

Cumberland County Courthouse Project Narrative



Figure 1: Cumberland County Courthouse

History

The Cumberland County Courthouse, located in Crossville, Tennessee, has served as a civic landmark for more than a century. Constructed in 1905, the courthouse was the third built for the county, replacing earlier structures from 1857 and 1886. Designed by W. Chamberlin & Company of Birmingham, Alabama, the Romanesque Revival building was constructed with sandstone quarried locally.

For decades, the courthouse housed the county's judicial and administrative offices, before those functions were relocated to a modern justice center in 2009. Its iconic clocktower and sandstone façade have long symbolized Cumberland County's heritage. Recognizing this importance, the courthouse was listed on the National Register of Historic Places in 1980.

By the early 2020s, time and deferred maintenance had taken a toll. The roof structure and supporting trusses were in critical condition, threatening the building's stability and future use.

Initial Issues and Stabilization

In 2023, ceiling failures in the second-floor courtroom led to a structural investigation.

Engineers discovered that several heavy timber roof trusses were severely deteriorated, with settlement of more than twelve inches at multiple bearing points.



Figure 2: Deterioration of the wood trusses

The building was deemed unsafe and closed to the public. Emergency shoring was installed to prevent collapse of the roof and clocktower, but it was only a temporary measure. Cumberland County sought a permanent stabilization program to preserve the courthouse for future generations.



Figure 3: Shoring holding the roof aloft while the team works

Purpose of BCR Contract

Buckeye Construction & Restoration (BCR) was selected through a value-based procurement process to execute a lump sum contract of \$2,292,369, including \$537,407 performed by specialized subcontractors (asbestos abatement, roofing, and historic window replacement). The project ran from February 5, 2024, to March 14, 2025, under the oversight of Wiss, Janney, Elstner Associates as Engineer of Record.

The County's objectives were:

- Stabilize the roof framing and prevent collapse.
- Repair deteriorated timber trusses, masonry, and the clocktower.
- Restore the building envelope — stone, brick, windows, and roofs.
- Deliver a structurally sound, weather-tight shell for future interior renovation.
- Perform all work to the standards of the National Park Service for Historic Landmarks.

Scope of Work

BCR's work included both structural stabilization and exterior restoration. Major elements were:

- Selective demolition of finishes to access structural framing.
- Structural shoring using custom-fabricated steel towers running from roof to foundations, transferring loads from the trusses and clocktower during repair.
- Timber truss repairs, including removal of deteriorated members, reinforcement of chords and bearings with steel plates, rebuilding of truss tails, and restoration of failed connections.
- Masonry stabilization at bearing walls, with replacement and reinforcement of severely deteriorated stone and brick.
- Clocktower repairs to the heavy timber frame and sheet-metal enclosure.



Figure 4: Demolition of the deteriorated masonry

- Façade restoration, including dutchmen, stone replacement/resetting, tuckpointing, and brick restoration to both sandstone and brick facade. More than 30 window lintels were repaired/replaced.
- Envelope upgrades, including historically accurate replica windows, new roofing systems (membrane, standing seam, sheet metal), cleaning of all masonry, and replacement of all sealants.
- Final turnover of a fully stabilized, watertight shell ready for interior renovation.



Figure 5: Drilling holes in truss to install additional support system

Project Statistics

Contract Value: \$2,292,369

Subcontractor Portion: \$537,407

Owner: Cumberland County

Engineer of Record: Wiss, Janney, Elstner Associates

Schedule: February 5, 2024 – March 14, 2025

Delivery Method: Lump Sum, value-based selection

Project Challenges and Obstacles

The courthouse project presented several challenges:



Figure 6: Installation of turnbuckle style support system

- Occupied adjacency – An attached government building remained in use throughout construction, requiring careful control of dust, noise, and access.
- Downtown location – The courthouse sits on Crossville’s main square, limiting laydown areas and requiring coordination with city officials for staging and deliveries.
- Structural risk – Repairs required temporarily supporting 100% of the roof and clocktower. Precision sequencing and continuous monitoring were critical to avoid collapse.
- Unknown conditions – Extensive exploratory demolition revealed more deterioration in truss tails, connections, and masonry than anticipated. With no original drawings available, repair details had to be designed in real time.

Construction Innovations

BCR employed several innovative strategies to meet these challenges:

- Procore production tracking compared field progress against budgets and schedules, allowing quick manpower and sequencing adjustments.
- Rolling look-aheads (two- and four-week) integrated into Procore ensured subcontractors and self-performing crews stayed aligned with shifting conditions.
- QR code documentation – Locations were tagged with QR codes linked to photos and notes in Procore, giving the engineer and owner immediate access to field conditions. This streamlined approvals and reduced downtime.
- Custom steel shoring – Heavy shoring systems were designed and fabricated onsite to accommodate the irregular geometry of the historic structure, transferring loads safely while repairs were executed.

Conclusion

The Cumberland County Courthouse stabilization and restoration preserved one of Tennessee's most treasured civic landmarks. Over thirteen months, BCR and its partners repaired trusses, rebuilt masonry, restored façades, replaced windows and roofs, and stabilized the iconic clocktower — all while working within an active downtown and alongside occupied government offices.

The project was completed on schedule, under budget, and without a single safety incident. It demonstrates BCR's ability to deliver complex historic restorations with precision, innovation, and collaboration. Today, the courthouse once again stands as a safe, stable, and enduring symbol of Cumberland County's heritage.

Figure 7: Masonry Facade Restoration



Figure 8: Newly restored facade



Figure 9: Fully complete truss system

