



LOCATE RADIANT HEATING TUBES

Locating radiant heat tubing in a concrete slab using GPR

Overview

Ground Penetrating Radar is an effective tool for mapping out all embedments in concrete. Whenever concrete is cut or cored knowing what is in the slab is critical for worker safety and to prevent damage to the structure. Being able to differentiate between various objects in a slab allows for cost effective decisions to be made.

Challenges

A contractor was asked to core a series of 3" holes through a concrete slab. Normally this would be a simple enough task however upon inspection it was noted that the slab contained in-floor heating. Even a small "nick" in one of these tubes would cause significant damage and put the project way over budget. It was determined that the tubes must be located before any coring could begin.

Solution

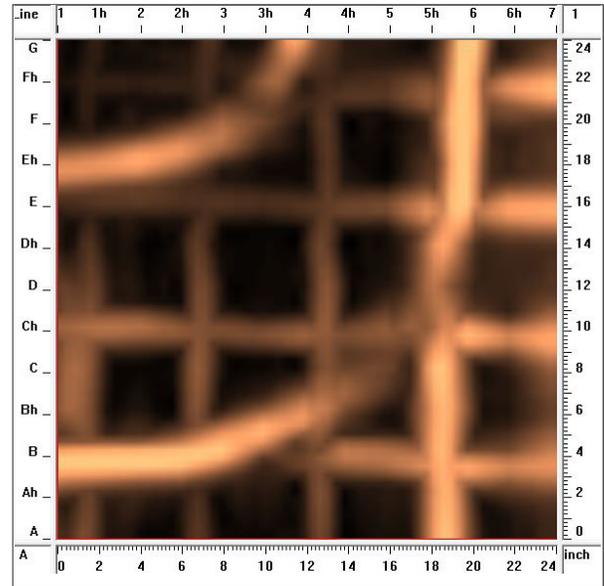
To minimize the risk of hitting a tube GPR was used to scan each of the drill locations. Conquest 100's quick grid collection and rapid on-board processing allowed for each drill site to be scanned and cleared in a matter of minutes.

A 2ft by 2ft grid was collected at each of the locations where holes needed to be cored. Since the first priority was to avoid all embedments the location of the cores were adjusted based on the depth slice images.

The depth slice images generated by Conquest 100 clearly showed the in-floor heating and reinforcement allowing for operators to have accurate information on the interior structure before beginning work. In select locations the heat tubing which had a diameter of 1.25 inches was spaced 6 inches apart leaving little room for error.

Results

Thanks to the use of GPR all holes were drilled without damage to the reinforcement or the in-floor heating tubes. The technology served to efficiently prevent any damage without delaying coring. This resulted in the project moving forward on schedule and on budget.



Depth slice showing wire mesh and in floor heating tubes.

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