



06/09/2019

**Report National Health Laboratory Service
Modderfontein**

Dear Glen

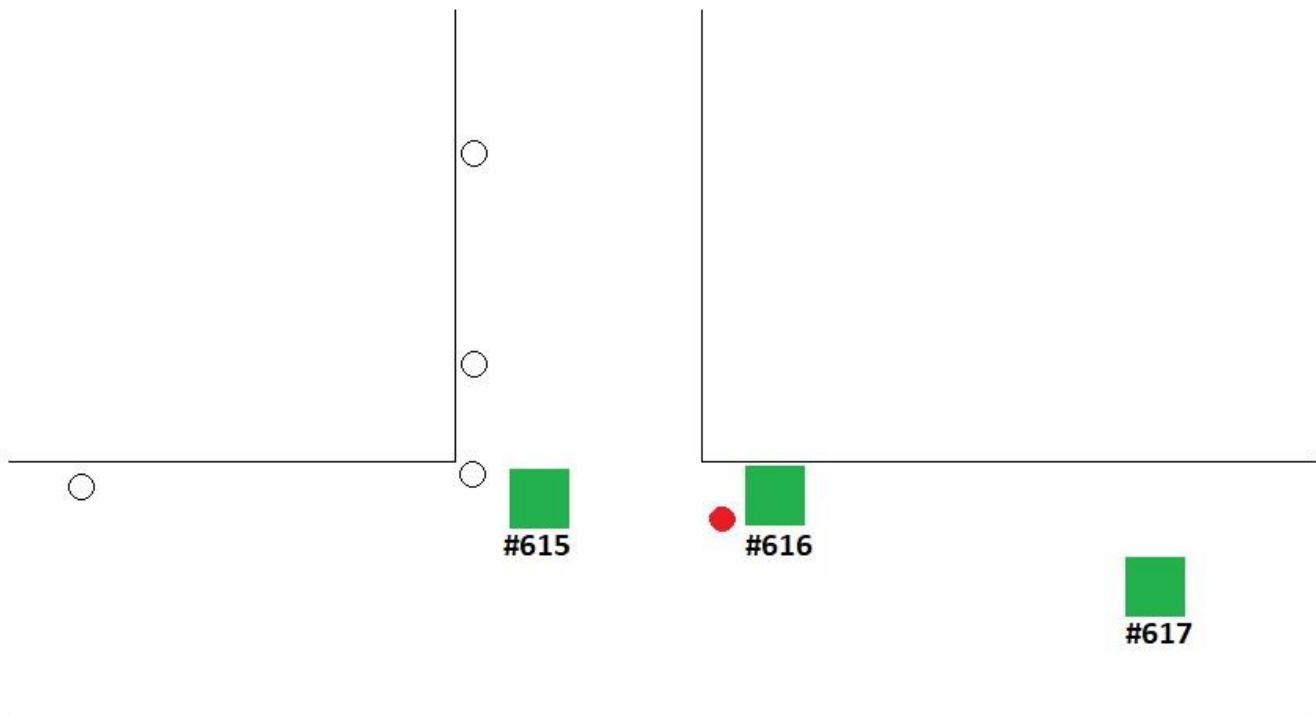
We arrived on site on Friday 6th September to inspect and scan the areas requested.

The slab in question is a conventionally reinforced slab containing R bars.

Four scans were completed in areas where water damage is a concern.

A core sample was extracted for testing and four reinforcement exposures were completed.

Please see the rudimentary drawing below for the position and orientation of scans and core sample.



*Core sample marked as a red circle.

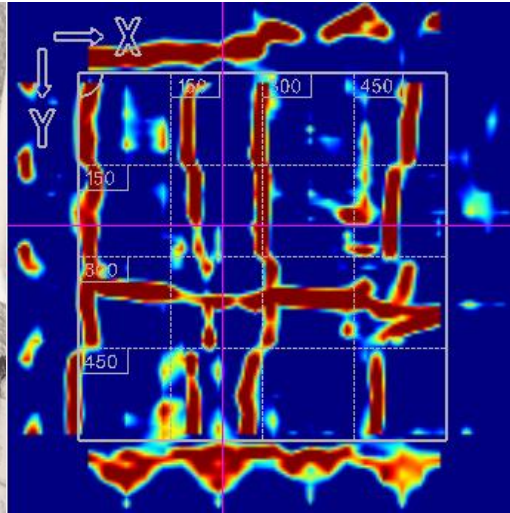
Scans and Images

#615

Photo



Scan



- The scan was placed over the exposed damaged reinforcement.
- The scan did not detect excessive water in the area.

Exposure



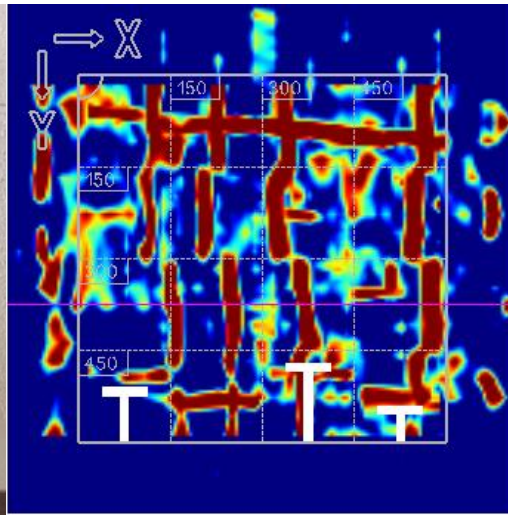
- This area appears to be the worst affected by water damage.
- Further reinforcement was exposed to observe how far the oxidation has occurred.
- It appears the water damage is localised in the one direction, please see red arrow indicating the end of the oxidation.

#616

Photo



Scan



- The scan did not detect excessive water in the area.

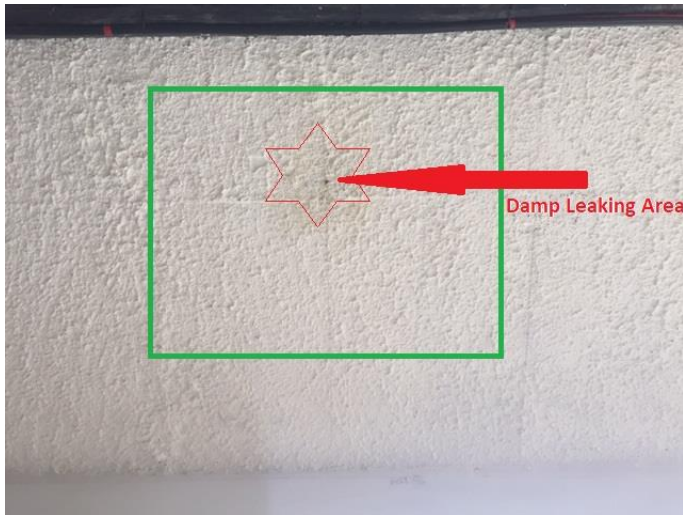
Exposure



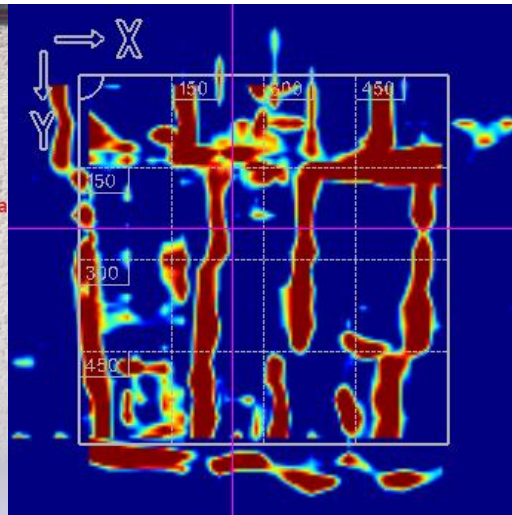
- The reinforcement in this area appears only slightly oxidized.

#617

Photo



Scan



- This area was chosen as it has a visible drip of water leaking through the slab.
- The area was scanned and only a small amount of water was detected.

Exposure



- The reinforcement in this area is slightly oxidized.

Additional Exposure



- An additional exposure was completed approximately 1m from the damp leaking area.
- No oxidation was found on this reinforcement.

Further observations



- The steel column in the image above has a drain pipe within its centre.
- This pipe has blocked up sometime in the past.
- A part of this column has been cut to allow the escape of drain water and therefore has been weakened.
- Due to its position we suspect this column is load bearing.

Conclusion

- The water damage to the slab in appears to be in **isolated** areas where the waterproofing above has failed.
- The reinforcement exposures confirmed that the entire slab is not affected and clean healthy reinforcement was discovered.

Recommendations

- We highly recommend exposing both top and bottom reinforcement in the areas where the water proofing has failed and the reinforcement has started oxidizing.
- This reinforcement should be mechanically cleaned with a wire brush and thereafter treated with an anti-oxidizing product.
- This exposed reinforcement should then be repaired with a high strength repair mortar. Thereafter the waterproofing should be reinstalled.

If you have any questions or concerns, please do not hesitate to contact me.

Best regards
Greg Bothma
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