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The Henderson County Courthouse, designed by Grier-Fripp Architects, an affiliate of FreemanWhite Photography by Rick Alexander

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The Texas Motor Speedway attracted over 200,000 fans for its debut. The story behind its design is on page 7.

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#### -by Roger K. Lewis, FAIA

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## **Resorting To The Basics**

"Resorting to the Basics" is the theme as AIA North Carolina hosts its annual Summer Design Conference July 24-26 at the Hilton Resort at Hilton Head Island, S.C.

Architects will have an opportunity to obtain AIA Continuing Education Learning Units through a variety of fascinating seminars and workshops. Charles Fraser, the visionary behind the Hilton Head Island development, provides the keynote address on Thursday, July 24.

Eugene Kohn, FAIA, principal of Kohn Pederson Fox with offices in New York, Berlin and London, will present the 1997 AIA North Carolina Design Awards on the evening of July 26. Kohn will also present two seminars during the conference — one on marketing issues and the other as a display of his firm's work.

A total of 38 companies have secured space as convention exhibitors. Other companies have agreed to sponsor events or programs.

As chairman of this year's Summer Design Conference, Steve Lineberger, AIA, of WGM Design, Inc., in Charlotte has developed a program that gives architects ample time to share ideas with their colleagues in a family-oriented venue.

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## **Even Speedways Bigger In Texas**

North Carolina Architect Designs Premier Racing Facility, By Johnny Moore

ennis Yates has always had a little bit of racing in him. Growing up in Rockingham, N.C., Yates' father was employed as an electrical contractor and worked at the North Carolina Motor Speedway. Yates would take rides with his father down to the track when it was being built in the early 1960s.

Now, more than 35 years later, Yates is a part of the design and building of one of the largest sports facilities in the nation — the Texas Motor Speedway.

Yates-Chreitzberg Architects was founded in 1984. Yates was offered the opportunity, under the guidance of Bruton Smith, owner of Speedway Motorsports, to be part of the design team for Texas Motor Speedway.

Never in the history of the United States has a public place of assembly been developed to seat more than approximately 80,000 people at its initial completionopening. Texas Motor Speedway is designed to seat in its completed state more than 270,000 people.

During its debut on April 6 of this year, the new track welcomed 203,061 fans for the Interstate Batteries 500 NASCAR event.

During construction, more than four million yards of dirt was moved. The structure required 15 million pounds of structural steel and approximately five million pounds of aluminum.

As architect for this mammoth project, Yates worked on most major aspects of the design, including site master planning of the facility; road-traffic layout; basic engineering infrastructure; actual design of the racetrack itself; assistance in the development of sight lines for seating; and development of the concourse for race fans and associated service facilities.

Although the architectural form of this facility will perhaps not rival Ericsson Stadium, Camden Yards or The Ball Park at Arlington, Tex., it is likely the world's premiere motor sports facility.

"This facility was designed and conceived similar to other new sports facilities, by allowing the development and innovation of grand concourses capable of allowing easy access by the race fans to toilet, souvenir and concession facilities, " explained Yates. "This required a significant adjustment in the philosophy of how typical motor sports facilities are conceived and constructed. There are some 2,700-plus toilet fixtures on the front straight-away alone, with approximately 50,000 parking spaces on site."



This facility has it all — and all on a very large scale. There are 202 double-decked VIP suites with associated toilets and other supportive infrastructure facilities. When you consider that Charlotte Motor Speedway has approximately 80 VIP suites, you can quickly understand the magnitude and scope of the project. The VIP elevated concourse and suites stretch continuously for 3,700 linear feet (three-quarters of a mile) without interruption. The suspended VIP suite levels are served by 17 large stair and elevator towers which provide life safety systems and service to VIP suites. Each of these towers contain scissor emergency exits normally found in high-rise office facilities. Due to the size and height of each of these structures, they fall and are designed as individual high-rise towers. Dimensions are approximately 40x60 feet and 120 feet tall. The building code for the state of Texas adheres to the uniform building code.

"Due to the magnitude and type of project, we were required to negotiate and 'invent' the life safety code for various components of the project, requiring a significant amount of time," explained Yates.

Yates received his first experience with actual track design at the Charlotte Motor Speedway. His office is located just five miles from the track in Concord, N.C.

"It wasn't very long before I went to the Charlotte track asking about the possibility of doing redesign work," said Yates. "The firm did master planning changes. Grandstand additions, parking layouts, infield garages. We also designed the flagstand at Charlotte Motor Speedway."

In addition, Yates-Chreitzberg Architects designed the

## "What we did is take the 22-degree banked turns from Atlanta Motor Speedway and designed those with the double doglegs at Charlotte Motor Speedway.... In theory, it is easier to drive because there are less abrupt changes." DENNIS YATES, AIA • Speedway designer



condominiums, located by the first turn at the Charlotte Motor Speedway, where Richard Petty is known to have a room. The condos are priced at \$750,000.

The work Yates-Chreitzberg acquired at the Charlotte Motor Speedway enabled the firm to gain credibility, which in turn helped it to garner some re-design work at out-of-state speedways.

"When Bruton Smith purchased the Atlanta Speedway, our firm was hired by him to do master planning," said Yates. "We've done essentially all the master planning at Atlanta and assisted in developing concepts at Atlanta."

Most drivers feel the track is a combination of several different tracks, giving the Texas Motor Speedway its own feel.

"What we did is take the 22-degree banked turns from Atlanta Motor Speedway and designed those with the double doglegs at Charlotte Motor Speedway," said Yates. "The transition from....the length of space between the turn's transition, depending on the velocity of the car, determines how the race car and drivers will perform. Bruton wanted longer transitions. In theory, it is easier to drive because there are less abrupt changes."

The design team lengthened the transitions into, and out of, the turns by a couple of hundred feet, compared to Charlotte.

Some NASCAR drivers were critical of the track after the first race, especially regarding Turn 4. So an extra five feet of asphalt was used to widen the apron off the fourth turn prior to a June 7 Indy car race, the True Value 500k, which attracted over 110,000 fans to the new facility.

"Mathematically, it is a very different race track from the one in Charlotte," explained Yates. "We knew all along Texas wasn't going to behave like Charlotte. The proof of the pudding will be in the race."

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# Designing The HALLS OF JUSTICE

Security, Budget And Appearance Play Roles In The Architecture Of Correctional Facilities

## By Elizabeth Cozart

n one form or another, they've probably been around nearly as long as humankind has. Ever since that first mischief-maker discovered some reward in being bad, society has needed buildings in which to detain and judge the offenders. Jails and courthouses are an important element in many cities. But they present unique problems and challenges for those designing them.

"Jails, very often, play a prominent role in a downtown setting," said Timothy D. Kent, CAE, executive vice president of AIA North Carolina. "The public doesn't want a fancy jail, but at the same time you don't want an eternal blight on the landscape. Jails are difficult buildings for architects to design because they present many challenges."

Security, budget, time frame, appearance — these are a few of the concerns that designers of jailhouses face. Those who specialize in them say that they are exciting because they are complicated and technically challenging.

One of the primary issues facing jail designers is security, the *raison d'etre*, after all, for their existence. Keeping the inmates on the inside, protecting guards from unruly inmates, and protecting inmates from themselves are all part of the problem.

"A jail's primary role is detention for pretrial people, those accused but not found guilty," explained Dudley B. Lacy, AIA, of O'Brien Atkins Associates in Research Triangle Park. Lacy was project manager for the recently completed Durham County Justice Center. The 291,000 square foot facility has 528 beds and includes a district courtroom. The site was designed to include, in three phases, the jail, a courthouse, and a sheriff's department.

"The inmates are theoretically innocent," Lacy continued, "so their constitutional rights, their safety, and the safety of the staff are the primary concerns in designing a jail. You worry about containing them in the jail in addition to their personal security."

Lacy explained that the high turnover rate among the jail population makes it difficult to know each inmate's history and tendencies. The average length of stay in the county lockup is between 5 and 15 days, he said, making it important to properly classify inmates before putting them in with others.

The Durham County facility is podular in design, the newest trend in jail architecture. The standard pod has a day room in the center with cells around the perimeter. This arrangement allows for closer observation of the inmates. No more guards walking up and down a long hallway and peering into each cell. Amongst Durham County's general jail population, order is maintained by direct supervision, with one guard in the unit with 48 inmates.

"Direct supervision is how most jails are operating now," Lacy explained. "You keep inmates locked up but treat them with some dignity and the guard can sense right away if there's a problem."

A major factor in security, Lacy said, is moving inmates around as little as possible. The design of the Durham County facility, as with most modern jails, allows inmates to stay in one place for most of their day. Food, exercise, sick call, television — all are brought to the inmate. A district courtroom for probable cause appearances was designed into the jailhouse, with an underground tunnel designed to connect it to the future courthouse building.

"Lee Harvey Oswald was, after all, shot while getting moved from his jail cell to the courthouse," Lacy pointed out.

"Jails are complicated to design," he added, "and there's a lot that goes into keeping people from escaping. For keeping them in, it's pretty basic — locks, steel doors,



A basic cell at the Eastern Processing Center in Vanceboro (Walter Robbs Callahan & Pierce of Winston-Salem)



Hickory Police Headquarters consolidates several departments that had been in various locations (CBSA Architects of Hickory, Polson Architects of N. Kansas City, Missouri)

and bullet-resistant glass. But the only bars in a modern jail are where you can't see them, inside ductwork or in window mullions or hidden inside block walls. We have security walls with tool resistant steel bars. What you see in movies like *Escape From Alcatraz*, that probably won't happen in a modern jail."

Security and functionality were major concerns for James C. Stewart, AIA, of Stewart-Cooper Architects when they were called on to design the new City of Gastonia Police Headquarters. Presently under construction, that facility includes a courthouse which will be finished in April of 1998. The second phase of the project is a 424-bed, four-story jail and sheriff's department, with the buildings connected by a partially underground tunnel.

Working with partners John W. Cooper, AIA, and Kenneth C. Newell, AIA, Stewart said one of the challenges facing the three was the opportunity to work with many different elected groups.

"The county commissioners, the sheriff, the judges trying to bring all of these people together and get input from them has been a real challenge," Stewart said. "We've worked with them to review plans and will begin meetings shortly to discuss the construction process."

One of the directives provided to the trio was to reduce staffing within the jailhouse. To that end, they designed it as an indirect supervision facility. With one observation pod through two day rooms, one guard can oversee 112 prisoners, 56 in each pod. Stewart said that the whole complex will prohibit smoking, something many newer jails are trying.

"The biggest challenges we faced were function-related and security-related issues," he said. "The interfunction between different departments was our greatest problem, and how to separate different functions and traffic patterns."

Allowing the public into the courthouse through the front door only, keeping the judges and jury in a corridor behind courtrooms, bringing judges in their own elevator from a secure parking lot, and, of course, using metal detectors are some of the ways that the Stewart-Cooper designers hope to keep everybody safe.

The way a county jail looks from the outside can be a huge challenge to an architect. They are, in many cases,



City of Gastonia Police Department (Stewart-Cooper Architects of Gastonia)

smack in the middle of an urban area, where razor wire wouldn't exactly complement the skyline. How do you make it look decent and still be secure and affordable?

"People who say you don't have the opportunity to do good architecture in a jail are just inhibited by the building type," said John H. Duncan, AIA, of the Charlotte firm J.N. Pease Associates. Along with his partner Adi M. Mistri, AIA, and project architect Paul D. Bonsall, AIA, Duncan designed the Rowan County Justice Facility in Salisbury.

"Salisbury has a strong historical tradition with a

beautiful courthouse," Duncan explained. "It's a monument to government right in the middle of town. What we did was basically an expansion on an existing site that included the old courthouse and added new courtrooms, services, and offices."

Duncan said that Rowan County purchased an old Cadillac dealership, a two-story structure adjacent to the courthouse. They stripped it down and rebuilt it as a jail structure, with a new building connecting the two. "Jails are complicated to design, and there's a lot that goes into keeping people from escaping....What you see in movies like 'Escape From Alcatraz,' that probably won't happen in a modern jail." DUDLEY LACY, AIA O'Brien/Atkins Associates

Construction got under way in early 1993 and was completed the following year.

"It's a brand new complex, using the old buildings and adding something new in the middle," he explained.

"We took the old courthouse as the centerpiece. And we re-did the facade of the (car) dealership to match the limestone of the courthouse, in a compatible color and



Mecklenburg County Jail North (Middleton, McMillan, Architects of Charlotte)

texture. We applied the proportions in the courthouse to the windows and facade so that when you look at the new building, there are similar materials and proportions."

In the linking structure, Duncan said, the use of a columned arcade makes everything fit together nicely.

"There's a lot of glass and it's very contemporary," he explained, "but it fits together in shapes and forms."

They may not be as inspiring to design as cathedrals or skyscrapers. But jails and courthouses are a necessary and integral part of our social network and, as long as

> there are people who can't play by the rules, we'll need someone to come up with buildings where we deal with them. Those who do them on a regular basis say they're a great opportunity.

"Jails are really a very exciting building type to work in because they're complicated," Duncan said. "You can either make it something or you can ignore it. We were forced to make it something because it's right there in the middle of town next to their famous courthouse so we

were forced to make it a good piece of architecture."

"The whole jail situation is really tied up with society," Duncan said. "What are you going to do with people who can't function? Do you lock them up and throw away the key or try to approach it a little more humanely? On the philosophical side it's something we think about, but as architects, we don't have much control over it."

## **Rowan County Justice Facility**

Size & Location: 143,430 sf, Salisbury Architect: J.N. Pease Associates, Charlotte General Contractor: John S. Clark Co. Construction Completed: 1995

he Rowan County Justice Facility involved the renovation of a 1920s three-story concrete structure (the Rufty Building), the construction of four new courtrooms and a new 200-bed jail, and the conversion to a women's dormitory of the existing county jail and sheriff's office. The whole design is linked to and anchored by the existing county courthouse, which dates back to 1914. The site was very restricting, as differing floor elevations had to be accommodated to unify the circulation within the complex.

The plan for the new two-story courts building is divided into three parts: a small private corridor for judges' circulation, the courtrooms together with jury rooms and allied spaces, and the main public corridor that provides access to the courtrooms.

The philosophical approach to the design, however, went beyond the functional challenges of the program and the constraints of the site. The project was seen as an integral part in the completion of a city block within an historic urban fabric which contains the major institutions of a county seat — the county courthouse and county jail along with a community building, a church and an old cemetery.



The public corridor of the courts wing of the Rowan County Justice Center (right); the view from Main Street of the old courthouse and renovated Rufty Building (opposite page top); and the main entry to new courts (opposite page bottom)



## **Durham County Detention Facility**

Size & Location: 291,000 sf, Durham

Architect: O'Brien/Atkins Associates, Research Triangle Park

Associate Architect: HDR, Dallas, Tex.

General Contractor: Centex-Simpson Construction Co.

**Construction Completed:** 1996

Photographer: Rick Alexander

ocated in an area of downtown Durham that is slated for private development, this new medium/maximum security detention center was designed with the idea of encouraging private investment in the vicinity while fitting in as an integral part of the larger civic campus.

The 528-bed facility contains four indirect supervision units of 24 beds, nine direct supervision units of 48 beds and one 48-bed classification unit. Each unit has its own outdoor exercise area, multipurpose room and visiting area. Included in the facility are intake-release, food preparation, laundry, magistrate, district court and other facilities for a fully operating jail.

Prior to the design of the detention center, the site was master planned for expansion as a complete justice center to include (in three phases) the detention facility, courts, sheriff's department, future jail expansion and parking.











## **Henderson County Courthouse**

Size & Location: 99,116 sf, Hendersonville

Architect: Grier-Fripp Architects, Charlotte

General Contractor: M.B. Kahn Construction Co., Greenville, S.C.

**Engineering:** Structural - Yates/Starnes Engineering;

Mechanical-Electrical - McKnight Smith Engineers; Landscape - ColeJenest

**Construction Completed:** 1995

Photographer: Rick Alexander

ited on the pinnacle of 13.5 acres to accentuate its monumentality and image to the community, the new Henderson County Courthouse is the focal point of the governmental-criminal justice complex of downtown Hendersonville.

The building includes all county offices and five courtrooms with their related support spaces. It was programmed and designed to meet projected space needs of the facility to the year 2015.

The building's traditional facade is achieved through varying textures in low-maintenance precast concrete wall panels, which were influenced by its 1904 vintage neo-classical predecessor by famed architect R.S. Smith.



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> Or information can be faxed to: (919) 477-6368

## **Off The Drawing Board**

AIA North Carolina History Book, Cyberspace, Strong Economy

he 84-year history of AIA North Carolina will be detailed in a 250-plus page book to be published later this year.

The book, co-authored by David Jackson and Charlotte Brown of N.C. State, provides a detailed account of the North Carolina Chapter and the development of the architectural profession during the 20th century. The book will include more than 100 photographs.

A task force, chaired by Leslie N. Boney Jr., FAIA, of Wilmington, has spent countless hours assembling records, checking facts and conducting the necessary research. Other task force members include Macon S. Smith, FAIA, Marvin R. A. Johnson, FAIA, and Betty Silver Howison, Hon. AIA, all of Raleigh.

Nearly \$45,000 in corporate and personal pledges have been made to the project.

#### AIA IN CYBERSPACE

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In recent weeks, AIA North Carolina has debuted its

own World Wide Web site at **www.aia-nc.org**. The North Carolina side provides a host of valuable information including direct links to several key architectural web sites.

### **TWO PROJECTS ON ENVIRONMENTAL TOP 10**

Two North Carolina buildings, designed by AIA North Carolina architects, have been included in the American Institute of Architects' top ten list of buildings that are examples of environmentally friendly, sustainable design. The selections were made by members of the AIA's Committee on the Environment.

The U.S. headquarters for The Body Shop in Wake Forest, designed by Design Harmony of Raleigh, and Durant Middle School in Raleigh, designed by Innovative Design of Raleigh, were singled out for their responsible use of building materials, use of daylighting and overall sensitivity to the environment.

The Body Shop headquarters is the result of recycling an existing building which maximizes daylight as the primary light source. The Body Shop produces naturally-based cosmetics and skin care products.

Students at Durant Middle School perform above county norms in terms of testing and attendance. Daylighting provides most of the lighting in the school and, because of the reduced mechanical and electrical systems required, the costs of the daylighting systems are expected to be recouped within a year.



Durant Middle School exterior and daylit classroom (by Innovative Design of Raleigh) deemed environmentally-friendly

#### AIA NORTH CAROLINA EXECUTIVE WINS TWO AWARDS

In recent months, AIA North Carolina executive vice president Timothy D. Kent, CAE, has won two significant honors.

In February, Kent received the National Service Award from the American Institute of Architects for his efforts in helping architects become more politically astute and effective in national, state and local government affairs.

In May, Kent received the Outstanding CEO Award from Association Executives of North Carolina. As a former president of AENC, Kent played a key role in the hiring of AENC's first-ever full time staff and establishment of an office.



Timothy D. Kent, CAE

### STRONG ECONOMY KEEPS ARCHITECTS BUSY

A healthy construction market has fostered greater prosperity among U.S. architectural firms. The 1997 AIA Firm Survey indicates billings will increase 10 percent this year on average, with the greatest gains anticipated by firms with 50 or more employees.

1996 was a profitable year for many architectural firms nationwide. More than half of the firms surveyed reported pretax profits of 10 percent

or more while over 20 percent reported profits in excess of 25 percent.

One of the more significant changes in architectural practice is the expanded services that architects typically offer to their clients. Less than 60 percent of a firm's billings comes from traditional design services. The rest comes from services such as site design, computer simulation, construction administration and feasibility studies.

#### **BONEY RECEIVES HONOR**

Leslie N. Boney Jr., the 1996 winner of the AIA North Carolina-Deitrick Medal for Service, has received two more significant honors. Boney is a recent recipient of the Watauga Medal from N.C. State University for distinguished service to the university. Boney and his wife, Lillian, also received the UNC Wilmington Alumni Association's Distinguished Citizens for Service to the University award.

### CAROLINA'S OLDEST ARCHITECTURE FIRM CHANGES NAME

FreemanWhite Architects has changed its name to FreemanWhite as the initial step in implementing organizational and structural changes that will provide clients with non-traditional, innovative and measurable services not typically offered by architectural firms.

The 104-year old firm, the oldest in the Carolinas, is creating a new management structure made up of a new president and executive vice presidents. William N. Hartsell, AIA, FreemanWhite's president of 10 years, has handed the role over to Alan T. Baldwin Jr., AIA, in a planned transition of leadership. Hartsell will assume responsibilities as chief financial officer. Other new management changes include James H. Boniface, AIA, and Franklin H. Brook, AIA, being named executive vice presidents.

This restructuring stems from executive management's decision to

be ahead of changes in the industry. "We are creating an environment," says Baldwin, "much like what the Big Six accounting firms did when they expanded their services to avoid a niche market. We see significant changes coming in the healthcare, senior living and justice industries we serve. FreemanWhite is repositioning not only to meet our clients' future needs for space, but to offer expanded services in areas such as operations analysis, computer simulation and market research."

## MARS HILL PLANS FOR FUTURE

This spring a 20-member team of architects, designers, draftsmen and landscape architects immersed themselves in a voluntary three-day workshop to put together a master plan for Mars Hill College. The college and the town anticipate extensive growth early in the 21st century, especially after Interstate 26 is completed in 2001. That is expected to double traffic through the town and area leaders want to be prepared.

G. Carroll Hughes, AIA, an architect from Asheville, organized the workshop on the impetus of Mars Hill president Dr. Max Lennon. The town already has a master plan and representatives of both the school and community thought they should work from the same page in anticipating future growth.

### FAYETTEVILLE FIRM IN LOCAL MEDIA SPOTLIGHT

The Fayetteville firm of Shuller Ferris Johnson Lindstrom Architects, P.A., recently was featured in the Fayetteville Observer-Times and on WECT Channel 6 News for renovating an historic structure in downtown Fayetteville for use as the firm's new office.

This marks the fifth downtown project that the firm has been involved with, contributing to the revitalization of the downtown area.

Items for Off The Drawing Board can be mailed to P.O. Box 2982, Durham, NC 27715-2982 or faxed to 919-477-6368.

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## **Don't Shoot The Messenger**

Architects Are Doing Their Part To Control Escalating School Construction Costs

> **By Timothy D. Kent, CAE** Executive Vice President, AIA North Carolina

n early 1993, the North Carolina construction economy emerged from a recession of several years. Since then, the construction business has been riding a wave of initial robust growth, followed by stability.

In an industry where ups or downs typically last, at most, three years, the current four-anda-half year growth cycle has increased state tax revenues, reduced overall unemployment and helped the public and private sector address long overdue infrastructure needs.

That's the good news.

Construction prices, especially on public projects, have gone through the ceiling. Take a look, for instance, at the cost of building public schools. In 1993, at recession's end, the average price of a school building was \$68 per square foot. Today, it's not unusual to receive construction bids at \$96-100 per square foot or more.

It's a classic case of supply and demand. Because there's so much construction work, both public and private, there's a significant shortage of skilled labor. In order to secure the necessary labor, contractors must scramble for help and that drives wages upward.

In addition, many of the best general contractors in North Carolina typically steer clear of public construction work because they are unwilling to deal with the state's antiquated separate prime contracting laws (North Carolina Architecture, Winter 1994). In the early 1990s, an architect could reasonably expect 40 contractors or more to bid on a school project. Recently, one architect had to personally telephone 52 contractors just to rustle up the requisite three qualified bidders.

Before voters approved a \$1.8 billion school bond issue in November 1996, architects cautioned lawmakers about the potential impact on construction prices. As a result, the bond money will be released in increments over a four-year period to lessen labor demand.

Nonetheless, school construction prices continue to rise at a rate far exceeding other building types. A 94,000 square foot elementary school that would have cost about \$7 million three years ago now carries a price tag of \$9 million or more.

When project architects present this grim information to school boards, the reaction is usually bewilderment, followed by outrage. School officials must decide between paying the full cost or reducing the size and/or quality of the building.

Architects continue to do their part to control costs. Many of the state's architectural firms are actively marketing prototype school plans which reduce preliminary design time and architectural fees.

At a time when school construction prices have increased by 41 percent, an architect's fee on new projects has, in many cases, gone down.



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