HARRY H. EDWARDS AWARD WINNER

Jack Britt High School Fayetteville, North Carolina

Insulated precast concrete wall panels with cast-in thin brick provided North Carolina's Cumberland County Schools with a cost-effective alternative to traditional brick and block construction. The precast panels used in this way maintained the traditional "school house" look and feel that was so important to school officials and the community. The resulting design has become a prototype for other schools which previously considered masonry as the primary building material.

Challenged with a very tight construction schedule and restrictive budget, architects for the new Jack Britt High School near Fayetteville, North Carolina, turned to an insulated precast concrete panel system with cast-in thin brick as a viable, cost-effective solution. The 275,000 sq ft (25,500 m^2) facility features 410 precast concrete wall panels, most of which are $7^5/_8$ in. (194 mm) thick. Built to house 1750 students and faculty, the new school took less than 18 months from beginning of site work to completion of the precast erection, and only 21 months to occupancy. The resulting design offered an attractive option for creating new school buildings that provide the feel of brick and block but have to be built in a short period of time (see Fig. 1).

Fig. 1. The precast concrete panels with thin-brick veneer gave Jack Britt High School the look and feel of a traditional brick masonry building, but made construction faster and less costly.

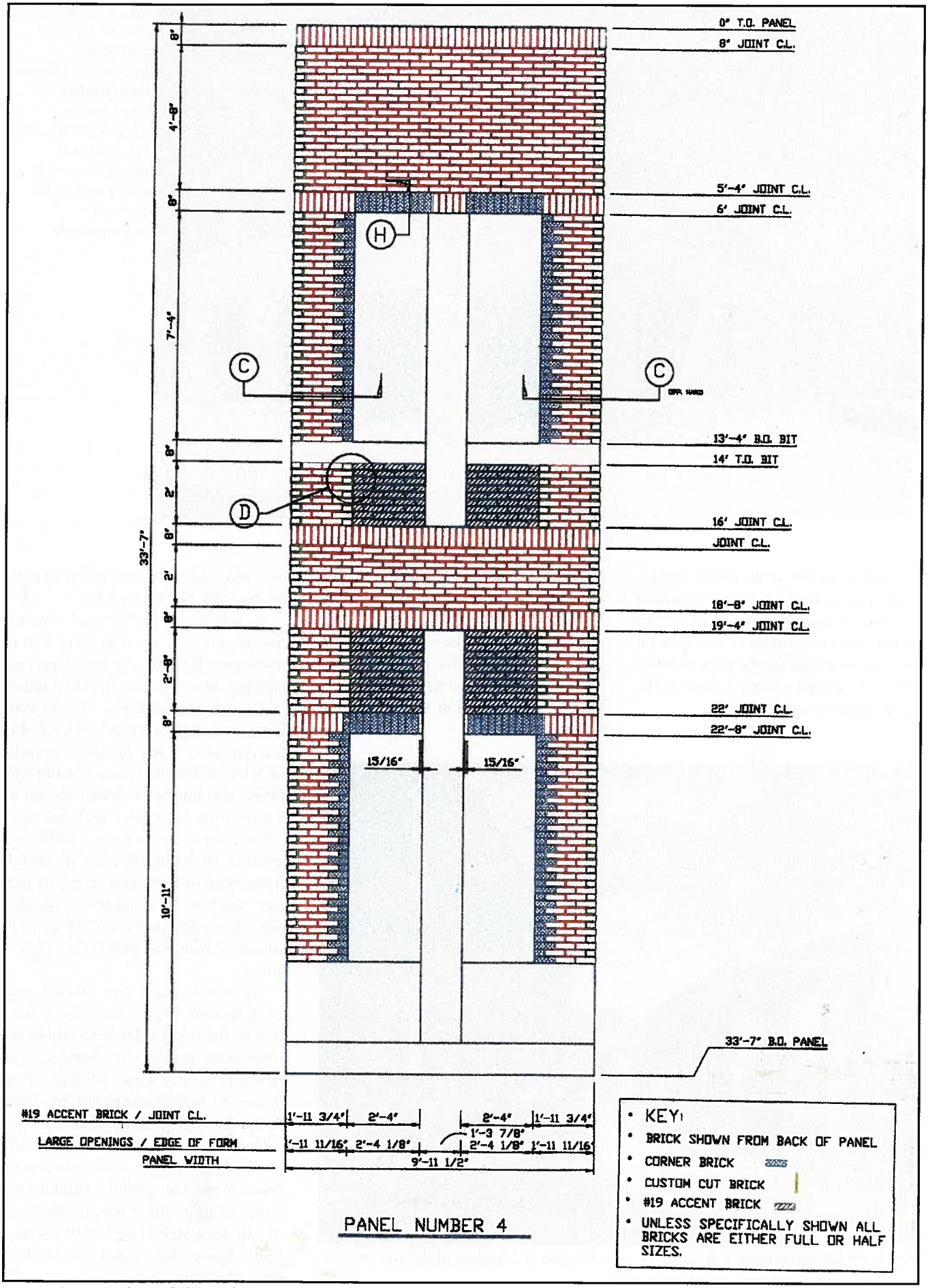

Fig. 2. This typical panel shows the different types of thin brick that was cast in the panels.

Fig. 3. Sandblasted precast concrete around the building's perimeter (foreground), provided an attractive contrast to the insulated precast concrete wall panels with thin brick (background).

Because of the great size of the facility and critical shortage of skilled masons in the area, designers were afraid that there would not be enough masons available in the area to complete the building using a more traditional masonry system.

Precast concrete's advantage of construction speed was another deciding factor in using the material over masonry. The insulated panels could be fabricated at the precast plant while interior masonry walls were being built at the job site. This process reduced the construction time by approximately four months.

Fig. 4. Architectural accents throughout were created at a fraction of the cost of those for typical masonry cavity-wall construction.

To sell the idea of precast concrete for the school, the designers had to overcome the perception of precast concrete as a solution for only industrial types of buildings. To do this, they worked with school officials and the precast concrete producer to come up with an insulated precast wall panel faced with thin brick, which would be a substitute for cavity wall masonry construction (see Fig. 2). Additional accents, including decorative medallions, windowsills, and bands of precast concrete, were added to complement the combination architectural/structural insulated panels (see Figs. 3 and 4).

The windowsills and precast concrete banding were created at a fraction of the cost of doing so within the framework of a masonry building. The producer created false columns, spandrels, and medallions by leaving brick out of the form in selected areas.

Spanning two levels, the facility was designed as a multi-functional space organized around a central two-story atrium, which was illuminated, in part, by a 10,000 sq ft (930 m^2) skylight. Spaces for shared use, such as the auditorium, gymnasium, and cafe-

teria, are located on the first floor. The functional considerations for the common areas included not only the school itself, but also the community at large. For instance, partitions between the cafeteria and central atrium can be removed to create a huge space for a variety of activities. A modern media center, music room, and administrative offices also occupy the first floor. The second level comprises core academic classrooms and science laboratories (see Fig. 5).

The precast panels and masonry construction complemented each other very well. Accent walls, for instance, combined concrete blocks with alternating split-face and smooth-face courses to create an aesthetically pleasing contrast to other parts of the structure.

The project design was a prototype system for what could be applied to other types of facilities and other locations. Compared to traditional masonry construction, which is more time consuming and requires more labor from various trades, the precast concrete panels system reduced potential delays and litigation, and assured the highest quality of construction in the finished project.

The total cost of construction for the project was $27 million.

Jury Comments: "This project makes it clear that schools can benefit greatly from the use of thin-brick, insulated wall panels, which eliminate the need for block, brick, insulation, and stud walls. Providing the entire package in one unit reduces the number of trades and condenses the responsibility into one supplier, providing a cost-effective solution. The project is distinctive not only because it was designed as a prototype and thus can be used in many different locations, but also because it meets the needs of the client elegantly and economically. The project expands the use of precast concrete into an area not often considered for its use and produced a handsome modern school in the process."

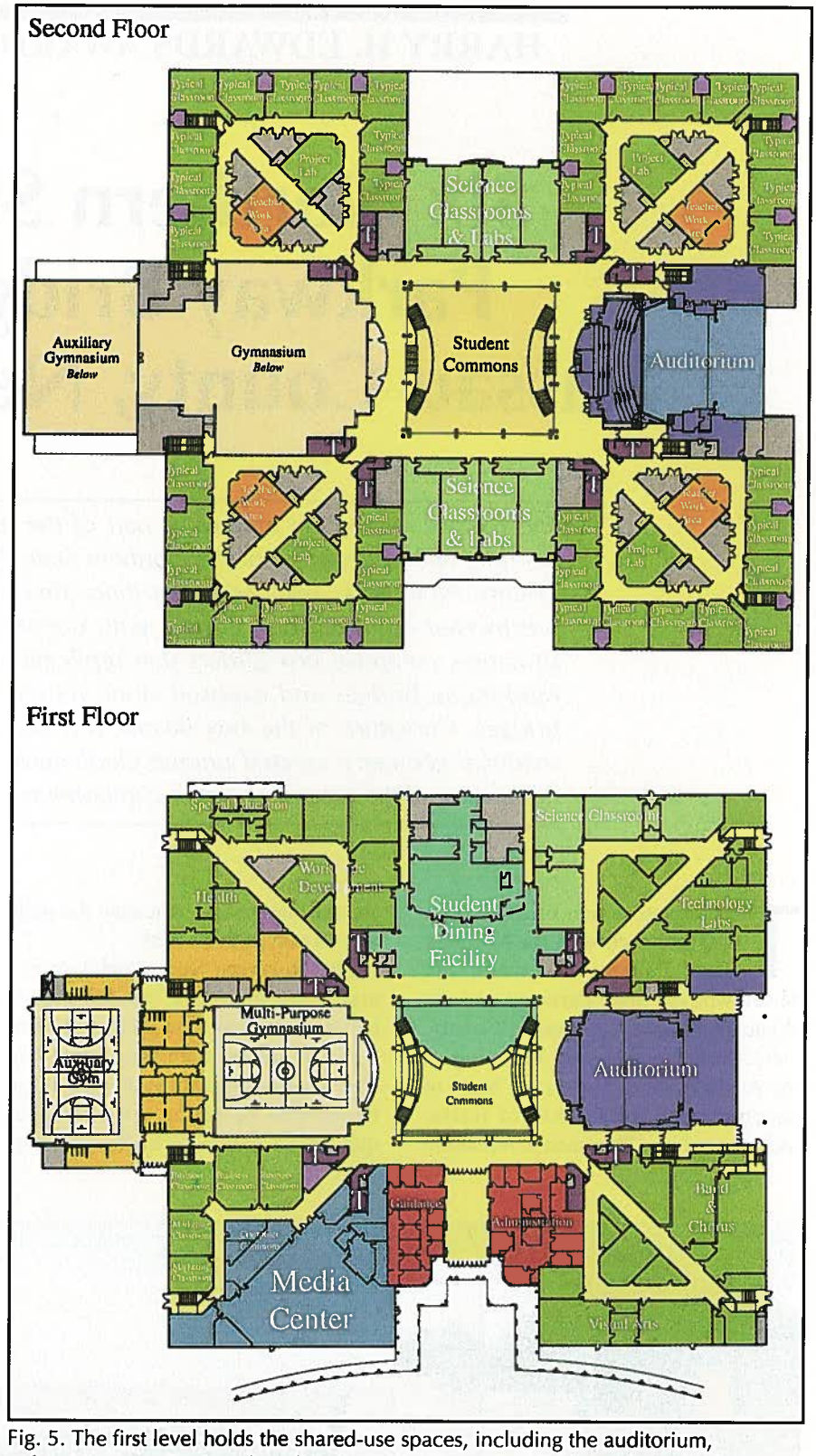

Fig. 5. The first level holds the shared-use spaces, including the auditorium, cafeteria, gymnasium, and media center. On the second floor are the typical classroom spaces and science laboratories.

CREDITS

Owner: Cumberland County Schools, Fayetteville, North Carolina

Architect: Shuller Ferris Lindstrom & Associates Inc., Fayetteville, North Carolina

Engineer: Fleming & Associates Inc., Fayetteville, North Carolina

General Contractor: Barnhill Contracting Co., Raleigh, North Carolina

Precast Concrete Manufacturer: Tindall Corp., Spartanburg, South Carolina