

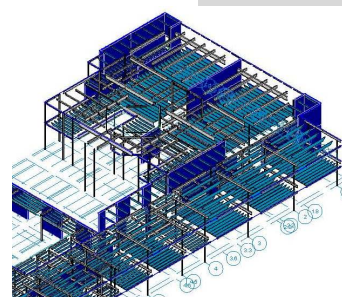
### John Handley High School

The initial phase of the project required a structural evaluation and feasibility study determining the extent of structural modifications required to remove areas of the roof structure and build a new second floor structure over the existing footprint. The changes implemented required modification and reinforcing of the existing structure for large skylights, retrofitting the interior structure and increasing lateral load capacity for wind and seismic loads, and adding a second floor structure over existing classroom areas.

The foundations at the lower level were reinforced with pile caps on micro-pile foundations. Helical piers were considered for the foundation, however, due to the karst land identified in the geotechnical study, it was decided micro piles which were socketed a minimum of 5 feet into the underlying limestone would provide a more reliable foundation solution.

The boiler building was also retrofitted for wind and seismic loads and the roof structure was raised approximately 6 feet. The stadium fixed seating bleachers and press box were upgraded and expanded.

The picture at the lower left corner shows the computer model of the café court dining area, while the picture in the center shows the same area during construction. The image in the lower right corner is of the 3D structural model that was generated during design.



### John Handley High School Renovation and Expansion

**Location:** Winchester, VA

**Architect:** VMDO Architects  
Charlottesville, VA

**Construction Manager:**  
Howard Shockey and  
Sons, Winchester, VA

**Area:** 259,500 ft<sup>2</sup> renovated  
and 37,000 ft<sup>2</sup> 2<sup>nd</sup> floor  
expansion

**Student Capacity:** 1,350

**Construction Cost:** \$63.5 M

**Floor System:** concrete on  
steel joists

**Roof System:** steel joists

**Lateral System:** steel braced  
Chevron frames

**Completion Date:** Nov. 2009  
project was completed over  
four phases spanning 6 years  
for design and construction

The decision was made to renovate and expand as the existing school is a beloved and historical element of the community.