

Project: Johnson Controls, Inc.
Location: Holland, MI
Owner: Johnson Controls, Inc.
Contract Type: Firm Fixed Price
Contact: Cliff Folkert, Plant Facilities Manager

Background

Johnson Controls, Inc. is an automotive supplier with several manufacturing facilities in the Holland, Michigan area.

Scope

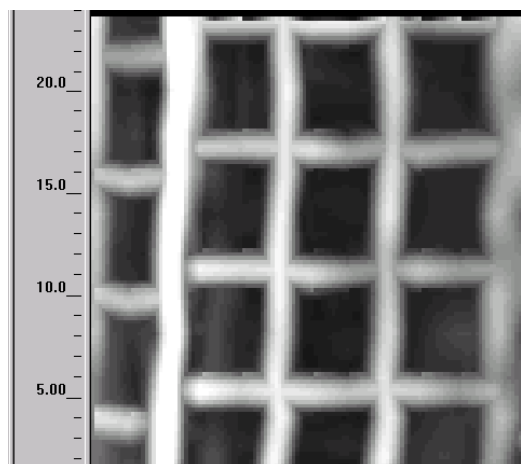
Johnson Controls needed to install several pieces of equipment in their Southview plant which is responsible for producing visor and door assemblies. It was necessary to determine the structural capacity of the existing floor in these areas to see if modifications would be required. By assessing the thickness of the concrete and positioning of the steel reinforcement in the floor their engineers could make a decision. Also, they needed to know the depths and locations of water and air pipes that supplied the existing machinery.

Before any work on the plant was done Johnson Controls called Diamond Inc. to perform Ground Penetrating Radar to generate a series of reports to determine that the above mentioned conditions were ideal for new machinery to be placed.

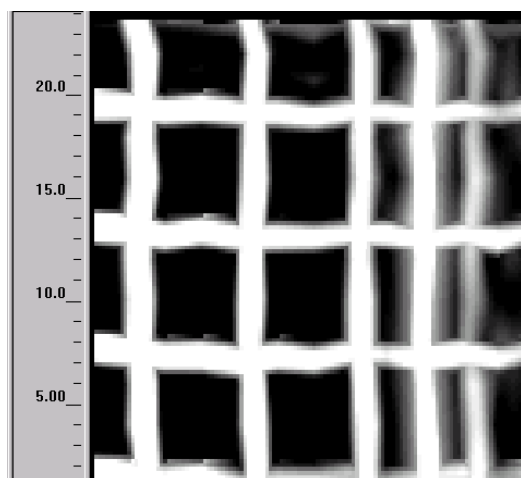
Finally, the customer was under significant time pressure since the new equipment was already on its way to the plant. It was determined that radar surveying was the most efficient means of assessment based on the time available and nominal cost of the service.

Technology and Manpower

Radar surveys were performed by Diamond, Inc. using technology engineered and manufactured by Geophysical Survey Systems Inc. The SIR 20 system with onsite 3D capabilities with Radan software technology was used by one Diamond, Inc. technician. The 400 mHz antenna was used to find the location and depth of the water and air pipes. The 1500 mHz antenna along with the patented 3D Smart Pad technology was used for diagnostics on the thickness of the concrete slab and location of steel reinforcement. Seven different locations between the visor and door plant were scanned and included in a report delivered to Cliff Folkert of Johnson Controls Inc. the following day.



Above: Top view of 2'x2' 3D scan between columns 14.5 and 15 in door plant. Steel reinforcing mat at 3'-4" deep with 8" concrete thickness.



Above: Top view of 2'x2' 3D scan in area of column G3 in visor plant. Steel reinforcing mat at 1.75" to 2.25" deep. Air and water pipe side by side located at 20' deep on the right side of the above scan photo.