



Integrated
Consultancy Group

Integrated Building Consultancy Norwest

ACN 119 674 298 ABN 44 119 674 298

All Correspondence to:

PO Box 7769, Baulkham Hills BC NSW 2153
Telephone (02) 8814 5999, Fax (02) 8814 5899
Email info@ibc.net.au www.ibc.net.au

Head Office:

Unit 33, 10 Gladstone Road
Castle Hill NSW 2154

BCS Strata Management Pty Ltd (Epping)
Level 2
51 Rawson Street
Epping NSW 2121

04 November 2014

Our ref: 2140438-REP

Attention: Russell Young

Dear Russell

**RE: SP52948 - 1-15 FONTENOY STREET, NORTH RYDE NSW 2113
WATER INGRESS IN NOMINATED UNITS**

As per your work order 483265 dated 20/10/14 I attended site on the 30/10/14 in company with the Building Manager, Ms Ruth Luka and carried out an inspection of ground floor Units 49, 103, 146, 150 & 151 plus Townhouse 200 in order to ascertain the following:

- Inspect, investigate and determine the source of the water entry within the nominated units.
- Determine the most appropriate and cost efficient remedial methodology.

Weather conditions at the time of the inspection were fine and sunny however there had been sufficient recent heavy rain storms to ensure that if water entry was occurring that some level of moisture should show up when using diagnostic equipment such as moisture meters.

FINDINGS

Townhouse 200

This townhouse owner has converted the usage of the garage into office space and was complaining about water entry within the garage/office at the base of the wall and also to the wall immediately inside off the front entrance door.

It was noted that the brick wall directly outside of the garage and front entrance door up to approx 1200mm was wet at the time of the inspection. It was considered that this wetting of the wall has been occurring on a long term basis as it was found that the wall was subject to moss and efflorescence growth.



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The small garden bed directly opposite the wall is fitted with an automatic watering system and it was found that one of the sprinklers was aimed at the garage wall causing its long term saturation.

The Building Manager confirmed that the watering system is timed to operate in the early morning hours which would explain why the unit owners have never seen the water spraying against the wall.

It was considered that this constant spraying of the brick wall with water from the irrigation system is causing the two areas of internal leakage.

The sprinkler head was adjusted immediately and it was agreed that the wall should be again checked in approx 3 to 4 months time to see if the sprinkler adjustment has resulted in the internal dampness drying out.

	
<p>Area of staining and moisture entry at base of wall inside garage/office</p>	<p>Area of staining and damage due to water entry beside front entrance door</p>
	
<p>Water saturated wall outside of subject area to garage/office</p>	<p>Discolouration and staining to the bricks outside of front entry door confirming long term water contact</p>

Units 49, 103, 146, 150 & 151

Evidence of moisture entry in the form of staining and or light damage to the painted wall finishes and raised moisture meter readings were evident to the base of the walls which back on to the perimeter wall of the ground floor unit.

Moisture was also noted to the perimeter hobs forming the base wall of the sunken enclosed tiled patio areas to Units 49, 146, 150 & 151.

The building is of a full masonry construction with rendered and painted external walls. Weep holes at the base of the walls have generally been put in position to all the nominated units (other than 49) however the weep holes have been partially covered over by the pavers used to the external patio areas.

The positioning of the pavers will greatly reduce the ability of the cavities to self drain any water which may enter the cavity via cracks within the external render and or gaps at window and door reveals.

It is considered that moisture entering the cavity (by the aforementioned means) is being trapped within the base of the cavity by the pavers and lack of weepholes for Unit 49. This saturation of water will then allow for it to migrate through to the internal masonry walls via capillary action through laps and other possible failures (holes) within the cavity flashing or via mortar bridges formed on the cavity flashing from mortar droppings that were not fully cleaned out during the original construction.

There is evidence of previous remedial repairs being carried out which has included blocking and unblocking weepholes and placing a waterproof membrane material at the base of the external walls, however this approach has not been successful.



	
<p>Area of sunken enclosed patio wall within unit 146 that requires the installation of an air brick</p>	<p>Note height of pavers in relation to weep holes for unit 151</p>
	
<p>Moisture damage to base of walls internally of unit 151</p>	<p>Moisture damage to hob wall of sunken patio area within unit 150</p>
	
<p>Poorly carried out and unfinished internal render repairs within unit 150</p>	

RECOMMENDED REMEDIAL REPAIRS

The following repairs are detailed in the knowledge that the Owners Corporation intend to carry out a re-paint of all external facades in 2015.

It is highly recommended that this re-paint be carried out using Elastomeric type paint as supplied by Ardex, Taubmans and or Dulux. These style paints have the following favourable properties;-

- The paint is of a high build and flexible type that will cover over (without any special preparation) cracks of up 0.75mm in width.
- The paint will form a waterproof barrier to the outside face of the building.
- The paint will remain in a serviceable condition for approx 50% longer than "normal" acrylic type external paints.

The general remedial scope for the units is as follows with specific unit by unit details noted at the base.

Allow to carry out the following works around the full external perimeter of units 49, 103, 146, 150 & 151;-

- Carefully remove and store the header paver course from around the full perimeter of the unit.
- Carefully cut and remove the sand/cement bedding from under the removed header course.
- Clean the exposed concrete floor slab and outside face of the external wall to remove all traces of sand/cement bed and any loose and flaking paint.
- Partially fill the existing weep holes with a foam backing rod positioned a minimum of 50mm from the finished surface in readiness to fill the weep holes using Ardex A-46 repair mortar or similar finished off flush with the outside surface of the wall render.
- At the junction of the wall base and concrete slab below allow to form a minimum 10mm x 10mm fillet finished to 45deg using Ardex-SE flexible sealant or similar.
- Supply and install 455mm x 75mm brass wire air bricks within the wall areas to each unit. Unit 49, 7 bricks. Unit 103, 7 bricks, Unit 146, 5 bricks including 1 brick to the wall within the sunken enclosed tiled patio, Unit 150, 7 bricks and Unit 151, 5 bricks.
- The bricks are to be installed centrally within the wall sections and positioned level and to a uniform line with the base of the brick being 200mm above the internal floor slab height.
- Ensure that the cavity is cleaned of any debris caused by the brick installation prior to permanently mortar bonding the air brick into place.

- Apply a taped level line around the perimeter walls running level with the bottom face of the new air bricks.
- Apply Ardex WPM-001 waterproof membrane or similar in strict accordance with the manufacturer's recommendations from the exposed edge of the patio area concrete floor slab and pavers across and up the wall to the line of the tape.
- Tape off around each window and door reveal prior to applying a bead of Ardex-SE or similar sealant at the junction of each door and window frame and rendered reveal to prevent water entry into the cavity.
- Apply a taped level line around the perimeter walls running level at approx 600mm up from the internal floor slab level.
- Allow to paint the external wall section from patio slab up to the taped line using a colour matched (or similar) Ardex WPM-330 in strict accordance with the manufacturer's recommendations.
- Lay the original header course pavers on a sand/cement bed modified with Ardex WPM-405.
- Clean up on completion.

Allow to carry out the following internal repairs:

- Scrape back and remove all evidence of any moisture induced efflorescence and paint delamination from the internal walls of Units 103, 146 including within robe of main bedroom, 150 and 151.
- Carry out final required render repairs necessary to those areas previously exposed and poorly repaired within Unit 150.
- Remove the paint from inside face of each sunken enclosed patio hob to expose the base render.
- Remove the paint from the base of Unit 146 sunken enclosed patio wall (where the air brick was installed) to a height of approx 300mm up from the finished floor level.
- Allow to coat the exposed areas within the sunken enclosed patios with a clear penetrative sealer as added protection.
- Allow to prime and paint the affected wall sections from shadow line to shadow line using a suitable colour matched internal acrylic paint.
- Clean up on completion.

Carrying out the above works would be far more cost efficient than exposing the existing cavity flashing and re-newing along with the application of membrane at the base of the cavity to take into account that the external pavers are set too high.

ADDITIONAL ITEM

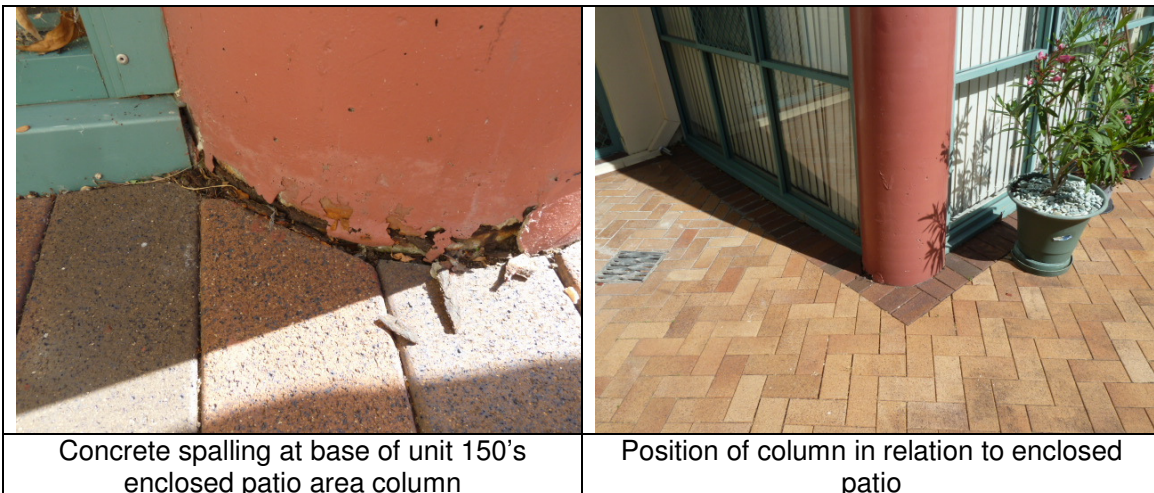
While carrying out the inspection from the paved patio area of Unit 150, it was noticed that the round concrete column forming one corner of the sunken enclosed patio was suffering from concrete spalling (concrete cancer) at the base.

Close inspection of the damage area showed a circular perimeter bar was exposed along with what appeared to be lots of small pieces of tie wire and other metallic pieces such as nails etc.

Unless remedial actions are taken the corrosion will continue to the point where the repairs are costly and may require the input of a Structural Engineer if some of the more structural steel bars start to corrode.

Allow to carry out the following works;-

- Grind back the exposed sections of steel to a minimum of 15mm below the surface level of the concrete.
- Remove and replace those sections of steel that have had their overall cross sectional size reduced by more than 20%.
- Treat the top of the steel with a zinc rich primer.
- Fill the hole with a polymer modified render mix similar in qualities to "BASF MASTER EMACO S5400 CI",
- Make good all surface finishes affected by the original defect, any exploratory and or remedial works.
- Clean up on completion.



If you have any further questions, please do not hesitate to contact the undersigned.

Yours faithfully
For and on behalf of
Integrated Building Consultancy Norwest ACN 119 674 298


Mark Kavanagh
Senior Building Consultant - Mediator
mark@ibc.net.au

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1. The Report is made in accordance with the requirements of Australian Standard 4349.1-1995 and is a special purpose property report that reflects the requirements of the instructions provided to Integrated Building Consultancy Norwest ACN 119 674 298. This is not a pre-purchase report nor does it express any view as to the value of the Property or parts thereof being inspected.
2. This Report and all its content is prepared for the exclusive use of the Addressee and may not be used for any other purpose than its stated intention with the exception of its distribution to any party in litigation to which this Report may have reference. No responsibility will be accepted for its content in respect of Third Parties.
3. This Report will remain the property of Integrated Building Consultancy Norwest ACN 119 674 298 and may not be used by the Addressee for any purpose whatsoever until full payment is made. Non compliance with this condition forms a substantial breach in the terms of the agreement between the Addressee and Integrated Building Consultancy Norwest ACN 119 674 298.
4. This Report may not necessarily be suitable for presentation in litigation and other Court or Tribunal actions as a report with a different structure, ie, a Scott Schedule, may be required by direction of the adjudicative body.
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 - (a) no soil etc has been excavated
 - (b) no plants or trees have been removed
 - (c) no fixtures, fittings, cladding or lining materials have been removed
 - (d) no items of furniture or chattels have been moved
 - (e) no enquiries of Councils or Authorities or persons have been made for the purpose of inspecting the Building and providing this Report.
6. **This Report does not include-**
 - (a) faults in inaccessible parts of the Building
 - (b) faults not apparent on visual inspection
 - (c) faults apparent only in different weather or environmental conditions
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 - (e) minor faults (e.g. hairline plaster cracks, jamming doors, window and catches etc)
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