

# **CONDITION REPORT**

## **FOR HOROWHENUA DISTRICT COUNCIL CIVIC BUILDING**



**AT  
126 – 148 OXFORD STREET  
LEVIN, 5510**

**FOR  
MICHAEL FEYEN**

**REPORT NO. BC068**

**NOVEMBER 2016**



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## 1.00 INTRODUCTION

1.01 This report is the property of Koru V.S.L and Michael Feyen only. It has been prepared solely for the party to whom it is addressed with respect to the particular brief given to us and information or advice contained within it may not be used in any other context or for any other purpose without Koru V.S.L's written agreement. No part of this report may be reproduced, stored or transmitted in any form or by any means to any third party without the written authority of Koru V.S.L.

1.01.01	<b>Party Requesting Visit:</b>	Michael Feyen
1.01.02	<b>Site:</b>	Civic Building, 126 – 148 Oxford Street Levin, 5510
1.01.03	<b>Date of Visit:</b>	23 November 2016
1.01.04	<b>Weather:</b>	Overcast.
1.01.05	<b>Registered Building Surveyor:</b>	Nick Hickling
1.01.06	<b>Date of Completion of Report:</b>	20 December 2016
1.01.07	<b>Author of Report:</b>	Nick Hickling

## 1.02 BRIEF

1.02.01 Instructions were received to arrange for an independent third party Structural Engineer to prepare a seismic assessment in respect of the Civic Building at 126 – 148 Oxford Street, Levin and to undertake a non-invasive visual inspection of the building to comment upon its current condition and highlight any areas of concern, together with providing recommendations on any remedial works required and any other investigations considered necessary.



### 1.03 PROPERTY DETAILS

- 1.03.01 The Horowhenua District Council Civic Building is a building constructed over three separate levels comprising offices and Council Chambers at ground and mezzanine levels and a basement car park. It was constructed between June 2006 and August 2009 in three stages, with Code Compliance Certificates being issued by Horowhenua District Council for Stage 1 on 5 May 2008 and Stage 3 on 21 August 2009, although that for Stage 2, the completion of the Structural Frame and Full Weather Skirt was not issued until more recently on 13 October 2015.
- 1.03.02 The building is constructed with concrete pad foundations in conjunction with strip footings and foundation beams and has a cast in-situ concrete floor slab over sand and compacted hardfill at basement level. The ground level floor is a pre-cast concrete slab with concrete screed topping, whereas that at mezzanine level is a pre-cast concrete rib floor supported off pre-cast concrete walls and columns.
- 1.03.03 The main elevations are a mixture of pre-cast retaining walls to the front and side of the building at Basement level, pre-cast panels with differing architectural finishes at ground level, fibre-cement sheet cladding with negative joints to sections of the perimeter of the terrace at Mezzanine level and aluminium composite panels forming the fascia and soffit cladding. Aluminium composite panelling is also installed as a wall cladding on either side of the main entrance.
- 1.03.04 The main roof is of steel construction and is provided with a profiled metal covering. The Terrace accessible from the lunch and social room on the mezzanine level is provided with a ceramic tile covering over a membrane as is the rear balcony at ground level. Further membrane coverings are provided above the public entrance foyer and to the internal gutters serving the main roof.
- 1.03.05 Window and door joinery is powder-coated aluminium construction with full height glazing between the pre-cast panels on the front elevation. Further glazing is provided above the public entrance foyer.



## 1.04 HISTORY/PROPERTY FILE

- 1.04.01 An inspection of the Property File documents made available to us by the Horowhenua District Council confirmed that the construction of the building was undertaken in 3 separate stages, which were each the subject of separate Building Consents (copies attached at Appendix A). Stage 1 works for the construction of the Basement and First Floor Structure, were the subject of Building Consent No. 2006/724/21 issued on 22 June 2006; Stage 2 works for the Completion of the Structural Frame and Full Weather Skirt, were covered by Building Consent No. 2006/1026/21 issued on 8 September 2006; and the Stage 3 works for the New Commercial and Internal Elements and Site Works were covered by Building Consent No. 2006/1395/21 issued on 21 December 2006.
- 1.04.02 The Property File documents also confirmed that each of the Stages of work have been issued with a Code Compliance Certificate (copies attached at Appendix B), with that to Stage 1 issued on 5 May 2008 and that to Stage 3 on 21 August 2009. It was however noted that the Code Compliance Certificate for Stage 2, which involved the completion of the structural frame and full weather skirt was not issued until more recently on 13 October 2015. The inspection record sheets in relation to the construction of the building were not included within the documents provided for our information and we are not able therefore to confirm why there was such a time lapse in obtaining that Code Compliance Certificate.
- 1.04.03 It is understood that following completion of the construction of the building staff became aware of some cracking to the ground floor slab. This was investigated by Opus International Consultants Limited who reported that they believed that the cracking was limited to the topping screed only with no cracking continuing into the structural members beneath and appeared to be localised in their Report of September 2012 (copy attached at Appendix C). They did however recognise that the crack may significantly compromise the ability for the structural system to distribute loads laterally and recommended that repairs were undertaken to the crack.



- 1.04.04 The repair works to the cracking on the ground level were the subject of Building Consent No. 2013/37 issued by Horowhenua District Council on 19 February 2013 (copy attached at Appendix D) and comprised the installation of reinforcing bars within chases cut within the screed. These works were completed and a Final Inspection was undertaken by the Horowhenua District Council on 4 April 2013, with a Code Compliance Certificate issued on 12 July 2013 (copies attached at Appendix E).
- 1.04.05 Following the announcement of proposed changes to the Building Act 2004 that may affect the strengthening timeframes for Earthquake Prone buildings the Horowhenua District Council employed Opus International Consultants Limited to undertake a Detailed Seismic Assessment of the building in order to establish whether the seismic performance of the building satisfies the Building Act 2004 minimum requirements. They found within their Report dated 20 June 2014 that the building had a likely strength in the order of 50% NBS (New Building Design Standard) when assessed as an Importance Level 4 (IL4) building and 87% NBS when assessed as a normal commercial building (IL2). Therefore, they considered that the building was not Earthquake Prone, but did however recognise that there were some areas where the detailing of the building does not have a suitable level of robustness and that it would be classified as a Moderate Earthquake Risk according to the NZSEE 2006 Risk Grading Scheme when considered as an IL4 building with post disaster function.

In 2015, a number of Councillors at Horowhenua District Council raised concerns over the condition of the building due to the presence of cracks and apparent leaks within the basement car park, which may have been related to recent earthquakes. A further assessment of the building was therefore undertaken by ISPS Consulting Engineers, who reviewed the structural documentation and the report on the structural performance provided by Opus International Consultants Limited. They advised in their Report dated 2 March 2016 that they were of the opinion that the building had a probable performance of a Grade A, low risk building for seismic actions, as defined by the NZSEE grading scheme for a normal commercial building when compared to the latest building standard and was considered safe for normal occupancy of an Importance Level 2 (IL2) structure. They did however recognise that there were



cracks that had developed in various locations which they considered to be mainly due to concrete shrinkage and would not affect the capacity of the structure to resist earthquake or gravity loads.

- 1.04.06 Subsequent to their March Report on the structural behaviour of the building ISPS Consulting Engineers also provided a Report dated 14 April 2016 (copy attached at Appendix F) outlining the remedial works they consider necessary to the concrete cracking observed. This provided two strategies to remediate the cracks and reinstate the structural integrity of the building and also indicated possible locations where other cracking could be located. These repair methods were the use of an epoxy resin injection system for smaller cracks and the routing and sealing method for larger cracks.
- 1.04.07 Koru V.S.L was approached to arrange for a third party independent Seismic Assessment to be prepared in respect of the Civic Building and to undertake an inspection to comment upon its current condition and highlight any areas of concern, together with providing recommendations on any remedial works and any other investigations required.

## 1.05 **SITE INVESTIGATION**

- 1.05.01 A visual inspection both internally and externally at the building was carried out on 23 November 2016, together with James Capper, an Advisor acting for Michael Feyen, and also in part with Garry Newton of Structural Concepts, the Independent Engineer who would be preparing a Post-Earthquake Assessment following the Culverden Earthquake of 14 November 2016 and an Independent Seismic Assessment of the building (copies of Reports relating to these are provided under separate cover).
- 1.05.02 No invasive (resistance) testing was undertaken as this can only be undertaken by drilling holes through or removing sections of the cladding, which may compromise its weathertightness and our comments are therefore limited to what could be ascertained from a visual inspection only. If there are areas that are considered to require further more destructive investigation, we will comment upon these within the report and make recommendations for such additional investigation.



1.05.03 No destructive investigation was undertaken at the time of inspection. Future opening up works may be necessary to confirm the extent of damage in suspect areas or to determine moisture ingress paths.

## 1.06 **SPECIALIST EQUIPMENT USED**

1.06.01 The following specialist equipment was utilised during the course of the site investigations:

- Photographs during the inspection were taken using a Panasonic DMC – LZ40 Digital Camera.





## 2.00 OBSERVATIONS

### 2.01 INTERNAL

2.01.01 A visual inspection of the condition of the property was undertaken to ascertain if there was any evidence of any damage that may be of concern that requires attention or further investigation. Our inspection commenced on the Mezzanine level where the Information Technology (I.T.) and Lunch and Social Room facilities were situated.

2.01.02 Cracking was noted at the junction of the plasterboard above the stair adjacent to the Social Room where it abutted a column (refer to Photos 1 and 2). This cracking is likely to be due to some movement of the building either caused by thermal movement or recent earthquakes, but is not considered to be significant. It was noted however that the fixings of the plasterboard had 'popped' and been repaired on this section in the past and when this area is redecorated the cracking evident should be repaired.



Photo 1

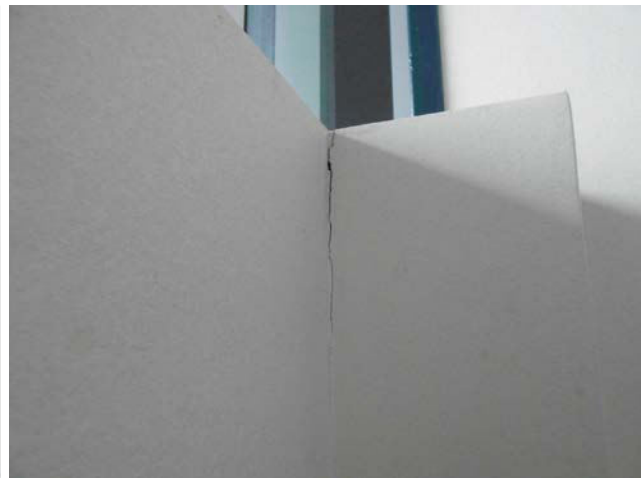


Photo 2

2.01.03 Further cracking at this level was also noted at the junction of the plasterboard wall between the Kitchen and Social Room with the structural column on the external wall (refer to Photos 3 and 4). This again illustrates some movement between the different elements and although not considered significant will require repair. Additional areas of hairline shrinkage cracking were also noted in the corners of other rooms at this Mezzanine level.



Photo 3



Photo 4

- 2.01.04 Within the Server Room at the far end of the Mezzanine level it was noted that cable trays were installed above the server, which were supported between the walls. Where these abut the stair wall, there were however open gaps through which some of the cables penetrated without any protection and this may therefore affect the fireproof integrity of this wall (refer to Photos 5 and 6).



Photo 5

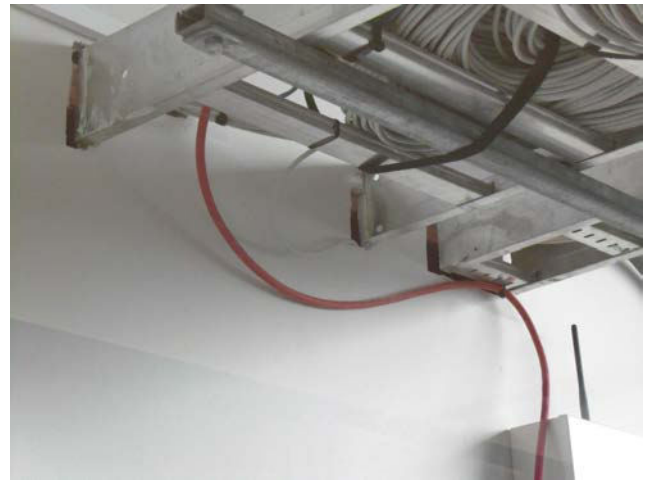


Photo 6

- 2.01.05 At ground level within the Offices some additional cracking was noted. Within Office 146 a crack was noted to the beam on the south-west side of the building approximately 1.7m from the fire exit door (refer to Photos 7 and 8), with additional cracking noted along the same elevation wall beneath the window opening in Office 148 (refer to Photo 9). Some cracking and loose plaster was also noted at the junction of the internal partition to Office 147 with the steel frame (refer to Photo 10). Again these are not considered to be significant, but are signs of general movement that has occurred to the building since its construction and will require repair and monitoring for further deterioration.



Photo 7

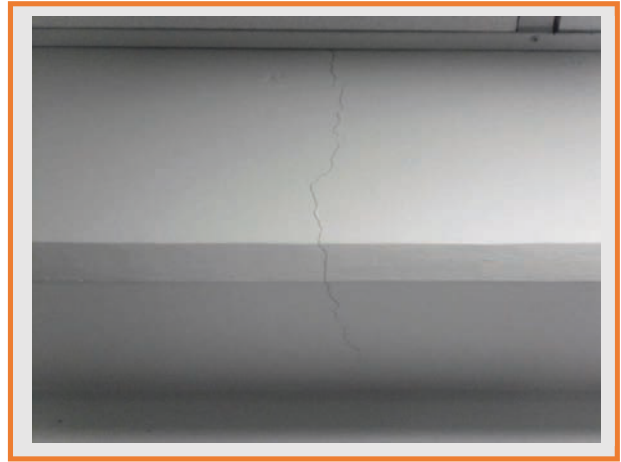


Photo 8



Photo 9



Photo 10

2.01.06 Within Office 146 some staining was also evident to the ceiling adjacent to the north west elevation and beneath the terrace area on the Mezzanine level above (refer to Photo 11). An inspection of the column adjacent to the window in this location revealed drip runs from the ceiling level down the column (refer to Photo 12) and staining and cracking of the column at the base (refer to Photo 13). This was repeated on the opposing side of the window (refer to Photos 14 and 15) and confirms therefore that moisture has penetrated from above, it is suspected through the junction of the terrace waterproofing with the structural elements above this area. It is recommended therefore that further investigation is undertaken regarding the cause of this leak to ensure that it is rectified effectively.



Photo 11



Photo 12

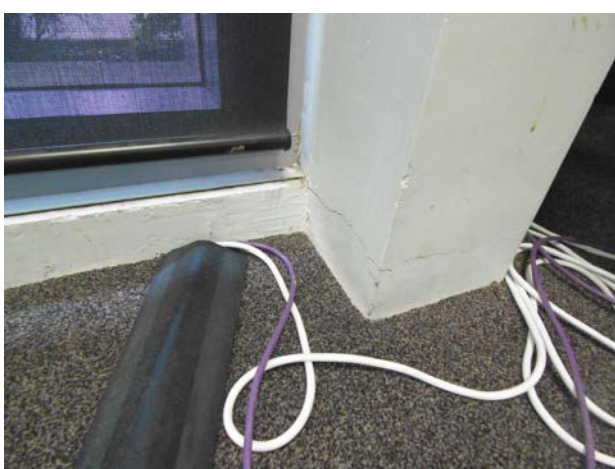


Photo 13



Photo 14

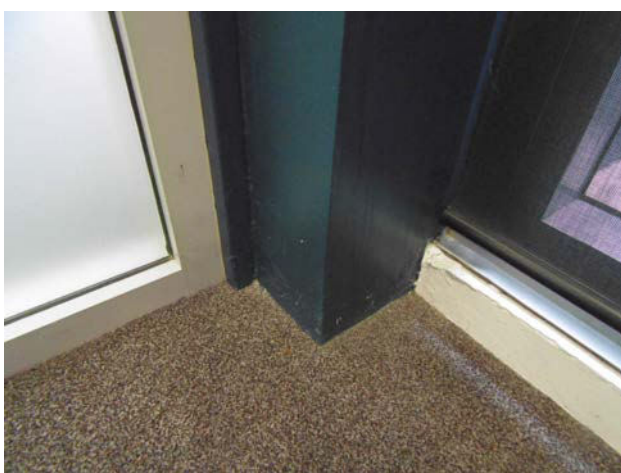


Photo 15

- 2.01.07 Within Office 136 there was evidence of moisture entry where cracking and deterioration was noted to the ceiling and the custom wood shelving has warped (refer to Photos 16 – 18). This moisture entry appears to be due to a leak from the internal gutter provided almost directly above this area and further investigation in respect of the cause and remedial works necessary should be undertaken to resolve it.



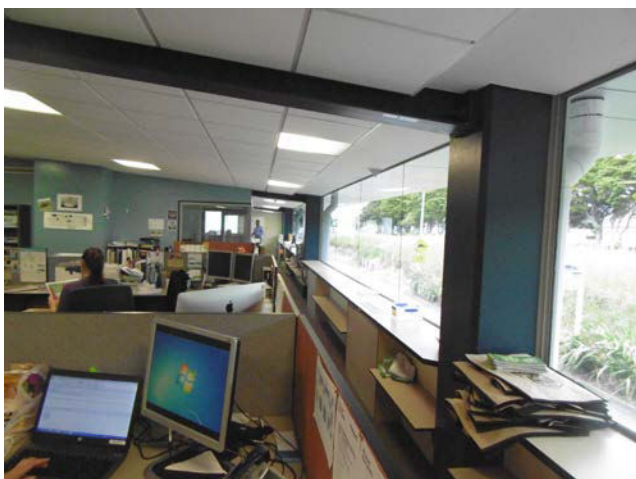


Photo 16



Photo 17



Photo 18

2.01.08 Further signs of moisture and cracking to the walls was noted within the Public Entrance Foyer. Above the entrance to Area 116 some moisture runs were noted to the wall at the time of our inspection either due to moisture entry or condensate forming on the underside of the glazing to the roof above this area (refer to Photos 19 and 20). Some cracking was also noted adjacent to the opening (refer to Photo 21).

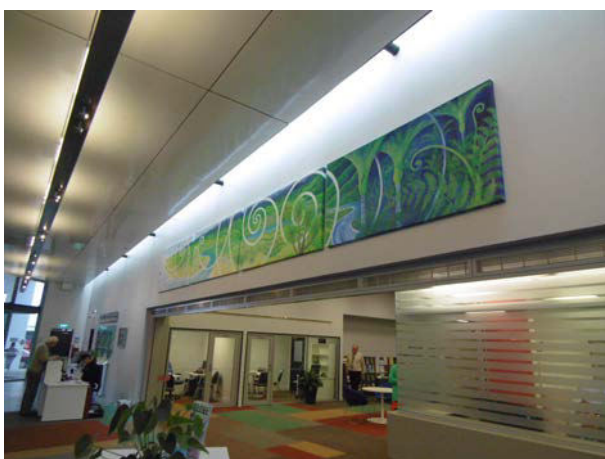


Photo 19



Photo 20



Photo 21



Photo 22

- 2.01.09 On the opposing side of the Public Entrance Foyer further moisture stain runs were noted (refer to Photos 22 – 24). These appear however to be due to moisture ingress rather than condensate and it would therefore be recommended that a more detailed inspection be undertaken to confirm their cause. This will involve inspecting the detailing of the junctions of the glazed lights and roof above this area, which was not accessible at the time of our inspection.



Photo 23



Photo 24

- 2.01.10 At Basement level a Car Park and other facilities are situated serving the building. An inspection at this level revealed evidence of cracking to the walls and floor and we are aware that previous inspections have been undertaken by both Opus International Consultants Limited and ISPS Consulting Engineers NZ Limited in respect of cracking at the building. The latter of these has also provided the Horowhenua District Council with a Report dated 14 April 2016 with recommended repairs to these cracks (refer to copy at Appendix F).



- 2.01.11 Cracking was evident adjacent to the saw cuts provided to the concrete slab forming the Car Park floor as control joints to control the amount of cracking that occurs (refer to Photos 25 – 27). These cracks have formed where they are expected at or adjacent to the weak points formed by the saw cuts. However, it was noted that the frequency of the saw cuts was not as per the design drawings, which showed them running perpendicular to all columns and to the centre of the entrance opening area at the south western end (refer to Photo 28). This lack of saw cuts may have increased the amount of cracking that has occurred in those areas.



Photo 25



Photo 26



Photo 27



Photo 28

- 2.01.12 It was noted that the saw cuts where provided were in excess of the maximum 6 metre distance recommended between control joints within concrete slabs (refer to Photo 29) and did not continue for the width of the slab on either side of the columns in areas (refer to Photo 30). This has therefore led to further





cracking forming in the slab where movement has continued on the opposing side of the columns.



Photo 29



Photo 30

2.01.13 The worst section of cracking evident to the floor within the Basement was along Grid Line K, where the cracking was found to be up to 35mm wide and 60mm deep (refer to Photos 31 – 34). These cracks were reported upon within the ISPS Consulting Engineers Report dated 14 April 2016 (see attached Copy at Appendix F) as being up to 10mm in width and they recommended that if more significant cracks were identified then further investigation would be required as their recommended remedial methods may not be adequate enough. It is therefore recommended that the Engineers be invited to re-assess that crack and recommend further repairs.



Photo 31



Photo 32





Photo 33



Photo 34

2.01.14 Cracking to the walls was also evident at Grid Line E, with diagonal cracks to the wall and floor in this area (refer to Photos 35 – 38). These again appear to have been inspected by ISPS Consulting Engineers and commented upon within their Report, with a proposed remedial solution outlined to attend to these and other cracks within the Basement. It is recommended that these repair works are undertaken to repair the cracking experienced by the building at present.



Photo 35



Photo 36



Photo 37



Photo 38



- 2.01.15 There was also however, evidence of what appear to be previous crack repairs at Grid Line E adjacent to the Car Park entrance (refer to Photos 39 and 40). The repair appears to have comprised the provision of a skim coat of plaster over the previous damage, but this is cracking, loose and falling away in areas.



Photo 39



Photo 40

- 2.01.16 There is also some evidence of moisture entry into the Basement Car Park either through the waterproofing provided to the retaining section of the Car Park wall or at the junction of this with the floor slab to the ground level accommodation. This is visible where moisture stains are apparent at the base of the wall (refer to Photo 41) and where the cracks are evident upon the wall in various locations within the Car Park (refer to Photo 42).



Photo 41



Photo 42

- 2.01.17 Staining to the underside of the beams supporting the ground level floor slab illustrate that the moisture may be entering behind the waterproofing at the junction of the floor slab with the retaining walls (refer to Photos 43 – 45). Visible drops of water were observed upon the beams at the time of our inspection (refer to Photo 46).



Photo 43



Photo 44



Photo 45



Photo 46

- 2.01.18 The evidence of moisture ingress was also noted at the north eastern end of the Car Park (refer to Photos 47 and 48), with cracking and quite distinct staining apparent at Grid Line M (refer to Photos 49 and 50). It is recommended that further investigation is undertaken to confirm the position in which moisture is entering to allow remedial works to be undertaken in order to prevent this becoming more significant.

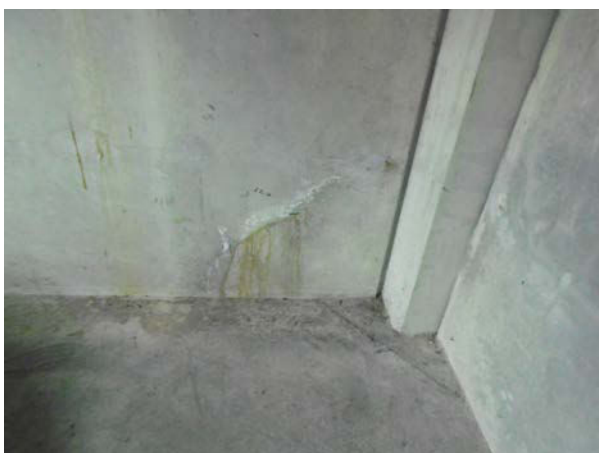


Photo 47



Photo 48





Photo 49



Photo 50

2.01.19 On the north western side of the Car Park it was also noted that the gaps between the beams and the wall differed in width (refer to Photos 51 and 52), which raises concern over the suitability if the bearing provided in this location.



Photo 51



Photo 52



## 2.02 EXTERNAL

- 2.02.01 The front elevation of the Civic Building faces toward the north west with painted pre-cast panels forming the external finish together with full height aluminium joinery to the western end, beneath an aluminium composite panel soffit. The ground abuts the concrete panels and sections of membrane have been installed over the top of the pre-cast panels to act as weather protection (refer to Photos 53 and 54).



Photo 53



Photo 54

- 2.02.02 Where the paving provided adjacent to the entrance to the left of this section of the building is situated some corrosion staining is evident at the base of the pre-cast panels (refer to Photos 55 and 56). This suggests that moisture is holding in this location and may be seeping beneath the ground and possibly contributing to the moisture entry noted within the Basement from our internal inspection.



Photo 55



Photo 56



- 2.02.03 To the right and left sides of the main entrance aluminium composite panels have been installed as the cladding (refer to Photo 57). It was noted however, that this panelling continues to ground level, with no clearance between the cladding and adjacent ground, which may allow moisture to hold in that location and penetrate behind the cladding with no means of discharging away (refer to Photo 58). This is repeated on the left side, with only the sealant joint provided between the panel and adjacent paving provided to prevent moisture ingress (refer to Photos 59 and 60).

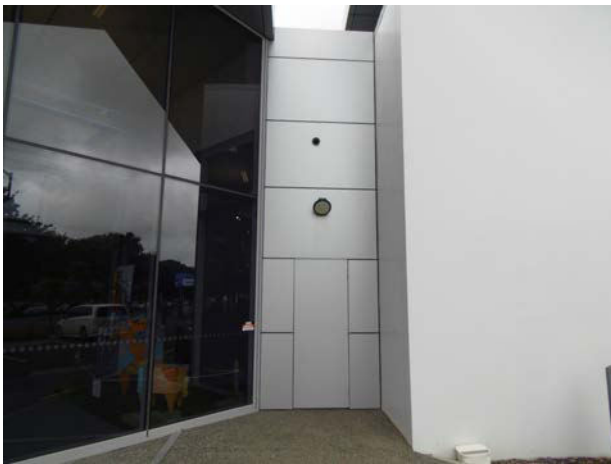


Photo 57



Photo 58



Photo 59



Photo 60

- 2.02.04 It was also noted that the overflow outlet to the right side of the entrance, which penetrates the composite panels has no seal around its perimeter to the right side (refer to Photo 61), whereas it does to the left side (refer to Photo 62). This will therefore allow moisture to penetrate behind the composite panel, with no method of drainage installed to this section of wall to allow any penetrating moisture to drain away.



Photo 61



Photo 62

2.02.05 The aluminium composite panels used as a soffit system above the main entrance are also provided with no drainage slots (refer to Photos 63 and 64). Elsewhere around the perimeter of the building drainage slots have however been installed as is recommended on comparable systems (refer to Photos 65 and 66)



Photo 63



Photo 64



Photo 65

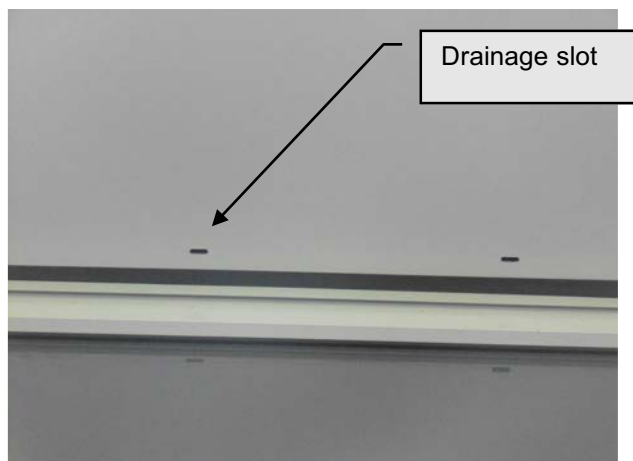


Photo 66





- 2.02.06 Where the riser inlet and alarm is housed within the pre-cast panel to the left side of the entrance no flashings have been installed to the perimeter of the housing to prevent moisture entry in that location (refer to Photos 67 and 68). It is recommended that this is either provided with perimeter flashings or sealed around its perimeter to prevent moisture entering behind the panel in the future.



Photo 67



Photo 68

- 2.02.07 The gardens to the front of the north west facing elevation abut the pre-cast panels that form its construction (refer to Photos 69 and 70) and it is understood that the retaining section of this wall that forms the front wall of the Basement Car Park has been provided with a tanking system to prevent moisture ingress. A detailed inspection of the tanking system was not able to be undertaken without removing sections of the garden to confirm how this is applied at the top of the retaining section, but it is evident that moisture is penetrating and affecting the Basement Car Park from our internal inspection. It would be recommended therefore that some further investigation is undertaken to confirm how this has been detailed in order to prevent moisture entry at the junction with the floor slab where moisture appears to be penetrating from our internal inspection.





Photo 69



Photo 70

- 2.02.08 This is also a concern to the western end of the building where the road leading to the rear abuts the pre-cast panels (refer to Photo 71). In this position some moisture staining was noted to the panels at low level, which suggests that moisture is present behind the paint finish applied (refer to Photo 72) and this may therefore be penetrating behind the waterproofing and affecting the Basement Car Park.



Photo 71

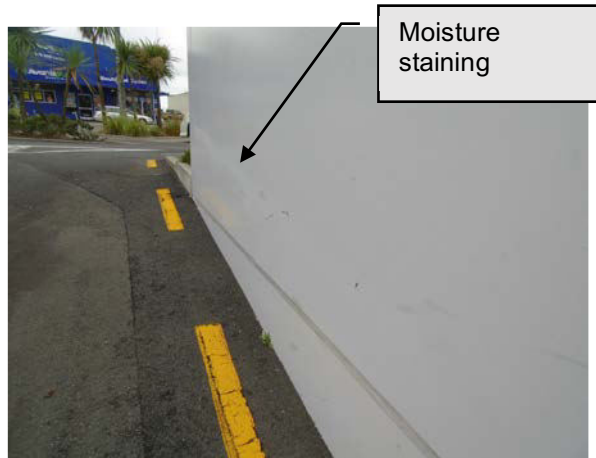


Photo 72

- 2.02.09 An inspection of the windows on the front elevation illustrated that these were reliant upon sealant for weathertightness at their junction with the concrete sill as well as in part to the side of the seismic frames in which they are situated. These joints were loose in areas (refer to Photo 73), which will allow moisture to penetrate and will require attention to prevent significant moisture entry in the future.



- 2.02.10 Further reliance upon sealant at the joints on the window and to the cap flashings above the window were noted at high level on the window to Office 146 (refer to Photos 74 and 75). This is the window where moisture stain runs were noted internally within Office 146 on both sides of the window and externally staining was also noted on the sill where moisture has held adjacent to the right side of the joinery (refer to Photo 76). Further investigation to confirm the exact position of moisture entry should be undertaken to ensure that the cause may be rectified effectively.



Photo 73



Photo 74



Photo 75



Photo 76

- 2.02.11 At the eastern end of the front elevation and on the north east elevation staining is evident to the pre-cast panels beneath the cap flashing. These stains are evident at the joints between the flashing and at fixing points where moisture has been concentrated and created the stains (refer to photos 77 – 79). It should be ensured that the seal between the joints is maintained effectively to prevent moisture entry beneath the capping.



Photo 77



Photo 78



Photo 79

- 2.02.12 On the north east elevation some fracturing of the pre-cast panels was noted at low level (refer to Photos 80 and 81). Whereas more severe fracturing was evident on the opposing side of the building on the south west elevation where cracking is evident at the junction of the pre-cast panels to the side of the Council Chamber which may be related to movement during recent earthquakes (refer to Photos 82 – 85). These cracks have also allowed moisture to enter behind the paint coating provided to the pre-cast panels and this is causing the coating to bubble and flake away.



Photo 80



Photo 81



Photo 82



Photo 83



Photo 84



Photo 85

2.02.13 Further cracking of the sealant at the jambs of the joinery was noted to the windows within the fibre-cement façade panel clad section of the north east elevation (refer to Photos 86 and 87). These need to be regularly maintained in order to prevent moisture entry in these locations.



Photo 86



Photo 87

- 2.02.14 Where the joinery is installed directly within the façade panel cladding cracking of the fibre-cement sheets was noted adjacent to them on both the north east and south east elevations (refer to Photos 88 – 89) and these will require repair to prevent moisture entering and causing the sheets to delaminate.

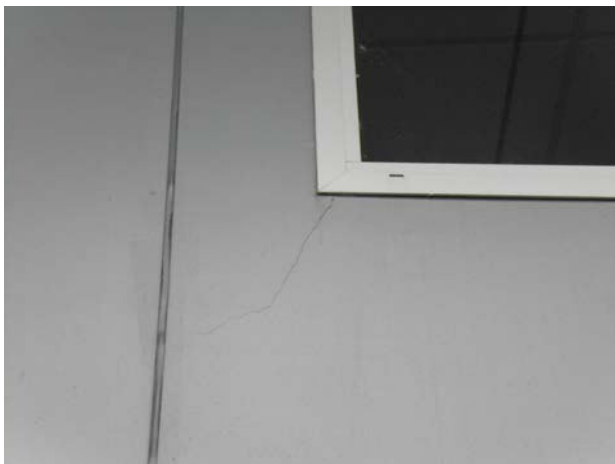


Photo 88



Photo 89

- 2.02.15 Along the south east facing elevation it was noted that the location through which the gas supply pipe enters the cladding to the Basement Car Park is open and not protected against moisture or vermin entry (refer to Photos 90 and 91). It is recommended that this penetration is sealed with a protective flange.





Photo 90



Photo 91

2.02.16 At the eastern end of the south east facing elevation a deck is provided at the rear of the Entrance Lobby to the building (refer to Photo 92). This is provided with a membrane to its surface over which ceramic tiles have been installed. Unfortunately, the membrane does not appear to have been applied to form an upstand to the side at the junction with the pre-cast panels at either end and moisture entry into the panels in these locations has caused some cracking to form at ether end of the deck (refer to Photos 93 and 94).



Photo 92



Photo 93



Photo 94



Photo 95

2.02.17 Damage has occurred to the underside of the slab forming the deck where no drip detail is installed and the lack of a drip detail to the underside of the tiles provided at the edge of the deck is allowing moisture to stain the edge of the slab (refer to Photo 95). It is recommended that the detailing to this deck be amended to prevent further moisture damage occurring.

2.02.18 Beneath the rear deck the fibre-cement façade panel cladding installed continues to ground level where it abuts the adjacent drive and is not provided with the minimum recommended gap of 100mm between the base of the cladding and adjacent ground (refer to Photos 96 and 97). This will allow moisture to affect the fibre-cement sheet and also prevent drainage from the cavity provided to the rear of the fibre-cement sheet and should be amended.



Photo 96



Photo 97

2.02.19 To the side of the façade panel cladding the reveal to the entrance to the Basement Courier Delivery Area also abuts the adjacent ground and is deteriorating (refer to Photo 98). It is recommended that the base of the reveal



is removed to provide some clearance between the reveal and adjacent ground surface.

- 2.02.20 A further lack of clearance between the base of the façade panel cladding and the adjacent ground was noted where this cladding is used on the Terrace Mezzanine level (refer to Photos 99 – 101). The junction between the cladding and the adjacent tiles in that location is sealed with a sealant, which prevents any moisture that has penetrated behind the cladding from escaping.



Photo 98



Photo 99



Photo 100



Photo 101

- 2.02.21 On the terrace at Mezzanine level, it was also noted that the coatings to the steel frame at roof level were deteriorating and require attention (refer to Photos 102 and 103).





Photo 102



Photo 103

2.02.22 Additional corrosion was also noted to the gate to the Fire Exit leading from the Terrace at Mezzanine level (refer to Photos 104 and 105).



Photo 104



Photo 105

2.02.23 Deterioration of the coatings provided to the pre-cast panels was noted in a number of areas around the perimeter of the building where moisture had entered behind the coats. This was evident at high level and particularly adjacent to cracks where they have formed on the south west elevation, but also on the panels to the south east elevation (refer to Photos 106 – 108). It is considered therefore that the exterior of the building is due for the coating system provided to the pre-cast panels to be renewed.



Photo 106



Photo 107



Photo 108

2.02.24 Our inspection also revealed that the glazing rubbers to a number of the windows to the Mezzanine level were loose and that these need to be reinstated or replaced where they have shrunk (refer to Photos 109 and 110).



Photo 109



Photo 110



2.02.25 During our inspection we were unable to inspect the condition of the roof above the Mezzanine level or the Public Entrance Foyer due to lack of access and our inspection of the roof above the ground level accommodation was restricted to what could be seen from the Terrace and the Mezzanine level (refer to Photos 111 and 112). It is apparent that leaks through the internal gutter to the ground level roof have affected the interior at Office 136 and further investigation in respect of the repairs required in that position and also to prevent moisture entry affecting the Public Entrance Foyer would be recommended.



Photo 111



Photo 112



### 3.00 ISSUES

- 3.01 Our inspection was undertaken to assess the general condition and weathertightness of the property and to comment on any issues identified in order that these can be remediated. Our internal inspection identified areas where cracking has occurred to the plasterboard linings, concrete beams, and pre-cast panels, together with the concrete Basement floor, as well as evidence of some moisture ingress at the property through the Basement retaining wall and on the first level within Offices 136 and 146 and the Public Entrance Lobby.
- 3.02 The internal cracking to the plasterboard is not considered significant, but may be related, together with the cracking to the beam within Office 146 to movement generated from recent earthquakes. The cracking evident to the floor and walls within the Basement Car Park have been inspected previously by ISPS Engineers and they have provided a Report to the Horowhenua District Council dated 14 April 2016 outlining the Remedial Repairs they consider appropriate. This Report does however advise that if the cracks to be repaired are in excess of the 10mm cracks observed by them then their repair procedure may not be appropriate and moisture ingress and further investigation is required. This is the case and we recommend that further investigation is undertaken to ensure that the cracking that is evident is repaired effectively.
- 3.03 Within the Basement Car Park there is also evidence of moisture ingress at the junction of the retaining walls with the first level floor slab, with visible drips and stains apparent during our inspection. This suggests that moisture is penetrating over the top of the tanking system installed to the Car Park retaining walls and further investigation to confirm the exact cause would be recommended.
- 3.04 Further moisture entry affecting the Civic Building was noted within Office 146, where staining was noted to either side of the window on the north east facing elevation. This Office is beneath the Terrace at the Mezzanine level and further investigation to confirm the location of moisture entry would be recommended to remediate this issue.
- 3.05 Within Office 136 damage is evident to the ceiling and the custom wood shelving beneath the window on the south east elevation. This is almost directly beneath the location of the internal gutter at roof level and further investigation at that level would be recommended to identify the cause and to allow this to be rectified.
- 3.06 Moisture was also noted internally within the Public Entrance Lobby, where drip runs were visible on the walls at high level beneath the glazed roof above this area. This may be



due to condensation, but it is recommended that further investigation is undertaken to confirm this by inspecting the upstand details and condition of the roof above this area, which was not accessible at the time of our inspection.

3.07 Our inspection both internally and externally also revealed a number of issues relating to the construction of the property, which we have commented upon within the Observations Section of this Report and we list below those that we consider require attention:

- Lack of an adequate number of control joints to prevent movement causing damage to the Basement Car Park concrete floor;
- Lack of ground clearance between base of Aluminium Composite Panels and adjacent ground;
- Lack of ground clearance between base of fibre-cement cladding and adjacent ground;
- Corrosion of metal gate and fencing;
- Lack of seals around penetrations through Aluminium Composite Panel and fibre-cement cladding;
- Lack of drainage slots to soffit or base of Aluminium Composite Panels;
- Prospective lack of seal at top of tanking system provided to retaining walls;
- Lack of flashings to perimeter of riser and alarm housing;
- Lack of upstand and drip detail to edge of deck at first floor level;
- Loose glazing wedges to joinery;
- Flaking and bubbling paint finish to pre-cast panels;

3.08 It is recommended that each of these issues are addressed as part of any works that are undertaken to the property and that these works are undertaken in the near future to ensure that the property and its elements do not deteriorate further.



## **4.00 CONCLUSIONS AND RECOMMENDATIONS**

- 4.01 Our site inspection comprised a visual inspection only of the interior and exterior of the property to ascertain whether there were any significant areas of disrepair or areas of concern that may be the subject of deterioration over and above that expected for a property of this age. The inspection confirmed that there were areas of moisture entry within Offices 146 and 136 as well as evidence of moisture runs and staining beneath the glazed roof in the Public Entrance Foyer. Each of these areas require further investigation to confirm the cause and works necessary to resolve these issues.
- 4.02 Additional evidence of moisture entry at the Civic Building was noted within the Basement Car Park where staining was noted at cracks on the pre-cast retaining walls and drips were visible at the junction of the walls with the first level floor slab. It appears therefore that moisture is penetrating at the junction of these two elements, which are beneath the ground level externally. We understand that a tanking system has been applied against the retaining wall, but we were unable to view the top of this without undertaking more substantial investigation. We would therefore recommend that further investigation is undertaken to ascertain if this is the location in which moisture is penetrating and resolve the cause in order to prevent further damage.
- 4.03 At Basement level within the Car Park cracking is evident to both the walls and floor, which have been inspected previously by Engineers and appear to have worsened since their visit and production of their April 2016 Report, which recommends repairs. It is therefore recommended that these Engineers be asked to re-visit their recommendations taking into consideration the increase in size of these cracks and revise their proposed method of repair accordingly. Once this has been done we would also recommend that those repairs are carried out.
- 4.04 Other issues were also identified, which we refer to further within the Observations and Issues Section of this Report and it is recommended that these be remediated to ensure that the building continues to perform in accordance with the requirements of the Building Code.





4.05 It is therefore recommended, that consideration is made to undertaking the following work as part of the maintenance undertaken to the building as a whole:

1. Undertake repairs to cracking evident within floor slab at Basement level in accordance with Engineer's recommendations and saw cut additional control joints within slab in locations as identified upon original Building Consent drawings.
2. Undertake recommended epoxy injection and routing out and sealing crack repairs to walls within the Basement Car Park area and on external pre-cast panels in accordance with the Engineer's recommendations within their Report dated 14 April 2016 adjusted as necessary following a review of their findings.
3. Undertake further investigation to identify the cause of moisture ingress from the Terrace level which is affecting Office 146 beneath it, rectify cause and repair affected areas.
4. Undertake further investigation into the cause of the leak affecting Office 136. This investigation will involve the hire of a hoist or erection of scaffold or edge protection to the roof for health and safety purposes to allow an inspection of the internal gutter to the main roof to be undertaken. Once the cause is identified repairs should be undertaken to repair the affected areas.
5. Undertake further investigation into the cause of the drips affecting the Public Entrance Foyer to confirm the extent of remediation works required.
6. Remove lower sheets of Aluminium Composite Panels to either side of public entrance and either adjust these or renew the affected sheets allowing for a minimum clearance of 50mm between the base of the sheets and adjacent ground level. Include to ensure that pressure equalisation and drainage slots are installed at the base of the sheets.
7. Remove lower sheets of fibre-cement cladding where no clearance is provided between the base of the sheets and adjacent ground on the south east elevation, amend sheets and reinstall where possible with a minimum clearance of 100mm between the base of the cladding and adjacent paved ground. Include to amend clearance at base of reveals to Car Park entrances.
8. Attend to areas of corrosion evident to fire exit gate and fencing to Terrace.
9. Retro-fit pressure equalisation and drainage slots within underside of Aluminium Composite Panels provided to soffit of building where missing.



10. Seal around penetrations through external cladding where overflows and gas supply pipes are installed and install protective flanges.
11. Undertake further investigation in respect of detailing at top of retaining walls to ensure that moisture is not penetrating in this position and affecting the Basement Car Park. Include to install protective cap flashing over top of waterproofing as necessary to prevent further moisture entry.
12. Install seal and protective flashings to perimeter of riser and alarm housing.
13. Install waterproof upstand to edges of Deck at rear of public entrance foyer to prevent further deterioration of pre-cast slab in that location. Include to repair cracking to pre-cast slabs and to decorate.
14. Install drip detail at base of tiles to Public Entrance Foyer deck.
15. Reinstall or replace loose glazing wedges on Mezzanine level.
16. Remove flaking and bubbled decorations where evident on pre-cast panels, repair all cracking evident, prime and re-coat previously painted pre-cast panels. Note these panels should be recoated a minimum of every 7 – 8 years.
17. Re-coat all external cladding with a minimum of two coats of an acrylic paint system to maintain the weathertightness of the cladding following all necessary repairs having been completed.

4.06 These general repair recommendations are not sufficient to instruct a contractor in the process of repair works.

4.07 We trust that this report clearly outlines the general condition of the Civic Building at present and the extent of works considered necessary to remediate the issues identified during our inspection.





4.08 If you have any further queries, please do not hesitate to contact us.

**NICK HICKLING**  
**MNZIBS, AAMINZ**  
**REGISTERED BUILDING SURVEYOR**  
**LICENSED BUILDING PRACTITIONER**  
**CERTIFIED WEATHERTIGHTNESS INSPECTOR**  
**WEATHERTIGHTNESS REMEDIATION SPECIALIST**

For and on behalf of



*This Site Visit Report has been prepared solely for the party to whom it is addressed with respect to the particular brief given to us. No responsibility is accepted for the use of any information or advice contained in it in any other context or for any other purpose without Koru V.S.L.'s prior written agreement.*

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