VIRGINIA RECORD

AUGUST 1981

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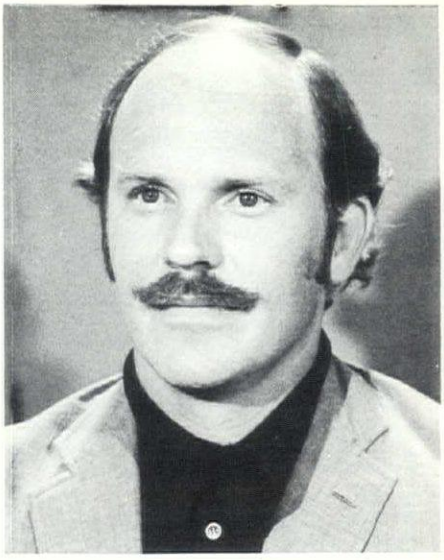
IN THIS ISSUE

ON OUR COVER is the Low-Rise Dormitory designed for Virginia Commonwealth University by Glave Newman Anderson & Associates, Inc. The project is featured on page 14 of this issue. (Photography by Huffman Studio)



By
Frederick E. Baukhages, IV, AIA

ENERGY AND TAXES

In recent years, much has been written in this column on the subject of energy—how we use it, how we squander it, how we can conserve it. This month we are still talking about energy savings—specifically, energy-saving residential design. There is more, however, and home buyers and renters alike should all be interested.

Today's tax laws provide certain economic incentives designed to encourage those in need of housing to invest money in energy-saving design. These legislative influences can create opportunities for architects to provide professional services; can create work for the builder; and can create the home being sought by the buyer or renter. The combination of an immediate tax credit and the long term savings in energy dollars may convince clients to seek architectural services in connection with residential projects.

The Energy Tax Act of 1978, together with recent additions, created a federal income tax credit for qualified energy expenditures made each year in connection with the taxpayer's primary residence. The recent additions have created several opportunities for architects doing residential design. Currently, the tax credit is 15 percent of "energy conservation expenditures" up to $2000 and 40 percent of "renewable energy source expenditures" up to $10,000, a possible total tax reduction of $4300. The tax credit is confined to measures taken on the taxpayer's principal residence which must be in the United States.

"Energy conservation expenditure" is defined as an expenditure made on or after April 20, 1977 for insulation or any other energy-conserving component for a dwelling substantially completed by that date. "Other energy-conserving component" is defined as any item included other than insulation and which falls into one of eight categories: increased efficiency replacement burners, modifying devices for flue openings, a furnace ignition system to replace pilot light, exterior storm windows or doors, an automatic set-back thermostat, caulking or weatherstripping of exterior windows or doors, an energy usage display meter, or an item specified to increase energy efficiency. The taxpayer seeking the credit must be the originator of the energy-conserving steps and such steps must be expected to remain in operation at least three years and must conform to performance and quality standards.

"Renewable energy source expenditures" is defined as an expenditure made on or after April 20, 1977 for property that, when used in connection with a residential building, uses or transmits solar energy, geothermal energy, or any other renewable energy specified to heat or cool a dwelling, to provide hot water or electricity for use in a dwelling, or wind energy for residential purposes. As with "energy conservation expenditures," the renewable energy source property, in order to qualify, has to meet performance and quality standards and must be expected to remain in operation for five years and the use of the property must originate with the taxpayer.

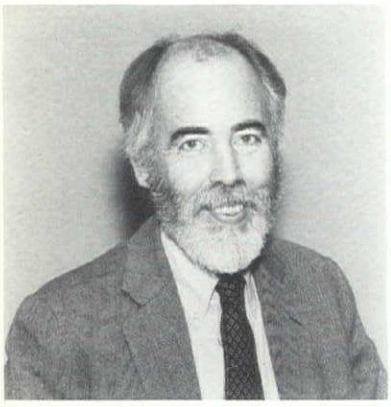
Without a doubt, the most important parts of the regulations for architects are contained in the section on active and passive solar energy systems. This part of "renewable energy source expenditures" not only produces the largest dollar value in annual tax credit, up to $4,000 but provides vast opportunity for design and technical innovations. "Solar energy property" is, generally, defined as materials and equipment of a solar energy system which use or transmit solar energy to heat, to cool, or to provide hot water for a dwelling. Active solar systems are characterized as using either mechanically forced energy transfer or thermal energy transfer and usually use collectors, storage tanks, rock beds, thermostats, and heat exchangers. Passive systems must, in addition to other requirements, include all of the following components: a solar collection area, an absorber, a storage mass, a heat distribution method, and heat regulation (shading) devices. Only those portions of the system serving the single purpose of transmitting or using solar radiation qualify for a tax credit. There are, in this existing legislation, other areas or definitions dealing with "wind energy property" and "geothermal energy property."

Because this legislation is still new and due to the inherent ambiguities involved, it remains to be seen how the regulations will be applied, especially in areas where products and materials do not fall exactly within the definitions. In any case, architects and builders armed with knowledge of the tax credits, can design and build in accord with the client's requirements and achieve a tax savings at the same time.

A.I.A. NEWS

VIRGINIA SOCIETY
AMERICAN INSTITUTE OF
ARCHITECTS

Samuel A. Anderson, AIA Elected to National Board



Samuel A. Anderson, AIA

Richmond architect Samuel A. Anderson, AIA, has been elected a director of the Middle Atlantic Region to the national board of the American Institute of Architects (AIA) at the organization's recent annual convention in Minneapolis. Anderson will represent architects from Virginia, Delaware, West Virginia, Maryland, and the District of Columbia as an AIA board member.

A partner in the firm Glave Newman Anderson Architects, Anderson is also a director on the boards of the Central Richmond Association, the United Way of Virginia and the YMCA of Metropolitan Richmond. He is former president of the Virginia Society/AIA (1979), the Richmond Urban League (1978), the Central Virginia Housing Development Corporation (1975-76), and the Community Housing and Design Center in Richmond (1972-73); and currently is secretary of the Falls of the James Committee.

As an architect, Anderson developed master plans for Virginia Commonwealth University and the Medical College of Virginia, both of which received Virginia Museum Biennial design awards. He also developed master plans for Union Theological Seminary, St. Catherine's School, St. Christopher's School, and Girl Scout Camps Holly Dell and Kittamagund. Other land use plans he produced included the Riverfront Flood Protection and Development Study for the City of Richmond, Stony Point Estates, and Neighborhood Conservation Studies for Randolph, Oregon Hill, Bainbridge, and Jackson Ward.

His institutional and commercial projects have included the restoration of Monumental Church, the renovation and expansion of the Valentine Museum, seven stores for Best Products, the renovation of the State's Department of Taxation, the Surry County Community Center, the Hopewell Community Center, three branches of the YMCA of Metropolitan Richmond, First United Presbyterian Church, Westham Green condominiums, and others.

Additionally, Anderson is known for his work with dozens of private residences both here and abroad. His design for the renovation of Les Bregueires, a complex of 18th and 19th century farm buildings in Southern France, received many awards.

Besides his architectural practice, Anderson has been a visiting lecturer and studio critic at the University of Pennsylvania and the University of London's Bartlett School of Architecture. At the University of Virginia, he was Visiting Professor of Architecture in 1977 and a visiting lecturer in 1979.

Anderson was graduated from St. Christopher's School in 1951 and received a Bachelor of Arts degree from the University of Virginia in 1955 and a Bachelor of Architecture degree (with major honors) from the University of Pennsylvania in 1961.

Anderson is married to the former Alice Gordon Childs and they are the parents of four daughters.

Reagan Administration Hears AIA Views on Energy Conservation Programs

The president of the American Institute of Architects has told the Reagan Administration that federal energy conservation programs must continue funding research for improving energy efficiency of buildings and also continue to disseminate information on buildings and energy use to the design profession and building industry.

Alexandria architect R. Randall Vosbeck, FAIA, presented the AIA's views during the Environmental Protection Agency's public hearing on new directions of federal energy conservation programs. He noted that current direction are guided by two general principles: higher energy prices will "speed up" conservation efforts; and the private sector will be able to "pick up" activities previously carried out by the federal government.

The head of the 36,000-member national professional society described how two existing federal programs—research and information—"are beginning to experience the real impact of the new federal directions."

Since 1973, he noted, client demand for energy-efficient buildings has increased not only because of higher prices, but also as a result of "better and more widely available information." Most of this information is a "direct result of the federal energy conservation program," he added.

"This information flow has speeded up innovation in the building industry: design manuals, seminars and computer programs provide tangible design solutions for designers willing to try new buildings," Vosbeck explained.

Expressing concern that this information flow "is about to be cut off," he told the EPA panel that "the fragmented building industry" cannot take over extremely technical research reports and turn them into design manuals nor reduce large-scale computer programs into simulation programs for hand-held calculators.

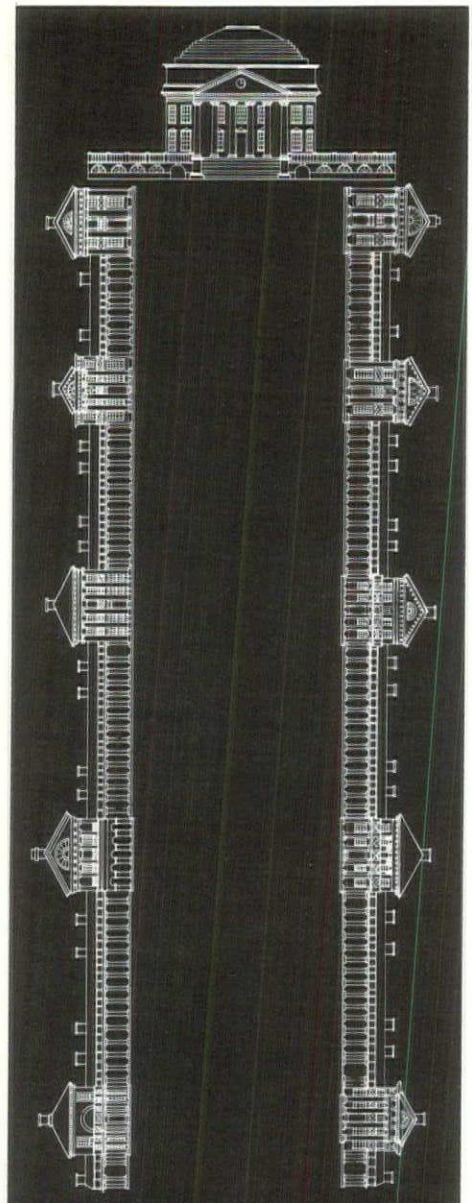
"The new direction calls for a more basic research and development approach for the building sector," Vosbeck pointed out. "The stroke of a budget-cutting pencil has eliminated projects that have potential to help our industry solve its short- and mid-term problems and has instead substituted research of a long-term nature.

"The building industry, however, will not be able to pick up the integrated research at the national level that was characterized by much of 'federal buildings' research," the AIA president stressed. "These activities do more than provide performance data; they spawn design tools that belong to the public domain.

On the new directions' spending priorities, Vosbeck said: "We question the efficiency of allocating remaining resources to high-risk projects—especially when so many short-term problems need just a little additional work for market acceptance." He suggested that the AIA assist the government during this period of transition in deciding how to spend remaining funds.

Unless federal energy conservation programs are continued, Vosbeck predicted that the "potential to reduce energy consumption by 40 percent by the year 2000 will be missed." And architects' efforts "to design and retrofit buildings for even greater energy efficiency will be impeded by the lack of new research knowledge."

(Continued)



1981
FALL MEETING
OF THE
VIRGINIA SOCIETY
A.I.A.
OCTOBER 29 TO 31
CHARLOTTESVILLE
VIRGINIA

President Reagan Names AIA Director Thomas B. Muths To Advisory Council on Historic Preservation

Thomas B. Muths, AIA, of Jackson, Wyo., a member of The American Institute of Architects Board of Directors, has been appointed by President Reagan to the Advisory Council on Historic Preservation, the chief policy counselor to the White House and Congress on the nation's historic preservation activities.

The 19-member council, established by the National Historic Preservation Act of 1966, is responsible for guiding federal agencies to ensure that their programs "are carried out with consideration to preserving the nation's historic resources." The 1980 amendments to the preservation act specifically require (for the first time) that at least one architect serve on the council.

Architect Muths, a national leader in historic preservation efforts for more than a decade, was installed by HUD Secretary Samuel R. Pierce Jr. to the council during special June ceremonies at the White House. This was his second Presidential appointment to the Advisory Council on Historic Preservation. He was named by President Ford to serve from 1976-78.

In addition, Muths has served on the board of directors of the National Trust for Historic Preservation since 1973. He was a delegate to the International Council on Historic Preservation Conference in Rome in 1977, and was a member of the U.S. delegation to the International Conference on Monuments and Sites in Moscow in 1978.

A principal in the small Jackson firm of Thomas B. Muths, AIA, & Associates since 1968, he specializes in both contemporary architecture and historic preservation.

Dowling Retires from AIA To Form Consulting Firm

James R. Dowling, director of the codes and standards division of The American Institute of Architects since 1971, has resigned to form his own professional consulting business.

James Reid Dowling & Associates will offer consulting services to design professionals, manufacturers of building products and trade associations in such areas as building code compliance, standards, fire/life safety, barrier-free design, sound control and energy conservation.

As director of the AIA codes and standards division, Dowling was responsible for administering programs to strengthen the collective voice of the design professions in the art and science of building code and standard writing including federal and state legislation.

On behalf of the Institute, Executive Vice President David O. Meeker, Jr., FAIA, thanked Dowling for the decade of service he devoted to codes and standards and the AIA. "Not only the AIA membership, but the entire architectural profession has received the benefit of your efforts in the area of regulation."

Prior to joining the AIA staff, Dowling was technical manager of architectural and construction services and corporate staff consultant on building codes and standards with the United States Gypsum Co. He has authored numerous technical papers on a diversity of subjects including fire testing, sound control, adhesives and barrier-free design. He also has lectured at more than 30 universities in the United States and Canada.

Dowling serves on a number of national professional building code and standards writing organizations and is a member of the consultative council national executive committee of the National Institute of Building Sciences.

RELEVANT REFLECTIONS

The Terraset Experience

By Anthony A. Martin
Coordinator, Energy Management Section
Fairfax County Public Schools

What does the assassination of Saudi Monarch King Faisal have to do with a school in Reston, Virginia? Read on, you will be surprised.

We were more stunned than surprised when we walked out of the building that housed the National Science Foundation (NSF) on an October afternoon in 1975. We thought that this model of a school we carried and the innovative ideas its design contained were truly worthy. Then why did the presentation we had just made to this agency of the U.S. Government, responsible at that time for encouragement and support of such ideas, seem to fall on such deaf ears? We'll never know.

We had in our hands and in our heads the design of a building that would do many things, in combination, to drastically reduce its energy consumption when compared to a similar structure, conventionally built. In reaction to the 1973–74 oil embargo and the spiraling cost of fuel it portended, we had worked long and hard to weave energy conservation ideas into the entity that the model represented, so our disappointment was understandable.

Architects Doug Carter and Satish Bhide had taken energy-saving ideas and directives from Al Hlavin, Fairfax County Public Schools (FCPS) director of design and construction, and me, infused them with ideas of their own, and produced an unusual but completely functional design for an elementary school that would house a thousand children and utilize significantly less energy than would be normal. The major features of the design were circular and square shapes to keep the building's exterior walls and roof areas, and therefore its surface heat loss and heat gain, to a minimum; an earth cover to act like a thermal flywheel and shield the interior from outside temperature extremes; a reclaim system that would recycle the heat from lights and people to keep the building warm in the winter; and a solar system that would cool in the summer, and heat in the winter whenever there was sunshine.

The earth-cover design was unusual but we liked it. However, on the basis of the experience with NSF and other similar ones at the state level, we were feeling a little defensive about our brainchild. So, over iced tea at lunch one day, our group struggled to give the project an identity that would forestall such terms as "Mole Elementary," or "the school where the kids wear miner's helmets," etc. I guess we all showed our age when Doug Carter came up with the name "Terraset" and we embraced it, for you see, "terra" is Latin for "earth," and way back when we went to school instruction in Latin was mandatory. So, this was how our school that is "set" in the earth first got an identity.

Except for the solar system, Terraset was funded by the local taxpayer, fully designed, ready for construction, and desperately needed by the community for the 1976–77 school year. Buyt we just had to have that solar system to complete our coup for energy conservation. Local taxes couldn't be expected to pay for it—too expensive, too experimental. So we went back to NSF, which had been absorbed by ERDA (Energy Research and Development Administration), and which is now known as DOE (Department of Energy).

This time we went prepared, no play-dough model this trip. Now we had a comprehensive proposal, albeit unsolicited, for a computer-controlled, state-of-the-art, evacuated tubular, hydronic solar heating and cooling system. We had a proposal that had been contributed to by a small army of experts. However, neither NSF's name change nor our admittedly sterling proposal did us any good; deaf ears became cold stares and silence—months of silence.

The silence was broken one day—not by NSF . . er . . I mean ERDA though—when my phone rang. On the other end was a gentleman who had read about the earth-covered school in the papers and wanted to know more. After my spiel, he wanted to know how our grant proposal to ERDA was going—and in any case would we be interested in a private grant to fund the solar system? I mumbled something in the affirmative, agreed to send him a copy of the ERDA proposal, looked forward to our talking again after he had read it, and on that note our conversation ended.

I immediately went into our director's office and tentatively related this telephone conversation. His reaction was that under the proper circumstances he would take anyone's money to build the solar system.

"Anyone" turned out to be the al Dir'iyyah Institute, a philanthropic organization, chartered in Geneva, Switzerland, and formed by the family of the assassinated monarch King Faisal in his honor.

This was all mind-boggling stuff to us, so we huddled with the School Board's attorney, consulted with the State Department, and sought the Superintendent's and the School Board's advice and approval to negotiate the "proper circumstances."

The proper circumstances turned out to be the right to design, build, own, and use the system as we saw fit and their right of access to design and performance information, and visitation to the school for five years.

An agreement was signed, and Terraset turned out to be the first project funded by this philanthropic Saudi foundation, and Fairfax County Public Schools built one of the best solar assisted, energy conserving facilities in the nation.

Proof of Terraset's energy solution is evident in the following comparison of electricity bills with Hunters Woods, a comparable elementary built without emphasis on conservation.

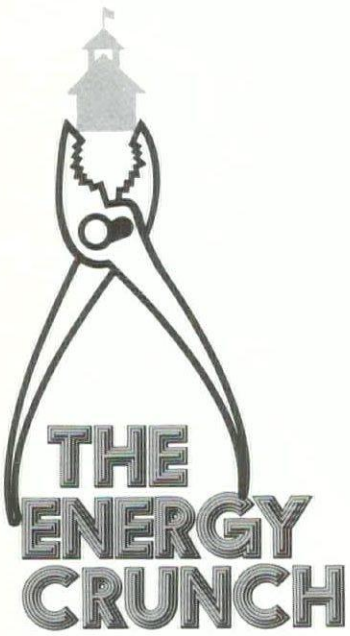
	TERRASET		HUNTERS WOODS	
Month/ Year	Kilowatt Hours	Cost	Kilowatt Hours	Cost
Oct. '78	71,424	$ 2,208	107,280	$3,317
Nov. '78	59,328	1,769	134,640	4,015
Dec. '78	73,728	2,130	169,920	4,909
Jan. '79	95,616	2,710	231,120	6,550
Feb. '79	93,888	2,759	247,680	7,280
Mar. '79	92,160	2,742	199,440	5,949
Apr. '79	72,000	2,218	177,840	5,479
May '79	61,632	1,900	162,000	4,995
June '79	58,752	2,101	151,200	5,407
July '79	26,496	955	144,720	5,217
	705,024	$ 21,492	1,725,840	$ 53,118

Terraset is only one school among 167 in the Fairfax County public school system, some many times larger, and a great deal of effort was and is being made to help fulfill its energy-saving expectations. Many things are being tried and proven in the process that are being, and will be, beneficially applied to other schools, and this in a very practical sense is the true value of the "Terraset Experience."

Energy Mangement Computer Installed in Fairfax County Public Schools

By Anthony A. Martin

Coordinator, Energy Management Section
Fairfax County Public Schools



One of the most efficiently run buildings is that rare one which has knowledgeable, round-the-clock building engineering supervision—a person on duty at all times who turns off equipment that is not needed, reduces the outside air allowed to enter the building during really hot or cold spells, and checks and corrects conditions of overheating, overcooling, and overventilating whenever they occur.

Energy management with the use of a computer can be just as effective, if not more so, than this round-the-clock building engineer. In this era of inexpensive microcomputers and microprocessors, computerized energy management can do so at a fraction of the cost.

The computer, in effect, becomes the indefatigable building engineer, always on the job controlling the building to advantage by using the accumulated knowledge of the building's dynamics as well as the operational logic of a program provided by experts in building operation.

A computerized energy management system can do the following in a programmed way:

- **Control** (turn on/turn off, open/close, start/stop) fans, pumps, dampers, boilers, water heaters, valves, lights, etc.
- **Monitor** time, temperature, humidity, sunshine, fuel consumption, fluid flow, equipment on/off status, etc.
- **Warn** of equipment malfunction, power failure, high energy consumption, etc.
- **Log, store,** and **provide** operational data.

With these features, a school district would have the ability to constantly and immediately optimize the use of energy-consuming equipment in its buildings. The system would assure timely warning of unsafe or undesirable conditions, and provide from a single source immediate access to information about needs for operational change and system condition and performance.

This year, such a system was installed in seven Fairfax County Public Schools in a pilot project and expansion of the program has been authorized for seven additional buildings. The Central Control and Monitoring System (CCMS) is of a distributed configuration with local, stand-alone programmable microprocessors at each school and leased telephone connections to a central computer to provide system access control, data storage, system graphics, system polling, etc.

Fairfax County Public Schools expect the pilot project to pay for itself in three years with the energy savings it will generate. As additional funds are made available, the energy managements system will be implemented in most of the remaining schools throughout the 167 school building district. The eventual savings in energy costs will be quite substantial.

New Uses for Surplus School Buildings

By Ralph Snell, AIA

What's all this I hear about surplus school buildings?

So convert them into arts centers. And junior colleges. And slightly offbeat luxury condominiums.

It's all been done before.

But now, as more and more schools become surplus (as more and more Baby-Boom babies buy starter homes and station wagons) we need to stretch our imaginations a little farther. There's a large supply of school buildings out there.

What building types could use old school facilities?

Just think. Besides classroom space, schools contain food service areas, recreational facilities, large scale assembly spaces, labs and offices. Schools are good for at least seven profile codes on US Government 254 forms.

So who could use this variety of space?

Got an extra open plan high school sitting around? How about selling it as a corporate office building?

If the open plan wasn't abandoned with the installation of concrete block walls, office landscaping—office systems design—can be used. There's already a cafeteria for the employees. And for the health-conscious employer—the gym and other recreational facilities for an employee's health spa. It's cheaper than Blue Cross.

Got a school built in the '50s? It invariably has large areas of glass which invariably face south.

Tack on the words "passive solar design" and you've automatically updated the building 30 years.

Use the glass walls as part of a Trombe wall and you've got a building that United Technologies or Wang couldn't resist.

Got a school with a traditional plan—individual rooms arrayed either side of a wide corridor?

Does that sound suspiciously like a shopping mall?

Got a school with a large assembly space and lots of classrooms and a kitchen?

What does a church group want when it builds its ultimate facilities?

But are we missing the hottest market?

Yes. And what is it?

The word is: ThemePark.

Convert those surplus schools into ThemeParks. First, of course, you must pick an appropriate name. Usually two words that normally travel separately, jammed together, one cutely misspelled, with the first letter of each word capitalized. Like SchoolDaze. Or SchoolTyme.

High schools offer the most opportunity for successful conversion. Adults will be attracted back to relive memories from the old school days. Kids will enjoy the chance to be grownups.

How would it work? Since the object and design of ThemeParks is the complete control of your senses (beginning to get the connection?), a day at a school ThemePark must be totally planned.

First, no matter how near or far you are to the ThemePark, you will be bussed. Something about crowd control bussing to achieve spatial integration.

You will be assigned a homeroom and given a computer planned schedule of classes and activities.

Homerooms will be staffed with audio-animatronic figures telling you where to sit (boy-girl-boy-girl) while the day's announcements are given over the PA system.

Communications and transportation are very big in ThemeParks.

As is, of course, food. Each day, one special item will be featured in the cafeteria. One day it will be Salisbury steak; the next, ground beef with gravy; the next, hamburger pattie deluxe au jus. You get the picture.

But the real fun will come after school hours—cheerleading practice ("Give me an 'A'"), football practice (for all the would-be jocks), and the full gamut of extra-curricular activities. Clubs. The Yearbook. And a fleet of maroon-and-white '57 Chevys for drag racing and patch-laying.

Each evening will be topped off with commencement exercises ("You are now standing at the crossroads of life . . .") at the football stadium (in the gym in case of rain); followed by the prom (with a theme like "Moonlight and Roses"). Formals will be available for rental at exorbitant prices. A photographer will record the scene. For a substantial fee.

All in all, a sure-fire, money-making proposition. Little in the way of conversion costs—turnstiles and pipe rail mazes that make it seem like the line in which you're standing really isn't that long, with megabucks for profit.

You can't lose.

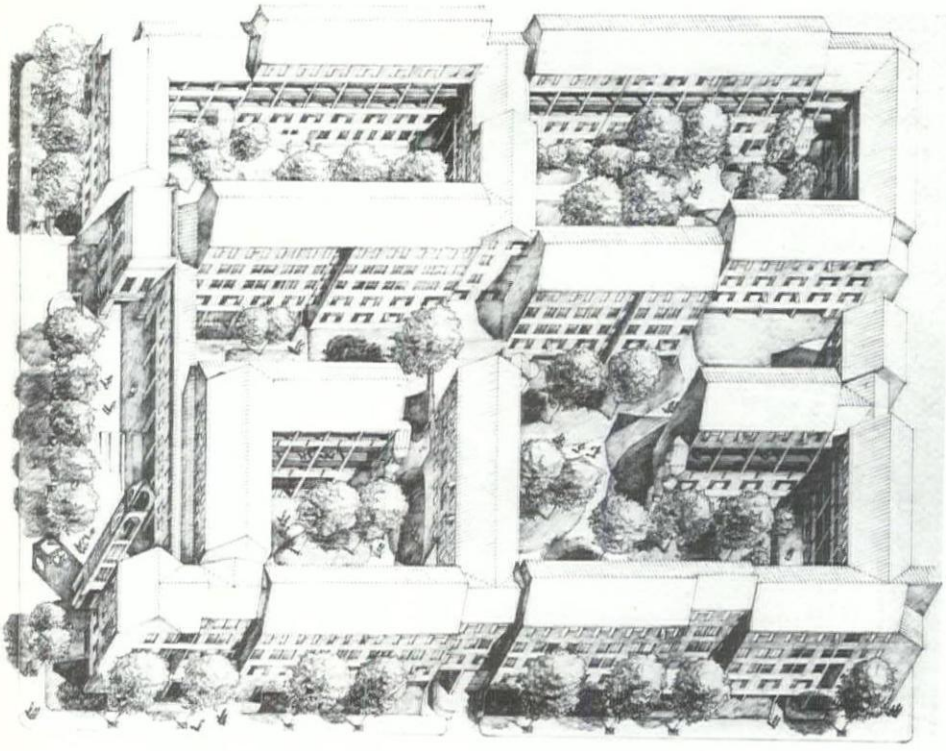
Convert.

ABOUT THE AUTHOR: Ralph Snell is an architect with HTB, Inc., a multiple discipline design firm in Washington, D.C. He was formerly an associate in a Virginia firm noted for the design of educational facilities. None has been converted to a ThemePark. Yet.

Low-Rise Dorm, Va. Commonwealth University
Richmond

Glave Newman Anderson & Associates, Inc.—Architect

Landscape Architect, Wilson-Moreth Partnership • Mechanical/Electrical Engineer, Roache, Mercer & Faison • Structural Engineer, W. J. Davis • General Contractor, J. Kennon Perrin Construction Co., Inc. • Photography, Huffman Studio.



Virginia Commonwealth University wanted its new dormitories to create an identifiable image, separate from yet in sympathy with its community.

The academic campus (formerly Richmond Professional Institute) occupies a landmark position in Richmond: wedged between an elegant residential neighborhood of 19th century townhouses and the city's bustling downtown business district. Literally hundreds of thousands of people drive through the campus daily on their way downtown, which makes VCU unlike most traditional cloistered campuses. Additionally, the campus image is fragmented: a combination of small, renovated townhouses and massive, modern classroom buildings. Non-University properties are interspersed with those owned by the University.

The Low-Rise Dormitories convincingly reverse this trend through conservation of open space at the center of the housing units. A landscaped entrance piazza opens onto the street and faces an adjacent city park, effectively creating green spaces within the University's domain.

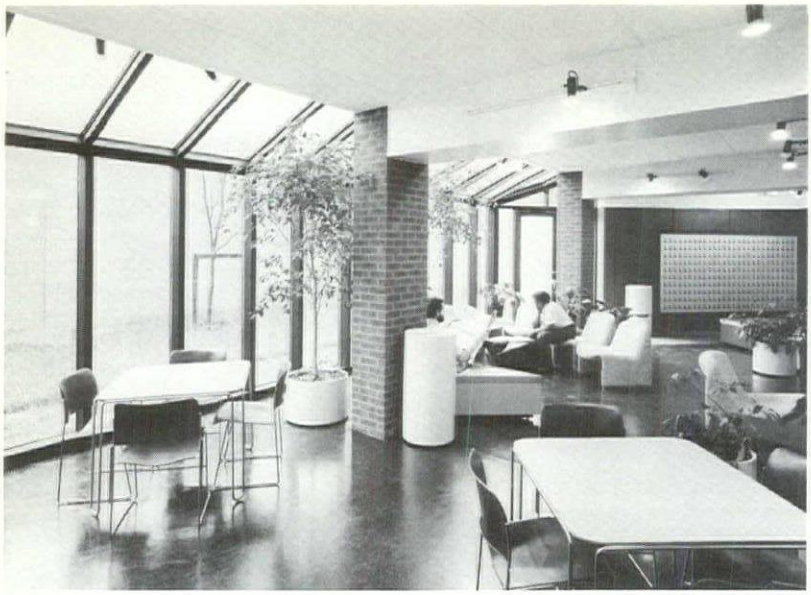
The site fronts Monroe Park. Neighboring buildings include the Moorish-style Mosque (a city auditorium), the Gothic style Grace and Holy Trinity Church, the Italian Renaissance Cathedral of the Sacred Heart, several fine French mansarded houses, and some Gothic apartment buildings. On the site itself is a 1911 French

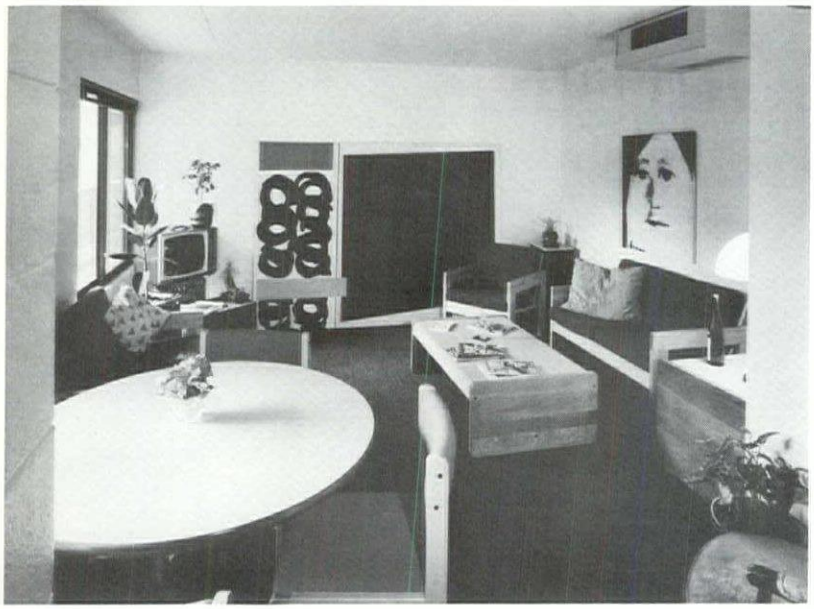
Renaissance bathhouse which was salvaged to provide the main entrance to Phase I of the total housing complex.

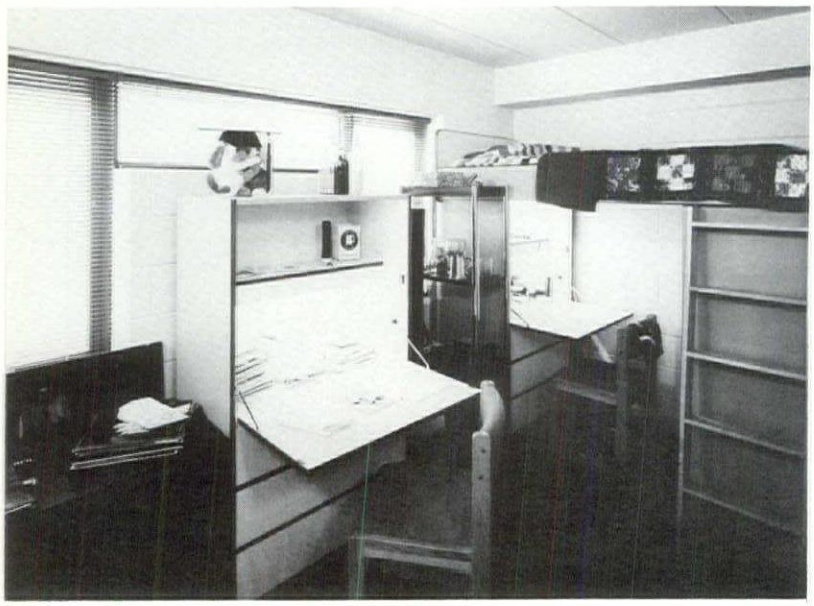
In this first phase, the brick dormitory buildings form a four-to-five-story "figure eight," enclosing pairs of landscaped courtyards that provide semi-private open spaces. This configuration is patterned on the example of surrounding residential blocks with block interiors buffered from external traffic by two-to-three-story buildings along the perimeter.

The dormitory does not attempt to compete with other buildings on the park. It serves as a backdrop enframing the architectural landmarks. Pale green sloped roofs were selected to complement and suggest the verdigris copper domes and towers of the Mosque and the Cathedral. Phase II of the dormitory will include a broad plaza and arcade, also fronting Monroe Park. This will complete the University's "embrace" of the park.

Beyond the general objectives of neighborhood development, the dormitory design was the outcome of an intensive three-day working session with students, housing administrators, University officials, and architects. Together, they systematically identified, discussed, and resolved major design issues inherent in institutional residential facilities. High rise dormitories were considered impersonal, institutional, and plagued with crime. Residential ambience and tight security were high priorities. Apart-







ment-style townhouses and flats appealed to the urban-dwelling students. In place of closed-circuit television surveillance, the Low-Rise Dormitories rely on more natural "defensible space" techniques such as a single nighttime entry point, open stairways, and brightly lit galleries. Security is achieved primarily with the shared interior courtyards about which students feel possessive, protective, and responsible.

All apartments and the student lounge are entered from these open galleries. Stairs, treated as sculptural elements, articulate spaces and enliven the buildings' elevations with student activity. The lounge serves as a waiting room for visitors and a public room for students to pick up mail and use adjacent laundry facilities. Seating units and brightly colored ottomans are clustered to form small conversation groupings. Expanses of glass on the east and west walls offer views of the courtyard and the main flow of student traffic.

The dormitory houses 500 students in more than 100 units which are subdivided into one-level "flats" and two-level townhouses. The townhouses, with a kitchen/dining/living level and a bedroom/bathroom tier, provide a uniquely residential feel to the apartments, distinctly homelike and non-institutional. The "flats" include similar spaces on a single level. Apartments for handicapped students are at street level and feature wider clearances, larger rooms, and roll-in showers.

The architects designed many of the interior furnishings after researching the market with University administrators and students. Living rooms contain sofas, lounge chairs, end and coffee tables, lamps, and dining suites. Bedroom furnishings include bed, wardrobe, desk/dresser, study chair, ladder/bookshelf, and night table. Stackable bedroom units permit the most efficient use of space; the bed sits atop the wardrobe and desk/dresser.

Through sensitivity to user input and urban design issues, the Low-Rise Dormitories increase the level of student accomodations plus promise to encourage campus identity and consolidate neighborhood image.

J. Kennon Perrin Construction Co., Inc. of Richmond was general contractor for the project.

Subcontractors & Supplier
(Richmond firms unless noted)

E. G. Bowles Co., excavating & paving; Terminix Engineers, soil treatment; Laird's Nursery, landscaping; Massey Concrete Corp., concrete contractor; Bat Masonry Co., Inc., Lynchburg, masonry contractor; Lynchburg Steel & Specialty Co., Monroe, structural steel supplier; Montague-Betts Co., Inc., Lynchburg, reinforcing steel; Ar-Wall, Inc. of Virginia, metal roofing; Miller Manufacturing Co., Inc., millwork & wood doors; Richmond Primoid, Inc., waterproofing; and E. S. Chappell & Son, Inc., caulking.

Also, N. W. Martin & Bros., Inc., built-up roof; Construction Specialties, louvers; John Bagley, mail boxes; Richmond Glass Shop, Inc., windows & storefront; Sears, Roebuck & Co., venetian blinds; Pleasants Hardware, hardware supplier; F. Richard Wilton, Jr., Inc., Ashland, drywall & Dry-vit System; Stonnell-Satterwhite, Inc. (now H. E. Satterwhite, Inc.), ceramic tile; N. Chasen & Son, Inc., painting contractor & fireproofing; Overhead Door Co. of Richmond, overhead doors; Otis Elevator Co., elevators; Hungerford Mechanical Corp., mechanical contractor; and E. C. Ernst, Inc., Ashland, electrical contractor.

Roanoke College

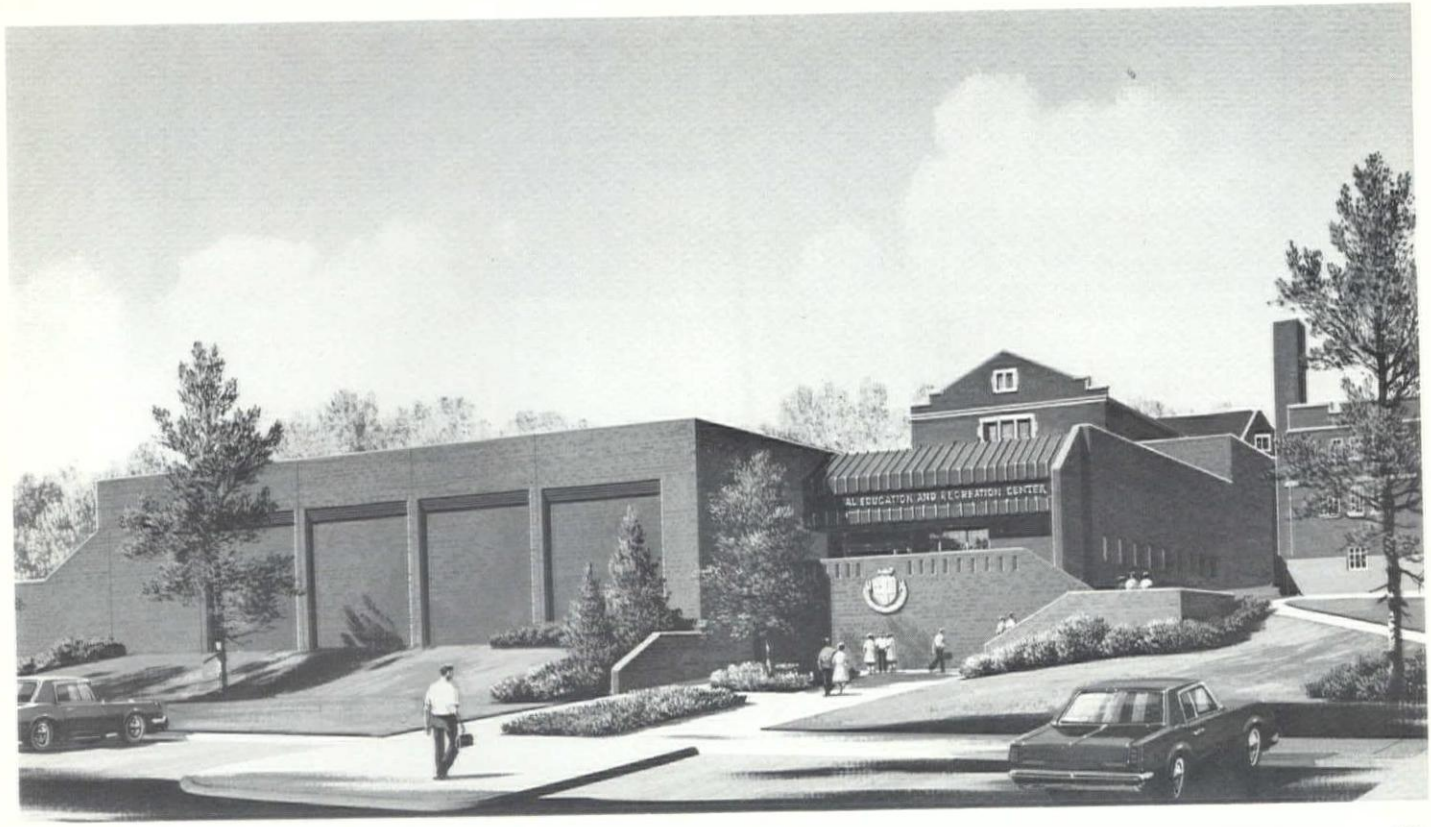
Physical Education & Recreational Center, Salem

Byron R. Dickson—Architect

Project Manager, Dan W. Horner • Mechanical/Electrical Engineer, Lawrence Perry & Associates • General Contractor, Days Construction Co., Inc.

The new Athletic Facility designed by the firm of Byron R. Dickson, Architect, provides the last link in the Master Campus Plan for Roanoke College, located in Salem. The building will serve as a center for the expanding Department of Physical Education and provide intercollegiate, intramural and recreational activities.

Roanoke College, a recent holder of the NCAA Small College Basketball Championship, had



long outgrown the Alumni Gymnasium built in 1930. After exhausting research, the college selected a design/build concept offered by Byron R. Dickson, Architect, of Roanoke and Days Construction Co. of Salem. The decisive factors cited for the client's decision were design concept, time limitations and cost control.

The Physical Education and Recreation Center, built on a hillside, will contain over 46,000 square feet on three levels. Students will be able to enter a mezzanine level directly from the main campus area. This level will contain a lobby and Hall of Fame.

The spectator level, accessible from the main parking area, provides space for access to telescopic seating for 2,100 persons, concessions, student lounge, trophy room, and athletic department offices and classrooms.

The lower level encloses the gymnasium floor, four racquetball courts, locker rooms and, equipment and various support spaces.

Analysis by the Design/Build Team led to the selection of a preengineered steel structure to solve the dual constraints of a large clear span and construction economics.

The unique problems of fire and moisture resistance and high durability resulted in the specifications of precast concrete planks on masonry bearing walls as the support structure over the locker room areas. The foundation will be supported entirely by wood piles and grade beams to overcome a major fault line crossing the site.

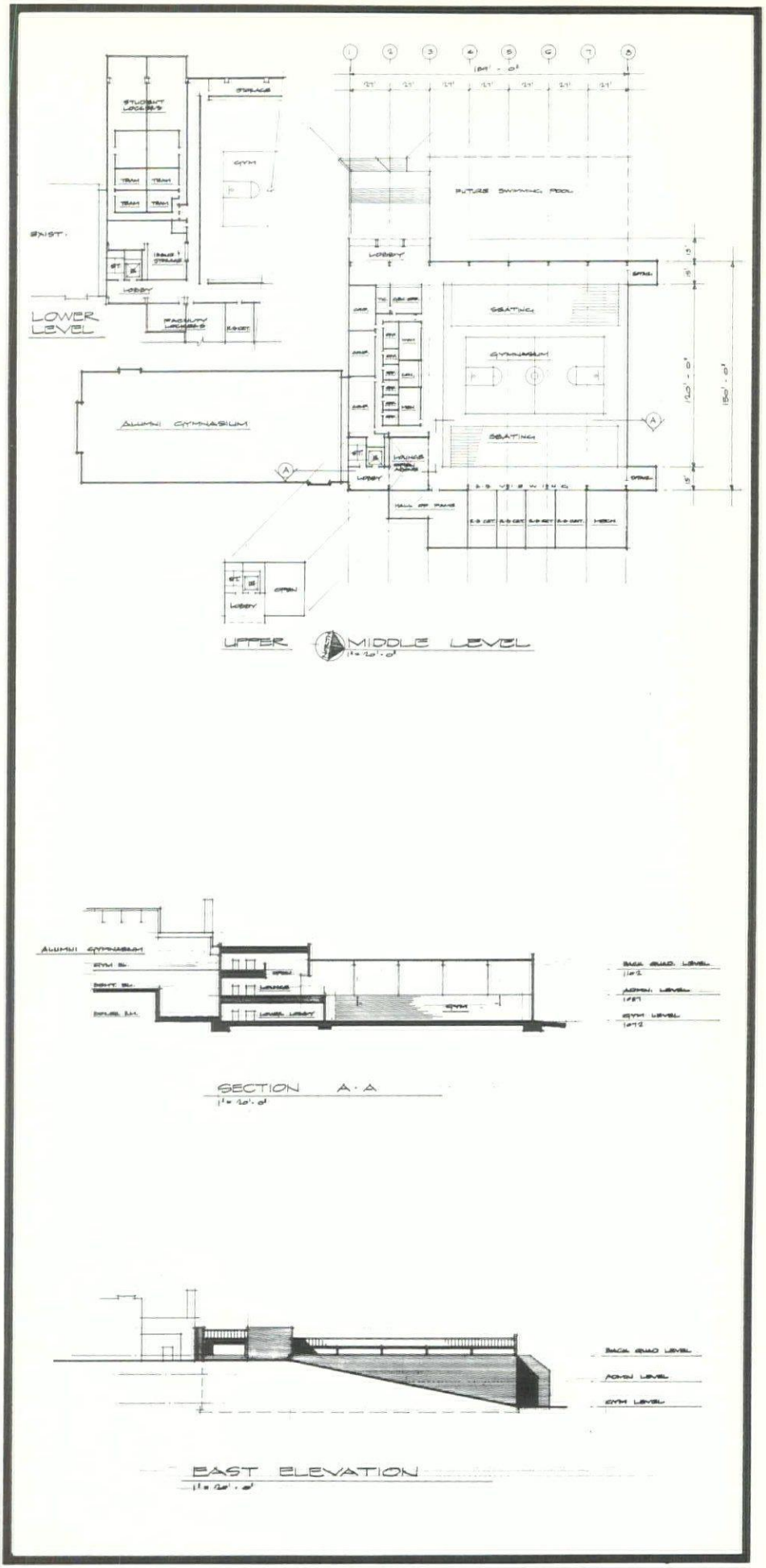
The exterior envelope is brick and CMU Cavity wall with a standing seam metal roof.

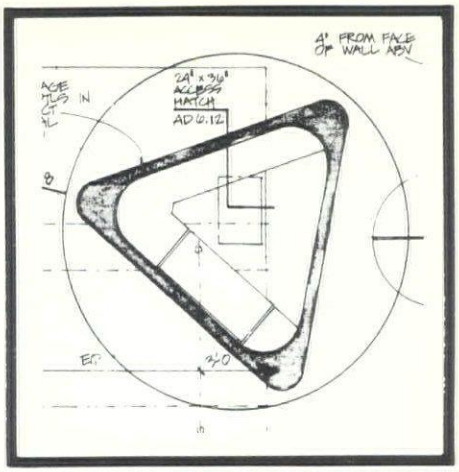
The building was planned to accommodate the future addition of an olympic size pool and extension of the gymnasium floor.

Days Construction Co., Inc. of Salem, is general contractor for the project and is handling concrete work, masonry work, steel joists, carpentry, millwork and cabinets.

Subcontractors & Suppliers

Varco-Pruden, Winston-Salem, NC, steel erection & standing seam roof; Owen Plumbing & Heating, Inc., Salem, plumbing/heating/ventilating/air conditioning contractor; and Newcomb Electric, Inc., Roanoke, electrical equipment supplier; electrical contractor & fire alarms & public address system.

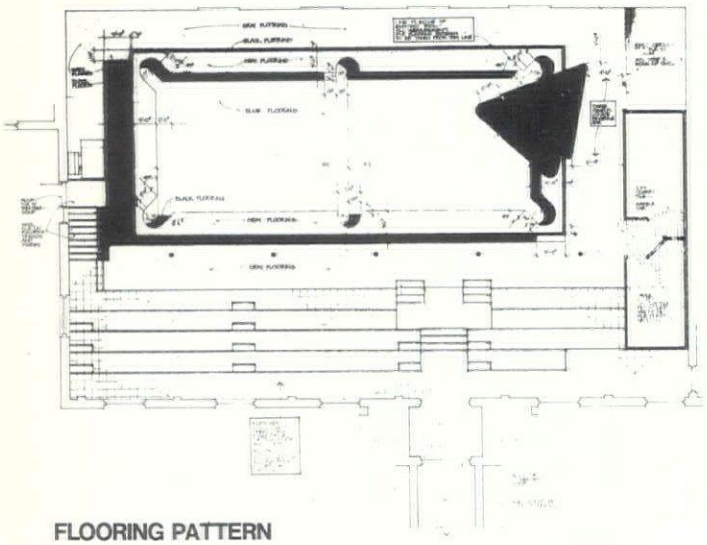




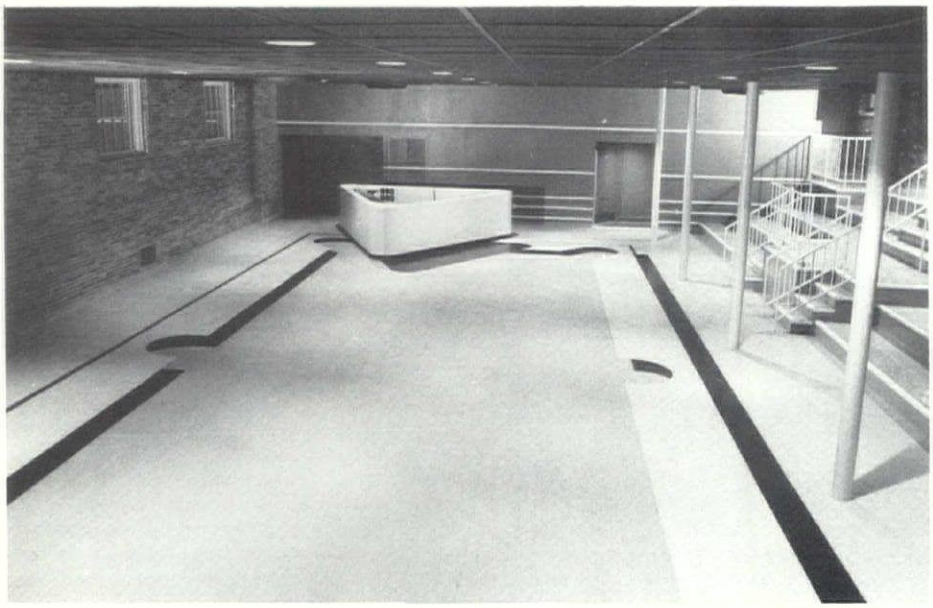
Mary Washington College, 'Pool Room'

Fredericksburg,

Glave Newman Anderson & Associates, Inc.—Architect



FLOORING PATTERN



Interior Design, Glave Newman Anderson & Associates, Inc. • Mechanical/Electrical Engineer, Simmons, Rockecharlie & Prince • Structural Engineer, W. J. Davis • General Contractor, D. C. McClain Construction Co., Inc. • Photography by the Architect.

Mary Washington College had an abadoned indoor swimming pool with bleachers situated beneath the front terrace of the student union building. The College asked Glave Newman Anderson Architects to convert the space into a "rathskeller" for beer parties while reserving the pool itself, which later would be filled to serve as a heat sink for the building's new air conditioning system.

A new, impervious floor was built over the pool and the space now includes areas for dancing, stand-up talking, seating (without movable furniture), a beer bar, vending machines, lighting and sound controls, and the requisite rest room facilities.

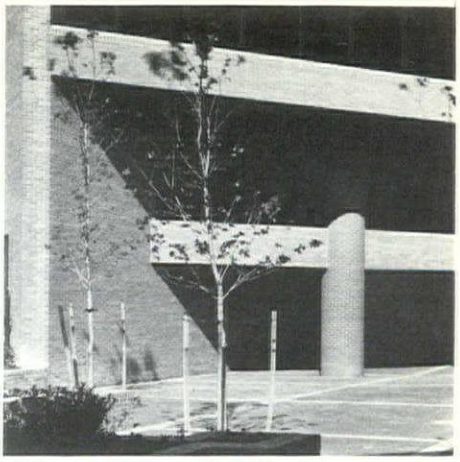
The decorative scheme is an obvious pun on the room's original name—The Pool Room. Seamless flooring was inlaid in a cartoon version of a pool table and the beer bar constructed in the shape of a triangular ball rack.

The scheme is completed by turning necessities into features: the landing between twin stairs provides a theatrical entry route and a platform for movie projectors; the required new second exit becomes a grand balconied entrance (and incorporates a wheelchair lift); the white nosings on the vinyl-tiled bleachers provide safety through a raised edge and visual contrast and then continue as decorative stripes on the side walls.

D. C. McClain Construction Co., Inc. of King George was general contractor for the project.

Subcontractors & Suppliers
(Richmond firms unless noted)

Kim The Mason, Inc., Fredericksburg, masonry contractor; P.D.Q. Corp., steel supplier; Architectural Hardware, Inc., hardware supplier; R. C. Lee Carpet & Tile, Inc., Fredericksburg, ceramic tile; O'Ferrall, Inc., acoustical treatment & resilient tile; PPG Industries, Pittsburg, PA, paint supplier; W. W. Nash & Sons, Inc., fireproofing; Kiker Plumbing Co., Fredericksburg, plumbing contractor; Grigsby, Inc., Fredericksburg, air conditioning contractor; and J. D. Conti Electric Co., Inc., Weems, electrical contractor.

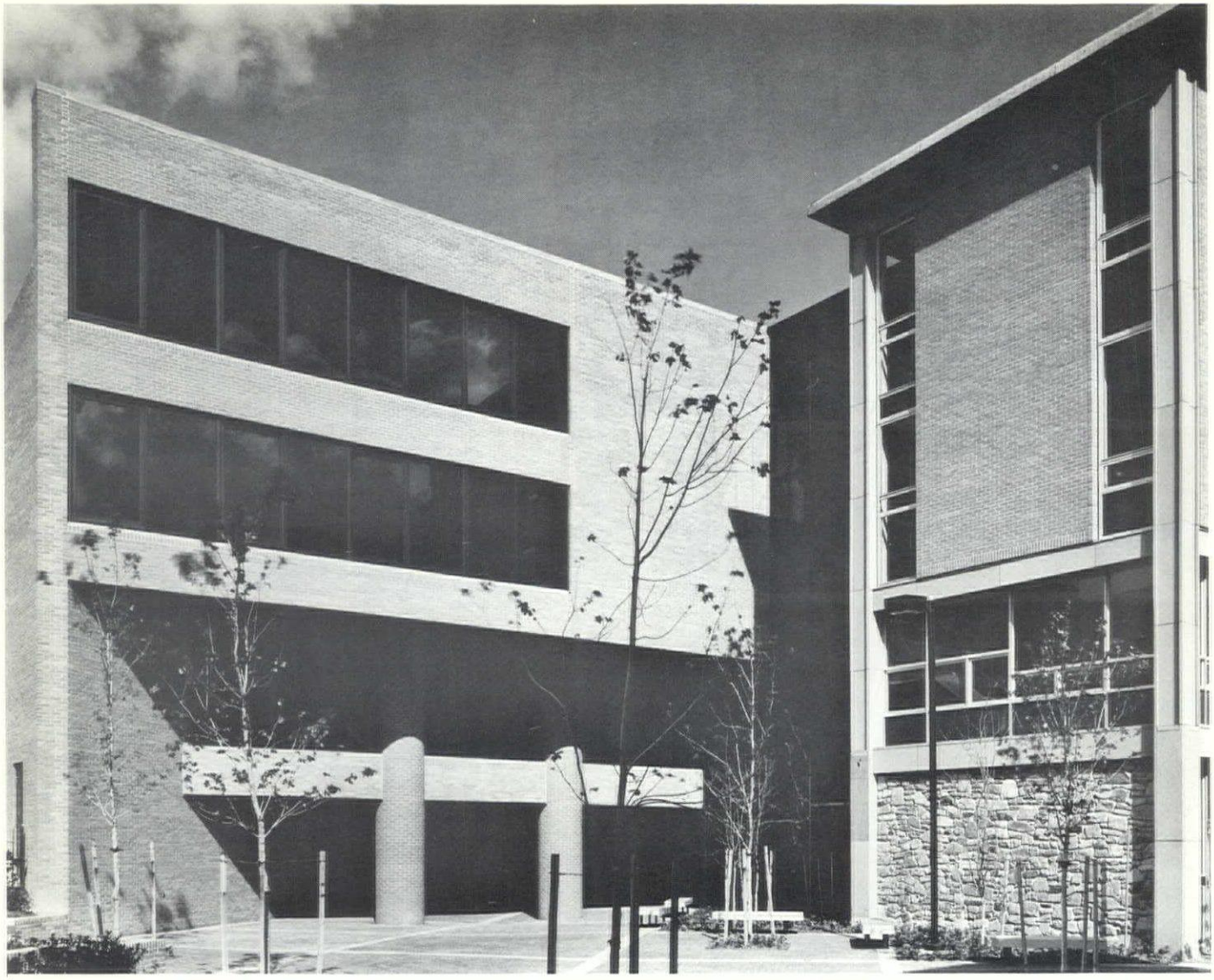


Law Library, University of Maryland

Baltimore, Maryland Campus

VVKR, Incorporated—Architect/Engineer

Landscape Architecture & Interior Design, VVKR Incorporated • General Contractor, R. S. Noonan • Photography, B. Schopper.



The law library is situated at the northeast corner of a growing urban campus adjacent to a neighborhood undergoing rehabilitation and renewal. Two law school buildings and an existing law library are nearby. Design considerations included preserving the pedestrian flow from the northeast corner of the site to the main campus area without interruption.

Requirements included providing bookstack space for more than 200,000 volumes and providing seating for 360,000, spread throughout the facility. A rare book room, specialized reading areas, technical service areas and audio-visual capabilities were also needed.

The law library is designed as an addition to the existing library, and is constructed with an identical brick masonry exterior and similar massing so that the existing library is not overwhelmed. A glass enclosure connects the two buildings. Bridges at all floor levels link the buildings, and a glass connector is utilized as an extension to the existing student lounge on Level 2 and provides a new central entrance to the law school. The bridges enable handicapped students to reach levels of the law school previously denied to them.

The law library is designed to create a quiet and relaxing atmosphere for study. A minimum of window openings are placed on the street side of the building to reduce noise levels. Maximum windows are designed for the south wall for passive solar gain. These windows provide a view of the inner courtyard below. Deciduous trees, sun screens and overhangs prevent unnecessary heat gain in the summer. All glass is double glazed and window openings are operable for cleaning and natural ventilation.

Exterior pedestrian flow is preserved by creating a spacious angled walkway which passes under the building and flows through a landscaped courtyard toward the inner campus.

Special features included a rare book room, a smoker's lounge, terrace, an intrusion alarm system and an electronic book detection system.

To accommodate the unusually high live loads due to the amount of book shelving, the building frame is reinforced concrete and the floors are designed for live loads of 250 LBS/SF.

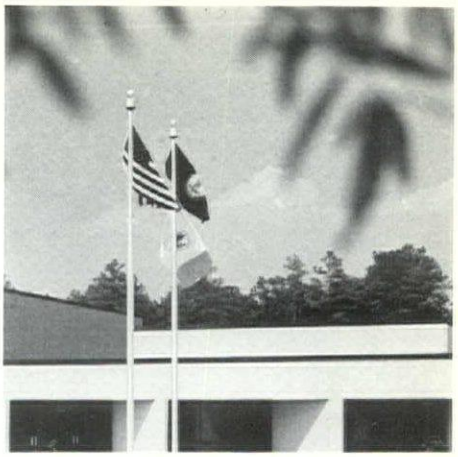
To provide maximum energy conservation, the building is heated and cooled by water heat pumps with a cooling tower located on the roof. A small steam boiler provides higher temperatures for the heat pump closed loop system in winter months.

All floors are lighted with a specially designed fluorescent strip system utilizing only one lamp per fixture on 5' centers. The entire electrical system is well within the 2 watts/SF guidelines called for in the state energy code, ASHRAE 90-75.

R. S. Noonan of Hunt Valley, Maryland was general contractor and handled concrete work and carpentry.

Subcontractors & Suppliers

Grade-Tech, Inc., Baltimore, MD, excavating; Chapel Valley Landscape Co., Woodbine, MD, landscaping & landscaping contractor; Hastings Pavement Co., Lake Success, NY, paver contractor; Consolidated Masonry, Towson, MD, masonry contractor; U. S. Elevator, Baltimore, MD, elevators; Southern Mechanical, Baltimore, MD, plumbing/heating/ventilating/air conditioning contractor; and Oles Electric Co., Baltimore, MD, lighting fixtures/electrical equipment supplier & electrical contractor.

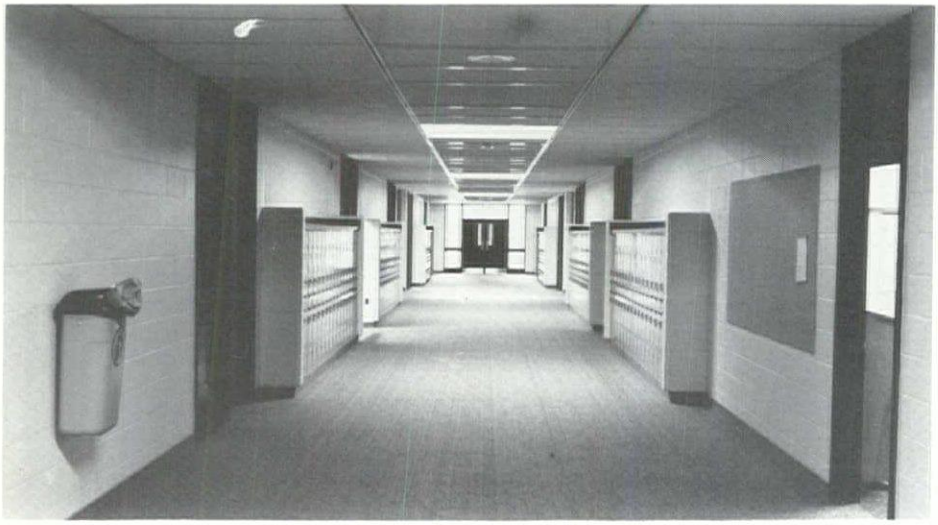


Mills E. Godwin High School

Henrico County

Carneal and Johnston—Architect/Engineer

Acoustical Consultants, Bolt, Beranek & Newman, Inc. • Landscape Architecture by the Owner • General Contractor, Kjellstrom and Lee, Inc. • Photography, Kenneth Bunch.



The Mills E. Godwin High School is located on 63 acres in a developing residential area in western Henrico County. It contains more than 188,000 square feet and is designed for 1,200 pupils with alternate expansion to 1,500. It is an educational complex and offers a broad curriculum of academic, vocational, and physical education subjects, suitable for both the county's high school and adult education programs.

The School Board's criteria called for a one-story building and this worked out to more than four acres under roof. The architect's assignment was to make adequate provisions for the many diverse facilities of a modern high school and to unify all these functions into an efficient plan. In other words, convert four acres of land into a warm, colorful, friendly environment that would work.

To accomplish these objectives, Carneal and Johnston suggested a central commons area surrounded by the various school elements. The commons is the hub or core. It is immediately adjacent to the school's two large group activity areas—the auditorium and gymnasium. During lunch period the commons converts into a dining room for the adjoining kitchen and serving line. For the remainder of the day, it is the school's social center and activity area. Carpeted corridors radiate out from the commons area to the school's other facilities.

Traffic flow is a key feature of the Mills E. Godwin High School. Corridor traffic is minimized through location of activity areas. Those facilities used by the greatest number of students are closest to the commons. For example, the auditorium, administrative area, cafeteria, and gymnasium are immediately adjacent to the commons and do not require corridors. The commons concept also simplifies use of these facilities at night for the school's activities, athletic events, and community use. The same concept governs the school's relationship with the site. Bus traffic is completely separated on

the north side of the school immediately adjacent to academic homerooms. A large parking area for passenger vehicles on the west side provides direct access to the commons and administrative areas. Service for industrial arts, kitchen, and maintenance areas is by a separate service road and a parking area on the east side of the school. There is direct access to athletic and physical education areas from the school's south side. Cross traffic between pedestrians and vehicles has been virtually eliminated.

As the school is air conditioned throughout, exterior glass has been held to a minimum. However, skylights and glass are strategically used to provide natural light and an "open feeling" wherever possible, especially at public areas and gathering points. Skylights admit natural light at all corridor intersections. Large glass lights in the administrative and commons areas face an attractively landscaped area. Arts and crafts classrooms receive glare-free northern light through an insulated glass window wall. The adjoining landscaped patio provides space for outside arts and crafts exhibits.

The Mills E. Godwin School is designed to conserve energy. No effort has been spared to provide adequate light and climate control. However, glass has been held to a minimum to reduce heat loss. Wall and roof construction are heavily insulated. Building controls permit operation of systems only when actually needed. Energy conserving variable volume air conditioning units supply the amount of conditioned air actually required to maintain comfort.

Other interesting features of the Mills E. Godwin School are:

a. **Laboratory Commons:** This is a large open space surrounded by laboratory classrooms. It doubles as a preparation area and space for individual supervised study and experimentation.
b. **TV Studio:** The studio is specifically designed for the purpose with special lighting and air conditioning. Facilities are included for both preparation of the school's own individualized programs and for use of programs prepared outside the school.
c. **Integrated Ceiling Construction:** This provides a uniform pattern of lights, acoustical tile, and air conditioning outlets arranged on a 5' by 5' module. The modular pattern facilitates partition construction and future modifications. The ceiling's irregular shape provides superior acoustical and glare control.
d. **Auditorium:** The auditorium is provided with the latest developments in lighting and sound control. The control center is located within the rear seating area which allows the operator to make adjustments based on actual conditions.

The varied facilities and curriculum of the Mills E. Godwin High School make it one of the finest high schools in the Commonwealth of Virginia and also helps to make the County of Henrico, the progressive community that it is.

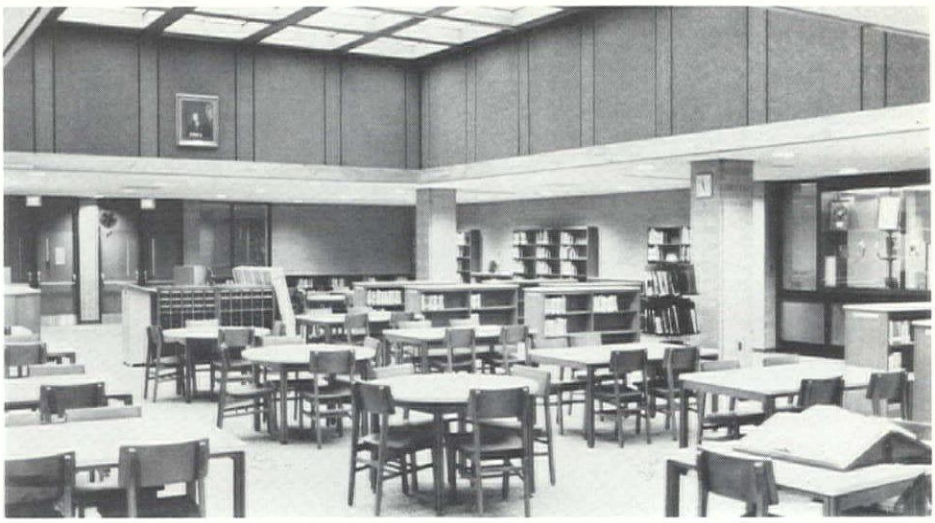
Kjellstrom and Lee, Inc. of Richmond was general contractor and handled foundations, concrete work, reinforcing and carpentry.

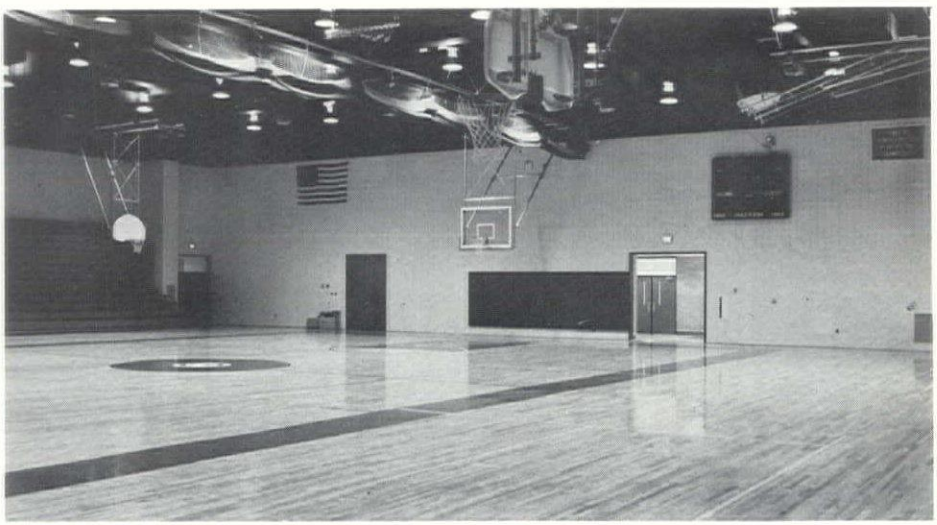
Subcontractors & Suppliers
(Richmond firms unless noted)

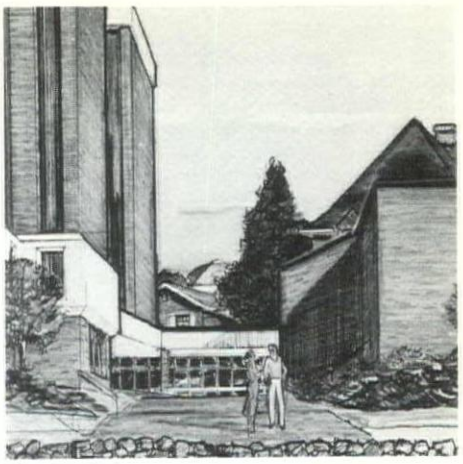
J. H. Martin & Sons Contractors, Inc., excavating, sodding, seeding, etc.; Lee Hy Paving, paving contractor; Lone Star Industries, Inc., concrete supplier; W. H. Stovall & Co., Inc., Ashland, precast facing panels; Hammond Masonry Corp., Sandston, masonry contractor & wall insulation; Taylor Clay Products Co., masonry manufacturer; Flamingo, mortar; Lynchburg Steel & Specialty Co., Monroe, steel supplier/erection/joists/roof deck, miscellaneous metal & handrails; The Bonitz Insulation Co., Greensboro, NC, cementitious roof deck; Weaver Brothers, Newport News, millwork; Alexander Waterproofing Co., waterproofing; and E. S. Chappell & Son, Inc., caulking.

Also, N.W. Martin & Bros., Inc., built-up roof, roof insulation & sheet metal; Allied Glass Corp., glass, glazing contractor & window wall; Doral Mfg. Co., Newark, NJ, metal doors & frames; Algoma Hardwoods, Inc., Algoma, WI, wood doors; Pleasants Hardware, hardware supplier; F. Richard Wilton, Jr., Inc., Ashland, plaster contractor & gypsum board contractor; H. E. Satterwhite, Inc., ceramic tile & terrazzo; O'Ferrall, Inc., acoustical treatment; Costen Floors, Inc., resilient tile; and Cherry Rug Co., Portsmouth, carpet.

Others were: Liskey Architectural Systems, Baltimore, MD, special flooring; Shaw Paint & Wall Paper Co., Inc., Norfolk, painting contractor (Devoe & Raynolds paint) & wall covering; Republic Steel Corp., metal lockers; Nisson Corp., Cedar Rapids, IA, gym equipment; Catlett-Johnson Corp., sprinkler/plumbing/heating/ventilating/air conditioning contractor; General Electric Supply Co., lighting fixtures/electrical equipment supplier; Northside Electric Co., electrical contractor; Schalow Manufacturing Co., Inc., chalkboards, tackboards; E. L. Burns Co., Inc. Shreveport, LA, covered walkway; Interkal, Inc., Kalamazoo, MI, gym bleachers; and Hart School Equipment Co., Norfolk, Panelfold folding partitions.







Student Dormitory, Hampton Institute

Hampton

Livas' Associates, Inc.—Architect

Along the shores of the Hampton River in Southeastern Virginia, Hampton Institute has begun construction on a new dormitory designed by Livas' Associates, Inc. of Norfolk.

Hampton Institute, prestigious, predominantly black liberal arts college, was founded in 1868 by General Samuel Chapman Armstrong. Its academic strengths, both in faculty and curriculum, have continuously progressed to yield some 28 schools as outgrowths of Hampton Institute.

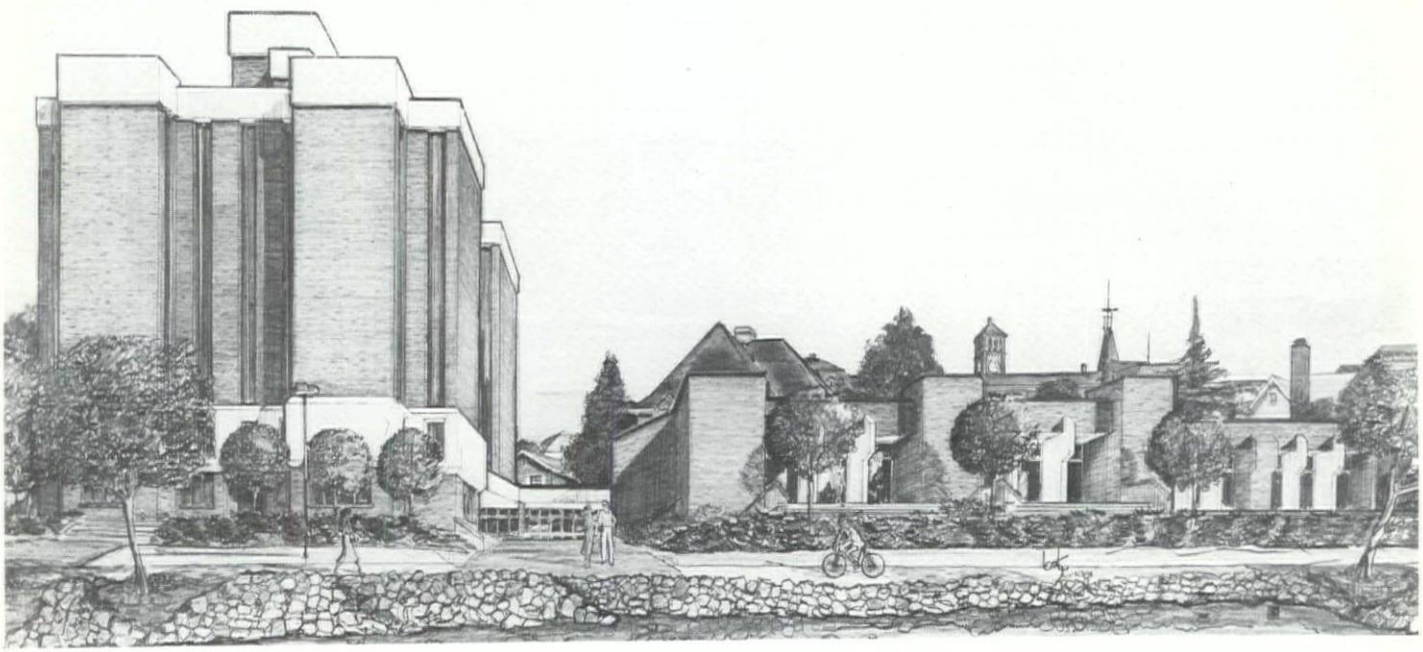
Current president, Dr. William R. Harvey, the college's 12th president, was instrumental in locating the building site overlooking the river front, the school's unifying element. The site, somewhat small, yet with its ideal vista, created definite project constraints.

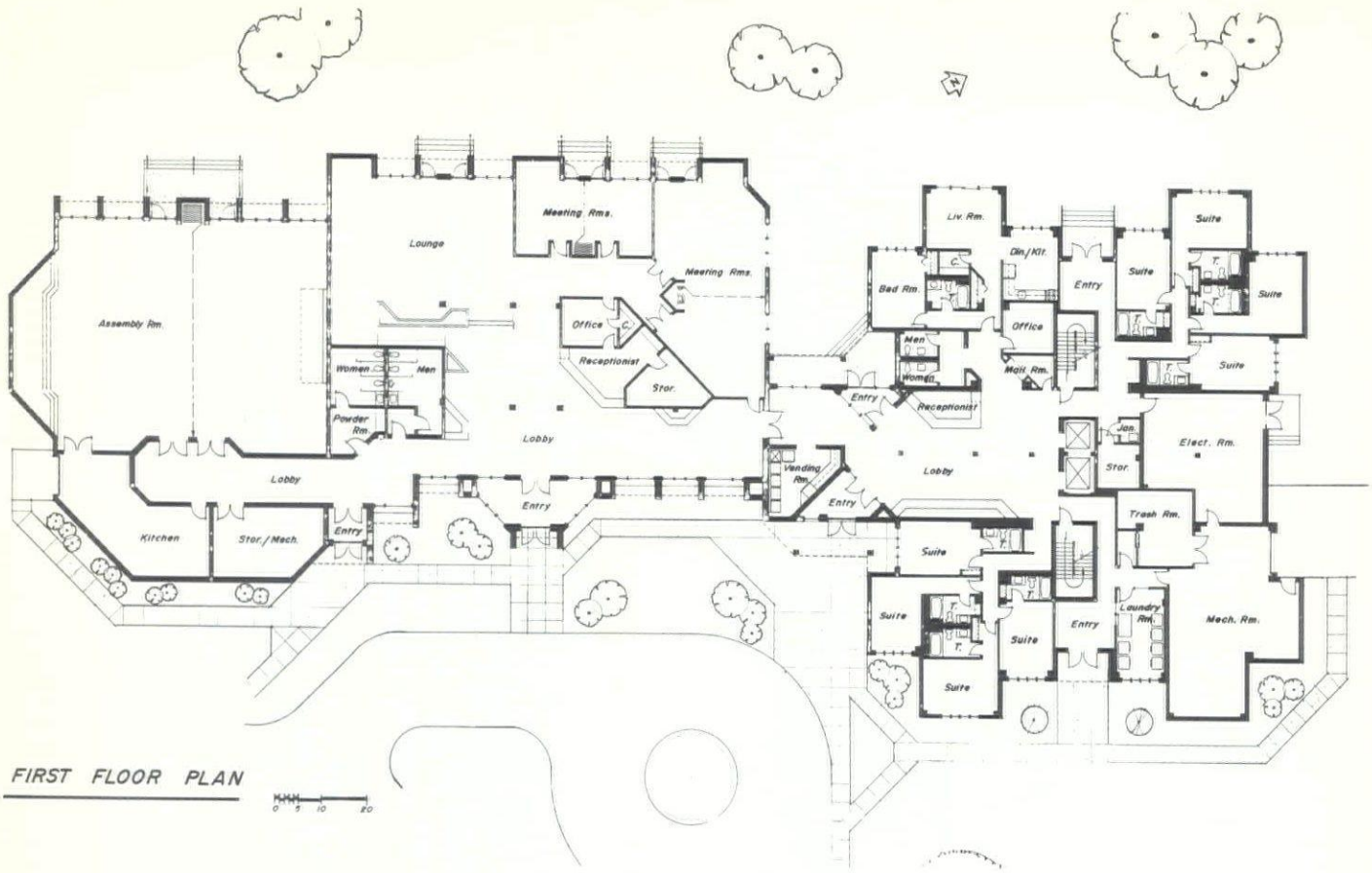
Because of the steady growth of the school and current trends of "returning to campus living," the program demanded 300 beds minimum in the scheme. Activity Center facilities for the increasing academic programs and continuing education classes serving the school, were also required. The dormitory living center includes current concepts in student group living to reduce housekeeping maintenance overall.

The building is to be located on a site at the northwest sector of the campus—approximately 300 feet of waterfront property along the Hampton River. The entrance to the one-acre site has a southeastern orientation.

Surrounding buildings consist of one- and two-story residential structures from 50-80 years in age, with materials ranging from clap-

Project Manager, William Milligan, Jr. • Project Architect, Elbert V. Walker, Jr. • Project Designer, Brian G. Thornton • Landscape Architect, John Spencer, AIA, ALSA • Job Captain, Sherman T. Brown • Mechanical/Electrical Engineer, H. S. Gresham & Associates, Inc. • Structural Engineer, Fraioli-Blum-Yesselman Assoc., Inc. • Civil Engineer, Langley & McDonald • General Contractor, W. M. Jordon Co., Inc.





FIRST FLOOR PLAN

board to brick and stucco; long low brick dormitories 20-25 years old; and a variety of architectural styles in the older housing units.

To the northeast is old Hampton, the hub of Hampton's central business district, dominated by the nine-story, marble and glass city hall building.

To the north and west, the shipping and waterfront activities as well as the exclusive yacht clubs and restaurants can be viewed. The adjacent views to the surrounding three sides are various bright-colored houses and red brick dormitories.

In following the historical background of the buildings at Hampton (five of which are in the National Register of Historic Landmarks) the building will be of dark brownish-red brick and bands of stucco to wrap the staggered parapets.

The modular tower plan incorporates four rooms, clustered about a central restroom and living area, to form a quad. These quads are clustered about the central elevators, support facilities, and stairwells, to form a nine-story tower, thus eliminating the need for long corridors. Connected to the tower will be a two-story activity center designed around an existing infirmary building (to be removed at a later date). The initial phase will build an 11,000 square foot first-level activity center, and 67,000 square feet of tower living space to total about 78,000 square feet.

The angular orientation of the activity center and its entry continue the visual axis from the Ogden Circle, the campus center to the waterfront.

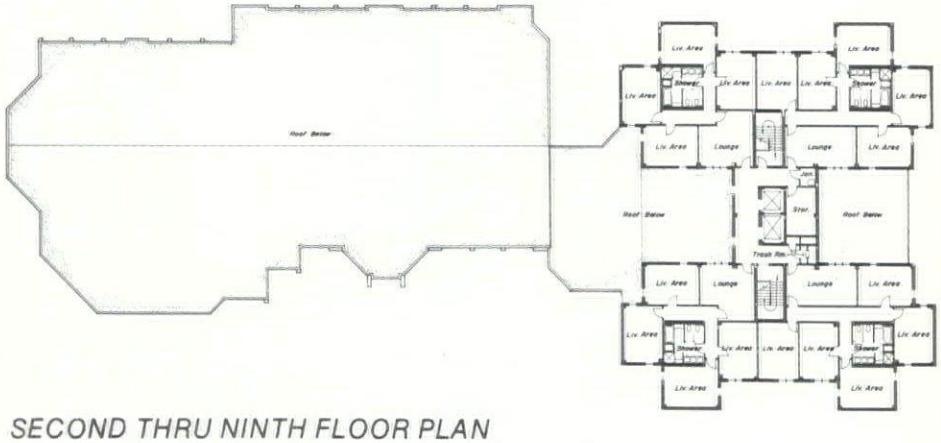
The tower will be the tallest and most expensive building on campus to date, utilizing some 4.8 million dollars made available by a HUD student housing loan. With a schedule of 400 days from initial construction, occupancy will be August 1982.

W. M. Jordan Co., Inc. of Newport News is general contractor and is handling concrete work.

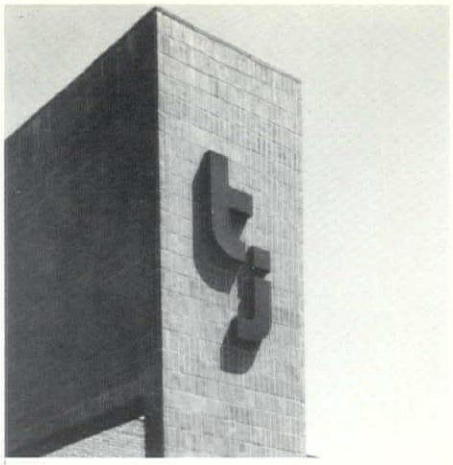
Subcontractors & Suppliers
(Newport News firms unless noted)

Pembroke Construction Co., Inc., Hampton, excavating & paving contractor; Ford Pile Foundations, Inc., Virginia Beach, piling; Chisman Co., Hampton, foundations & concrete supplier; Hall-Hodges Co., Norfolk, reinforcing; Capital Masonry Corp., masonry supplier; Structural Steel Co., Inc., Roanoke, steel supplier/joists; Globe Iron Construction Inc., Norfolk, steel erection; L. C. Heath Roofing, Inc., roof deck, miscellaneous metal, built-up roof, roof insulation & foundation insulation; and Weaver Bros., Inc., carpentry, millwork, cabinets and wood doors.

Also, Herrin Bros. Erection Co., Inc., Portsmouth, caulking; Walker & Laberge Co., Inc., glass, glazing contractor, windows & storefront; Virginia Metal Industries, Inc., Orange, metal doors & frames; Seaboard Building Supply Co., Va. Beach, hardware supplier; Able Systems, Inc., plaster contractor, gypsum board contractor & acoustical treatment; David Allen Co., Raleigh, NC, ceramic tile & structural (glazed) tile; King-Page, Inc., Norfolk, resilient tile; Cherry Rug Co., Portsmouth, carpet; R. D. C. of Va., Inc., Richmond, painting contractor, special wall finish & wall covering; Westinghouse Elevator Co., Richmond, elevators; Williams Fire Sprinkler Co., Inc., Norfolk, sprinkler contractor; Warwick Plumbing & Heating Corp., plumbing/heating/ventilating/air conditioning contractor; and Smith Electric Co., Va. Beach, electrical contractor.



SECOND THRU NINTH FLOOR PLAN



Thomas Jefferson Elementary School

Renovation & Addition, Falls Church

VVKR Incorporated—Architect/Engineer

Landscape Architecture, VVKR Incorporated • General Contractor, Whitener & Jackson, Inc. • Photography by the Architect.

The Thomas Jefferson Elementary School is situated on 5.83 acres bounded by city streets in Falls Church, a small school district. The project required reconstruction of an existing school and creation of a new gymnasium to accommodate an increased enrollment due to consolidation. The reconstruction effort was to address two prime concerns of the school board: upgrading the building to current codes, state education regulations and energy conservation provisions; and, redesigning the building to be more functional and conducive to the learning environment and be compatible for increased community-related activities. The reconstruction process created an additional 49,000 SF of usable space.

The design solution for T. J. Elementary included three additions: a new gymnasium, a small addition to house the administrative functions, and an addition for an art media center.

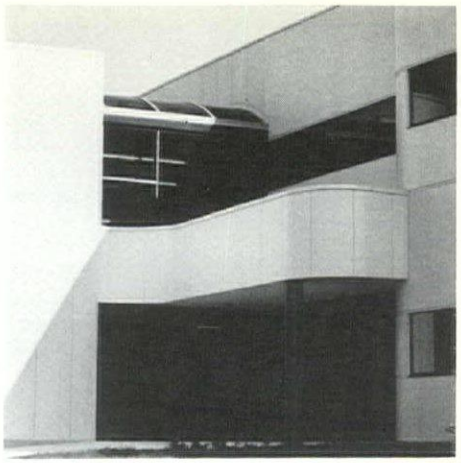
A large (96' X 56') new gymnasium provides for both physical education classes and recreational activities. A special community entrance with restroom facilities serves the gymnasium.

A second, two-story addition was created by filling in an existing U-shaped court. The first level of the addition houses an art center while the second level houses a new media center, replacing an outdated, remotely located library.

New administration facilities are contained in a third addition, which is placed near the main entrance and away from classroom space. A teachers' lounge and workroom and a pupil personnel office are placed in this area, centralizing these functions.

Renovations on the first level included modernizing an obsolete kitchen, and moving kindergarten rooms away from the main facilities but closer to a play area. Enrichment studios (art and music) are located on the first level. A community education room and extended day care facilities are also placed on the first level.

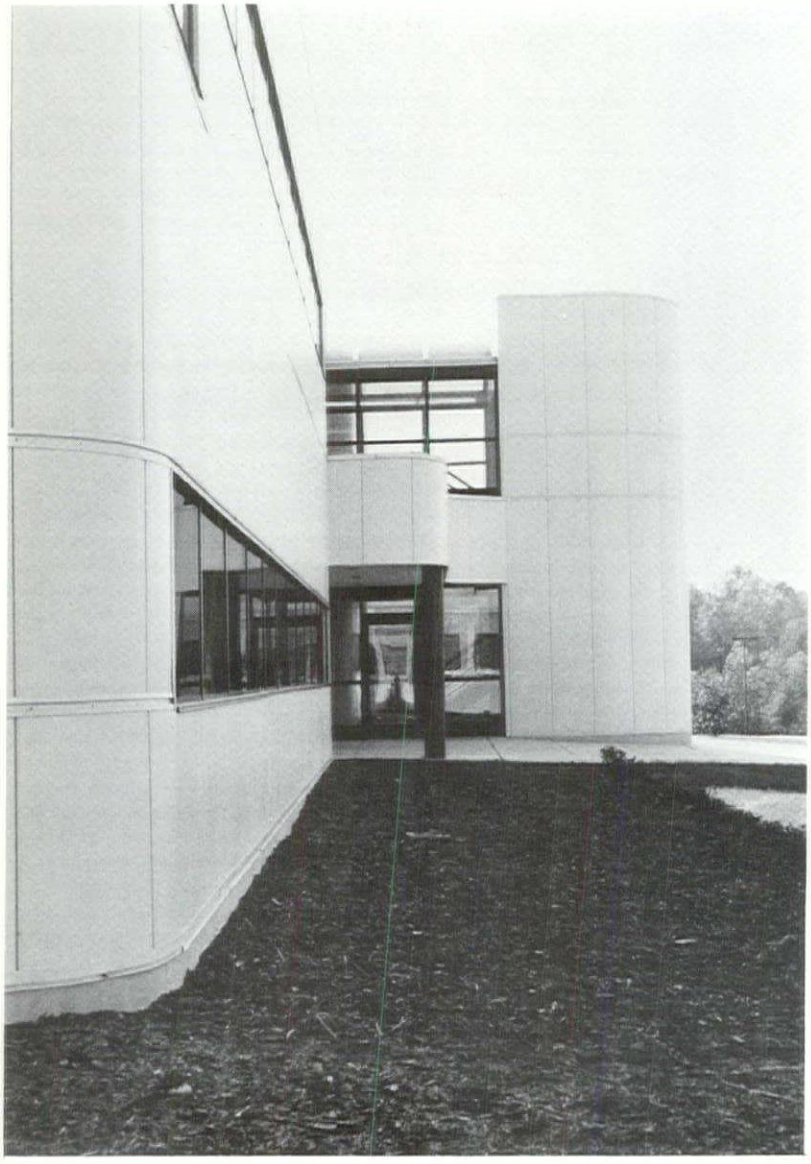
(Continued on page 40)



J. Sargeant Reynolds Community College

Phase II, Henrico County

Marcellus Wright Cox & Ladd—Architect



Landscape Architect, James T. Buck • Mechanical/ Electrical Engineer, Roache, Mercer & Faison, Inc. • Structural Engineer, Harris, Norman, Giles & Walker • Civil Engineer, Austin Brockenbrough & Associates • General Conractor, Kenbridge Construction Co.

J. Sargeant Reynolds Community College, Phase II, Academic Building houses classroom and lab space for a variety of curriculum selections. It is a two-story structure of steel frame construction sheathed in a metal curtain wall. The exterior facade materials were selected to save cost, conserve energy and maintain continuity with the existing cast stone of the Phase I structure. The color and panel size were also selected to blend with the existing structure.

The building was placed to continue the flow of the proposed master plan for the College and has formed a courtyard for student gathering between the Phase I structure and Phase II.

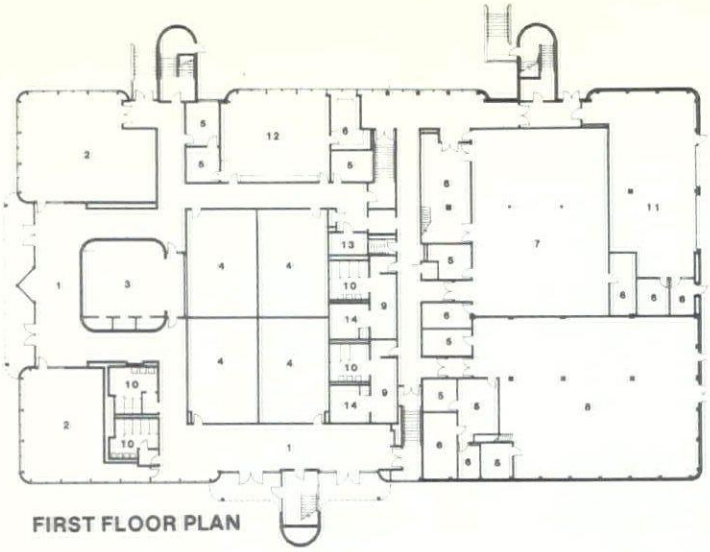
On the ground level the plan provides space for general classrooms, study halls, and lab spaces. The second level houses classrooms and labs for math, environmental technology, fire and police science, and photography. Also located on the second level is a group of faculty and administrative offices.

Interesting architectural features include the use of metal wall panels, vertical stair towers used to visually interrupt the horizontal plains of the building created by the strips of dark glazed windows and a glass-roofed circulation area on the north side of the building.

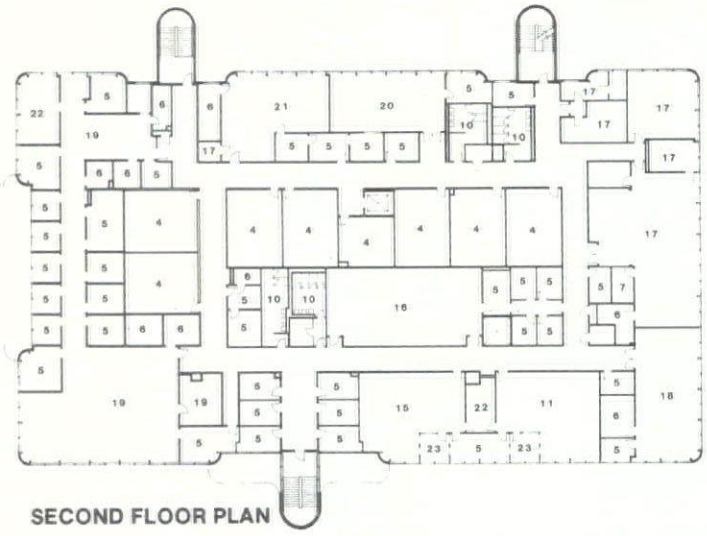
Kenbridge Construction Co. of Kenbridge was general contractor for the project.

Subcontractors & Suppliers
(Richmond firms unless noted)

W. E. Duke & Sons, Inc., Glen Allen, clearing & grubbing, earthwork, excavation, backfilling, topsoiling, grading & seeding; Holmes Steel Co., Inc., Ashland, structural metal, steel joists, metal roof decking, steel form decking, miscellaneous metal & metal stairs; Dodson Brothers Exterminating Co., Inc., soil treatment; M. P. Barden & Sons, Inc., painting, textured coating for exterior concrete & masonry; Harris Heating



FIRST FLOOR PLAN



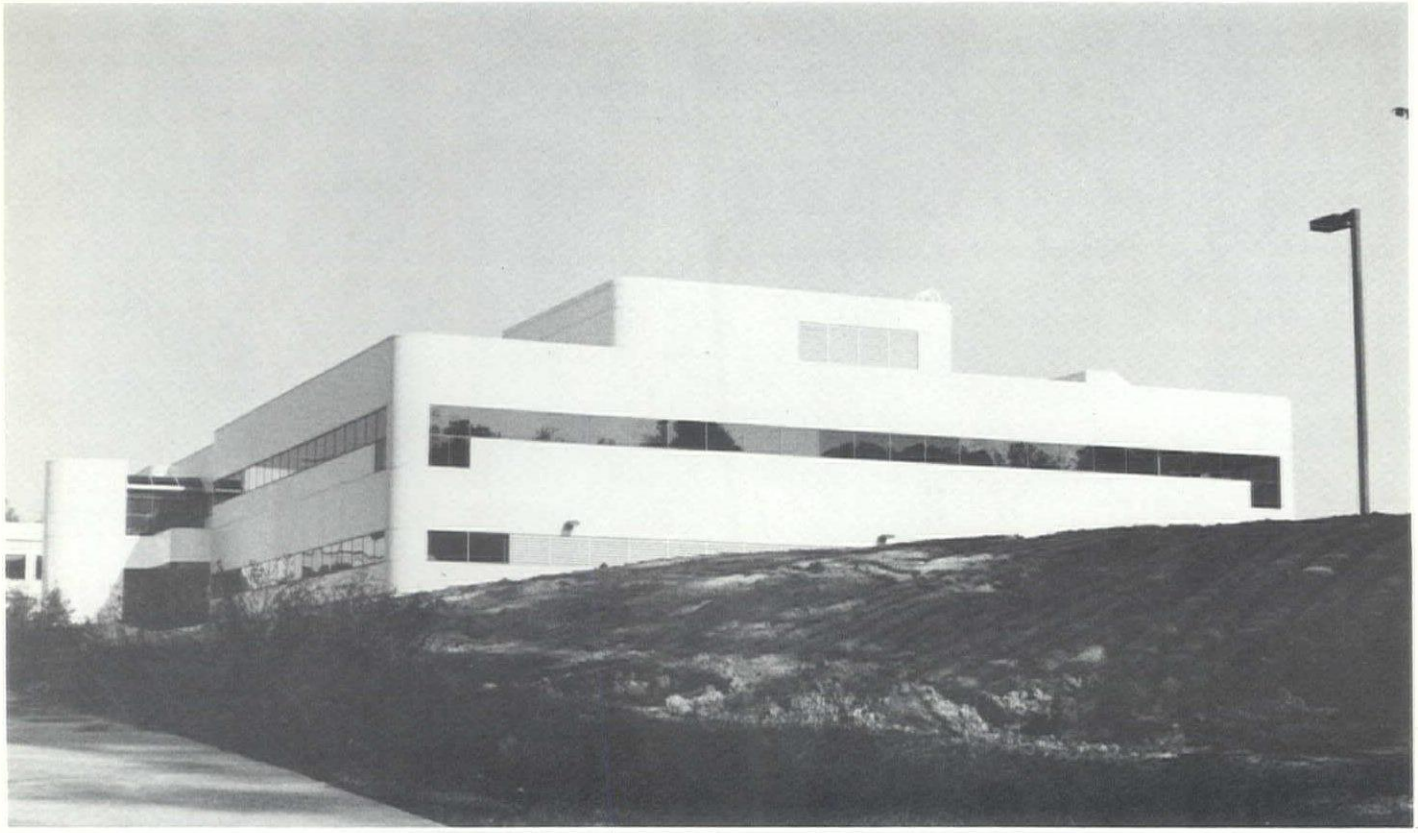
SECOND FLOOR PLAN

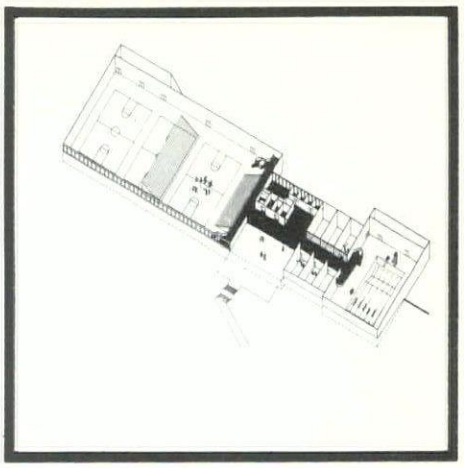
LEGEND

1 Lobby
2 Lounge
3 Study Skills
4 Classroom
5 Office
6 Storage
7 Physical Leadership Lab
8 Machine Technology Lab
9 Locker Room
10 Toilets
11 Manpower Training Room
12 Equipment
13 Career Development Center
14 Showers
15 Math Lab
16 Environmental Technology Lab
17 Graphic Arts & Photographic Lab
18 Mechanical Engineering Technology
19 Art Lab
20 Fire Science
21 Police Science
22 Conference
23 Testing

& Plumbing Co., Inc., storm drainage system, exterior water system, sanitary sewers, plumbing & HVAC; Bagby Elevator & Electric Co., electrical work; Virginia Elevator Co., Inc., hydraulic passenger elevator; Southeastern Waterproofing Co., Inc., dampproofing & waterproofing; and N. W. Martin & Bros., Inc., built-up roofing, flashing & sheet metal work terne metal work.

Also, Conti & Wood Sprinkler Co., Inc., Mechanicsville, sprinkler; E. S. Chappell & Son, Inc., sealants; Binswanger Glass Co., aluminum doors and storefronts, glass & glazing; F. Richard Wilton, Jr., Inc., Ashland, plaster, gypsum drywall; C. B. Smith Co., acoustical treatment, resilient flooring; Warren Brothers Co., bituminous paving; Fan Garden Shop & Florist, planting trees & shrubs; Syscon Sales Corp., Kensington, MD, preformed insulated metal siding; H. E. Satterwhite, Inc., ceramic tile, marble partitions & thresholds; Hanover Concrete Corp., Mechanicsville, curb & gutter, walks; and Bruce & Holmes, Meredithville, masonry contract.



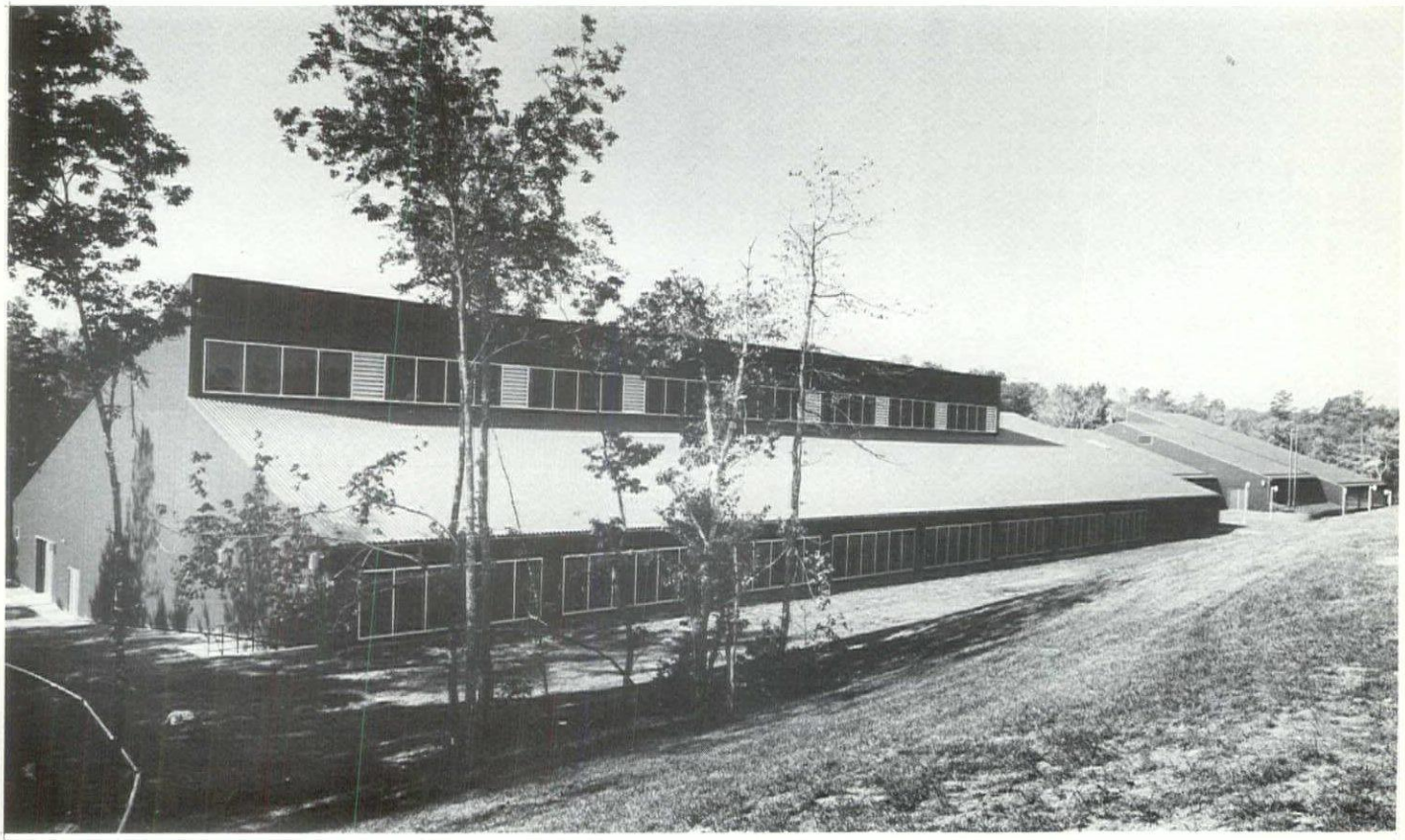


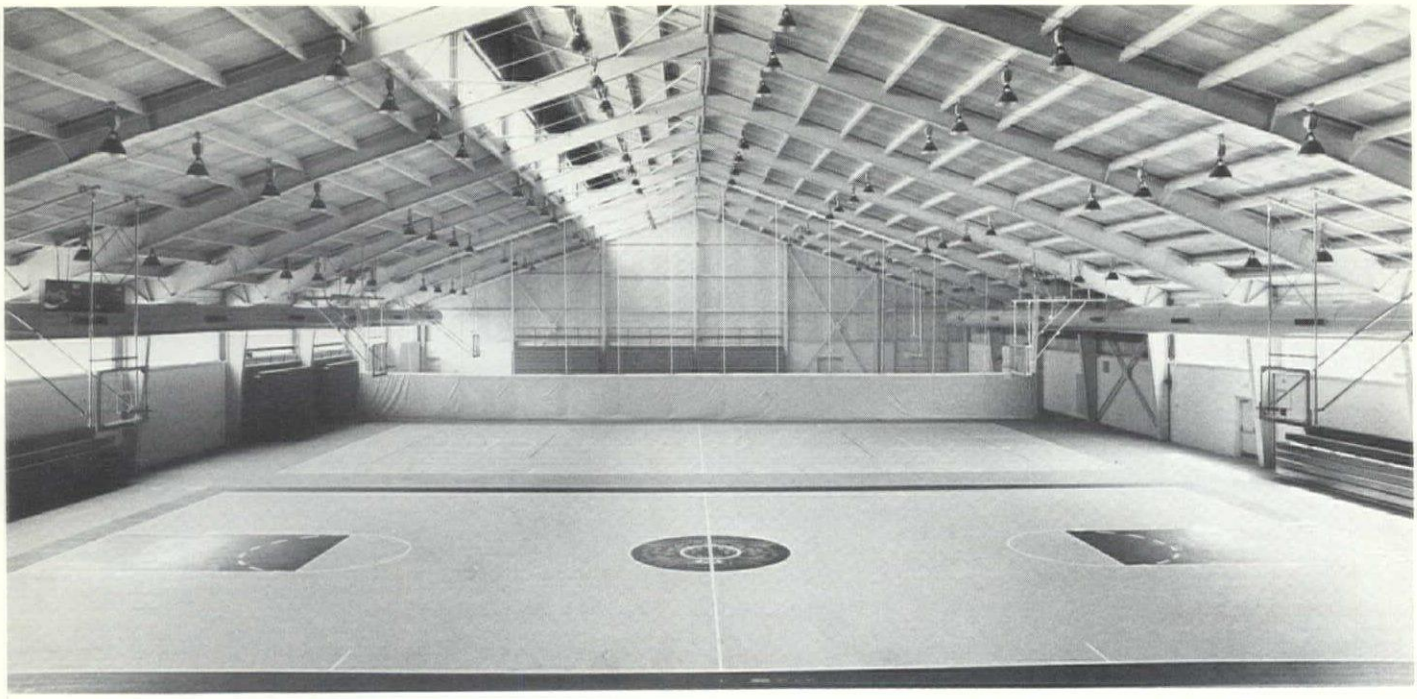
Fieldhouse, Hampden-Sydney College

Hampden-Sydney

Glave Newman Anderson & Associates, Inc.—Architect

Interior Design by Glave Newman Anderson & Assoc., Inc. • Mechanical/Electrical Engineer, Roache, Mercer & Faison • Structural Engineer, Wm. J. Davis • Construction Manager, Construction Advisors, Inc. • Photography, Robert Strong.





Hampden-Sydney College needed a large facility to house its burgeoning indoor sports' program and this new fieldhouse provides 75,000 square feet of space for athletes and spectators.

On the eastern side of the building, the large gymnasium (with a resilient floor) allows for three concurrent basketball games and can be converted for three simultaneous tennis matches. Tiered seating accommodates 2,000 spectators and can be moved about for any of the court games plus other functions such as concerts or graduation ceremonies.

Toward the western portion of the building are four handball courts and one squash court, which also feature resilient floors. Wall surfaces are of white laminated plastic over dense particleboard panels. Next to the handball and squash courts is a 25-meter, six-lane swimming pool with one- and three-meter competition diving boards. Also included in the room is ample spectator space for competitive events.

The building's ancillary spaces include generous locker rooms for indoor and field athletes, plus showers, a training room sauna, laundry, press box, concession area, and a classroom. The spacious lobby at the center of the building displays the College's athletic trophies and the banners of other schools in the Conference.

Although large in scale, the fieldhouse does not dominate or compete with the petite, Georgian buildings on the Hampden-Sydney campus. The building pushes into its hillside site so that the roof, when seen from the entrance road, seems to rest on the ground, keeping a profile below the trees. An upper terrace faces the entrance drive and a parking lot, providing a gallery-level entrance for spectator crowds. On the campus side of the building, students use a lower level entrance to gain direct access to locker and equipment areas.

In addition to convenience of circulation, the below ground construction conserves energy by using the ground's thermal mass. Windows

bring in glare-free northern light, reducing energy needs; while southern exposed windows in the swimming pool room aid in heating the space. In warm weather, large overhead doors are left open to ventilate the pool room and open onto a pleasant patio.

The construction methods and materials were chosen for their initial economy and their long-term durability. Large spans over the game courts were achieved with a series of rigid steel frames. The exterior is clad with an insulated prefinished metal siding and the window openings are glazed with simple box-shaped aluminum frames and wire glass. Intermediate floors are concrete waffle slabs which also serve as the finished ceilings. Walls in the heavy-use, high-moisture areas are epoxy-painted block.

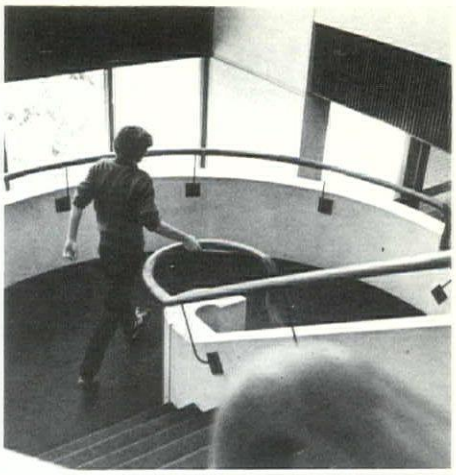
Since its opening in September 1979, the Hampden-Sydney College Fieldhouse has been used enthusiastically by both students and faculty as the College continues to respond vigorously to Virginia's collegiate needs.

Construction Advisors, Inc., of New York City, NY, was construction manager for the project.

Subcontractors & Suppliers
(Richmond firms unless noted)

Suitt Construction Co., Inc., Columbia, SC, concrete contractor; Montague-Betts Co., Inc., Lynchburg, reinforcing & steel supplier; S. C. Newman, Farmville, concrete supplier; Capital Masonry Corp., masonry contractor; John Vermier, Farmville, steel erection; The Dages Co., prefinished steel roof deck & wall panels; White's Building & Supply, Inc., Keysville, carpentry; Southern Waterproofing & Concrete Co., Inc., waterproofing; E. S. Chappell & Son, Inc., caulking; and The Ceco Corp., metal doors & frames.

Also, W. H. Stovall & Co., Inc., Ashland, Kawneer window wall & storefront; Surflex, Inc., Martinsville, special flooring & handball courts; Chapman & Martin, Inc., Amelia, painting contractor; Devoe & Raynolds Co., Inc., paint supplier/manufacturer; Sparky Blanks, Lynchburg, bleachers; Brownson Equipment Co., Inc., athletic equipment; National Pools of Roanoke, Roanoke, swimming pool; Riddleberger Brothers, Inc., Harrisonburg, plumbing/heating/ventilating/air conditioning contractor; Piedmont Electric Supply Co., Lynchburg, lighting fixtures supplier; and J. B. Moore, Inc., Lynchburg, electrical contractor.

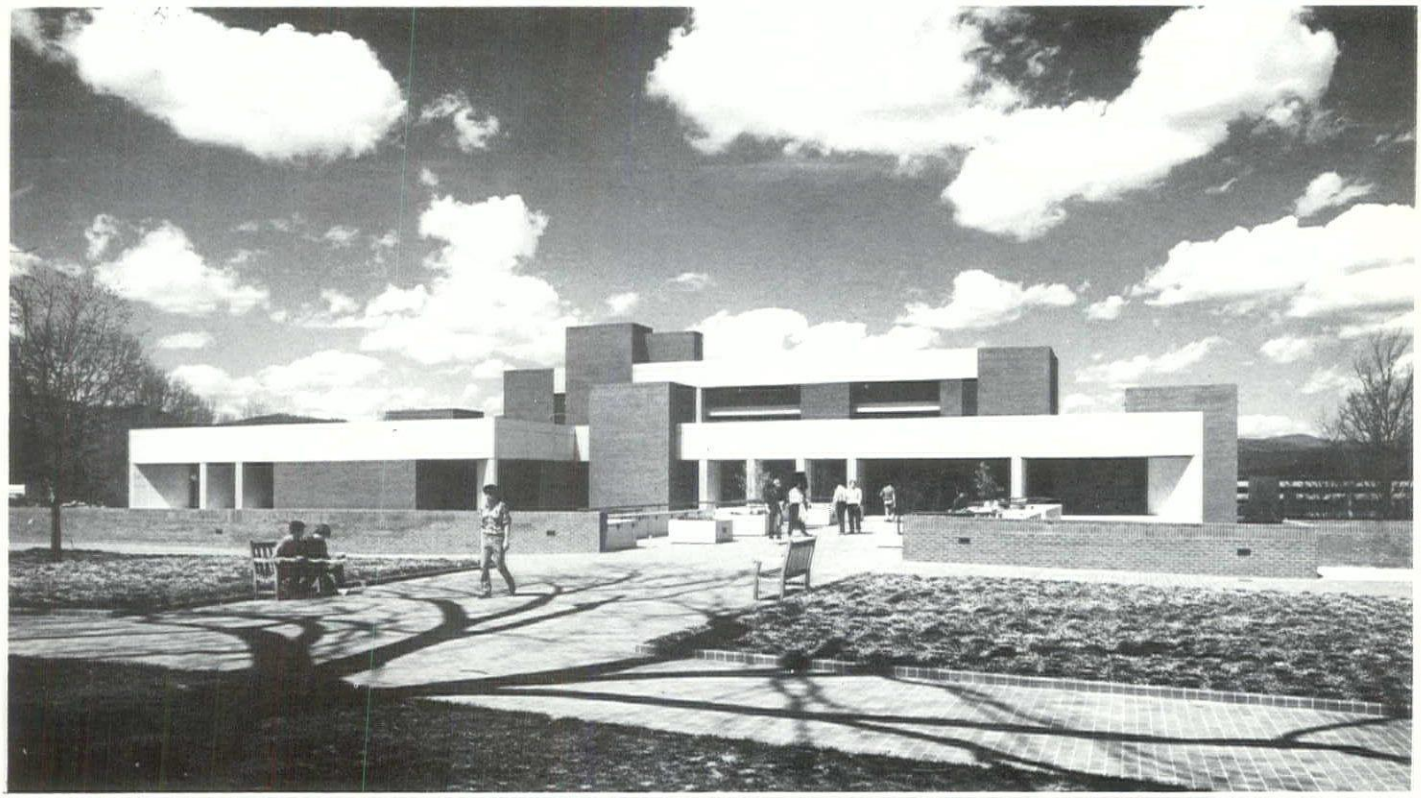


Undergraduate Library

Washington & Lee University, Lexington

Marcellus Wright Cox & Smith—Architect

Landscape Architect, Griswold, Winter, Swain & Mullin • Mechanical/Electrical Engineer, Hankins & Anderson • Structural Engineer, Harris, Norman, Giles & Walker • Acoustic Consultants, Bolt Baranek & Newman, Inc. • Construction Methods, Kelly/Hough, Inc. • General Contractor, Bass Construction Co., Inc.



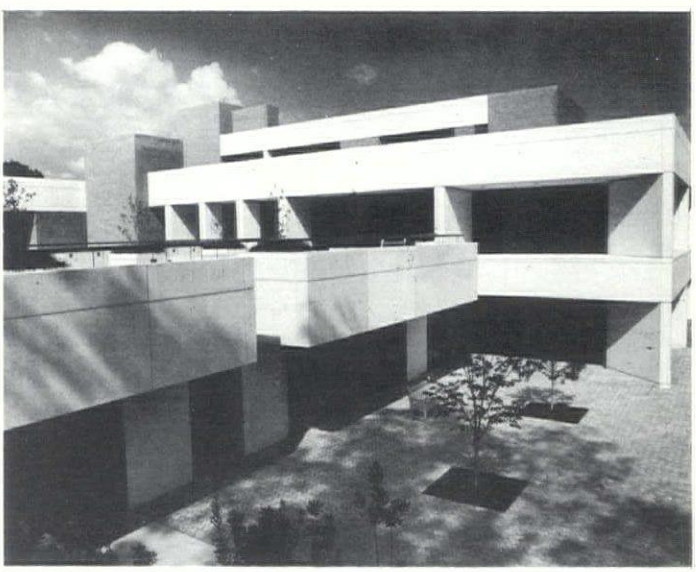
The New Undergraduate Library for Washington and Lee University provides its neoclassical campus with a new focus. Designed in conjunction with a new Master Plan for the University, the library acts as a hub of activity along the new mall and nearby plaza which ties the National Historic Landmark Front Campus to the other buildings.

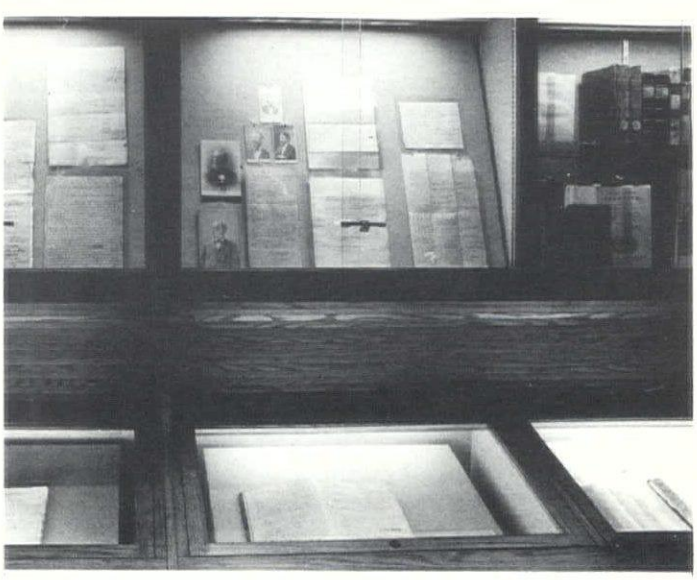
The library has a presence commensurate with its stature, but refrains from overpowering its surroundings with its 130,000 square feet of space. At mall level, the two-story height of its facade permits a view of the Blue Ridge mountains from the other buildings. A steep drop-off behind the mall provides for three additional levels at the back, for a total of five stories of stacks and reading areas with a view of the mountains and expanded campus beyond. The pedestrian scale of the front contrasts with the monumental back facade, which will be seen across a small valley behind the mall from other new University structures. The library makes extensive use of brick paving and walls which, along with white concrete fascias and accent panels, were chosen for their compatibility with existing buildings.

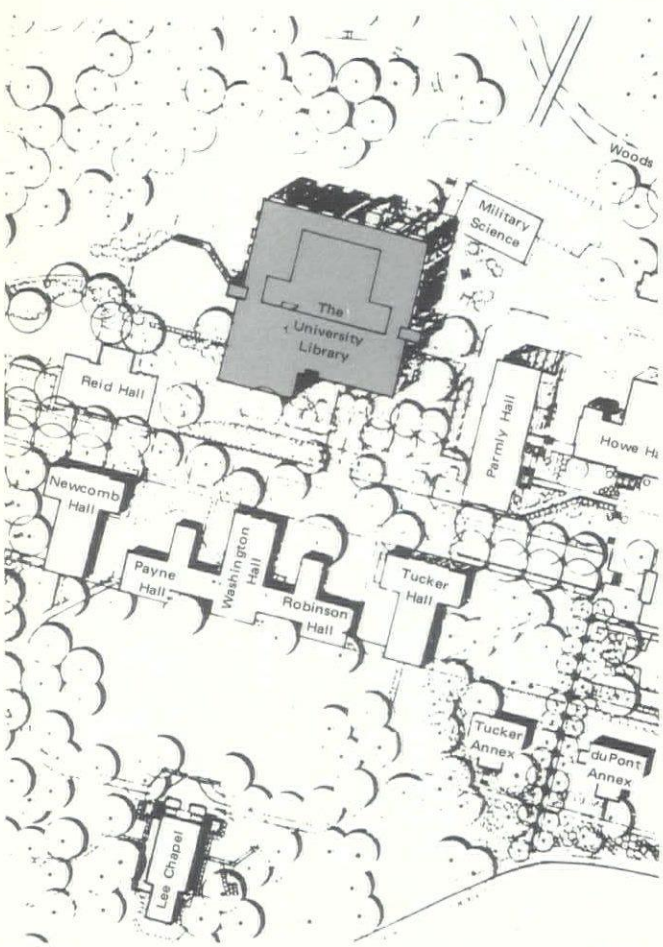
The library's main entry level contains the circulation desk and administrative functions, along with technical services, acquisitions, cataloguing, etc. in the front. Reference and public services divisions occupy the back half of the main level, with shelving for 10,000 volumes. Rooms for microfilms and similar resources are located on the periphery. The periodicals area has room for 1,500 current publications and 60 seats.

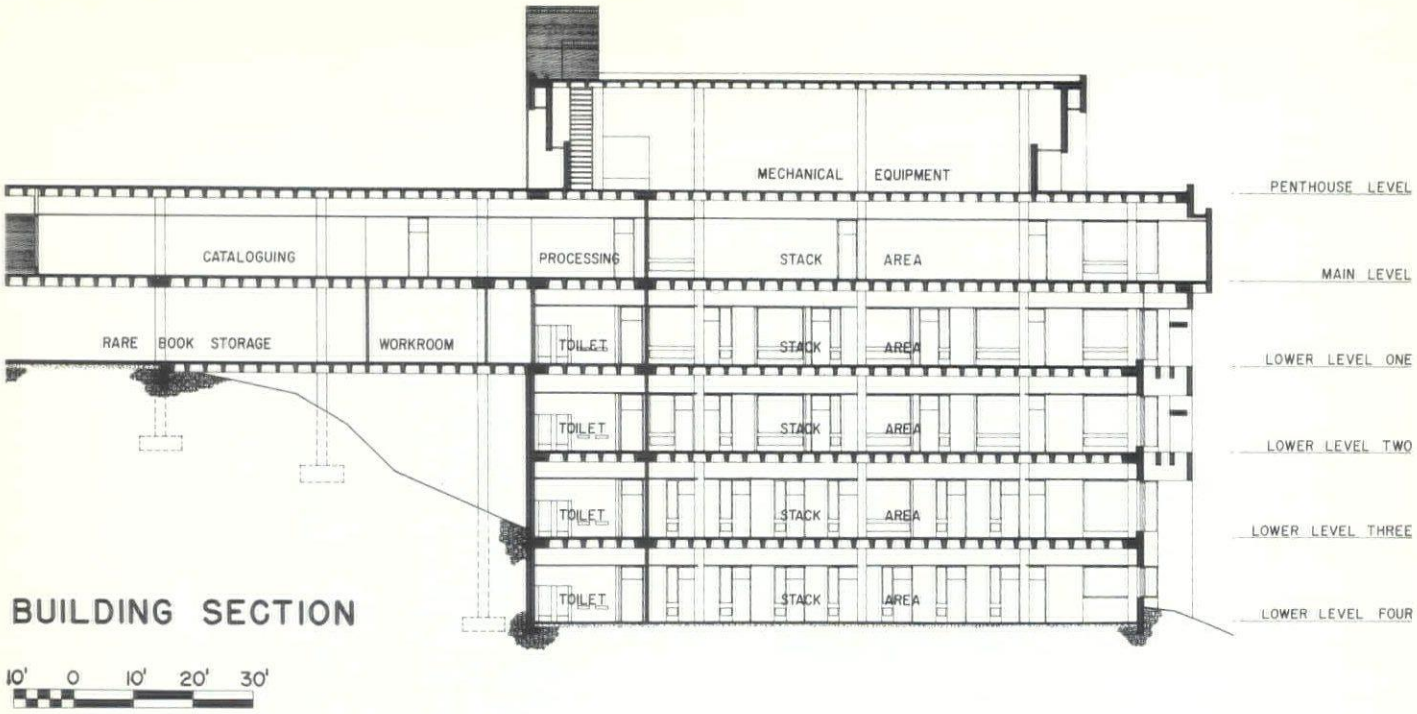
Just below the main level is lower level one. Special collections are housed on this floor. A 2,500 volume rare book display and reading room are here, along with a larger rare book storage area. A 100-seat auditorium is also on this level, for conferences, lectures, readings and seminars. The back of this floor, as well as lower levels two, three, and four below it, are stack areas, with 560 study carrels, smoking lounges and a variety of study, conference and seminar rooms distributed throughout.

The Library has shelf space designed for a total of 500,000 books and can house an almost infinite quantity of date in various "micro" formats. Table and desk space is available for 800 users at a time. All carrels and study areas have the built-in capacity to be "hot-wired" for









electronic information retrieval services in the future.

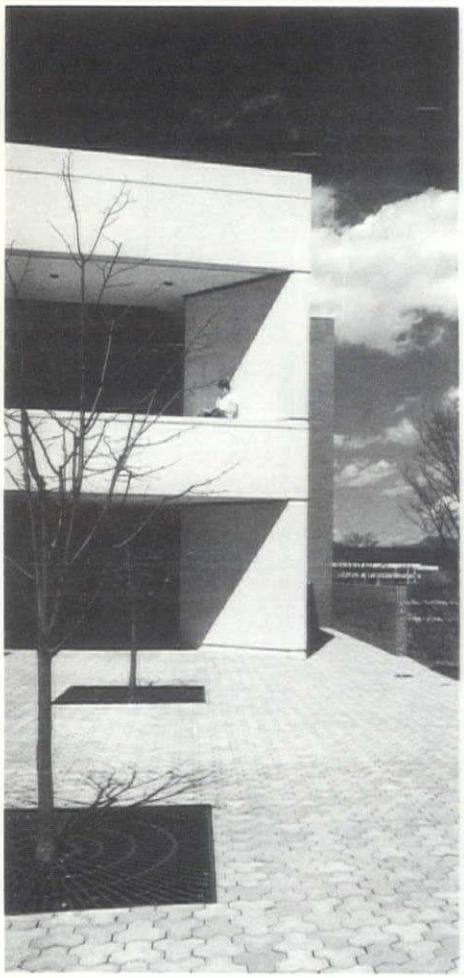
Arrangement of the interior is based upon a 27-foot-square module, derived from structural criteria and dimensions of standard library equipment. Most floors are carpeted. Ceilings are coffered concrete panels and acoustical tile. Walls are exposed brick, plaster and glass. With these finishes a unified, comfortable feeling is achieved, maintenance reduced, and noise kept to a minimum. Natural light and views abound in the reading and study areas, providing the spaces with a strong orientation.

Washington and Lee University is now equipped with a library which will fulfill its present needs and those of the future, and has enough flexibility to handle possible changes in academic emphasis. The building occupies an intersection between the old and new portions of the campus, forming a visual and physical connection between the two. It provides a direction for future projects undertaken while maintaining Washington and Lee University's tradition of excellence.

Bass Construction Co., Inc. of Richmond was general contractor for the project.

Subcontractors & Suppliers
(Richmond firms unless noted)

Laurel Creek Nursery, Blacksburg, landscaping; Charles W. Barger & Son Construction Co., Inc., Lexington, concrete contractor; Bat Masonry Co., Inc., Lynchburg, masonry contractor; Miller Manufacturing Co., Inc., millwork; Richmond Primoid, Inc., waterproofing; E. S. Chappell & Son, Inc., sealants & weatherstripping; N. W. Martin & Bros., Inc., roofing & sheet metal work; W. H. Stovall & Co., Inc., Ashland, glass, glazing & curtain wall system; Architectural Hardware, Inc., hardware supplier; H. E. Satterwhite, Inc., ceramic tile & marble; Manson & Utley, Inc., acoustical treatment; L. R. Brown, Sr. Paint Co., Roanoke, painting contractor; Harris Heating & Plumbing Co., Inc., mechanical contractor; The Howard P. Foley Co., electrical contractor; and Riddleberger Brothers, Inc., Harrisonburg, electrical utilities.



George Washington Junior High School

Renovation, Alexandria

VVKR Incorporated—Architect/Engineer

General Contractors: Quad-Con Assoc., Inc. • Porter Contracting, Inc. • Northwood Contractors, Inc. • Metro-Management, Inc. • Photography by the Architect.

Instead of closing George Washington High, the City of Alexandria chose to remodel it.

All renovation work was done during the summer, but contractors were given enough lead time so that they were able to start immediately when the school closed in the spring. The scope of the work to be completed each year was coordinated with the city so that funds from the capital budget were available as needed.

This project involved a program analysis and energy audit of the school to accommodate a new educational program. Implementation of the results of the study resulted in major renovation and remodeling of the existing structure. In the first phase of renovation, installing a new roof, sealing leaking windows, and replacing broken panes made the building weatherproof. Suspended acoustical ceilings were placed in 69 classrooms and the corridors, with new recessed fluorescent fixtures replacing the existing incandescent pendants.

In the corridors, the lowered ceiling was interrupted at intervals to expose the original plaster arches. Where this occurs, bright colors help break up the apparent length of the corridors. New vinyl asbestos tile replaced worn flooring in 57 classrooms and some corridors, while the main floor corridor, the language and home economics labs were carpeted. Restrooms were completely redone with epoxy floors, epoxy paint, new fixtures, stalls and sinks set into brightly colored laminated plastic countertops.

There are now 10 science labs, all but one of them furnished with recycled casework. The old bases, both from this school and from two closed schools, were refinished and then fitted with new tops, hardware and faucets. Recycling the casework saved time as well as money. The home economics labs were upgraded with all new equipment and one new teaching station. Art labs received new sinks and countertops, while the typing labs were moved into "found

(Continued on page 40)

George Washington Jr. High *(From page 38)*

space" that had been locker and shower rooms. Painted drywall installed over the original tiled block walls prevented potential acoustic problems.

Energy conservation measures include a new, more efficient lighting system, lower ceiling heights and reduction of the glass area in windows. The new ceiling abuts the windows at a horizontal mullion line, shutting off the top 2 ft. of glass, which was insulated on the inside. This was seen as a temporary measure, and work has begun on installing replacement windows that have insulated top panels and small operable panes at the sides.

Last summer, the school's three boilers were replaced by a water to air heat pump system. A two pipe, closed loop circuit, circulates water continuously throughout the building. On demand, any one of the 42 heat pumps can absorb heat from the loop; for cooling, it rejects heat to the loop. A storage tank is being installed to store heat gained in the spring and fall for use in the evenings and morning warmup times. A 50-gallon hot water heater is now used for the domestic supply. Formerly, a boiler had to be kept going all summer to heat the water.

General Contractors for the various phases of this project were: Quad-Con Assoc., Inc., Burke; Porter Contracting, Inc., Springfield; Northwood Contractors, Inc., Alexandria; and Metro-Management, Inc., Fairfax.

Subcontractors & Suppliers

None were available at press time.

Thomas Jefferson Elementary School *(From page 27)*

The primary grades are grouped on the second floor in existing classrooms which were gutted and fitted with flexible, moveable partitions permitting various combinations of self-contained or open classroom space. Secondary grades are accommodated in the modernized third floor. Ceilings are lowered and fitted with acoustical tile. Carpeting in all areas reduces the noise level. The entire interior is repainted. Finishes throughout are color coodinated to provide variety, interest, and a more stimulating atmosphere. All toilets are totally renovated; colorful partitions and graphics were added. A new elevator provides access to all levels for the handicapped. The building was modified to be barrier free. Signage is replaced with new signage incorporating braille for visually impaired students.

The exterior design challenges for T. J. Elementary included blending the small additions and the larger gymnasium with the existing austere building. Elements such as the school entrance mast parapet, the portal and the elevator tower are utilized to create interest and detail. Soldier brick is used for these elements in order to reflect subtle contrast. The glass area is reduced by shortening the windows, which are reglazed with insulating glass for better energy conservation. A more aesthetic environment is created by new landscaping.

The existing mechanical system was replaced with a new energy efficient HVAC system utilizing heat pumps. Existing electrical and illumination systems were completely upgraded to meet codes and design standards. Fire alarms, smoke detectors, an emergency generator, an intercom system and a TV system were also included in the renovation.

Whitener & Jackson, Inc. of Falls Church was general contractor for the project.

Subcontractors & Suppliers

Anderson & Cramer, Inc., Chantilly, ventilating contractor; and Brand Electrical Construction Co., Inc., Manassas, electrical contractor. No other subcontractors or suppliers were available at press time.

I-264 Tunnel Bids To be Opened October 20

• The Virginia Department of Highways and Transportation will open contractors' bids October 20 for the largely federally funded Interstate 264 tunnel under the Elizabeth River between Norfolk and Portsmouth.

The new crossing will be built just south of the existing Downtown Tunnel, which was opened in 1952, and will alleviate one of the state's worse traffic congestion problems, the department said.

Traffic through the existing tunnel averages some 37,600 vehicles daily, and on occasion has reached 43,000 vehicles a day. It was originally designed to accommodate about 18,000 vehicles daily.

Ninety percent of the cost of the new facility will be borne by federal funds, with the state responsible for the remaining 10 percent.

The project on which bids are to be opened in October will provide for fabrication and placement of eight underwater tunnel sections and construction of the tunnel approaches. The tunnel will be 3,814 feet long, with its west portal at Court Street in Portsmouth and the east portal near Ligon Street in Norfolk. Cost of the first project is expected to exceed $90 million.

It will be the first of several phases which ultimately will provide additional lanes for Interstate 264, an interchange with Interstate 464 in the Berkeley area, and a new Berkley Bridge. The total work, including the tunnel and the related improvements, is expected to cost almost $300 million.

The department said the tunnel would take about three years to build, and would be opened to traffic upon completion. However, the schedule for the remaining projects will depend on the availability of federal and state funds, and completion of the entire project is not expected before at least the late 1980s.

Hankins & Anderson, Inc. Announces Promotions

• The board of directors of Hankins and Anderson, Inc., a Richmond consulting engineering firm, announces the election of two new Vice Presidents, William L. Turns, III and N. Davis Wrinkle.

Turns, a former Associate of the firm, originally joined Hankins and Anderson in 1970. He returned earlier this year after being a principal in Holton Engineering, a Richmond electrical consulting firm, for three years. A Registered Professional Engineer, he is a graduate of the University of Virginia and serves as Chief Electrical Engineer for Hankins and Anderson.

Wrinkle, also a former Associate, is Chief of Architectural/Engineering Project Management for the firm and has been employed by Hankins and Anderson since 1974. He holds a Bachelor of Science in Mechanical Engineering from Virginia Polytechnic Institute and State University and a Master of Science in Engineering Administration from George Washington University. He is a Certified Life Costing Analyst and a Registered Professional Engineer.

Other promotions within the firm include new Associates, Edwin L. Bell, David L. Carr, Robert DeFazio, and Jeffrey L. Goss.

Bell serves as Project Engineer on heating, ventilating, and air conditioning projects and has eight years of experience with the firm. Carr, Chief Plumbing Engineer, joined the firm earlier this year after 25 years' experience with other firms. DeFazio, Senior Process Engineer, has a bachelor of science in Chemical Engineering from Penn State University, is a Registered Professional Engineer in Virginia, and has been with Hankins and Anderson, Inc. for one year. Goss, a Project Engineer for heating, ventilating, and air conditioning work, has a bachelor of science from Penn State University in Architec-

tural Engineering. He is a Registered Professional Engineer in Virginia.

Four Hankins and Anderson Associates have been promoted to Senior Associate. They are Raymond J. Frank, AIA, Chief of Specificiations; William M. Glasheen, Chief Power Plant Engineer; Gerald L. Jolley, Professional Engineer, HVAC Engineer; and John B. Parker, Professional Engineer, Chief Structural Engineer.

June B. Wheeler, Bookkeeper, has been elected Assistant Treasurer for the firm.

Hankins and Anderson, Inc. was founded in 1947 and provides total engineering services to architects, industry, and state, local, and federal governments.

David E. Taylor Elected President Of The American Society of Certified Engineering Technicians

• David E. Taylor of Richmond, is the new National President of ASCET—The American Society of Certified Engineering Technicians. ASCET is the nationwide Professional Society of Technicians and Technologists.

Mr. Taylor holds an Associate of Science Degree in Civil and Highway Engineering Technology from Virginia Commonwealth University and is employed by the engineering firm of R. Stuart Royer & Associates, Inc. of Richmond.

Prior to being elected ASCET President, Mr. Taylor served as Vice President of the Southeastern Region of the Society and he has been Chapter Director, past National Director, and Secretary and Treasurer of the Richmond Metro Chapter of ASCET. In 1978, Mr. Taylor received a First Place Technical Paper Award and received the President's special award of "Most Valuable Member" for 1978-79.

Saunders Oil Appoints Jones

• Robert P. Jones has recently been appointed Vice President of Saunders Oil Company, Inc. of Richmond.

Mr. Jones graduated from the University of Richmond and has been employed by Saunders Oil for the past seven years. He has been serving as the assistant to the Executive Vice President for the past several years.

VIRGINIA INDUSTRIAL DEVELOPMENT NEWS

Tate Engineering Locates in Chesterfield County

• Tate Engineering, Inc. of Baltimore, Maryland, has established a facility in the Chesterfield County Industrial Air Park. Groundbreaking for the company's new building occurred on May 26.

Scheduled for completion in October of 1981, the company's new plant will house the sales, services and installation activity of heavy industrial equipment such as pumps and air compressors manufactured in others parts of the United States. Tate Engineering will employ approximately 12 employees initially with additional employment expected depending on market activity.

The new building to be funded in part by a $500,000 industrial revenue bond issue authorized by the Chesterfield County Economic Development Authority will include office, warehouse and shop areas amounting to about 21,000 square feet. It will be located on a two-acre tract in the county industrial area.

William Sanders, Branch Manager of the Chesterfield County facility, noted the proximity of Tate's new location to major industrial customers in central Virginia, particularly in the chemical field, and the willingness of Chesterfield County officials to assist the company in its site selection activity.

"We believe that the Chesterfield County Industrial Air Park gives us an ideal vantage point from which to market Tate's products to current and potential users in Virginia," said Sanders. Tate was assisted by the Chesterfield County Office of Economic Development in addition to the county's bond-issuing development authority.

Pennsylvania Firm Selects Spotsylvania Site

• Molded Materials Company has announced plans to construct a new manufacturing facility in Spotsylvania County, according to company officials and representatives of Spotsylvania County and the Division of Industrial Development.

Molded Materials Company, headquartered in Ridgway, Pennsylvania, is a division of the Carlisle Corporation. The new Virginia facility is expected to employ approximately 100 workers in the production of brake linings.

A 20-acre site in the Lee Hill Industrial Park in Spotsylvania County has been selected by the company for the location of the new plant. Construction of the 100,000 square foot manufacturing facility is expected to begin later this year.

An inducement resolution authorizing a $10 million industrial bond issue has been passed by the Spotsylvania County Industrial Development Authority to finance the new facility.

Molded Materials Company was assisted in the site selection process by representatives of Spotsylvania County, the Rappahannock Area Development Commission and the Virginia Division of Industrial Development.

Aircraft Manufacturer Selects Arlington for Marketing Headquarters

• Shorts USA has announced the opening of its new marketing headquarters in Arlington.

A wholly-owned subsidiary of Short Brothers, Ltd. of Belfast, Northern Ireland, the Shorts USA marketing operation is primarily responsible for sales development and product support in North America and the Caribbean. Its prime responsibility is the Shorts 330, a 30 seat commuter aircraft, of which there are over 40 operating in the U.S. at present with eleven airlines.

"The Crystal City site in Arlington was chosen because of its close accessibility to Washington, D.C. and National Airport," A. Oakley Brooks, Jr., Vice President of Shorts USA, said.

A regional marketing headquarters had formerly been located in Boston, Massachusetts. The corporate headquarters for the Shorts USA is located in Irvine, California.

Shorts Brothers, Ltd. has been making aircraft since 1905, when they made the first production flyers in Europe for Orville and Wilbur Wright. Today, the firm focuses on the design, development and manufacture of aircraft, aircraft components and missiles.

Shorts USA was assisted in its site selection activity by the Fairfax County Economic Development Authority and the Richmond and Brussels, Belgium Offices of the Virginia Division of Industrial Development.

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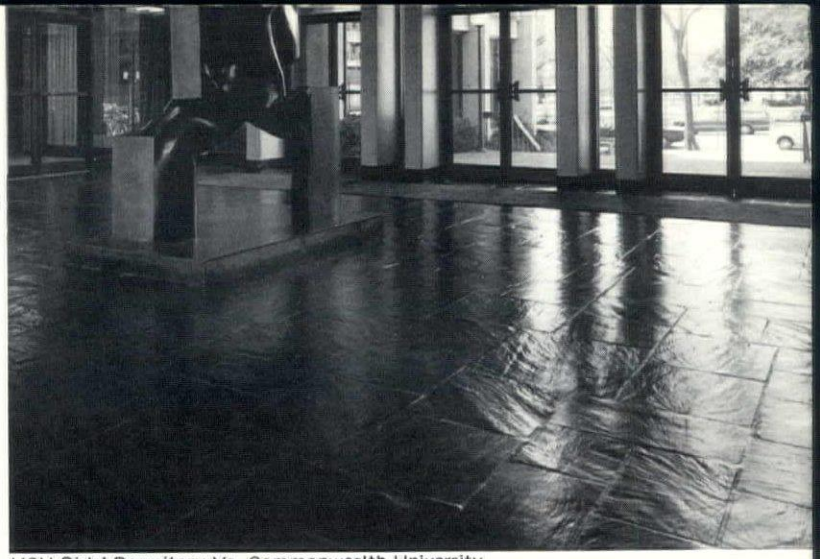

VCU Girls' Dormitory Va. Commonwealth University
Architect: Lee, King, & Poole

(Above and right) Woody's Funeral Home, Parham Chapel, Richmond, Va.
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