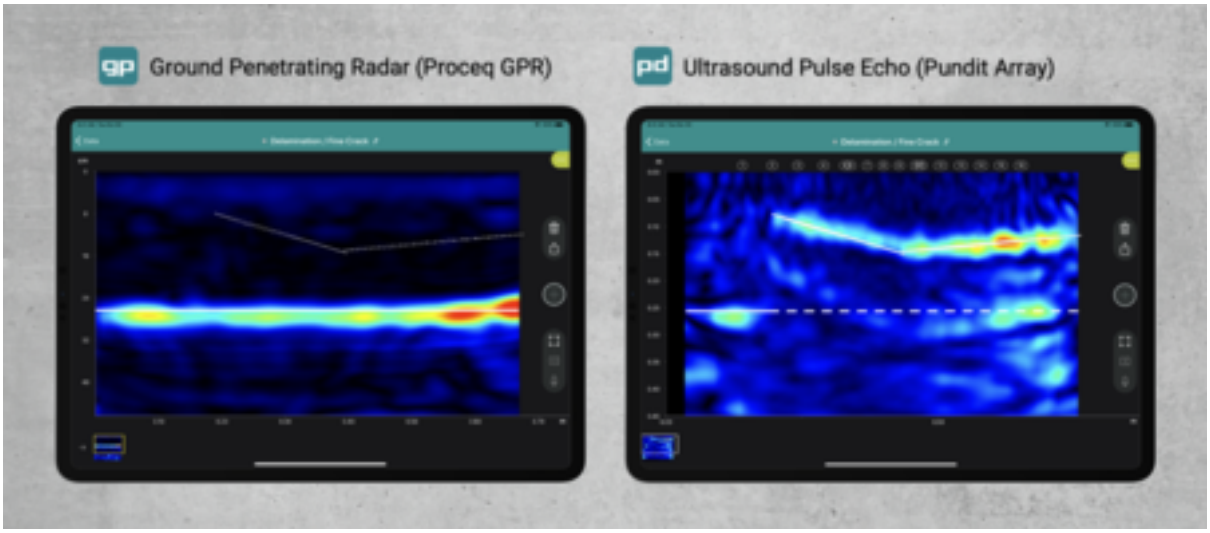
Evaluating Concrete Using Ultrasonic Tomography

As an expert user of GPR for concrete applications, you are confident with its capabilities. But let's take a look at why GPR is not that one silver bullet for all concrete inspections.

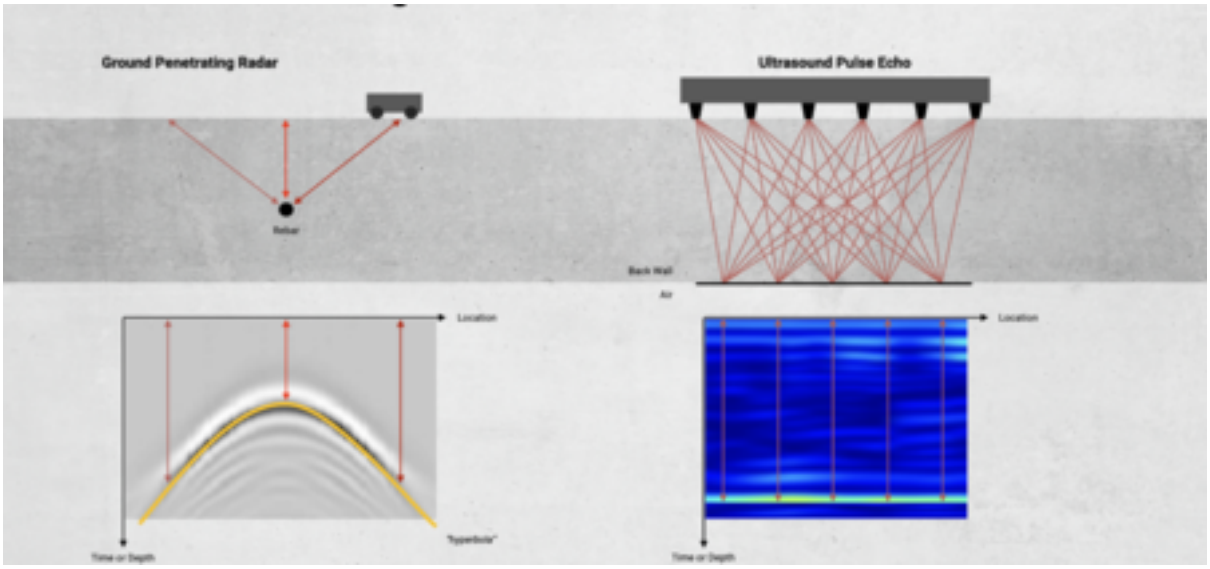


As you know, GPR is perfect for detecting metal objects like rebar. When the GPR waves hit metal, they reflect 100% and you get a very strong signal back. Although GPR provides accurate data for most concrete evaluations, there are some instances where it can have limitations:

· When scanning steel fiber reinforced concrete with GPR, you get a crazy response because the waves just bounce off erratically.

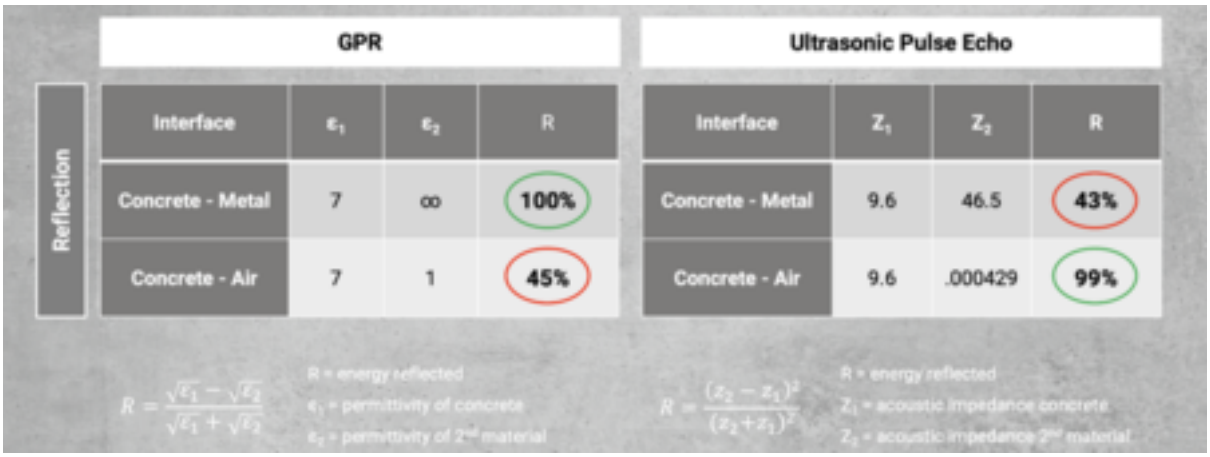
· If GPR waves hit air, only some of the waves reflect back, resulting in a weaker signal.

· At somewhere around 60 to 80cm penetration depth you reach the physical limit of your concrete GPRs.

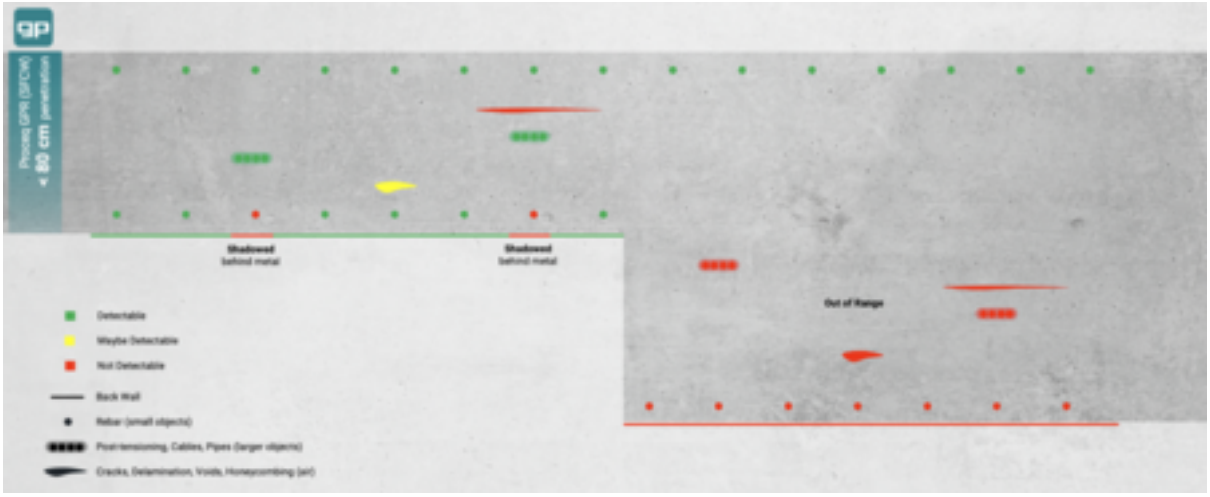


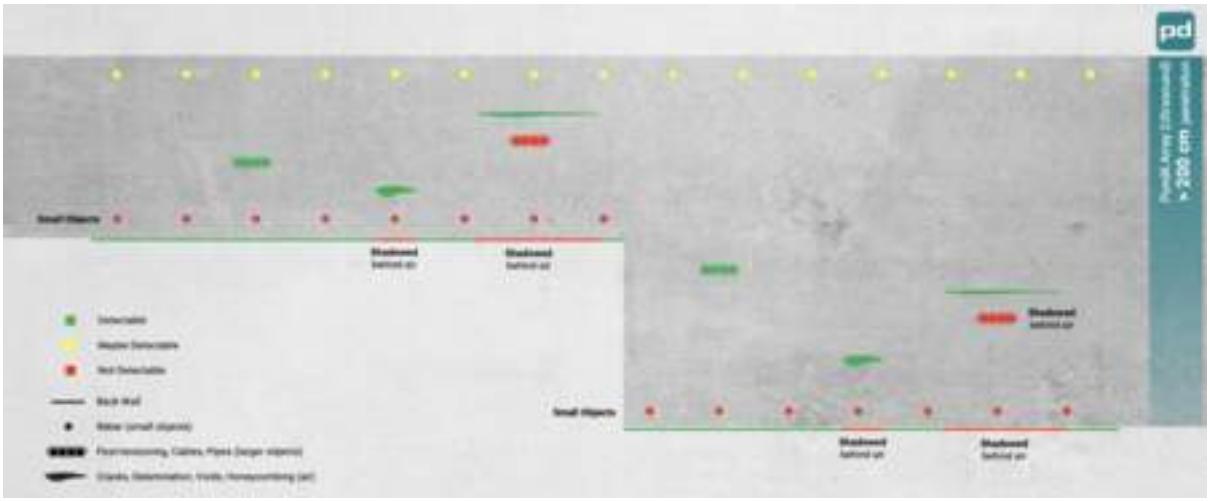
How to get past any limitations of GPR?

This is where ultrasound comes into action. Unlike GPR, an ultrasound wave reflects 100% when it hits air and slices through steel with only a partial reflection. Ultrasound waves also travel much further in concrete allowing you to overcome the penetration limits of GPR.



The Pundit Live Array ultrasound pulse echo device is the leading solution for evaluating concrete using ultrasonic tomography. It is an imaging device like GPR, but instead uses ultrasound waves.

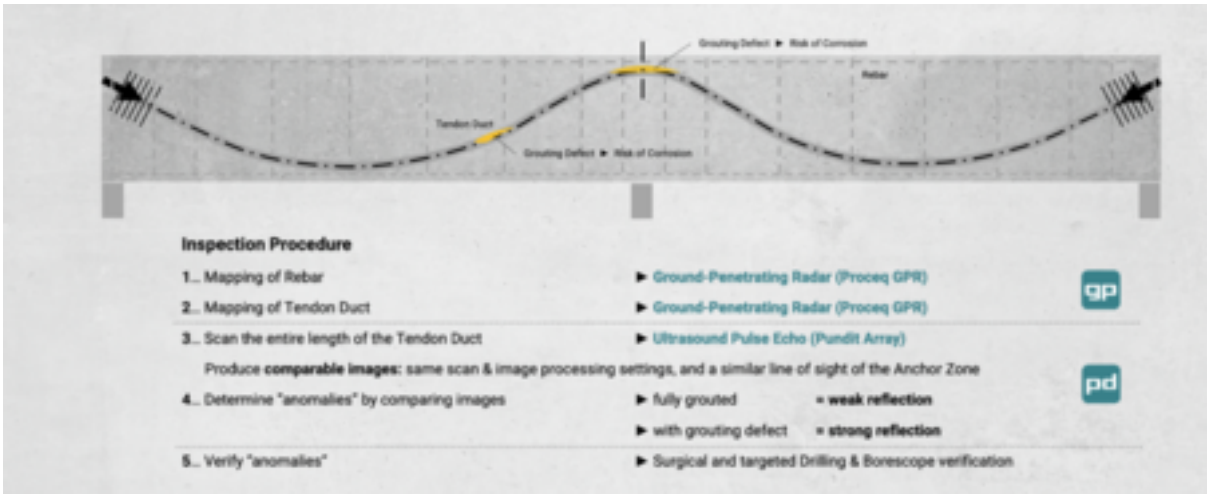




Let's have a look at some of the key highlights of evaluating concrete with ultrasonic tomography, using the Pundit Live Array.

New capabilities

Be it grouting defects of post-tensioning cables or other grouting applications, detecting those dangerous delimitations very early on, scanning steel fiber reinforced concrete, or investigating those thick and mass concrete applications. The Pundit Live Array gives you new capabilities for inspecting concrete strength and uniformity.

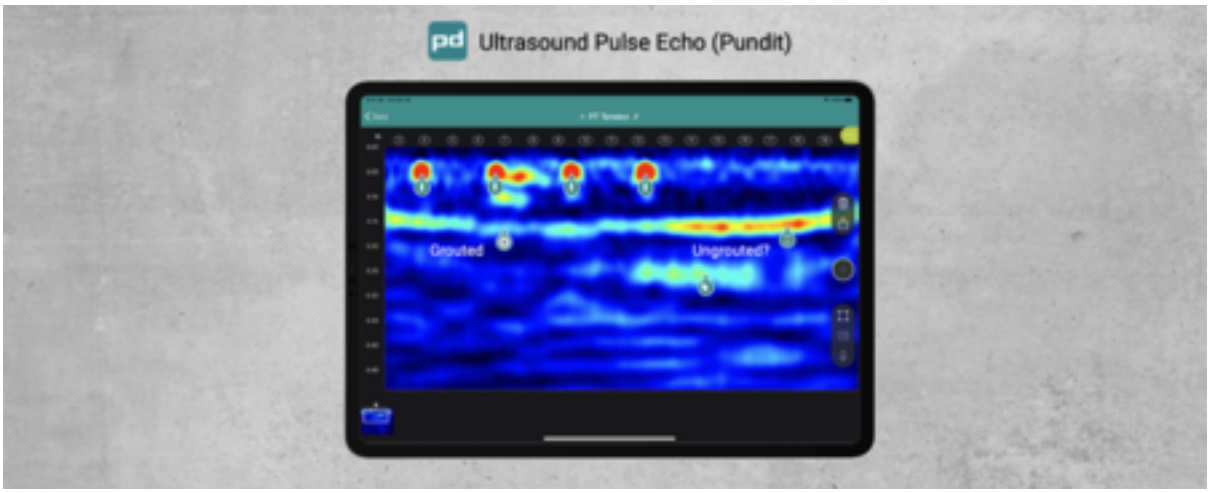


New revenue streams

A number of our customers have opened up entirely new business verticals and significant new revenue streams because they can detect and do inspections that GPR only guys can simply not do - because of the physical limitations of GPR mentioned before. Imagine creating entirely new revenue streams because you have a technology that nobody else has.

Improved workflow

The Pundit Live Array connects wirelessly to any off-the-shelf iPad. Together with our intuitive software platform, you can capture, report, and share concrete inspection data efficiently. Collect instant non-migrated, migrated, time-slice, full 3D visualization and even fully augmented reality data projection, without the need for post processing back at the office. Leveraging the iPad also lets you instantly share the data with your colleagues in their offices or do a live screen-share using applications like Zoom.



Evaluate the homogeneity and the quality of the concrete, detect internal defects, and estimate the depth of any cracks using ultrasonic tomography with the Pundit Live Array.

Together - we can **protect the built world**.

Visit the Tech Hub for more information on concrete inspection methods and techniques.

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