CONVENTION DELEGATES

Delegates to the AIA Convention in Miami, May 5-9, were unanimously elected at the April 3rd meeting. Representing our Chapter will be: Stan Arthur, Leroy Bagley, Ted Cromar, Paul Kea, Denny Madden and Trad Thomen.

COUNTY PLANNING GROUP MEETING

The Montgomery County Citizens Planning Association has announced a program of unusual interest for the night of April 18th. The topic will be The Human Aspects of Physical Planning, and the speakers will be Frederick Gutheim, President of The Washington Center for Metropolitan Studies, and Karl Linn, Professor of Landscape Architecture at the University of Pennsylvania.

The meeting will be held in the auditorium of the Maryland-National Capital Park & Planning Commission, 8787 Georgia Avenue, Silver Spring, Md., at 8 p.m. Members of the Chapter are particularly welcome.

SUMMER JOBS

The chapter office is receiving numerous requests for summer work. Those who have given career day talks in the high schools know the keen interest shown by some students. To insure the future of the profession these young people should be given every chance to find out all they can about architecture. Anyone who can find a place for one or more of these young people this summer should contact the chapter office.

The sketches of Street Elements in the March issue of PVA were by KYOSHI MANO, AIA of the office of Doxiadis Associates, Inc.
A NEW NAME IN PRECAST CONCRETE

Beginning April 1st, a dynamic new company—STRESCON INDUSTRIES—will handle Technical Sales Service and Erecting Service for the Baltimore Concrete Plank Corporation.

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President Kennedy on the Washington Area—"A model for the rest of the country." He said, "Community Development guided by effective planning must be a cooperative venture by the various governments of the National Capital Area toward the common goals of the metropolitan region as a whole."

Secretary Stuart Udall—To more than 50 area planners and political leaders—"There are much greater opportunities to work together in the field of conservation than any of us have explored." Major Projects—Corridor Plan, C&O Canal, Damming the Potomac, Park land acquisition, Historic Sites and Washington tree preservation.

Prince Georges County Cultural Center—Land donated near Prince Georges Plaza by owner Marvin Blumberg. The $78,000,000 office, apartment and business complex of the New Town Center designed by Edward Durrell Stone will include a cultural center on a portion of the 105 acre tract. Congratulations—Prince Georges County comes of age from cultivators to Culture!

"Monorail System" proposed by D.C. Transit along Viers Mill Road Median strip. The pilot commuter line project with a three car train, seating 55 passengers in each car, would run 2½ miles, 18 feet above the roadway between Georgia Avenue and Randolph Road. D.C. Transit's answer to the NCTA plan would carry Washington's commuter traffic by rail and bus downtown. NCTA says the plan inflicts more road traffic on already choked arteries, whereas the NCTA subway lines do not have to share right of way. Our point of view—the elevated line may have possibilities and certainly high speed systems should be developed but on what and whose right of way? We are in favor of anything D.C. transit does technically to eliminate fumes, buses and abuses. We agree with Mason A. Butcher, the plan is "well worth looking into."

Minibus A Great Success after 12,000 riders pay a nickel and double fare box expectations! 14 more of the colorful shopping buses will soon be operated by D.C. Transit with the encouragement of HHFA, Downtown Progress and thousands of shoppers who are starting to find downtown shopping a lot more enticing. Under consideration now is expansion of the plan to tie in Downtown, Southwest, the Waterfront and Haines Point to provide convenient short haul transportation at the "human scale." Too bad they are not electric.

Minimum Heliport bill introduced by Senator Alan Bible. Facility would provide means for rapid transit to Dulles, Friendship and Washington National Airport from downtown business and Federal Offices. Tremendous growth of Helicopter service has occurred in New York, Chicago and Los Angeles in the last 10 years. It's going to happen anyway, so let's do it now!
Foundation failures and the resulting settlement and damage to building structures has plagued architects, engineers, and builders for centuries. We still have foundation problems with buildings and other engineering structures, although science has advanced our understanding of these problems.

One of the most noted structures in Washington, the Washington Monument, has had a foundation failure. The monument has undergone over 6 1/2 inches of settlement during the period in which settlement was observed. However, every year hundreds of small, lightly loaded buildings also undergo damaging settlements. These settlements can be attributed to either shrinkage of soils below foundation levels or consolidation of the underlying soft foundation soils.

The majority of foundation failures are due to the shrinkage of natural clay soils, which is not related to the soil bearing pressure. Several two story masonry apartments located on Trinidad Avenue, N. E. have undergone settlements and lateral movements up to 2 inches, due to loss of moisture in the natural foundation soil. Test borings taken adjacent to these buildings indicated a sharp decrease in soil moisture from about 5 to 10 feet below foundation level to the footing level. Similar problems have occurred in Suitland, Seat Pleasant and Glassmanor in Maryland and in all local Virginia areas.

The loss of moisture in soils below the foundation level is a problem that is generally not considered in normal building practice. Drying of soil due to interior heating must be protected against together with any lowering of the groundwater table. Many engineers choose to carry foundations below the zone of moisture variations either by drilled piers or lowered footings. The loss of moisture is also the cause of many earth supported floor slab failures.

The second most common reason for foundation failure is the construction of buildings on loose uncontrolled fill. In many cases the settlement of the fill is due both to the overloading of the loose soils and the shrinkage of the fill materials by loss of moisture. A great number of settlements resulting from constructions on fill ground have occurred at old filled ravine sites along both Connecticut and Wisconsin Avenues in Washington, D. C. One wing of a five story apartment building constructed on fill has settled 2 1/2 inches and moved laterally 1 1/2 inches with respect to the main building. Settlement of two story brick dwellings is common in many areas. A recently constructed one story warehouse-store building in Bethesda designed with continuous inverted reinforced concrete T-beam footings also has settled and cracked masonry walls. The old Navy Yard brick wall along M street has settled up to 12 inches in an area where a former marsh was filled for the extension of the Navy Yard.

Construction of buildings on uncontrolled fills should be avoided regardless of how hard the material appears at the surface, or in test borings. However, an increasing number of buildings are being constructed on controlled fills in which the soil materials and compaction is carefully tested under soil engineer supervision. The recently opened Noland Company warehouse in Falls Church, Virginia and the Capital
Gateway Plaza shopping center at the Baltimore-Washington Parkway and Annapolis Road are both constructed on compacted fill soils with allowable soil bearing values ranging from 3000 to 4000 pounds per square foot. This method allows the improvement of soft soils and the preconsolidation of underlying soils prior to the construction of structures.

The exceeding of allowable soil bearing pressures with foundation loads also has caused foundation failures in the Washington Area. The settlement of the Washington Monument could have been readily predicted by the modern methods of Soil Mechanics. The stone shaft is supported by a 100 foot square footing founded at about sea level, or 40 feet below the present entrance grade. The soil bearing pressure on the underlying sand and gravel has been estimated at 8 tons per square foot. Medium consistency organic clay below the sand and gravel was the seat of settlement and is still a cause of concern.

Many buildings experience settlement due to exceeding the soil bearing capacity but evidence of settlement is difficult to find. One heavily loaded six story reinforced concrete building at the Navy Yard experienced an estimated 2 1/2 inches of settlement during construction, but this could not be observed after completion. Settlement readings of main columns of a one story industrial building founded on very loose fine silty sand in Silver Spring indicated a rapid settlement of about 1/2 inch during construction with footings designed for an allowable soil bearing value of 1000 pounds per square foot. Some settlement occurred during the construction of the Town Center in S. W. Washington but no further difficulty has been experienced since completion.

Soils in the Washington area that present problems due to lack of adequate soil bearing characteristics must be identified by test borings. Common troublesome soils are located in Prince Georges County and are usually associated with high groundwater conditions. Very loose sands and sandy silts are encountered in the Suitland area below the usual sand and gravel deposits. These sands and sandy silts are uniformly loose for depths up to 130 feet and could cause excessive settlements of heavy buildings or other structures. Very loose, soft and variable soils are also found in river and stream valleys in all areas around Washington. These soils range from marsh deposits to sediments of clay, sand, and gravel deposited by old rivers.

Foundation problems may also be experienced with the residual soils formed by the disintegration of rock in Montgomery and Fairfax County. Loose sandy silts and silty sands residual soils have been experienced in sections of Wheaton, Rockville, Bethesda, Silver Spring and Falls Church, usually with high groundwater conditions. Serious settlement of buildings founded on these loose strata have been observed.

It is seen that many latent foundation problems exist in the Washington area that must be recognized and solved by architects and engineers. The practice of insistence on adequate, reliable test boring data, including the analysis by experienced engineers is the best insurance against foundation problems.

Many people have the idea that the way to obtain density in a soil fill, regardless of the nature of the soil, is to flood or "puddle" it at the time of construction. This notion has led to many building failures ranging in scope from the annoying to the disastrous.

David M. Greer in PROGRESSIVE ARCHITECTURE

Architectural students in particular stop thinking of structures at the ground line. Yet the hard facts of life demand a substructure as well as a superstructure, even if it is never seen. A consistent philosophy of structure would require that the foundation be as carefully studied and as elegant structurally (though perhaps not visually) as any other part.

William Zuk in PROGRESSIVE ARCHITECTURE
DRAWINGS BY ARCHITECTS

by Claudius Coulin is a new picture book with a difference. A collection of architects drawings covering twelve centuries, it samples almost every imaginable technique, subject, mood, and architectural style. The book ranges from the engineering sketches of Nervi to the fantasies of Gaudi and d'Alpoim Guedes; from details of stonework to perspectives of whole cities; from the impressionistic shorthand of Utzon and Corbusier to the copper engravings of Ledoux. The reproduction technique combined with the scale (almost every drawing is at least 2/3 actual size) gives each example the immediacy of an original drawing. The only fault with the book, as one national reviewer has said, is that turning the last page leaves the reader with the disappointment of a child when the last piece of candy is gone.

The drawing shown above is a study for the gateway to the vineyard at Oatlands Palace, Surrey, England, by Inigo Jones. The original drawing is in sepia on white paper. The palace was built in 1616 for the wife of James I.

left:
PAUL SCHMITTENHAUER
Study for a house, 1946.
Pencil on tracing paper.

below:
PIER LUIGI NERVI
Corso Franco road bridge, 1958.
Study Sheet.
Pencil on tracing paper.

right:
ARNE JACOBSEN
SAS Royal Hotel, 1955
Ink and pencil on tracing paper.
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