When construction of Ellis Library was completed at the University of Missouri’s Columbia campus in 1913, an exterior of white limestone reinforced the school’s image as the state’s oldest and most comprehensive institution of higher learning. With the onset of the 1980s, however, it was apparent that a new addition was overdue at the 1,500,000 volume main library.

Ensuring the new facility maintained historic continuity with the 148-year-old campus was high on the university’s list of design priorities. It was not unexpected, therefore, when architects proposed a veneer of cut limestone outside the 63,000-square foot addition.

Introducing the exterior stone and joint patterns as a design element in the building’s atrium entrance area, however, offered an opportunity for imaginative use of gypsum wallboard to accomplish the “limestone effect.”

Project architect Jerry Baru of Peckham Guyton Albers & Viets

The new 10 x 12 clerestory arches were framed using metal studs, angles and track, then finished with stone-shaped gypsum wallboard cuttings as large as three feet across at the clerestory peak.
A skim coat of smooth finish plaster was applied to produce the fine sand texture characteristic of cut limestone.

(PGAV), Kansas City, MO, emphasized the limestone look created from gypsum board was an important contributor in relating the new addition to the existing design. “We felt it was important to maintain continuity with the original structure. Carrying the limestone block, keystone and cornice patterns into the atrium helped us achieve the desired result.”

Positioned in a 50 x 100-foot area at the northwest corner of the new library wing, the two-story, glass-faced atrium not only unites the new construction with the old, but also provides spatial separation between the traditional Indiana limestone quarried in different decades.

Entering the atrium through vestibule doors on the building’s west side reveals a marble stairway which draws one’s eye upward to massive clerestory arches 35-feet above a terrazzo floor.

The series of vaulted arches, like the sidewalls flanking the open stairway, feature the limestone treatment crafted from gypsum wallboard to resemble the building’s exterior stonework. Installed by AWCI member company Braun Plastering of Jefferson City, MO, much of the drywall work demanded exceptional framing and cutting skills.

According to George Braun, president of Braun Plastering, the Ellis Library project was a real test for his six-man crew. “We’ve been challenged by some pretty tough assignments over the past 15 years, but I don’t recall one that required more precision than this job.”

Braun’s carpenters were initially challenged with the task of framing the atrium’s walls and ceiling with metal studs, track and trim. Columns and recessed seating ledges demanded the know-how of veteran craftsmen, but the crew’s real test came in assembling, raising and anchoring the eight 10 x 12-foot arches above the atrium’s second level. Formed from metal studs and angles screwed to channel-shaped track, construction of the first arch was the most difficult, but once a pattern was established, other assemblies followed quickly.
The limestone look created from gypsum board was an important contributor in relating the new building addition to the existing design.

With atrium framing complete, drywall hangers and tapers moved in to finish the job. The first step was to apply a base course of 1/2-inch gypsum wallboard throughout the atrium interior. Next came the time-consuming task of securing several hundred stone-shaped wallboard cuttings to the first layer. Pieces were spaced 1/2-inch apart to replicate rusticated joints and secured with drywall screws.

While the “stone” pattern of the atrium’s arches and columns is fairly uniform, a random design on interior walls required pieces to be ruled and scored without the benefit of a template. Pieces ranged in size from several inches wide near the atrium.

A series of vaulted arches, as well as sidewalks flanking the addition’s marble stairway, feature a stone look fashioned from Gold Bond gypsum wallboard and plaster-finished to produce a texture which matches the native limestone.

Entering the 50 x 100-foot atrium-style gallery through vestibule doors on the new Ellis Library wing’s west side reveals an open marble stairway which draws one’s eye upward to massive clerestory arches 35 feet above a terrazzo floor.
floor to nearly three-feet across at the clerestory peak.

All wallboard joint lines were trimmed with metal corner bead to ensure uniform, square edges. A skim coat of smooth finish plaster was then applied to produce the fine sand texture characteristic of cut limestone. After joint recesses were spray-painted with an off-white latex, a stiff roller was used to cover the atrium’s surface areas with a very low gloss charcoal grey.

The Braun Plastering crew required approximately six weeks to complete the challenging atrium portion of the project. Foreman David Bax stated that the Ellis atrium was a real departure from most jobs he encounters. “I’ve seen drywall used in unusual and interesting ways, but never quite like this or on a job of this size. I’d like to tackle another one.”

Bill Labus, Kansas City, MO sales representative for Gold Bond Building Products, supplied more than 80,000 square feet of gypsum wallboard for the library’s new wing. In his estimation, “Gypsum wallboard is such a basic element in interior construction today that its creative potential is often overlooked. The use of gypsum board in the atrium entrance area ranks as one of the most creative applications we’ve seen and shows that craftsmanship is not dead.”

According to PGAV Director of Design Tom Jowett, his firm’s recommendation to use gypsum wallboard to simulate cut stone has paid off for the university both aesthetically and economically: “The limestone effect not only reflects the imagery of the existing building . . . it also gives the atrium visual punch at half the cost of real limestone.”