

Ground Penetrating Radar Systems

This technology has been modified over the last few years and is now being offered as a tool to assist the construction and engineering industry with solving problems regarding the location of items in and below concrete slabs and the location of underground utilities.

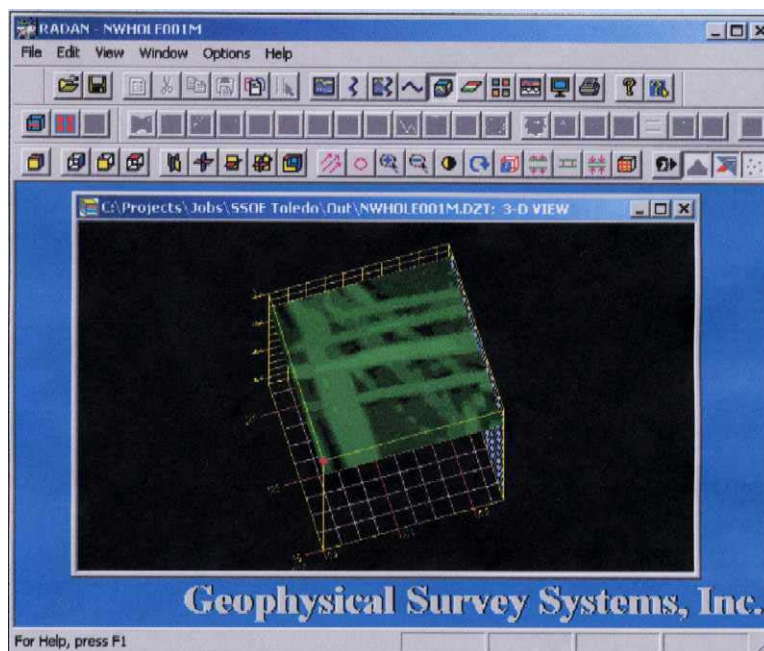
Ground Penetrating Radar Systems, Inc. (GPRS), based in Sylvania, OH has been using this technology for just over one year and has helped numerous contractors and engineering firms throughout the Midwest with locating just about anything they have wanted to find on their specific job-sites. The capabilities ground penetrating radar (GPR) has to offer are being improved continuously. GPRS has recently purchased software that will take the scans from the radar survey and put them into a three-dimensional format for the customer. (See following page).

Why is GPR Innovative?

GPR is innovative because it provides a definitive explanation to questions that otherwise had no easy way of determining the answer. There are other methods of locating, but nothing that is as cost effective or as convenient as GPR. A GPR survey can be conducted in an occupied building without disturbing any residents. On large surveys, several thousand square feet can be scanned in one day.

What GPR has Changed?

X-rays have been used in the past, and are still used to a degree, for imaging structural elements within concrete slabs. The main disadvantage of using X-ray is the cost of having to pay per image. If it takes five or six pictures to find a clear area to drill, which is common, the customer would have to pay for each image. By using the radar, the antenna is simply moved along the surface until a clear area is found. This process takes no more than a few minutes. X-Rays also emit radiation; there is nothing hazardous about radar. GPR frequencies are low enough that they can be used next to sensitive equipment without any disturbance whatsoever.



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Ground Penetrating Radar Used at the New McNamara Terminal at Detroit Metro Airport

One of the largest construction projects in the Midwest is the new \$1.2 billion, recently completed, McNamara Terminal at the Detroit Metro Airport. This terminal will serve as a hub for Northwest Airlines. For passenger convenience, a Westin Hotel is being incorporated into the main terminal building.

Pace Mechanical is the mechanical contractor for the hotel, which is due to open in September of 2002. The concrete structure utilizes post-tensioned cables for reinforcing. It is critical when making the penetrations in the floor for the various mechanical systems, that these cables are not cut. Pace Mechanical and Walbridge/Aldinger decided to use this new technology to locate the post-tensioned cables prior to drilling.



While scanning the area where a penetration is needed, the operator marks the locations of the post tensioned cables.

Pace Mechanical's foreman, Mike Pummill, was amazed at the accuracy of the ground penetrating radar. He commented, **"GPRS really took a heavy burden off of our shoulders and allowed us to drill these holes with ease. Without this service we could not have drilled 125 holes without hitting any of these cables."**

If you have a project where it would be beneficial to know the exact location of the reinforcing steel or utilities prior to cutting or excavating, give Ground Penetrating Radar Systems a call. This technology may be new, but it will become a routine procedure in the near future. If you would like more information about GPRS, give Matt Aston a call or e-mail him at matt.aston@gp-radar.com. Then you can decide if this is a technology you should consider adding to your specifications.

Should You Add This New Technology to Your Specifications?



The mechanical contractor is able to drill the hole by staying away from marks which represent cables.

What is Ground Penetrating Radar?

Ground Penetrating Radar is a technology developed by geophysicists to help them locate valuable natural resources. By transmitting ultra wide band radio frequencies into the ground geophysicists are able to detect anomalies that may represent oil, natural gas and other resources without the expense of drilling. Archaeologists use ground penetrating radar to explore historical sites. Use of ground penetrating radar gives them the ability to excavate areas that show the greatest promise.

Ground Penetrating Radar is proving to be a valuable tool in commercial construction. **This technology allows the contractor to precisely locate reinforcing, electrical conduit, water and sewer lines and voids in and below a concrete slab.** The radar is much safer than x-rays and can be done in structures without disturbing the occupants.

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