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NOVEMBER

1976

TWENTY-FOURTH ANNUAL ARCHITECTURAL ARTS EDITION

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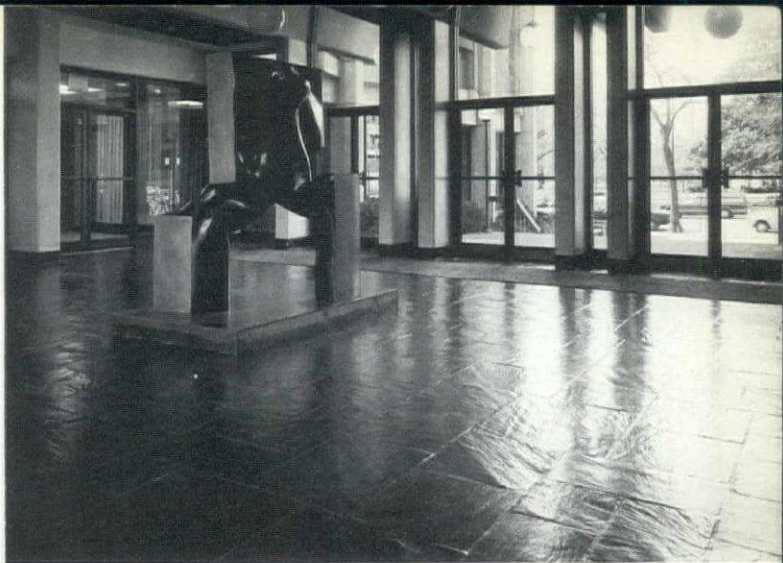
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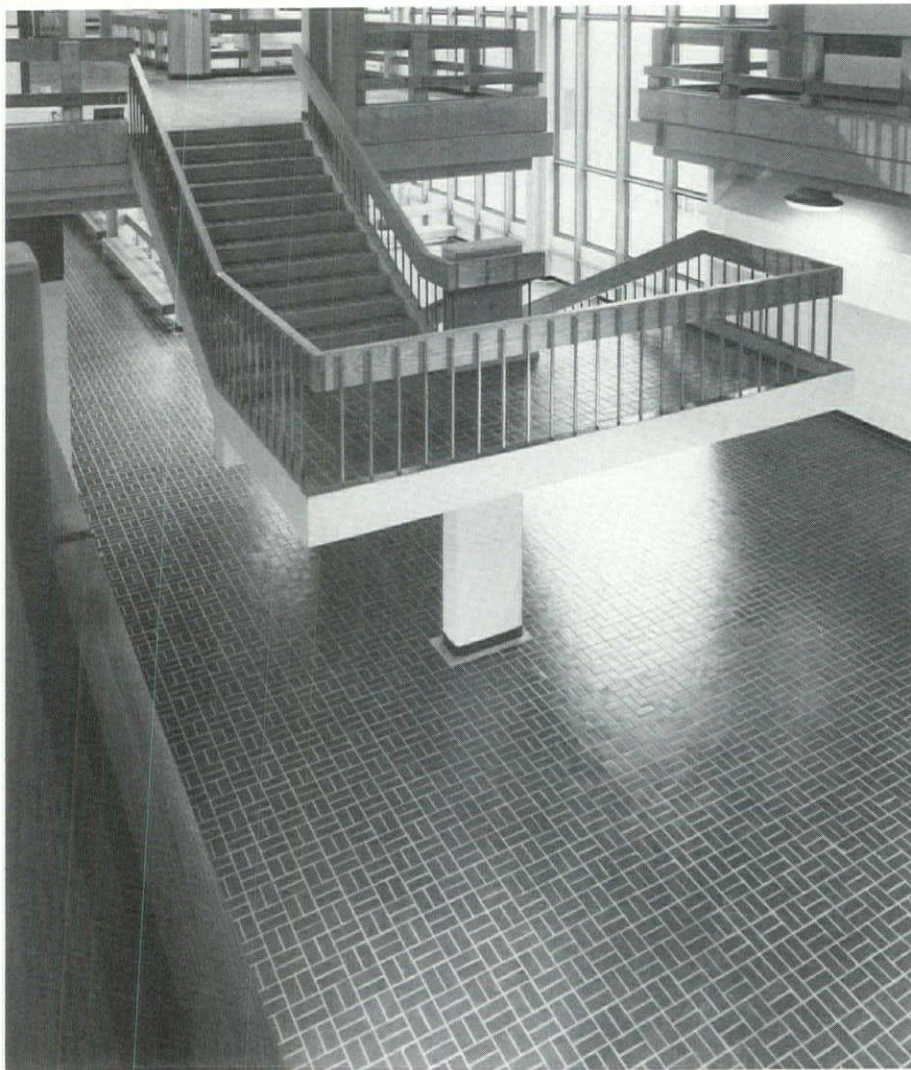
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ON OUR COVER: Several months ago, the American Institute of Architects asked a group of practitioners, historians and critics to nominate up to 20 of what they considered the proudest achievements of American Architecture over the past 200 years.

Far and away in first place, with 29 mentions, was Thomas Jefferson's University of Virginia campus, in Charlottesville. The recently restored Rotunda at the University is shown on our cover. (Cover photo courtesy of Ballou & Justice, Architects.)

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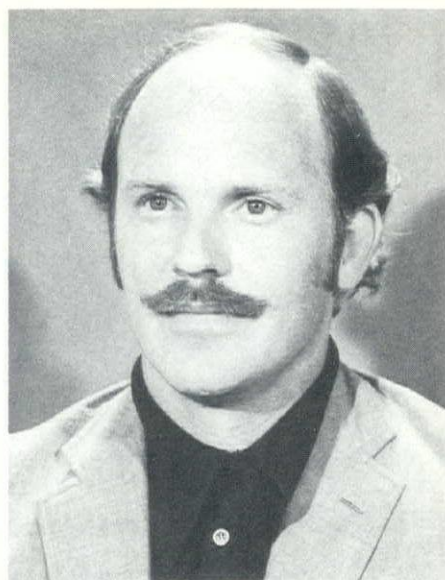
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Energy Conservation and the Built Environment



By
Frederick E. Baukhages, IV, AIA

THE DESIGN OF THE built environment — homes and schools, offices and factories, shopping centers and hospitals — has far-reaching effects on the quality of human life. Those who design this environment must take into account how the building project meets the physiological, and psychological needs of its users, as well as how it affects and is affected by its natural setting. It is clear that many of our natural resources are in limited supply: the land on which we build, building materials, and the fossil fuels on which the built environment depends for energy.

The recent increased cost of fossil fuels, which now provide about 95 percent of the United States' energy, presents a major challenge to the design professions since the built environment consumes almost one-half of the nation's energy.

About 35 percent of all energy used in the United States is consumed directly in buildings; another six percent is consumed in offsite facilities to support buildings for such purposes as sewage treatment, water supply, and solid waste management; approximately seven percent more is used to process, produce and transport materials used for building construction. All told, about 48 percent of all energy used is in and for building. In 1970 the total U.S. consumption of gas, coal and oil amounted to the equivalent of almost 32.5 million barrels of oil a day. Based on present trends, it is estimated that consumption will be more than doubled by 1990 when it reaches 68.5 million barrels per day. The anticipated rapid expansion of domestic production of coal, gas and nuclear energy, along with projected imports of gas and the development of hydroelectric and geothermal power, is expected to yield the equivalent of 39.2 million barrels of oil a day in 1990. The remaining demand gap of 29.3 million barrels, however, will have to be supplied from domestic and foreign oil sources. Since domestic oil sources are expected to produce only 11.3 million barrels of oil a day in 1990, the balance - 18 million barrels - will have to be met from oil imports, a three-fold increase over the present import rate of six million barrels.

Even before the "energy crisis" was generally recognized, the American Institute of Architects was studying means of reducing dependence on fossil fuels in the built environment. The results of these studies indicate that energy savings could be achieved if the nation's new and existing buildings were designed to be energy efficient. Existing buildings' fuel consumption could be reduced as much as 50 percent from current levels by efficient redesign and operation techniques. New buildings initially designed to be energy efficient could save as much as 80 percent of the fuel they would consume at present levels. Using conservative estimates of 30 percent savings for existing and 60 percent for new buildings, the energy saved would amount to the equivalent of 12.5 million barrels of oil a day by 1990.

The potential savings projected by these studies would be practically equal to the increase above the current level of oil

(Continued on page 70)

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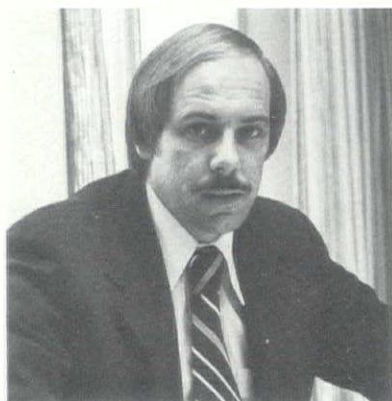
NEW CORPORATE MEMBERS

NORTHERN VIRGINIA CHAPTER, AIA



NATHANIEL B. JOHNSON III, AIA

Born January 1, 1943, in Trenton, New Jersey, Johnson received his Bachelor of Architecture degree at the University of Oklahoma. He is registered in Virginia and has been a Corporate member of the Northern Virginia Chapter since April 30, 1976.



LAWRENCE PETER LAMMERS, AIA

Larry was born May 30, 1941, in Teaneck, New Jersey, and received his

to tell the Virginia Story

Bachelor and Masters degrees at Texas A & M University. He is Vice President of Medicus Planning in Washington, D.C., and has been a Corporate member of the Northern Virginia Chapter since May 25, 1976.



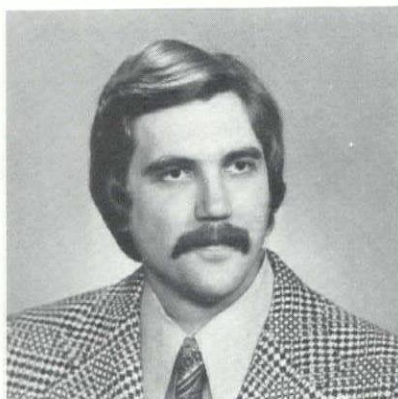
ROBERT A. WIECH, AIA

Born June 8, 1938, in New Castle, Pennsylvania, Wiech received his degree in Architecture at Penn State University. He is registered in the State of Virginia, employed in the firm of VVKR Partnership, Alexandria, and has been a Corporate member of the Northern Virginia Chapter since June 23, 1976.

VIRGINIA CHAPTER AIA

GLEN S. ANDERS, AIA

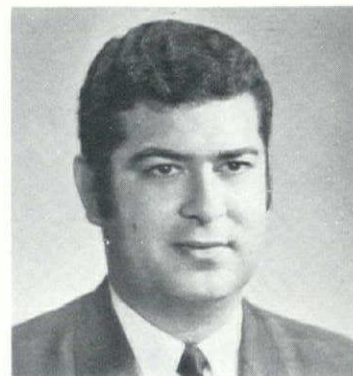
Born July 3, 1944 in Honolulu, Hawaii, Anders received his Bachelor of Architecture degree from Georgia Institute of Technology. He has been a Corporate member of the Virginia Chapter, AIA, since September 20, 1976.



PHILLIP SCOTT FOLCK, AIA

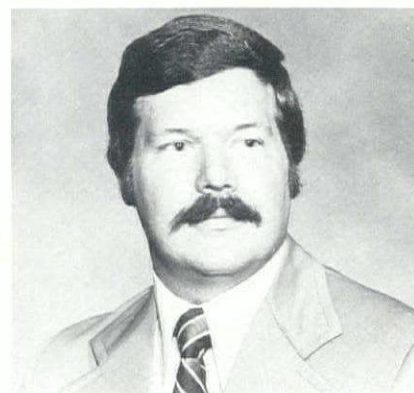
Born June 29, 1947 in Junction City, Kansas, Folck received his Bachelor of Architecture degree at Kansas State

University. He has been a Corporate member of Virginia Chapter, AIA, since September 20, 1976 and is presently a Project Manager for Williams and Tazewell Associates in Norfolk.



MAMDOUGH MOUSTAFA KHATTAB, AIA

Born September 15, 1938 in Cairo, Egypt, Khattab received his B.S. in Architecture from Ain-Shams University in Cairo, Egypt and Master of Architecture, Urban Design from Catholic University of America in Washington, D.C. He has been a Corporate member of Virginia Chapter, AIA since September 20, 1976 and is presently with the Public Works Department, City of Richmond.



RONALD M. MARTIN, AIA

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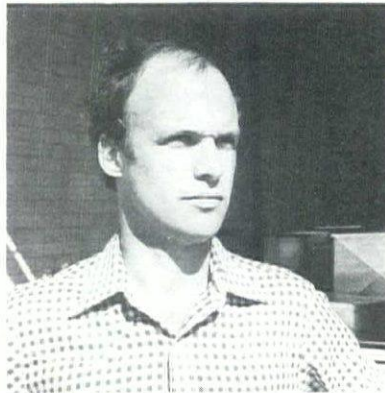
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AIA NEWS

(Continued)

Professional Associate, he has been a Corporate member of Virginia Chapter, AIA since August 4, 1976.



ROGER F. NEWILL, AIA

Born October 18, 1946 in New Jersey, Newill received his Bachelor of Architecture and Masters in Regional Planning degrees from Cornell University. Formerly an Associate member, he has been a Corporate member of Virginia Chapter, AIA since September 20, 1976.

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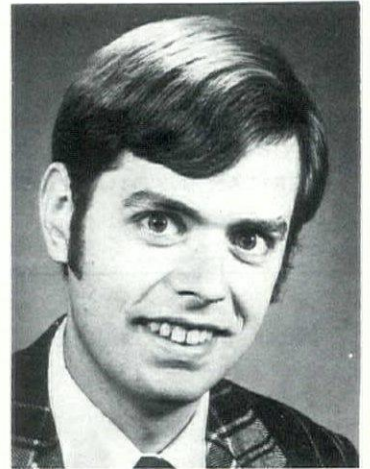
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EDWARD F. "TED" MASLIN

Born October 16, 1954 in Chelsea, Massachusetts, Maslin received his B. S. in Architecture from University of Virginia. He served as Student Representative to Virginia Chapter, AIA Executive Committee and has been an Associate member of Virginia Chapter, AIA since August 26, 1976. Maslin is presently with the Colonial Williamsburg Foundation Architects' Office.

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CONSTRUCTION INDUSTRY GUIDELINES

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The Joint Cooperative Committee is composed of: Virginia Chapter, The American Institute of Architects; Virginia Branch, Associated General Contractors of America, Inc.; Consulting Engineers Council of Virginia, Inc.; and The Virginia Society of Professional Engineers. These organizations have joined in presenting to the business community of Virginia, the Construction Industry Guidelines which their agencies have adopted.

This publication is offered to provide the various segments of the building industry with logical solutions to industry related problems in the form of guidelines which clearly delineate the functions, duties, and expected performance levels to which those in the building industry should adhere in order that all segments can work harmoniously, efficiently and cooperatively. They can also serve to acquaint a prospective owner with what is considered to be fair and equitable practices in the construction process.

The guidelines set forth herein are not intended to supplant the responsibilities of contracting par-

ties; nor do they preclude adjustments in order to safeguard or control a given contract; for in the final essence these conditions must be established to suit the individual needs of each project as set forth in documents for that specific contract.

These recommendations have made reference to various AIA documents and forms, since they are widely accepted throughout the Construction Industry and are generally available in most localities. Similar documents and forms sponsored by other technical and engineering societies may be used when they are deemed to better serve the objectives of the Contracting Parties.

Throughout the year of 1976 the guidelines in their entirety will be presented to the Virginia business community. It is our hope that they will be beneficial to all who peruse them.

In this edition of the *Virginia Record* we present for your information the Construction Industry Guidelines on: (20) Bidding Procedures; and (21) Unanticipated Sub-Surface Conditions.

Bidding Procedures

The preparation and submission of bids is of vital interest to contractors. Lengthy bid proposal forms consisting of various alternates, unit prices, listing of subcontractors or suppliers, etc. tend to further confuse the bidding procedure and greatly enhance the possibility of mistakes in bid.

The bid proposal should be brief with subsequent information submitted along procedure lines as outlined.

I. BIDDING DOCUMENTS

Bidding documents furnished to general contractors and subcontractors for purposes of preparing a competitive proposal only will be covered by this recommendation. The following should be noted:

- 1) The nature of competitive bidding is to secure the best proposal for construction of a project. It is a method whereby the most acceptable proposals to the general contractor can be combined into one single proposal for the project. Unavailable drawings and specifications certainly prohibit additional general and subcontractors from preparing a proposal.
- 2) The unsuccessful general contractors, subcontractors, and suppliers have expended time and money to prepare a proposal from which they will receive no benefit.
- 3) The reproduction and distribution of the bidding documents does place a responsibility on the architect. He must see that all bidders do have the same information, including all addenda, etc., on which to finalize their proposal.

Time and money are factors in the issuance of bidding documents. The balance between the proper distribution of bidding documents and the optimum return on the cost for these documents is of extreme importance to the owner. The owner will obviously benefit by additional general, subcontractor and supplier prices at bid time. It is recommended that the following minimum guidelines be used by the owners in distribution of their documents.

A. RECOMMENDATIONS

1) General Contractors:

Up to \$500,000—Two sets *minimum*

\$500,000-\$2,000,000—Three sets *minimum*

Over \$2,000,000—Four sets *minimum*

Security for the above documents can be in the form of deposit required of the general contrac-

tor and refundable to all bonafide bidders. Bidding documents requested in excess of the above allotments would be on the basis of the reproduction cost.

2) Subcontractors and Material Suppliers:

a) Mechanical and electrical subcontractors are to receive two complete sets of bidding documents upon receipt of required deposit with which to prepare their proposal; fully refundable to all bonafide bidders. Additional drawings could be secured on a reproducible cost basis.

b) Other trades and material vendors would be expected to use drawings and specifications available to them from general contractors, subcontractors, or plan rooms.

c) Plan rooms would receive bidding documents in accordance with following schedules:

Project under \$500,000

—One set *minimum*

Project \$500,000 to \$2,000,000

—Two sets *Minimum*

Project over \$2,000,000

—Three sets *minimum*

It is not recommended, that any bidding sets be broken. The use of broken sets does not relieve bidders of their responsibilities under the contract.

II. INTERPRETATIONS AND/OR CLARIFICATIONS OF BIDDING DOCUMENTS

Modifications to bidding documents once they have been issued for procurement of bids normally come about for reasons that can be divided roughly into the following categories:

a) Discoveries made by Architects and/or Engineers in review of their plans.

JOINT COOPERATIVE COMMITTEE

AIA - AGC - CEC - VSPE

b) Discoveries made by General Contractors, Subcontractors, and suppliers in reviewing the documents in preparation of an estimate.

It is in the interest of all that an early review be made so that, wherever possible, all corrections and ambiguities can be clarified by this type of addendum. Ways to urge early review, especially in the mechanical, electrical and specialty fields, must be studied. With respect to written addenda the Architects and/or Engineers will require all bidding parties to request clarification at least six days prior to the bid opening so an addenda can be mailed out to each bidder at least five days prior to the bid opening.

Recognizing that lack of time may preclude the above, the Architect and/or Engineer may issue telegraphic addenda based on their own findings or legitimate requests from a bidder requesting clarification of a matter that will affect the cost of the bid up to two days prior to the bid opening. This type addenda must be clear and concise and essentially give a "yes" or "no" answer.

Since substitutions frequently "muddy" the water at a late stage in the preparation of a bid, especially from manufacturers, the Architects and/or Engineers will give no manufacturer a verbal permission as to an equal. Therefore, any bidder who represents to the Contractor that his bid item has the Architects and/or Engineers approval will not be given bonafide consideration unless the substitution is approved by a written addendum prior to bid.

III. GENERAL AND/OR SPECIAL CONDITIONS

It is recommended that the AIA Document A201 "General Conditions of the Contract for Construction," as amended, be followed.

Refer to Index for these guidelines applicable.

IV. SINGLE CONTRACT

It is recommended the Single Contract for Construction be used.

The owner, Architect and/or Engineers concerned with a construction project, has the right to expect from the Construction Industry the best possible cost. The owner, Architect and/or Engineer should consider how best to obtain this assurance of satisfactory performance.

Long experience has demonstrated that maximum efficiency in the construction of a project normally results when responsibility for its efficiency is placed

with a general contractor through the award of a single contract for the entire job.

The Single Contract method has many advantages such as:

1. Single Responsibility & Liability
2. Control of scheduling.
3. Quality Construction.
4. Coordination of all trades.
5. A Uniform Safety Program.
6. The lowest ultimate cost.

V. ALTERNATE BIDS

The Construction Industry is unique in the process of submitting bids. Practically all proposals are received orally from Subcontractors and suppliers. Further, most of these oral proposals are received during the last hour of bidding; thus creating a situation where the General Contractor cannot determine the low bid on major items until the final minutes.

In view of this bidding process, it is recommended that alternates involving two or more trades be submitted by either of the following procedures:

- a) Submitted by all bidders by noon the day after receipt of bids. The basic bids should not be opened or revealed until receipt of all alternates.
- b) Negotiate with the low bidder after opening of bids and determination of successful bidder.

VI. UNIT PRICES

Refer to Article 19 of these guidelines.

VII. LISTING OF MAJOR SUBCONTRACTORS

General Contractors should not be requested to submit a list of subcontractors with the submission of bids. Listing of Subcontractors and major suppliers will be in accordance with Article #5, paragraph 5.2, AIA Document A201 as pertaining to award of subcontracts and other contracts for portions of the work.

VIII. MISTAKE IN BID

Procedure for withdrawal of bids shall be according to Section 11-20.2 of the Code of Virginia.

A copy of the Section 11-20.2 should be inserted in the Specifications and the selected procedure, option 1 or 2 so stated.

unanticipated sub-surface conditions

The investigations of sub-surface conditions may not disclose all of the conditions as they may occur. Some conditions such as ground water level may vary substantially between the time of investigation and the time of excavation or other operations. When the scope of the work and the soil conditions at the site justify special attention, the following actions should be considered:

1. Prior to the preparation of the Bidding Documents, a Foundation Consultant should be retained by the owner to make a sub-surface investigation and submit a report interpreting the data and presenting his conclusions as to the conditions likely to be encountered.

2. The Bidding Documents should include full and complete analysis of the reports and should provide for access to such samples, data and such supplemental information as is available to afford the most complete disclosure of the information at hand to permit the General Contractor proper evaluation of the conditions as they may affect the execution of the work required under the contract.

3. In recognition of the fact that variations may occur, a clause should be included in the contract to provide means of equitable adjustment of compensation and/or completion time if adverse unanticipated conditions are encountered or if more favorable conditions are found

to exist. Should concealed conditions encountered in the performance of the work below the surface of the ground be at variance with the conditions indicated by the Contract Documents, the Contract Sum and Contract Completion Time shall be equitably adjusted by Change Order. Time may become a critical factor in making adjustments, therefore, when the contractor or the owner observes conditions that are substantially different than those anticipated by the Contract Documents, he shall immediately (within 24 hours) bring this fact to the attention of the other. Once a fact of unanticipated conditions has been brought to the attention of either the owner or the contractor, and the consultant has concurred, negotiations should be undertaken between the owner and contractor to arrive at a change in contract price and/or completion time for additional work or reduction in the work because of the unanticipated conditions.

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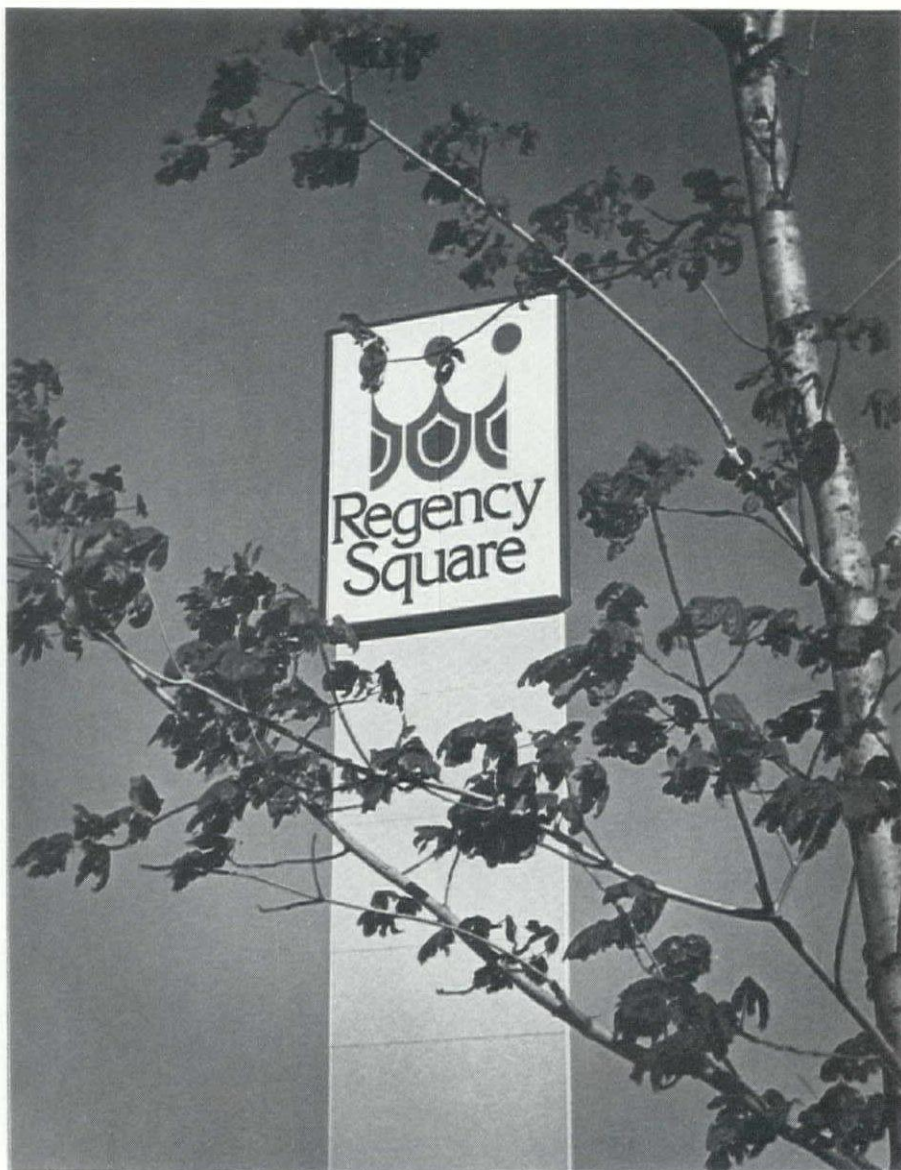
KATZMAN/KLOKE ASSOCIATES, INC.
Interior Design

TAYLOR AND PARRISH, INC.
General Contractor
Mall and Shopping Center Building

HUFFMAN STUDIO
Photography

REGENCY SQUARE is a regional Shopping Center of contemporary design strategically located on 48 acres at the intersection of Parham and Quioccasin Roads in Henrico County. Quioccasin Associates, the owner, is a limited partnership. The general partner and 50% owner is Home Beneficial Corporation, whose principal subsidiary is Home Beneficial Life Insurance Company. The limited partners are E. Carlton Wilton, Inc., a Richmond area developer, and L.L. Farber of Florida, Inc., a well known developer of shopping centers. The Farber Company served as developer for Regency Square. The project architect-engineer is Carneal and Johnston of Richmond. Regency Square is fashion oriented and serves the entire central Virginia area. Projected employment is 3500 and gross sales are expected to total \$65,000,000.

Regency Square is the largest shopping center in central Virginia and one of the largest on the East Coast, having 1,000,000 square feet, four major department stores — Miller and





Rhoads, Penney's, Sears, Thalhimers — 89 retail stores, and two parking decks. The two-level air conditioned shopping mall is connected with escalators and a glass-enclosed elevator, and is attractively landscaped with live trees and plants. Five fountain groups, numerous depressed and carpeted seating areas, and four original bronze

sculptures provide a comfortable and interesting shopping atmosphere.

A relatively new concept, shell and allowance, was used for Regency Square. The developer constructs the shell building and finished mall. Each retail merchant is given an allowance for construction of his store. The merchant prepares his own plans, which must meet the developer's criteria, and then enters into a contract for its construction using his own contractor. Department stores are constructed individually by the tenant or developer.

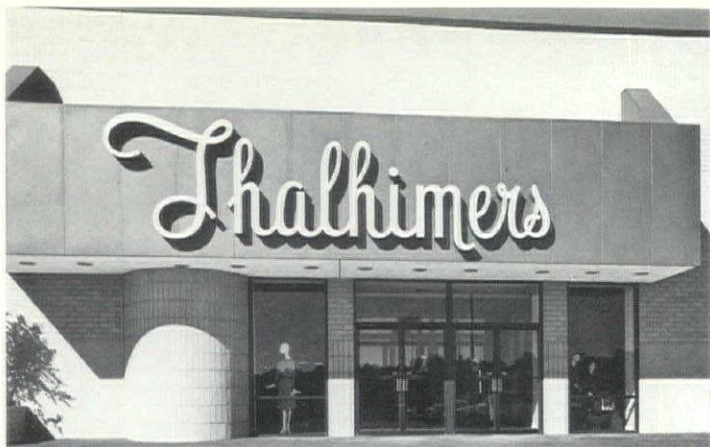
Taylor and Parrish, Inc. of Richmond was general contractor for the Mall and Shopping Center. The firm also handled foundations, concrete work and carpentry. The department stores and

shops were constructed by other contractors.

Subcontractors & Suppliers (All Richmond firms)

F. G. Pruitt, Inc., excavating; Laird's Nurseries, Inc., sodding, seeding, etc., landscaping & landscaping contractor; Lee Hy Paving, paving contractor; Montague-Betts Co., Inc., reinforcing, steel supplier, steel joists & miscellaneous metal; Concrete Structures, Inc., prestressed concrete; Southern Brick Contractors, masonry contractor; Taylor Brick, masonry supplier; Flamingo, mortar; Stonnell-Satterwhite, Inc., stonework contractor & structural (glazed) tile; W. H. Stovall & Co., Inc., stonework supplier; W. O.





Grubb Steel Erection, Inc., steel erection; Inland-Ryerson Construction Products, steel roof deck; Greendale Ornamental Iron Co., Inc., handrails; H. Beckstoffer's Sons, millwork; Custom Kitchens, Inc., cabinets; and, E. S. Chappel & Son, Inc., caulking.

Also, N.W. Martin & Bros., Inc., built-up roof, roof insulation & sheet metal; F. Richard Wilton, Jr., Inc., wall insulation & plaster/gypsum board contractor; SDG, Incorporated, glass & glazing contractor; Pleasants Hard-

ware, hardware supplier; Stonnell-Satterwhite, Inc., ceramic tile & terrazzo; Glidewell Bros., Inc., painting contractor & wall covering; Dover Elevator Co., Inc., elevators; Worsham Sprinkler Co., Inc., sprinkler contractor; Noland Company, plumbing fixture supplier; Hungerford, Inc., plumbing/heating/ventilating/air conditioning contractor; Northside Electric Co., electrical contractor; and Rafe Affleck Studio/Gayle S. Mann Jr. & Co., Inc., fountain sculpture.



WILLIAMS AND TAZEVELL AND ASSOCIATES, INC.

ARCHITECT

OLD DOMINION UNIVERSITY LIBRARY

FRANK M. BREWER, JR.

Consulting Engineer, Mechanical/Electrical

FRAIOLI-BLUM-YESSELMAN ASSOCIATES, INC.

Consulting Engineer, Structural

Interior Design BY THE ARCHITECT

W. B. MEREDITH II, INC.

General Contractor

LAWRENCE S. WILLIAMS, INC.

Photography

AN INVERTED pyramid is solving a growing university's library space problem while adding a striking new profile to its urban campus.

Old Dominion University, located in Norfolk, had been experiencing rapid growth during the 1960s and 1970s. By 1971 space in the existing Hughes Library was becoming obviously inadequate to meet the school's planned growth. The pressing need was to build a new library that could handle ODU's library requirements in the last half of the 1970s, provide space for reasonably predictable intermediate term growth, and somehow be positioned to accommodate unpredictable long term growth, thereby avoiding the fate of the Hughes Library - obsolescence.

As programming and planning for the new library proceeded, the layout dictated by the features ODU desired indicated that more space would be required on the upper floors than on the ground floor. This led to the plan of an inverted pyramid design. Combined with this was the desire to overcome the necessity for close column spacing usually required by the heavy loading capacities in libraries. Consequently the structure uses post-tension waffle slabs that allowed for wide column spacing and also permitted the use of the cantilevered floor and roof systems.

The inverted pyramid allowed the library to meet its objective of limiting the functions on the ground floor. Extending from the main entrance completely through the north-south axis of the building is a large open space. To the left is the charging desk behind

which is the sorting room. To the right is the card catalog. Continuing in that direction through a glass partition is the reference and information department. Thus the charging desk has visual control of all traffic flow on the ground floor, the card catalog, and the reference and information department, which is perhaps the most heavily used area and contains many of the more costly volumes. This visual control is a key element in the building's security and is obviously enhanced by the wide column spacing.

Besides the first floor, the column spacing provides an open feeling throughout the library. It also contributes to good circulation of people and books, and allows greater and more flexible use of floor space.

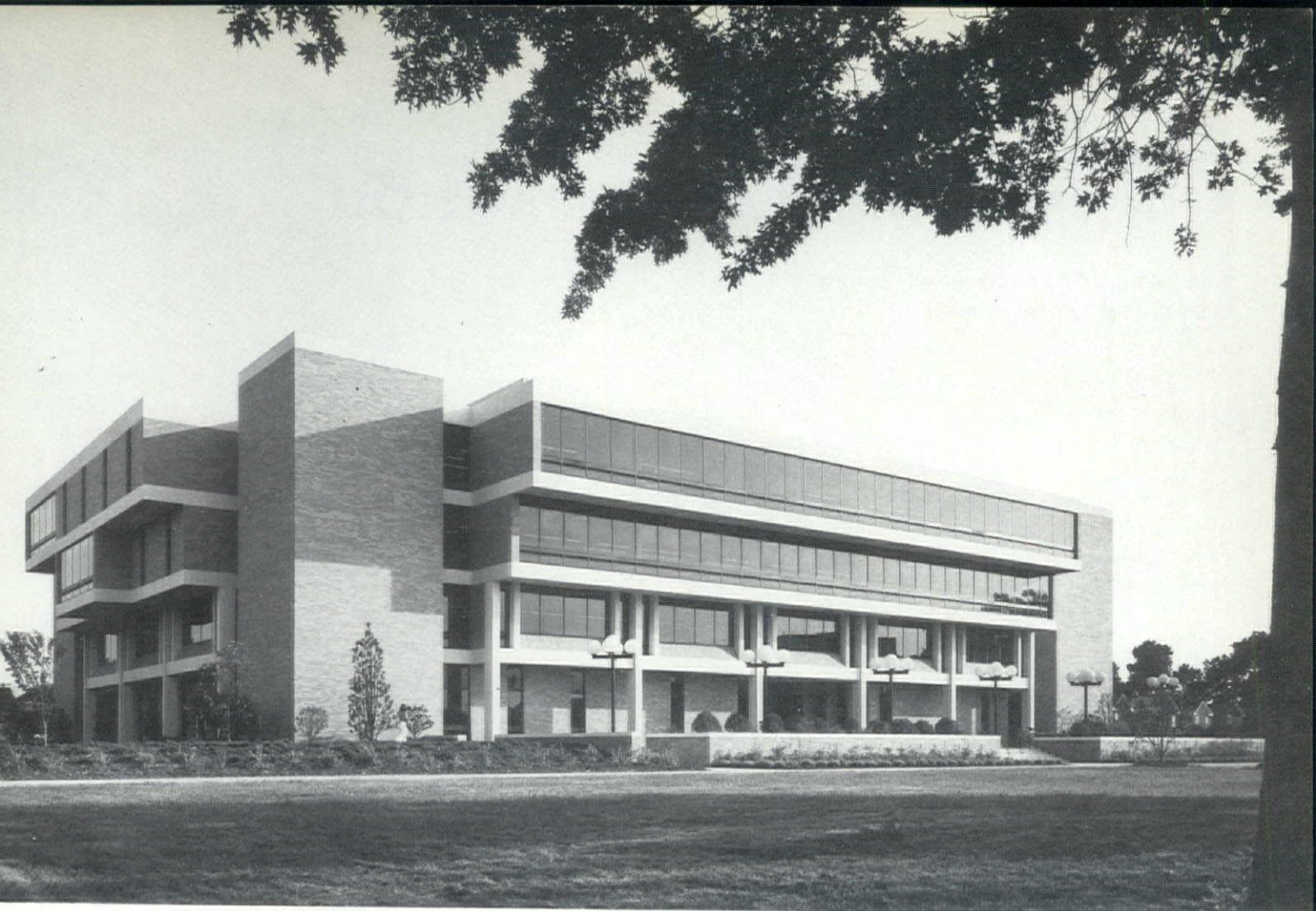
As part of the library's function as an active learning and resource center, a variety of ancillary areas were provided. For example, there are group study rooms which may be reserved by an instructor so that his class may use specialized resources of limited availability. Faculty carrels are located on every floor as are typing and

photocopy rooms. Special facilities are provided in the fine arts department for listening to recordings. A micro media department provides efficient storage and retrieval of newspapers and other periodicals. There is also an inter-library loan department to teletype arrangements to loan or borrow books from libraries throughout the country.

Provisions for the handicapped meet all state requirements. In addition, ramps to the podium on which the library sits have even less slope than required resulting in very easy access.

In summary, the new library's capacity of 420,000 volumes comfortably accommodates ODU's present needs and allows for expansion to meet

(Continued on page 63)



SIEGWERK, INC. PLANT EXPANSION

S. R. GAY & CO., INC., General Contractor
FRED KNIGHT, Photography

INDUSTRIAL FACILITIES expansion occasionally confronts the architect and engineer with a combination of new requirements and problems that demand new approaches and creative techniques. An excellent case-in-point is Siegwark, Inc., which recently undertook a Phase II Expansion to increase its facilities for manufacturing rotogravure printing ink. Siegwark produces ink exclusively for Meredith-Burda, Inc., for whom Wiley & Wilson also completed an expansion project in Lynchburg.

The most significant factor of this expansion project was the caution required in all aspects of the operation dealing with toluene, the highly flammable liquid solvent for the ink dyes.

During construction it was necessary to erect a fire wall to protect continuing plant processes from activities outside. Internal engineering and ventilating

also reflected this absolute need for caution. Fumes given off by the toluene during the manufacturing process are evacuated by a positive, floor-level exhaust system. During expansion the exhaust system had to be modified to exact proportions. Similarly, the plant is equipped with a temperature-triggered sprinkler system that also required proportionate amplification.

Because toluene fumes are more dangerous in a dry atmosphere, a special humidification system, already existing in the facility, was expanded to adequately control a larger air capacity. Proportionate tie-ins were also made to the plant sewer system which is designed to automatically shut off the moment a toluene spill occurs and to rechannel it into a specially devised container for dilution.

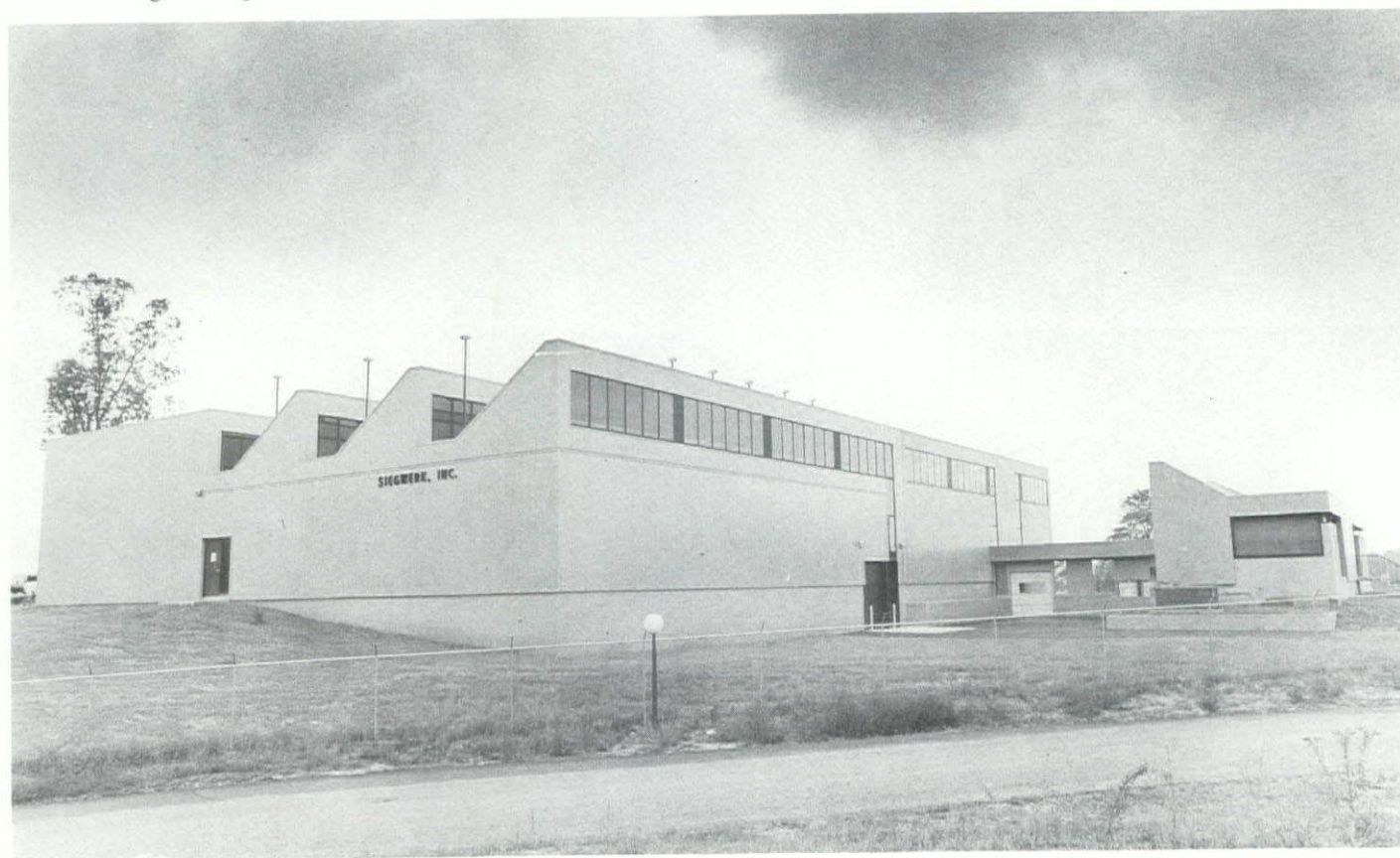
Architectural design was performed under the pressure of two demands:

exact compatibility with the original building, and Siegwark's absolute safety specifications. Vertical "blow out" panels were built into the walls to minimize damage and injury if an explosion were to occur. All visible construction materials were matched exactly and the "saw tooth" shape of the building was continued.

Gas and water services required relocation as well as expansion and tie-in. Electrical service was not only relocated but enlarged to accommodate heavier loads of power for process cooling, exhaust fans, and large mixer motors.

Siegwerk provided its own ink processing equipment from European manufacturers, and structural steel had been prepurchased to save construction time. The total project cost was just under \$600,000, excluding plant

(Continued on page 64)



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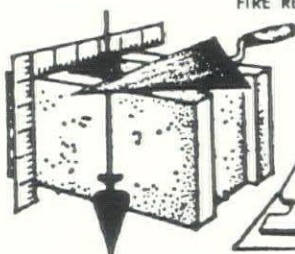
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MARCELLUS WRIGHT, COX, CILIMBERG AND LADD — ARCHITECT

ALTERATIONS AND ADDITIONS TO THE OFFICES OF THE UNIVERSAL LEAF TOBACCO COMPANY

Interior Design BY THE ARCHITECT

JAMES BUCK — LANDSCAPE ARCHITECT

ROBERT S. SPRATLEY AND ASSOCIATES
Consulting Engineer, Mechanical/Electrical

HARRIS, NORMAN, GILES AND WALKER
Consulting Engineer, Structural

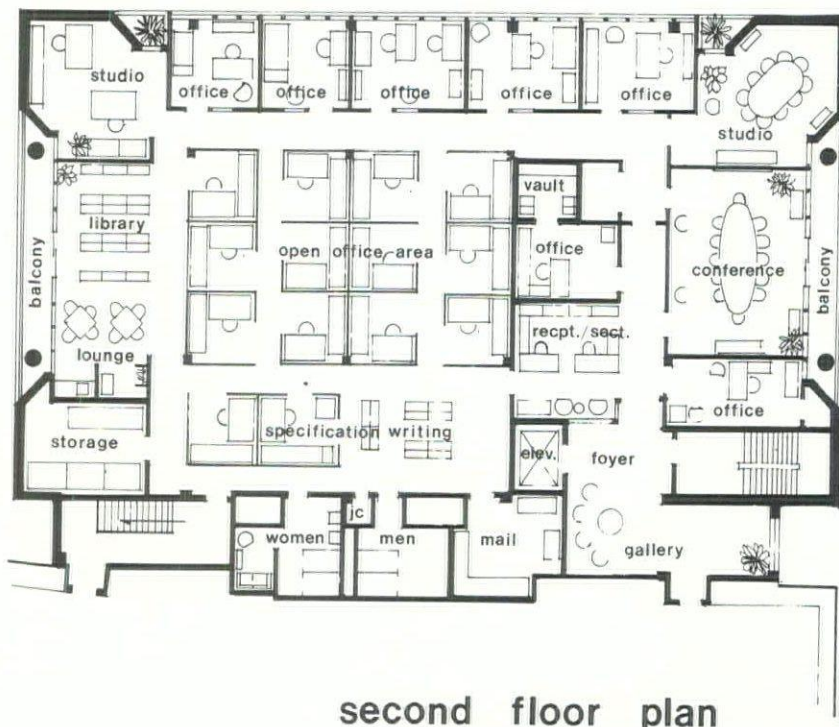
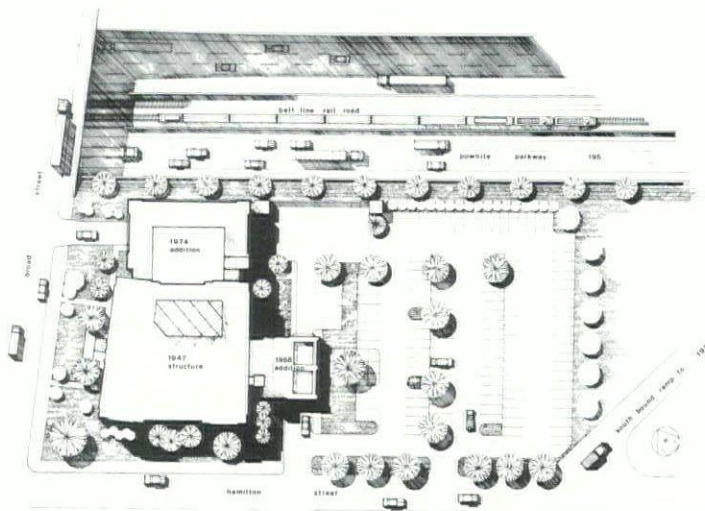
J. KENNON PERRIN CONSTRUCTION CO., INC.
General Contractor

DAN YOSHIDA & LAWRENCE S. WILLIAMS, INC.
Photography

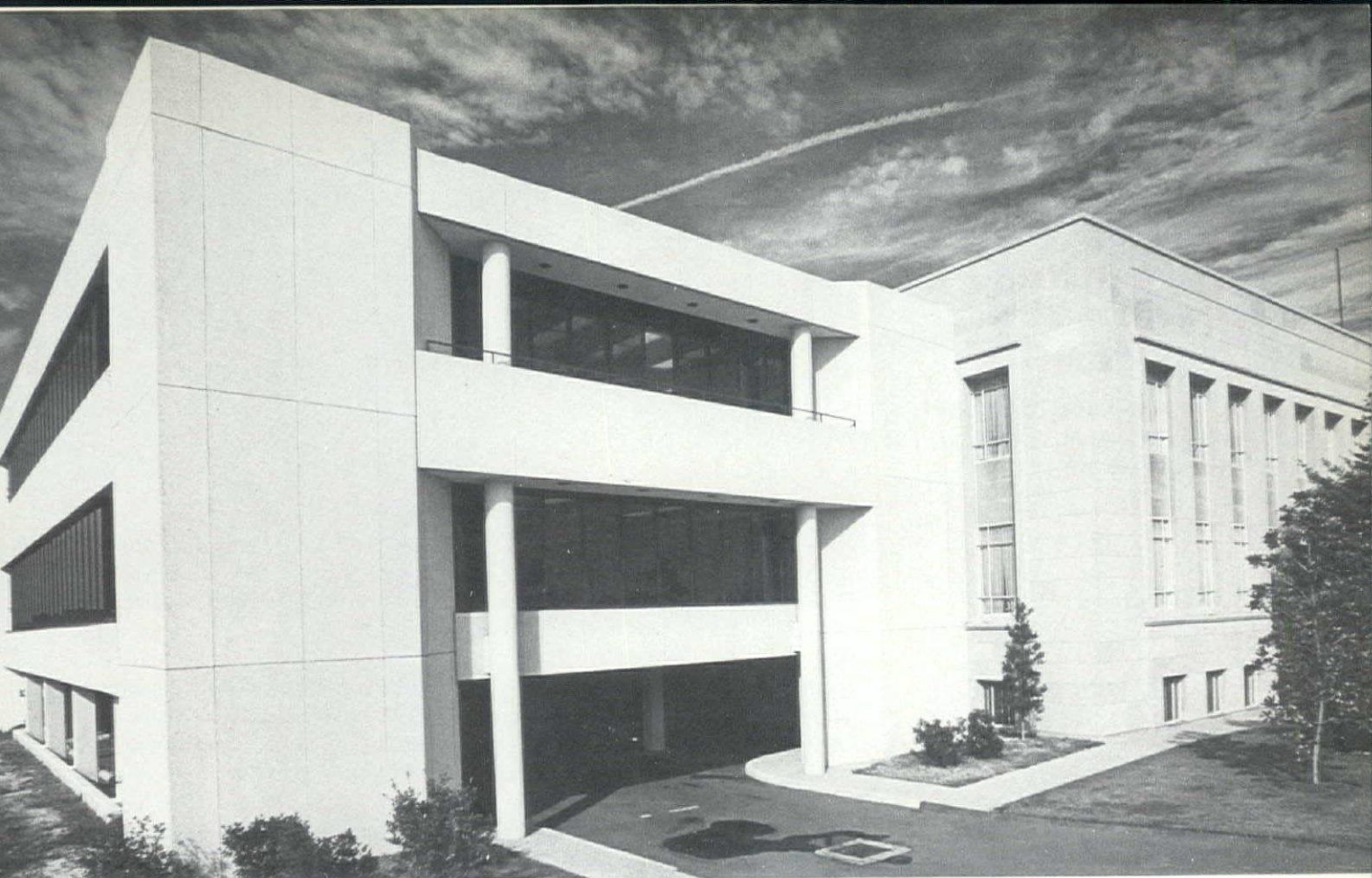
THE UNIVERSAL LEAF Tobacco Company Headquarters is located on the southeast corner of the intersection of Hamilton and West Broad Streets in Richmond, Virginia. The original structure was built for another company in 1947. Universal Leaf obtained the building and had alterations and additions designed by Marcellus Wright, Cox, Cilimberg and Ladd and built by J. Kennon Perrin Construction Company, Inc. prior to occupation in 1968.

This addition, designed and built by the same architectural firm and general contractor, was built in 1974 to meet the requirements of an expanding accounting department and to provide space for the projected growth of the company.

The ground floor of this addition provides required parking, a service



second floor plan



(Photos by Dan Yoshida)



ramp down to the basement, and an elevator lobby. Universal Leaf's accounting department is located on the first floor with direct access to their computer area which is located in the original structure. The second floor is leased to Marcellus Wright, Cox & Ladd, Architects, and provides the space for Universal Leaf's future expansion. Attached to the east side of the original structure the addition extends toward the east edge of the property, where the grade slopes sharply down toward the new Powhite Parkway.

The exterior building materials are cast stone, rubbed concrete, and tinted glass. The glazing system is designed to

(Continued on page 67)



(Photo by Lawrence S. Williams, Inc.)

BEN R. JOHNS, JR., AIA — ARCHITECT

FOREST HILL POST OFFICE

KENNETH HIGGINS, LANDSCAPE ARCHITECT

SIMMONS ASSOCIATES

Consulting Engineer, Mechanical/Electrical

C. T. TOMLIN

Consulting Engineer, Structural

HENDRICK CONSTRUCTION CO., INC.

General Contractor

THE PRIMARY planning objective for the Forest Hill Station Post Office was to create a clear separation of public service areas and employee support spaces - both of which maintain a strong functional relationship to the work room. Linear arrangements of these public service areas and employee support spaces were thus wrapped around the common work room, and this concept is articulated three-dimensionally through separate form expression for each of these major zones. Furthermore, they are divided from one another by walls running along the points of juncture.

Built amidst a predominately low scale surrounding context of professional office and residential structures, the post office reiterates this context through the forms chosen and through the use of rather quiet buff and brown tones. Material selections also further emphasize the plan delineations. The separating wall is striated concrete block rising above each of the zones which are skinned in a complementing ribbed concrete block.

This outer skin wall folds back at the point where the employee support spaces meet the public service areas, accentuating the planning concept. Security walls become extensions of the building helping tie it to the land.

The psychological need for a positive and stimulating work environment was of prime importance in the design of the work room. Thus a continuous strip window along the north wall provides a view toward a backdrop of trees, and a bold color scheme adds a touch of brightness to the space. Warm, friendly tones, accented by reds, oranges, and yellows provide the general color scheme throughout the building, and structural and mechanical installations are exposed and painted to create a basic understanding of the buildings' systems.

Hendrick Construction Co., Inc. of Richmond was general contractor and handled foundations, concrete work and carpentry.

Subcontractors & Suppliers
(Richmond firms unless noted)

E. G. Bowles Co., excavating, sodding, seeding, etc. & paving contractor;

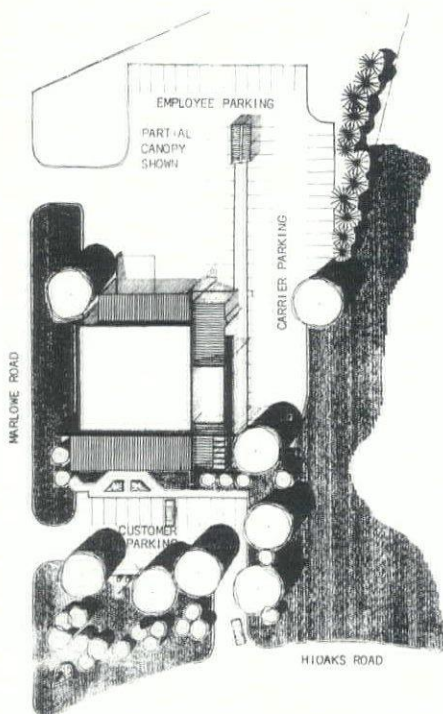
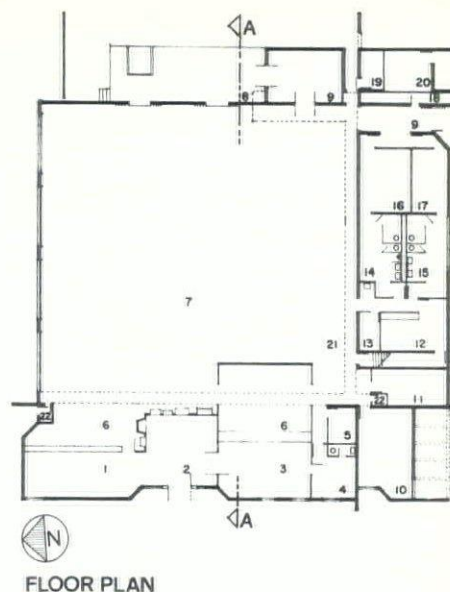


Cherotuck Nurseries, landscaping & landscaping contractor; Bethlehem Steel Corp., reinforcing; Lone Star Industries, Inc., concrete supplier; W. B. Davis Masonry, Inc., masonry contractor; Concrete Structures, Inc., masonry supplier; Browning Steel Co., steel supplier, steel erection, steel joists, steel roof deck, roof deck (other), steel grating, miscellaneous metal & hand-rails; Miller Manufacturing Co., Inc., millwork & wood doors; and Commercial Caulking Co., caulking.

Also, Johns-Manville Co., roof insulation; Ar-Wall, metal roofing; Dow Chemical USA, wall insulation & foundation insulation; Binswanger Glass Co., glass, glazing contractor, windows & storefront; J. S. Archer Co., Inc., metal doors & frames; Seaboard Building Supply Co., Virginia Beach, hardware supplier; F. Richard Wilton, Jr., Inc., plaster contractor & gypsum board contractor; Oliva & Lazzuri, Inc., ceramic tile; Consolidated Tile Co., acoustical treatment, resilient tile, carpet & special flooring; and W. W. Nash & Sons, Inc., painting contractor, special wall finish & wall covering.

Others were: M. A. Bruder & Sons, Inc., paint supplier/manufacturer; David Rose Co./J. S. Archer Co., Inc., specialties; Hyman Mechanical Corp., plumbing fixture supplier, plumbing/heating/ventilating/air conditioning contractor; General Electric Supply Co., lighting fixtures & electrical equipment supplier; Brook Hill Construction Corp. of Va., electrical contractor; Homestead Materials Handling Co., lift platform & dock ramp; and Architectural Components, Inc., Rockville, Md., asbestos panels.

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HARRIS, NORMAN, GILES & WALKER

Consulting Engineer, Structural

PHILIP RICHARDSON COMPANY

General Contractor

THOMAS L. WILLIAMS

Photography

THIS TWO-STORY BUILDING is located on a corner lot adjacent to the restored Colonial Williamsburg area and across the street from City Hall. The exterior design was coordinated with, and reviewed by, the local Architectural Review Board to insure compatibility with the surrounding areas. The first floor houses the commercial business office, records office, and plant engineering and the second floor houses testing and assignments.

The building is designed for 20-square foot bays on five foot modules with provisions for lighting and air conditioning in each. The structure is protected steel framing.

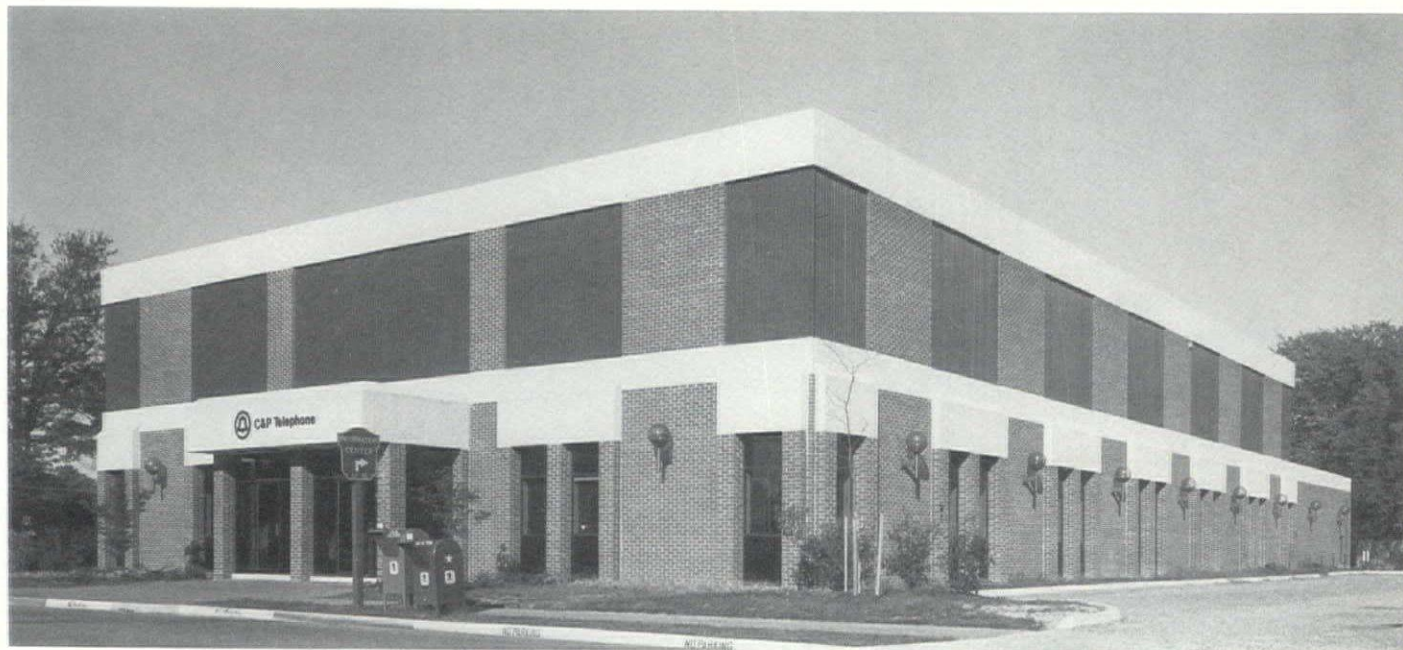
The exterior is reddish-brown brick, off-white cast stone with tan river bed gravel aggregate, bronze anodized aluminum window frames and trim with solar bronze glass, and dark brown aluminum siding on portions of the second story. The equipment screen around the first floor roof area is bronze anodized aluminum.

Parking areas were topped with light brown gravel to help blend in with the surrounding areas. The site was landscaped to coordinate with a local master landscaping plan.

The project was somewhat unusual in that the building was designed around the requirements of the Chesapeake and Potomac Telephone Company, owned and built by the Philip Richardson Company, and leased back to the C & P Telephone Company.

Subcontractors & Suppliers

L. C. Heath Roofing Co., Newport News; Walker & Laberge Co., Newport News; Pompei Tile, Inc., Newport News; John H. Hampshire, Inc., Richmond; Colonial Maintenance Service, Williamsburg; Reynolds Aluminum Supply Co., Richmond; and Door Engineering, Norfolk.



THE VVKR PARTNERSHIP — ARCHITECT/ENGINEER

UNITED VIRGINIA BANK, N.A. — ROANOKE

Interior Design BY THE ARCHITECT

THE HYMAN DOYLE & RUSSELL CO.

General Contractor

E. ALAN MCGEE

Photography

FOR YEARS, the city of Roanoke lay nestled in a valley, ringed by its mountain skyline. But recently, Roanoke has developed a manmade skyline of its own, as highrise office buildings signal the revitalization of its downtown.

One of those highrises is the 14-story United Virginia Bank building, a 150,000 square foot reflection of the client's belief that "business is most efficiently conducted in a central business district." The owner, United Virginia Bankshares, Inc. of Richmond, wanted quarters for its Roanoke bank, United Virginia Bank, and additional office rental space. The building should be designed, architects Vosbeck Vosbeck Kendrick Redinger were told, to reflect the forward-looking image of the bank and to enhance and brighten the surrounding business district.

The bank now occupies the first, mezzanine, and second floors of the building. Street level windows, set under a columned arcade, give pedestrians

a view into the bank lobby, a colorful, inviting space where day-to-day banking business is conducted. A dramatic concrete spiral staircase provides a focal point for the lobby and invites patrons to enter the mezzanine level, where bank officers are quartered.

The rental spaces have been designed for maximum tenant flexibility. A central core houses high speed elevators, mechanical systems, restrooms, and stairways (stairways are pressurized for fire safety and the building is fully sprinklered). The remainder of the space is broken only by four columns and a service elevator, giving tenants an almost endless number of space combinations and total flexibility in locating electrical outlets and telephones.

The building is constructed of textured precast concrete spandrels and solar gray thermo-pane windows on a reinforced concrete frame. Vertical blinds give tenants further light and



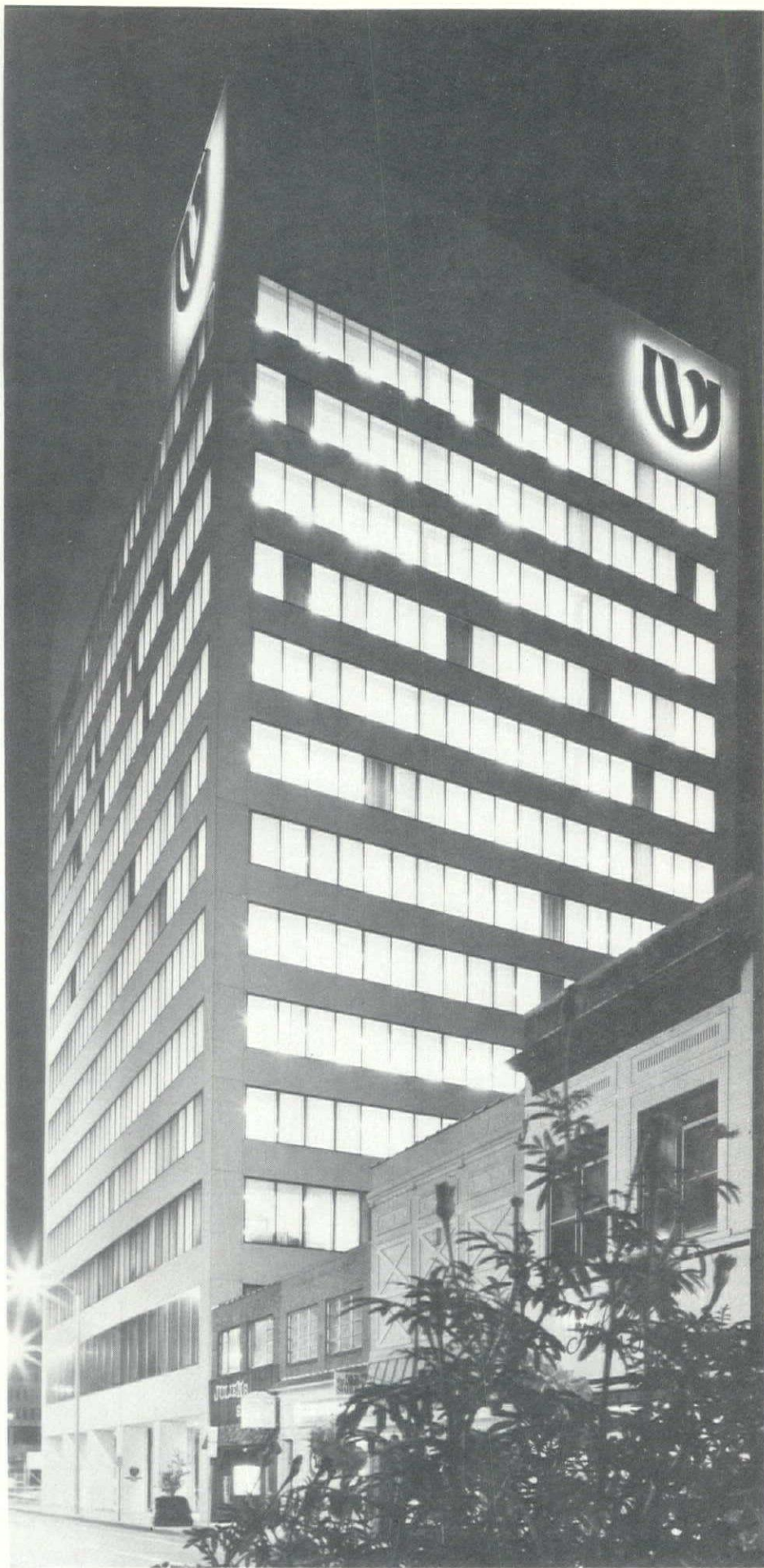
heat control; sound control is provided in part by acoustical tile ceilings and full carpeting. High velocity systems supply heated and cooled air through diffusers in the ceiling-mounted fluorescent lighting fixtures. Electric radiation units below the windows furnish heat.

Kenneth L. Motley, head of the architectural firm's Roanoke office (VVKR also has offices in Alexandria, Virginia, and University Park, Maryland), was partner in charge of the building, which opened in May 1975. (Coincidentally, the topping out ceremony, July 1, 1974, was also the day the bank celebrated its own birthday.)

The Hyman, Doyle & Russell Company, of Richmond, was general contractor.

Subcontractors & Suppliers (Richmond firms unless noted)

Roanoke Ready Mix Concrete, Roanoke, concrete; Brimar Construction Co., Sharon, Pennsylvania, masonry contractor/supplier; Commercial Roofing & Sheet Metal Co., Cheverly, Maryland, roofing & sheet metal; PPG Industries, Charlotte, North Carolina, windows, window walls & glazing; William S. Alt & Sons, Arlington, painting; O'Ferrall, Inc., acoustical; C. J. Coakley Co., Merrifield, plaster & drywall; Peter Bratti Associates, Braintree, Massachusetts, ceramic tile; The Howard P. Foley Co., lighting fixtures & electrical work; The Poole & Kent Corp., air conditioning, heating & ventilating; Otis Elevator Co., elevator; Skyline Paint & Hardware, Roanoke, hardware; Mahone, Inc., Roanoke, rolling grille; Buckingham-Virginia Slate Co., slate; Marietta Concrete Co., Marietta, Ohio, precast; Allison Seymour, Inc., Seattle, Washington, floor mat; and, James A. Cassidy Co., Beltsville, Maryland, mail chute.



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EDWARD R. WALL & DONALD K. MACCUBBIN

Photography

THIS PROJECT IS the first recreational complex in one of the rapidly growing cities on the East Coast. This presented a challenge to produce a complete prototype considered adequate to serve a population segment of 50,000 people with other centers to follow as needed. The building contains therefore a balance of activity, age, utility and service touching all life interests for community recreation.

The building simply defines itself in two natures. The first nature, the creative, passive nature which allows for drama, music, dance and public assembly in an intimate thrust stage theater.

Wings on each side of the theater are specific space designations for recreation programs. These include painting, sculpture, ceramics and other related artcrafts on one side of the theater. On the opposite side of the theater are specific rooms devoted to the needs of the senior citizens and handicapped individuals. Behind the theater there are diverse public meeting rooms which co-relate to kitchen facilities for both instruction and banquet needs. All of this space is one level without entry stair limitation and is surrounded with a half-height exterior wall berm to diminish energy needs for heating and cooling.

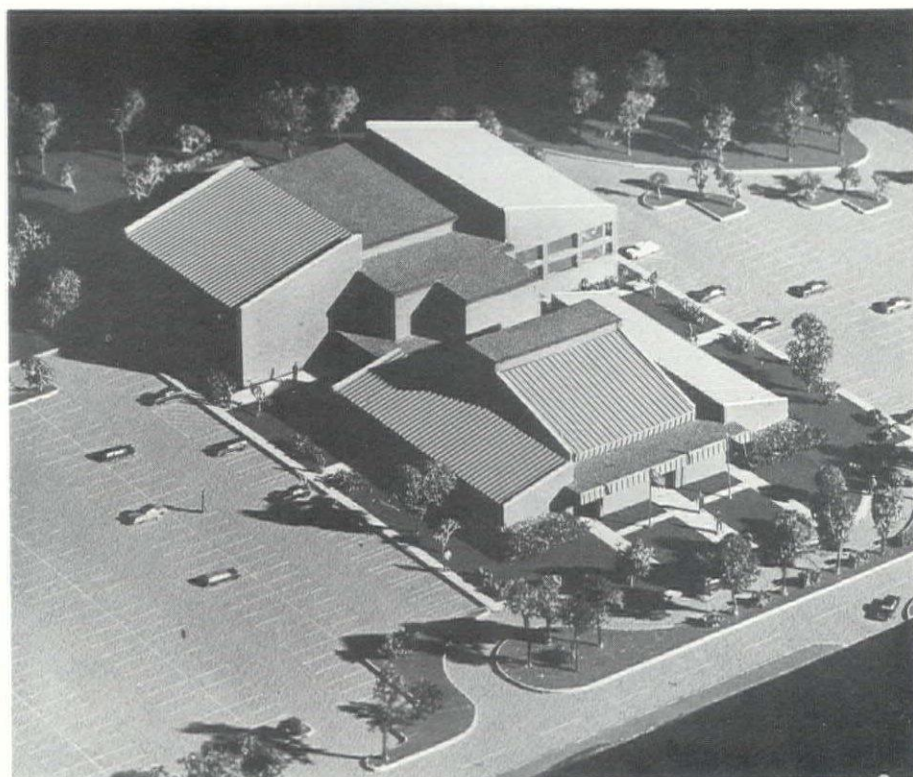
The second nature of the building is the physical nature and has a Teen/Youth Center separate from the previously stated Adult/Creative Area. The teen center is diverse and self-contained with core supervisory control.

Vertical connection in the physical activity area is by means of a main ramp concourse surrounding a public display and exhibit space. The second level contains a gymnasium with 400 seats and a natatorium with over 400 seats connected by locker facilities serving each function. The seating and exercise rooms are on a third level by a continuation of the main ramp. First floor level of the physical portion contains twin bowling lanes and an activity pavilion devoted entirely to the needs of the elderly and the handicapped for therapy, instructions and enjoyment.

General administration of the building is controlled from staff offices located in the physical center of the building configuration. Restroom placement allows for controlled use within the building. Cut-off for inactive spaces may be easily regulated, whereby certain wings may be secured when inactive.

The entire building design concept provides for total accessibility to citizens irrespective of age or handicap limitations whether for participation or spectating.

The Virginia Beach Community Recreation Building was originally conceived with the objective of providing the City of Virginia Beach with a facility developed with total energy conservation incorporated. The con-



figuration and construction of a building greatly contributes to the reduction in its energy usage. In addition, earth berms were designed to protect the lower portions of the outside walls from the heat and cold of different seasons.

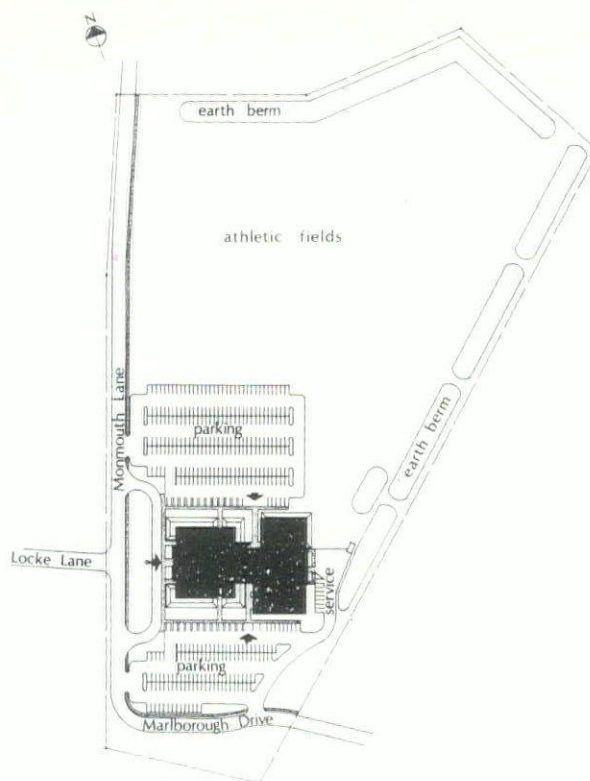
After the development of the preliminary drawings, the consulting engineers for the project proceeded with an economic and system comparative analysis utilizing available computer services to analyze various types of heating, ventilating and air conditioning systems. This program produced a comparative analysis of the initial and operating costs of various types of air conditioning systems that could be used for the building. Factors that had to be considered were, that portions of the building were heated and air conditioned while other portions of the building were only heated. Large quantities of ventilation air had to be provided for the pool area and domestic water heating and pool water heating would be prime factors in energy usage.

As a result of this extensive study and investigation, a closed circuit water to air incremental heat pump system was selected for the portions of the building requiring heating and cooling. The remaining areas of the building requiring heating only are to be heated by a series of heating and ventilating units with water coils utilizing hot water from the boiler as a source of energy.

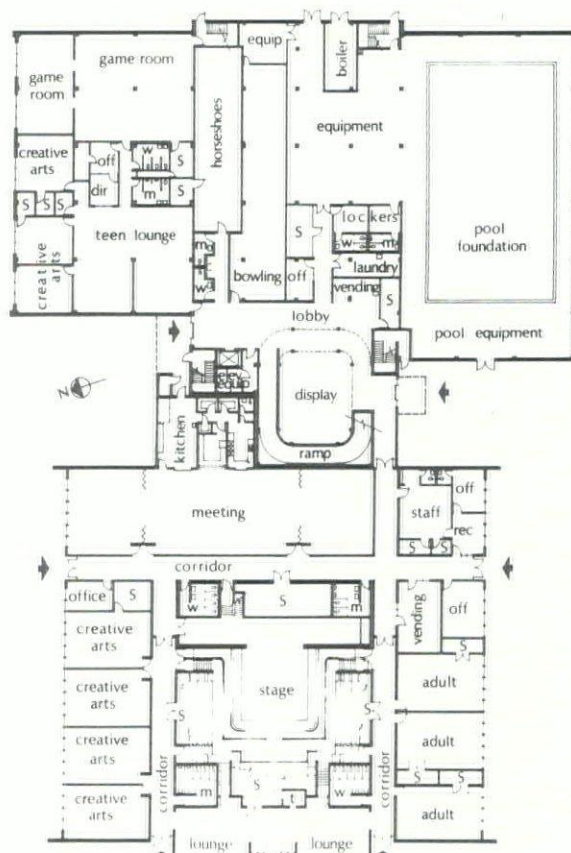
Spaces housing swimming pools require a great deal of ventilation air. Normally, this air is heated and introduced at a high location in the space. After circulating through the space, it is then exhausted directly to the outside. The swimming pool area in this building is heated and ventilated by a thermal recovery unit which transfers the heat from the warm moist air being exhausted to the fresh outside air that is being introduced into the space. This is accomplished by control dampers and heat transfer pipes.

Land acquisition is sufficient to allow outdoor activities in the Community Center site for softball fields, tennis, picnic and playground facilities for year-round diverse public use.

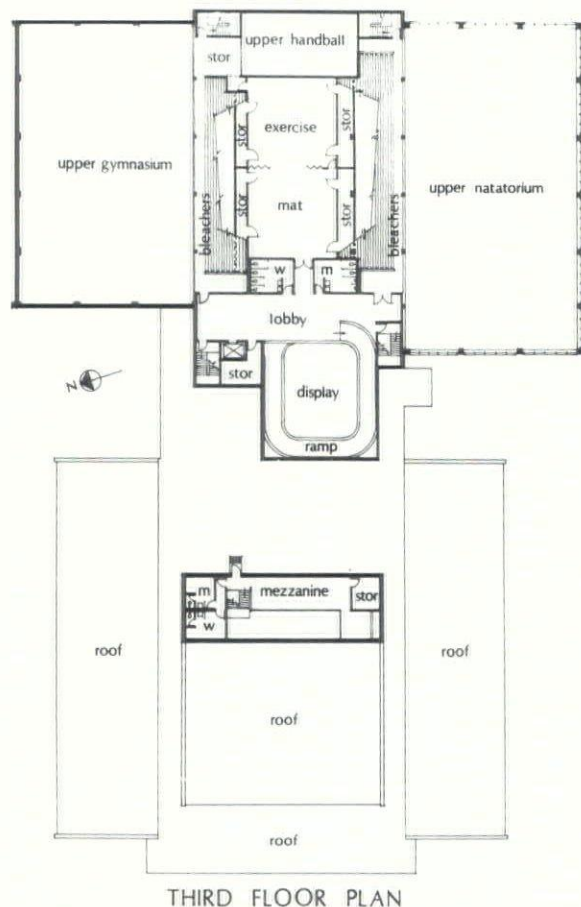
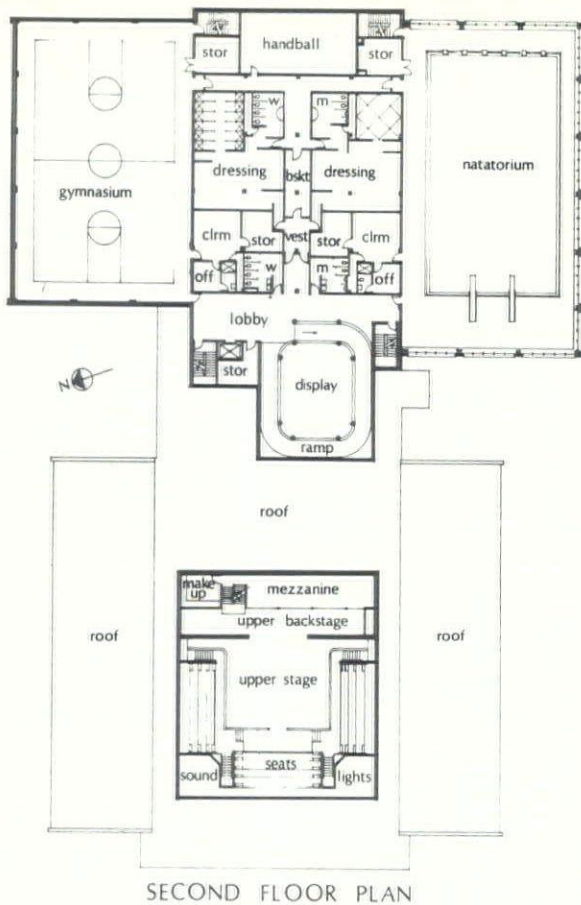
W.B. Meredith II, Inc. of Norfolk was general contractor and handled



SITE PLAN



FIRST FLOOR PLAN



foundations, concrete work, miscellaneous metal and carpentry.

Subcontractors & Suppliers (Norfolk Firms unless noted)

Johnson & Joliff, Inc., Va. Beach, excavating; Asphalt Roads & Materials Co., Inc., Va. Beach, paving contractor; Hall-Hodges Co., Inc., reinforcing; Lone Star Industries, Inc., concrete supplier; W. T. Stowe, Inc., Portsmouth, masonry contractor & wall insulation; Lawrenceville Brick, Lawrenceville, masonry supplier; Flamingo, Riverton, mortar; Economy Cast Stone Co., Richmond, stonework contractor/supplier; Barnum-Bruns Iron Works, Inc., Chesapeake, steel supplier; Goodfellow, Inc., steel erection; Guille Steel Co., steel joists & steel roof deck; Warner Moore Co., Inc., cementitious roof deck; and, Burton Lumber Corp., Chesapeake, millwork, cabinets & wood doors.

Also, J. H. Steen, Portsmouth, Thoroseal waterproofing & painting contractor; Herrin Bros. Erection Co., Portsmouth, caulking; Stevens Roofing Corp., built-up roof, other roofing & roof insulation; Walker & Laberge Co., Inc., glass, glazing contractor, windows, window wall & storefront; Seaboard Building Supply Co., Inc., metal doors & frames & hardware supplier; Chesapeake Partition, Inc., plaster contractor; Bay Tile Corp., Portsmouth, ceramic tile, structural (glazed) tile & terrazzo; L. R. Brittingham, acoustical treatment; and, Ferrell Linoleum & Tile Co., Inc., resilient tile.

And, Martin Surfacing, composition flooring; Dages & Co., Richmond, paint supplier; Southern Coatings & Chemicals, South Carolina, paint manufacturer; Meredith Swimming Pool Enterprises, Virginia Beach, swimming pool; L. F. Chiselbrook Elevators, elevator; Atlantic Sprinkler Co., sprinkler contractor; George G. Lee Co., Inc., plumbing fixture supplier; K & L Plumbing & Heating Co., plumbing contractor; Pittman Mechanical Co., heating/ventilating/air conditioning contractor; Noland Co., lighting fixtures & electrical equipment supplier; and Continental Contracting, Inc., Va. Beach, electrical contractor.

The City of Va. Beach handled sodding, seeding, etc., landscaping & landscaping work.

WILEY AND WILSON, INC. — ARCHITECT/ENGINEER

GOOCHLAND COUNTY PUBLIC HEALTH CENTER

W. M. WALDER, JR., INC.

General Contractor

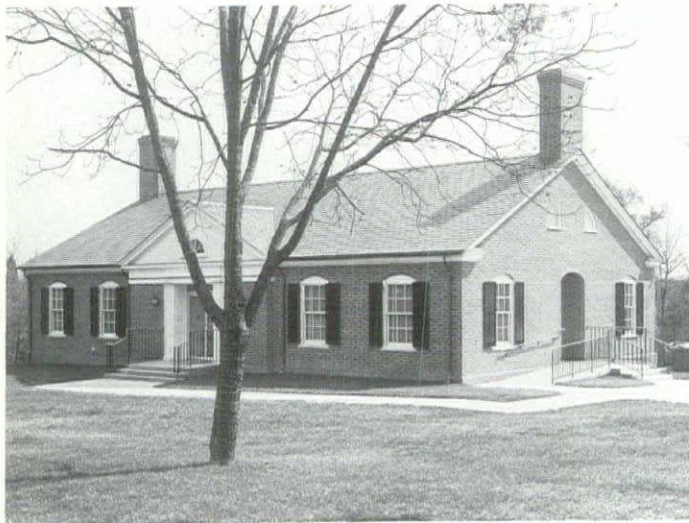
"AL" COTHRAN STUDIO

Photography

GOOCHLAND COUNTY, VIRGINIA has a sense of history matched by few other areas. Its graceful old buildings have a proud heritage. The architecture itself exudes the rich aura of past years.

However, Goochland County ran into a problem in trying to preserve the best of yesterday while meeting the tough demands of a modern Health Center. For assistance, the County called in a team of specialists — Wiley & Wilson architects, engineers, and planners.

The new public health facility was badly needed to provide medical and dental services for the indigent of Goochland



County. Its function was strictly utilitarian: to examine and treat an average of 20 patients a day.

The location of the new Health Center was based largely upon a study by Wiley & Wilson and substantiated by planners from the University of Virginia in Charlottesville. This facility would be the first building of three in a courtyard complex at the rear of the old Goochland County Courthouse. The new building had to harmonize with this old, but outstanding model of Colonial Architecture.

To give Goochland County both a modern health facility and a traditional building, an Eighteenth Century shell was designed for the Twentieth Century facility. On the exterior, the new Health Center is quite similar in materials and style to the 150-year old Courthouse. Achieving this similarity required hours of research, numerous photographs, and a careful comparison of details. Eight different brick samples were evaluated, and four types were assembled in mortared panels to make certain the appearance, color, and texture of both brick and mortar were proper.

Inside the new public health building, the story is dramatically different. From a waiting room that does double duty as a group training area, to the modern tile floors and streamlined molding, everything is designed for efficiency.

On the main floor are offices for the Director, the County Nurses, Sanitarians, and clerks who maintain county medical records. On the other side are three treatment rooms and a consultation room. The structure was designed to accommodate a mobile X-ray unit which can pull up, park, and plug into all utilities.

The County Dentist is on the lower level, which is also ground level with nearby parking. Here, there is a small but complete dental X-ray facility and darkroom. Expansion plans call for the Sanitarian to move into this area when space for additional medical services is required upstairs.

Although a relatively small building by most architectural standards, the Goochland County Public Health Center offered some interesting and intriguing challenges. The requirements of a modern medical facility are much the same regardless of size. Wiley & Wilson's ability to house this facility in a replica of antiquity has attracted the attention of other prospects with a similar desire to preserve a particular architectural style.

W. M. Walder, Jr., Inc. of Richmond was general contractor and handled excavating, carpentry and insulation materials and work.

Subcontractors & Suppliers
(Richmond firms unless noted)

Lee Hy Paving, paving contractor; Southern Brick Contractors,



Contractors, Inc., cinder or concrete blocks, concrete contractor, brick & bricklaying; Lone Star Industries, Inc., ready mixed cement or concrete; Tidewater Quarries, sand and gravel; Browning Steel Co., iron & steel materials & work; Fendley Floor & Ceiling Co., flooring & acoustical ceiling materials & installation; TMS Millwork, millwork & cabinets; N. W. Martin & Bros., Inc., roofing materials, other roofing, gutters & downspouts & sheet metal; Binswanger Glass Co., Inc., glass & glass work; Architectural Hardware, Inc., steel windows, doors & frames; Paris Shade Shoppe, Inc., venetian blinds or shades; Tom Jones Hardware, hardware; A. Bertozzi, Inc., wall board; General Tile & Marble Co., Inc., ceramic tile; Tri-County Painting & Decorating, Inc., painting contractor/supplier; Carter Sand & Gravel Co., Inc., septic tanks; Bradley Mechanical Co., Chesterfield, plumbing fixture supplier, plumbing contractor, heating equipment & air conditioning contractor; and, Union Electric Co., Inc., electric fixtures & wiring & electrical contractor.

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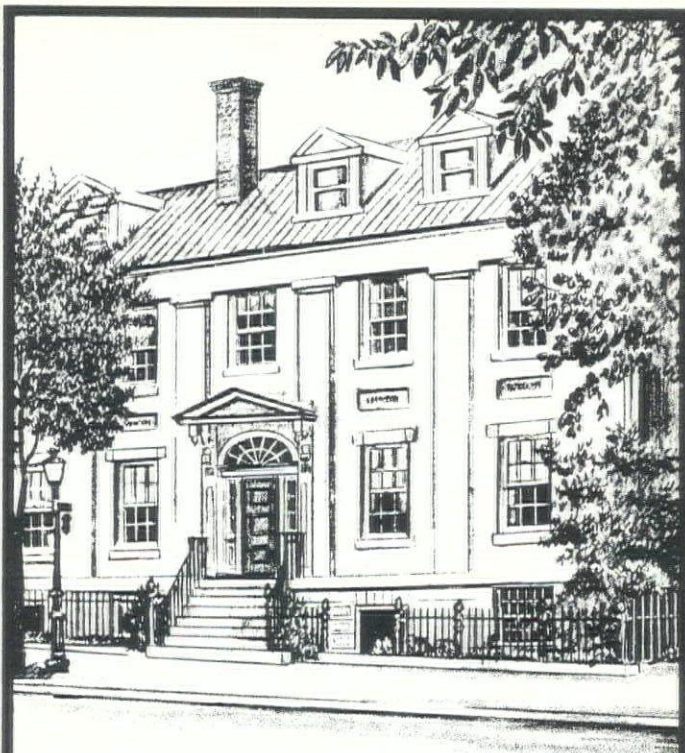
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NORTHWEST NAVAL COMMUNICATION STATION, CHESAPEAKE

CHANDLER AND GIBSON, Consulting Engineer, Mechanical/Electrical

JOE D. GLENN, JR. AND ASSOCIATES, P.C., Consulting Engineer, Structural

LANGLEY, McDONALD AND OVERMAN, Consulting Engineer, Civil

EDWARD M. HOLBROOK, Interior Design

G. R. DAVIS AND SONS, INC., General Contractor

LASZLO ARANYI, Photography

NORTHWEST NAVAL Communication Station may not be as remote as the Arctic Circle, but still, the man or family stationed there does not have a great deal of opportunity for entertainment.

Northwest is actually part of Chesapeake, Virginia, within walking distance of the North Carolina State line, and about 45 minutes driving time from downtown Norfolk.

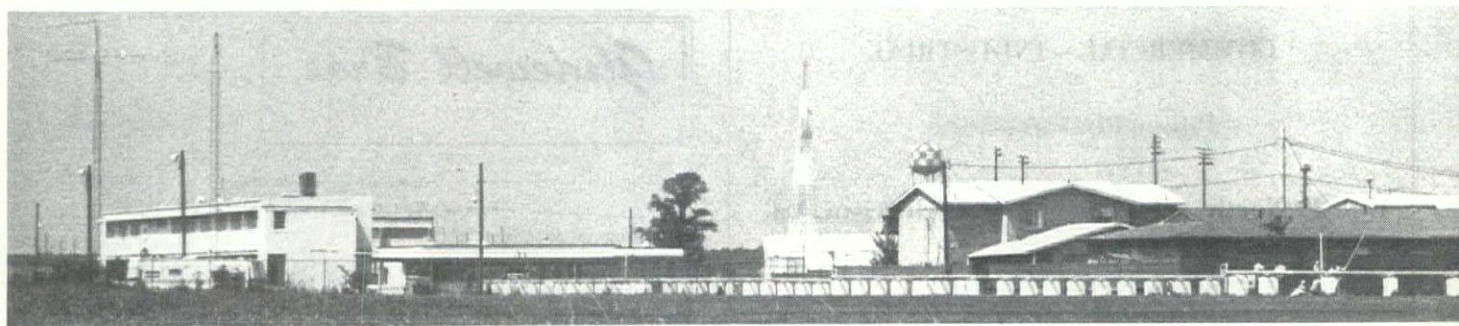
There was a dire need to establish a multi-function club at this location. This club was to accommodate the rather small daily clientele and the occasional overflow crowd for special events. This was the reason for subdividing the dining room with a folding partition into two segments. As it turned out, the smaller portion is used as a luncheonette during the day.

The bar was located so as to serve as an overflow area from the dining room. The spacious entry hall can be used to accommodate some people and allows a view to the stage.

The building was constructed with masonry bearing exterior walls and steel roof structure. The brick exterior is accented with stucco dividers and

stucco fascia. The entrance area features a large canopy for protection in case of inclement weather.

Most of the club is carpeted except for ceramic tile in the toilets and quarry tile in the kitchen. To maintain a quiet atmosphere, all ceilings are of acoustical material. The lighting was





curbs; W. T. Stowe, Inc., masonry contractor; A. D. Stowe, Inc., plaster/gypsum board contractor.

Virginia Beach firms were: Hanna Garden Center, Inc., sodding, seeding, etc.; and Fett Roofing and Sheet Metal Co., Inc., roofing & flashing.

And, from Norfolk were; Walker & Laberge Co., Inc., glass & interior glass and glazing contractor; Door Engineering Corp., metal doors & frames and hardware; Grover L. White, Inc., ceramic tile & resilient tile; Atlantic Equipment Corp. walk-in refrigerator & freezer; and, Electrical Mechanical Specialists Co., plumbing/heating/air conditioning/electrical contractor.

Others were: Barnum-Bruns Iron Works, Inc., Chesapeake, steel erection; Miller Manufacturing Co., Richmond, millwork; and, Brownson Equipment Co., Inc., Richmond, fabric covered folding door.

designed to accommodate the flexible use of the spaces.

G.R. Davis and Sons, Inc. of Portsmouth was general contractor.

Subcontractors & Suppliers

From Portsmouth were: Portsmouth Paving Corp., paving contractor &



WILEY AND WILSON, INC. — ARCHITECT/ENGINEER

THOMASVILLE FURNITURE INDUSTRIES

MANUFACTURING PLANT

D. R. ALLEN AND SON, INC., Prime Contractor

ENGLISH CONSTRUCTION CO., INC., General Contractor

IN A BUILDING that encompasses nearly ten acres, the one thing there is more of than almost anything else is exterior wall. This is certainly true of the new Thomasville Furniture Industries' manufacturing plant at Appomattox, Virginia. The wall of this mammoth facility that faces U.S. 460 is over 900 feet long and 28 feet high. Another wall, behind which there is housed nearly half a million cubic feet of open storage space, is 200 feet long and 60 feet high.

Because of their quantity, visibility, and importance, the exterior walls were one of Thomasville's primary concerns. Nine separate criteria were established for material selection and Thomasville requested an in-depth evaluation of different types of wall systems.

The project was already on an accelerated schedule, so the first criterion was: wall material must be readily available. The material also had to be one that would lend itself to rapid construction.

Thomasville is a premier name in quality furniture and the image projected by their building had to be con-

sistent with the image of their products. Therefore, the outward appearance of the new plant was critical, and a second criterion was that its exterior walls present a simple, well-ordered appearance.

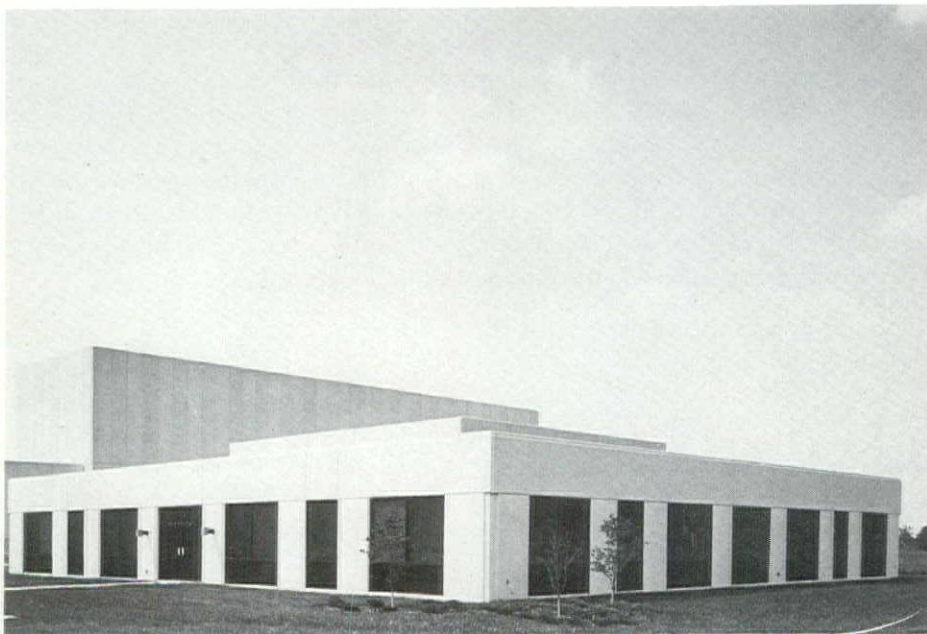
The next six criteria are almost standard in any modern manufacturing facility. The walls had to offer good fire resistance, good insulating value, high resistance to impact, durability, and low maintenance, all at the lowest possible construction cost.

The final criterion had to do with Thomasville's optimistic view of their future: the walls should be capable of being relocated easily for plant expansion.

Wiley & Wilson's engineers and architects studied several different types of wall systems and decided on a solution relatively new to this area of the country: tilt-up reinforced concrete panels. This system met or exceeded all requirements and resulted in a financial savings of approximately 20% compared to other alternatives.

The panels were cast on-site on concrete casting beds. They were 8 inches thick, 10 feet wide, and varied in length from 28 to 40 feet. Before pouring, lift inserts and anchoring devices were secured in place and blockouts were formed for openings. A stack-type casting method was employed in which panels were cast six high with a bond breaker coating between panels.

The concrete used was lightweight (115 lbs./cu. ft.) with a 28-day strength of 3500 psi. Air entrainment was called for along with a water-reducing, set controlling admixture. Reinforcing



wide and is beveled from 8 inches thick to 12 inches. In placing the panels, the 12-inch sides were always next to each other and the 8-inch sides were also next to each other. This created an undulating effect in the wall that is accentuated by shadows as the sun moves across its white face.

Immediately in front of this wall, utilizing it as a dramatic backdrop is a 10,000 sq. ft. office building. It features large, dark-tinted windows in black anodized frames set into the white concrete. This building is used by designers, administrators, and project engineers and includes a conference room and a lunch room. There is also a 3,100 sq. ft. mechanical equipment building. A total of approximately 140,000 sq. ft. of wall panels was required for all three buildings.

Construction on Thomasville's new
(Continued on page 69)

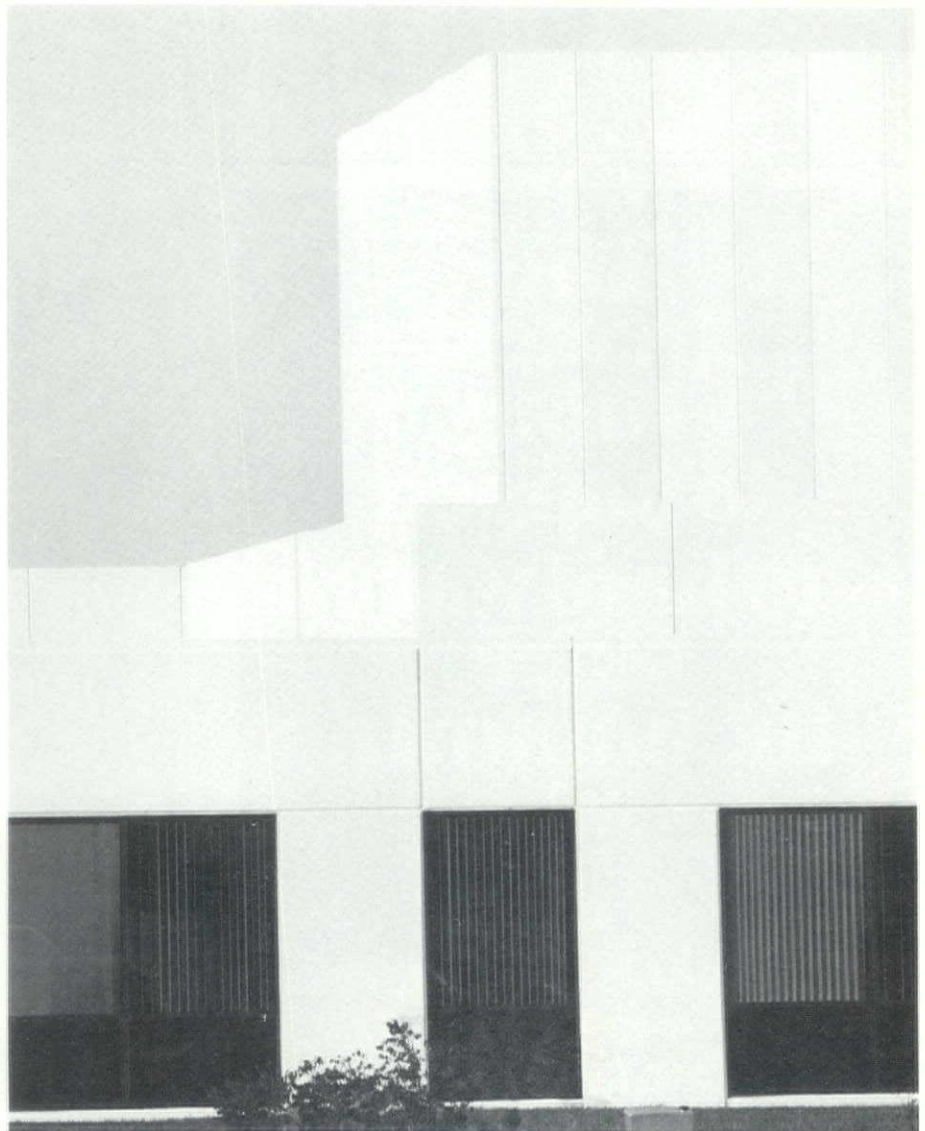
steel was ASTM 615 Grade 40 with stainless steel reinforcing chairs.

When the necessary strength had been reached by curing, each panel was lifted, using two inserts in the edge of one of its long sides, then rotated to a vertical position using inserts in its narrow end.

The panel was next set on previously prepared isolated footings, which were notched on the top to keep it in position. Leveling shims were used to insure that each panel was plumb and level. Inserts in the panel were then welded to the steel frame of the building and panels were grouted in at the footings. When all exterior walls were in place, they were painted white.

Framing in the manufacturing area utilizes steel joists with rolled steel sections integrated into rigid frames in two directions. Roof girders have end-plate moment connections at the columns which are pin-connected at the base. The bottom chord of the steel joists extends to the columns. The joists and columns are designed to sustain loads imposed by rigid frame action. All exterior columns are designed and fabricated for additional framing connections when future plant expansion becomes desirable.

The Thomasville plant is made up of three main structures, all of which utilize exterior walls of tilt-up concrete panels. The main building is the 424,000 sq. ft. manufacturing plant and warehouse. Its most significant architectural feature is a 60-foot high front wall created by placing one 30-foot panel on top of another. Each of the panels in this wall section is 5 feet





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COLEMAN & WOOD, INC.

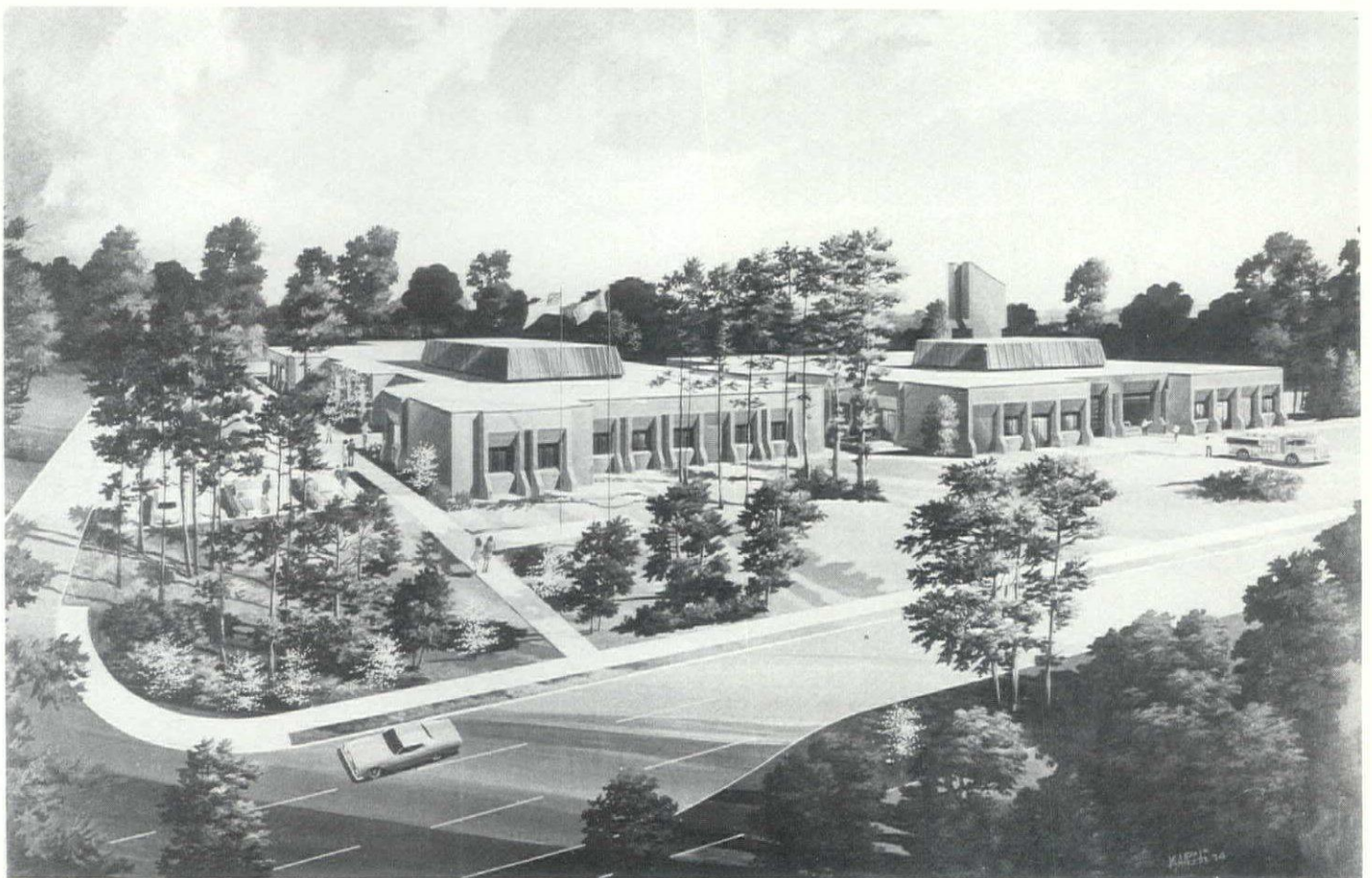
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PLANNING FOR Fairfax County's West Springfield Police/Fire/Governmental Center began in 1972, as an element of the County's "Government Decentralization Study." It is one of several facilities proposed for the Capital Improvement Program, establishing a program and concept to extend government services to the county residents, and at the same time, replace inadequate police facilities, and also, extending fire and rescue service facility needs throughout Fairfax County, in a

network of "five minute response time" locations, within standards established by the insurance services offices.

After analysis of programming data of the various County Governmental Using Agencies, studies of site use and flow were organized and defined. This facility would be the first attempt by Fairfax County to house Police and Fire Departments jointly in a single facility.

In addition to Police and Fire Departments, included in the program were the Governmental Agencies with the most public contact offering com-



munity service. Flexible space allocations were assigned to Health and Social Services, Assessments, Voter Registration, School Board, Recreation, Safety, Inspection Services and District Supervisor.

Design criteria called for a "low keyed structure with a compatible profile" blending with the neighborhood environment, stressing energy and ecological conservation.

Contracts for construction were awarded in October 1974 and the facility was completed and occupied in November 1975.

Coleman and Wood, Inc., of Silver Spring, Maryland, was general contractor and handled sodding, seeding, etc., foundations, stonework, carpentry, structural wood, waterproofing, wall insulation and foundation insulation.

Subcontractors & Suppliers

Maryland firms were: Arber Construction, Wheaton, excavating; Dietrich Brothers, Inc., Silver Spring, steel supplier; C & S Construction Products, Inc., Bel Air, steel joists, steel roof deck & other roof deck; W & W Fabrication, La Plata, steel grating, miscellaneous metal & handrails;

Washington Woodworking Co., Landover, millwork, paneling, cabinets & Eggers wood doors; R. D. Bean, Inc., Glen Dale, built-up roof, other roofing, roof insulation & sheet metal; Hardware Center, Inc., Capitol Heights, hardware supplier; T. M. Woodall, Inc., Takoma Park, plaster / gypsum board contractor & acoustical treatment; Boatman & Magnani, Inc., Capitol Heights, ceramic tile & terrazzo; Leonardo Decorators, Silver Spring, painting contractor (Fuller O'Brien, paint supplier/manufacturer) & wall covering; and, Long's Fence Co., Capitol Heights, fence.

And, from Virginia were: Southern Produce & Nursery Co., Alexandria, landscaping & landscaping contractor; Sam Finley, Inc., Chantilly, paving contractor; Concrete Plank, N. Arlington, concrete contractor & prestressed concrete; Trowbridge Steel Co., Leesburg, reinforcing; Virginia Concrete Co., Springfield, concrete supplier; Goins Enterprises, Alexandria, masonry contractor & mortar; Bill Butts, Inc., Fairfax, steel erection; Wilcox Caulking Corp., Lorton, caulking; Woodbridge Glass Co., Woodbridge, glass, glazing contractor & storefront; American Steel Products Corp., Woodbridge, metal doors & frames; Roanoke Engineering Sales Corp., Inc., Richmond, windows; Marty's Floor Covering, Alexandria, resilient tile; Roanoke Iron & Bridge Works, Inc., Roanoke, prison equipment; BACO Manufacturing Co., Springfield, sprinkler contractor, plumbing fixture supplier, plumbing/heating/ventilating/air conditioning contractor; and L. T. Souder, Inc., McLean, lighting fixtures/electrical equipment supplier & electrical contractor.

Others were: Mt. Vernon Clay Products Co., Washington, D.C., masonry supplier; Lee's Carpet, carpet; Onan, generator; Lyon Metal Products, Inc., Aurora, Illinois, lockers; Lamb Seal & Stencil Co., Inc., plastic signs; Colite Industries, aluminum letters; Morgan Francis Co., flagpoles; Overhead Door Co., uplift & sliding doors; Modern School Equipment, chalk & tack boards; and Greensteel, Inc., Dixonville, Pennsylvania, display case.

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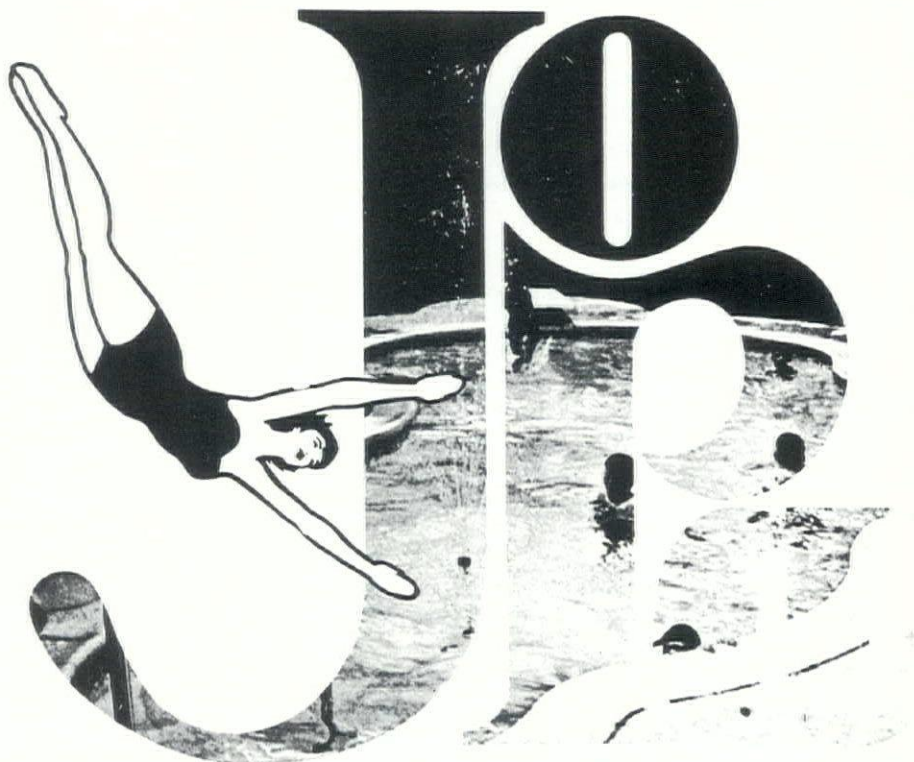
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FRANK JONES-ALLAN DENNY IVIE, ASSOCIATES, INC.

Interior Decorator

JACK R. LAMB, General Contractor

ROBERT E. TROXELL, Photography

EARLY IN 1972 Mr. and Mrs. Philip R. Hirsh began the development of an intimate shopping complex which was to become known as Gristmill Square. At that time the building consisted of an old mill, a hardware store and a shell of a barn at the rear of the property. The mill and the hardware store were in operation when the property was purchased.

The program called for a restaurant

and as many shops as possible (five) within the narrow limits between the property lines.

The mill structure was in good condition and was easily adapted to its present use as a restaurant with its bright and efficient kitchens being installed in the grain storage shed.

The hardware store was increased in length and, after major structural changes and general remodeling, the

first floor area became two specialty shops and the second floor became a two bedroom apartment.

The space between this building and the barn (now a general store) was very restricted and these restrictions dictated the area available for use while keeping as much open space as possible between the various elements. The circular building was introduced to help turn the corner formed by the different





angles of the existing buildings (see large photo).

The materials used throughout this project are similar to those used in late Eighteenth Century when Warm Springs first began its role as an active community.

Jack R. Lamb, of McDowell, Virginia, was general contractor.

Subcontractors & Suppliers
(Staunton firms unless noted)

Superior Ready Mixed Corp., Covington, concrete supplier; Augusta Block, Inc., masonry supplier; Braden & Van Fossen, miscellaneous metal; Holsinger Lumber Co., Inc., millwork; Bartley Bros., Roofing Contractors, Covington, roofing & air conditioning contractor; Martin Hardware Co., Inc., Charlottesville, hardware supplier; Homer L. Yount, plaster contractor; Standard Tile Co., Inc., ceramic tile; Staunton Paint & Wallpaper Co., Inc., paint supplier; Augusta Sheet Metal Corp., plumbing contractor; Piedmont Electric Supply Corp., lighting fixtures supplier; and, E. Darwin King, Monterey, electrical contractor.

MOSELEY-HENING ASSOCIATES, INC. — ARCHITECT

CRATER JUVENILE DETENTION HOME

WILLIAM G. BRANDT, JR. & ASSOCIATES, INC.

Consulting Engineer, Mechanical/Electrical

ALVIN W. DUNBAR

Consulting Engineer, Structural

Interior Design BY THE ARCHITECT

KENBRIDGE CONSTRUCTION CO., INC.

General Contractor

THE CRATER Detention Home Commission is now serving the Counties of Dinwiddie, Prince George, Surry, and Sussex and the Cities of Emporia, Hopewell, and Petersburg with the newest juvenile detention home in Virginia. This facility incorporates the latest thinking of the Department of Corrections and the Division of Justice and Crime Prevention.

The architect's basic design philosophy, reflected throughout the building, is that a warm, residential-feeling building helps produce an atmosphere which is conducive to rehabilitation. The non-institutional design approach in providing a more

humane environment was instrumental in the building solution.

Approached through a cultivated field, the structure's natural colors and shed roofs reflect the character of the indigenous rural architecture of the area. The exterior is a blend of warm earth colors, soft brown brick, redwood trim, brown asphalt shingles, and large areas of bronze glass. Tight security is provided without the institutional prison appearance formerly associated with detention facilities.

Primary colors are used throughout the interior. All rooms have cathedral ceilings, including the bedrooms.

The building has the following main areas:

1. Boys wing with individual



bedrooms, with a lavatory and water closet in each bedroom, a shower room, and a quiet room for reading and television viewing.

2. Girls wing is identical to the boys wing, and in addition has a laundry room, and a vanity room where girls can learn hair styling and good grooming habits.

3. The area for daily activities is co-educational and consists of a large activity room with clerestory for indoor sports and handcrafts, a spacious dining room which also serves as an additional craft area, and a fully equipped classroom. The activity room has an exterior door opening to a large fenced athletic area.

4. The administrative area is carpeted and has a large public reception room, business and staff offices, counselors' offices, a health clinic, and an admitting office with a private exterior entrance.

5. The kitchen is all electric and is equipped to serve three well balanced meals a day. It has a separate entrance and receiving area.

The structural system of the building consists of masonry bearing walls with precast concrete roof slabs and is of fireproof construction.

Year 'round air conditioning is provided by an all electric system with air cooled condensers. Heating is provided by electric coils in the air conditioning units, supplemented by electric wall radiation.

Kenbridge Construction Co., Inc., of Kenbridge, was general contractor.

Subcontractors & Suppliers

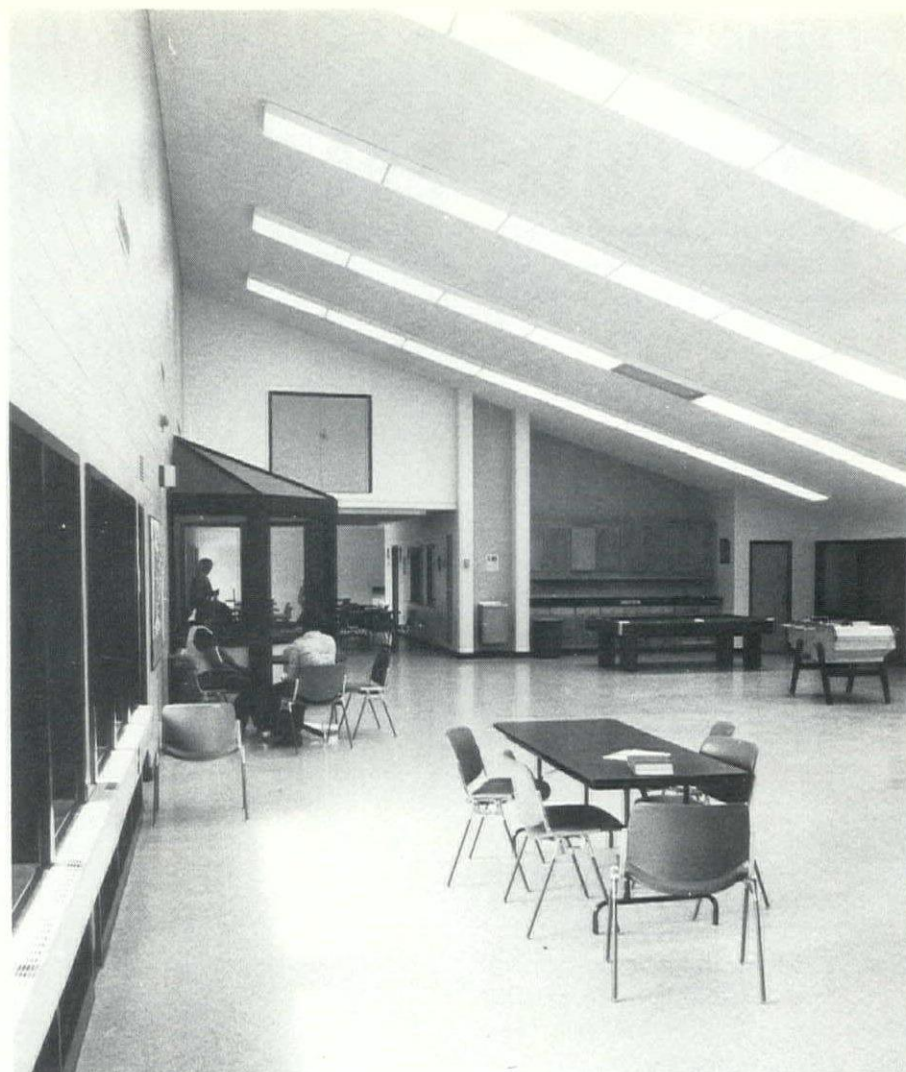
From Richmond were: Redford Brick Co., masonry supplier; SDG Incorporated, windows & glazing; Chapman & Martin, Inc., painting; E. S.

Chappell & Son, Inc., waterproofing; Architectural Hardware, Inc., weatherstripping & hardware; General Tile & Marble Co., Inc., ceramic tile & resilient tile; and, J.S. Archer Co., Inc., interior steel doors & bucks.

Petersburg firms were: Steelco Contractors, Inc., steel; Lone Star Industries, Inc., concrete; Builders Supply Co. of Petersburg, Inc., carpentry & millwork; W. M. Bowman, Inc., lighting fixtures & electrical work; K & M Plumbing & Heating Co., plumbing

fixtures & plumbing/air conditioning/heating/ventilating contractor.

Others were: W. N. Yeatts, Long Island, Va., excavating; Bruce & Holmes, Meredithville, masonry contractor; Strescon Industries, Baltimore, Maryland, prestressed concrete; L. H. Wingfield Roofing & Metal Co., Kenbridge, roofing; Hope's Windows, Silver Spring, Maryland, window walls; and, Virginia Plastering Co., Fredericksburg, plaster.



THE DESIGN COLLABORATIVE, P.C./EDWARD R. ROEHM, AIA ARCHITECT

LAW OFFICE FOR BARROW AND LOWE

USCHI MEDNICK, Interior Design

RICHARD GOMMELL, General Contractor

Photography by THE ARCHITECT

THIS PARTICULAR building has served several owners with several different purposes. It was originally designed as a beach residence, after World War II, and was later turned into a small garden shop. The garden shop went out of business and the building began to deteriorate. An attorney from Virginia Beach who needed more space to relocate his practice was considering buying the property but only if the building could be renovated satisfactorily.

The structure was still basically sound, but needed a new roof, interior partitions, windows, plumbing, mechanical and electrical equipment. The skylights provide most of the lighting requirements and face east to avoid the hot direct afternoon sun. A



new stairwell was designed to give the relatively small space a large open feeling. The entire renovation was completed within a very small budget.

The architect feels this building is a testament to the possibilities of recycled architecture. Many old buildings can continue to be useful structures for a fraction of the cost of new construction, and are often surprisingly adaptable to a variety of uses.

Richard Gommell, of Virginia Beach, was general contractor and mechanical work was handled by Conner Plumbing, also of Virginia Beach.

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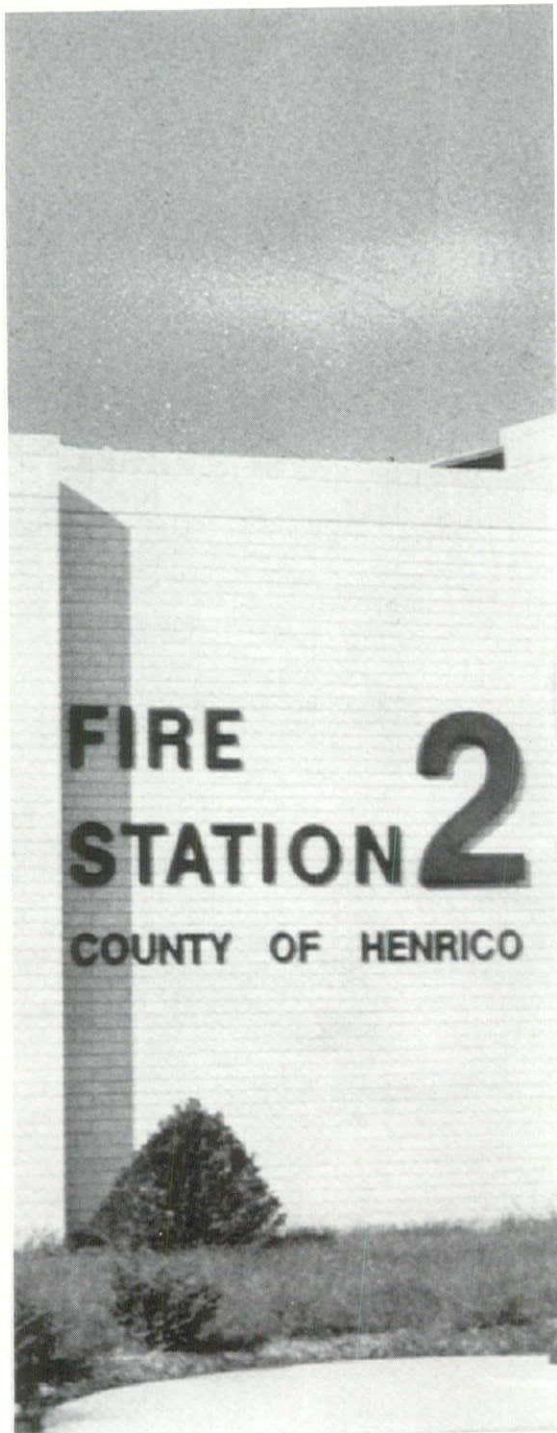
WILEY AND WILSON, INC. — ARCHITECT/ENGINEER

HENRICO COUNTY FIRE STATION #2

W. M. WALDER, JR., INC., General Contractor

"AL" COTHRAN STUDIO, Photography

FIRE STATION NUMBER TWO on Darbytown Road in Richmond's eastern Henrico County is a recent idea in fire station design - with one important exception: instead of the more recent drive-through concept, Fire Station Number Two has reverted to the "old-fashioned" single garage entrance.*



The purpose of the drive-through was to accommodate two engines (a primary engine and a utility vehicle) parked in tandem and an aerial truck parked parallel to the other two. This system works well if both engines are needed. However, when only the primary engine responds, which is frequently the case, it returns to the station and is blocked from its primary position by the utility vehicle. With a single-entrance garage, the returning truck merely backs into its primary position.

There are other benefits to the single entrance. It allows additional wall space for equipment storage and an area to house the hose drying cabinet. The latter eliminates the need for space-wasting drying racks.

The land for the fire station was donated to the County by the A.H. Robins Company with the provision that the station be compatible in appearance with the A.H. Robins Distribution Center on the adjacent lot. This proved to be no problem since Wiley & Wilson, Inc., engineers, architects and planners had designed the Robins facility.

The contemporary style station is constructed of beige brick with dark bronze metal accent panels above the windows and doors. It is a single-story structure containing 7200 sq. ft. On one side of the double truck bay, there are living quarters for eleven firemen. These include a ten-bed dormitory wing, toilet and shower facilities, a kitchen, dayroom, and office and separate quarters for the fire chief. The structure is designed for the addition of similar living quarters on the opposite side of the truck bay.

Visual similarity to local industry, the ability to expand with the needs of this rapidly growing area, and the single-entrance garage concept make this fire station a new standard in suburban firefighting facilities.

The entire project - architectural design, engineering, and construction administration - was handled by Wiley & Wilson personnel from both their Lynchburg and Richmond offices. The general contractor was W.M. Walder, Jr., Inc. of Richmond, Virginia.

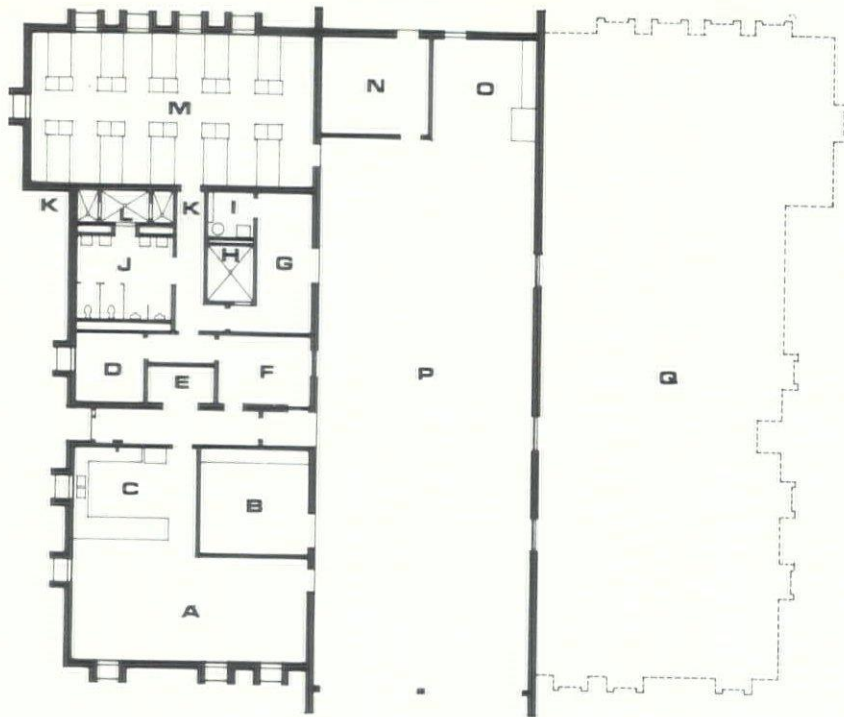
Subcontractors & Suppliers

(Richmond firms unless noted)

Laird's Nurseries, Inc., landscaping; Virginia Parking Service, parking stripes; Bowker & Roden, Inc., reinforcing; Southern Brick Contractors, Inc., masonry contractor; Cruickshanks Iron Works Co., structural steel, miscellaneous metal, steel joists & deck; T M S Millwork, millwork & doors; Boro Wood Products, Bennettsville, S.C., cabinets; and, E.S. Chappell & Son, Inc., caulking, weatherstripping & thresholds.

Also, N.W. Martin & Bros., Inc., roofing & sheet metal;

* See schematic design

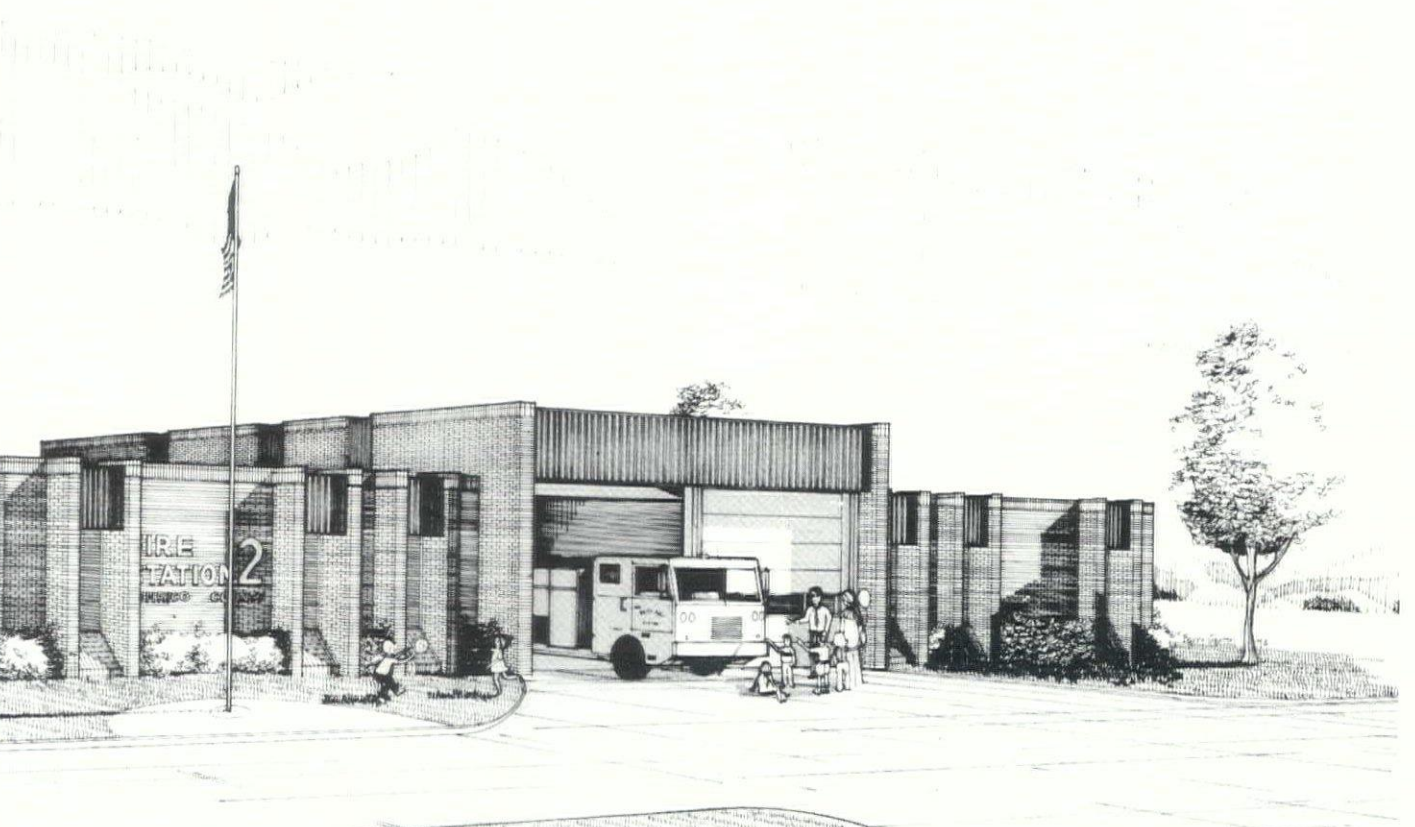


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- N STORAGE
- O HOSE DRY
- P APPARATUS ROOM
- Q FUTURE ADDITION

Babcock-Davis Associates, roof hatch; Allied Glass Corp., glass, aluminum fascia & glazing contractor; Architectural Hardware, Inc., metal doors & frames, hardware supplier & toilet accessories; Overhead Door Co. of Richmond, overhead doors; Courtenay C. Welton, aluminum windows; Lighting & Supply Co., Inc., kitchen exhaust; A. Bertozzi, Inc., lath, plaster & drywall contractor; General Tile & Marble Co.,

Inc., ceramic tile & window stools; Manson & Utley, Inc., acoustical treatment & resilient floor; Tri-County Painting & Decorating, Inc., painting contractor; J.S. Archer Co., Inc., toilet partitions & metal letters; Catlett-Johnson Corp., mechanical contractor; Lang Electric Co., Inc., Glen Allen, electrical contractor; James Thayer, flag pole; and, Republic Steel Corp., work bench.



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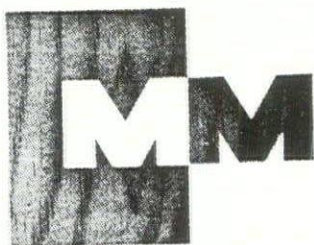
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FOR THE RECORD

AIM FOR SAFETY, PREVENTION OF BLINDNESS SOCIETY WARNS

• In an effort to carry eye safety into the woodlands of America this season, Franklin D. Kizer, Safety Committee Chairman of the Virginia Society for the Prevention of Blindness offers hunters several tips for saving sight and lives.

Recalling the many incidents of hunters mistaking other people for animals, the Virginia Society urges all hunters to have a complete eye examination before the start of each hunting season.

"Of course anyone with blurred vision should wear corrective lenses when stepping on hunting ground," reports Kizer. "Astigmatism, reduced field of vision, farsightedness, nearsightedness and color deficiency all affect target perception and visual acuity, and may result in blinding accidents, even death."

The Society warns every hunter to wear industrial strength safety lenses in a safety frame for maximum eye protection while hunting or shooting. "Ejecting shells, stray pellets, twigs that may fly into the eye while scrambling through the brush, or a fall on rough ground may shatter impact-resistant streetwear lenses," Kizer warns. "Real safety glasses will give the eyes the

protection needed for the hazards in the woods."

Hunters are reminded that sunglasses often cause a loss of visibility, particularly once the sun starts to set, increasing the task of distinguishing colors. Sunglasses should always be removed before driving after dusk when dim light makes it more difficult to see moving objects.

"Deficient eyesight and lack of proper eye protection play leading roles

in many hunting accidents," Kizer says. "The number of preventable eye accidents can be dramatically reduced if hunters are examined for possible eye problems and don safety eyewear *before* they head for the woodlands."

The Virginia Society is an affiliate of the National Society for the Prevention of Blindness, founded in 1908 to prevent blindness through a comprehensive program of community service, public and professional education and research.

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Robinson and Keogh Named By State Industrial Unit

• J. Frank Alspaugh, Director of the Division of Industrial Development, has announced the appointment of William C. Robinson as a Community Development Representative for the Division, and Hugh D. Keogh as Director of Public Relations and Advertising.

Robinson will be concentrating on the Division's work with manufacturers in Virginia who are already contributing payrolls to Virginia citizens. He will be working with David Dodd, Director of the Community Development Department.

A graduate of Ohio State University with a degree in Industrial Engineering, Robinson has recently been a management engineer for the Medical College of Virginia. A native of Birmingham, Alabama, he was associated with B. F. Goodrich Company for twenty years, first as a plant industrial engineer in Tuscaloosa and finally as manufacturing manager at Bogota, Columbia, South America.

Following employment with Goodrich, Robinson was involved in professional search and recruiting work for industry throughout Virginia. He also worked as production manager for Galeski Photo Industry, now a Division of Fox Photo Corporation.

Robinson is married to the former Carolyn Campbell of Columbus, Ohio. Their children are recent graduates of Virginia Colleges.

Mr. Keogh, of Springfield, succeeds Harry E. Woodward who recently retired after holding the Public Relations and Advertising position since 1966.

A 1964 graduate of the University of Virginia, Keogh is currently Director of International Development for the National Association of State Development Agencies headquartered in Washington, D.C. NASDA is involved in practically all aspects of economic development programs for the 50 states. In his position as Director of International Development for NASDA, Mr. Keogh has been especially active in programs related to foreign plant location. "Invest in the U.S.A."

Seminars conducted in Germany, Sweden, England, France and Japan have been one of his principal responsibilities in his work with NASDA.

Mr. Keogh was formerly Executive Director of the Marble Institute of America with offices in McLean. Prior to this, he was a consultant with SPARCOM, Inc. of Alexandria, whose principal business was with the Department of Defense agencies.

A naval officer and veteran of the war in Vietnam, Keogh was awarded the Commendation Medal with Combat "V" in Vietnam. Prior to this, Keogh was stationed in the Navy at Norfolk,

Virginia. Following Vietnam, he was graduated from the Defense Intelligence School in Washington and subsequently served as Flag Lieutenant and Aide to Rear Admiral M. G. Bayne, Commander Middle East Force in the Persian Gulf.

Keogh took over his new position on November 1, and his family will reside in Richmond.

Division Director Alspaugh said, "We are extremely fortunate to have Hugh Keogh join the Division in the capacity of Director, Public Relations and Advertising. His experience in Virginia, his background and especially his work with the economic development directors of the 50 states represented by NASDA, will be of special value to Virginia in the development of our own economic development programs."

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EARL T. ROBB ONE OF THREE IN NATION PICKED BY FHWA

• Earl T. Robb, assistant environmental quality engineer for the Virginia Department of Highways and Transportation, is one of three state officials selected throughout the nation to attend the Environmental Management Institute at the University of Southern California during the 1976-77 academic year.

Robb will attend a 12-week session beginning in January under a grant from the Federal Highway Administration, which selected state environmentalists for the program.

A 40-year-old native of Richmond, Robb attended Virginia Commonwealth University, and joined the State Highway Department in 1956. He spent 15 years in road design work, with major emphasis on the interstate, arterial, and primary road programs, and transferred to the department's Environmental Quality Division shortly after it was established in 1971. He became assistant head of the division in 1973.

In his present position, he assists in directing preparation of environmental reports and in coordinating the consideration of environmental factors in the department's planning, construction, and maintenance activities.

In 1969, he was selected as the outstanding Jaycee in Virginia and was among the top 20 Jaycees in the United States.

Besides Robb, the FHWA selected one representative each from the California and Kansas Departments of Transportation to join officials from the federal government and other organizations in attending the institute.

PEACOCK RETIRES AFTER 35 YEARS AT SMITH-DOUGLASS



• E. Bruton Peacock, Fertilizer Sales Manager for the Smith-Douglass division of Borden Chemical, Borden Inc., has retired after 35 years of service.

Peacock, a native of North Carolina, joined Smith-Douglass in 1941 after graduating from the University of North Carolina, where he majored in commerce. His first post was in the Norfolk sales office. Later he supervised a sales territory at Wilson, N.C. and then became branch manager of the Smith-Douglass Kinston branch. From there, he was promoted to Wilmington, N.C., a larger operation. In 1962, he was named sales manager for the Eastern Sales Division of Smith-Douglass. He was named sales manager for the entire fertilizer section in 1968.

Peacock and his wife Jessiebeth live in Virginia Beach, where he is an avid gardener. Peacock retired two years before the mandatory retirement age of 65 but says he plans to garden and travel and may ultimately move back to North Carolina, where he has business interests in the Wilmington area. The Peacocks have two children, Edwin in Charlotte, N.C. and Beth in Washington, D.C.

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• Weidmuller Terminations, Inc., has purchased 20 acres of land in Southport Office Park, Route 60, Chesterfield County, for the purpose of establishing a headquarters and manufacturing plant in the United States. Definite building plans will be announced later.

The company is an associate of C. A. Weidmuller KG, of Detmold, West Germany and of Klippon Electricals Ltd., of Sheerness, Kent, England. The company specializes in the production of industrial electrical terminal blocks and terminal strips, and the Weidmuller Group of Companies has associate companies throughout the world — France, Austria, Italy, Australia, South Africa, Canada and a number of other countries. Presently, Weidmuller Terminations, Inc., has a

sales and distribution facility, located in the Richmond Industrial Interport.

In Europe, the Weidmuller/Klippon Group is the market leader in industrial electrical terminations and the Group employs about 2,000 people. The main markets for the Group product are utilities, motor control gear and process control manufacturing, instrument makers and industrial electrical control and distribution equipment. The President of Weidmuller Terminations, Inc., is H. G. Renner, who formerly was, for 17 years, Managing Director of Klippon Electricals of England.

Working with Weidmuller in its plans have been the Division of Industrial Development in Richmond and the Brussels office, as well as Chesterfield County Officials.

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(From page 20)

projected growth. Finally, the location in an expanding area of the campus, and the layout of the ground floor with the open north-south axis, allows for connection with a second building to the rear if such is required in the future.

W. B. Meredith II, Inc. of Norfolk was general contractor and handled excavating, foundations, concrete work and carpentry.

Subcontractors & Suppliers
(Norfolk firms unless noted)

Ford Pile Foundations, Inc., piling; Southern Pines Garden Center, Inc., sodding, seeding, etc.; Ames & Webb, Inc., paving contractor; Hall-Hodges Co., Inc., reinforcing; Lone Star Industries, Inc., concrete supplier; Exposaic Industries, Inc., Fredericksburg, prestressed concrete; Snow, Jr. & King, Inc., masonry contractor; Johnny Doyle, masonry supplier & mortar; Ajax Co., Inc., stone work contractor/supplier & ceramic tile; Tidewater Steel Co., Inc., Va. Beach, miscellaneous metal; J. B. Cross, Inc., handrails; Weaver Bros., Newport News, millwork; Eastern Roofing Corp., waterproofing, built-up roof & roof insulation, and, K & P Caulking, Portsmouth, caulking.

Also, Sheet Metal Specialties, Va. Beach, sheet metal; Libby-Owens-Ford Glass, glass; Walker & Laberge Co., Inc., glazing contractor & window wall; Superior Fireproof Door Co., New York metal doors & frames; U. S. Plywood, wood doors; Door Engineering Corp., hardware supplier; Febre & Co., gypsum board contractor; O'Ferrall, Inc., Richmond, acoustical treatment & resilient tile; Miller & Rhoads, Richmond, carpet; E. Caligari & Son, Inc., painting contractor; PPG Industries, paint manufacturer; Howard E. Marquart & Co., specialties; L. F. Chiselbrook elevators; E. B. Sams Co., Inc., plumbing contractor; Sheet Metal Specialty Co., Va. Beach, heating/ventilating contractor; Baker & Co., air conditioning contractor; and, Continental Contracting, Inc., electrical contractor (Westinghouse fixtures).

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(From page 22)

machinery. The additional building space of 8,800 sq. ft. was designed for ink mixing and storage, a maintenance shop, HVAC (Heating, Ventilating, and Air Conditioning) and electrical equipment housing.

Wiley & Wilson designers and planners handled all phases of the expansion from architectural design to total environmental air control and fire prevention.

The project was begun in November of 1973 and was completed late in 1975. S.R. Gay and Company, Lynchburg, Virginia was the general contractor; W.M. Greenwood was the sponsoring officer; Architect H.L. Lytton, Project Manager; and F.R. Mays, Construction Administrator. Architectural coordination was handled by W.M. Hardison; Structural Engineering by G.L. Stahlman; Civil Engineering by C.P. Blackley, Jr.; Mechanical Engineering by P.F. Duckworth; Electrical Systems by J.R. Coombs. P. Gorman was responsible for Plant and Process supervision and J.D. Robertson, Jr. for Estimating.

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S.R. Gay and Co., Inc. of Lynchburg, the general contractor, handled water-proofing and caulking.

Subcontractors & Suppliers
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Associated Mechanical Contractors, Greensboro, N.C., site drainage, plumbing/heating/ventilating/air conditioning contractor, process piping & process equipment installation; Falwell Asphalt & Excavating Co., excavating, grading, paving & roads contractor; Powers Fence Co., fencing; Lynchburg Ready Mix Concrete Co., Inc., concrete contractor; Montague-Betts Co., reinforcing, hollow metal & supplier of structural steel joists, deck & miscellaneous metal; Fred M. Stinnette, Madison Heights, masonry contractor; William Rigging, steel erection; and, Consumers/Dornin-Adams, Inc., roofing, sheet metal & roof accessories, and metal siding.

Also, Lynchburg Plate Glass Co., glass & glazing contractor; Stout Door Co., Roanoke, special doors; Mahone, Inc., Roanoke, steel windows; Bailey-Spencer Hardware Co., Inc., hardware supplier; Beryle Phelps, painting contractor; Worsham Sprinkler, Mechanicsville, sprinkler/fire protection contractor; and, McDaniel-Kelly Electric Co., Inc., electrical contractor & electric alarm.

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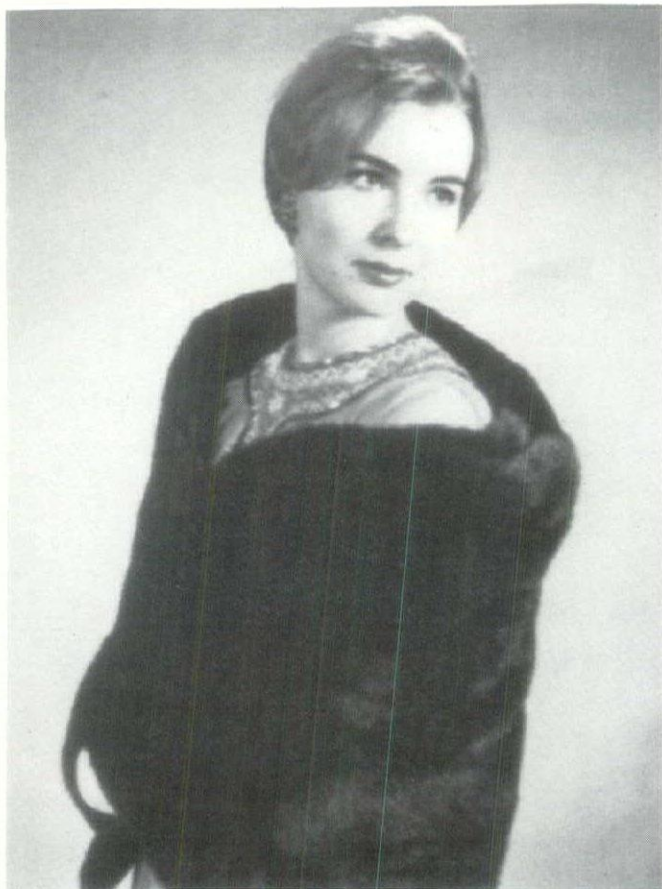
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(From page 25)

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(From page 41)

facility began in the summer of 1973 and was completed in December of 1974.

One of the main reasons for the project's being completed within the demanding time schedule was the control over the exterior wall material. Because the approximately 600 individual concrete panels were manufactured on the job site, there was never any delay in obtaining them. Because of the way each panel was prefabricated, erecting the walls was relatively uncomplicated and fast.

A notable feature which reduces the cost of fuel is a 60,000 lb./hr. boiler which burns both oil and the process waste products of sawdust and wood shavings.

Wiley & Wilson designed the air conditioning system for the plant offices and for the separate office building. They also designed exterior lighting and interior lighting for plant offices and the office building.

The total result of Wiley & Wilson's and Thomasville's efforts not only met all the original criteria but helped introduce to the area an exterior wall material that is being used more and more: tilt-up concrete wall panels.

The prime contractor, D. R. Allen & Son, Inc., of Fayetteville, N.C., also handled excavating, foundations and carpentry.

English Construction Co., Inc., of Altavista, was the general contractor.

Subcontractors & Suppliers

Marvin V. Templeton & Sons, Lynchburg, paving contractor; W. J. Megin, Naugatuck, Connecticut, con-

crete wall panels; Valley Steel Corp., Roanoke, reinforcing; J. E. Sears & Co., Inc., Appomattox, concrete supplier; Edno Construction Co., Lynchburg, prestressed concrete; Volunteer Structures, Nashville, Tennessee, steel supplier, steel joists, steel roof deck; Lynchburg Steel & Specialty Co., Lynchburg, steel erection; Carolina Steel Corp., Greensboro, N.C., steel grating, miscellaneous metal & handrails; Rayson Co., Charlotte, N.C., built-up roof & flashing; Armstrong Cork Co., Lancaster, Pennsylvania, roof insulation; Pritchard Paint & Glass Co., Charlotte, N.C., storefront; Marus Marble & Tile Co., Inc., Greensboro, N.C., ceramic tile; Southeastern Sprinkler Co., Inc., Greenville, S.C., sprinkler contractor; Associated Mechanical Contractors, Greensboro, N.C., heating/air conditioning contractor; and Cooper Electric, Greensboro, N.C., electrical contractor (majority of electrical work done by owner on separate contract).

Others contributing to the project as subcontractors and/or manufacturers or suppliers were: Vulcraft; Colonial Flooring & Acoustical Co.; Bullock & Humble; Stubbs Foundry; J. G. Wilson Corp.; Irving - IKG; Flow-O-Matic; Industrial Foundry; The CECO Corp.; Falcon; Tremco; Sonneborn;

Halbrook; Roll Form Products, Inc.; Rite Hite; Wesnell, Inc.; McPhilben; Westinghouse; Walkerdut; Josam; Mill Power; Owen Joist Corp.; Rockwell; American Flagpole, Inc.; Snow Lumber Co., Inc.; Robart; Master Builder; DeSoto; E. L. Burns Co.; U.S. Steel; Lynchburg Steel; Republic Steel; Socar, Inc.; Domestic Pumps, R. C. Musson Rubber Co.; Overhead Door Co.; Quality Outdoor Lighting; Cincinnati Fan Co.; Capital; Union Corrugating Co.; and Richmond Engineering Co.

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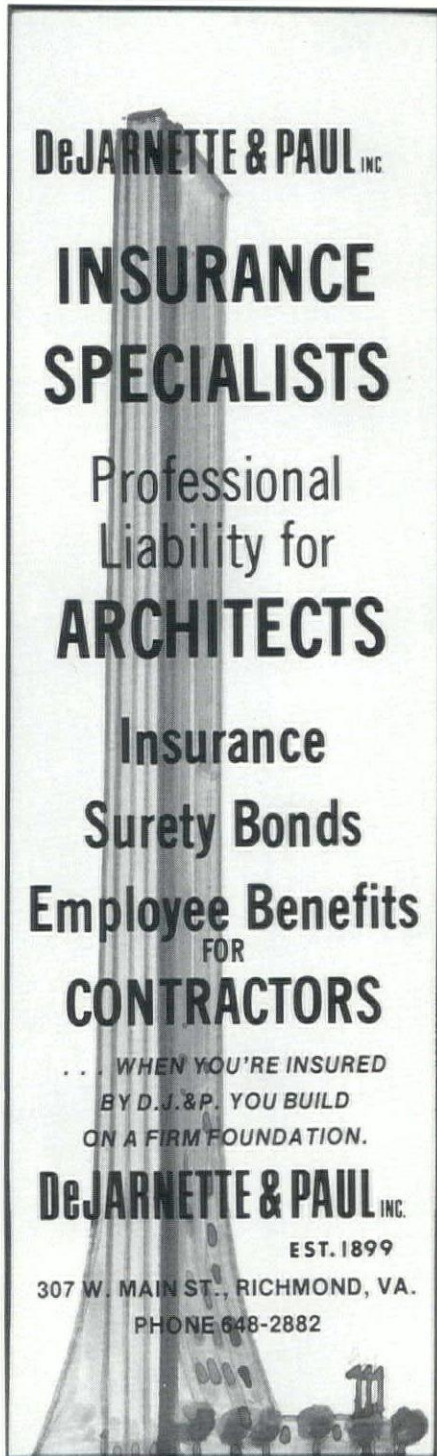
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Guest Editorial *Energy Conservation* *and the* *Built Environment*

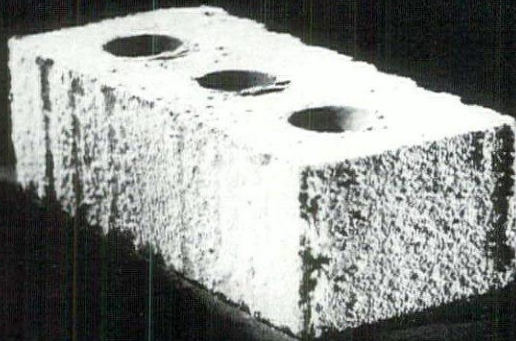
(From page 7)

imports expected in 1990. Nevertheless, these savings still amount to only about two thirds of the presently estimated 1990 imports. Clearly, the energy conservation program is not in competition with domestic energy sources, nor with present accelerating efforts to increase domestic energy supplies, but rather is supplementing them in keeping down costly imports.

These savings could be realized through a high priority national effort to create an energy efficient building inventory. Such an inventory could be built by the application of techniques covering planning, design, construction and management. Present opportunities to conserve fuel in new and existing buildings are numerous. The design professional can, for example: plan for the most efficient utilization of a new project or advise on use pattern changes in existing projects; site buildings properly to take advantage of natural light and ventilation; plan to use existing vegetation to shield excessive sun and wind; design screening methods to let in sun when needed and block it when not desired; and insure use of the most efficient heating, cooling and lighting systems. Further savings can be accomplished by use of alternative energy sources. Sun, wind and water can supplement or, in some instances, even replace use of fossil fuels.

Energy efficient buildings will bring with them additional capital costs as buildings will, on the whole, tend to cost more than traditionally designed and constructed projects. The gross investment required to achieve energy efficiency could be 10 to 20 percent above usual construction costs. Since new buildings and major improvements to existing buildings, including energy efficient measures, are traditionally financed with borrowed funds, the traditional approach has been to reduce initial construction costs to reduce risk. This approach together with society evolved attitudes, policies, tax laws and

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institutional practices which favor the economics of higher operating expenses over higher initial costs have made the "front end" cost problem a formidable barrier to energy efficient construction. It may, therefore, be necessary to provide certain incentives to overcome economic and other barriers and to coordinate and merge action for implementation.

Thus the American Institute of Architects (and *each* individual design professional must join in the effort) is endeavoring to inform the general public of the importance and lasting advantages of fuel conservation to be realized through design of an energy efficient built environment. Public awareness thus hopefully generated will encourage individual initiative as well as public support for incentives designed to stimulate capital commitments. Incentives can be offered in a variety of forms, such as tax credits, guaranteed loans, subsidized interest rates, rapid depreciation allowances, subsidies or technical assistance. And the sources of such incentives can range from local communities to the federal government.

It is widely held that energy saving legislation is in the area of concern for Congress and the federal government, and the American Institute of Architects recognizes this as witnessed by their campaign initiated last June which included mailings to all Senators and Representatives. Not all effort, however, begins and ends in Washington. The same material was mailed to all 50 governors, 30,000 city and county officials and agencies and all of the chapters of the American Institute of Architects for local follow-up. An informed and concerned public should apply pressure on its elected representatives in all levels of government to formulate meaningful legislation toward these incentive goals. There is not time to waste! To achieve the goal of an energy efficient built environment will require a large scale national effort in both the private and public sectors. The American Institute of Architects is firmly committed to this effort and would welcome the interest, support and cooperation of those who share this concern.

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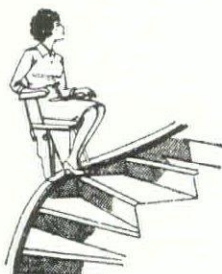
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