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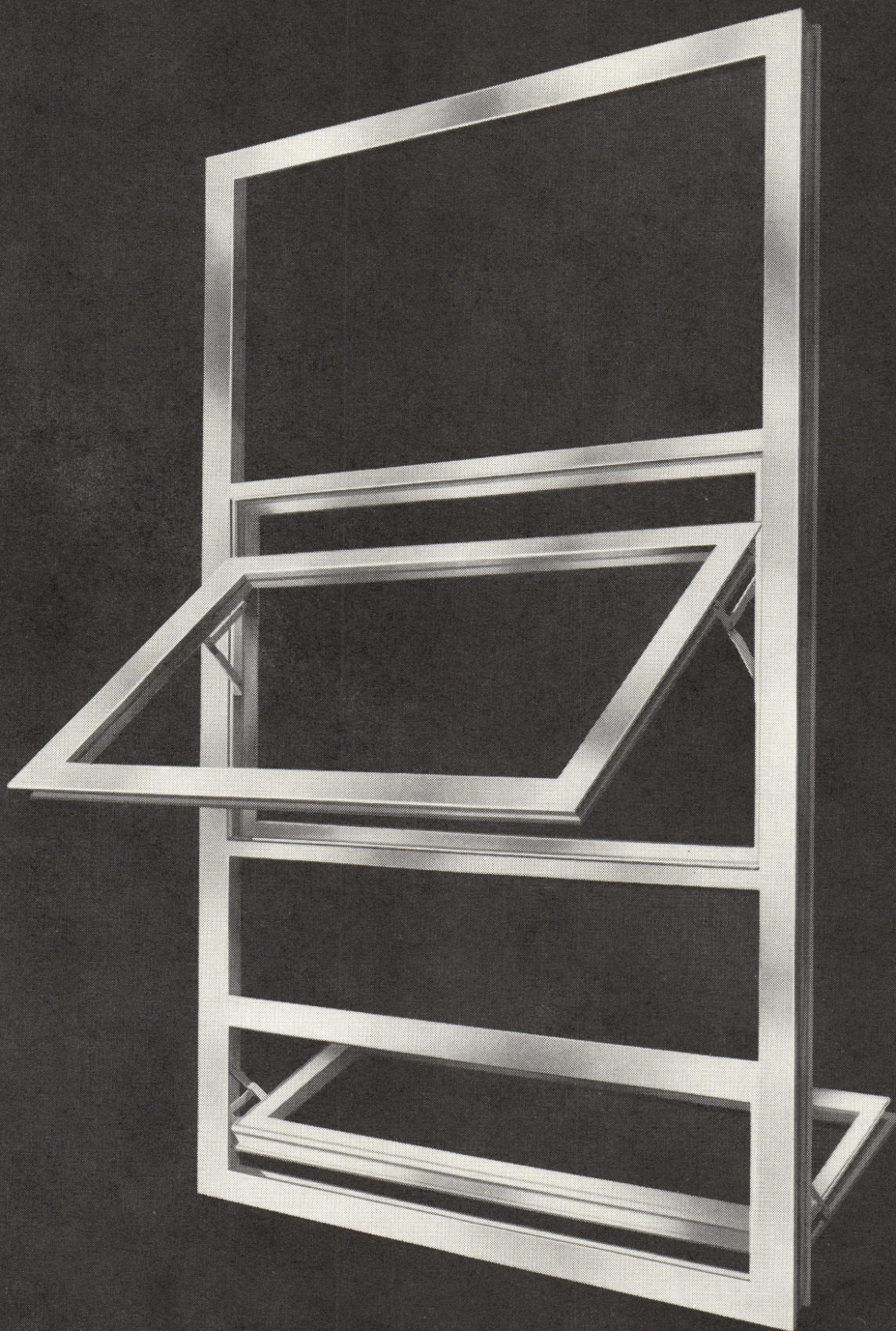
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QUALITY METALWORK

This nine foot high cross, custom made to the architect's design, is of heavy aluminum plate welded, ground and satin finished.

First Presbyterian Church
Goldsboro, N. C.

Architect: Harold E. Wagoner, Philadelphia, Pennsylvania

J - D - WILKINS Co.

GREENSBORO, N. C.

NORTH CAROLINA ARCHITECT



JUNE 1965, VOL. 12, NO. 6
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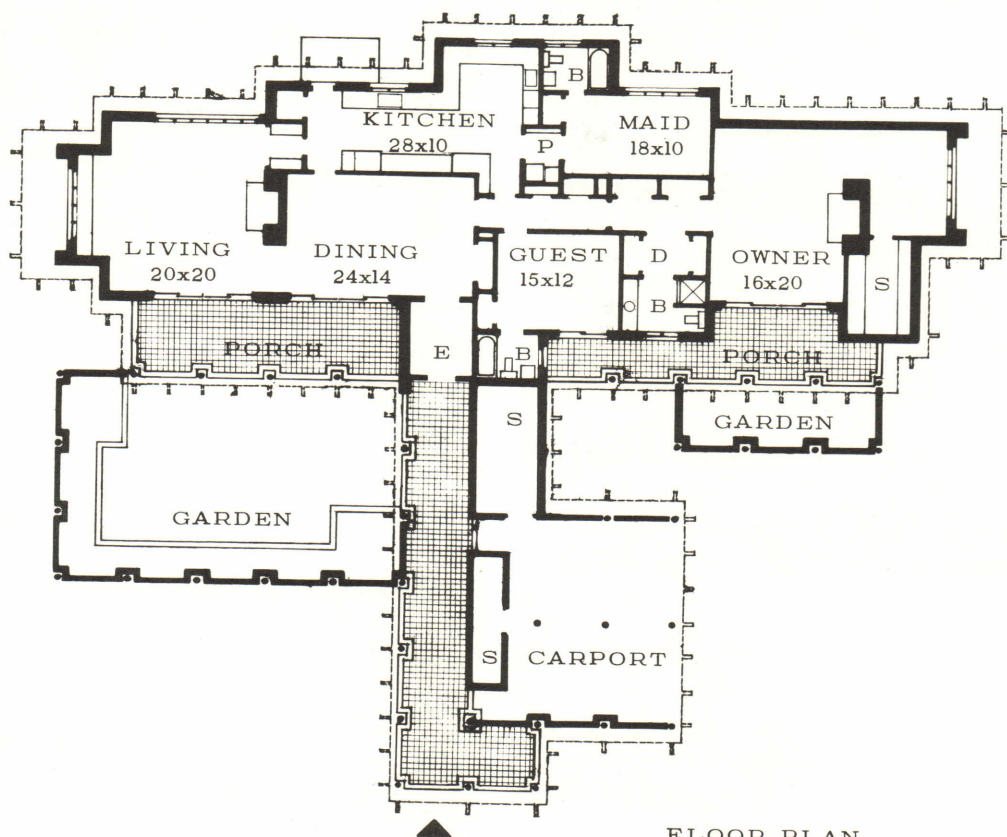
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**RESIDENCE OF
MRS. JULIAN F. BARNES**
pinehurst

architects
AUSTIN AND FAULK
southern pines



AREA:
 HEATED: 2845 SQ.FT.
 UNHEATED: 1967 SQ.FT.
 ROOFED: 5360 SQ.FT.

FLOOR PLAN

0 8 16 24

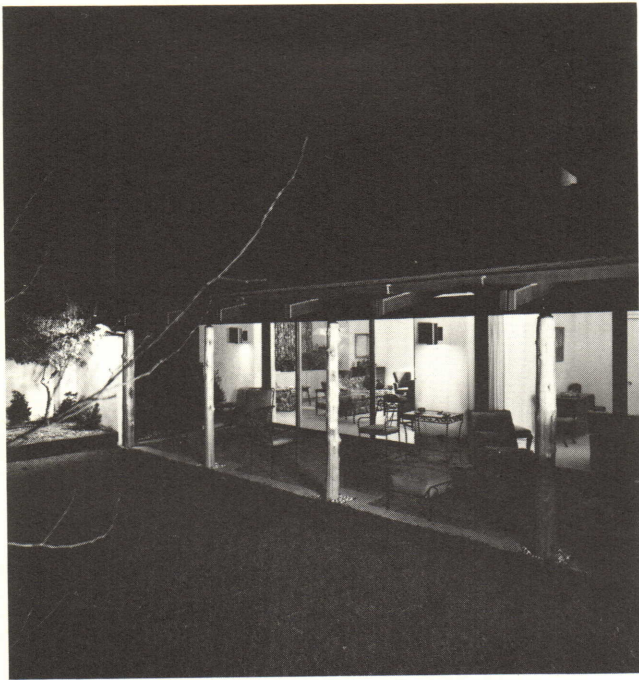
general contractor:
 Roy Newton
 southern pines

landscaping
 Clarendon Gardens
 pinehurst

structural engineers:
 Gardner, Elsevier and Kline
 durham

photographs:
 Gordon H. Schenck, Jr.
 charlotte

mechanical engineer:
 James Hollis
 laurinburg



PROGRAM

Year round residence in resort area, for widow of a retired General

House tailor-made for one person with no children, who entertains extensively.

House to have indoor-outdoor living but with complete privacy from street and neighbors on relatively small lot.

House to be as maintenance free as possible, for maximum of two servants.

Landscaping to be natural and maintenance free with pinestraw as major ground cover. Only grass to be in larger garden.

Large bedroom — sitting room — study combination for owner.

Small guest bedroom and bath.

Maid's room and bath.

Mechanical space in basement.

STRUCTURAL SYSTEM

Post and beam with bearing walls.

Columns — peeled cedar logs.

Beams and purlins — fir (Purlins at 1' 0" centers).

Exterior bearing walls — 12" solite block filled with "Zonolite"; one inch rigid insulation laminated to inside face of block with rocklath and plaster finish inside; 5/8" stucco on exterior face of block.

Roof deck — fir: T&G 2x4's spanning 4'-0"; exposed on porches.

Floor system: Concrete slab on grade except reinforced concrete slab spanning mechanical area under kitchen.

INTERIOR FINISHES

Floors — Wall to wall carpet except as noted; kitchen, bar, and pantry — vinyl tile; foyer — brick; storage — vinyl asbestos tile.

Trim — wood

Walls and Ceiling — Plaster

Windows — "Pella" wood casements with insulating glass.

Sliding doors — "Pella" wood with insulating glass.

Cabinets — birch (dark stain)

All walls, doors, ceilings, and trim painted white throughout.

EXTERIOR FINISHES

Floors — brick

Walls — white stucco

Columns — weathered cedar post

Beams and purlins — dark brown stain

Deck — fir treated with bleaching oil.

MECHANICAL SYSTEM

Heating — gas fired boiler for perimeter warm air heat.

Air conditioning — electric

IN THE BEGINNING . . .

by Jane Hall

(Reprinted by permission from the News & Observer, Raleigh, N. C., May 16, 1965)

There was a time when North Carolina had no architects and no architecture.

Then, there was a time when it had no architects and buildings were constructed by builders who used "pattern books" published by architects from out-of-the-State.

That, of course, was long ago.

Now, North Carolina not only has its own architects, it educates them. Graduates of the School of Design at N. C. State are filtering out across the nation and even into foreign countries. Wherever they go, they carry with them North Carolina influence, inspiration, ideas.

Tar Heel Head

Now, too, a North Carolinian heads the American Institute of Architects. A. G. Odell Jr. of Charlotte is the first Southerner in the more than 100-year history of the organization to serve as president.

True, no unique architectural movement has yet been initiated by a Tar Heel but that time may come.

In the North Carolina of 1965, Tar Heel architects are turning out fine buildings all over the State, buildings designed for the times, buildings suited to contemporary life. Good-looking, as well as functional, these buildings are improving the face of the State. North Carolina is looking younger, more vital these days because of the work of North Carolina architects.

In The Beginning

It all began, of course, with the log house, a type of structure suitable for the needs of a pioneer people. Even now we may look upon the hewn log house with pride for it reached a high degree of development in North Carolina.

When there was time enough and money enough to build bigger and better houses, the colonists quite naturally built structures very similar to those they left behind, not necessarily in Europe but in the colonies from which they came.

For example, Tidewater settlers came from England to Virginia and then to North Carolina. As a consequence, their early buildings reflect England and the Virginia adaptation. In the Piedmont, settlers from Pennsylvania who came down through the Valley of Virginia—Moravians, Quakers, et al—constructed buildings touched with Middle Europe and Pennsylvania influences.

Over the decades, two types of houses developed—the story-and-a-half house, with gambrel roof and chimney (Booth House, 1767, Edenton) and the two-story building, with gable roof, and chimneys and a center door, with a window on either side (Mendenhall House, 1811, Jamestown). In large or small editions and with variations, houses of these two types became common throughout the State.



JOEL LANE HOUSE, Raleigh

The earliest minimum house in North Carolina was a frame, one-story house with a loft in the gable roof and a chimney at one end, much like the Riddick House near Gates County. Later developments included a hall for the stair and a great room on the other side.

When more space was needed, shed roofs were added at the rear so that the house became two rooms deep. This solution for increased space was reached by builders from New Hampshire to South Carolina. Subsequently, the shed rooms, were enlarged to equal the front rooms in size and the house was raised to a full two stories.

The gambrel roof was widely used because it gave full head-room in the attic and thus a story-and-a-half house became as useful as a two-story house. Examples are the Bock-over House in Edenton and the Joel Lane House in Raleigh.

Cupola House

The best illustration in North Carolina of the full development of the house into its two-story and attic form is the Cupola House at Edenton.

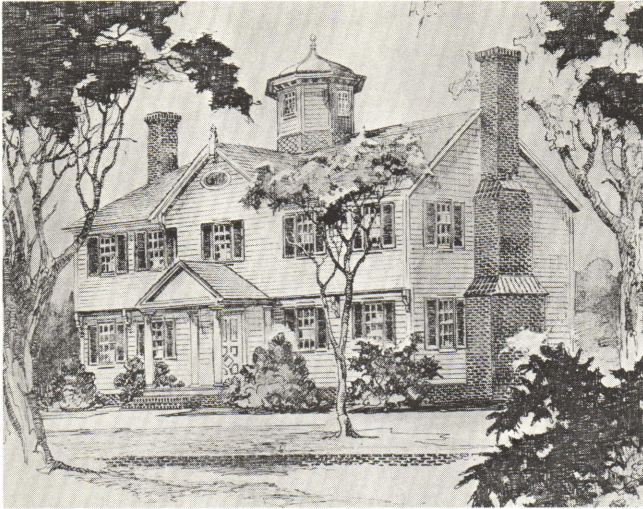
The Cupola House is considered one of the most striking essays in the Jacobean style in America. Though the date 1758 is on the gable finial experts think the house was built much earlier, about 1715. It was the home of Francis Corbin, Lord Granville's agent, who arrived in Edenton in 1757.

Of frame construction, the Cupola House has a bold overhanging second story, with hewn brackets, high gables with carved finials and a great projecting chimney with weathered off-sets. The use of sash windows in the house is considered unusual at so early a date and may have been their first appearance in North Carolina. Leaded casement windows were in universal use in all the colonies up to the first quarter of the 18th century.

The oval window in the front gable is considered unique in American timber building. The house is richly-finished on the interior in the Queen Anne manner.

Similar to the Cupola House in plan is the Marsh House in Bath, built in 1744, and the Cornwallis House in Wilmington 1771. The main feature of the Cornwallis House is the large Palladian doorway in the Ionic order. The two-tiered porch, with superimposed Ionic columns seems to date from the 19th century.

Porches came to North Carolina from the West Indies and were first used in coastal areas. Examples are the Sloop Point House, 1728, at Hampstead in Pender County, the double galleries at Ashland, the John Skinner House (1775) at Harvey's Neck in Perquimans County and the double-galleried Joseph and Duncan houses in Beaufort.



CUPOLA HOUSE, Edenton

1758



MARSH HOUSE, Bath

1744

Moravian Building

The Moravians were master builders in the Piedmont and many fine examples of their work still exist in Winston-Salem's Old Salem. The high-gabled roofs and the tile roofing bespeak their Germanic origin. The hooded doorway, however, is an American invention and is found only in this country.

Individual dwellings were basically of the four-room, central-hall variety, with end chimneys. However, there were variations, including the Forth House and the Chimney House where the rooms were grouped around the chimney. Rooms in Salem houses without fireplaces presumably were heated by tile stoves. Moravian brickwork is unusually fine.

The Piedmont House was sharply influenced by the Quakers largely because Proprietor William Penn wrote a pamphlet in 1684 that included a three-room house plan.

This plan, with variations and sometimes on a larger scale, was widely used. Since the Quakers also settled in northeastern North Carolina, examples of the Penn plan are found there, including, in its simplest form, the Lane House at Nixonton in Pasquotank County.

Tryon Palace

The finest early house built in North Carolina—and perhaps the colonies—was, of course, Tryon's Palace in New Bern. It is also one of the few instances in which an English architect designed an American structure.

John Hawkes, architect, designed the palace in the Georgian manner and it was built during 1767-1770. In 1798, the palace was destroyed by fire but in recent years it has been restored, principally through the generosity of the late Mrs. Maude Moore Latham of Greensboro, a native of New Bern.

The plan consists of a two-story main building with advance dependencies connected to the main building by curving colonnades. It is extremely handsome inside and out.

The Georgian manner was the reigning style in the mid 1700's and the prototype for small mansions in this State was the Randolph-Semple House in Williamsburg, which was derived from Plate No. 37 in Robert Morris's *Select Architecture*, published in London in 1765.

This house was one of the first with a pedimented roof. It departed from Morris's plan in several respects, notably in the addition of a pedimented portico at the front entrance. North Carolina variants include the Williams-Reid-Macon House near Airlie and the Junius Tillery House, both in Halifax County.

One of the largest and most beautiful mansions is Hayes Plantation house near Edenton built shortly after 1800. The large white frame house has a hip roof, tall windows and features an elliptical portico and a large cupola on the roof. An unusually beautiful aspect of the house is the fine, tall-columned porch on the water side which is connected to the pedimented wings by curved colonnades.

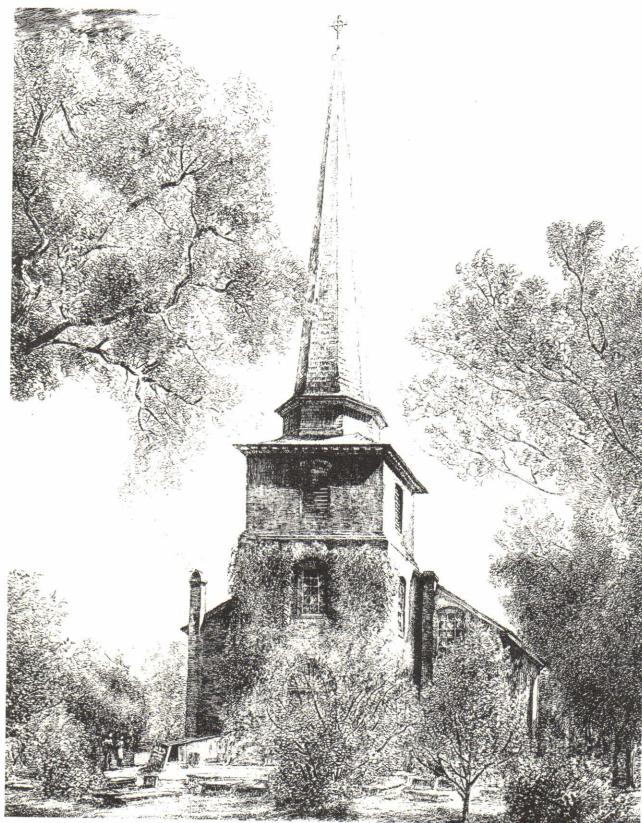


TRYON PALACE, New Bern



HAYES PLANTATION HOUSE, Edenton

1800



ST. PAUL'S EPISCOPAL CHURCH, Edenton

1736

Piedmont Builders

Master builders in the Piedmont were John Stigerwalt (now Stirewalt) and his son, Jacob, who in the late 1700's and early 1800's, were the only men in the area who could be called architects.

The Stigerwalts adhered to local building forms but in their doorway designs and interior finishes they exercised considerable architectural imagination and ingenuity. The doorway of the Michael Braun House in Salisbury is unusually fine, as is that of the Davis House, built in 1803 as a combined bank and dwelling. Later, the Davis house became one of three State banks in the State.

The John Stigerwalt house, built in Rowan County in 1811, is noted for its external brick chimney containing end-to-end fireplaces. The chimney is half the width of the house at its base, and it tapers toward the top. The broad face bears a lozenge brick design.

Ingleside, David Forney's mansion built in Lincoln County in 1817, is based upon a plan very like that of the Cupola and Marsh houses. It features, however, a pedimented roof and a very fine Ionic portico.

The earliest church still standing in North Carolina is St. Thomas Episcopal Church at Bath built in 1734. Appealing in its simplicity, the small church is constructed of brick laid in Flemish bond. It has an arched brick pediment over the door and apparently once was covered by a hip roof.

St. Paul's Episcopal Church in Edenton was started in 1736 and completed about 1745. This charming brick church has a gabled nave and a chancel apse that is rare in colonial architecture and unique in the State. The square western tower projects from the church and has a belfry under an octagonal spire. The interior has a central, barrel-vaulted nave with tall, aisle columns that support side galleries.

The Home Church of the Moravians, built in 1800 in Salem, is a tall building with high end gables and unbroken ranges of nave windows in the side walls. Its most distinctive aspect are two tall arched cupolas.

The earliest permanent public building still standing in the State is the Chowan County Courthouse at Edenton, built in 1767. It is considered the finest Georgian courthouse in the South. Of excellent proportions, the building has a fine two-story facade, with central pedimented pavilion and a beautifully-designed cupola.

Other still existing permanent buildings of the early period include several buildings at the University of North Carolina in Chapel Hill. Among them Old East, whose cornerstone was laid in 1793, a simple rectangular building without architectural pretensions, as is its companion, Old West, that was constructed a bit later; and Person Hall, built in 1793-97, whose proportions and brickwork are considered excellent.

Toward the end of the 1700's architectural styles began to change in America and to succeed one another with a fair degree of rapidity. The sequence was reflected in North Carolina.

The Georgian manner gave way to the Roman Revival, initiated in part by Thomas Jefferson in the design of the Virginia State Capitol. In turn, that was succeeded by the Greek Revival which became very widespread. Soon, the Gothic Revival superseded the Greek Revival.

St. Matthew's Episcopal Church in Hillsborough (1812-15) is an excellent example of the Gothic Revival. The small redbrick church has high-pointed, arched windows and a sharp spire. It was designed by the Rev. Francis L. Hawkes, grandson of John Hawkes, the architect of Tryon's Palace.

Richard Upjohn, New York architect, designed the neo-Gothic Christ Episcopal Church in Raleigh (1848) considered the finest church of the period in the State. The church is cruciform in plan and is built of cut stone. The free-standing bell tower with broach spire is unique.

The Orange County Courthouse in Hillsborough (1845), designed by Capt. John Berry, is a beautiful example of the Greek Revival style. It is constructed of brick laid in Flemish bond and has a portico with well-proportioned Doric columns



ORANGE COUNTY COURT HOUSE, Hillsborough 1845

supporting a richly-designed entablature that carries around the building. The cupola is octagonal in shape and sets on a square plinth.

Berry, a native of Orange County, also designed the Playmakers Theater (1850) at UNC in Chapel Hill in the Greek manner.

Two other interesting Greek Revival buildings in the State are Eumanean Hall (1849) and Philanthropic Hall (1850), both at Davidson College. The pair formerly flanked the entrance to the campus.

The North Carolina State Capitol (1833-40) is unquestionably the finest example of a public building in the Greek Revival manner in the State. The architects were Ithiel Towne and Alexander Jackson Davis of New York.

The finest Greek Revival houses in North Carolina are the Belo House (1849) at Winston-Salem, and the Bellamy House (1859) in Wilmington, whose ornate details indicate the coming of the Victorian Period.

For decades after the formal demise of the Greek and Gothic revivals and even after the demise of the Victorian Period; architects and the public in America and North Carolina continued to cling to and draw from ancient sources for their buildings. Times were changing and the way of life was changing but the design for buildings remained more or less the same.

All, however, was not stagnation. There was a stir in the Midwest occasioned by two remarkable men, with sharply creative imaginations, who grasped the advantages offered by technological advance and began to create something new.

The two were Louis Sullivan and Frank Lloyd Wright. Sullivan was the first great practitioner of the theory "form follows function." Simply put, that means if a building is designed for the function it will perform it will, by its very nature, be beautiful as well as useful.

Wright, a pupil of Sullivan's put the theory into practice in a brilliant and highly individual manner. He has had an immense influence on modern architecture.

Things were stirring in Europe, too. Architects there were discarding the old for the new. By the 1920's the International Style had developed under the auspices of Le Corbusier in France and Walter Gropius in Germany. The style was called International because it was generally accepted throughout the western world.

Gropius, who later came to this country, designed the Bauhaus in Germany in 1926, a building constructed of concrete that established the principles of the style and his reputation.

Light, air, simplicity of design and functionalism embodied in modern materials are hall marks of the International Style and, indeed, of contemporary architecture.

Probably, the first example of the International Style in North Carolina came in 1931 with the completion of the biological laboratory at the Highlands Museum in Highlands designed by Oskar Stonorov who was consultant to Tucker and Howell, architects.

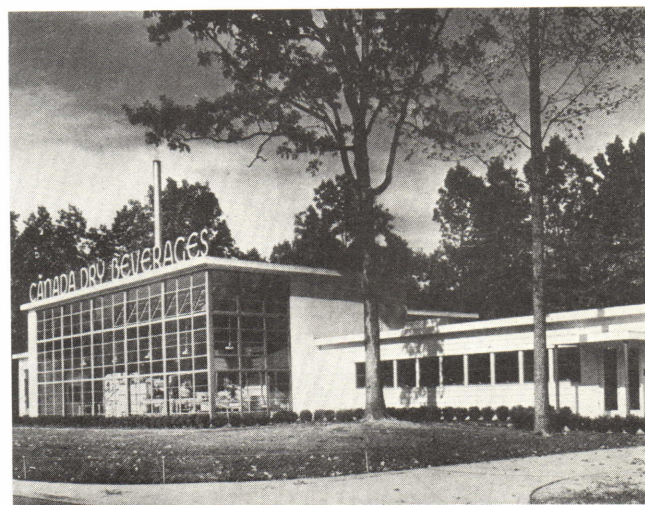
Jack P. Coble of Greensboro was one of the first contemporary designers in the State. In the late '30s Coble designed several modern houses, as well as the Greensboro bottling plant for Canada Dry.

Since the plant is on a main boulevard, Coble decided to use the bottling process as an advertising feature. Hence, the tall glass wall in the center permits passersby to watch the bottling machinery in action. With advertising in mind, Coble used vivid colors—making the building white, the machinery green and the columns red.

Gropius, one of the originators of the International Style, was commissioned, along with Marcel Breuer, to design the campus at Black Mountain College. The project was never built. However in 1947, when he was consultant to the Ballinger Company, Gropius did design the Greensboro plant of the Container Corporation of America. A refugee from the Nazis, the world-famed architect served for many years as chairman of the Department of Architecture at Harvard.



SAM T. WEYMAN MEMORIAL LABORATORY, Highlands 1931



CANADA DRY PLANT, Greensboro



RHYTHM

by Brian Shawcroft, Professional Associate Member
of The North Carolina Chapter, A.I.A.

"Do you remember an Inn, Miranda,
Do you remember an Inn?
And the cheers and the jeers of the young muleteers
Who hadn't got a penny,
And who weren't paying any
And the hammer at the doors and the Din?
And the Hip! Hop! Hap!
Of the clap
Of the hands to the twirl and the swirl
Of the girl gone chancing,
Glancing
Dancing
Backing and advancing
Snapping of the clapper to the spin
Out and in—
And the Ting, Tong, Tang, of the Guitar!
Do you remember an Inn
Miranda?

Do you remember an Inn?"

Hillaire Belloc in his poem *Tarantella* the second stanza of which is presented here, has used rhyme, onomatopocia and alliteration to create the powerful rhythm of the dance in words. The poem scans in its entirety as a verbal tarantella, no one can deny the insistent and fascinating rhythm created. The close linking of words and music in this form can be readily comprehended as both media are concerned directly with the sense of hearing. From his very early days man has shown a strong tendency toward rhythm in sound from the first beating of a drum to the development of the dance. It can be shown that the entire universe in its physical structures and phenomena are based on a systematic recurrence of elements or events with a recognizable relationship between them. Sound, radio, and light travel in waves with a measurable frequency, whilst in the total cosmos, the stars, suns and planets move in orderly, rhythmic cycles of such vast dimension in both space and time that man has great difficulty in comprehending the actual order.

With the present day knowledge of the universe and as that knowledge has advanced from the early theories of men like Galileo and Newton to the Quantum Theory, Einstein's Theory of Relativity and the Unified Field Theory, it has been believed that there is some total order to the universe and Emerson in *Monadnock* states:

"For the world was built in order
And the atoms march in tune;
Rhyme the pipe, and time the warder
The Sun obeys them, and the Moon."

The means of expressing and communicating these ideas is achieved through the medium of mathematics, a language or system that is entirely dependent on order. Many theories have been put forward relating mathematics to architecture, especially in the much debated field of proportion. With its common basis of order, whether simple or complex, mathematics and rhythm in architecture would seem to have some parallels for the academician, but in relating rhythm to architecture we must confine our discussion to the experienced and visual relationships which from experiment and observation, we can draw some conclusions which would lead to the formulating of principles only, not giving us any rules to use as a yardstick in judging an architectural concept.

Very much closer and more vital is the inescapable and ever pervading rhythm of our own heartbeat and breathing, the very essence of life under normal conditions, continues whilst I write and the reader reads these words. Had they a recognizable rhythm throughout of an intended and complex or subtle nature, my task would be doubly accomplished!

The action of walking, running or swimming requires a rhythmic co-ordination of the body which develops naturally as the child grows from taking its first faltering steps, to the normal walk with the easy swing of the legs and arms. From these basic movements with their rudimentary rhythm coupled to the breathing (noticeable especially in the action of swimming the crawl), developed the dance. The movements are made by balancing the weight of the body in definite measured intervals against the spring of the muscles producing an exhilarating action which is enjoyed by both the dancer and the observer. From these simple beginnings a very expressive and meaningful art form has been developed in the dance—which relies on rhythm as its basic controlling element. Aesthetic and emotional expression tend toward the hedonistic primarily in the dance and this may be attributed somewhat to the sexual instincts in man which are of a basically rhythmic nature. More developed forms of the dance as in classical ballet and some acrobatics, by far transcend this basic form of expression.

In addition to the primary physiological rhythms in man, breathing and the beating of the heart, scientists have discovered independent rhythmical contractions and expansions of the artery walls, increasing and decreasing at regular intervals the flow of the blood. Experiments have shown that there are definite rhythmic activities in the nerve system generating from the spinal cord. Dr. Thadus L. Bolton of Clark University, at the beginning of the century conducted a series of experiments to try and correlate a similar rhythmic order in mental action. More recently much work has been done by Dr. Norbert Weiner in the field of cybernetics in paralleling the brains action to that of controlled electronic systems.

In the foregoing I have laid stress on the element of rhythm in its all pervading dominance in our life, hoping to reinforce reasons for its necessity in the arts and architecture as a positive principle of design that can evoke some of these natural rhythms within and around us.

The nature of beauty has continually been the subject of philosophic debate and in briefly examining some of the statements there seems to be some consistency in the basic elements of aesthetic theory since the days of ancient Greece with one or two notable exceptions. Plato disapproved of the sensuous qualities of art and could not seriously consider it; considering it mimetic he proposed to exclude poets from his ideal Republic. He did however define beauty as that which delights the sight and hearing, and that which is fitting, useful or good. He later rejects the theory, 'that which delights the sight and hearing' as he could find no common element in both. Yet spatial form and temporal form have the same underlying element of metric measure; later in recognizing the importance of the mathematical element he writes in *Philebus*: 'If arithmetic, mensuration and weighing be taken away from any art, that which remains will not be much,' and further "For measure and proportion always pass into beauty and excellence", here especially in geometric form. He ignores the fact that art is imaginative and expressive, Aristotle however recognizes

these aspects and goes on to say: "The main elements of beauty are order, symmetry, definite limitation, and these are the chief properties the mathematical sciences draw attention to."

The interpretation of aesthetic experience in a mystical manner is put forward by Plotinus who opposes the views put forward by Plato and Aristotle, the general view taken by the Greeks however did emphasize the formal elements: "beauty consists in the imaginative or sensuous expression of unity in variety". The formal elements as expressed were the relationship of the part of the whole, the comparative purity of geometric forms and figures, or rhythmic or spatial intervals that bear numerical relationship to one another.

Much later, Descartes and Leibnitz present beauty in terms of mathematical reasoning and de Crousaz in his *Traité du Beau* 1724 repeats the theories of Plato and Aristotle by stating: variety, unity, regularity, order and proportion as being the basic elements.

A more considered approach by Euler who begins to look at some of the reasons why we derive pleasure from looking at objects is accounted to us by Helmholtz in the following: "The more easily we perceive the order which characterises the objects contemplated, the more simple and more perfect will they appear, and the more easily and joyfully shall we acknowledge them. But an order which costs us trouble to discover, although it will indeed also please us, will associate with that pleasure a certain degree of weariness and sadness".

A complete reversal of these theories is put forward by the painter Renoir and its effect can be seen in work of today. He maintains that "Irregularity is the basis of all art" and "false perfection of order destroys art". The writer Baudelaire follows him up with a thesis that "the unexpected, surprise and astonishment are characteristic of beauty".

In recent years, more and more has been written on the subject of design both from an objective and subjective point of view, often going to great lengths to prove some chosen basis for design, especially where it is applied to works whose authors have long since been in a very difficult state to refute them. There do however as stated before, appear to be some common denominators in the elements of beauty which can be inverted as basic principles to be aware of when designing; included in these lies the element of rhythm. In his *Theory of Pure Design* Dr. Denman W. Ross writes: "The beautiful is revealed, always as far as I know, in the forms of Order, in the modes of Harmony, of Balance and Rhythm. While there are many instances of Harmony, Balance and Rhythm which are not particularly beautiful, there is I believe, nothing really beautiful which is not orderly in one or the other, in two or in all three of these modes. In seeking the Beautiful therefore, we look for it in instances of Order, instances of Harmony, Balance or Rhythm. We shall find it in what may be called supreme instances".

Like the earlier theories this lays great stress on order, which I suspect is of a very formal and obvious nature, not comprehending some of the more recent approaches in the arts of more complex rhythms and balance used in different ways to our accepted classical approach. The subtle rhythms of forms and curves in Le Corbusier's Chapel at Ronchamp, or in a piano solo by Dave Brubeck or an orchestration by Honneger. I must hasten to say that these new approaches to the use of rhythm do not in any way invalidate or supersede the formal rhythms, but serve to augment them in enriching the vocabulary. Nor is it a fact that the complexity and sophistication necessarily denotes an advance in our culture of a new nature. The negro is capable of beating complex rhythms with each hand separately, a natural attribute which is virtually impossible to a white man.

Serious attempts have been made and are continually sought to draw a close parallel between architecture and music, the most notable reference being made by Goethe: "Die Baukunst ist eine ertarrte Musik", that architecture is frozen music. Schiller's description of architecture as "music in space" has a poetic concept in keeping with Goethe and Schlegel who also describes music as architecture in the fluid state and architecture as frozen music. John Browne in the eighteenth

century draws a line of distinction between the two arts by stating: "the object of music is to unite beauty and expression, as the object of architecture is to unite beauty and utility", but Schopenhauer maintained that, "all Arts aspire to the conditions of music". Further descriptive associations have been made by Frank Lloyd Wright who has described a symphony as an 'edifice in sound' and who said that when he was moved by a work of Architecture he heard inner music.

In taking the subject one step further, James A. Murray in a paper read to the Vitruvian Society of Toronto in 1956, went so far as to draw parallels between architecture and composers! The comparisons are interesting; the Parthenon to Bach, Roman Engineering to Beethoven, leaving much to be desired as to the validity of such associations.

The inspirational value of music has also been brought to our attention in that some architects are said to work to a background of certain composers' music. Eric Mendelsohn was known to listen to Bach whilst designing, it would appear much neater had it been Felix Bartholdy instead, although one cannot entirely dismiss the influence of Bach in the act of creation, the second Brandenburg Concerto is used to assist natural childbirth!

The attention and sensitivity necessary to listen to music can hardly be given if one is struggling with the problems of circulation, mass, form and structure, mechanical services etc., which are part of the architect's vocabulary today. It would be an interesting experiment to design an office building to the background of 'A Night on the Bare Mountain' by Moussorgsky or an airport to 'Pavane' by Faure'.

If one can resolve a common basis between the essential dynamic quality of music which can only exist in time, to that of architecture, which is primarily static and exists in both space and time, the parallels may be made given a thorough understanding of both media. Herein lies the danger of using one medium to describe another. It assumes that the person is thoroughly conversant with the fundamentals of harmony, counterpoint and musical composition to appreciate the same elements in architecture. However, in the more common instances, it is a great temptation not to avoid easy analogies. In his book "Experiencing Architecture" Steen Eiler Rasmussen resorts to this practice, and naively describes the Spanish Steps in Rome to have been designed as a polonaise, a dance form executed by four persons. The Spanish Steps having a tripartite division would make the execution of the dance progression as described by Rasmussen rather difficult to perform.

From the associations of music to the mechanics of perception it is interesting to consider the various theories as to how the eye works and the brain reacts to images and to the importance of rhythm in helping this process. The gestalt account of perception suggests that whenever an object is perceived, its form somehow re-occurs in the nervous system, that is to say the form of the physiological configurations in the brain is structurally analogous to the form of the object. Ambiguous figures are always seen in the simplest way as the brain seeks to organize itself in the least complicated fashion, thus allowing itself more rest. Another account of perception by D. O. Hebb is one of aggregation in that we see things as the result of a complicated learning process which goes on through cell assembly in the visual cortex. The basic assemblies being formed early in life allowing more complex combinations later with the possibility of more cells being added. Again simple figures give the brain an easy job as it has no necessity to combine or add anything further.

A third theory given by F. Attneave being that if the normal visual field is described in the terms of a minute grid with monochromatic squares and the information as to their tone and colour is given to a person one at a time whilst looking at a pattern, not all the information will surprise him, and in a simple pattern he will anticipate the colour and tone of the squares as he realizes the order of the pattern being described. With complicated patterns he will be kept guessing most of the time, and the number of errors made in anticipation indicates the complexity of the pattern. With each error it



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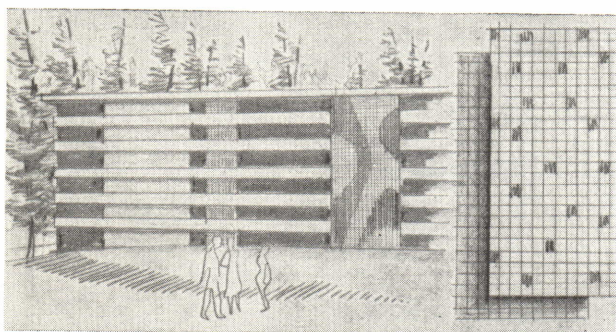
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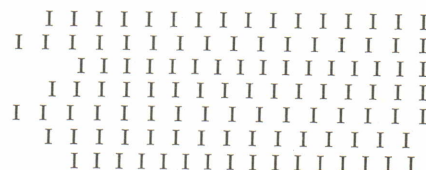
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costs the observer effort, so that with a simple and ordered pattern less effort is involved. It can be judged from these three theories and relatively truly so, that the eye or the brain is lazy and simple patterns and rhythms seem to please the brain by making its work less, thus giving a pleasurable sensation. This adds to the ancient view that simplicity rests the eye and is therefore beautiful. A random arrangement of shapes will be incoherent and restless not allowing the eye to stop on any arrangement or group, although patterns and rhythms may not always be consciously apprehended and necessarily analysed in their entirety. An example of this is in the night sky with its myriads of stars in no apparent visual order, with groups of brighter stars forming immediate focal points overlying the background. These groups are now recognizable to us by their names given to their associated shapes. A point in favour of Renoir's theory is borne out here, in that if the sky was dotted with stars in a geometric pattern the eye would understand immediately and would find nothing further to look for, but with its delicate rhythms of groups and single stars, balanced against the background, it forms an ever fascinating subject for the eye's searching and the brain's contemplation. This also substantiates a theory that the eye must be stimulated and not allowed to rest.

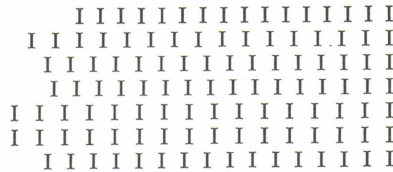
Taking the two extremes it is feasible to use this understanding of the mechanics of perception and use the principles in design to express or create a mood within the observer. In its simplest form, rhythm consists of equal elements with equal intervals, of space or time, in architecture the time element is experienced as the eye travels across the field of view or is bodily transported through as sequence of spaces. A diagrammatic example of this basic rhythm is as follows: IIIIIIIIIIIII It has been the most commonly used rhythm throughout history and due to its simplicity recurs frequently today. It can be criticised as dull, and when it is used continually it could well be, but it is also a very strong rhythm and has been used to great effect to create a sense of direction leading to a climax. Bernini's colonnade around the square leading the eye on to the Basilica of St. Peter in Rome, or in the majority of gothic churches with the strong progression of arches and piers leading to the altar, flanking the processional route which would move with a slow, stately insistent Rhythm during the mass.

The psychological and to some extent the physiological aspects of visual rhythms in architecture can be used to great effect. Simple, strong, complex, subtle, peaceful or violent rhythms can be arranged to heighten the emotions or to synchronise with some of the inherent rhythms in man to enliven the effects of his environment. This approach has been greatly exploited in the cinema by Sergei M. Eisenstein with his use of visual rhythms, often architectural forms, with audible rhythms reinforcing them, the total film having a complex rhythm of timing in the cutting of the shots and sequences. The eye's fascination for moving images such as the rhythmic fall of the waves on the shore, soldiers marching, was realized by men like Eisenstein from the early days of the cinema, or the "flicks", and the appeal to this vital quality of dynamic movement with its strong attraction is evident in his work. This vital element of movement can be created in an illusory way in a static image by the use of rhythm which involves the time factor.

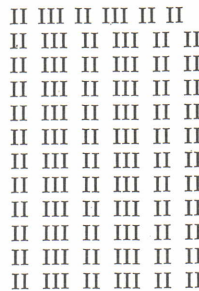
Rhythm in architecture can be expressed in many ways, some obvious and some less so, the overriding factors that must be exercised are control and order.



Visual chaos,
Vertical rhythm
created, no apparent
horizontal rhythm.



Both vertical and horizontal rhythms.



Without these two elements we have no rhythm, merely an unorganized arrangement of shapes and spaces as in the first illustration above. Rhythm lies in the entire composition, or in the parts giving a consonance to the whole and may be expressed through the arrangement of masses in regular or progressive rhythms, spaces, planes, solids, voids, light, shade, detail or the rhythmic alternation or contrast of plain surfaces to textured surfaces. The repetition of similar elements immediately creates a rhythm in its most basic form as described before, may become dull unless controlled or defined. How can this definition be accomplished? The eye we know likes both stimulation and rest, thus a repetitious rhythm must have a beginning and an end to stop the eye anticipating the continuance of the measure. In a circular or curving building the effect of the closing of the intervals as the plane curves away from the eye, effectively accomplishes this, whilst in a plane surface the changing of the interval or element at the extremities will stop the rhythm. The spacing of the two end columns on the Parthenon is of a less dimension, although this can be argued that it was done to correct the optical illusion to create an apparent equality. Later in many Renaissance buildings, the coupling of the columns or pilasters at corners was done consciously to stop or change the rhythm of the facade. Within the simplest rhythm of equal repetition lies a variation often seen in the repetition of unlike elements at like intervals. Excellent examples of this are found in row houses, especially in Boston. The very essence of these rhythms has been used by Hugh Stubbins in his design for a large apartment block at 330 Beacon Street, which although in mass and height is in contrast with the surrounding buildings, the rhythm of the facades has been repeated in the block giving a sympathetic unity to the scheme.

The breaking down of simple rhythms into more complex rhythms of the same numerical order can be seen in the gothic churches, where bays are divided and sub-divided by the same number of parts, whereas a dominant rhythm may be sub-divided in a differing numerical order giving an accented or syncopated result. Scandinavian row houses use this theme to great advantage, where a regular rhythm is set up due to the equal division of the lots, and within each unit an independent rhythm is created.

The interplay of rhythms may occur in many ways, not being limited to any one direction or plane, the horizontal rhythms set up in a facade may be combined with the vertical rhythm of the floors, with a single building forming part of a total rhythm of forms and spaces. An excellent example of this is the Rockefeller Center in New York.


Another mode of rhythm that we encounter and is less obvious to the eye but very often more satisfying, is the free rhythm as opposed to the metric with its formal qualities. Free rhythm may take the form of a profession based on changing intervals and may not be fully comprehended or felt until it is realized in its entirety. Curving forms and

lines give this continual flow quality leading the eye on with accents and changes to create an overall rhythm. The contrasting of free and metric rhythms can be used to maximum effect in large scale works as in landscape architecture and highway design.

In examining some of the aspects of rhythm in architecture, it can be appreciated that the dynamic quality so essential in man's environment which is of necessity primarily static, it can be created by the judicious and sensitive use of rhythms that will flow 'through' the buildings in harmony with, or strongly opposed to the basic life giving rhythms that are inherent in man himself and his physical world.

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**CSI
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STEGALL**

Joel E. Stegall, Jr., AIA, CSI, of Charlotte, N. C., was advanced to the rank of Fellow in the Construction Specifications Institute at the technical society's national convention at San Diego, on May 26.

Stegall, an associate in the architectural firm of J. N. Pease Associates, 2925 East Independence Blvd., Charlotte, received the national Fellowship medal along with seven other men. He has been with the Pease firm since 1948 and was made an associate in 1964. He lives at 2459 Elkwood Circle.

He was recognized for his "contributions to the development of new chapters in the Carolinas," and for guiding the development of the Institute's technical activities in these states, for which he is known locally as "Mr. CSI".

In addition to helping organize the Charlotte Chapter, he was instrumental in founding the Charleston and Winston-Salem, Greensboro, High Point Chapters.

In supporting him for Fellowship, the local CSI Chapter extolled his service to it as president and as a member of the Board of Directors and chairman of its technical committee since 1959.

In 1959, he won an award in the annual specifications competition sponsored by the national association.

His citation reads as follows:

Joel E. Stegall, Jr., FCSI

Fellow

of The Construction Specifications Institute

In recognition of your distinguished and dedicated service to The Construction Specifications Institute, as a Member, as an organizer and dominant force in the Charlotte Chapter, as a member of numerous committees and as an officer and president of your chapter; and in recognition of your contributions to the development of new chapters in the Carolinas, and for your zealous leadership in furthering the objectives of the Institute at all levels, you are advanced to Fellowship in the Institute on this 26th day of May, 1965.

President

Chairman, Jury of Fellows

Billy Griffin Is A Hit With Goldsboro Voters

Goldsboro has given a vote of confidence to the four incumbent members of the Board of Aldermen.

This is a tribute to the incumbents for there were some capable and well-liked men among the other candidates who offered.

The vote was especially a tribute to Alderman Billy Griffin. Two years ago, Griffin finished in sixth place in a second primary. He was appointed to the board when Dr. A. H. Pate resigned.

In Saturday's election, Griffin led the ticket.

It was not surprising, Griffin has been as energetic an alderman as the city has ever had.

At public meetings before civic and other groups, *Griffin has spoken out on the need for proper planning.* He has been among the first to speak his opinion at the regular meetings of the board. This is not always the most politic course.

But the citizens demonstrated at the polls that they appreciate hard work in public office. And that they respect a man for taking a position, though it be contrary to their own opinion.

Griffin practices architecture in Goldsboro and is a member of the North Carolina Chapter AIA.


(From the Goldsboro News-Argus, May 4)

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Born: January 1, 1933, Charleston, W. Va.
Registration: West Virginia #601
Education: University of New Mexico, Albuquerque, N. M.
University of Cincinnati, Cincinnati, Ohio
Graduated: 1958, B. S. in Arch.
Travel: Canada, Mexico
Professional Training & Practice: J. Hyatt Hammond Associates, Asheboro
Supervisor
December 1, 1964 to present
Memberships: Univ. of Cincinnati Student Chapter 1952-53

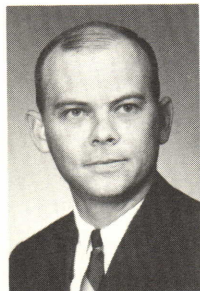
DALE ALAN BLOSSER, Raleigh
Born: October 3, 1927, Brussels, Belgium
Registration: North Carolina #1317
Education: N. C. State College, Raleigh
Graduated: 1956, B. Arch.
Carnegie Institute of Technology, Pittsburgh, Pa.
Clemson College, Clemson, S. C.
Travel: Belgium, Holland, France, West Germany, Belgian Congo
Professional Training & Practice: Project representative: John D. Latimer & Assoc., Durham
August 1960-August 1962
Project representative: Synergetics, Inc., Raleigh
August 1962 to present



BENJAMIN HYMAN KEEL, Raleigh
Born: April 15, 1929, Wallace, N. C.
Registration: North Carolina #1444
Education: Winley Art School, Beaufort, N. C.
N. C. State College Extension Service
College of William & Mary
Richmond Polytechnic Institute, Richmond, Va.
Travel: England, France, Germany, Switzerland, Italy, Spain, Austria, Holland, Czechoslovakia
Professional Training & Practice: Draftsman-Designer: Burret H. Stephens (deceased)
1947-1956
Robert H. Ferguson, New Bern
1956-1957
William M. Weber, Raleigh
1957-1958
John D. Latimer, Durham
1958-1963
Architect - F. Carter Williams, Raleigh
1963 to present
Memberships: Raleigh Council of Architects



WILLIAM BROWN KEENER, Cary
Born: August 31, 1921, High Shoals, N. C.
Registration: North Carolina #960
Education: Brevard Junior College, Brevard, N. C.
Graduated: 1940
N. C. State College, Raleigh, N. C.
Graduated: 1950, BS in Architectural Engineering
Professional Training & Practice: Draftsman-Designer: M. A. Ham Assoc., Durham
1950-1956
Registered Architect: M. A. Ham Assoc., Durham
1956-1960
Associate: M. A. Ham Assoc., Durham
1960 to present



WESLEY PAUL HARRELLE, Greenville
Born: November 8, 1934, Colerain, N. C.
Registration: North Carolina
Education: Virginia Polytechnic Institute, Blacksburg, Va.
Graduated: 1958, B.S. in Building Design in Arch.
Professional Training & Practice: Head Designer & Chief Draftsman: J. W. Griffith, Jr., Greenville
1958-1962
Head Designer & Chief Draftsman: Dudley & Shoe, Architects, Greenville
1962 to present



JAMES O'HEAR, III, Charlotte
Born: April 28, 1934, Westerly, Rhode Island
Registration: North Carolina
Education: Clemson College, Clemson, S. C.
Graduated: 1957, B. Arch.
University of Pennsylvania, Philadelphia, Pa.
Graduated: 1958, M. Arch.
Professional Training & Practice: Jr. Assistant & Job Captain: James Cubitt & Partners, London, England
1960-1962
Associate: Charles H. Wheatley & Assoc., Charlotte
1963 to present
Travel: England, France, Germany, Denmark, Finland, Sweden, Norway, Spain, Switzerland, Italy, Greece
Awards & Scholarships: Alpha Rho Medal
G. Howard Perkins Scholarship



JOSEPH GREGORY HAYS, JR., Charlotte
Born: October 24, 1925, Charlotte
Registration: North Carolina #1442
Education: N. C. State College, Raleigh, N. C.
Graduated: 1950, B. S. (Textiles)
Professional Training & Practice: Architect: J. N. Pease Associates, Charlotte
1952 to present



JAMES ALEXANDER WARD, Durham
Born: February 6, 1915, Forsyth Co., N. C.
Registration: North Carolina #671
Education: Wofford College, Spartanburg, S. C.
Graduated: 1937, A. B.
N. C. State College, Raleigh
Graduated: 1948, Special Student in Architecture
Professional Training & Practice: Draftsman & Specs. Vice President: M. A. Ham Associates, Durham
1948 to 1964
Assistant University Architect: Duke University, Durham
September 1964 to present



SAMUEL CARTER HODGES, JR., Chapel Hill
Born: August 10, 1930, Durham, N. C.
Registration: North Carolina #988
Education: N. C. State College, Raleigh, N. C.
Graduated: 1953, B. Arch.
University of North Carolina, Chapel Hill
Graduated: 1964, M. Reg. Planning
Professional Training & Practice: Draftsman: Hackney & Knott, Durham
1955-1956
Designer: William M. Weber, Raleigh
1956-1958
Associate: John D. Latimer & Assoc., Durham
1958-1963
Associate: City Planning & Arch. Assoc., Chapel Hill
1963 to present
Memberships: Durham Council of Architects

Producers' Council To Award Scholarship

The Carolinas Chapter of Producers' Council, Inc., has announced plans to establish a \$500 scholarship for a worthy student enrolled in the School of Design at North Carolina State University of Raleigh.

Edwin H. Smith of Charlotte, president of the Producers' Council, said the scholarship is being established on an annual basis and that the first award will be made in the spring of 1966.

"The Producers' Council is pleased to have this opportunity to give support to the fine N. C. State School of Design and the architectural profession," Smith declared.

The Producers' Council, which has its headquarters in Charlotte, is made up of approximately 50 representatives of national manufacturing organizations.

Church Conference Well Received

A. G. Odell, Jr., FAIA, President of The American Institute of Architects was principal speaker at a conference on Church Architecture sponsored by the Synod of North Carolina Presbyterian Church, held at the First Presbyterian Church, Greensboro, on May 21st.

Approximately fifty NCAIA Members and one hundred others interested in the design of Presbyterian Churches attended the one-day meeting. Purpose of the Conference was "To bring together architects, pastors, and building committees for open discussion of the worship of Presbyterian and Reformed Churches; and the services offered by the profession of architecture in designing buildings to house this worship and learning well."

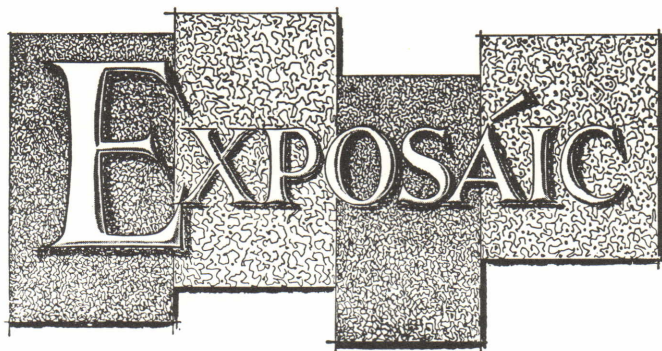
Participating in a panel discussion on Presbyterian Worship and Church Architecture were The Rev. Wallace A. Rogers, Presbyterian Minister of Norfolk, Va.; Milton L. Grigg, FAIA, Past President of the Church Architectural Guild and member of the AIA Committee on Religious Buildings; and James L. Doom, Secretary, Department of Church Architecture, Presbyterian Church, Atlanta.

During luncheon, A. G. Odell, Jr. addressed the group on "How the Architect Serves the Church", and Leslie N. Boney, Jr., NCAIA President, gave his endorsement of the Conference.

The afternoon session was a panel discussion by The Reverend Robert Turner, Regional Director of Christian Education for the Presbyterian Synod of N. C., and James H. Finch, FAIA, practicing architect of Atlanta, moderated by James L. Doom.

On exhibit during the Conference were displays of church buildings which have received awards from the Church Architectural Guild of America. Thomas P. Heritage, AIA, of Greensboro, was in charge of arranging the Conference.

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DESIGN OF URBAN HIGHWAYS

Statement To The White House Conference on Natural Beauty

As I stated at the meeting of the National Advisory Committee on Highway Beautification of the Secretary of Commerce, the motivation of the Federal government in supporting systems of transportation has always been to stimulate and facilitate interstate and intercity transportation. This has been true ever since Thomas Jefferson made a master plan of American roads and canals in 1804. It is true with our interstate highway program and the government's support of air travel.

Our current concern with the effects of roads in our landscape — whether in recognition of automobile junk yards, billboards, overhead utility wires, roadside rest places, or recreational open spaces — is a recognition of the fact that we must now plan ahead for *all* the areas that transportation systems affect.

Our improved road systems are one of the main reasons our cities enlarge, and are a main reason for the growth of suburbs and suburban shopping centers. To merely adorn these phenomena with trees or shrubs is to miss the real problem entirely.

The real problem is to design all the areas affected by highways. Beautification is, to be sure, an im-

portant aspect of design — but let us not put the cart before the horse. It may be that our concern over the appearance of auto graveyards is the expression of a national embarrassment with our extravagant waste.

Simply stated, we should build into our highway planning a process where *design* is required, indeed where it *leads* the whole effort. It is not enough to "invite" design consultants or to have partial funds for design or planning. That has *not* worked up to this point.

We have already developed the technical knowledge to design the rural highway. We have been doing it for a half century or more.

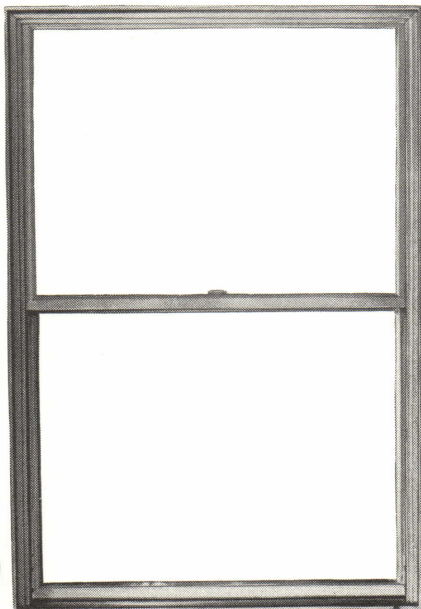
Since our urban areas will double in size within the next thirty-five years, the real frontier of environmental design today is the *city* and the key to its design is to understand how highways affect the city. Here we Americans ought to be making a large investment in exploratory design — as we have done with radios, TV sets, jet airplanes and rockets to the moon.

A. G. Odell, Jr., President
American Institute of Architects

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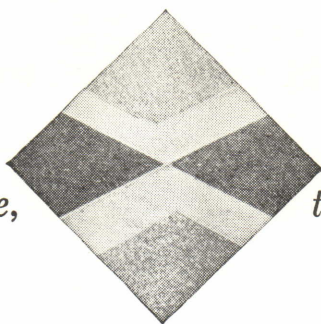
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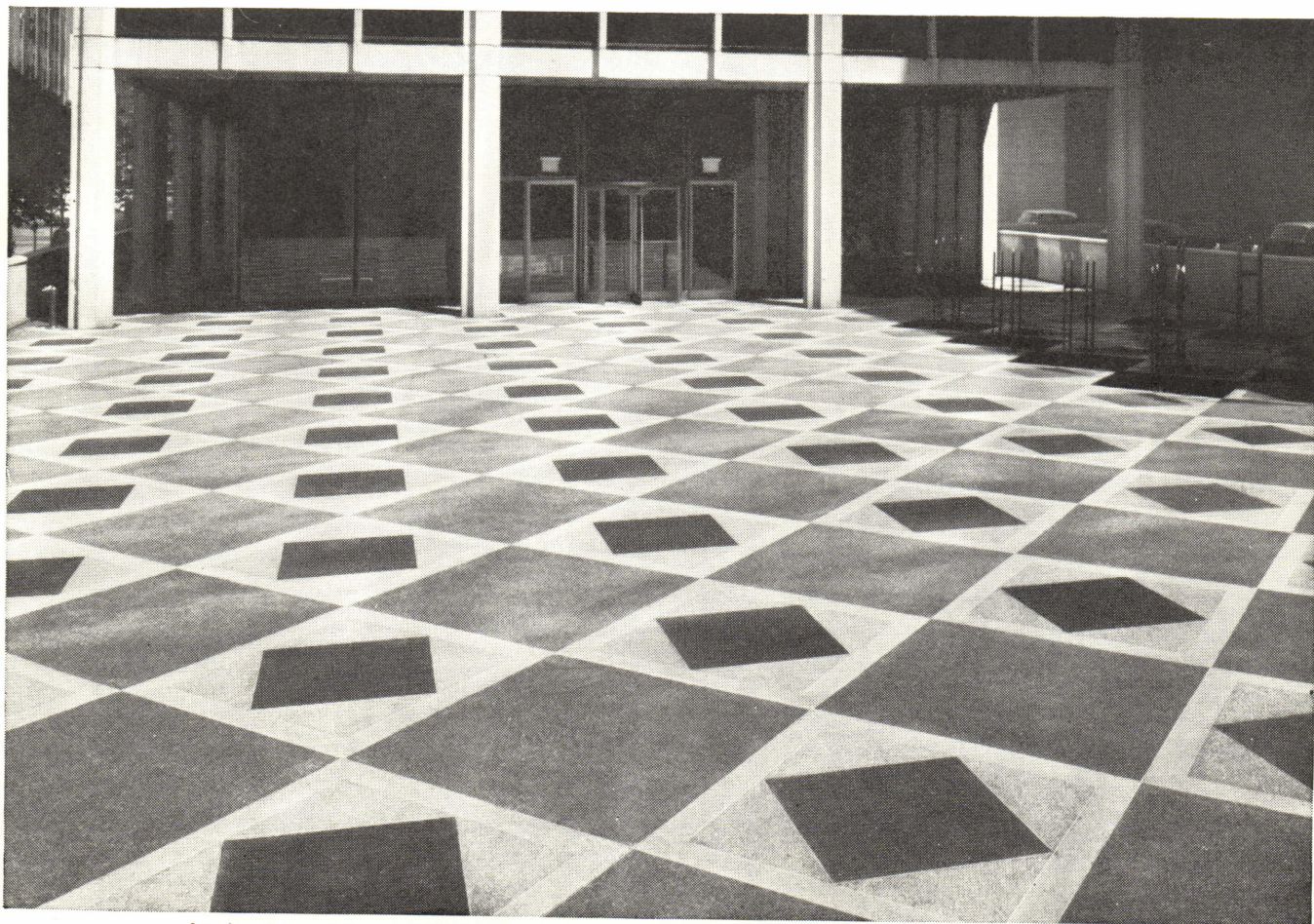
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CALENDAR OF EVENTS

- July 7: Charlotte Section, N. C. Chapter AIA, Stork Restaurant, Independence Blvd., 12:30 P.M., John C. Higgins, Jr., AIA, President
- July 7: Durham Council of Architects, Jack Tar Hotel, James A. Ward, AIA, President
- July 8: Raleigh Council of Architects, YMCA, 12:15-1:30 P.M., Ralph B. Reeves, Jr., AIA, President
- July 13: Greensboro Registered Architects, Ivanhoe's Restaurant, Walter E. Blue, Jr., AIA, President

NCAIA SUMMER MEETING

Blockade Runner Hotel

Wrightsville Beach, N. C.

July 1-2-3

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THE PRODUCERS' COUNCIL, INC.

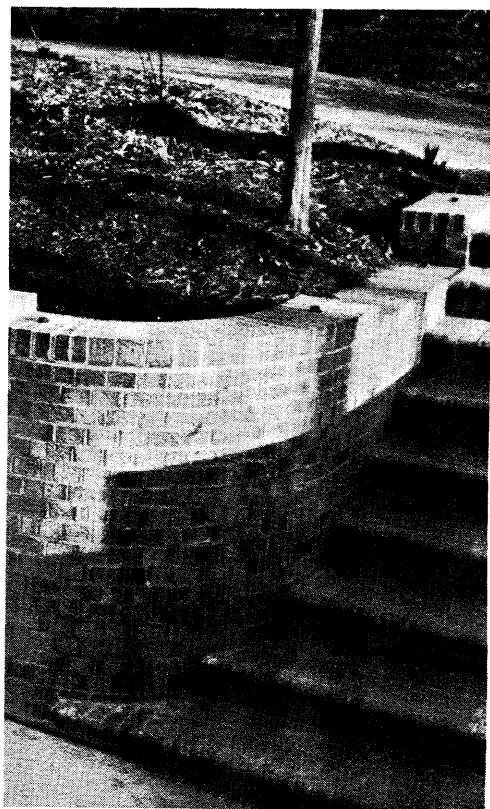
Aluminum Company of America
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