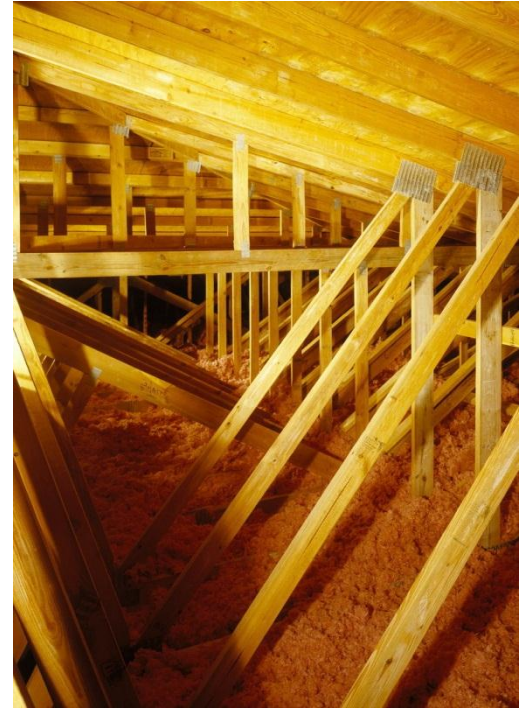




PROJECT PROFILE

Gavin Elementary School

Repair of Plate-connected Wood and Steel Roof Trusses | Ingleside, IL



CLIENT

Harleysville Insurance Company

BACKGROUND

Gavin Elementary School opened in 1993 and is home to first-through fifth-grade students. The school consists of three distinct modules totaling nearly 60,000 square feet. Two of the three modules house classrooms and were constructed with a plate-connected wood truss roof system supported by exterior masonry bearing walls and an interior steel beam line. The third module contains the library, administration offices, and gymnasium. The gymnasium and adjacent rooms were constructed with a long-span steel truss roof system, while the remainder of the third module utilized wood roof trusses.

The client retained WJE to analyze the trusses and develop repair plans in response to the discovery of many fractured plate-connected wood trusses throughout the building. WJE discovered that the steel trusses supporting the roof of the gymnasium and adjacent rooms were improperly designed and fabricated.

SOLUTION

WJE engineers performed an investigation and structural analysis of the wood trusses to identify the cause and extent of the problem and to determine the as-built structural conditions. The engineers then designed bolted repairs to address all members in distress and implemented retrofits to provide supplemental structural redundancy. WJE also instrumented and jacked in situ trusses to remove dead load stresses, performed nondestructive evaluation of all welds, and designed and installed reinforcement details. Finally, WJE supervised the repair and retrofit installation and performed construction administration services.

