[redacted]

From: Dave Charters <dave@dclconsulting.co.nz>
Sent: Sunday, 13 March 2016 12:22 p.m.
To: [redacted]
Cc: [redacted]
Subject: CASTLE STREET BALCONY COLLAPSE.
Attachments: Report v2 draft.pdf

Good morning [redacted].

My completed report is attached for your comment. I look forward to discussing this further with you in Due Course. I completed this work over the weekend as I am on a course on Monday and out of town on Tuesday and Wednesday morning. I shall, however, be intermittently available on my cell phone and will monitor my emails.

Dave Charters

DCL Consulting

EXPERIENCE : VALUE : SERVICE : PROFESSIONALISM : INTEGRITY
Contact Details: DDI 03 482 1138 : Cell 021 313135

598 CASTLE STREET, DUNEDIN

INVESTIGATION INTO BALCONY COLLAPSE

Table of Contents

1 Introduction.

1.1 History

1.1.1 On Friday 4th March 2016 an event was held at 598 Castle Street. This was a band, Six60, performing outdoors. The buildings in the vicinity form a closed quadrangle and comprise blocks of Student accommodation. During the event students packed the quadrangle in front of the stage and took advantage of the vantage point on the balconies at first floor level on units 4, 5, 6 & 7. During the performance the balcony to unit 6 collapsed causing injury to a number of students.

1.2 Brief

1.2.1 DCL Consulting was briefed by the Dunedin City Council, (DCC), on Monday 7th March to carry out an investigation of the collapse. Whilst the brief developed during the week as the investigation progressed, the fundamental questions to be addressed by DCL Consulting were:

1.2.1.1 To examine the remainder of the balconies at the location as a matter of urgency,

1.2.1.2 To advise on the safety of continued use of the balconies,

1.2.1.3 To determine the likely cause of collapse,

1.2.1.4 To determine whether the construction of the balconies was code compliant at the time of construction.

1.3 Approach

1.3.1 The site was inspected on the morning of the 7th March. At that time the balcony was laid on the ground and was also inspected.

1.3.2 A 3-D Video of the event was being filmed by Animation Research. This provided valuable information on the mechanism of collapse and loading at the time of collapse. This was viewed at the Dunedin Central Police Station on the 9th and 11th March.

1.3.3 The balcony was inspected at the Dunedin Central Police Station on the 9th and 11th March.

1.3.4 The Property Manager associated with the units was interviewed and added information relating to previous balcony damage at the site and communication with Students prior to the event.

1.3.5 Calculations were carried out to determine the capacity of the balconies using current design information and design information contemporary with the construction.

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1.4.1 This report is logically structured setting out:

1.4.1.1 Brief description of the buildings,

1.4.1.2 Inspection findings,

1.4.1.3 The Animation Research Video,

1.4.1.4 Discussions with involved persons,

1.4.1.5 Design Documentation,

1.4.1.6 Calculation results,

1.4.1.7 Level of Compliance with contemporary Design Documentation,

1.4.1.8 Suggested Cause of Collapse,

1.4.1.9 Further recommended investigation.

1.4.2 The consideration of item 1.4.1.7 also answers any question regarding the administration of the Building Consent for the buildings.

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2.1 Scope of Inspection

2.1.1 This report is circumscribed to the balcony construction only. No comment is offered or inferred on the adequacy or compliance level of any other part of the buildings. Only imposed loads were considered and there was no assessment of snow or wind load which would both be expected to be significantly lower than imposed loads. The inspections were carried out by visual means only and no opening up or testing of any kind was carried out.

3 Description of Buildings.

3.1 Form

3.1.1 The building development comprises three blocks of student accommodation. There are eight units and each has six bedrooms. The buildings have two floors, ground and first. Units 1 & 2 form one block, Units 3 to 8 form the second with unit 9 forming a building. Units 1, 2, 4, 5, 6, & 7 have balconies at first floor level.

3.1.2 The buildings are timber framed and construction followed a Building Consent dated December 1999. The basis of consent was NZS 3604:1999 which is a "Deemed to Satisfy" Document in terms of the Building Act.

3.1.3 For the purposes of this report the right hand end of the balcony would be the right hand end facing the building.

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4.1 Unit 6 Balcony.

4.1.1 This was inspected on the ground adjacent to unit 7 on the 7th March and at the Dunedin Central Police Station on the 7th and 9th March.

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4.1.9 The balustrade was found in other intact balconies to be excessively flexible.

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5.1 General Observations.

5.1.1 The animation research video was viewed at the Dunedin Central Police Station on the 9th and 11th March.

5.1.2 The video shows the balcony at unit 6 before and during the collapse.

5.1.3 The balcony is occupied by 16 – 17 individuals. This was estimated by others using 3-D glasses. DCL Consulting accept this figure. As the right hand end of the balcony faced the stage it can be expected that the students would congregate at that end.

5.1.4 As a sound track starts, two individuals are seen to move with the beat of the music. They do not appear to be jumping. For clarity, the meaning here is that their feet do not appear to be leaving the balcony surface. Others may be moving with the beat of the music to a lesser extent.

5.1.5 The two individuals can be seen to move a couple of times. On approximately the third movement the balcony collapsed starting at the right hand end. The balcony did not collapse instantaneously, but collapsed progressively from the right hand end which dropped first. The sound of the fracture was not a single crack but was more of a very rapid ripping sound as each joist failed.

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6.1 Property Manager.

6.1.1 There had been problems with apparently deliberate vandalism some years ago where a group of individuals jumped up and down on the balcony to unit 2. The balcony did not collapse but repairs were required.

6.1.2 Following this incident there was a cautious approach to the balcony loading during the event. The tenants of all flats 3 to 9 were warned to keep their flats locked during the event and that only the occupants of each unit should be allowed on the balconies. This would restrict the numbers on the balconies to six.

6.1.3 Further discussion with students took place and the limit was relaxed to an absolute maximum of eight. That was set out as the flat occupants plus two guests.

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7.1 Contemporary Standards.

7.1.1 The New Zealand Standard for the design of buildings, NZS 4203:1992 "Code of Practice for General Structural Design and Design Loadings for Buildings, (Known as the Loadings Standard). This document sets out loadings for various elements of buildings and the procedure for calculating applied loads in the design of building components such as joists and the like. This standard is now superseded. The loading for the design of balconies taken from this document is $2kN/m^2$. This is the value of load for Domestic Use buildings. Clause 3.4.1.5 of this document sets out that loadings associated with the assembly of persons should be separately assessed. The design of balusters around balconies must sustain, inter alia, a horizontal load on the top rail of 0.36kN/m.

7.1.2 The Timber Structures Standard, NZS 3603:1993. This document sets out procedures for the design of all timber components for use in buildings. This document is used for specific design and the use of this document is intended to be limited to appropriately qualified professional engineers.

7.1.3 The Timber Structures Standard, NZS3604:1999. This Standard provides methods and details for the design and construction of timber framed buildings not requiring specific engineering design. This Standard is intended to be an Acceptable Solution in terms of the Building Code. This document is necessarily prescriptive in nature. The copy of this document used for this assessment exercise included a number of amendments that were dated after the Building Consent was granted. This inevitably leads to difficulty in precisely assessing compliance.

7.2 Current Standards.

7.2.1 AS/NZS 1170.0 Part 0: General Principles.

7.2.2 AS/NZS 1170.1 Part 1: Permanent, imposed and other actions. This document sets out that the loading intensity for a balcony with a potential fall exceeding 1.0m is 2kN/m^2. This standard directs the user to examine Category C of table 3.1. Section C deals with the loadings associated with areas where people may congregate. Section C5 deals with areas susceptible to overcrowding. The baluster loading in this standard is 0.75kN/m.

7.2.3 The Timber Structures Standard remains valid, albeit with a number of amendments. This Standard is under review at this time.

7.2.4 The Timber Structures Standard, NZS3604: 2011. This Standard is similar in purpose and relevance to its 1999 predecessor.

8 Calculation Results.

8.1 Contemporary Design Documents.

8.1.1 The Scope and Interpretation of NZS 3604:1999 is confirmed as having applicability to the structure in question.

8.1.2 The floor structure was checked to NZS 3603 and found adequate in terms of its capacity to sustain a loading of 2kN/m2. The current and contemporary loadings standards also included a point load of 1.8kN to be applied at the most onerous location. The balcony joists were not adequate to sustain this loading.

8.1.3 The cantilever detail was checked against the prescribed details in NZS 3604:1999. This document appears to omit consideration of the point load requirement discussed in section 8.1.2 above. Section 7.1.5 of NZS 3604: 1999 deals with cantilevered floor joists. Section 7.1.5.1 allows dry stresses to be used in design. The loading of 2kN/m2 is confirmed in section 7.1.5.1. and Table 7.2. table 7.2 allows a maximum projection of 0.95m from the face of the support for timber grade No 1 Framing and MSG6. The maximum projection Grade VSG8 and MSG8 is 1.2m.

8.2 Current Design Documents.

8.2.1 The Scope and Interpretation of NZS 3604:2011 is confirmed as having applicability to the structure in question.

8.2.2 The specific assessment in accordance with NZS 3603 remains largely unchanged. The Balcony is satisfactory under the distributed loading of 2.0kN/m^2 but not under the 1.8kN point loading.

8.3 Baluster Capacity.

8.3.1 The baluster capacity was calculated in accordance with NZS 3603. The cut out at the base of the posts reduced the capacity of the baluster to a point well below the requirement from NZS 4203. The connection between baluster posts and balcony joists was not evaluated but is considered suspect. NZS 3604: 1999 included advice on balustrade design but this has been withdrawn and could not be assessed.

8.4 Baluster/Deck interaction.

8.4.1 The forces imposed on the baluster posts would be transmitted in some part to the deck joists. Whilst recognising that the posts are understrength and the connections are suspect, it must be recognised that these forces are additive to the gravity loads on the deck.

9 Level of Compliance.

9.1 Floor Structure.

9.1.1 The measured cantilever projection from the face of the support is approximately 1.25m. this is marginally in excess of the maximum under NZS 3604 for timber grades VSG8 and MSG8. These grades were adopted with NZS 3603 amendment 4 in 2005, after the date of the construction. The No 1 Framing grade in the edition of NZS 3603 current at the time of construction has a higher characteristic stress in bending than the VSG8 and MSG8 grades in the 2005 amendment. It appears reasonable to therefore assess the maximum cantilever projection at 1.2m and the construction on site exceeds this by 4% which is not significant.

9.1.2 The tabulated values of maximum projection do not appear to recognise the addition of baluster post forces to the deck forces.

9.1.3 It is a recommendation of this report that expert assessment of the timber is carried out to reach an authoritative stance on the grade used.

9.2 Baluster.

9.2.1 By any analysis the baluster capacity does not meet contemporary or current design codes. This did not contribute in any way to the collapse of the balcony.

9.3 Building Consent.

9.3.1 In terms of gravity loads the construction is very close to the prescribed cantilever projection maxima set out in NZS 3604. It appears reasonable therefore for a Building Consent to have been granted.

9.3.2 The baluster capacity is significantly less than required under NZS 3603 and it is recognised that it has not been built in accordance with the drawings. As noted above, this did not contribute to the balcony collapse.

10 Suggested Cause of Collapse.

10.1 General.

10.1.1 In considering the cause of collapse, the mechanism of collapse set out earlier must be recognised. To recap, this was a progressive collapse starting at the right hand end of the balcony.

10.1.2 The maximum joist spacing of 450mm was found at the right hand end of the balcony. This exceeds the design spacing, (400mm), by 13%.

10.1.3 The addition of forces from the balustrade post into the joist at the right hand end would have further surcharged that joist.

10.1.4 The design uniformly distributed loading on the balcony was 2kN/m^2. Estimating the average mass of the balcony occupants at 75kg and considering the gross area to be 5m^2, this equates to 13.6 people. The occupancy of the balcony at the time of the incident has been estimated at 16 or 17 people from the Animation Research video. This is an overload factor of 25%. Whilst subject to interpretation, it is likely that the students were crowded into the right hand end of the balcony as the view to the band was in that direction. The local intensity of loading may therefore have been higher. This case is considered in AS/NZS 1170.1 and a load of 4kN/m^2 is prescribed in that document for areas where people may congregate. This generates an overload factor of 100%.

10.1.5 Whilst the occupants were not jumping, there was a measure of movement to the beat of the music. It is graphically telling that on the third, (approximately), movement the balcony collapsed from the right hand end. The movement would add a measure of dynamic loading that amplified the static gravity loading.

10.1.6 It is the conclusion of this report that the collapse was caused by a combination of these factors and can be summed up simply as the balcony being critically overloaded beyond its ultimate capacity.

10.1.7 The corollary to point 10.1.6 is that perhaps the design loading for a balcony in this situation was unacceptably low.

11 Recommendations for Further Action & Investigation.

11.1 Timber Strength.

11.1.1 It is recommended that three intact joists are extracted from the balcony and tested to destruction to estimate the Characteristic Bending Stress.

11.1.2 Notches, (see section 4.1.2), cause a rise in localised stress. This is covered in NZS 3603 in section 3.2.6. this does not appear to have been considered in NZS 3604. Research into the effect of notches in these circumstances to the weakening effect is recommended.

11.1.3 The effect of nailing on the section capacity should be investigated.

11.1.4 A Timber expert should be engaged to assess the timber grade used in the balcony joists.

11.1.5 This report should be forwarded to MBIE.

11.1.6 This report should be forwarded to the drafting committee examining update proposals for NZS 3603.

11.1.7 Similarly, this report should be forwarded to the NZS 3604 drafting Committee via SNZ. Timber cantilever balconies have a brittle failure mode giving no warning of impending failure. At least a cautionary note expecting users to evaluate likely loadings in excess of the basic 2kN/m^2 should be added.

From: [redacted]
To: Simon Pickford
Subject: Balcony collapse
Date: Tuesday, 15 March 2016 11:35:00 a.m.
Attachments: image001.png

Hi Simon

Just an FYI, I have provided MBIE with a copy of our engineers report for the balcony.

I also had a good conversation with Dave from MBIE, who is doing the investigation, and he says that their findings are likely to be the same as ours i.e. too many students on the balcony and no fault attributed to the DCC.

On a completely different topic, [redacted]

[redacted]

[redacted]

[redacted]
Regulatory Services
Dunedin City Council
50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3366
Email: [redacted]
- Register online to receive regular e-newsletter updates from Building Services
www.dunedin.govt.nz/bs-newsletter

[redacted]

From: Dave Charters <dave@dclconsulting.co.nz>
Sent: Thursday, 17 March 2016 04:48 p.m.
To: [redacted]
Subject: Castle Street.
Attachments: Report v3 draft.pdf

Hi [redacted]

I had a think about your comment and I can see that a little more explanation in 10.1.7 would be helpful. Anticipating your concerns I have added to section 10.1.7 and report version 3 is attached. We can discuss this tomorrow, but as I am unavailable tomorrow morning I thought some ideas now would assist.

Dave Charters

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9.3 Building Consent.

9.3.1 In terms of gravity loads the construction is very close to the prescribed cantilever projection maxima set out in NZS 3604. It appears reasonable therefore for a Building Consent to have been granted.

9.3.2 The baluster capacity is significantly less than required under NZS 3603 and it is recognised that it has not been built in accordance with the drawings. As noted above, this did not contribute to the balcony collapse.

10 Suggested Cause of Collapse.

10.1 General.

10.1.1 In considering the cause of collapse, the mechanism of collapse set out earlier must be recognised. To recap, this was a progressive collapse starting at the right hand end of the balcony.

10.1.2 The maximum joist spacing of 450mm was found at the right hand end of the balcony. This exceeds the design spacing, (400mm), by 13%.

10.1.3 The addition of forces from the balustrade post into the joist at the right hand end would have further surcharged that joist.

10.1.4 The design uniformly distributed loading on the balcony was 2kN/m^2. Estimating the average mass of the balcony occupants at 75kg and considering the gross area to be 5m^2, this equates to 13.6 people. The occupancy of the balcony at the time of the incident has been estimated at 16 or 17 people from the Animation Research video. This is an overload factor of 25%. Whilst subject to interpretation, it is likely that the students were crowded into the right hand end of the balcony as the view to the band was in that direction. The local intensity of loading may therefore have been higher. This case is considered in AS/NZS 1170.1 and a load of 4kN/m^2 is prescribed in that document for areas where people may congregate. This generates an overload factor of 100%.

10.1.5 Whilst the occupants were not jumping, there was a measure of movement to the beat of the music. It is graphically telling that on the third, (approximately), movement the balcony collapsed from the right hand end. The movement would add a measure of dynamic loading that amplified the static gravity loading.

10.1.6 It is the conclusion of this report that the collapse was caused by a combination of these factors and can be summed up simply as the balcony being critically overloaded beyond its ultimate capacity.

10.1.7 The corollary to point 10.1.6 is that perhaps the design loading for a balcony in this situation was unacceptably low. It was noted in section 7.2.2 that the current loadings code, (AS/NZS 1170.1), directs the user to consider Category C of Table 3.1. this section deals with loadings associated with areas where people may congregate and the loading intensity under this section would be 4kN/m^2. The point here is that a loading of 4kN/m^2 would be a safer loading to adopt for balconies, particularly in the student precinct. This loading intensity is consistent with Occupancy A2 which caters for hospitals, hotels and the like. This comment does not detract from section 9.3.1 where it was noted that on the basis of contemporary documentation it was correct to issue a Building Consent at that time.

11 Recommendations for Further Action & Investigation.

11.1 Timber Strength.

11.1.1 It is recommended that three intact joists are extracted from the balcony and tested to destruction to estimate the Characteristic Bending Stress.

11.1.2 Notches, (see section 4.1.2), cause a rise in localised stress. This is covered in NZS 3603 in section 3.2.6. this does not appear to have been considered in NZS 3604. Research into the effect of notches in these circumstances to the weakening effect is recommended.

11.1.3 The effect of nailing on the section capacity should be investigated.

11.1.4 A Timber expert should be engaged to assess the timber grade used in the balcony joists.

11.1.5 This report should be forwarded to MBIE.

11.1.6 This report should be forwarded to the drafting committee examining update proposals for NZS 3603.

11.1.7 Similarly, this report should be forwarded to the NZS 3604 drafting Committee via SNZ. Timber cantilever balconies have a brittle failure mode giving no warning of impending failure. At least a cautionary note expecting users to evaluate likely loadings in excess of the basic 2kN/m^2 should be added.

[redacted]

From: [redacted]s
Sent: Thursday, 31 March 2016 12:56 p.m.
To: Simon Pickford; Adrian Blair; [redacted]
Subject: draft media release re balcony collapse
Attachments: xMR Balcony collapse investigation report released.doc

Importance: High

Hi all

Here is the first draft for you to review and add to/amend. I do have a couple of other small questions so I will try to catch up with one of you this afternoon. I presume you intend to have the report on the website – do you want me to talk to the web team about this?

Also, are you intending to give the property owner, University and Police etc a heads up on the report and release? I can make sure the Uni comms team get a copy of the release and can try to get it to national police comms (there is no longer a local comms manager), but you may want to let the organisations know before that. Happy to discuss.

Thanks

[redacted]
Communications Team Leader, Council Communications and Marketing
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 474 3433
Email: [redacted]

[redacted]

From: David Charters <dave@dclconsulting.co.nz>
Sent: Thursday, 31 March 2016 10:17 a.m.
To: [redacted]
Subject: RE: Castle Street.

Now is good.[redacted]

Dave.

From: [redacted]
Sent: Thursday, 31 March 2016 9:47 AM
To: David Charters <dave@dclconsulting.co.nz>
Subject: RE: Castle Street.

Hi Dave

Any chance we can have a talk about the report, just a couple of changes we would like to see.

[redacted]

[redacted]
Regulatory Services
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3366
Email: [redacted]

- Register online to receive regular e-newsletter updates from Building Services www.dunedin.govt.nz/bs-newsletter

Please consider the environment before printing this e-mail

From: Dave Charters [mailto:dave@dclconsulting.co.nz]
Sent: Thursday, 17 March 2016 4:48 p.m.
To: [redacted]
Subject: Castle Street.

Hi [redacted]

I had a think about your comment and I can see that a little more explanation in 10.1.7 would be helpful. Anticipating your concerns I have added to section 10.1.7 and report version 3 is attached. We can discuss this tomorrow, but as I am unavailable tomorrow morning I thought some ideas now would assist.

Dave Charters

DCL Consulting

EXPERIENCE : VALUE : SERVICE : PROFESSIONALISM : INTEGRITY
Contact Details: DDI 03 482 1138 : Cell 021 313135

From: [redacted]
To: David Charters
Subject: RE: Castle Street.
Date: Thursday, 31 March 2016 11:06:00 a.m.
Attachments: image002.png

Thanks Dave

I'll let you know what my people think?

[redacted]

[redacted]
Regulatory Services
Dunedin City Council
50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
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Sent: Thursday, 31 March 2016 10:47 a.m.
To: [redacted]
Subject: RE: Castle Street.

Hi [redacted]

I have made the changes we discussed to my report and it is attached. You should particularly note the last sentence of 10.1.6 which notes that the issue of a Building Consent was perfectly in order with contemporary documentation.

Dave Charters

email logo

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Dave Charters

email logo

EXPERIENCE : VALUE : SERVICE : PROFESSIONALISM : INTEGRITY
Contact Details: DDI 03 482 1138 : Cell 021 313135

From: [redacted]
To: David Charters
Cc: Adrian Blair
Subject: RE: Castle Street.
Date: Thursday, 31 March 2016 05:14:00 p.m.
Attachments: image002.png

Hi Dave

Looking good.

However our lawyers were wondering if there is any chance you could add the following after 4kN/m2. To para 10.1.6?

'Designing to this standard is not currently a requirement of the NZ Building Code, for this type of residential building'

Happy to discuss

[redacted]

[redacted]
Regulatory Services
Dunedin City Council
50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
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email logo

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[redacted]

[redacted]
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Dave Charters

[redacted]

From: Kristy Rusher
Sent: Friday, 1 April 2016 05:07 p.m.
To: David Charters; [redacted]
Subject: RE: Castle Street Balcony Collapse.

Hi David,

Your amendments deal with the issue that we discussed on the phone today. [redacted] I think this is now ready for publication after you have advised MBIE of our intention to do so.

Regards, Kristy Rusher

From: David Charters [mailto:dave@dclconsulting.co.nz]
Sent: Friday, 1 April 2016 4:52 p.m.
To: Kristy Rusher; [redacted]
Subject: Castle Street Balcony Collapse.

Hello Kristy, [redacted].

Attached my report version 5. I added to my section 11 discussing Recommendations for Further Action and Investigation, para 11.1.5. this previously noted that my report should be forwarded to MBIE. I have expanded on that to step through the process that a Consent cannot be declined under the Building Act if the application is made under NZS 3604. This seems an appropriate place to include this point.

As I mentioned, I shall be out of the Office on Monday and Tuesday. I shall be available tomorrow and willing to work on this if further tuning is required.

Dave Charters

DCL Consulting

EXPERIENCE : VALUE : SERVICE : PROFESSIONALISM : INTEGRITY
Contact Details: DDI 03 482 1138 : Cell 021 313135

Arlene Goss

From: Kristy Rusher
Sent: Friday, 1 April 2016 05:07 p.m.
To: David Charters; [redacted]
Subject: RE: Castle Street Balcony Collapse.

Hi David,

Your amendments deal with the issue that we discussed on the phone today. [redacted] I think this is now ready for publication after you have advised MBIE of our intention to do so.

Regards, Kristy Rusher

From: David Charters [mailto:dave@dclconsulting.co.nz]
Sent: Friday, 1 April 2016 4:52 p.m.
To: Kristy Rusher; [redacted]
Subject: Castle Street Balcony Collapse.

Hello Kristy,[redacted]

Attached my report version 5. I added to my section 11 discussing Recommendations for Further Action and Investigation, para 11.1.5. this previously noted that my report should be forwarded to MBIE. I have expanded on that to step through the process that a Consent cannot be declined under the Building Act if the application is made under NZS 3604. This seems an appropriate place to include this point.

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Dave Charters

DCL Consulting

EXPERIENCE : VALUE : SERVICE : PROFESSIONALISM : INTEGRITY
Contact Details: DDI 03 482 1138 : Cell 021 313135

[redacted]

From: [redacted]
Sent: Monday, 4 April 2016 12:31 p.m.
To: Simon Pickford; Adrian Blair; [redacted]; Kristy Rusher
Subject: latest!!
Attachments: MR2 Balcony collapse investigation report released.doc

Importance: High

Hi everyone

After some input from the Mayor and CEO, here is the latest (and hopefully final) version. We have lifted the key messages as they were getting lost.
If you have any issues, please get hold of Simon/me asap as we would like to get this out about 1pm.

Thanks

[redacted]
Communications Team Leader, Council Communications and Marketing
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 474 3433
Email: [redacted]

Balcony collapse due to overloading

Dunedin (Monday, 4 April 2016) – An independent report has found the recent balcony collapse in North Dunedin was due to overloading.

The Dunedin City Council launched an investigation after18 people were injured, two seriously, after a balcony collapsed during a concert at 598 Castle Street, a property with student flats, on 4 March.

DCC General Manager Services and Development Simon Pickford says DCL Consulting has concluded the cause of the collapse could be summed up as "the balcony being critically overloaded beyond its ultimate capacity".

The balcony met the building code requirements when it was built and the building has building consent.

Mr Pickford says, "While it's important to know the balcony was built to code, the key issues centre on the event itself and where it was held.

"This was a great initiative where students were enjoying themselves. However, this wasn't a suitable location for the concert and as a city we need to work out the best way for students to have fun while they are in Dunedin, but to do it safely.

"We are all very aware students were seriously hurt as a result of this incident and we want to reduce the chances of anything like this happening again."

The DCC is discussing these issues with the University of Otago, the Otago University Students' Association, emergency services and other stakeholders.

In the report, the consultant has made recommendations for further action, including that the balcony materials be assessed to see if further strengthening of the remaining flat balconies would be prudent. Mr Pickford says the DCC had already suggested the property owner obtain independent engineering advice and strengthen the other balconies.

The report states a different loading standard for balconies, particularly in the student precinct, could be considered. The DCC has already referred this point to the Ministry of Business, Innovation and Employment (MBIE) for further consideration and suggested MBIE looks at this option to allow councils to enforce a higher standard than under the current Building Act.

The Ministry will also receive the full report, as will the owner of the flat with the collapsed balcony and other property owners at that address.

The DCC will also write to the Otago Property Investors Association and local property management companies suggesting they encourage members who own high density residential buildings with balconies to read the report and decide if further action is required. The DCC is also giving advice to people making new consent applications for similar high density accommodation buildings.

A copy of the report is available at www.dunedin.govt.nz/balcony.

For more information
Simon Pickford
General Manager Services and Development
Phone 03 474 3707

From: David Charters
To: [redacted]
Subject: Castle Street.
Date: Wednesday, 6 April 2016 11:19:09 a.m.

Good morning [redacted]

[redacted] from [redacted] was on the phone. He wanted me to clarify the meaning of clause 8.1.2 of my report. I have reproduced this below. His query related to the extent of the statement that, “The balcony joists were not adequate to sustain this loading”. I can confirm that in this clause of my report that comment related to the capacity to carry the 1.8kN point load. As noted elsewhere in my report this point load requirement has not been included in NZS 3604 which formed the basis of the Building Consent.

“The floor structure was checked to NZS 3603 and found adequate in terms of its capacity to sustain a loading of 2kN/m2. The current and contemporary loadings standards also included a point load of 1.8kN to be applied at the most onerous location. The balcony joists were not adequate to sustain this loading”.

Naturally, I refused to comment, but I did say that I would pass on his query to you, along with the answer.

Dave Charters

email logo

EXPERIENCE : VALUE : SERVICE : PROFESSIONALISM : INTEGRITY
Contact Details: DDI 03 482 1138 : Cell 021 313135

From: Simon Pickford
To: [redacted]
Cc: Adrian Blair
Subject: Re: Balcony Collapse - Castle St
Date: Wednesday, 6 April 2016 12:36:14 p.m.
Attachments: image001.png

Hi [redacted]

No - could you please?

Thanks

Simon

Sent from my iPad

On 6/04/2016, at 11:26 AM, [redacted] wrote:

> Hi Simon
>
> Have we sent a copy of our report to the Police?
>
> [redacted]
>
> [redacted]
> Regulatory Services
> **Dunedin City Council**
> 50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
> Telephone: 03 477 4000; Fax: 03 474 3366
> Email: [redacted]
> - Register online to receive regular e-newsletter updates from Building Services
> www.dunedin.govt.nz/bs-newsletter
> <image001.png> <image002.jpg><image003.jpg><image004.jpg>
>
> Please consider the environment before printing this e-mail
>
> ---
>
> **From:** KARL, Desmond (Des) [mailto:Desmond.Karl@police.govt.nz]
> **Sent:** Tuesday, 5 April 2016 8:59 a.m.
> **To:** [redacted]
> **Subject:** Balcony Collapse - Castle St
>
> Dear Mr [redacted]
>
> The police inquiry into the collapse of the balcony in Castle Street has been passed to me to continue with.
>
> I noted the media release last night advising a report into the matter had been completed, apparently by DCL Consulting.
>
> Can you please advise who from the Council was liaising with the [redacted] family

prior to the report being released to the media. I am reluctant to speak to the family without knowing what they have already been told with regard to the report.

And on that topic, could you please forward me a copy of the report by DCL Consulting also please.

Kind regards

Detective Des Karl
Criminal Investigation Branch
Dunedin Central Police | 25 Great King St, Private Bag 1924 | Dunedin
☎ | 021 1914960 | Fax 03 479 9361

Understanding and responding to the drivers of crime

From: [redacted]
To: Desmond.Karl@police.govt.nz
Cc: Adrian Blair; Simon Pickford
Subject: RE: Balcony Collapse - Castle St
Date: Wednesday, 6 April 2016 01:34:00 p.m.
Attachments: Report v5 draft.pdf
image001.png

Hi Des

Please find attached a copy of the DCC report into the balcony collapse also please note that we have provided a copy to MBIE.

To the best of my knowledge no one from the DCC has spoken to the [redacted] family.

If we can be of further assistance please contact me on [redacted] or by email

[redacted]

[redacted]
Regulatory Services
Dunedin City Council
50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3366
Email: [redacted]
- Register online to receive regular e-newsletter updates from Building Services
www.dunedin.govt.nz/bs-newsletter

Please consider the environment before printing this e-mail

From: KARL, Desmond (Des) [mailto:Desmond.Karl@police.govt.nz]
Sent: Tuesday, 5 April 2016 8:59 a.m.
To: [redacted]
Subject: Balcony Collapse - Castle St

Dear Mr [redacted]

The police inquiry into the collapse of the balcony in Castle Street has been passed to me to continue with.

I noted the media release last night advising a report into the matter had been completed, apparently by DCL Consulting.

Can you please advise who from the Council was liaising with the [redacted] family

prior to the report being released to the media. I am reluctant to speak to the family without knowing what they have already been told with regard to the report.

And on that topic, could you please forward me a copy of the report by DCL Consulting also please.

Kind regards

Detective Des Karl
Criminal Investigation Branch
Dunedin Central Police | 25 Great King St, Private Bag 1924 | Dunedin
☎ | 021 1914960 | Fax 03 479 9361

Understanding and responding to the drivers of crime

[redacted]

From: Dave Gittings <Dave.Gittings@mbie.govt.nz>
Sent: Monday, 11 April 2016 09:14 a.m.
To: [redacted]
Subject: RE: 598 Castle Street Balcony Collapse : DCC Report and Media Release [UNCLASSIFIED]

Hi [redacted]
I realise things have been dragging on a bit but the decision to release the Ministry's report into the balcony collapse is still sitting with the Minister. I believe he wants to make a public release this week and I would have thought it would come to you as a courtesy prior to that. I also don't believe there is anything in it that will unduly alarm DCC.

As part of the release the Minister is considering visiting the flats and wanted to know who the owner was. Is it reasonably easy for you to flick through the owners details?

Dave

From: [redacted]
Sent: Monday, 4 April 2016 3:23 p.m.
To: Dave Gittings; Peter Laurenson
Cc: Dave Charters (dave@dclconsulting.co.nz)
Subject: FW: 598 Castle Street Balcony Collapse : DCC Report and Media Release

Hello Pete and Dave

FYI

Please find attached the final version of DCC report into the balcony collapse and a copy of a press release that went out today.

Can you tell me when the MBIE report is likely to be available??

[redacted]

[redacted]
Regulatory Services
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3366
Email: [redacted]

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Please consider the environment before printing this e-mail

From: [redacted]
Sent: Monday, 4 April 2016 3:18 p.m.
To: [redacted]
Subject: 598 Castle Street Balcony Collapse : DCC Report and Media Release

Dear [redacted]

Please find attached a copy of the Dunedin City Council report and recent media release relating to the recent collapse of the balcony at 598 Castle Street for your information.

Kind regards

[redacted]
Customer & Regulatory Services
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3523.
Email: [redacted]z

Register here to receive electronic updates from the Building Services team.

Please consider the environment before printing this e-mail

[redacted]

From: [redacted]
Sent: Monday, 11 April 2016 11:37 a.m.
To: [redacted]
Cc: [redacted]
Subject: 598 Castle Street - Contact Email Details

Here you go [redacted]

Units 1 & 2 : [redacted]
Unit 3, 4, 5, 6, 7 & 8 : [redacted]
Unit 9 : [redacted]

Cheers
K

[redacted]
BCA Administrator
Customer & Regulatory Services
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3523.
Email: [redacted]

Register here to receive electronic updates from the Building Services team.

Please consider the environment before printing this e-mail

[redacted]

From: [redacted]
Sent: Monday, 11 April 2016 12:04 p.m.
To: Adrian Blair; Simon Pickford
Subject: FW: 598 Castle Street Balcony Collapse : DCC Report and Media Release [UNCLASSIFIED]

Simon / Adrian

FYI

Please see the email from MBIE below.

I have provided the requested contact information

[redacted]

[redacted]
Regulatory Services
Dunedin City Council

50 The Octagon, Dunedin; P O Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3366
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[redacted]
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Dunedin City Council

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[redacted]
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Dunedin City Council

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Telephone: 03 477 4000; Fax: 03 474 3523.
Email: [redacted]