

Ruby Falls

Chattanooga, TN | Travel/Tourism

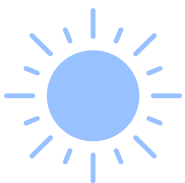
Ruby Falls receives over 500,000 visitors annually, coming to catch a glimpse of the tallest underground waterfall open to the public in the U.S. Now, reimagined venues at Ruby Falls represent a new chapter for the historic destination. An environmentally sustainable transformation, completed in 2018, involved repurposing the National Register of Historic Places 1929 Cavern Castle. The two-story, 13,000-sf building expansion and 4,000-sf outdoor venue addition was designed and constructed with health, wellbeing, energy efficiency, water conservation, and community access in mind. Highlights of the project include a new entrance and Ticket Atrium with expanded guest services, the Blue Heron Overlook, the Back Porch featuring seasonal open-air dining, Village Gift Shop, administrative offices, and the Ruby Falls Village Plaza. The project is LEED certified.



ENERGY CONSERVATION



Energy Efficiency: The building was modeled to be *more than 24% efficient in energy compared to a conventional building*. The energy-efficient envelope, low-E windows, LED lighting and controls, efficient HVAC system, and building automation system all contribute to this performance. To verify the energy-efficient design met Ruby Falls' project requirements and was effectively implemented, a third-party commissioning authority was engaged. The commissioning authority reviewed the design and coordinated systems installation and testing with the contractors, verified training of the building operators, and ensured that systems were functioning as designed.



Natural Light: Daylighting was integrated into the design approach with the controlled admission of natural light, direct sunlight, and diffused light. Daylighting was balanced with thermal issues such as winter heat loss and summertime heat gains. Daylighting helps create a visually stimulating and productive environment for building occupants while reducing building energy costs. It provides a direct link to the dynamic and continuously evolving patterns of natural outdoor illumination, strengthening the connection to nature.

WATER CONSERVATION



Low-Flow Fixtures: Water conserving plumbing fixtures were installed in all new bathrooms and break rooms. These fixture selections improved indoor water consumption by 38,287 gallons per year; *a 39% water use savings compared to a similar conventional building.*



Rainwater Collection & Use: Ingeniously placed under the Village Plaza is a modern rainwater collection and filtration system featuring two 8,000-gallon water tanks. Utilized for landscape irrigation, the system reduces water runoff, decreases contaminants that may otherwise enter the watershed and reduces stress on public water sources.

COMMUNICATION & EDUCATION



Digital Signs: In 2018, more than 500,000 guests visited Ruby Falls and learned how the attraction is protecting natural resources in the cave, above ground, and in the community. Information highlighting the sustainable features of the new venues are featured on digital sign boards around the property and on the Ruby Falls [website](#).

TRANSFERABILITY

The expansion project illustrates the role a strong sustainability vision, supported by clear goals from a comprehensive approach, has in fostering economic growth and positive impact on the community.

Project outcomes have been presented to the Sustainability Professionals of Greater Chattanooga, Southern Highlands Attractions (SHA), Center for Sustainable Business and Development, University of Tennessee College of Retail, Hospitality, and Tourism Management classes.

PARTNERSHIPS

The project was dependent in large part on an exceptional level of partnership with local and state officials, local utility providers (EPB and Tennessee American Water), and the Chattanooga Land Development Office. It also created an extraordinary collaboration between the Ruby Falls facility team and the general contractor (EMJ), and with the residents of Lookout Mountain. Local vendors are supported, and their products are sold at Ruby Falls.