earthquake Order[1] in Council 16 September 2010, modified the meaning of "dangerous building" to include buildings that were identified as being EPB's. As a result of this, we would expect such a building would be issued with a Section 124 notice, by the Territorial Authority, or CERA acting on their behalf, once they are made aware of our assessment. Based on information received from CERA to date and from the DBH guidance document dated 12 June 2012 [6], this notice is likely to prohibit occupancy of the building (or parts thereof), until its seismic capacity is improved to the point that it is no longer considered an EPB.

3.1.2 Cordoning

Where there is an overhead falling hazard, or potential collapse hazard of the building, the areas of concern should be cordoned off in accordance with current CERA/territorial authority guidelines.

3.1.3 Strengthening

Industry guidelines (NZSEE 2006 [2]) strongly recommend that every effort be made to achieve improvement to at least 67%NBS. A strengthening solution to anything less than 67%NBS would not provide an adequate reduction to the level of risk.

It should be noted that full compliance with the current building code requires building strength of 100%NBS.

3.1.4 Our Ethical Obligation

In accordance with the IPENZ code of ethics, we have a duty of care to the public. This obligation requires us to identify and inform CERA of potentially dangerous buildings; this would include earthquake prone buildings.

[1] This Order only applies to buildings within the Christchurch City, Selwyn District and Waimakariri District Councils authority

4 Background Information

4.1 Building Description

The Burnside Park Toilet building is a single storey concrete masonry structure with a timber framed roof. The floor is a concrete slab on-grade.

The building comprises separate male and female toilets, with a disabled toilet extension built to the rear during 2001. The original building has dimensions of 6.6m x 2.8m x 2.7m maximum height and the extension has dimensions of 2.7m x 2.55m x 2.4m maximum height.

The building is constructed on level ground.

We have no information with respect to the foundation of the original building, and have assumed that the concrete slab is likely to have a concrete edge beam all around and thickening under internal masonry walls. The extension has a 100mm thick concrete slab with 200mm wide edge beams extending 350mm minimum below ground level.

The original building has 2m high 15 series masonry walls, seated on a concrete nib of 100mm nominal height. We have no details of the reinforcement size used and have assumed D12 bars. We have been able to confirm corner vertical bars along with a top course bond beam and the walls to be all cells filled construction. Above the wall are timber framed glazing panels of maximum height 400mm at the frontage, which taper down to the rear along the building sides, following the line of the roof pitch. The roof is timber framed with corrugated iron cladding and an internal lining of Villa Board or similar. The roof to wall connections appear weak for effective transfer of roof loadings to the masonry walls.

The extension is constructed of 2m high 20 series masonry walls, seated on a concrete nib of 100mm nominal height. The wall reinforcement is D12 at 600mm centres each way and all cells are of filled construction. The roof is timber framed with exterior cladding of 18mm H3 plywood and an internal lining of 9mm Villa Board. The building soffits are 6mm Hardiflex.

We are unaware of the date of construction of the original building, but the extension was constructed during 2001.

4.2 Survey

4.2.1 Post 22 February 2011 inspections

Inspections were undertaken by Opus International Consultants during July, September and December 2012.

4.3 Original Documentation

No construction drawings or design calculations were provided by CCC for the original building. Full construction details are available for the 2001 extension.

4.4 Surrounding Buildings

The Toilet Block is a stand-alone building located in Burnside Park. There are no surrounding buildings.

4.5 Residual Displacements

No residual displacements have been noted.

4.6 Foundations

The building is located on a near level site, on a concrete slab on grade. We have assumed slab thickenings around the edge and beneath internal masonry walls.

4.7 Primary Gravity Structure

We have confirmed all cells filled construction for the external concrete masonry walls of the original construction and the later extension.

The roof structure is timber framed construction. Connections for the roof structure to the masonry walls appear weak for the original building but connections are adequate for the extension. The strength of the connections for the original building will need to be assessed if any strengthening options are to be developed.

4.8 Non Structural Elements

There are no non-structural elements.

5 General Observations

The building appears to have withstood the Canterbury earthquake sequence post September 2010 in a satisfactory manner with its structural integrity intact. Two vertical cracks were noted, one of which requires sealant applied to ensure weather tightness (refer Appendix 1, photo 8).

The top corner masonry block of the male toilet entry screen shows impact damage that is unlikely to be earthquake related. This item does not affect the structural integrity of the building however it does require minor remedial work (refer Appendix 1, photo 9).

6 Detailed Seismic Assessment

The detailed seismic assessment has been based on the NZSEE 2006 [2] guidelines for the "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes" together with the "Guidance on Detailed Engineering Evaluation of Earthquake Affected Non-residential Buildings in Canterbury, Part 2 Evaluation Procedure" [3] draft document prepared by the Engineering Advisory Group on 19 July 2011, and the SESOC guidelines "Practice Note – Design of Conventional Structural Systems Following Canterbury Earthquakes" [5] issued on 21 December 2011.

6.1 Critical Structural Weaknesses

The term Critical Structural Weakness (CSW) refers to a component of a building that could contribute to increased levels of damage or cause premature collapse of a building.

No CSW's have been identified for this building.

6.2 Quantitative Assessment Methodology

The concrete masonry walls have been reviewed for shear and moment capacity in the in-plane and out-of-plane directions.

6.3 Assessment

A summary of the structural performance of the building is shown in the following table. Note that the values given represent the worst performing elements in the building, as these effectively define the building's capacity.

Table 2: Summary of Seismic Performance

Structural Element/System	Failure Mode, or description of limiting criteria based on displacement capacity of critical element.	% NBS based on calculated capacity
Masonry walls of original building	In-plane shear adequate	70%NBS
	Face load shear and wall flexure weak	45%NBS
Masonry walls of extension	In plane shear is to code requirements	>100%NBS
	Face load shear and wall flexure are to code requirements	>100%NBS

The calculated seismic capacity of the building has been assessed to be 45%NBS.

As the building has a capacity of between 33%NBS and 67%NBS it is defined as a moderate earthquake risk building under the NZSEE classification system and has a relative risk of failure of 5-10 times that of a building constructed to the New Building Standard. Based on the form of construction and the seismic load resisting systems present we believe that the building has a low risk of collapse.

6.4 Limitations and Assumptions in Results

The observed level of damage suffered by the building was deemed low enough to not affect the capacity. Therefore the analysis and assessment of the building was based on it being in an undamaged state. There may have been damage to the building that was unable to be observed that could cause the capacity of the building to be reduced; therefore the current capacity of the building may be lower than that stated.

The results have been reported as a %NBS and the stated value is that obtained from our analysis and assessment. Despite the use of best national and international practice in this analysis and assessment, this value contains uncertainty due to the many assumptions and simplifications which are made during the assessment. These include:

a. Simplifications made in the analysis, including boundary conditions such as foundation fixity.
b. Assessments of material strengths based on limited drawings, specifications and site inspections
c. The normal variation in material properties which change from batch to batch.
d. Approximations made in the assessment of the capacity of each element, especially when considering the post-yield behaviour.

7 Geotechnical Appraisal

Due to lack of observed ground damage, no site specific geotechnical appraisal has been undertaken.

8 Conclusions

Based on the information available, and from undertaking a quantitative assessment, the structure's original capacity has been assessed at a minimum of 45% NBS.

As the building has a capacity of between 33%NBS and 67%NBS it is defined as a moderate earthquake risk building under the NZSEE classification system and has a relative risk of failure of 5-10 times that of a building constructed to the New Building Standard. Based on the form of construction and the seismic load resisting systems present we believe that the building has a low risk of collapse.

9 Recommendations

The following recommendations have been made for the building:

1. Strengthening options be developed to increase the seismic capacity of the building to at least 67%NBS.
2. The cracking and impact damage be repaired.

10 Limitations

1. This report is based on an inspection of the structure with a focus on the damage sustained from the 22 February 2011 Canterbury Earthquake and aftershocks only.
2. 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 the time.
3. This report is prepared for the CCC to assist with assessing remedial works required for council structures and facilities. It is not intended for any other party or purpose.

11 References

[1] NZS 1170.5: 2004, Structural design actions, Part 5 Earthquake actions, Standards New Zealand.

[2] NZSEE (2006), Assessment and improvement of the structural performance of buildings in earthquakes, New Zealand Society for Earthquake Engineering.

[3] Engineering Advisory Group, Guidance on Detailed Engineering Evaluation of Earthquake Affected Non-residential Buildings in Canterbury, Part 2 Evaluation Procedure, Draft Prepared by the Engineering Advisory Group, Revision 5, 19 July 2011.

[4] Engineering Advisory Group, *Guidance on Detailed Engineering Evaluation of Non-residential buildings, Part 3 Technical Guidance*, Draft Prepared by the Engineering Advisory Group, 13 December 2011.

[5] SESOC (2011), Practice Note – Design of Conventional Structural Systems Following Canterbury Earthquakes, Structural Engineering Society of New Zealand, 21 December 2011.

[6] DBH (2012), Guidance for engineers assessing the seismic performance of non-residential and multi-unit residential buildings in greater Christchurch, Department of Building and Housing, June 2012.

Appendix 1 - Photographs

1. **Building frontage**

2. **Building side**

3. Rear extension constructed 2001

4. Front wall: roof/window/wall detail

5. Side wall (typical): Roof/window/wall detail

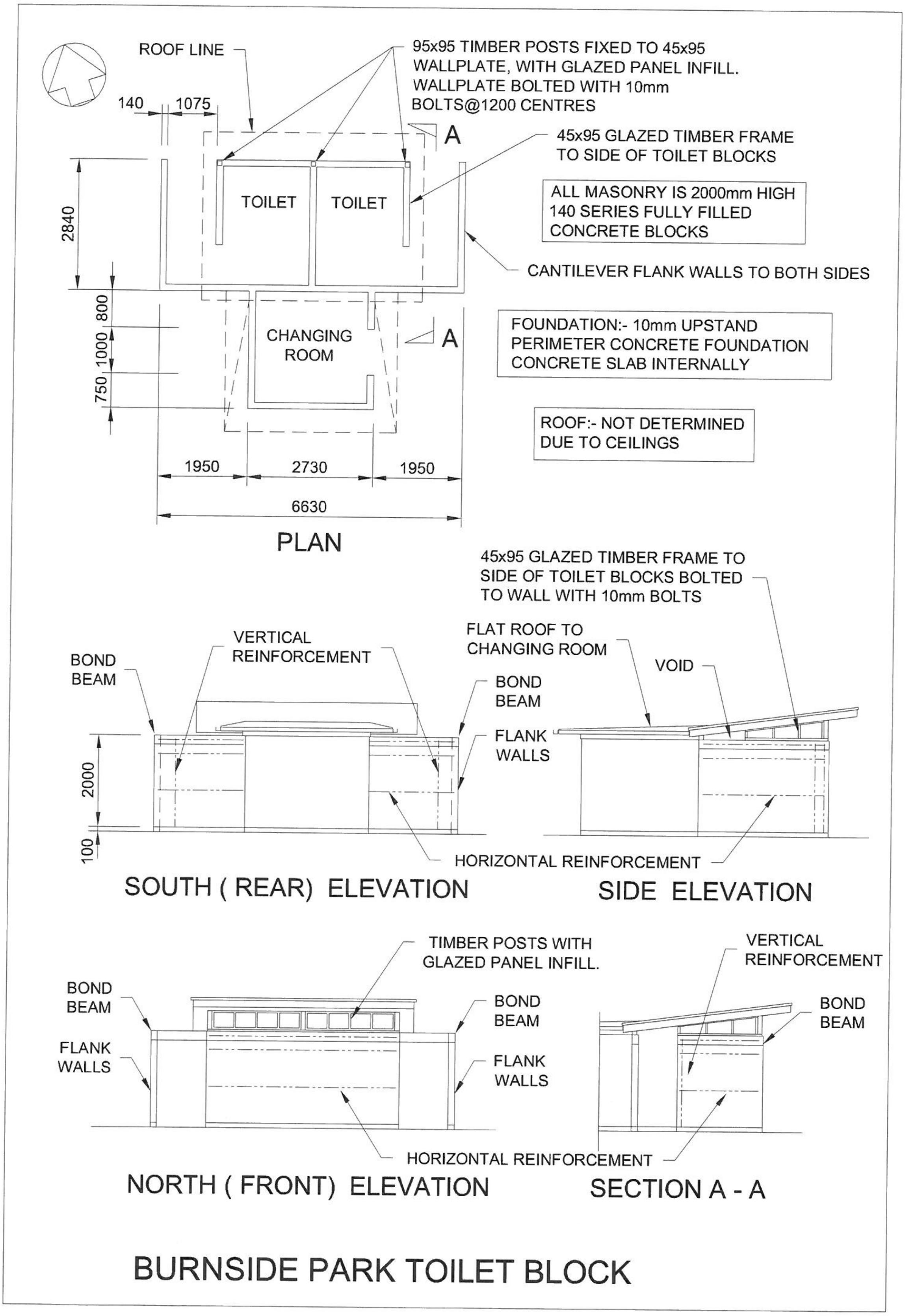
6. Weak window connection to masonry wall

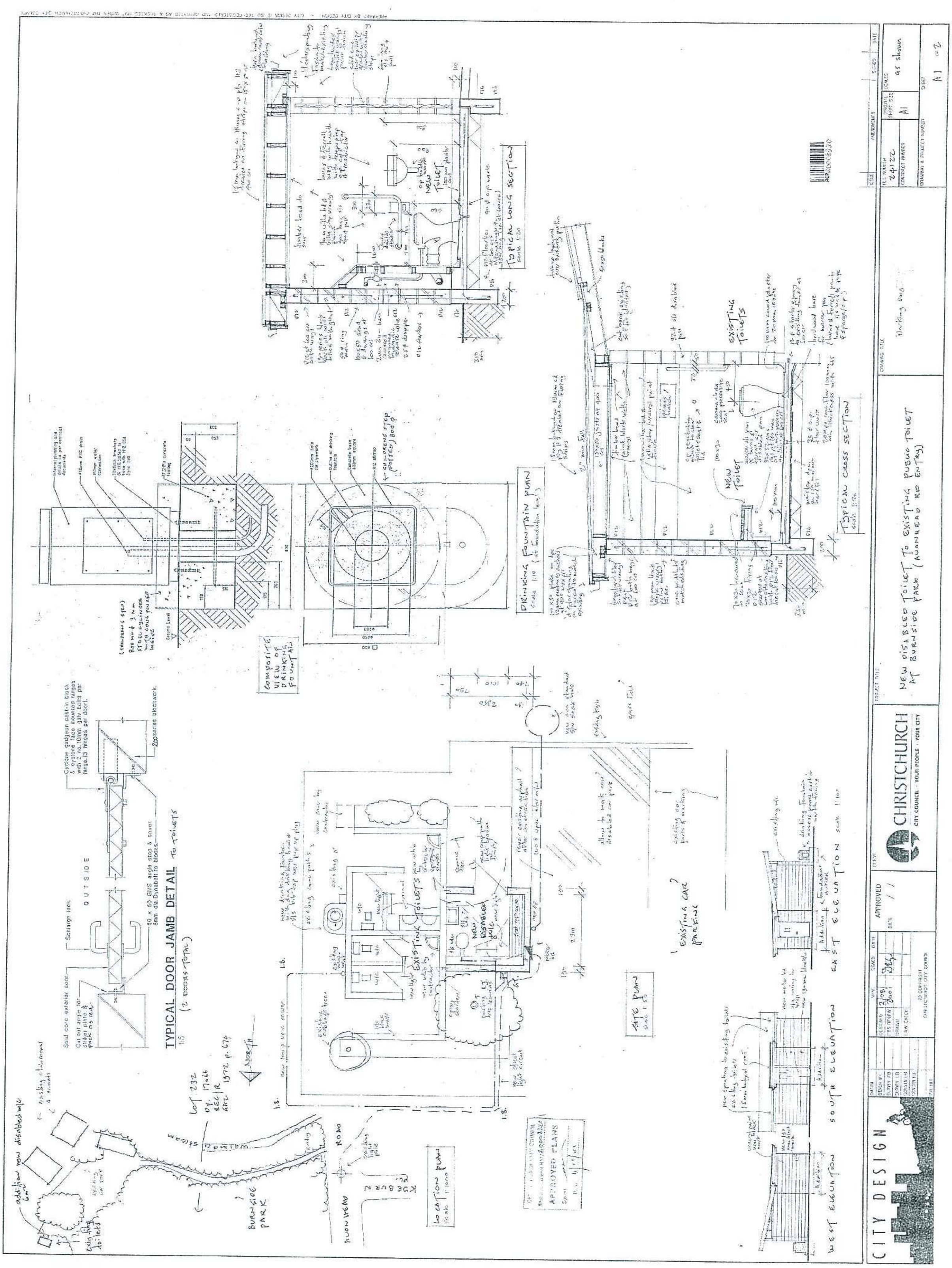
7. **Typical internal wall corner detail**

8. **Moderate width wall crack requiring sealant**

9. Impact damage to top corner of the masonry screen to the male toilet

Appendix 2 – Building Plans


ROOF LINE
95x95 TIMBER POSTS FIXED TO 45x95 WALLPLATE, WITH GLAZED PANEL INFILL. WALLPLATE BOLTED WITH 10mm BOLTS@1200 CENTRES
140
1075
A
45x95 GLAZED TIMBER FRAME TO SIDE OF TOILET BLOCKS
2840
TOILET
TOILET
ALL MASONRY IS 2000mm HIGH 140 SERIES FULLY FILLED CONCRETE BLOCKS
CANTILEVER FLANK WALLS TO BOTH SIDES
800
1000
750
CHANGING ROOM
A
FOUNDATION:- 10mm UPSTAND PERIMETER CONCRETE FOUNDATION CONCRETE SLAB INTERNALLY
ROOF:- NOT DETERMINED DUE TO CEILINGS
1950
2730
1950
6630
PLAN
45x95 GLAZED TIMBER FRAME TO SIDE OF TOILET BLOCKS BOLTED TO WALL WITH 10mm BOLTS
BOND BEAM
VERTICAL REINFORCEMENT
FLAT ROOF TO CHANGING ROOM
VOID
BOND BEAM
FLANK WALLS
2000
100
HORIZONTAL REINFORCEMENT
SOUTH (REAR) ELEVATION
SIDE ELEVATION
TIMBER POSTS WITH GLAZED PANEL INFILL.
VERTICAL REINFORCEMENT
BOND BEAM
BOND BEAM
BOND BEAM
FLANK WALLS
FLANK WALLS
HORIZONTAL REINFORCEMENT
NORTH (FRONT) ELEVATION
SECTION A - A
BURNSIDE PARK TOILET BLOCK


TYPICAL DOOR JAMB DETAIL
CHRISTCHURCH
CITY DESIGN

Appendix 3 – CERA DEE Spreadsheet

Detailed Engineering Evaluation Summary Data V1.11

Location

Building Name:	Burnside Park Toilet	Reviewer:	Dave Dekker
	Unit / No: / Street	CPEng No:	1003026
Building Address:	Burnside Park, Avonhead Road, Bur	Company:	Opus International Consultants
Legal Description:		Company project number:	6-QUCC1.63
		Company phone number:	3635400
	Degrees / Min / Sec		
GPS south:		Date of submission:	28-Feb-13
GPS east:		Inspection Date:	July, September & December 2012
		Revision:	Final
Building Unique Identifier (CCC):	PRK_0275_BLDG_003 EQ2	Is there a full report with this summary?	yes

Site

Site slope:	flat	Max retaining height (m):	
Soil type:		Soil Profile (if available):	
Site Class (to NZS1170.5):	D		
Proximity to waterway (m, if <100m):		If Ground improvement on site, describe:	
Proximity to clifftop (m, if < 100m):			
Proximity to cliff base (m,if <100m):		Approx site elevation (m):	

Building

No. of storeys above ground:	1	single storey = 1	Ground floor elevation (Absolute) (m):	
Ground floor split?			Ground floor elevation above ground (m):	
Storeys below ground	0			
Foundation type:	other (describe)		if Foundation type is other, describe:	concrete slab with perimeter footing
Building height (m):	2.70		height from ground to level of uppermost seismic mass (for IEP only) (m):	
Floor footprint area (approx):	25			
Age of Building (years):			Date of design:	
Strengthening present?			If so, when (year)?	
			And what load level (%g)?	
Use (ground floor):			Brief strengthening description:	
Use (upper floors):				
Use notes (if required):				
Importance level (to NZS1170.5):				

Gravity Structure

Gravity System:	load bearing walls		
Roof:	timber framed	rafter type, purlin type and cladding	Timber rafters & purlins, Galvanised corrugated iron cladding for original construction, H3 plywood for extension.
Floors:	concrete flat slab	slab thickness (mm)	
Beams:			
Columns:			
Walls:			

Lateral load resisting structure

Note: Define along and across in detailed report!

Lateral system along:	other (note)		describe system	All cells filled masonry
Ductility assumed, μ:	1.25			
Period along:	0.40	0.00	estimate or calculation?	estimated
Total deflection (ULS) (mm):			estimate or calculation?	
maximum interstorey deflection (ULS) (mm):			estimate or calculation?	
Lateral system across:	other (note)		describe system	All cells filled masonry
Ductility assumed, μ:	1.25			
Period across:	0.40	0.00	estimate or calculation?	estimated
Total deflection (ULS) (mm):			estimate or calculation?	
maximum interstorey deflection (ULS) (mm):			estimate or calculation?	

Separations:

leave blank if not relevant

north (mm):	
east (mm):	
south (mm):	
west (mm):	

Non-structural elements

Stairs:	
Wall cladding:	
Roof Cladding:	
Glazing:	
Ceilings:	
Services(list):	

Available documentation

Architectural	none	original designer name/date	
Structural	partial	original designer name/date	Extension only, Chch City Design
Mechanical		original designer name/date	
Electrical		original designer name/date	
Geotech report	none	original designer name/date	

Damage

Site:
(refer DEE Table 4-2)

Site performance:	No damage observed	Describe damage:	
Settlement:		notes (if applicable):	
Differential settlement:		notes (if applicable):	
Liquefaction:		notes (if applicable):	
Lateral Spread:		notes (if applicable):	
Differential lateral spread:		notes (if applicable):	
Ground cracks:		notes (if applicable):	
Damage to area:		notes (if applicable):	

Building:

	Current Placard Status:			
Along	Damage ratio:	100%	Describe how damage ratio arrived at:	
	Describe (summary):			
Across	Damage ratio:			
	Describe (summary):			
Diaphragms	Damage?:		Describe:	
CSWs:	Damage?:		Describe:	
Pounding:	Damage?:		Describe:	
Non-structural:	Damage?:		Describe:	

$$Damage\_Ratio = \frac{(\%NBS\,(before) - \%NBS\,(after))}{\%NBS\,(before)}$$

Recommendations

	Level of repair/strengthening required:	minor non-structural	Describe:	Seal one crack, Repair entry screen block
	Building Consent required:		Describe:	
	Interim occupancy recommendations:	full occupancy	Describe:	
Along	Assessed %NBS before:	45% ##### %NBS from IEP below	If IEP not used, please detail assessment methodology:	Quantitative
	Assessed %NBS after:			
Across	Assessed %NBS before:	45% ##### %NBS from IEP below		
	Assessed %NBS after:			

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