

## Detection of Reinforcing Steel, Post-Tension Cables and Electrical Conduits in Concrete

Using our Ground Penetrating Radar (GPR) we can quickly detect post-tension cables, reinforcing steel and electrical conduits in a concrete slab. The equipment is portable and battery operated allowing it to be used at all locations.

Radio waves are pulsed through the concrete which are then reflected back to the test head revealing any embedded materials in the slab. As the test head is pushed across the slab, the system produces an image on the screen of a video data logger, enabling the operator to directly mark the embedment locations on the slab surface, during our site visit. This service is ideally suited to locating of embedded materials where openings in existing concrete slabs are required. The use of radio waves ensures that there is no health hazard associated with this technology and therefore can be completed during normal working hours without special precaution



GPR in use



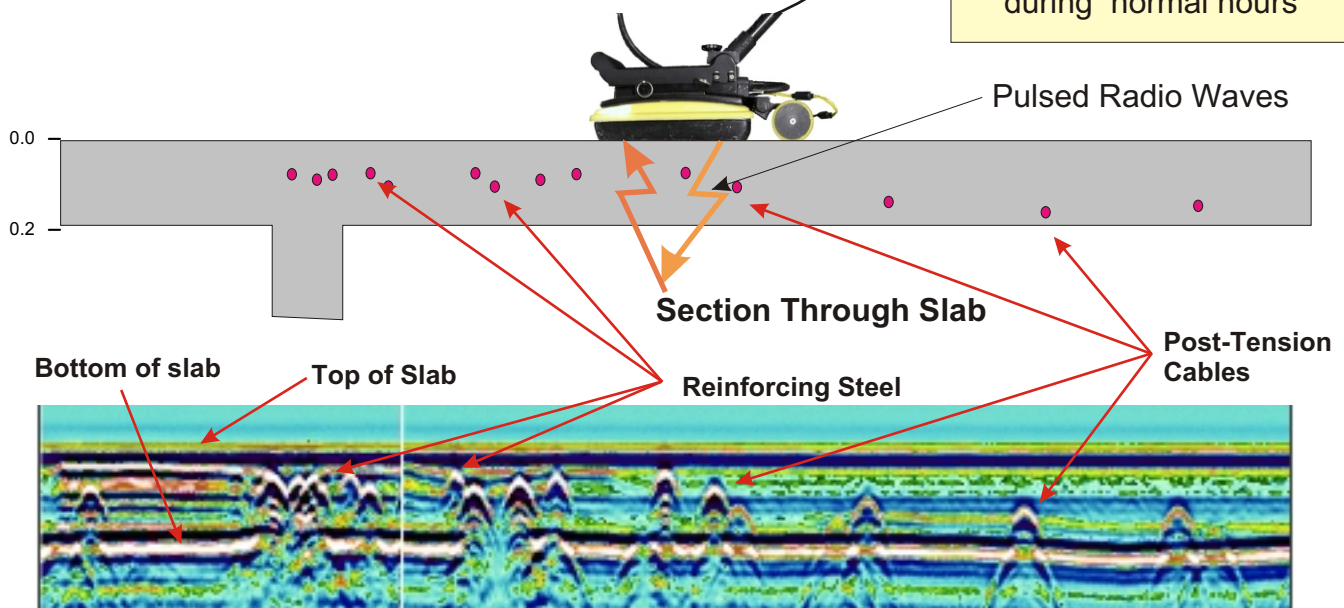
Video Data Logger

### Locates

- Reinforcing Steel
- Post-Tensioned Cables
- Electrical Conduit

### No Health Hazzard

Service completed during normal hours



## GPR Scan Through a Post-tensioned Concrete Slab

Specialists in NDT and Computer Monitoring of Structures

For Further Information Contact

## Company Profile

Tekron Services is a Canadian company providing specialized inspection and testing of construction materials. Incorporated in 1987, the company offers a wide range of inspection and non-destructive testing services to evaluate structures and construction materials. Since the formation of the company our goal has been to incorporate emerging technology into tools and techniques for the construction industry.

## Data Sheets

To illustrate these technologies Tekron has produced a series of data information sheets and case studies. These data sheets are available on request and are posted on our web page from time to time.

## Evaluation Techniques

Since 1987, our company has been involved in several notable investigations including earthquake damage, historical masonry and extensive water leakage, often requiring unusual field techniques to be used to evaluate the problems. Our methods often make use of advanced computerized systems including impact-echo technology which uses sound waves to evaluate defects deep within concrete structures, ground penetrating radar which uses electrical conductivity to detect dissimilarities and computer monitoring techniques using miniature data loggers or cellular connections to evaluate the dynamics acting upon a structure. A list of some of the techniques used and types of investigations completed are given below.

### NDT Techniques

#### Impact-echo

- Thickness
- Delamination
- Honeycombing
- Voids

#### Ground Penetrating Radar

- Re-bar & post-tension cable detection
- Voids & honeycomb in concrete
- Voids below concrete
- Voids in masonry

#### Corrosion mapping

#### Boroscope

#### Moisture and humidity detection

#### Dynamic measurement of physical properties

- Linear displacement transducers
- Telltale
- Demeg gauge
- Vibrating wire strain gauge
- Vibrating wire water pressure transducers
- Vibrating wire tilt meters
- Miniature single and multiple channel data loggers including the following sensors:-
  - Temperature
  - Humidity
  - Light intensity
  - Voltage
  - Motor on/off vibration sensor
  - Motor on/offA/C sensor

### Investigations

#### Concrete Structures

- Bridge decks
- Parking garages
- Reservoirs
- Dams
- Concrete pipes
- Tunnels and shafts
- Water retaining structures
- Pavements
- Foundations
- Historical structures
- Concrete protection
- Analysis of structural materials
- Monitoring of physical properties

#### Building Envelopes

- Roof inspection
- Anchor Safety Testing
- Masonry cladding
- Residential inspection
- Precast concrete
- Stone cladding
- Historical masonry

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