A Pattern Of Quality

It begins with Christina Marble Company, fabricators and suppliers of the world's choicest marble and granite. It continues with David Allen Company, expert contractors and parent company of Christina Marble. Together, they turn design dreams into living stone. Each building is unique. Each fits an exacting pattern of quality.

For information and technical assistance, contact:

Christina Marble Company
P.O. Box 27685, Raleigh, NC 27611 919/828-8001

A subsidiary of

DAVID ALLEN CO.
P.O. Box 27705, Raleigh, NC 27611 919/821-7100
5 BACK TO SCHOOL
Schools are for children, for educators and for the community. Architects who design schools have to know and understand the needs of all of them. A look at how some architects across the state have balanced competing demands to produce schools that work.

Cover photo: Interior courtyards at Albrighton Middle School in Fort Bragg expand the space for teaching and activities to the outdoors. Above: Clerestory windows in the media center at Franklinton Elementary School shed light on the learning process.

15 SELECTING AN ARCHITECT
Picking an architect to design a school requires homework and rigorous self-examination. A guide to choosing the one who can best deliver the school of your choice.

16 NCA FORUM
Architects, educators, administrators and school board members discuss the issues facing people involved in the planning, design and construction of new schools.

20 BUILDING FOR TODAY AND TOMORROW
The age of experimental education, which dominated the 1960s and 1970s, is past. Today, as architects and educators plan and build schools with a new infusion of state funds, they respond to a new, more traditional educational program.

22 OFF THE DRAWING BOARD
Who's designing what, where in North Carolina, plus names and changes among the state's design firms.
Pozzi Wood Windows are beauty defined. Architecturally correct. Soundly crafted. Elegantly designed. But beyond the surface, form and function combine to make this the finest, most perfectly engineered wood window made.

**Commercial Grade Boot Glazing**

Pozzi's insulated glass is surrounded by a vinyl boot that keeps out moisture, controls noise and cushions against the natural movement of the structure.

**More Wood**

Pozzi puts more wood into both its sash and frame to increase their natural insulating qualities, enhance structural integrity and make possible more attractive detailing and shadow lines.

**Ease Of Maintenance**

A phillips screwdriver, a rubber mallet, a nearby hardware store and a willing owner are all that are required to fully maintain all window components.

**Learn More...**

Pozzi offers a very detailed, full-color booklet, The Differences Defined, which will familiarize you with all the unseen beauties of this remarkable wood window. Call 1-800-821-1016 today to receive your personal copy.
LUCK STONE PORTFOLIO SERIES

When their 14,000-square-foot Showroom opened in October 1987, Ashley Furniture Industries greeted visitors with an elegant new image. Rosso Levanto marble had been selected by their designer to reflect the upgrading of their new lines.

Because of their huge inventory and fabrication capabilities, Luck Stone was able to use their resources to match 843 square feet of the colorfully veined tiles and slabs to create this dramatic entrance. At their North Carolina Showroom, expert craftsmen prepared the custom-curved archway and the solid marble desk front, then worked with the installer to make sure it was perfect.

**Designer:** Joyce Design Group, Inc.  
**Builder:** Varner Construction Company  
**Installer:** Peagram Marble and Tile  
**Marble Supplier:** Luck Stone Corporation

Luck Stone, recognized for its expertise in the importing and fabrication of marble and granite, operates ten quarries and three major Showroom Centers and Fabrication Shops in the mid-Atlantic. Offering over 135 varieties of stone and marble to architects, designers, builders, contractors and consumers.

For more information about Luck Stone’s current projects and quarry representation, write Luck Stone Corporation, P.O. Box 29682, Richmond, VA 23229. Or call 804/784-3335.
The old Willard Hotel, now the Willard Inter-Continental, was once called the Unofficial White House. During the meticulous Willard restoration, architects insisted on 1,675 custom Pella Windows. Pella created historic accuracy outside, wood's beauty inside and a new lifetime of Pella quality.

The custom Pella window units precisely match original profiles with special sash dimensions, exterior jamb extensions and perimeter trim extrusions modeled after pieces of original wood trim.

Pella built the new Willard's Traditional Double-hung (TD) units with insulating glass, including archtops. Huge fixed windows with venting casements above match original 7' x 14' double-hungs.

Even the classic Willard trim color was matched with aluminum cladding in baked enamel.

Now, we know every window treatment challenge isn't the Willard. But should that really make any difference?

The Willard Hotel deserved Pella Windows, and so do your clients.
SCHOOL DESIGN: A BALANCING ACT

Budgets rule school building projects.

"Just about every time you put pencil to paper, you are thinking about it," said Charles Francis of Stephens & Francis, PA. "If you're not, someone else is."

Architects who build schools are dealing with public money, with the needs of children and educators and with the community the school serves. They also must design to conform to specifications that may run counter to the client's needs to keep building and maintenance costs low.

For instance, the state requires that most classrooms have windows, eliminating interior classrooms. That means less efficiency and a challenge to architects to find innovative ways to balance one demand against the other.

Another balancing act applies to scale and budget. "From an economic standpoint, the more compact the building the more efficient it is," Brian Shawcroft of Shawcroft-Taylor Architects said. "But then comes the problem of the building getting oversized and becoming frightening to young children."

The architect must also consider what happens 20 years from now, when the roof needs replacing and surfaces battered by thousands of boisterous children must be repaired.

"You have to build for long-term building life and low maintenance, so you will not be a burden on the public expense," Atilla Orkan of Grier, Fripp and Orkan Associates said. "And you have to make a selection that meets the teaching trends. Today it's media centers and the computer studies."

Frank MacMillan of MacMillan and MacMillan Architects said his firm has found that school systems often will ask for a repeat of a design they have put to work and are happy with. "That sort of establishes cost and cost of construction," he said. But he doesn't recommend repeating a design after a few years, because educational trends change too quickly.

Balancing budgets with programs can be serious sticking points between educators and architects, particularly if the educators want more than the budget can deliver.

"We have found in our experience, generally, that if we will face those issues up front, at the very beginning, that the school administrator and the school board may not like what we are telling them, but they accept it and are very cooperative in adjusting their priorities," W. Calvin Howell of Hayes-Howell Architects said. "But if you get halfway through and then tell the client he can't get it for his money, it's too late."
Top: Albrighton Middle School is organized around interior courtyards. They open up window spaces for interior classrooms and expand the teaching space to the outdoors. Above left: Bicycles at a student entrance stand ready for the get-away when the final bell rings. Above right: A large sky dome fills a pyramid-shaped vaulted ceiling over the main part of the library. Right: Mirrored glass permits a view of the courtyard from inside the classroom, but it blocks the view from the outside in.
Five years ago, the quality of life for Fort Bragg’s middle-school students took a momentous leap. They moved up from makeshift classrooms in old World War II barracks to new classrooms with views of landscaped courtyards, to a new cafeteria with booths, to a new, skylit media room.

The new 100,000-square-foot school was built in 1982 and 1983 for a cost of $5,259,200—with a special directive from the client, the U.S. Department of Education, to keep maintenance at a minimum.

Hayes-Howell Architects responded with an exterior of insulated, precast concrete panels and a red, sloped shingled roof. Inside, masonry walls were coated with a durable, highly washable, epoxy paint. Trough terrazzo was used on the floors.

In the air conditioned building, instead of using institutional strip windows, the architects chose to use a smaller number of windows of a residential style to preserve energy while still allowing a view to the outside.

"We’ve attempted to make the school more of a personal statement than an institutional statement." W. Calvin Howell said. "I think this is a trend—a good trend."

Little touches, like the booths in the cafeteria and strong accent colors, recognize the preferences of middle-school children. In the media center, an insulated translucent skylight lets in enough light to cast shadows and permit potted trees to thrive indoors.

The interior courtyards are the organizing feature of the building. The media center is at the end of one courtyard, the sides of which are lined by classrooms, a professional library and staff production areas.

Two more courtyards are surrounded by two rows of classrooms and special program areas. The outer row faces the school grounds, while the inner row faces the courtyards. The windows onto the courtyards are mirrored on the outside, permitting a view out of but not into the classrooms. The courtyards, which have several levels, are effective outdoor classrooms.

The interior courtyards presented some special construction challenges, said Victor Jones of J.H. Allen, Inc., the general contractor. The exterior precast concrete walls of the courtyard sides of the building had to be set along with the structural steel frame and specially braced, because there was no way to get a crane into the interior areas once the frame was completed.

In addition, all the trees, plants, dirt and mulch to landscape the courtyards had to be hauled through the building in wheelbarrows, over the new terrazzo floors. "You don’t usually use wheelbarrows in this day and time," Jones said.

Project
Albritton Middle School
Fort Bragg

Client
U.S. Department of Education
Regional Office of Facilities Engineering & Construction

Architect
Hayes-Howell Architects, Professional Association
Southern Pines

Contractors/Consultants
General: J.H. Allen, Inc., Asheboro
Structural: W.H. Gardner Jr. and Associates, Durham
Mechanical: Buffalo-Morgan and Associates, Raleigh
Landscape Architect: Lewis Clarke Associates, Raleigh

Photographer
Hayes-Howell, Professional Association
Like a number of schools today, Farm Life Elementary School has gone through several identity changes. In the 1920s, it was a state boarding school for agriculture, thus its name. Later, it was a county high school. After consolidation, it became a local elementary school. The new school, completed in January 1983, is a consolidated elementary school.

The large 70-acre site serves 650 children, K–6, in three buildings. An auditorium, a holdover from the school’s high school days, serves both the school system and the county recreation department.

The challenge for Stephens & Francis was to incorporate two old buildings into the new plan. A 7,500-square-foot shop building became the new food service building. A 4,000-square-foot home economics building was incorporated into the new administration building as remedial classrooms and a music room. The Farm Life building was razed.

The project involved 55,670 square feet, and the cost of construction was $2,715,800, or $48.78 per square foot.

The new campus is distinguished by sharp angles, inspired by the triangular shape of the new administration building. Charles Francis said the triangle best fit the confined space the architects had to work with. The old Farm Life building, which could not be razed until after the new building was completed, was close by and limited space for the new building. The triangular shape also opened up the area to create a grass yard, Francis said.

The roofs of the old buildings were flat. The client specified sloping roofs. By repeating the angles of the administration building in the roofline of the other buildings, the architects got a unified look and sloping roofs.

A student “gateway” is formed with a freestanding, angled, brick beam off the main entrance to the building, forming a triangular entrance. Classroom ceilings are sloped and make use of indirect lighting.

Classrooms are clustered to separate grade levels. But the client wanted to foster cooperation among those in a grade level through the use of shared areas. The architects designed areas in corridors outside the classrooms where students could come together for painting and crafts. The corridors, not used as exits, are equipped with sinks and get natural light from clerestory windows.

Two rectangular classroom areas are joined by a media center, with clerestory windows, that is shared by all students.

Project
Vanceboro Farm Life Elementary School

Client
New Bern-Craven County Board of Education

Architect
Stephens & Francis, PA
New Bern

Contractors/Consultants
General: L.A. Downey & Son, Inc., Durham
Electrical: Electrician, Inc., Kinston
Mechanical: Kinston Plumbing & Heating Co., Inc., Kinston
Plumbing: Harris & Elen, Washington
Structural Engineer: GKC Associates, Durham
Mechanical Engineer: Buffaloe, Morgan & Associates, Raleigh

Photographer
Charles Francis
Top: The entrance to the administration building, which also houses classrooms and resource areas for remedial programs. Above left: A typical classroom reveals the triangular lines characteristic of the school's design. The angles were an outgrowth of site demands and the need to incorporate an existing building into new spaces. Above right: The student gateway is formed from an angled beam off the main entrance to the building. Triangles were a unifying element in this school, where the new had to be wedded with the old. Left: "Wet areas" were established in the corridors to satisfy a desire for children in separate classrooms to come together for craft activities.
Prefer Custom Elevator Interiors? Southern is the Simple Solution.

More and more elevator interiors are taking on a sophisticated look...a discriminating image extension of the building's own interior design.

Southern Elevator realizes those first and last impressions are important. That's why we custom build our elevators tailored to your particular design requirements. Period.

Whether the image commands rich woods, sleek mirrors, or carpeting. Subtle tones or vibrant colors.

Be demanding.


southern elevator

A Southern Company for Southern Services.
Tindall’s reputation wasn’t created overnight. It was earned through years of dedicated efforts in single-source responsibility for structural design, manufacture, and erection/installation of superior precast and prestressed concrete components.

We’ve been known by a lot of names during that time. Good ones, we might add, like “The Budgetmakers” and “The Schedulemakers.” That’s because a great number of architects, structural engineers, general contractors/builders, civil engineers, and general utility contractors can attest to our quality components being supplied on-schedule and in-budget with every project. That’s the only way we do business.

TINDALLCAST Prestressed Building Systems
- Industrial building systems for manufacturing plants, food processing plants, warehouses, commercial buildings and specialty structures
- Office building systems for multi-story, prestige office park development
- Wall panel systems for pre-engineered metal structures
- Parking structure systems
- Stadium systems
- Pipe bridges, belt conveyor structures and other heavy construction applications

TINDALLCAST Underground Structures
- Pump stations, the only wet well/dry well stations in all one unit, as well as the largest standard package stations offered
- Precast sewer manholes and wetwells for wastewater collection
- Curb inlets and grate inlets for storm water collection
- Precast utility vaults for water and electrical distribution
- Precast tanks for the wastewater and chemical industry
- Custom-designed enclosures, in practically every shape and size conceivable

TindallCast underground structures are suitable for every type of construction—electrical, storm drain, utility, waste treatment, or water distribution. Whatever your next project—a new manufacturing plant, warehouse, parking structure, office building, waste treatment facility or other underground installation—call us.

CONCRETE QUALITY... ON SCHEDULE... COUNT ON IT!

TINDALL CONCRETE PRODUCTS, INC.
P.O. Box 1778 • Spartanburg SC 29304
(803) 576-3230

TINDALL CONCRETE VIRGINIA, INC.
P.O. Box 711 • Petersburg VA 23804
(804) 861-8447

TINDALL CONCRETE GEORGIA, INC.
P.O. Box 280 • Conley GA 30027
(404) 366-8270

© 1988 Tindall
TRITON HIGH SCHOOL
HARNETT COUNTY

MacMillan and MacMillan, Architects
Fayetteville

At Triton High School a 1,200-seat auditorium is a cultural center for the community as well as the students. Sections along the back and the sides of the main entrance can be partitioned off for small groups.

When Harnett County Public Schools built Triton High School to serve Dunn, Erwin and Coats, it considered the needs not only of the 1,500 students but the community as well.

At 250,000 square feet, Triton is one of the larger high schools in the state. Bucking a trend toward smaller auditoriums that seat 400 to 500, Harnett County ordered a 1,200-seat auditorium fully equipped for theatrical and musical productions.

"In our particular case, there was a great deal of interest that there be a large gathering place in the county for community use, as well as school use," said Ivo Wortman, the superintendent of the Harnett County School System. "It was an interest shared by the board of county commissioners and citizens throughout the county. There was a feeling that it should be adequately large for a variety of civic, county and recreational activity."

The school, designed by MacMillan and MacMillan of Fayetteville, was occupied in 1985, but the auditorium was left a shell at the time with concrete floors, walls and a roof. The rest was put on hold until the school system could fund the $800,000 it took to finish it. It was completed this spring.

Intended to be a multi-purpose facility, the auditorium has an elaborate sound and lighting system and excellent acoustics, Wortman said. It will accommodate symphonies, choral groups, dance, theater, speakers and pageants. In addition to the main seating area, which is equipped with upholstered auditorium seats, there are risers at the rear for about 400 people; that area can be closed off with a drapery for smaller programs. Other risers at each side of the main entrance form separately lighted areas that can be used alone for groups of 100 to 150.

"Because of our designers, I think we have achieved, about as perfectly as I've seen, a multi-purpose auditorium," Wortman said.

Another feature of the school—a large commons area where students congregate—also has proven to be a community asset and a feature that is now in all three of the county's high schools.

At Triton, the commons forms a large central lobby for the auditorium, the gym and the school cafeteria. When either of those spaces is used for community gatherings, the commons extends the space as needed. For a community dance, for instance, both the cafeteria and the commons can serve as dance floors.

"We do believe this investment in public school property should be used by the community for every conceivable kind of public function," Wortman said.

Project
Triton High School
Harnett County

Client
Harnett County Board of Education

Architect
MacMillan and MacMillan Architects
Fayetteville

Consultants/Contractors
General Contractor: Paul N. Howard Co., Greensboro
Mechanical Engineer: Progressive Design Collaborative, Raleigh
Structural Engineer: Lasater Hopkins, Raleigh

Photography
Dan MacMillan
FRANKLINTON CITY ELEMENTARY SCHOOL, FRANKLINTON

Shawcroft-Taylor, Architects
Raleigh

School systems sometimes must build their new schools in stages over time, as the money is made available. In Franklinton, Shawcroft-Taylor architects had to build for now, plan for later and find ways to make the old and new work together in the meantime.

The school was a high school that had been converted to an elementary school. Except for the gym, Brian Shawcroft said, the buildings were of poor quality. The plan eventually is to replace all the obsolete buildings, except the gym, which is used by the community for a variety of events.

But the immediate job, which was completed in October 1985, was to build two new buildings—a classroom building and a combined administration unit and media center—and to expand the cafeteria. The project cost just over $2 million, and involved 44,680 square feet, not including the cafeteria expansion. Red brick was used to blend with the remaining older buildings.

"We had to shoehorn everything onto a very restricted site," Shawcroft said. "The site itself had to be improved to control water run-off and eliminate flooding problems that had plagued the old buildings and would threaten the new ones.

The administration areas and the media center were built back to back in one building, with bathrooms and staff lounges between them. "This was to save money in terms of sharing spaces and making one building instead of two buildings," Shawcroft said.

Clerestory windows bring light into the media center. The multi-purpose space also has an area that can be darkened for viewing slides and films and spaces designed for small group activities.

Strong use of daylighting by clerestory windows distinguishes the circulation areas of the classroom building as well. In addition to lighting corridors, the windows also serve a passive solar function in the areas created by sloping roofs, which many school clients are now requesting.

The classroom building was designed with the future in mind. It can be expanded as older buildings are removed. And walls between two classrooms can be removed, if necessary, as programs and needs change.

Terrazzo tile floors were used in the circulation areas, but the classrooms are carpeted, a current practice that Shawcroft regards as a significant breakthrough in school construction. It softens the utilitarian, institutional look.

And, Shawcroft said, "It creates a quieter atmosphere, it is easily maintained and easy to change when it wears out. It's a very hard-wearing commercial carpet, looped as opposed to plush."

Project
Franklinton City Elementary School
Franklinton

Client
Franklinton City Schools

Architect
Shawcroft-Taylor Architects
Raleigh

Contractors/Consultants
Structural: Lasater Hopkins, Raleigh
Mechanical & Electrical: Knott & Roberts, Durham
General: R.L. Casey, Greensboro
Landscape: Jeffrey McLean, ASLA, Raleigh

Photographer
Brian Shawcroft
CATAWBA SPRINGS ELEMENTARY SCHOOL, LINCOLN COUNTY

Grier, Fripp & Orkan Associates, Inc.
Architects and Engineers
Charlotte

The focus of today's elementary schools is the media center, an updated library with audio-visual materials and a place for computers. Lincoln County wanted the media center to be the very soul of its new Catawba Springs Elementary School.

Grier, Fripp & Orkan Associates accommodated that desire by placing it at the heart of the school—the point from which four classroom and administration wings take off.

The perimeter of the media center is defined not by walls and doors, but by a corridor. "All the students, when they go to and from class, feel the presence of the media center," Atilla Orkan said. "They are free to go in and out of it all the time."

The 45,000-square-foot school, built in 1984 and 1985 at a cost of $2,043,489, has 23 classrooms and a student capacity of 600. One of the triumphs of its construction is that it was built at a cost of only $45.41 a square foot, including site improvements, without sacrificing the educational objective.

"The project was designed as a model school for Lincoln County to solve their past problems," Atilla Orkan said. The problems they did not want repeated were leaking roofs and high maintenance costs. The client specified sloping roofs because of a history of problems with flat roofs.

The architects eliminated gutters and downspouts and covered the roof with ribbed metal. The exterior is of a hexagonal, sculptural face block in a colonial cream color. The interior walls are concrete block and insulated gypsum board covered with a vinyl fabric on which push pins can be used to tack up teaching materials. Ninety percent of the floors are carpeted; the rest are quarry tile. All the cabinetry is prefinished in plastic lamination.

The insulation in the air-conditioned school with an energy management system is R-30. The administration area has a separate air-conditioning system for those times when school is out but the office is open.

The ceiling over the media center was punched up to a 16-foot height, and clerestory windows were installed to let in natural light. The center was designed for flexibility, with doors that can be used to cut it off from the academic areas of the school, making it suitable for community gatherings.

In the wings, classrooms were clustered in groups of four, with a storage area and bathroom for every two classrooms. The wings correspond to the grade levels, and each has its own color scheme. The general areas are mauve, set off with accent colors of burgundy, blue and gray.

Project
Catawba Springs Elementary School
Lincoln County

Client
Lincoln County Board of Education
Lincoln County

Architect
Grier, Fripp & Orkan Associates, Inc.
Architects and Engineers
Charlotte

Engineer
McKnight-Smith Engineers, Inc., Charlotte

Contractors
General: Walker Construction Co., Inc., Hickory
Plumbing: Hickory Plumbing and Heating, Hickory
HVAC: Southern Comfort of Charlotte
Electrical: Lail Electric Services, Inc., Lincolnton
A Critical Choice: Picking an Architect

Last fall, architect Frank A. DePasquale was invited to the annual meeting of the North Carolina school board association in Charlotte to speak on how to select an architect.

He asked the group why they so often hired a construction manager to do an architect’s job—and, to his surprise, he got a hostile response. The group charged architects with failure to meet time schedules, leaving materials out of projects, with cost overruns, with general incompetence.

“In the final analysis, they said that the construction manager works for the owner, while architects don’t,” DePasquale said. “One school superintendent said, ‘When you hire an architect, it’s like putting a fox in the hen house.’”

The comments convinced DePasquale he was in the right place with the right message.

“From what I’ve heard so far,” he told the group, “it’s evident you haven’t been doing it properly.”

DePasquale, whose firm, DePasquale, Thompson, Wilson Architects and Planners Ltd. of Durham, has been involved in nine Durham County school projects in the last year, said if the architect is well-chosen and if the school has done a good job of communicating its program, an architect should save the school system money and deliver a building that will better serve educational needs now and long into the future.

The issue has seldom been so important. Last summer the General Assembly allocated $3.2 billion to be spent over the next 10 years to upgrade and add to school facilities. Behind the infusion of money into school building was the recognition that educational programs have outgrown existing buildings; that some counties have been unable to keep pace with the need for new buildings; and that new industry will not locate in areas where the education system is below par.

The new money means that some school superintendents and school boards will be tackling the issues of design and building for the first time. In this situation, the architect should be a friend, not an adversary.

Sometimes, DePasquale said in a recent interview, school systems believe they can trim fees by hiring a construction manager for 12 percent, who then hires an architect for 7 percent.

“That reduces the architect’s services to the extent he can’t do what he has to do,” he said. “The selection of an architect could eliminate the construction manager and could do what the construction manager could do for far less a fee.”

Sometimes, an architect is chosen for the wrong reason—he’s a friend of a school board member, the nephew of a superintendent. “I’ve heard of situations where one-man offices were hired to do $19 million jobs,” DePasquale said. In some situations, architects were chosen from so far away that long-distance travel took big bites out of the budget.

To find the best person for the job, DePasquale said, interview all the architects in the area who are interested. Ask for resumes showing how much work in school building the firm has done in the last five years. That does not mean an architect must have done schools to be able to do them. A local architect who has done other kinds of good work in the community may be a good choice, DePasquale said, but the school board may feel more comfortable asking him to work with a school consultant.

Look at the architect’s work and contact at least five or six client references to find out if the building works, if the architect listened and communicated well, if his estimates were on target.

The school administration has internal work to do as well. A team of educators representing the range of educational programs the school must serve—special education, vocational education, math, science, English, the media center—should prepare an educational outline saying what they want that school to do.

The needs will not be the same in each location. Vocational programs in Durham, where employment opportunities are heavily influenced by the high-tech nature of Research Triangle Park, will be different from those in Buncombe County.

“There are educational careers no one knew existed before some corporations came to North Carolina,” DePasquale said. “We used to have a computer room with 10 or 15 computers. Now some schools have computer capabilities in every classroom. . . . All this needs to be explained to an architect.”

Once the team articulates its needs, the specifications should be given to the architect for his review so he can determine what the space needs will be and estimate the cost. Then, the architect must sit down with the staff and discuss the spaces. If desires and budget are out of sync, this is the time to set it right—to shave off dollars in space and materials, to make tough choices about what stays and what goes.

School administrators and school boards also need to pay attention to the team that the architect puts together—the structural engineer, the heating and cooling specialists, acoustical engineers.

“If the architect says, ‘I’ll be running the whole show,’ he could be a problem to you. An architect alone cannot do a whole building. That day is over.’

The tighter the money, the more critical the choice of an architect. “It’s more important for a rural county to get the right architect than it is for the major cities,” DePasquale said. “They just don’t have that much money. If there’s a cost overrun, they don’t have a way to raise the difference.”

The architect has to be trusted to have the vision to build for the future, to use the materials that will give long life with little maintenance, to design spaces that serve their purpose. “Architects cannot build monuments to themselves. They must design buildings that express their functions.”

And the school system must communicate its needs. “If you don’t do that, your cost could be much more and you have buildings that don’t function properly,” DePasquale said. “You damage the educational programs you are trying to achieve.”
New Money, New Programs, New Issues

By Jason Lesley

Editor's note.
In May, North Carolina Architecture held a forum to discuss the financing, planning, design and construction of schools. Participants were: Dr. Gene Causby, Executive Director of the N.C. School Boards Association; Darrell Spencer, Assistant Superintendent of School Planning; Dr. Larry Coble, Superintendent of the Durham County School System; Wray Stephens, a member of the Wake County School Board; John Thompson, AIA, of DePasquale Thompson Wilson Architects & Planners Ltd.; W. Calvin Howell, AIA, of Hayes Howell & Associates; John Knox, AIA, of Smith Sinnett Associates PA. What follows is a summary of that discussion.

Schools have become a top priority in North Carolina. Both the Basic Education Program and massive financial appropriations for school construction are firm commitments to improve the quality of education and of school building. Over the next 10 years, the N.C. General Assembly will provide $3.2 billion to assist school districts with school construction. How these schools are designed and built will determine if North Carolina gets its money's worth.

"Three years ago, school construction was $89 million," said Dr. Darrell Spencer, Assistant Superintendent of School Planning. "This fiscal year it will be $160 million, and by 1991, it will be $400 million."

The numbers sound huge, but the state has to begin a major school construction program just to stay even. The Basic Education Program includes plans to hire 12,000 new teachers by 1993. All this will require more classrooms.

"During my long association with education," said Dr. Gene Causby, Executive Director of the N.C. School Boards Association, "we have never had any dollars. This is the first time that we have hard dollars that we can count on so school districts don't have to raise property taxes to finance school construction."

The new money means school boards must pay more attention to long-range planning and begin to think in new ways about what they want their school buildings to do.

The state requires every school board to file a long-range plan, Spencer said. "Most know where they are going, but many school boards have to deal with new concepts. Some may have to consider closing a school because of declining enrollment. Some have always been very modest in their plans because of budget restraints. With the new money, they are able to expand their visions."

Durham County has been one of the state's more far sighted in planning for new schools. Located in one of the fastest growing areas, it has little choice, Superintendent Larry Coble said. "In anticipation of increased school needs, the county passed a special tax in 1976 for education. In the next three years, Durham County will spend $57 million in school construction. We have a comprehensive countywide plan and have $38 million in design and construction now."

Planning for both the current educational program and future expansion is crucial, said John Thompson, AIA, of Durham. "Site selection can be a big problem. Some counties can't find a site, while others have been holding land for years. Preparing the land for high density use—by running water and sewer lines to the site—adds to the cost of the project. Those costs need to be considered in the total budget."

Raleigh architect John Knox, AIA, said that schools have not done a good job planning their building budgets. "They haven't planned enough construction money to do an analysis," he said. "Often their educational program and the project budget are far apart. They need better planning or there will be a rude awakening."

Architects' input will have a big impact on the success or failure of the new schools in the next 10 years, Thompson said. "We need to build a capacity for future technology and new curricula; we need spaces that can grow with the schools."

Increased use of school buildings during the summer also will influence design. Many schools have summer enrichment and remedial programs. "And don't be shocked if we get into the day care business soon, too," Causby said.

Wray Stephens of the Wake County School Board said the county has an-
ticipated difficult years by building less square footage now with provisions for future growth. "We are trying to save now so that we can expand later."

Thompson cautioned that it might be cheaper to build space for future needs now. Not long ago, for instance, school construction cost $23 per square foot; today it is $59 a square foot. Coble agreed: "Years ago, I heard that you should build all the house you can afford. I think that we should build all the school we can afford."

School boards often do not have a clear understanding of the architect's job, Spencer said. "Very often the expectations of a school board are unrealistic. We have a real challenge. Most boards believe that an architect should provide full-time supervision. Now, with all this money, a lot of school districts are enticed by the concept of construction management (CM). They think the CM will assume all the responsibilities and simplify the process. They think the CM will deliver a school project on time and save money. South Carolina used CMs extensively and found no evidence that CMs saved them money."

Durham County and some other school districts have staff members who are responsible for school construction, Thompson said. "He's the person we deal with. He knows construction and expedites the project. The architect was trained to coordinate and administer projects; he is able and willing to continue in this role."

Some school systems have streamlined construction programs by designing a school—a middle school, for instance—and repeating all or part of it on different sites. Stephens said that Wake County packaged three elementary schools. While the savings in architectural fees was about 1 percent, he said, the savings in time was substantial.

Although stock or prototype plans may seem appealing and are once again being discussed, most of these experts agreed that the ideal is to design buildings that meet the particular educational and community needs of the district.

To accomplish that, however, requires input by school boards, administrators and educators, as well as the architect.

"People are scared of the building process," Thompson said. "They say don't bother me with the details. Just tell me the dollars and give me the key. They need to get involved in the building process."

An elementary school under construction in Youngsville. Shawcroft Taylor/Architects.

Construction of a school building in Apex. Shawcroft Taylor/Architects.
Carolina Builders Are Seeing New Signs Of Prosperity.

You can see them from Greensboro to Greenville, from Charlotte to Chapel Hill. But you have to look fast. Because signs for The Max™ don’t stay up long since nothing helps a home sell faster.

New as it is, The Maximum Value Home is already being sought out by buyers. And it’s no wonder since The Max offers energy-efficient construction, The Comfort Machine™ High Efficiency Heat Pump, safe, electric water heating and the biggest discounts possible on people’s power bills. Fact is, The Max is so far ahead of other homes, any buyer can see why it’s good for his bank account. And any builder can see why, too. So if you’re not already building The Max, ask your Duke Power representative for details. He or she will give you all the reasons it’s where the next generation will live.

Trademark of Duke Power Company
Johnson & Higgins designs
Professional Liability Coverages.

We know the field of professional liability protection as few other brokers do. That's why we've won the endorsement of the NCAIA, PENC, and SCAIA. And our worldwide network enables us to negotiate with underwriters everywhere. We'd like to talk with you about this. Call a J&H account executive at 1-800-433-2702 in North Carolina.

Rex Hospital required experience performance and the latest technology available for construction of their 48,000 square foot facility. We furnished it . . . on time and on budget.

For all of your construction needs.
Buildings • Utilities • Bridges

Contact:

TALCO

When you're looking for professional Architects and Engineers...

Look to the professionals

Roth Young

5130 Eisenhower Blvd.
Suit 222
Tampa, FL 33614
(813) 884-4538

T. A. Loving Company
GENERAL CONTRACTORS
DRAWER 919 • GOLDSBORO, N.C. 27530-0919 • 919-734-8400
During the 1987 Legislative Session, the General Assembly passed the School Facilities Finance Act of 1987, creating a public school building capital fund to assist county governments in upgrading and building schools.

The act provides $3.2 billion to be allocated over the next 10 years and to be matched with $1 of local funds for every $3 of state funds. The funds are for capital outlay projects including the planning, construction, reconstruction, enlargement, improvement, repair or renovation of public school buildings and for the purchase of land for public school buildings.

The passing of this act means that many architects will be busy planning and designing facilities for public schools over the next 10 years.

This action by the state legislators follows the enactment of the Basic Education Program, which has created a need for more teachers, programs and materials. The intent of the Basic Education Program is to insure that all children master a common core of knowledge and skills before graduation from a public high school in North Carolina. The program covers course requirements, a definition of the instructional day, class size recommendations and requirements, and it prescribes staffing allotment ratios. It sets facilities standards, making law of what, generally, have been the recommendations of the Division of School Planning.

The first phase of the Basic Education Program includes funding for additional teacher and support personnel needed because of mandatory reductions in the teacher/pupil ratios. These reductions create a need for more classrooms and related support facilities and equipment such as offices, augmented mechanical equipment, custodial, instructional equipment and materials, and maintenance.

School building configurations and interior relationships reflect the general pattern of the activities to be conducted therein. Frequently, the interior relationships are determined primarily for administrative convenience rather than by the education process. However, the educational process and its objectives are more reliable determinants, even though they are more difficult for architects and educators to interpret when preparing school plans.

Schools today reflect many of the education methodologies and programmatic changes of the 1960s and 1970s. This period of school planning frequently emphasized the library or media center, as it is now referred to, as the center of the education program and teaching stations, a 1960s euphemism for classrooms, grouped around the media program. The teaching stations were more or less open to the surrounding educational activities.

The total concept was called open education, and it functioned satisfactorily only when administrators and teachers were prepared to make a commitment to the idea and to the resulting architectural expression of it.

It was difficult to plan the educational and architectural environment of these schools. One result of the difficulty has been a steady return to the simplistic school planning method of a classroom for every teacher, with rooms aligned along a fire exit corridor. There is less concern today with planning for maximum flexible use of facilities.

Of course, the residue of the changes in the 1960s and 1970s is still part of the design vocabulary. That residue

---

**School Facilities Finance Act of 1987**

<table>
<thead>
<tr>
<th>Potential Funds for School Construction (in Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Public School Building Capital Fund (ADM)</td>
</tr>
<tr>
<td>Transfer Funds-Vocational Education &amp; School Secretaries</td>
</tr>
<tr>
<td>Critical School Facility Needs Fund</td>
</tr>
<tr>
<td>TOTALS*</td>
</tr>
</tbody>
</table>

*Department of Revenue, Division of Tax Research, September, 1987  
**Fiscal Research, September, 1987  
***Fiscal Research, September, 1987 — An additional $200,000 is allocated to the Commission of School Facility Needs.
What should I do when my custom printed drafting media runs out unexpectedly?

1. Call Duncan-Parnell toll-free.
   In N.C. 1-800-432-6022.
   In S.C. 1-800-438-4088.

2. Send in a camera-ready layout or a previously printed format to:
   P.O. Box 35649
   Charlotte, N.C. 28235

3. Sit back and relax.
   Our offset printing department does the rest.

New Creative Interiors*

With the widest selection of dynamic design faces, including the revolutionary new light-sensitive Reflecto-Lite™ series... An unlimited range of color, texture, form, scale and pattern... Over 35 years of proven performance...

Enduring beauty for the exterior too!

Spectra-Glaze™

Custom pre-glazed concrete, masonry units

For further information, contact
ADAMS PRODUCTS COMPANY
106 LaSalle St.
Durham, NC 27705
800-922-6330 (out of state) 800-845-0001 (in NC)

©1988, all rights reserved. ™ reg. U.S. Pat. Off., Canada, other countries by The Burns & Russell Co.
Four Architects From North Carolina Selected for Highest National Professional Award

Four North Carolina architects have been selected to become members of the College of Fellows, the highest award presented by the American Institute of Architects.

The AIA has selected Ronald L. Mace and Wesley A. McClure of Raleigh and Donald R. Lee and Philip A. Shive of Charlotte as Fellows.

The North Carolinians were selected from among 45,000 AIA members. In the 53 years the award has been presented, 40 Fellows have been selected from North Carolina.

Mace is principal of Mace and Associates, Architects and president of Barrier Free Environments, Inc. He is a nationally recognized expert on accessibility features for architectural design. He has served on numerous state and national organizations concerning barrier free design, and published a variety of articles on the subject.

He received a Bachelor of Architecture from the North Carolina State University School of Design in 1966.

McClure is a principal with NBBJ. He has designed a tremendous range of projects including renovations of several buildings at North Carolina State University; U.S. Army Special Forces Mission Facility at Ft. Bragg; International-Islamic Studies Center at Shaw University; and the residence of Dr. and Mrs. William C. Friday of Chapel Hill.

Many of his projects have historical

---

Harris & Associates
Estimating & Scheduling
1601 Cedar Lane Road
Centre West, Suite 15
Greenville, SC 29611

(803) 246-8040

We specialize in CACES estimating for Corps of Engineers and CES for Naval Facilities Engineering Command.

Estimates are available on computerized format upon request.
connections, including the visitor center and dock for Elizabeth II State Historic Site, the design manual for Cape Hatteras National Seashore and visitor center, and Bennett Place State Historic Site in Durham. McClure received a Bachelor of Architecture from North Carolina State University School of Design in 1969. He was student body president there for two years. He is the son of Harlan E. McClure, Dean Emeritus of the Clemson University College of Architecture.

Lee is president and founding principal of Dellinger/Lee Associates.

Lee has a long standing commitment to architectural education and professional leadership. He was president of the NCAIA in 1986 and is co-chairman of the NCAIA-PAC. He has served on the University of North Carolina at Charlotte College of Architecture Advisory Board, the NCSU Design Foundation Executive Committee and is President of the NC Architectural Foundation, which funds student scholarships.

His firm has received a variety of design awards for a Cherokee condominiums project, the Pic 'N Pay corporate headquarters in Charlotte and renovations to the buildings at 119 E. Seventh Street and 600 South College Street in Charlotte.

Lee received a Bachelor of Architecture from the North Carolina State University School of Design in 1961.

Shive is principal with Shive Associates. From 1983 to 1987 he was vice president and director of design at J.N. Pease. While there he worked on projects including the Charlotte-Mecklenburg Government Center, Duke Power Computer Center in Charlotte, Underwriters Laboratories in Research Triangle Park, I-77 Welcome Center and the proposed U.S. Embassy Office Building in Doha, Qatar.

His works have received a variety of awards and he has published several articles and been active in professional organizations.

He attended Davidson College and graduated from the North Carolina State University School of Design in 1963 and the University of Pennsylvania in 1964.

When you’re buying school lab equipment, it’s no time to experiment.

An investment as important as this should not be left to outdated designs. That’s why we sell equipment that has been developed for the current and future needs of students and teachers — Sheldon.

Sheldon Laboratory Systems stand up to years of hard use. Only the highest quality materials go into their cabinets, tables, sinks, lab centers and instructional aids. But the secret to building truly functional equipment is Sheldon’s extensive research and testing to make sure you get the safest, most efficient learning centers possible.

So if you’re planning to equip a new facility or remodel an old one, give us a call at (804) 784-3523. We’ll help you plan for the future with proven success.

Flowers
School Equipment Company, Inc.
P.O. Box 29428, Richmond VA 23229
(804) 784-3523

Shawcroft-Taylor, Architects
100 East Six Forks Road, Suite 305, Raleigh, North Carolina 27609
P R E C I S I O N W A L L S , I N C . now distributes an ingenious new product - stone veneer - a lightweight building panel using natural stone. This product combines the aerospace technology of aluminum honeycomb with the beauty of granite and marble at one-fifth the weight of conventional solid stone panels. These panels are equally suited to exterior as well as interior use - ceilings, walls, decorative “bookmatched” designs, furniture and elevator cars. The materials are cost efficient, the application possibilities are unlimited and the beauty and prestige of the natural stone is timeless.

Raleigh  Greensboro  
(919) 832-0380  (919) 852-7710

The competition was keen this year for the Award for Excellence in Architecture, an annual event sponsored by the North Carolina Chapter American Institute of Architects. Ninety-five projects, a record number, were submitted. Find out which projects the jury selected and take a look at the other entries in the next issue of North Carolina Architecture.

SOUNDMASTER
Acoustical Panels That Make A Sound Difference

Are you . . .
Building new schools
Converting school gyms and cafeterias
Upgrading classrooms
Designing office buildings
Creating manufacturing facilities . . .

Then use

SOUNDMASTER I  Metal Panels or

SOUNDMASTER II  Fabric Panels

for Noise Control.

Absorb sound rather than bounce it back
Durable . . . metal or fabric (fabric in 10 decorator colors)
Low maintenance . . . metal is washable, fabric is easily vacuumed
Easy installation . . . walls or ceilings
Economical spot installation

• SATISFY ALL YOUR SOUND CONTROL NEEDS! •

SOUNDMASTER  5214 Western Blvd., Raleigh, NC 27606  (919) 859-0274
George Watts Hill, Sr., elected Honorary Member of the American Institute of Architects in recognition of his contributions to architecture in North Carolina

George Watts Hill, Sr., chairman of the board of Central Carolina Bank, was recently elected an honorary member of the American Institute of Architects in recognition of his outstanding contributions to and support of quality architecture in North Carolina. Only twelve men and women across the country were selected for this honor in 1988. The honorary memberships were presented May 18 during the 1988 AIA National Convention in New York City.

Over the past fifty-five years, Hill has been recognized for his ability, insight, and understanding of architecture, especially in the areas of programming and planning. By virtue of his holding official positions on the governing boards of corporate and public interest, Hill's keen sensitivity to good design and environmental quality has been evident in the overall growth and development of Research Triangle Park and in the area's corporate and academic architecture.

Hill has always been a strong advocate of architecture and the architect. He has recognized the importance of the building environment and its relationship to the quality of life and the natural environment.

Hill played a major role in the planning, growth, and expansion of projects such as Central Carolina Bank in Durham and its seventy-five branches; Blue Cross/Blue Shield of North Carolina, Chapel Hill; Memorial Hospital, UNC, Chapel Hill; School of Science and Math, Durham; Research Triangle Park; Watts Hospital, Durham; Quail Roost Conference Center, Durham; Durham Academy, Durham.

According to NCAIA president Ernest K. Sills, AIA, "Watts Hill is a planner, a man of action, and a man of superb taste. He has been a strong and effective voice for beauty and quality in the architecture of North Carolina."

We recognize the fact that no one understands your needs better than you. As a result, we listen to you... the client. We then respond to your needs with professional recommendations based on clearly defined goals and our fourteen years of experience.

Listening. It is an art we have down to a science.

architecture-engineering-interior design
Charlotte-Raleigh

Certified Fabricators Of Du Pont

CORILAM FABRICATING Co. Inc.
P.O. Box 361 Kernersville, N.C. 27285 (919) 993-3511

E. J. BROWN & ASSOCIATES
Quantity Surveyors/Cost Estimators/Construction Managers
Specializing in: Feasibility Studies, Preliminary Budgets, Conceptual Cost Estimates, Quantity Surveys, Detailed Cost Estimates, Value Engineering and Construction Management Also offering CACES® and CES® Formats.

American Society of Prof. Estimators
Construction Spec. Institute
American Assoc. Cost Engineers
Professional Const. Est. Assoc.
Society of American Value Engineers

Eddie J. Brown, C.P.E.
815 Old Winston Rd
Kernersville, NC 27285
Tel 919/996-3791
Before you start your next roofing project, it pays to ask some hard questions about recent developments in roofing techniques and materials. Developments that could increase the cost effectiveness of your roof.

Your local N. B. Handy representative is ready with the answers. Because of our Division 7 Department, all N. B. Handy representatives stay abreast of all the latest developments in roofing. Our Division 7 is a recognized industry leader in advising architects, roofing contractors and building owners about the best new roofing methods and materials.

But we're even better known for the finest customer service and delivery in the Southeast. Just ask our customers. Our inventory is vast, and we're just as big when it comes to keeping our promises.

So before your next roofing project gets underway, call your local N. B. Handy representative. Ask some good, hard questions. And get the answers you've been looking for.
Dennis Yates Associates to Design New Campus

Dennis Yates Associates, a 16-member firm based in Concord, was selected to design the new campus of Rowan-Cabarrus Community College on a 24-acre site in Cabarrus County. The project involves master planning the new campus and designing administrative and classroom facilities for approximately 800 students. It is scheduled for completion in early 1990.

The firm recently completed design work on the new Cabarrus County Government Center, a 72,000-square-foot administrative building.

Peter S. Macrae, who joined the firm in 1987, was recently made the firm's second principal.

Quick Associates to Give Pantry New Look

Quick-Associates, P.A., of Raleigh has been retained to design stores for The Pantry, Inc., to be built this spring and summer in Chapel Hill, Murrells Inlet, and Georgetown, S.C. These stores represent a new prototype and design for the convenience store chain.

Dellinger/Lee/Nichols Associates to Design New UNC School

Architects Dellinger/Lee/Nichols Associates of Charlotte have been selected by the University of North Carolina at Chapel Hill to design a new School of Social Work. The building is expected to contain about 75,000 square feet of classrooms and administrative offices, with a library and related support areas.
Names and Changes in N.C. Architecture

Michael Doyne has joined the Charlotte office of Peterson Associates as project architect and project manager. Doyne is a graduate of UNC-C COA. He previously worked two years with Peterson Associates and eight years with J.N. Pease Associates where he was a senior associate.

Jack French Parsons has joined the firm of Vaughn and Melton Engineers-Architects in Asheville as head of architecture. For the past 20 years, Parsons has been with Six Associates, Inc., of Asheville, where he was project manager.

David H. Clinton has been named vice president of Hayes, Howell and Associates, Southern Pines. He joined the firm in 1977 and has served as an associate and project manager. In his new position, he will be responsible for project design and management, as well as marketing.

Cynthia J. Cline has joined the Bower Partnership's Raleigh office as the firm's newest project architect. She received her BARCH from NCSU and brings to the firm a variety of experience in commercial and institutional design.

Two Asheville architectural firms have merged into a newly formed architectural, engineering, and planning firm known as ENG/Six Associates. The merger involves Six Associates, founded in 1941 and Ellis/Naeyaert/Genheimer Associates (ENGA), which is headquartered in Troy, MI and opened an Asheville office in 1982.
This skylight took 58 years to build.

Super Sky built some of the first modern aluminum skylights ever, in 1930. Today, our designs reflect the experience and innovation that only a pioneer can offer. Take advantage of it. After all, we’ve been working on your next skylight for the past 58 years. Contact our local representative.

J.H. ALLEN, INC.
GENERAL CONTRACTOR

P.O. Drawer 2809 • 409 West Central Avenue
Asheboro, NC 27204-2809 • (919) 672-1035

Industrial • Commercial
Institutional • Recreational
Health Care

General Contractor for Albritton Middle School
Fort Bragg, NC

John Barja
Vice-President
704/545-6151

Food Facilities Consultants
4628 Oak Drive
Charlotte, North Carolina 28212

George L. Beck
President
22 Years Experience

FOODESIGN

PROFESSIONAL FOOD FACILITIES DESIGN
* Schools & Colleges
* Hospital & Health Care
* Military & Government
* Correction & Justice
* Corporate & Industrial
* Hotel & Restaurant
* Civic & Stadiums
SCALE MODELS
Concepts Unlimited
Specialists in Three-Dimensional Communications

• Architectural
• Topographical
• Interior Studies
• Display
• Engineering
• Plant Layout
• Site Development
• Sales

Models . . .
• Communicate to the Layman
• Sell Conceptual Ideas
• Check Feasibility of Design
• Visualize the all important 3rd Dimension

For more information contact:
Concepts Unlimited
P.O. Box 471144, Charlotte, NC 28247, (704) 542-6061

THOUSANDS OF SUCCESSFUL N.C. BUSINESSES CHOOSE COMFORT

Quality conscious businesses rely upon the BRADY COMPANIES to provide the finest air conditioning products and services from the industry's leader, THE TRANE COMPANY. For over twenty-five years, we have served the commercial market in North Carolina as an authorized Trane representative.

If your company demands reliable and quality air care, choose the Brady Companies. We provide new or replacement equipment, building automation and control, repair and maintenance service, and replacement parts and supplies.

Choose the best. Choose Brady for Quality Air Conditioning Products and Services.

BRADY MEANS HVAC SATISFACTION — GUARANTEED

For new or replacement equipment:
BRADY SALES AND SERVICE
GREENSBORO 919-378-0680 RALEIGH 919-851-4131
WINSTON SALEM 919-765-0791

For repairs or maintenance service:
BRADY TRANE SERVICE
919-378-0670 or 800-632-0349 (NC only)

For Building Automation and Controls:
BRADY AUTOMATED SYSTEMS
GREENSBORO 919-378-0680

For parts and supplies
BRADY PARTS
GREENSBORO 919-379-0267 or 800-332-7729 (NC only)
RALEIGH 919-828-9040 or 800-532-4629 (NC only)
New Siding and Roofing from FibreCem

FibreCem Corporation of Charlotte has introduced to the United States market a fiber-reinforced cement-based line of roofing and siding products that has been widely used by builders and architects in Europe. Made from a technological advanced fiber-reinforced cement, the strong and flexible FibreCem siding and roofing line is made from a combination of organic fibers, cement, silica, water and other additives into a strong product base. The siding is available in plain, texture-coated and uncoated finishes and is suitable for contemporary or traditional architectural styles, and for the residential, commercial, industrial and manufactured housing market. The roofing comes in three standard and 16 optional colors. The product's flexibility and high sealability from the elements makes it ideal for designs such as hips, valleys and circular applications. FibreCem Corp., 7 Woodlawn Green, Suite 212, Charlotte, N.C. 28217. Phone (704) 527-2727.

Venting System Eliminates Corrosion

Plexco has introduced a new non-metallic corrosion-resistant vent system called PLEXVENT, to eliminate the corrosion problems caused by today's high efficiency furnaces and boilers. PLEXVENT components are made from ULTEM resin, a new generation of heat-tolerant, engineering-grade material from GE Plastics that can withstand pH levels from 1 to 9 and flue gas temperatures of up to 400 degrees Fahrenheit. PLEXVENT's
exceptionally high flame resistance and its combustion characteristics meet or exceed the standards of most national building codes. Unlike conventional metal piping, PLEXVENT is tough and durable and can't be bashed, dented, bent or split through rough handling in transit or on site. Plexco, 3240 N. Mannheim Road, Franklin Park, Illinois 60131. Phone (312) 455-0600.

A System for Roof Repairs

Andek Chemical Corporation has introduced the Roofd-x 20-year System, designed primarily for repair of asphalt, tar or built-up roofs. The system can also be used for other types of roofs, in both new and re-roofing situations, and for water proofing and lining situations. The tensile strength and elongation factors offered by the system will accommodate the extremes of movement, felt splitting, and thermal shock alligatoring of the asphalt. When all elements of the system are in place, the result is a seamless monolithic high tensile, solar-reflective membrane. The Roofd-x system employs a combination of three Andek products: Roofab polyester fabric, Roofd-x coal tar extended urethane, single-component coating and Roofd-x Silver Film, a high aluminum content, bright solar-reflective thermoplastic resin-based coating. The 3E Group, 3E Corporate Center, P.O. Box 392, Moorestown, N.J. 08057. Phone (609) 866-7600.

Two New Computer Software Packages

A new computer software/video disc package for masonry design has been developed by the International Masonry Institute and the Massachusetts Institute of Technology. The package, "Masonry Compute," is intended to facilitate the teaching of masonry design to architectural students and the practice of masonry design by practicing architects. The software enables the architect to design masonry building assemblies and components and estimate quantity, weight and cost. The video element allows the architect to call up on a screen visual presentations of the selected design.
The package, including 24 program and file diskettes, a 12-inch video disc, a 130-page users' manual and a digitizer template, costs $250. For more information, contact Robert Beiner, IMI, Suite 1001, 823 15th Street, N.W., Washington, D.C., 20005. Phone (202) 783-3908.

Barra Corporation of America offers a computer-aided design and drafting diskette library that allows architects to design and modify entire roofing systems on IBM and IBM-compatible personal computers equipped with AutoCad software. The BarraCadd package is designed for Barra single-ply roofing systems and eliminates the draftsman's need to duplicate printed literature and allows the architect to create new blueprints quickly to incorporate revisions. Each BarraCadd component system costs $249; a four-system package costs $495. Contact Barra Corporation of America, 190 Fairfield Ave., West Caldwell, New Jersey 07006. Phone (800) 526-2291 or (201) 226-2136.

Team Up With Eatmans

The UNC-Dean Smith Center in Chapel Hill, North Carolina, not only houses the finest basketball team but also the finest carpet. Eatmans Carpets teamed up with the architect and designer to create this custom colored – custom designed carpet exclusively for UNC. Whether you are carpeting a conference room for 16 executives or an auditorium for 21,000 screaming fans, the word is “Check with Eatmans”.

University of North Carolina’s Dean Smith Center: For superior performance and long lasting appearance, DuPont ANTRON Soil Hiding Nylon was used to produce this dense cut pile broadloom carpet.

GEORGE WATTS CARR, AIA
ROBERT WINSTON CARR, AIA
EDGAR TOMS CARR, AIA

3 Generations of Architectural Practice
Beyond the surface is the comfort of gas heat.

When Royal Insurance moved its headquarters, it became a beautiful addition to Charlotte. But the company realized that comfort as well as beauty is important. That is why a natural gas heating system was included in the design. Gas heat, combined with conventional air conditioning, provides much more comfortable temperatures than a heat pump. This comfort adds to employee efficiency and well being while the company is enjoying the savings in operating costs. Royal Insurance realizes additional savings with a gas kitchen and gas water heating.

Before you design your next beautiful building, get all the technical information on the many possibilities of gas and no-charge assistance from one of our Technical Service Engineers. Call toll free. From NC: 1-800-532-0462. From SC: 1-800-438-8410. Within Charlotte: 364-3120.
Traditionally in concrete masonry, it has been difficult to get color and texture consistency within a single block, much less maintain it from one block to another. Yet the block specifications for the new R.J. Reynolds Tobacco plant in Tobaccoville, NC required that each of the over 1.8 million 8" equivalent units meet the same standards of uniform appearance plus high quality.

To meet these exacting standards for the largest concrete masonry project in the southeastern U.S., the blocks were made using 100% pure Solite (a chemically inert, structural lightweight aggregate). As a result, each block passed the toughest inspections for size, texture and color uniformity to give the project an unsurpassed attractiveness.

Make your next project look like a million with attractive, cost-effective 100% pure Solite lightweight aggregate concrete masonry units.

**WHAT MAKES THIS ONE BLOCK UNIQUELY ATTRACTIVE**

**IS THE 1.8 MILLION OTHERS JUST LIKE IT.**
COMING SOON TO A MAILBOX NEAR YOU!

Early in August you will receive the official Architectural Brick Design Awards Call for Entries! Don't Miss It!

Start thinking now about your outstanding commercial projects using brick. You may enter as many examples of your work as you wish, as long as they fall within ABDA guidelines. More details are on the way.

BRICK
Smarter than you think
1-800-NC BRICK
ADD SOMETHING SPECIAL TO YOUR HOME. ADD PEACHTREE INSULATED WINDOWS AND DOORS.

EASTERN REGION OF N.C.
EASTERN MILLWORK & SUPPLY CO.
PO BOX 469
WINTERTVILLE, NORTH CAROLINA 28690-0469
PHONE (919) 756-3190 • 1-800-682-8180
RALEIGH-DURHAM, NORTH CAROLINA
PHONE (919) 781-0143 • 1-800-821-1911

WESTERN REGION OF N.C.
EAST COAST MILLWORK DISTRIBUTORS INC.
PO DRAWER 349
ELKIN, NC 28621
NC 1-800-682-3263
OUT OF STATE 1-800-682-3263

A COMPANY OF THE INDAL GROUP
A Good Idea Makes Borden Look Good

As proud as we are of our brick, we know that it's the ideas and skills of the architects, contractors and craftsmen that make brick into buildings. But when it's an especially good idea—like the Lord Research & Development Building—an especially good brick—like Borden's Waynesboro—is shown at its best.

It's a utility brick that compliments the architect's graceful design.

The people that specify Borden brick have thousands of ideas, some of them very demanding. That's why Borden manufactures thousands of bricks in different colors, textures and shapes. We meet those demands.

An idea like the Lord Building does make us look good. And we like to think we do our part to make the building as good as the idea.