



Sturgis Middle School
Sturgis, MI

Project: Sturgis Middle School
Location: Sturgis, MI
Owner: Sturgis Public Schools
Contract Type: Firm Fixed Price
Contact: Larry Hulst, JDH Engineering

Background

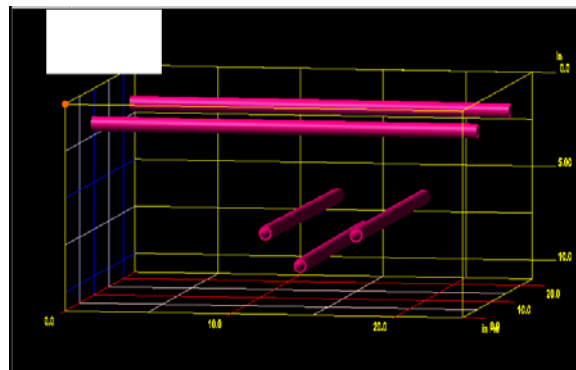
Sturgis Middle School was built in the 1920's. Recently, the school board decided voted to make improvements to the facility requiring significant modification to the existing structure.

Scope

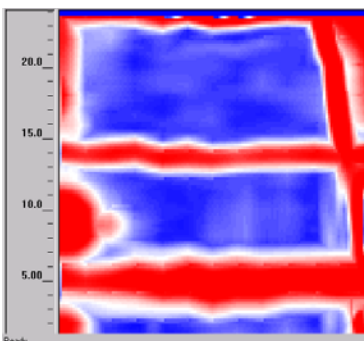
JDH Engineering was called upon to analyze the structural integrity of the 80-year-old building. By evaluating the original drawings of the building, the engineer could only speculate about the steel and its arrangement in the concrete. Some of the improvements proposed required that certain structural requirements be met and confirmed. Therefore, JDH contacted Diamond, Inc. to perform radar surveys of specific areas of the structure and improve the engineers ability to determine whether Sturgis Middle School was capable of supporting the renovations intended by the school board's plans.

Technology and Manpower

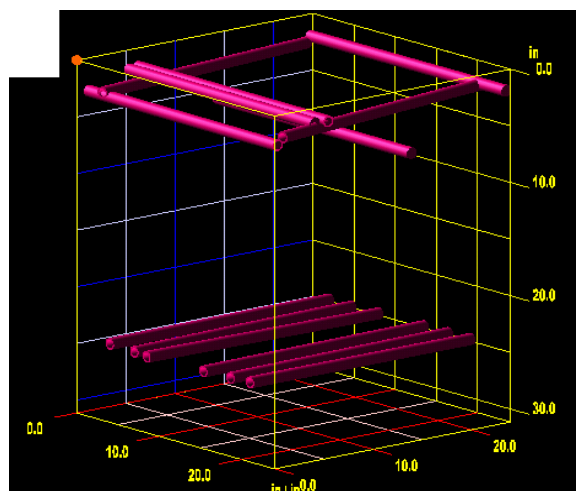
Ground Penetrating radar was performed by Diamond, Inc. using technology engineered and manufactured by Geophysical Survey Systems Inc. The SIR 20 system with onsite 3D capabilities using Radan software technology was used by the Diamond, Inc. technician. The 400 mHz antenna was used to find the location and of the footings on the bottom floor. 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. Ten different locations throughout the middle school were scanned and included in a report delivered to Larry Hulst of JDH engineering.



Above: Angled view of 2' x 2' 3D scan with lines added for clarity where reinforcement is present.



Above: Top view of the first layer of reinforcement present in a 2'x2' 3D scan.



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