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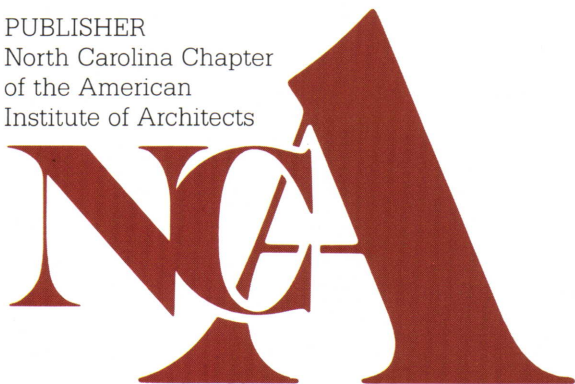


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VOLUME 36 NO. 3 □ MAY-JUNE, 1988

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North Carolina Architecture is
published six times a year by the
North Carolina Chapter of the
American Institute of Architects.
Advertising and editorial offices
are located at 115 W. Morgan St.,
Raleigh, N.C. 27601. Address
editorial, advertising and circula-
tion correspondence to *North
Carolina Architecture*, 115 W.
Morgan St., Raleigh, N.C. 27601.
Telephone (919) 833-6656. Sub-
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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 Albritton 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.*

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SELECTING AN ARCHITECT

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BUILDING FOR TODAY AND TOMORROW

The age of experimental educa-
tion, which dominated the 1960s
and 1970s, is past. Today, as archi-
tects and educators plan and build
schools with a new infusion of
state funds, they respond to a new,
more traditional educational
program.

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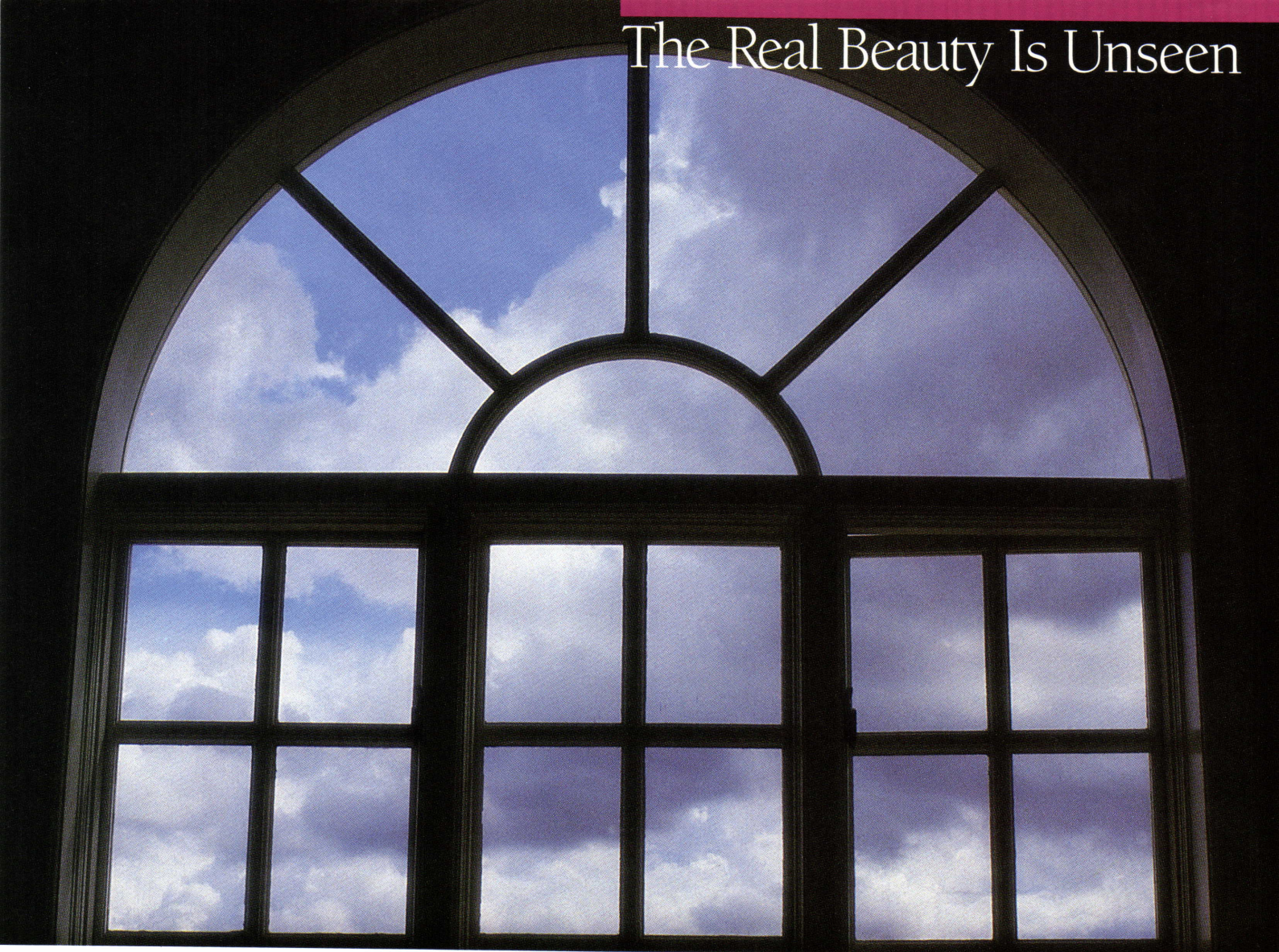
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North Carolina, plus names and
changes among the state's design
firms.

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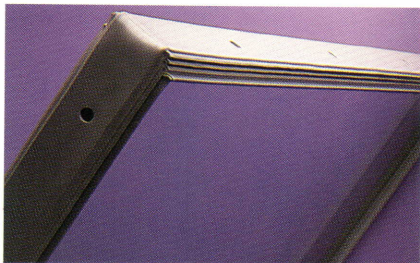


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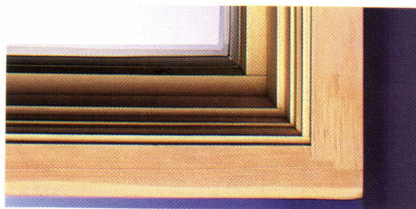
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High Point, North Carolina



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Builder: Varner Construction Company

Installer: Peagram Marble and Tile

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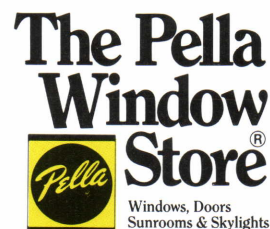
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The Office of Vlastimil Koubek,
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General Contractor
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Company, Bethesda, Maryland



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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."

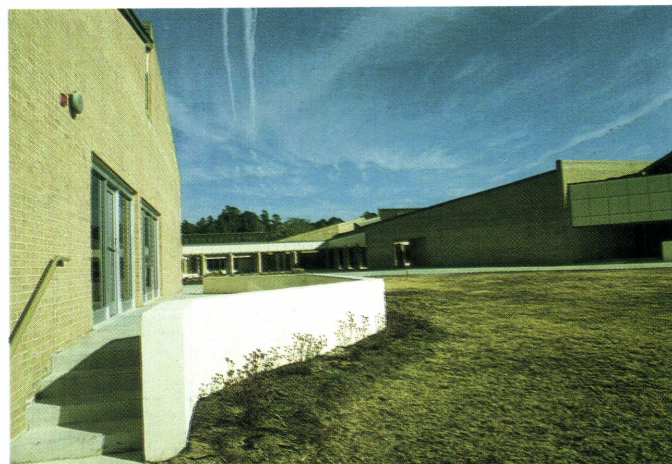
Frank MacMillan of MacMillan and MacMillan Architects said his firm has found that school systems often will ask for a repeat of a design they have put to work and are happy with. "That sort of establishes cost and cost of construction," he said. But he doesn't recommend repeating a design after a few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

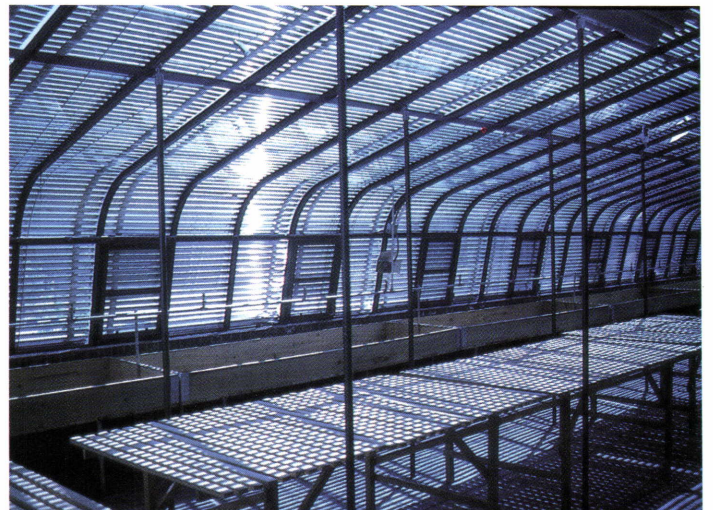
Balancing budgets with programs can be serious sticking points between educators and architects, particularly if the educators want more than the budget can deliver.

"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: At Catawba Springs Elementary School, the media center is the axis from which the classroom wings extend. Here, children play in the space created by two wings. Above: Clerestory windows are used throughout Franklinton City Elementary School, as a way of capturing passive solar energy and of introducing natural light. Below: Vanceboro Farm Life Elementary School was once a high school. What is now the cafeteria and art room was once a shop building. A view from the art room.





Top: Albritton 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.



ALBRITTON MIDDLE SCHOOL FORT BRAGG

Hayes-Howell Architects, Professional Association
Southern Pines

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. Tough 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: Buffaloe-Morgan and Associates, Raleigh
Landscape Architect: Lewis Clarke Associates, Raleigh
Kitchen Equipment Consultant: Foodesign Associates, Charlotte

Photographer

Hayes-Howell, Professional Association



A tree in the library thrives on light from clerestory windows.

VANCEBORO FARM LIFE ELEMENTARY SCHOOL, VANCEBORO

Stephens & Francis, PA
New Bern

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 ad-

ministration 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: Electricon, Inc., Kinston
Mechanical: Kinston Plumbing &
Heating Co., Inc., Kinston

Plumbing: Harris & Elsen,
Washington

Structural Engineer: GKC Associates,
Durham

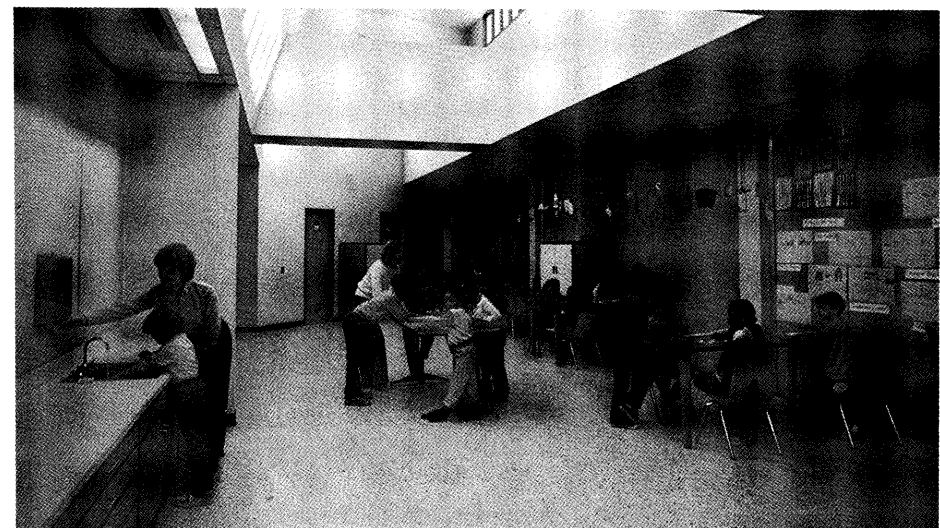
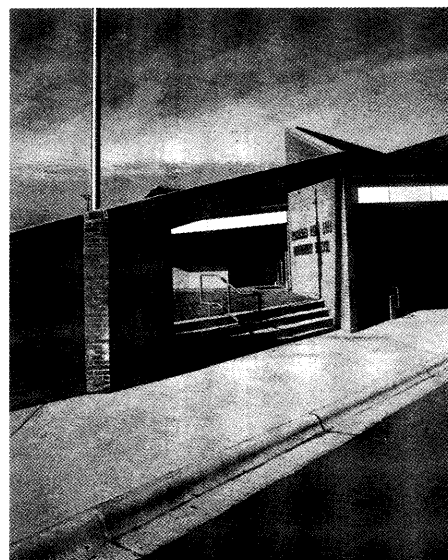
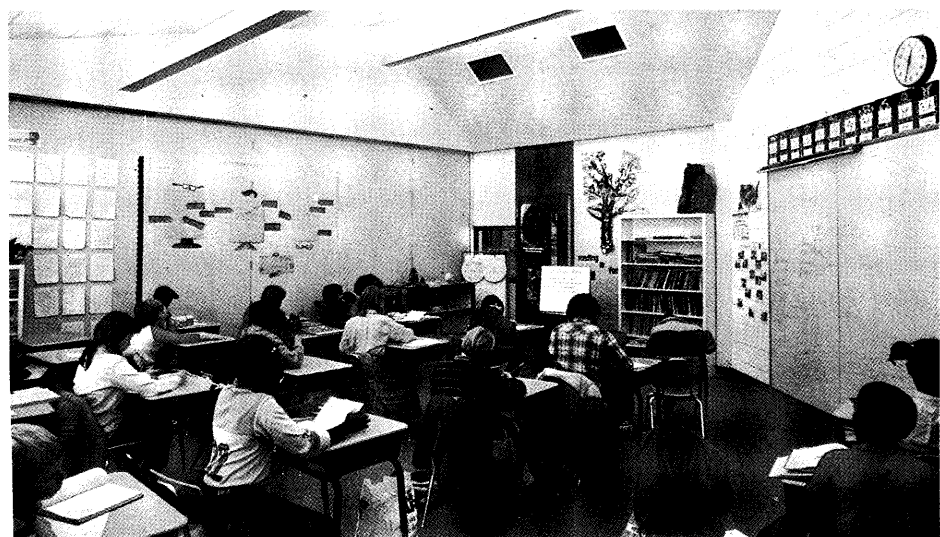
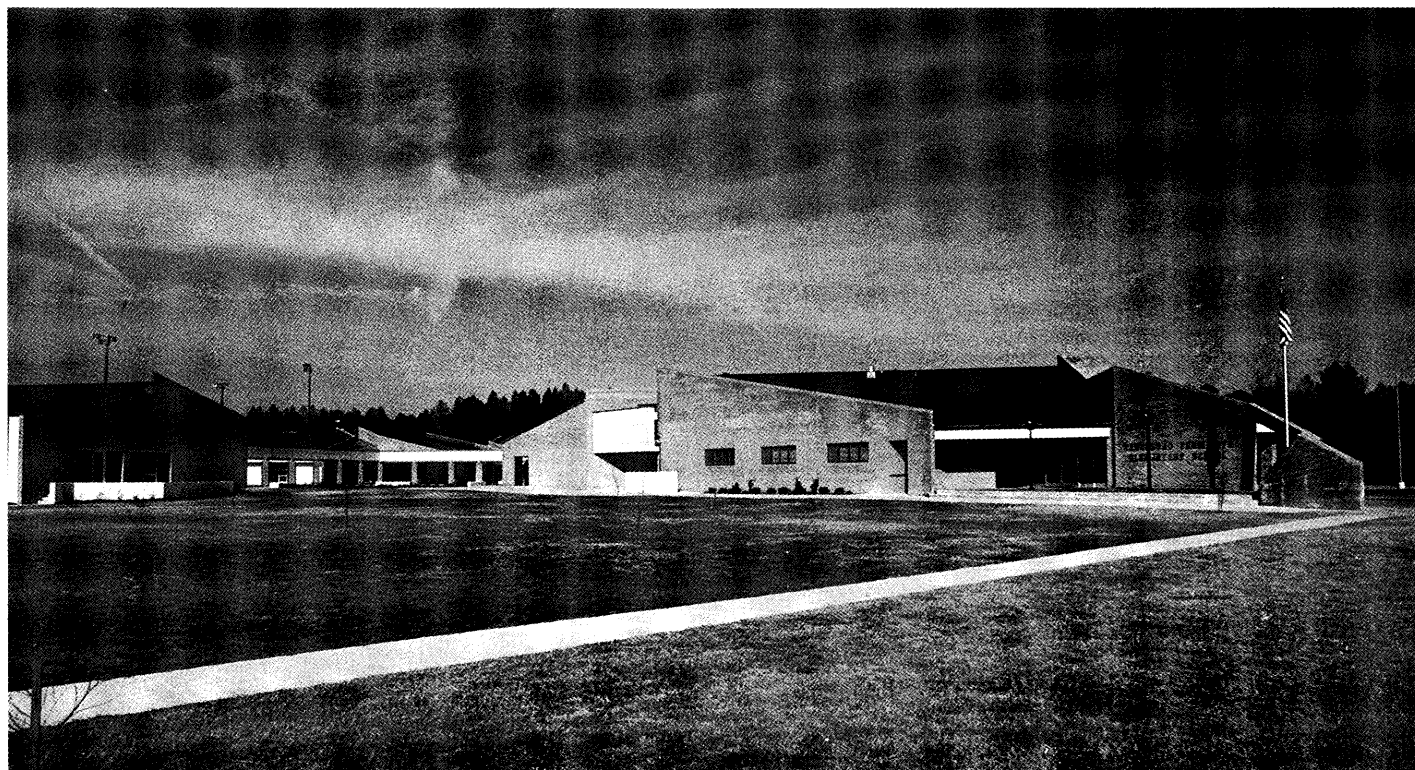
Mechanical Engineer: Buffaloe,
Morgan & Associates, Raleigh.

Photographer

Charles Francis

The new Vanceboro Farm Life Elementary School administration building, viewed here from across a courtyard, incorporated an old building that in the school's earlier days was used for home economics.





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.



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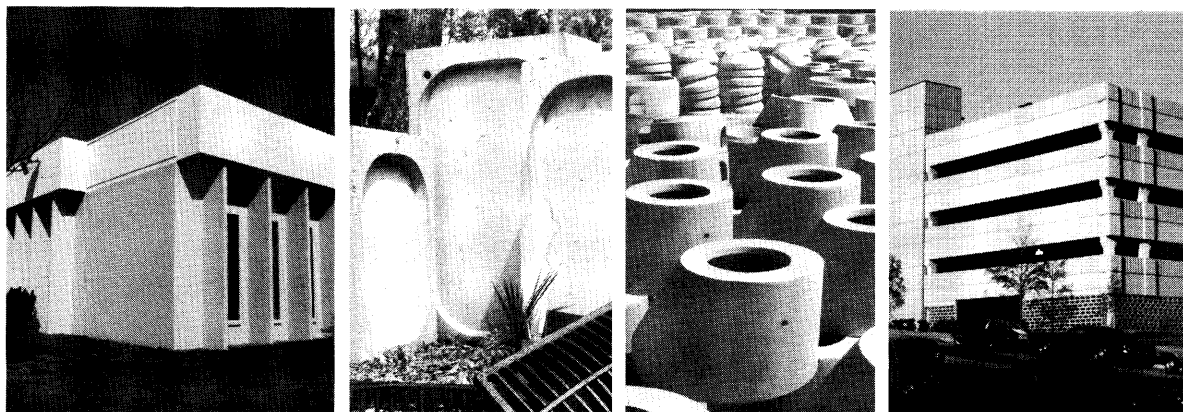
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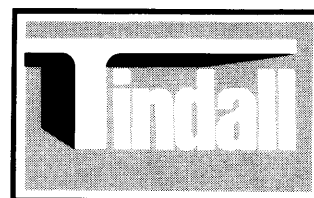
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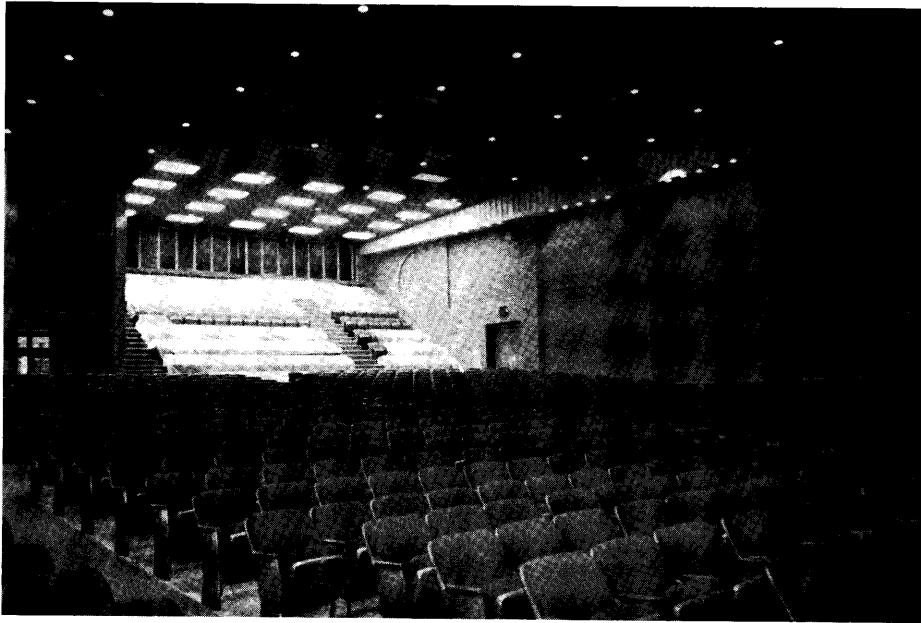
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TRITON HIGH SCHOOL HARNETT COUNTY

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.

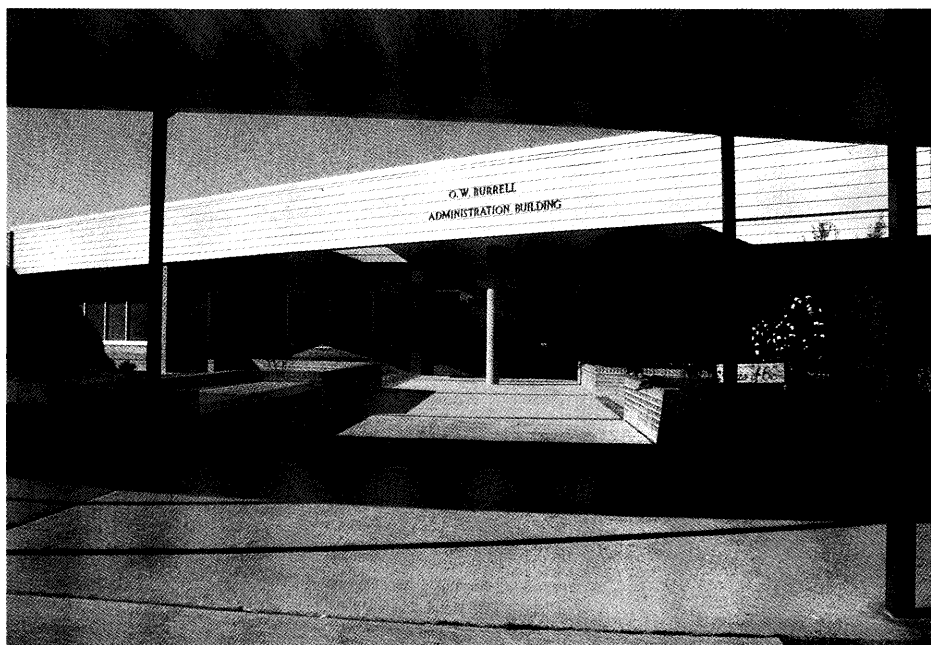
The school was a high school that had been converted to an elementary school. Except for the gym, Brian Shawcroft said, the buildings were of poor quality. The plan eventually is to replace all the obsolete buildings, except the gym, which is used by the community for a variety of events.

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.



The new administration building at Franklinton City Elementary School includes the media center. The two areas are built back to back with shared faculty and staff restrooms and lounges in between.

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.

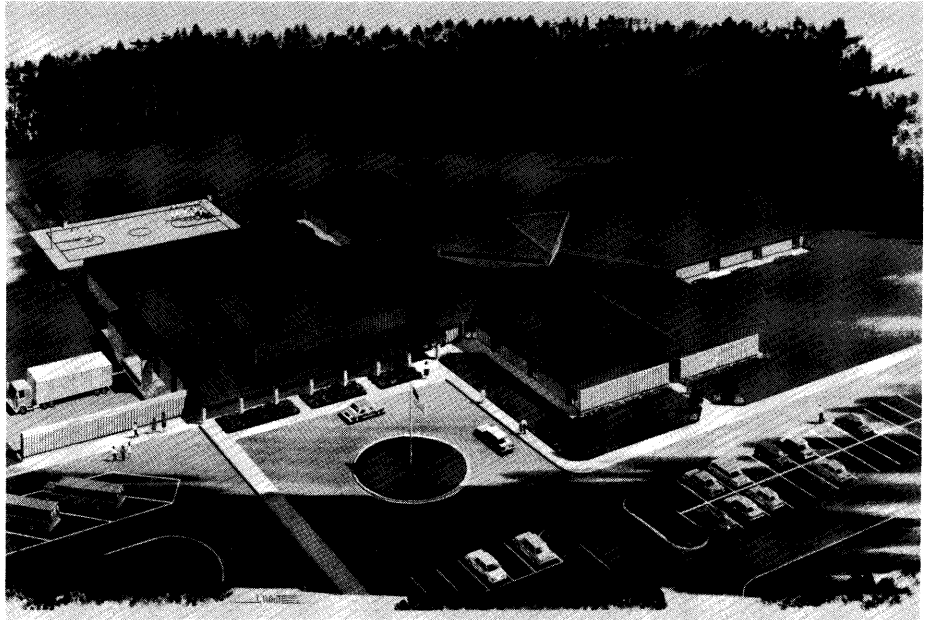
Grier, Fripp & Orkan Associates accommodated that desire by placing it at the heart of the school—the point from which four classroom and administration wings take off.

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



Under the roof cap at the center is the media center of Catawba Springs Elementary School. Designed to serve as the heart of the school, the center is defined by open corridors instead of walls for easy circulation and a constant presence.

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 build-

ing 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 synch, 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 State 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 State 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 had 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 had 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."

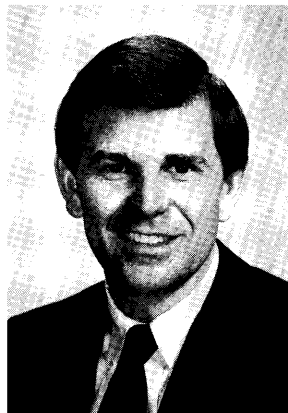
Architects' input will have a big impact on the success or failure of the new schools in the next 10 years, Thompson said. "We need to build a capacity for future technology and new curricula; we need spaces that can grow with the schools."

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.

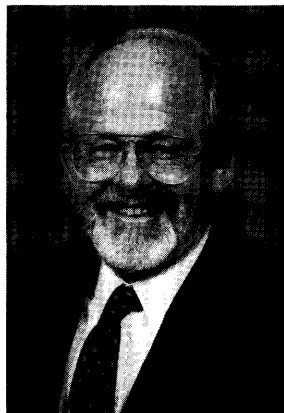
Wray Stephens of the Wake County School Board said the county has an-



Darrell Spencer



Larry D. Coble



John B. Knox

anticipated 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."

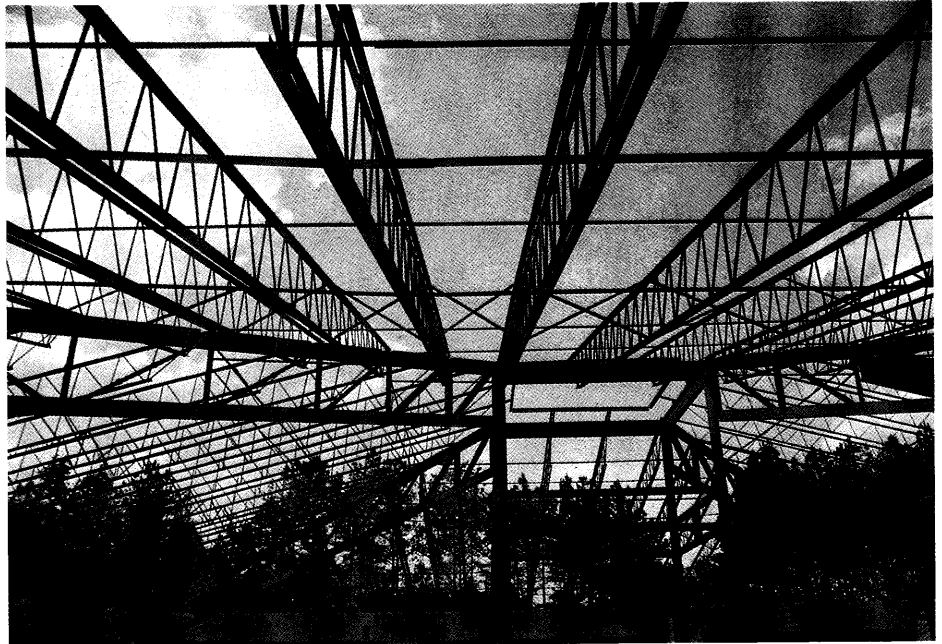
Thompson cautioned that it might be cheaper to build space for future needs now. Not long ago, for instance, school construction cost \$23 per square foot; today it is \$59 a square foot. Coble agreed: "Years ago, I heard that you should build all the house you can afford. I think that we should build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



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

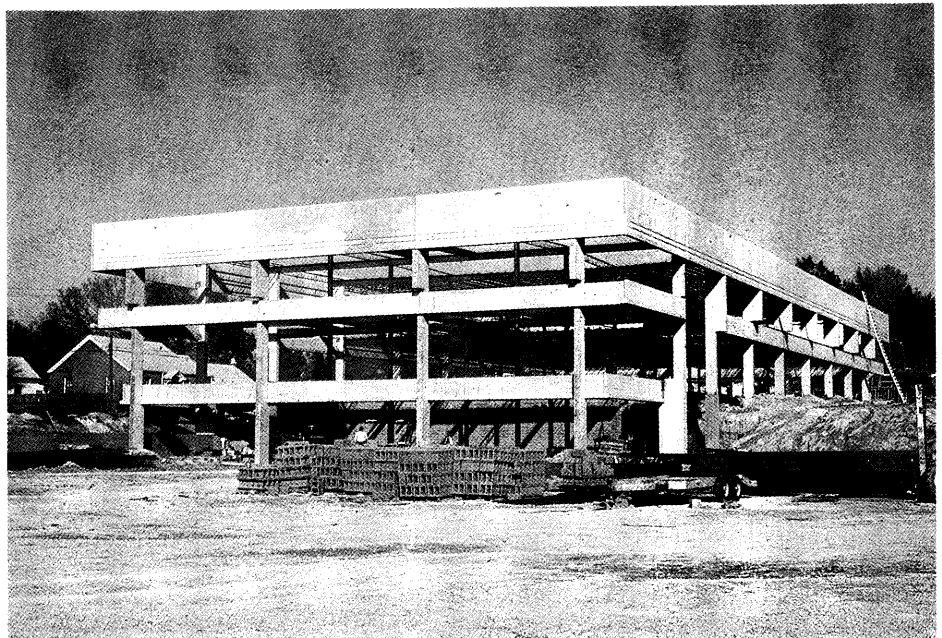
may seem appealing and are once again being discussed, most of these experts agreed that the ideal is to design buildings that meet the particular educational and community needs of the district.

To accomplish that, however, requires input by school boards, ad-

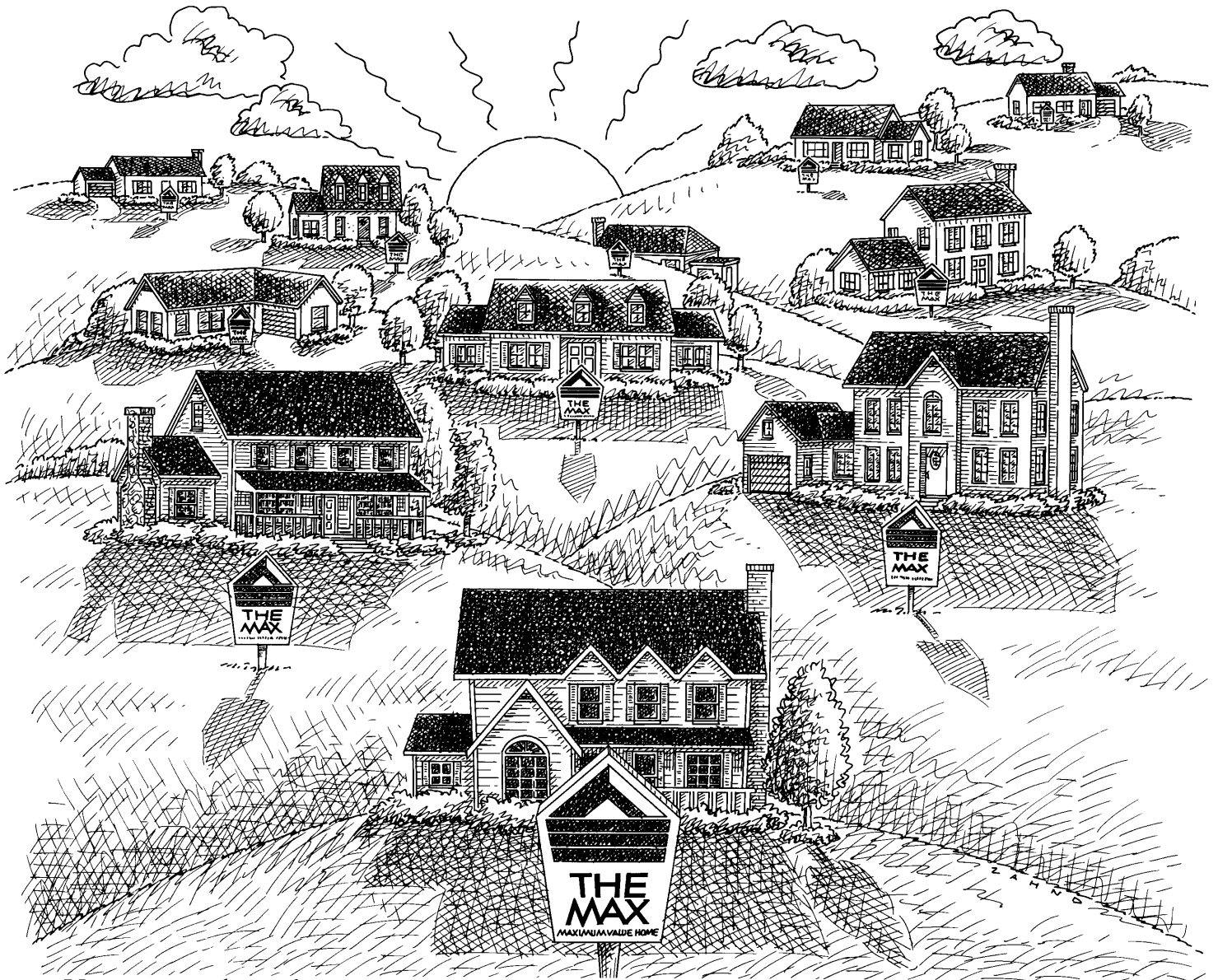
ministrators and educators, as well as the architect.

"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."

Construction of a school building in Apex. Shawcroft Taylor/Architects.



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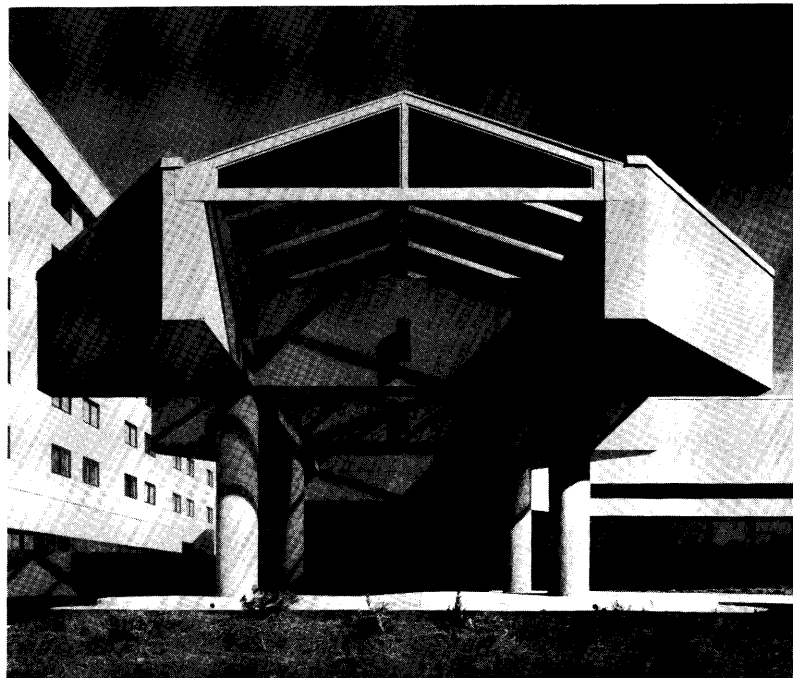
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Schools in the 1980s and 1990s: Less Dogma, More Options

Charles Reed
Senior Architect
N.C. Division of School Planning

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
POTENTIAL FUNDS FOR SCHOOL CONSTRUCTION
(IN MILLIONS)**

	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	TOTALS*
1983 & 1986 ½% Local Sales Taxes	131.7	134.0	140.1	147.3	155.0	163.5	123.1	124.8	129.5	135.0	1,384.0
Public School Building Capital Fund (ADM)	81.1	58.7	47.3	50.2	53.2	56.3	59.7	63.1	66.8	70.6	607.0
Transfer Funds-Vocational Education & School Secretaries	31.1	65.1	68.3	71.7	75.3	79.1	83.1	87.2	91.6	96.2	748.7**
Critical School Facility Needs Fund	95.7	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	185.7***
TOTALS	339.6	267.8	265.7	279.2	293.5	308.9	275.9	285.1	297.9	311.8	2,925.4

*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.

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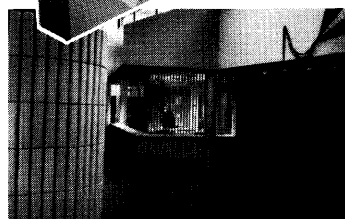
Today, the task of school planners and architects is made simpler by the absence of significant school building planning trends. Today, there is a greater variety of choices available to educators and school boards who want to do something other than the administratively convenient.

Mortimer Adler states three ways that learning improves the mind: by the acquisition of the information or organized knowledge; by the development of intellectual skills; and by the enlargement of the understanding.

Each of these three modes requires a setting or classroom appropriate to the material, methods and curriculum peculiar to each mode. The ordinary classroom with students sitting in rows and the teacher in front is suitable only for lecturing or question and answer pedagogy. It is not a suitable setting for the second and third modes. They require settings that facilitate discussion and doing, where the teacher is a guiding participant and the students are encouraged to be active learners rather than passive receivers of information.

The challenge for North Carolina architects is to help educators describe the appropriate environment for each of these three modes of learning as they relate to the Basic Education Program.

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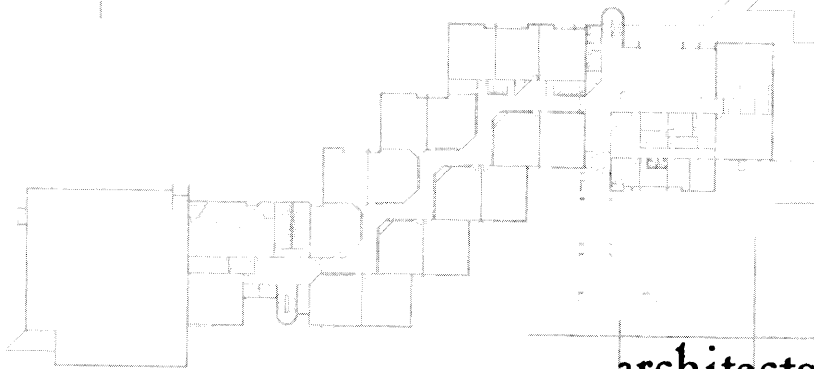


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Four Architects From North Carolina Selected for Highest National Professional Award

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

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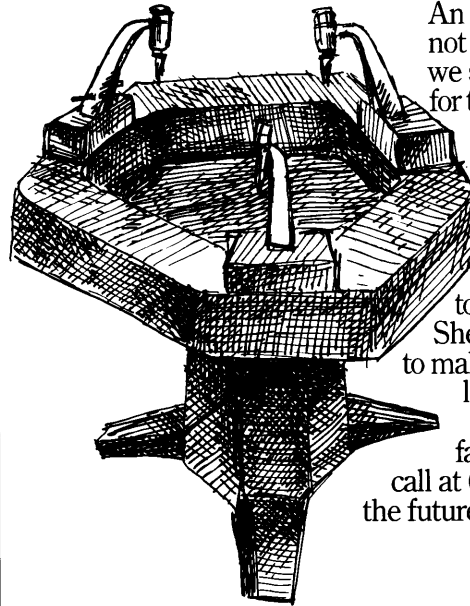
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connections, including the visitor center and dock for *Elizabeth II* State Historic Site, the design manual for Cape Hatteras National Seashore and visitor center, and Bennett Place State Historic Site in Durham. McClure received a Bachelor of Architecture 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.

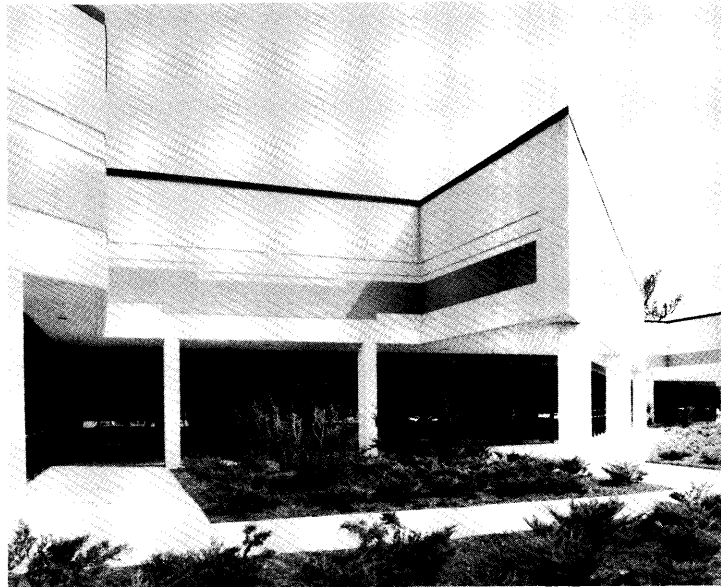
His firm has received a variety of design awards for a Cherokee condominiums project, the Pic 'N Pay corporate headquarters in Charlotte and renovations to the buildings at 119 E. Seventh Street and 600 South College Street in Charlotte.

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.



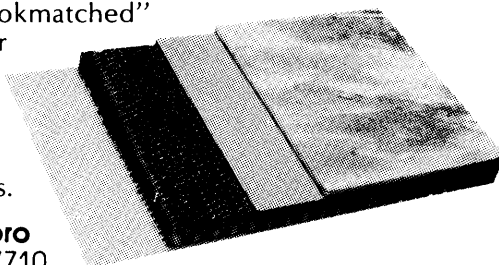
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The competition was keen this year for the Award for Excellence in Architecture, an annual event sponsored by the North Carolina Chapter American Institute of Architects. Ninety-five projects, a record number, were submitted. Find out which projects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

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his contributions to architec-
ture 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."

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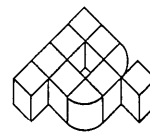
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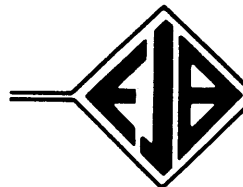
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Dennis Yates Associates to Design New Campus

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.



Peter S. Macrae

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.

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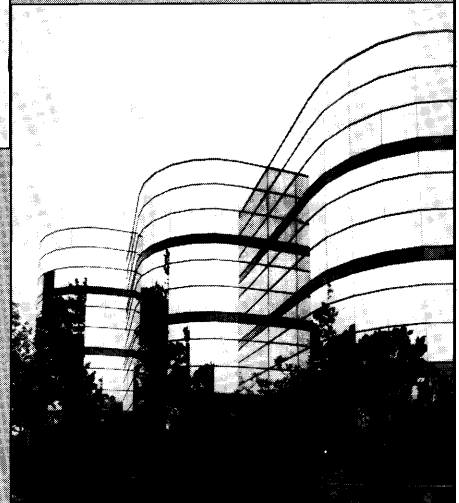
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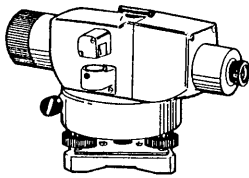
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Names and Changes in N.C. Architecture

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.

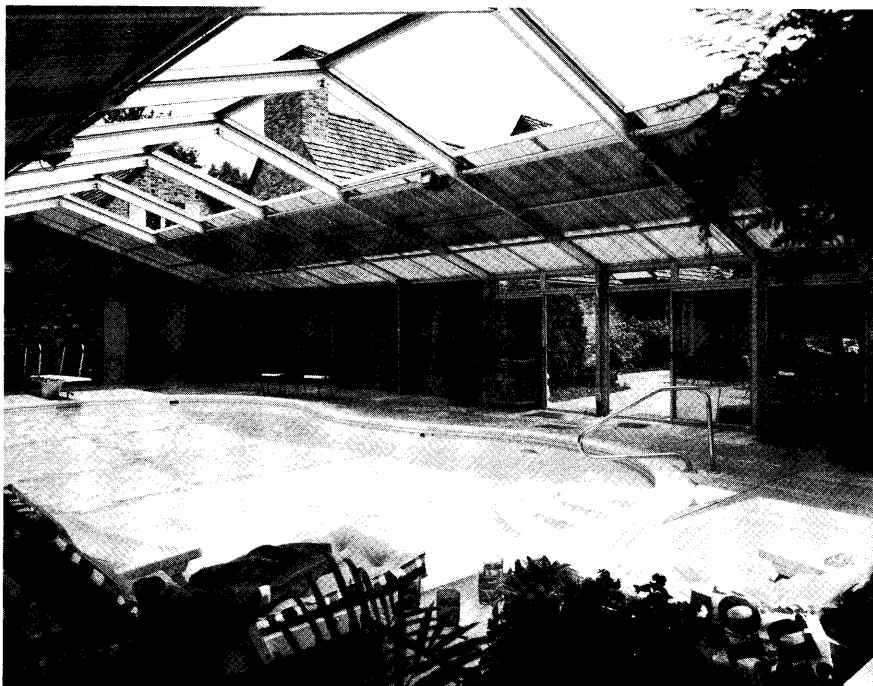
Cynthia J. Cline has joined the Bower Partnership's Raleigh office as the firm's newest project architect. She received her BARCH from NCSU and brings to the firm a variety of experience in commercial and institutional design.



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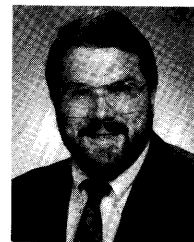
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Two Asheville architectural firms have merged into a newly formed architectural, engineering, and planning firm known as ENG/Six Associates. The merger involves Six Associates, founded in 1941 and Ellis/Naeyaert/Genheimer Associates (ENGA), which is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



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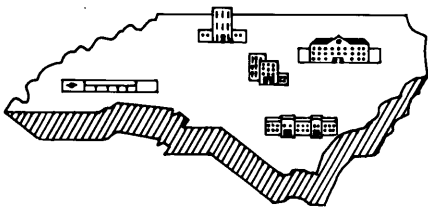
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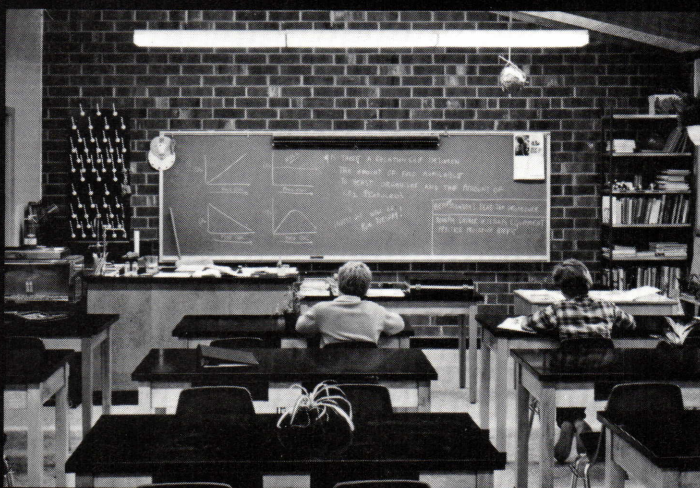
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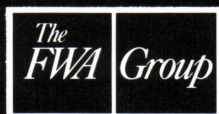
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Two New Computer Software Packages

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.

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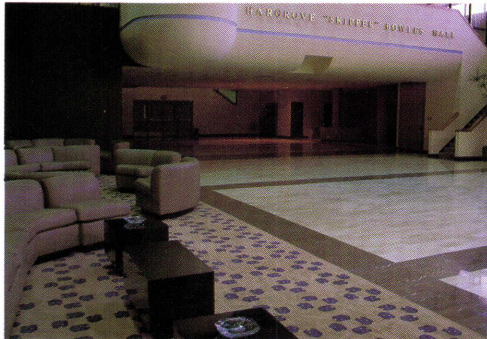
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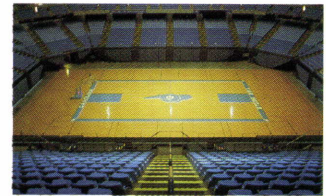
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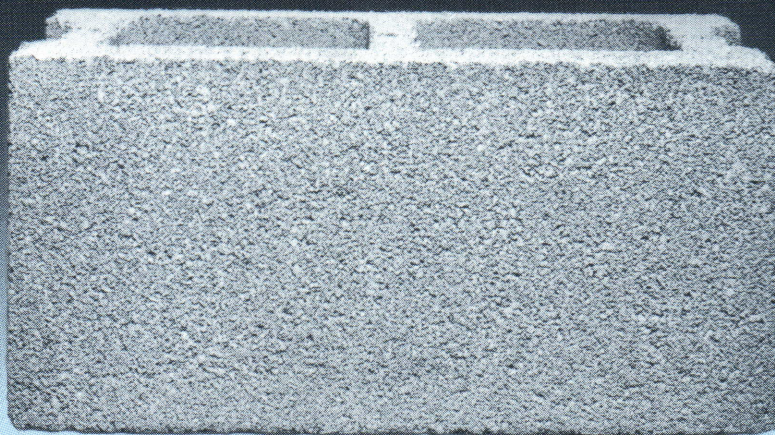


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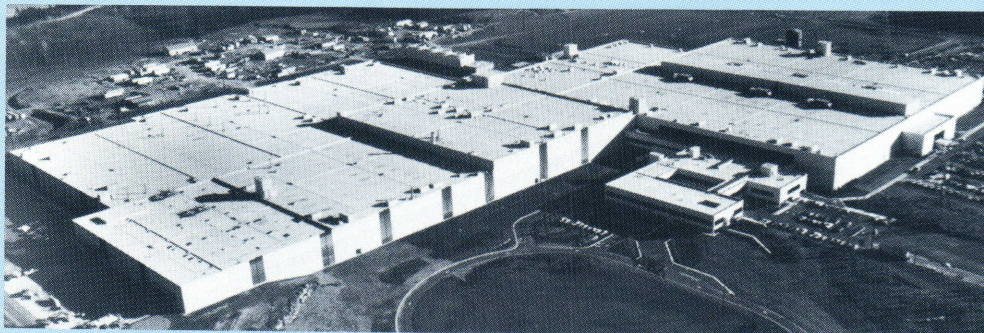
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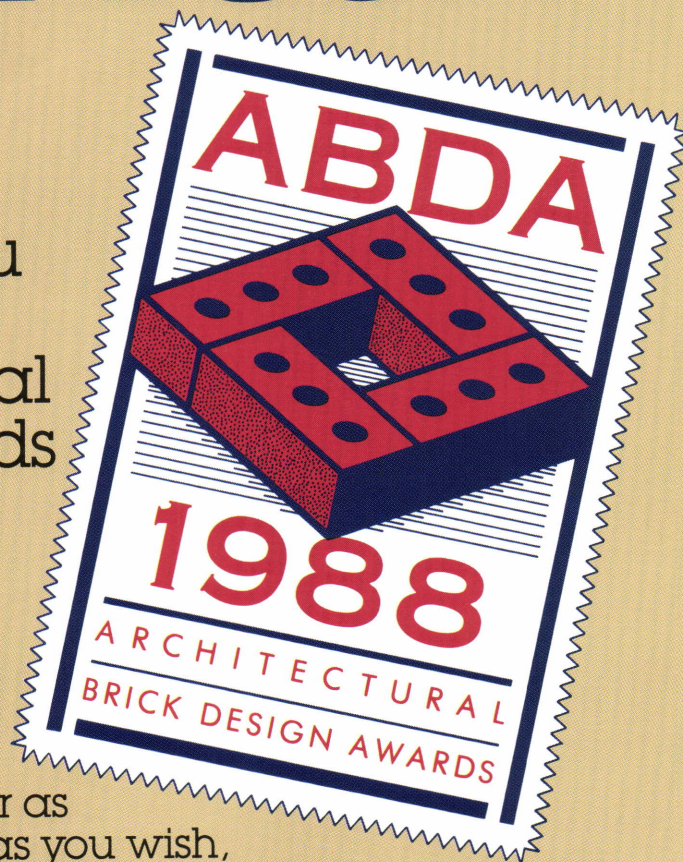
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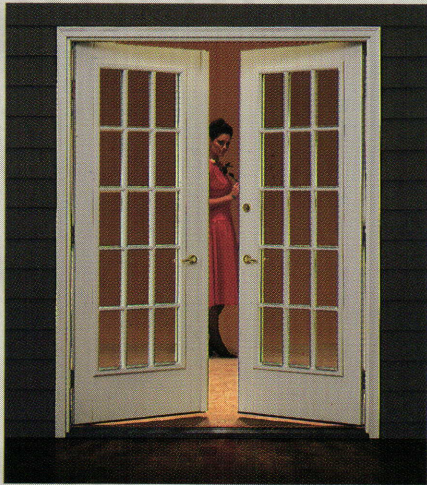
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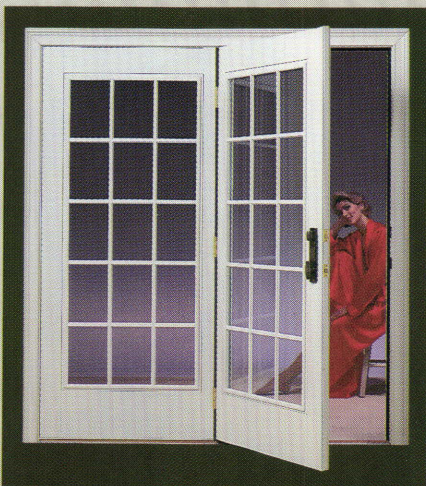
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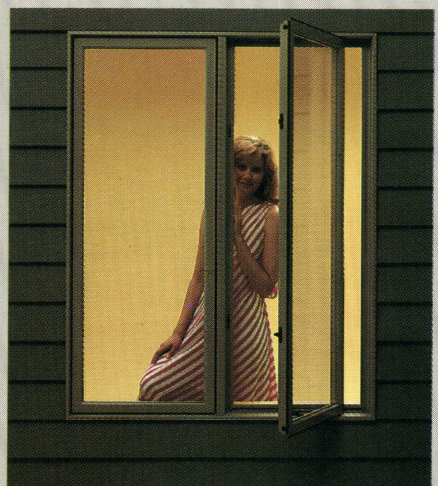
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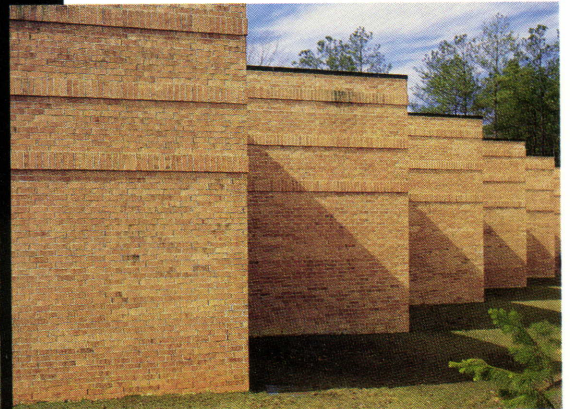


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A Good Idea Makes Borden Look Good

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.



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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.



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