

INVESTIGATION INTO THE CAUSE OF KNOWN DEFECTS

A section of the slab was presenting with significant heave, the cause of which was unknown

OBJECTIVES

The client had a section of slab that had raised up within their asset. The construction details of the slab were unknown, as was the extent of the damage; was the whole slab lifting or was it only surface finishes. The likely cause of the lifting was also unknown.

SOLUTIONS

The client brought in Trace-SI to investigate the affected area using non-intrusive investigation methods.

Trace-SI scanned the defective area extensively, as well as the surrounding areas, to determine the typical construction details.

Trace-SI analysed the data off site and were able to determine the typical construction details of the slab and where they varied around the defect. It was found that, while voiding was detected below the slab, only the surface finishes were rising up.

Furthermore, the gap between the slab and the surface finishes was filled with water. Water had penetrated through the surface finishes and likely caused corrosion to the steel within the concrete slab, resulting in expansion of material

BENEFITS

Site works were non-destructive, completed quickly and comprehensive allowing for no disruption to the project

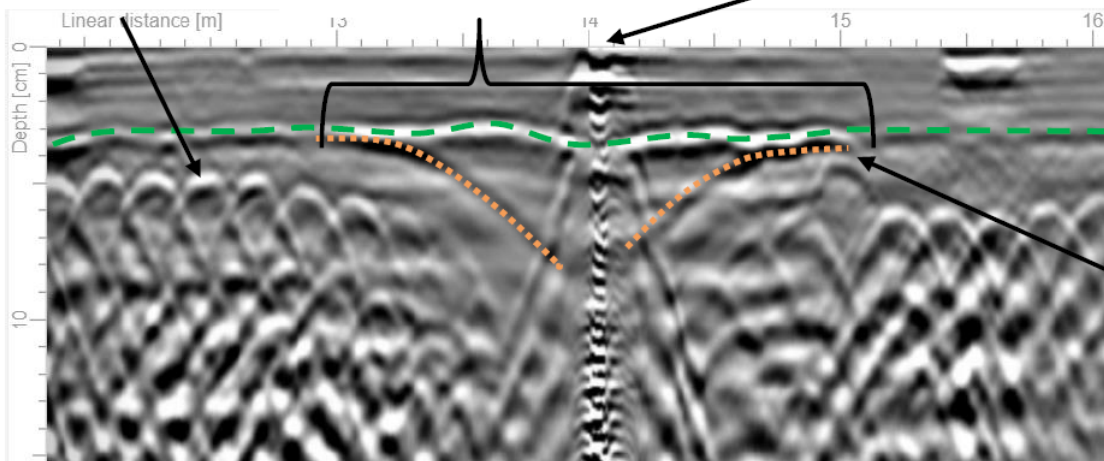
Accurate and detailed interpretation of the collected data allowed for detailed analysis of potential causes for the problem.

Follow up intrusive works and repairs could be better planned with the knowledge of what would be found upon exposure..

Slab reinforcement at 200mm centres at ~150mm depth

Strong reflection amplitude, indicative of a water filled cavity.

Gully



Underside of screed/surface finishes at ~80mm depth.

Apparent top of the structural slab, thought to be level but visually increasing in depth due to the presence of a cavity above.