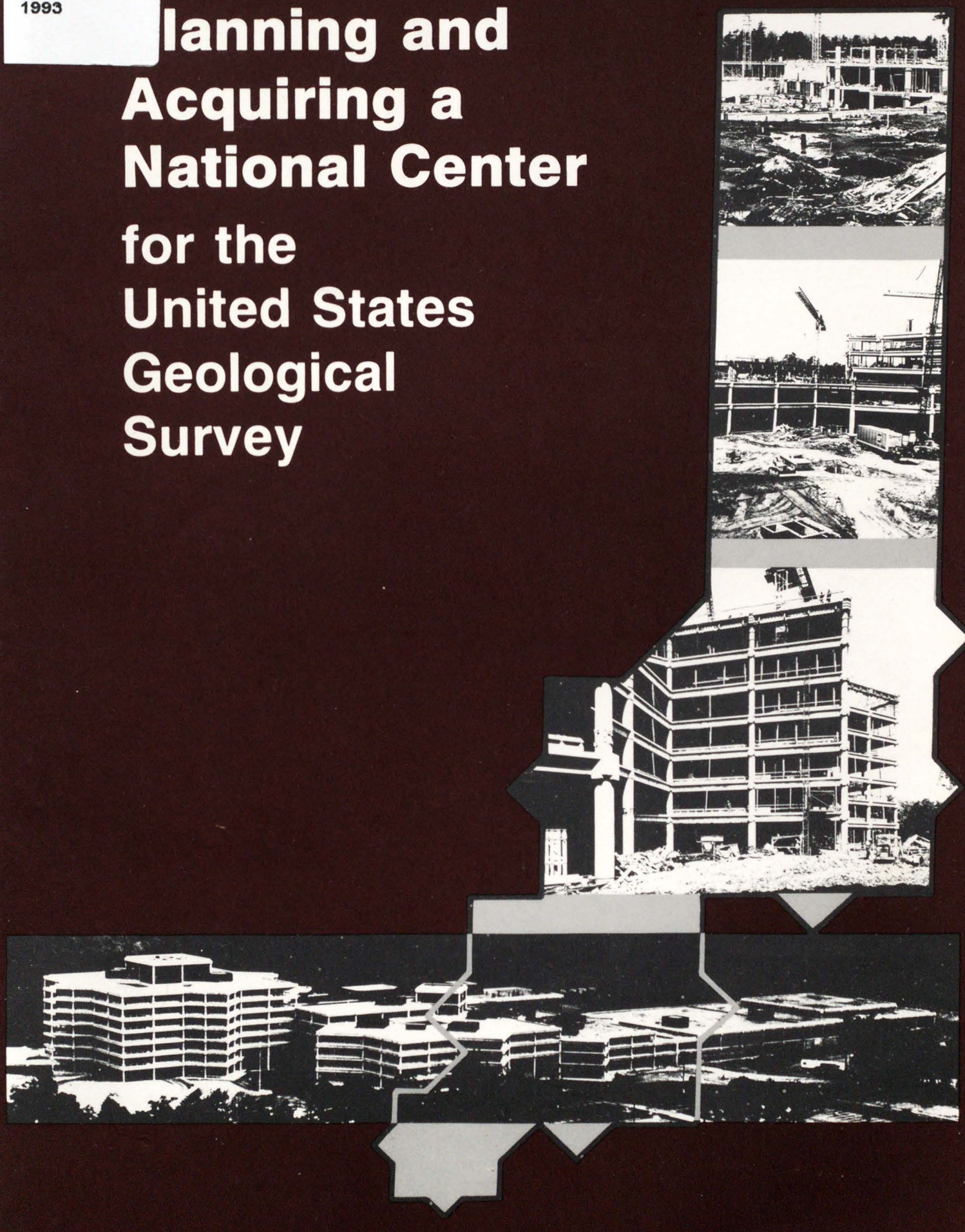
lanning and Acquiring a National Center for the United States Geological Survey



PLANNING AND ACQUIRING A NATIONAL CENTER FOR THE UNITED STATES GEOLOGICAL SURVEY

By **William A. Schmidt**

DEPARTMENT OF THE INTERIOR
BRUCE A. BABBITT, Secretary

U.S. GEOLOGICAL SURVEY
ROBERT M. HIRSCH, Acting Director

FOREWORD

This publication is particularly timely in that the Government, through the General Services Administration (GSA), will be accepting title to the John Wesley Powell Federal Building with the final rental payment under the Premises Lease in December 1993. The U.S. Geological Survey (USGS) incurred the envy of its sister bureaus in the Department of the Interior when, in 1973, it occupied its new headquarters building in Reston, Virginia, (the only bureau in the Department and one of only a few in the Federal establishment in the Nation's Capital to be so favored). For the record, its acquisition concludes the dedicated efforts of the Survey, from its establishment in 1879, to obtain a suitable mission-oriented home of its own.

Its authorization, planning and acquisition suffered through many of the same agonizing ordeals of competition, priorities, and crises in financing that, would you believe, plagued the construction of many historic buildings in Washington. The John Wesley Powell Federal Building has a character all its own which makes for ready recognition. Its design is a most interesting and evocative structure. Although this publication is intended primarily for historical record purposes, the documentation of this unique acquisition may be of interest to federal building planners and constructors.

Director

U.S. Geological Survey

SALUTE TO MAJOR POWELL
BY
V. E. MCKELVEY

Presented at the dedication of the John Wesley Powell Federal Building, U.S. Geological Survey, National Center, Reston, Virginia, July 12, 1974.

In the summer of 1869, Major John Wesley Powell began his historic exploration of the previously uncharted Grand Canyon of the Colorado River. On the morning of August 13, as his expedition prepared to break camp on the banks of the Little Colorado, Powell wrote the following in his journal:

"We are three quarters of a mile in the depths of the earth, and the great river shrinks into insignificance as it dashes its angry waves against the walls and cliffs that rise to the world above; the waves are but puny ripples, and we are but pygmies running up and down the sands or lost among the boulders.

"We have an unknown distance yet to run, an unknown river to explore. What falls there are, we know not; what rocks beset the channel, we know not; what walls rise over the river, we know not. Ah, well! We may conjecture many things."

That passage speaks volumes about Major Powell's courage. In itself though, it does not reveal Powell's thirst for scientific knowledge, which was the driving force that brought him to the Canyon in the first place. Something of that deep interest is shown by another quotation, this one from George Bradley, one of Powell's companions on the same expedition, who wrote in his log on August 11, two days earlier, that:

"The men are uneasy and discontented . . . . If Major does not do something, I fear the consequences, but he is contented and seems to think that biscuit made from sour and musty flour and a few dried apples is ample to sustain a laboring man. If he can only study geology he will be happy without food or shelter but the rest of us are not afflicted with it to an alarming extent."

Major Powell did indeed study geology and his 1875 report on the Exploration of the Colorado River of the West and later papers gave the first scientific insights into the origin and geologic history of surface drainage patterns, canyons, and many other land forms. Powell did not confine his interests to geology, however. He made similarly important contributions in two other areas—one as a pioneer ethnologist recording Indian languages and mythology and founding and directing the Bureau of American Ethnology in the Smithsonian Institution; and the other also, as a pioneer, in recognizing the need for conservation practices in the development of the arid lands of the West. His efforts in this area led to, among other things, the formation of the Reclamation Service within the Geological Survey, later established as a separate bureau, the Bureau of Reclamation. And speaking of innovation in the establishment of important institutions, Powell played key roles also in the founding of three learned societies—the Cosmos Club, the Geological Society of America, and the National Geographic Society.

We salute Major Powell for his achievements in these several fields, but we in the Geological Survey revere him most for the heritage he left us in the scientific direction and style that he established for our work. Powell, of course, played an important part in the consolidation of the four territorial surveys into the Geological Survey in the Department of the Interior in 1879, and he became its second Director in 1881. As he had in the conduct of his Geological and Geographical Survey of the Rocky Mountain Region during the preceding decade, Powell saw the linkages between the land, water, and other resources in determining the use we make of our environment; and he saw the need to underpin plans for development with scientific knowledge of the land and its resources. Powell's perception of the breadth of the studies required, of the need to have the Survey's work guided by the scientific method, and of the need

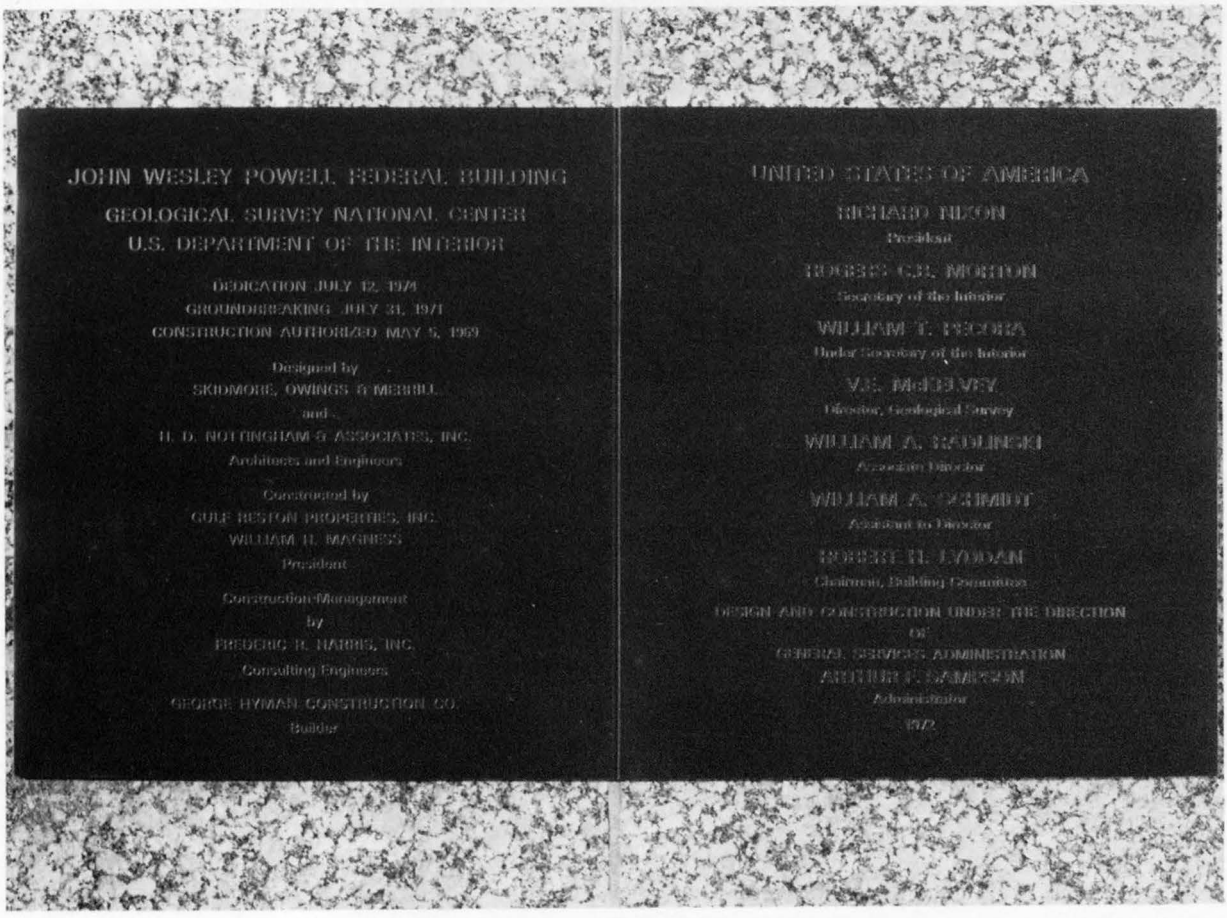
to direct the Survey's work toward the analysis and solution of critical national problems set us on a course that has been productive for both the Nation and science.

We are grateful also to Powell for establishing the working climate that attracts outstanding people and that brings forth their best efforts. This too began in Powell's territorial survey, to which he attracted some of the best scientists and technicians of the day and it continued in the consolidated Geological Survey. Powell respected his colleagues, encouraged independent thought and inquiry, and set the organizational tone that draws dedicated people to the public service. Powell's contributions and influence continue in the Geological Survey in the form of the traditions that have developed from precedents he helped to establish.

As is natural for the human being he was, Powell made some mistakes, one of which was to campaign vigorously for an arid land policy based on his understanding of the problem. Both he and the Survey suffered from the consequences of the political controversy surrounding the issue. But even in that mistake Powell gave invaluable guidance to the Survey, for he showed that a scientific organization serves the public most effectively in developing the facts and explaining their significance, and in laying the knowledge base for policy-making rather than in participating in the process itself.

The completion of this fine building marks the culmination of a dream about a National Center for the Geological Survey that can be traced back to Major Powell himself, for he was the first to draw up plans for a Survey building. It was to be rectangular in shape, 100 by 300 feet in size, five stories high, and to be located near the Smithsonian. No doubt he would be surprised to find us here, but we can be sure he would be pleased to see this expression of the vigor of the organization he helped to found.

The United States Congress acted wisely in naming this the John Wesley Powell Federal Building, for Powell symbolizes the spirit of dedication to the public service that must continue to motivate and guide the Geological Survey. In dedicating this building to Powell today, we not only pay homage to his works and achievements, but we erect a beacon that will help to guide us in continuing to serve the public interest to the best of our abilities.



PREFACE

In August 1973, the U.S. Geological Survey moved its first group of employees into the John Wesley Powell Federal Building of its newly constructed National Center at Reston, Virginia. The move signaled the fruition of more than 20 years of dedicated planning and work following World War II, to consolidate the agency's widespread activities into one location, which could truly serve as a national center.

Architecture of distinction and quality, in the words of its principal architect, Walter A. Netsch, "was considered to be quite radical at the time." The John Wesley Powell Federal Building provides requisite and adequate facilities in an architectural style and form which reflect the dignity, enterprise, vigor, and stability of the United States Government. It symbolizes the dedication to the public service that must continue to motivate and guide the Geological Survey.

This history of building a National Center for the U.S. Geological Survey is a "nuts and bolts" account of the planning, design and construction, forgotten happenings, and frustrations in the planning and authorization process, and the political and other considerations which played a significant role in the culmination of a dream about a National Center for the Geological Survey. This documented data of unique procedures in the acquisition and financing of Federal buildings, the choice and development of the building site, and its location as a contribution to the enhancement of the "new town" concept of the 1960's in the planning and development of the National Capital Area, may well provide guidance in the future to those who have to decide whether a building of true worth should be preserved.

ACKNOWLEDGEMENTS

This report of the U.S. Geological Survey National Center, the John Wesley Powell Federal Building, in Reston, Virginia, is the work of the Administrative Division staff researching available sources of information and data in the USGS records, with contributions from the staffs and records of the General Services Administration, the National Capital Planning Commission and Developers, Reston, Virginia Inc., Gulf Reston, Inc., Gulf-Reston Properties, Inc., and Mobil Land Corporation, to provide a documentation of its acquisition for future reference, archival, and historic purposes.

The planning, authorization, acquisition, design, and construction of the Center represents the dedicated efforts of many individuals and organizations, not the least of which were: Members of the Congress; the Secretaries of the Interior; the Bureau of the Budget (now the Office of Management and Budget); Reston, Virginia, Inc.; Gulf Reston, Inc.; the Commissioned Architect/Engineers Joint Venture of Skidmore, Owings and Merrill of Chicago, Illinois and Nottingham and Associates of McLean, Virginia; the U.S. Department of Transportation; and the cooperation of officials, elected and appointed, of the State of Virginia and Fairfax County. The report identifies these individuals who made significant contributions to the project. If in the identification of persons in the text any were inadvertently overlooked, it was not intentional. The author, formerly with GSA, was intimately involved with the project in its planning, authorization, and acquisition as GSA's Assistant Commissioner for Planning, and Deputy and Commissioner of the Public Buildings Service, and as Special Assistant to the Director, serving as the USGS Project Manager. He would especially like to acknowledge the support and work of Secretary Stewart Udall; Directors Thomas B. Nolan, William T. Pecora, and Vincent E. McKelvey; Associate Directors Arthur A. Baker and William A. Radlinski; and GSA Administrators Franklin G. Floete, Bernard L. Boutin, Lawson B. Knott Jr., and Arthur F. Sampson; and members of the Public Buildings Service and Survey staffs.

A deserving word of thanks goes to Robert H. Lyddan, former Assistant Director and Chairman of the Survey's Building Committee; Richard M. Doolittle, Building Coordinator; and Frank P. Ishmael, Professional Services Specialist with GSA and the Survey. Completion of the National Center would not have been possible without their assistance and dedicated effort in the long, and sometimes agonizing ordeal of planning, design, and construction. A special word of thanks to Bob Lyddan, who after his retirement and before his untimely death took the time to review the draft of this publication and supporting researched data to provide the author with a critical review and constructive suggestions.

The author also wishes to thank the following individuals for their assistance in providing a critical review and constructive suggestions on the draft manuscript, as well as providing graphics, material, and photographs for the publication:

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THE NATIONAL CENTER OF THE U.S. GEOLOGICAL SURVEY THE JOHN WESLEY POWELL FEDERAL BUILDING

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THE NATIONAL CENTER

OF THE

U.S. GEOLOGICAL SURVEY

THE JOHN WESLEY POWELL FEDERAL BUILDING

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
RESTON, VIRGINIA

INTRODUCTION

Beginning with the establishment of the U.S. Geological Survey (USGS) by an Act of Congress in 1879, the first and foremost problem of the new agency in the Federal establishment was to provide itself with a suitable headquarters for its scientific operations, preferably a home of its own. Every director, from Clarence King to Vincent E. McKelvey, played a significant role in this effort. In 1897, Director Charles Walcott's efforts to secure a new building did not succeed. However, in 1917, the Survey joined its sister bureaus of the U.S. Department of the Interior in the newly-built Interior Building on F Street between 18th and 19th Streets N.W. Twenty years later a new Interior Building was constructed just south of the "Old," but the Survey was compelled to remain in the old building, sharing the building with the Federal Works Agency. Later, the building was renamed the General Services Administration (GSA) Building. Expansion of the Survey's programs in the pre- and post-World War II periods resulted in the Geological Survey being housed in 20 widely scattered locations throughout the Washington, D.C., area. In 1949, the Survey, in collaboration with GSA, developed a preliminary plan as to the size and cost of the required facilities for a USGS headquarters, but because of budget constraints a freeze was placed on Federal construction in the Washington, D.C., area. Also, in the period immediately following World War II, considerable pressure developed toward dispersal and decentralization to reduce the concentration of Federal activities in the Nation's Capital. To some, the Survey was a logical candidate for decentralization. However, establishment of two major USGS field centers in Denver, Colorado, and Menlo Park, California, put that pressure on the Survey to rest. In 1954, GSA's Public Buildings Service, in collaboration with the Congress, launched a new nationwide program of public buildings construction, including a substantial program for the Nation's Capital to remove temporary structures built during the two World Wars. This program to build public buildings (post offices, court houses, and federal office buildings) with private capital, by purchase contract (lease-purchase) afforded the Survey the opportunity to obtain a national headquarters, with state-of-the-art research and engineering facilities to fulfill its scientific mission. The author coordinated this first lease-purchase effort in GSA. However, the purchase-contract method met with opposition in the Congress and was short lived. In 1959, a new public buildings program for direct appropriation was enacted and the Survey project authorized under that legislation (the Public Buildings Act of 1959), but before construction could be funded the budget constraints took their toll.

In the 1960's, in keeping with the Government's "Year 2000 Policies Plan" for guiding the National Capital Region's growth in satellite cities and to discourage further urban sprawl, the idea of establishing a major Federal facility like the Survey's headquarters in a satellite city gained momentum. Outstanding examples of the "New Town Concept" were Reston, Virginia, and Columbia, Maryland. Reston was not the Survey's first choice for a site, but when other desirable sites became unavailable and with the difficulties in obtaining construction funding, it became a feasible alternative especially with the donation of 50 acres of land by founder Robert Simon of Reston, Virginia, Inc., and with the successor developer's (Gulf Reston, Inc.) offer to construct the facility on a nonprofit lease-purchase basis. This radical change required a re-authorization of the project by the Congress in 1969.

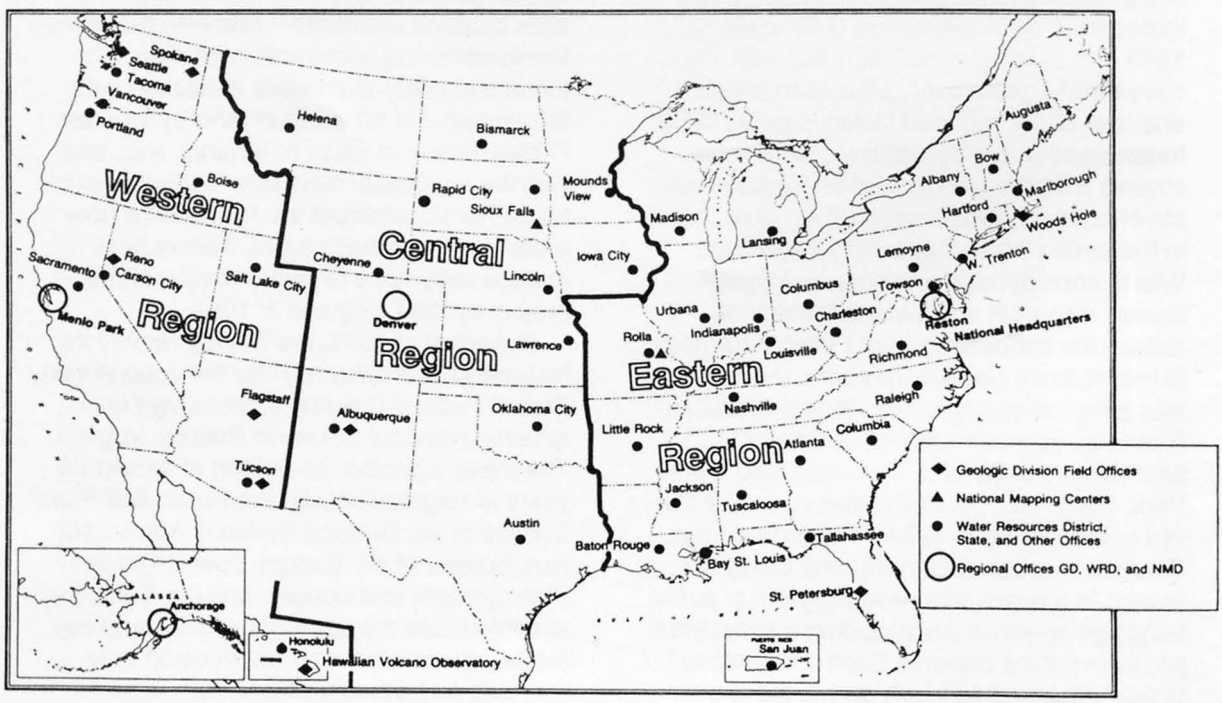
In August of 1973, the Survey moved its first group of employees into the John Wesley Powell Federal Building of its newly constructed National Center in Reston, Virginia. The move signaled the fruition of almost 20 years of negotiation with the Public Buildings Service of the General Services Administration, Bureau of the Budget, now Office of Management and Budget, and the Congress, to consolidate the agency's widespread activities into one location which could truly serve as a National Center.

THE SURVEY AND ITS MISSION

The U.S. Department of the Interior's Geological Survey is one of the Federal Government's major earth science research and fact-finding agencies. It carries out diversified programs that play a vital role in furthering the Nation's welfare. The Survey's programs provide information on the character, magnitude, location, and distribution of minerals and ores, the sources and supplies of water, and the natural earth processes that must be understood to maintain environmental quality. This information serves government and private enterprise as a sound basis for making critical decisions about mineral resource exploration and development, water resource use, land management, the problems of earthquakes and other natural hazards, enlightened urban planning, sound construction practices, and environmental and health problems.

For more than a century, the growth of the Survey's scientific and engineering research programs has paralleled and contributed to the development of the United States as a great industrial nation. Today, the expansion of the Survey's programs into the global environmental concerns reflects an increasing need for its surveys, investigations, research, and supervisory functions.

Specific responsibilities and programs are carried out by the Geologic, National Mapping, and Water Resources Divisions of the USGS. Support services for all Survey offices are provided by the Information Systems and Administrative Divisions from the National Center at Reston, Virginia. Other Survey offices include regional headquarters at Denver, Colorado, and Menlo Park, California; the Earth Resources Observation Systems Data Center at Sioux Falls, South Dakota; Mid-Continent Mapping Center at Rolla, Missouri; Publication Distribution Center at Denver, Colorado; and numerous field offices throughout the country.



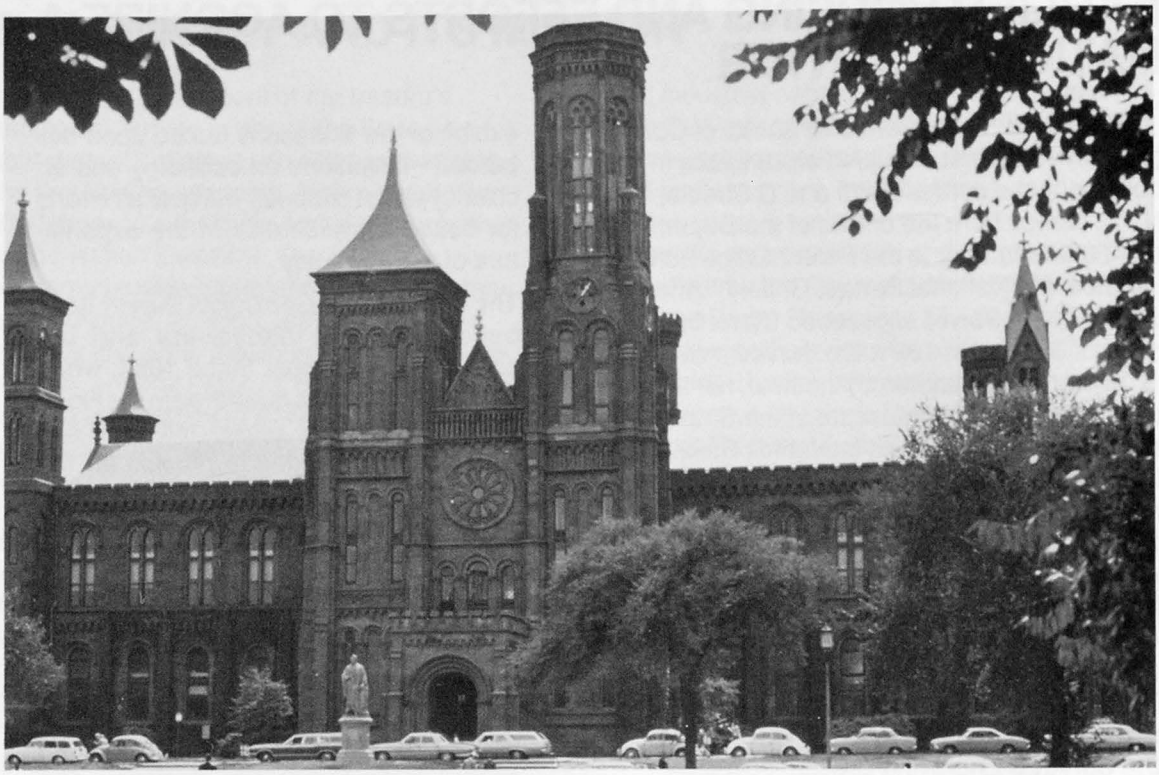
U.S. Geological Survey Offices.

EARLIER HOUSING AND EFFORTS TO ACQUIRE A NATIONAL CENTER

The Survey, established by an Act of Congress in 1879, first occupied office space in a building at the corner of 8th and G Streets, N.W., across from the offices of the Department of the Interior in the Patent Office Building (now the National Portrait Gallery). After John Wesley Powell succeeded Clarence King as Director in 1881, the Survey moved to the northeast pavilion of the new, not fully completed, National Museum of the Smithsonian (now the Arts and Industries Building). In 1884, the Survey moved to the Hooe Building at 1330 F Street, N.W. (presently the site of the National Press Building). The laboratories of the Survey's Chemical Division and the principal offices, laboratories, and collections in paleontology remained in the National Museum or the Smithsonian "Castle" Building. By 1894, the Survey occupied the entire Hooe Building above its ground floor. The Survey's Engraving Division occupied the top floor of the Adams Building across F Street at 1333-1335. In 1897, demand for additional laboratory space generated Director Charles Walcott's request that Congress authorize the Survey to secure temporarily two additional floors in the annex building at the rear of the Hooe lot until a new building could be constructed for the Survey. Walcott's efforts to secure a new building did not succeed.

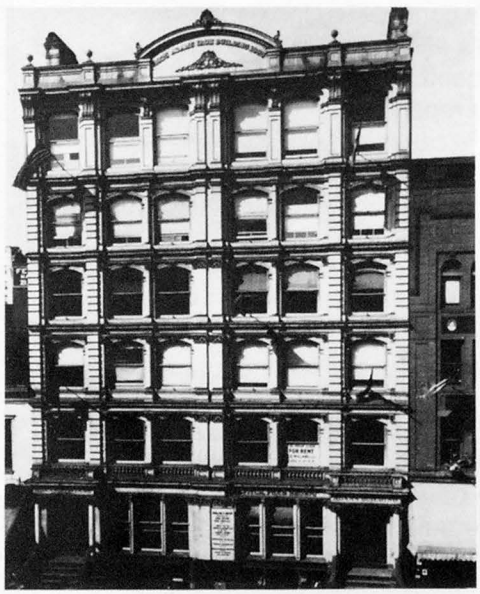
In his report to the Secretary of the Interior for the Fiscal Year 1912, Director George Otis Smith detailed the need of a Survey building, reporting on the unsatisfactory and deplorable conditions under which the Survey had to do its work. The following are excerpts from the Thirty Third Annual Report of the U.S. Geological Survey:

> The record of the work of the Geological Survey during the fiscal year 1912 may fitly be preceded by a statement of the conditions under which that work has been done, not as an apology for either the quantity or quality of the results of the investigations made, but rather as an exhibit of the limitations forced upon this bureau—limitations on economy and efficiency which seriously hamper all efforts for better administration in the expenditure of public money.
>
> The offices of the Geological Survey have become wholly inadequate and unadapted to its needs. Since 1884, when the Survey was first quartered in the Hooe Building, at 1330 F Street, the effort has been frequently made to provide for the growth of the organization by adding wings and extensions to the building, but every increase in floor space has been made at the expense of proper lighting of the older portions of the building, so that its fitness for the Survey's use has been steadily impaired, and the resultant conditions constitute an actual detriment to health and a menace to life and property, as well as an obstacle to efficiency. The conditions under which the Survey employees work in the Washington office are to be condemned for both humanitarian and business reasons.
>
> Under the humanitarian clause of the indictment the present quarters of the Geological Survey can be described without exaggeration as in large part comparable in crowded and insanitary conditions to a sweatshop. Treatment of wage earners that would excite severe criticism if a corporation were the offender is tolerated in the case of these employees of the Federal Government. The crowded condition of the building occupied by the Geological Survey is so manifest to every observer that it needs to be described only for the information of those who have not had occasion to visit the offices. In one division of the Survey statistical clerks have each on an average only 73 square feet of floor space. In another branch of the Survey the floor space allotted to each person is 67.5 square feet, and in still



The original National Museum of the Smithsonian

The Hooe Building



The Adams Building

another section, in which the workers are for the most part scientists, the average space per man is 102 square feet. The figures given do not measure the actual working space available, for not only must desks and chairs be provided, but also bookcases, large file cases, and in many rooms drafting tables.

The report details further the lack of fresh air and light, summer heat, especially in loft space, fire risks, impairment of efficiency, inconvenience of proper space, dirt and noise from without and distracting noises in the building. To continue from the report:

> Another argument for a special building is hardly less practical in its ultimate bearing. The present housing of this federal bureau is unworthy of the Nation. Both the work and the workers of the United States Geological Survey have an international reputation, and visiting foreign scientists do not conceal their astonishment at the miserable environment in which these investigations are being carried on. Our neighbors on this continent, in Canada and Mexico, have erected buildings especially adapted to the work of their geological surveys, which are properly housed, as is nearly every other geological survey in the world, and yet the geological survey of no other nation compares in size of organization or scope of work with that of the United States. In fact, the surveys of several of the larger European countries are organizations whose personnel is comparable in number only with that of single divisions of the American Survey.
>
> The practical side of this feature is the increased inducement that suitable quarters would afford in retaining in the Government service men of the highest professional talent. At best, most of these investigators are carrying on their Government work at a financial sacrifice, and the temptation to go into professional or corporation work at largely increased salaries is strengthened by the contrast between the well-lighted and sanitary offices generally provided in the business world and the noisy, dirty, dark, and crowded quarters offered by the Survey. To retain in the Government service the best men is by far the largest administrative problem of the Director of the United States Geological Survey.

A DEPARTMENT OF THE INTERIOR BUILDING

A new Interior Department office building was authorized March 4, 1912, ground broken August 16, 1915, and the building completed in May 1917. The new building (now the General Services Administration Building, which occupies the whole block bounded by 18th, 19th, E, and F Streets, N.W.) accommodated the Office of the Secretary, the General Land Office, Office of Indian Affairs, the Bureau of Mines, the National Park Service, and the Alaskan Engineering Commission as well as the Geological Survey, which with its library and map printing establishment occupied nearly one-third of the approximately half a million square feet of floor space in the building. The completion of the new building, although not just a Survey building, marked the culmination of the efforts of three directors of the Survey to procure quarters both adequate for its work and safe for its workers as well as the large accumulation of scientific records. The approximate cost of the building was $2.5 million. The building, then the largest public building in Washington, was unique in that the requirements of use for office and laboratory purposes were given first consideration, the architectural features being determined by the size of the unit decided upon as best providing for the special uses within the limits of the appropriation.

An interesting item is noted in the Fortieth Annual Report of the Director of the Geological Survey for the Fiscal Year 1919, only two years after occupancy of the new building, on the loss of efficiency through crowding.

> The latest restriction put upon efficiency in the scientific service of the Government has been the enforcement of a retrenchment measure whereby scientist and clerk alike are allowed only 75 square feet of floor space each. The inadequacy of

this allotment becomes evident when the tools of a working geologist are enumerated—several large cases of rock specimens, map cases, book cases, file cases, as well as his desk and drawing table or bench for simple laboratory tests. The practical arguments against putting two or more highly paid workers in the same room were set forth on pages 7-14 of the Thirty-third Annual Report, and such considerations presented to the congressional committee at that time led to the authorization of the new building, in which the Survey now finds its personnel more crowded than in its old rented quarters. Moreover, many of the special features of the new building designed to facilitate the best work of the scientists lose their highest value under the present conditions. Men who need what are essentially laboratory facilities cannot be crowded into the same space as clerical workers and render the service for which they are paid. The loss in efficiency which cannot appear on the books of the Treasury will surely several times exceed the apparent saving in rentals; and even worse than that, this crowding now adds to the unattractiveness of government employment to those who are most needed in the public service.

GSA Building

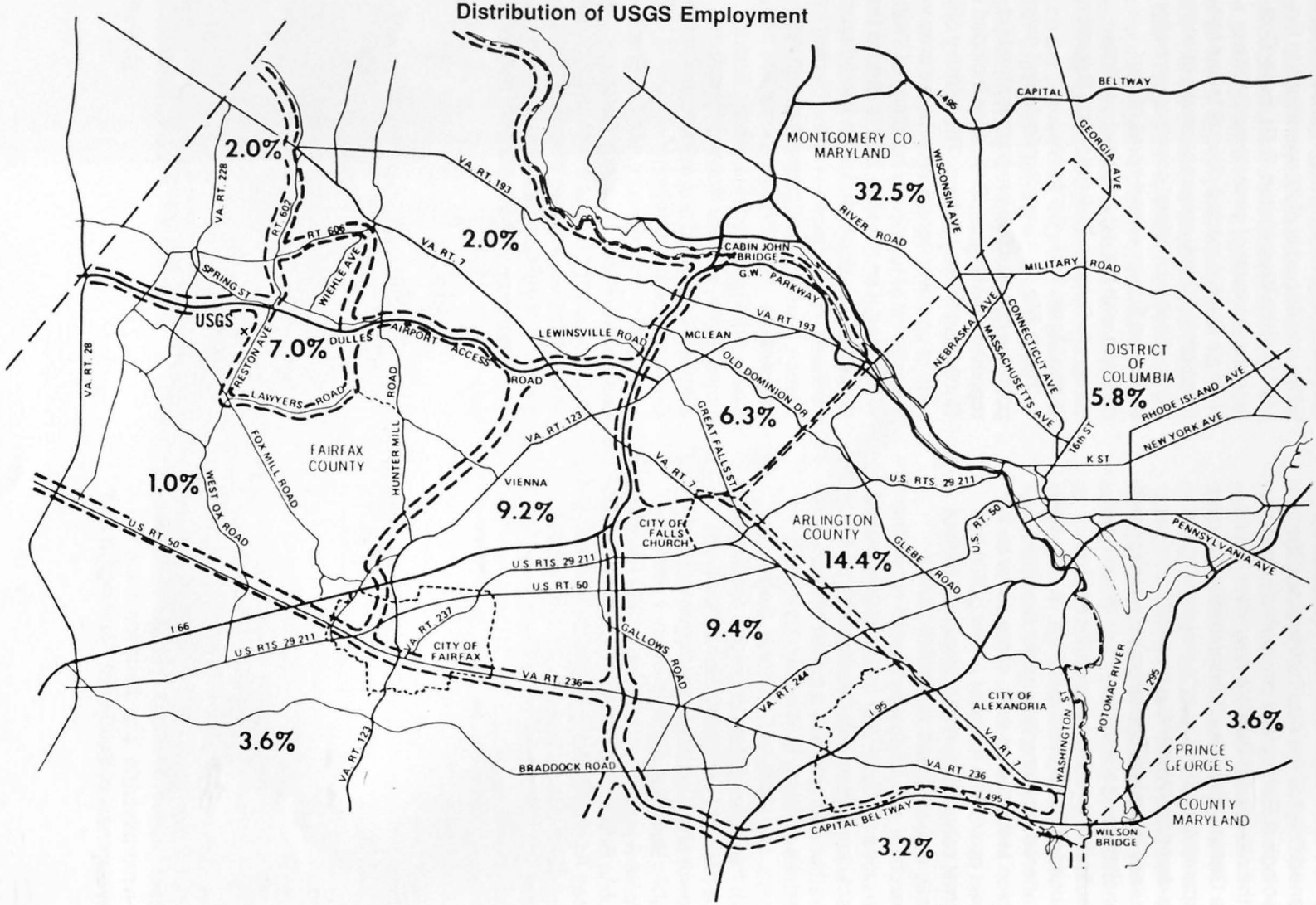
Twenty years later, a larger building was constructed just south of the old Interior Building—to house the expanding Department of the Interior. Height restrictions reduced the planned size of the new building, and the Geological Survey was compelled to remain in the old Interior Building now identified as the General Services Administration Building. Expansion of the Survey's programs in the pre-and post-World War II periods, and particularly the overall government need for additional office space in downtown Washington, resulted in the Survey's activities being housed in 30 different buildings, at 20 widely scattered locations throughout the Washington Metropolitan area, some as far as 27 miles apart. The need for a new building to permit consolidation and proper housing of these activities was recognized and a search for a solution was started soon after the close of World War II. The efforts toward a solution began with Director William E. Wrather and spanned a period of three directorships (William E. Wrather, Thomas B. Nolan, and William T. Pecora). Beginning with the development of precise requirements in a period of continuing Survey program growth and a continuing dialogue with the Public Buildings Administration, Federal Works Agency, established in 1939 (now the Public Buildings Service (PBS), General Services Administration established in 1949), the Bureau of Budget (now Office of Management and Budget), and the Committees on Appropriations and the Committees on Public Works of the Congress, every avenue towards an authorization and appropriation was explored. These efforts suffered through a period of post-war budgetary constraints; lack of decision as to whether GSA or DOI should budget for the Geological Survey building, a special purpose facility; efforts towards dispersal of government in the Metropolitan Washington, D.C., area and decentralization to limit the size of the Federal establishment in the Nation's Capital; post-war growth of the civilian agencies in the Federal Government; and Federal construction moratoriums. The demands of the redevelopment of Southwest Washington also became a dominant factor in the post-war construction in the Nation's Capital.

While all of this was going on, the Survey continued to grow resulting in further fragmentation and dispersal of its operations in the Metropolitan Washington, D.C., area. Continued expansion of government in the Nation's Capital made it difficult to surface a Geological Survey project because of competing priorities for Federal construction nationwide. The Survey eased some of the pressure with the establishment of field centers in Denver, Colorado, and Sacramento and Menlo Park, California.

The Public Buildings Service's first major post-war construction program for the Metropolitan Washington, D.C., area included a Geological Survey project. The primary objectives of post-war construction in the area was the removal of temporary buildings of World Wars I and II on the Mall, and to reduce the Government's dependence on leased space. However, higher priorities of the Central Intelligence Agency, the Federal Aviation Administration, the National Aeronautics and Space Administration, the Atomic Energy Commission, and the National Bureau of Standards thwarted any authorization of the Geological Survey project.

As a stop-gap measure, the Congress enacted the Public Buildings Purchase Contract Act of 1954 (Lease Purchase) P.L. 83-519 authorizing a 3-year program of private financing of public building construction repayable over a period of not to exceed 20 years.

Distribution of USGS Employment



A FIRST EFFORT TO ACQUIRE THE HEADQUARTERS BY PURCHASE CONTRACT

GSA submitted a list of projects for the Washington, D.C., area, including the Geological Survey project to the Bureau of the Budget (BOB) to be considered for authorization under the 1954 Act. The Survey was authorized by the Congress to use $400,000 of its appropriation for preparation of preliminary plans and site acquisition, but BOB impounded the funds. In 1956, the Public Buildings Service was reorganized and William A. Schmidt was appointed Assistant Commissioner for Planning. He had been coordinator of the GSA lease purchase program under the 1954 Act. As Assistant Commissioner, it became his responsibility for the nationwide public buildings planning, including long range planning for federal public buildings construction.

Director Nolan by memorandum of May 15, 1956, established the following Headquarters Building Committee: Robert H. Lyddan, Chairman; P. B. Simms, Administrative Division; R. E. Spratt, Conservation Division; K. E. Lohman, Geologic Division; C. P. VanCamp, Topographic Division; and W. H. Hastings, Water Resources Division. The function of the Committee was to provide a source of information as to the Geological Survey's space requirements in the new headquarters facility and to provide continuing liaison with the General Services Administration, the architects and engineers, and others.

By letter of June 23, 1955, a prospectus for construction of a "U.S. Geological Survey Building" under the 1954 Act at an estimated overall cost of $19,950,000 was transmitted to the Director, BOB, for a statement that the project is necessary and in conformity with the policy of the President as required by the 1954 Act. Following discussions with BOB, the project was approved by the Director, BOB, on March 13, 1956, at a maximum cost of $22,260,000 with the directive that every effort by made to design and construct space conducive to maximum efficient utilization, and to take advantage of any revision of cost downward which may be found possible as the plans develop and negotiations are advanced. Following the approval, the Secretary of the Interior advised GSA that determination had been made that a site within the area generally considered to be the target area for Washington, D.C., was deemed essential because a site at a remote location from the city of Washington would impair the effectiveness of Geological Survey operations.

On April 3, 1956, the prospectus was transmitted to the Chairmen of the House and Senate Committees on Public Works for approval under the 1954 Act. On July 19, 1956, the House Committee adopted a Resolution approving the project for construction in the Washington, D.C., area. On July 24, 1956, the Senate Committee adopted a Resolution approving the project with the premise that "it is located in the District of Columbia on Government-owned land." It is interesting to note here that "the Gold Mine Site" on the Potomac River in Montgomery County was a favored location for the USGS headquarters. However, on May 15, 1956, a story broke in the Drew Pearson column of the Washington Post implicating Congressman Victor E. Wickersham of Oklahoma in negotiations for the gold mine site.

The USGS and GSA proceeded with the project on the basis of the Senate Committee approval. The 1956 Interior Appropriations Act included $275,000 for preparation of plans for a USGS Building. The findings of a comprehensive study of the various possible government-owned locations within the District were presented to GSA. The project required a site of approximately 50 acres, which under most favorable conditions might be scaled down to an absolute minimum of about 30 acres. The following properties,

each of which afforded sufficient acreage, were reviewed as possible sites:

National Arboretum, Bladensburg Road, N.E.

National Bureau of Standards, Connecticut Avenue, N.W.

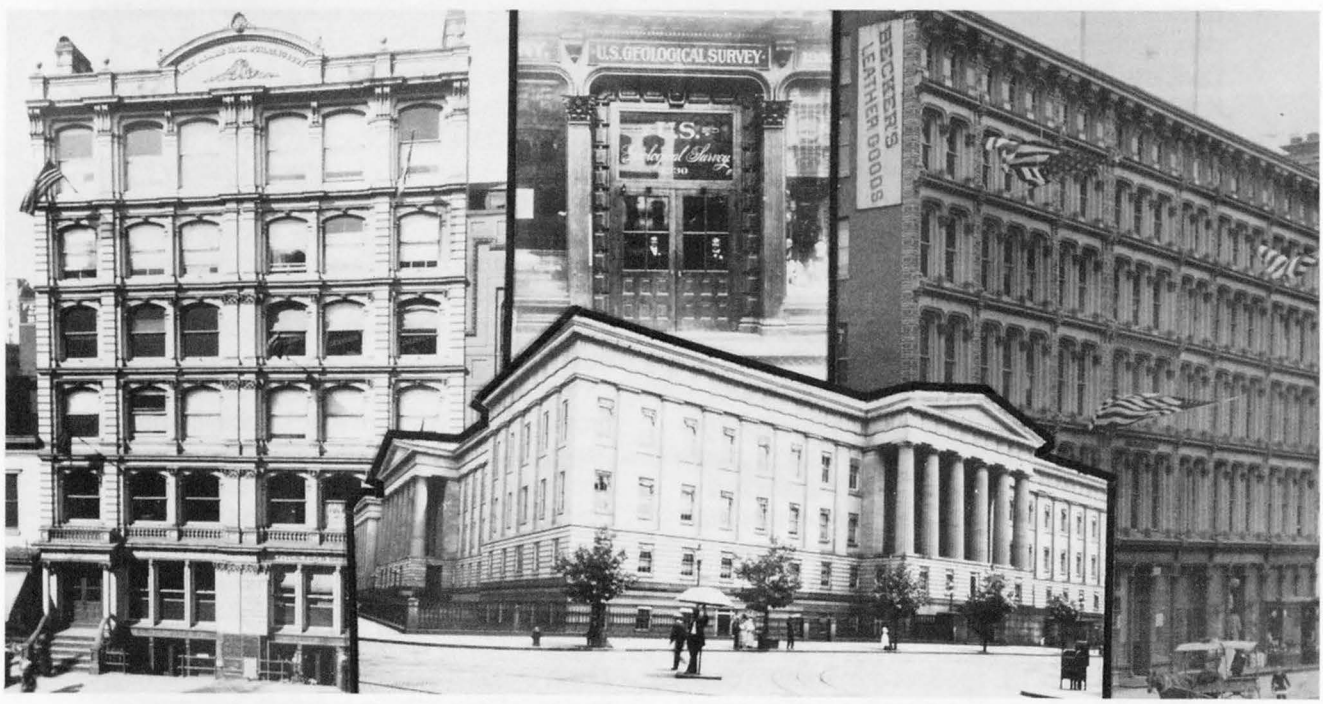
Dalecarlia Reservoir, Washington Aqueduct, MacArthur Blvd., N.W.

Naval Observatory, Massachusetts Avenue, N.W.

National Training School for Boys, Bladensburg Road, N.E.

Veterans Administration Hospital, Michigan Avenue, N.W.

No government-owned site was found which was considered both suitable and available. The Survey requested, therefore, that GSA request the Senate Committee to reconsider the authorization as to the advisability of removing the restriction regarding the location of the site. In response the Administrator of General Services advised that "any attempt by the Senate Committee to amend its present resolution would constitute a de novo action by the Committee, authority for which expired on July 22, 1957. Since the action of the Senate Committee resulted in a substantial and material deviation from the project approved by the House Committee, we do not have a fully approved project for the Geological Survey Building as contemplated by the Act." GSA suggested it should not contact the Senate Committee but wait to see what develops in further consideration of legislative proposals pending in the Congress. The pending legislation was to extend the lease-purchase authority or authorize a new program for construction of approved public buildings by direct appropriation. The Congress did enact the Public Buildings Act of 1959 (P.L. 86-249 September 9, 1959, 40 U.S.C. 601-616), authorizing a direct appropriation program.



AUTHORIZATION UNDER THE PUBLIC BUILDINGS ACT OF 1959

On September 11, 1959, a project for the design and construction of a new headquarters facility, with a cost of $32,240,000, in which to consolidate the operations of the U.S. Geological Survey on a site to be acquired in the Metropolitan Washington, D.C., area, pursuant to the provisions of the Public Buildings Act of 1959, was recommended and submitted to the Committees on Public Works of the Senate and the House of Representatives by Franklin G. Floete, Administrator of General Services. However, the project was not approved by the Committees of the Senate and the House until April 16 and July 16, 1962, respectively. In the interim, USGS continued with its planning for a new building.

By letter dated September 24, 1959, to Franklin G. Floete, Administrator of General Services, Director Thomas B. Nolan delineated the location requirements for the new Geological Survey headquarters, quoted in part:

> I assume that one of the first positive steps that will have to be taken is the selection of a site. I would like to comment on certain aspects of that problem which we consider important.
>
> Probably the most difficult problem in the scientific agencies in government is attraction and retention of competent personnel. We believe, therefore, that in the selection of a site for the Survey building it is most important that difficult transportation problems or the necessity for many employees to change their place of residence should be minimized.
>
> The majority of our employees live in the Arlington-Northwest Washington-Bethesda area. An analysis of the places of residence of all of our employees has indicated "the center of gravity" to be somewhere north of the Potomac River and near the western boundary of the District of Columbia. We believe a site somewhere in that area would have many real advantages.
>
> The building which we contemplate will have, in addition to standard office space, many special features: facilities for a map printing plant and map storage and distribution; special shops and laboratories for geologic and hydrologic research; and drafting rooms and other facilities for topographic map compilation. We believe such a building should be primarily functional in design, not a monumental type building usually considered appropriate for downtown Washington.
>
> This seems to us to suggest a location somewhere near the western boundary of the District of Columbia, far enough out that the cost of sufficient land would not be prohibitive, but not so far that many of our employees would have to move, or be confronted with serious transportation problems.

Site and design funds for the Survey building were included in the Independent Offices Appropriations Act approved September 15, 1959, on the condition that a prospectus would have to be approved before the funds could be expended. As the prospectus had not been approved Senate Report No. 1611 to accompany the Independent Offices Appropriation Act, 1961, then pending in the Senate, authorized the Administrator to apply such funds previously appropriated for site and design of the Geological Survey building toward financing six specific Section 11b projects approved under the 1959 Act.

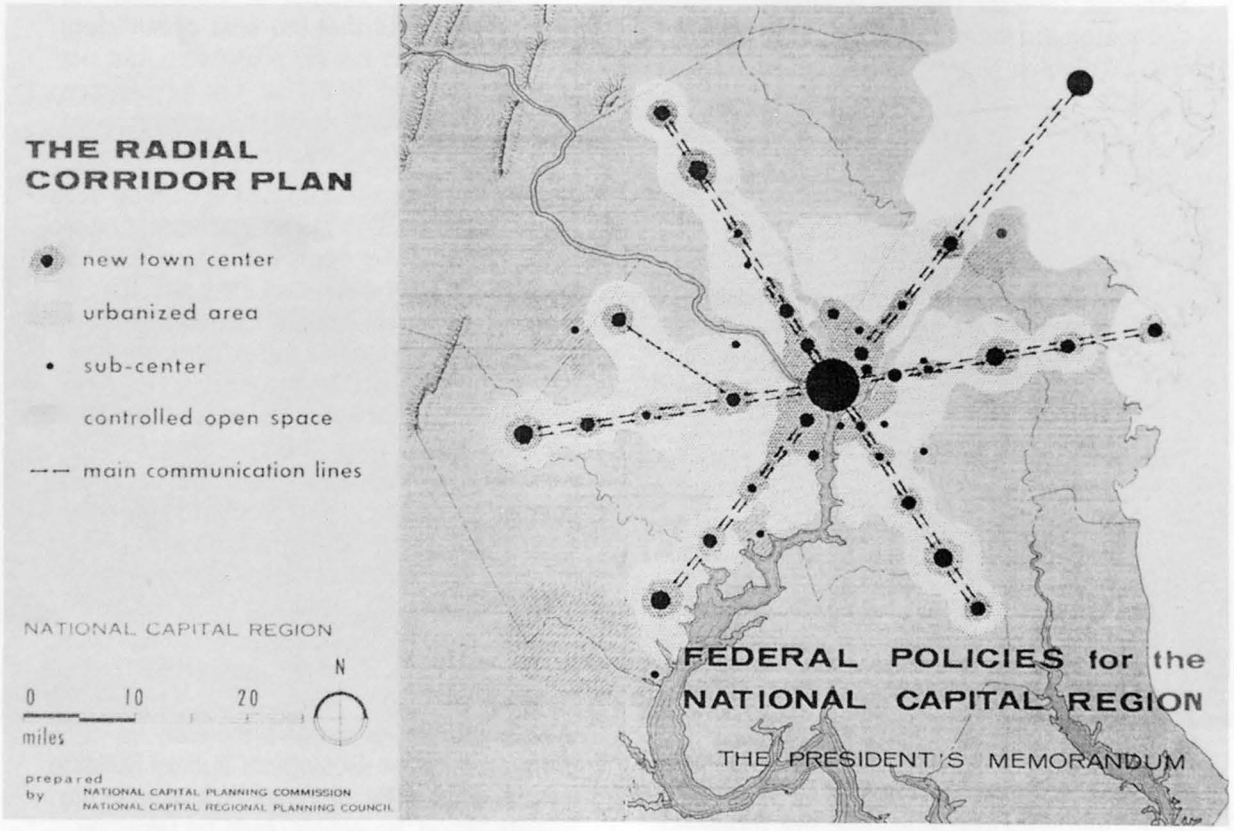
As a result of lack of approval of a project under the Public Buildings Act of 1959 by the Public Works Committees and the release of the site and design funds previously appropriated for the Geological Survey Building for use at other locations as proposed in the Senate report, no action could be taken by GSA to acquire a site or contract for design.

Funds for preliminary planning of a headquarters building, in the amount of $100,000, were appropriated to the Department of the Interior, Geological Survey, in the Department of the Interior Appropriation Act, 1964, P.L. 88-79, approved July 23, 1963. Funds in the amount of $2,025,000, under the heading of Sites and Expenses, were appropriated to the General Services Administration under the Independent Offices Appropriation Act, 1964, P.L. 88-215 approved December 19, 1963, for the acquisition of a suitable site and the preparation of plans and specifications.

The USGS engaged the architectural firm of Smith, Smith, Haines, Lundburg and Waehler of New York to do a preliminary Site Study to determine:

1. The approximate area required to site new facilities for the U.S. Geological Survey under the following assumptions:
   a. No future expansion is to be required.
   b. Three or four story buildings generally are to be provided.
   c. The site is a hypothetical one along the Virginia side of the Potomac River, northwest of Washington.
2. Prepare pictorial report derived from approximate requirements.
3. Assist in the selection of a suitable site.

The architects submitted their report under the date of January 31, 1964. The study concluded that approximately 100 acres of land having a high yield of usable area will be required; that the area required for cars is nearly twice the ground area covered by buildings; that it is extremely important to have a buffer area around the buildings; and that the site be adequate to at least a double



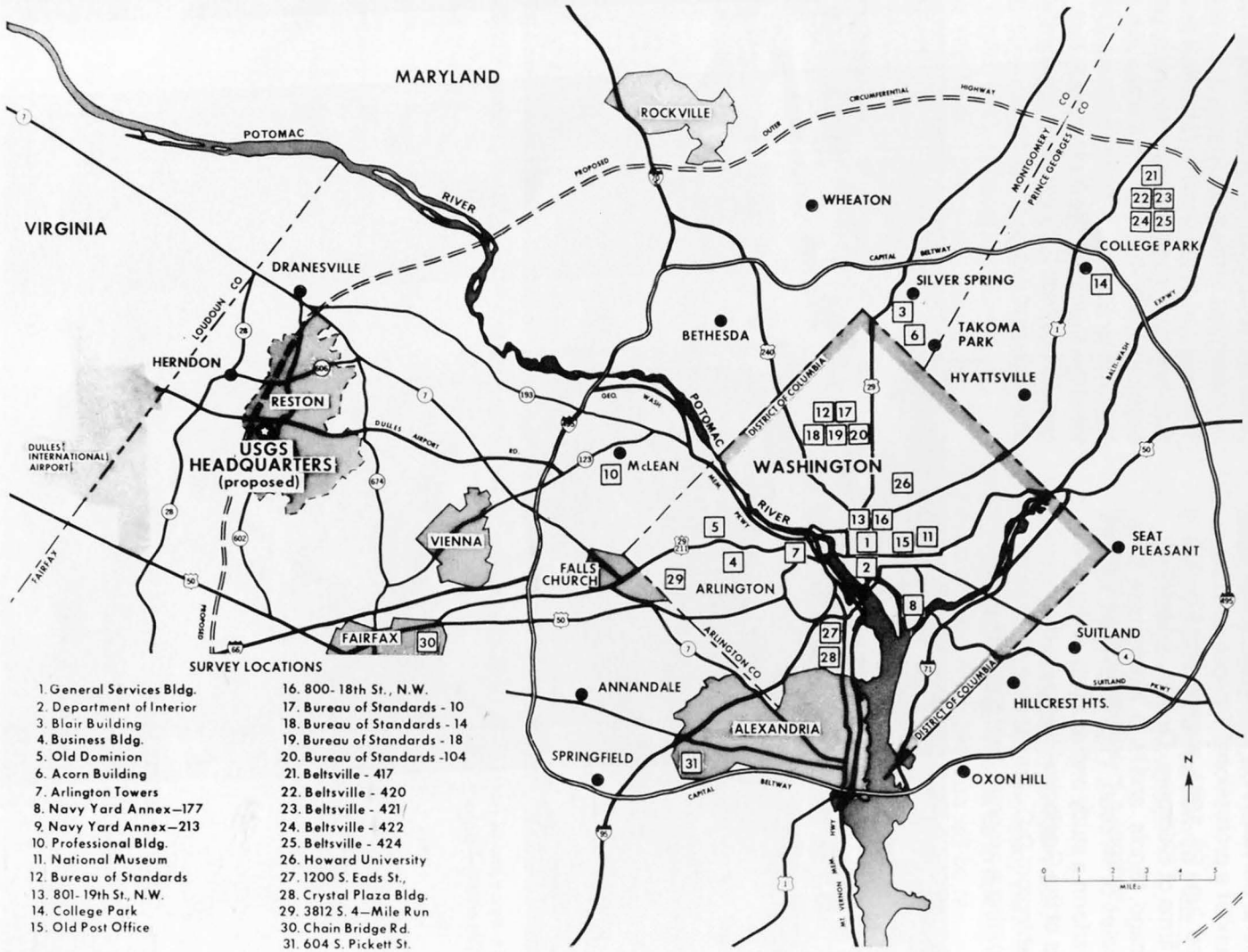
of the present contemplated requirements as the premise that no expansion is intended may not hold true during the 50 or more years of anticipated life of the project.

The planning funds were transferred to the General Services Administration, which agency, under a professional services contract dated June 29, 1964, engaged for $75,000 the firms of Skidmore, Owings, & Merrill of Chicago, Illinois, and H. D. Nottingham & Associates of McLean, Virginia, in Joint Venture to perform a study and analysis of the functions of the Geological Survey in the Washington, D.C., area for the purpose of preparing a program for the design of the new building and assisting in making a final recommendation for site selection.

After the money was appropriated, however, Bernard L. Boutin, the GSA Administrator, took the position that much or all of the Survey's Washington operations could be moved out of the Washington, D.C., area. This was part of the continued political pressure toward decentralization. Secretary Udall opposed that position, and the issue was resolved by Elmer Staats, then Deputy Director of the Bureau of the Budget. With that question settled, GSA could proceed with the site study and design program.

Bird's-eye view of new USGS facilities proposed by the architectural firm of Smith, Smith, Haines, Lundberg, and Waehler, January 1964

U.S. GEOLOGICAL SURVEY LOCATIONS



SURVEY LOCATIONS

1. General Services Bldg.
2. Department of Interior
3. Blair Building
4. Business Bldg.
5. Old Dominion
6. Acorn Building
7. Arlington Towers
8. Navy Yard Annex—177
9. Navy Yard Annex—213
10. Professional Bldg.
11. National Museum
12. Bureau of Standards
13. 801- 19th St., N.W.
14. College Park
15. Old Post Office
16. 800- 18th St., N.W.
17. Bureau of Standards - 10
18. Bureau of Standards - 14
19. Bureau of Standards - 18
20. Bureau of Standards -104
21. Beltsville - 417
22. Beltsville - 420
23. Beltsville - 421
24. Beltsville - 422
25. Beltsville - 424
26. Howard University
27. 1200 S. Eads St.,
28. Crystal Plaza Bldg.
29. 3812 S. 4—Mile Run
30. Chain Bridge Rd.
31. 604 S. Pickett St.

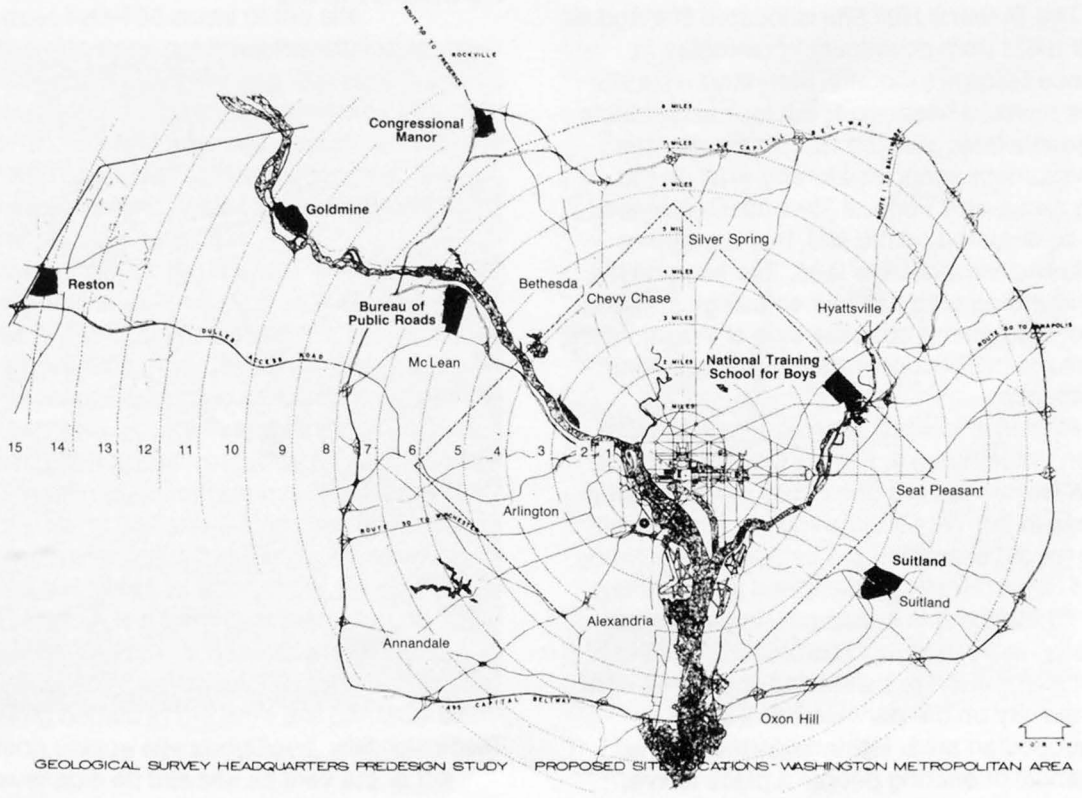
PRE-DESIGN PROGRAM AND SITE STUDY

(The following is condensed from the Report, Pre-Design Study, dated February 22, 1965, submitted by William E. Hartman for the Joint Venture.)

In summing up the broad goals that should be applicable to the Pre-Design Study, it is evident that the site recommended must be capable of reflecting the desired functions, operations, and spirit of the Geological Survey. Secondly, its use must take into consideration the nature of the site and its surrounding environment and recognize its obligation to that environment. Thirdly, the location of the Geological Survey Headquarters must also augment and support existing long range regional planning goals.

The Geological Survey presently (1964) has 2,352 employees occupying some 583,000 square feet of space in over twenty locations in the Metropolitan-Washington Area. For several years, there has been a pressing need to consolidate these dispersed functions in a new headquarters complex designed to meet the functional and technological demands of its operations. The Survey's operations encompass a wide variety of activities that are housed in such space types as offices, drafting rooms, dry laboratories, wet laboratories, photo laboratories, printing press spaces, storage, and industrial type spaces. The program lists some 1,567 spaces totaling 752,088 net square feet. The resulting total building area is 1,231,939 gross square feet costing $30,890,631.

The Survey's desire that the new headquarters be designed as a campus plan has sound merit. The campus plan permits the logical breakdown of the Survey's operations into several buildings that can relate as to function and use type as borne out by the program. It provides a manageable and comprehensible scale to a building program of some 1,231,939 gross square feet. But perhaps most important, it personifies the



GEOLOGICAL SURVEY HEADQUARTERS PREDESIGN STUDY PROPOSED SITE LOCATIONS - WASHINGTON METROPOLITAN AREA

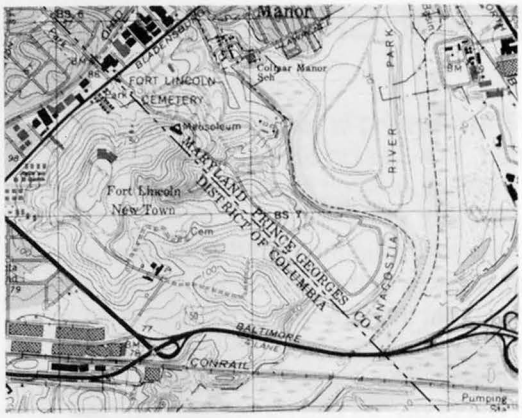
scholarly and contemplative nature of the Survey's work and it is this quality that attracts people to the Survey and makes their contribution so meaningful and extensive.

Six sites were selected by GSA and the Geological Survey for preliminary investigation for the proposed new headquarters of the Survey. Three of the sites were government-owned and three were privately-owned. After a preliminary investigation of the six sites, it was determined in reviews with GSA and the Geological Survey that three of the sites were unacceptable.

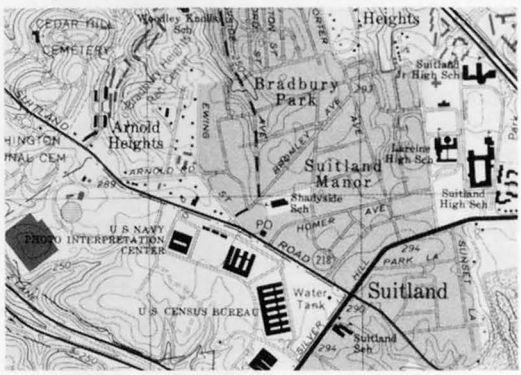
The *National Training School for Boys,* which is located in Washington, D.C., about four miles from the center of the city, was rejected because considerable time and expense would be involved with demolition of buildings presently occupying the site. Although the site commands an impressive view of the Anacostia River Valley to the east, the surrounding neighborhood of lower middle class housing is undergoing transition. It is also typified by shabby strip zoning and spotty development of light industry. The site also is located on the opposite side of Washington from the major concentration of employees' residences.

The *Suitland Hall Site* is located five-and-a-half miles from downtown Washington in Prince George's County, Maryland. This site was rejected because of the lack of buildable area available plus the fact that numerous government agencies already exist on the site and a new Federal Records Center is to be constructed on the site, thereby further reducing the available land. The site and the surrounding area has few amenities and also is located on the opposite side of Washington from the major concentration of employees' residences.

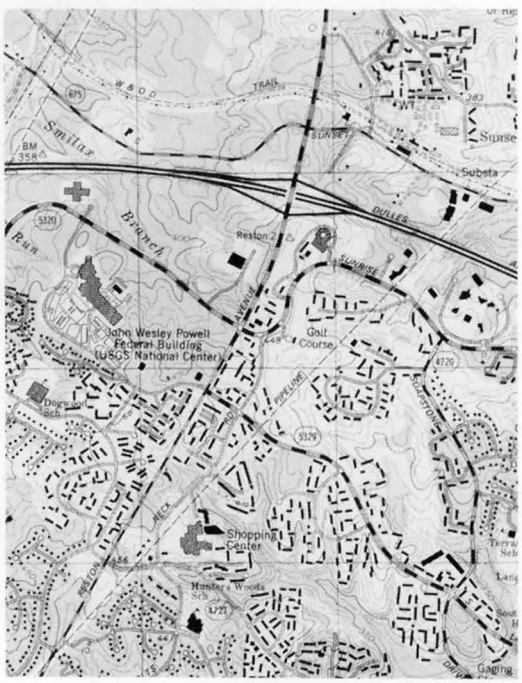
Reston is located approximately 15 miles from Washington in Fairfax County, Virginia. The Reston area is one of the most beautiful areas in the Washington region. It has a rolling terrain characterized by dense woodlands and farms. Reston is designed as a new city for 75,000 people encompassing homes, industry, recreation, and commerce. It is the first major effort to build a full-scale, self-contained city on the perimeter of a large metropolitan area. Reston has the goal and potential of offering people a place to live,



The National Training School for Boys Site



The Suitland Hall Site



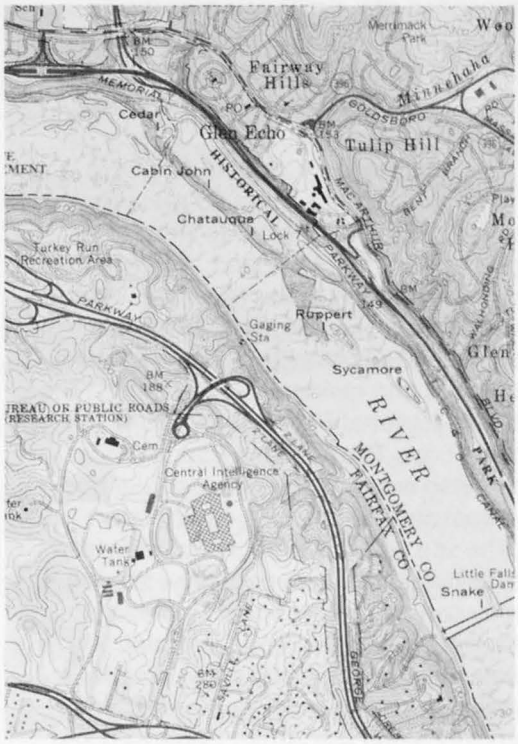
The Reston Site

work, and enjoy recreational activities. The site was rejected because of the excessive travel distances to other contacting agencies—not for any lack of faith in the goals and future of Reston. It was also felt that there would be a substantial loss and an inability to retain unskilled personnel due to travel distances from the central city and the present general area of home locations. The site also does not afford adequate access for trucking and automobiles.

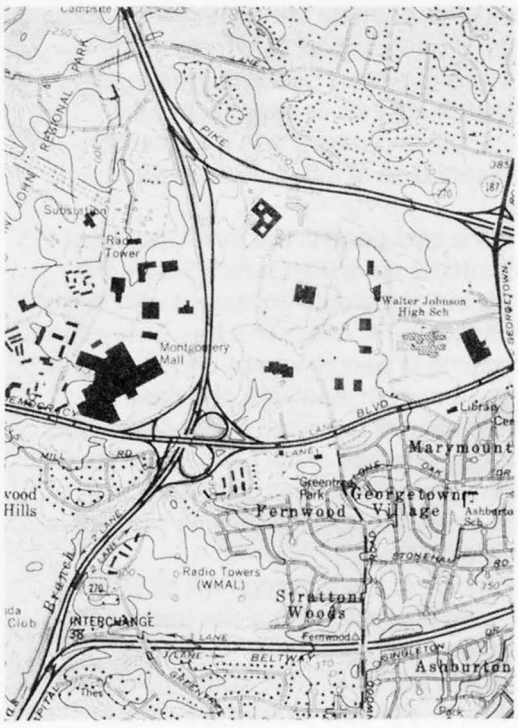
The *Bureau of Public Roads Site* was selected as the first alternate choice after the recommended site. It is located 6 miles from downtown in Fairfax County, Virginia. The site has access off the George Washington Memorial Parkway, Route 123 or Route 193. The surrounding neighborhood is predominantly large single family residences. Its neighbor to the south is the Central Intelligence Agency Headquarters. The 317 acre site is heavily wooded in parts with rolling terrain dipping to a ravine at the north edge of the property. Present Commerce Department buildings, for the Bureau of Public Roads, are located on the largest parcel of buildable flat land. As a result, the Geological Survey Headquarters would have to be located on the west 120-130 acres of the site.

This site does not have the attributes, opportunities, or flexibility associated with the recommended site. It is a handsome site with easy access and provides opportunity for contact with other Government agencies. Total estimated project costs for development on this site are $33,490,631.

The architects felt that *Congressional Manor Site* should be kept as a second alternate in case problems of acquisition should develop on the other two sites. Congressional Manor is located in Montgomery County, Maryland, approximately 9 miles from Washington and is 204 acres in size. The site presently is used for farming. The gently rolling farmland has small amounts of trees at the perimeter adjoining the expressways Route 270 and 240 that border the site on two sides. A few farm buildings exist on the property. The site and the surrounding area is predominantly zoned for residential use. The existing homes in the area are primarily exploiting unique site conditions, which are not as available on this site as they are at the



The Bureau of Public Roads Site



The Congressional Manor Site

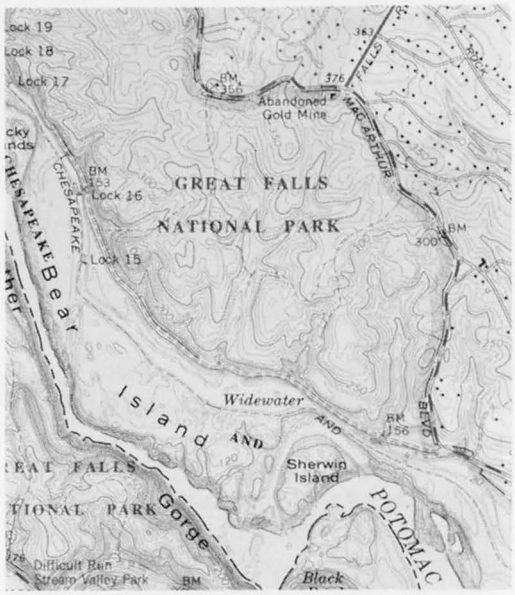
recommended site. Emphasis here would have to be on the spatial and architectural qualities of the plan. Total estimated project costs for development on this site are $33,143,631.

The recommended site is the 340-acre *Gold Mine Site* located about 10 miles from Washington along the Potomac River in Montgomery County, Maryland. Access to the site is off the beltway at the Potomac River at the David Taylor Navy Model Basin (Carderock). The site is heavily wooded with rock outcroppings and ravines. It is adjacent to the Great Falls National Park running along the Potomac River. The National Park Service property also contains the Chesapeake and Ohio Canal and includes the Great Falls area. The site and the surrounding area is zoned for two-acre residences. The site is presently served by MacArthur Boulevard and the George Washington Memorial Parkway stops about a mile to the southeast of the site. There is a proposed extension of the parkway along MacArthur Boulevard and through the site with the possibility of a turnoff and access to the site at about Falls Road. Total estimated project costs for development on this site are $33,150,631.

The Gold Mine Site affords a unique opportunity for the Geological Survey to not only have one of the most beautiful sites in the Washington area for its national headquarters, but to participate in the retention and preservation of the region's green open space.

The site also permits the development of the desired campus plan, which allows the participation of the outside spaces with that of the architectural spaces. This has a very special meaning to people whose undertaking in life is the research, analysis, and careful documentation of the earth's varied elements. The unique qualities of the Gold Mine Site will afford them a daily contact with many of those elements that make up their respective spheres of interest.

A complex of low buildings will be in keeping with the character of the site and the neighborhood environment. The thickly wooded site will screen the complex from its neighbors and people along the Potomac



The Gold Mine Site

River. By having the Survey and the National Park Service occupying the entire site, the major portion of the property will retain its present natural characteristics. Private development of any portion of the site for residential usage or resort facilities would both destroy the natural qualities of the area and also could hamper expansion possibilities for the Survey in the future. In order to keep the project in character with the site and environment plus provide expansion for the Survey, an absolute minimum of 150 acres should be provided.

The architects propose that the Gold Mine Site could become, not only the headquarters for the Geological Survey, but also a very special geological park that would demonstrate the various services of the Survey and also provide a park for use by the public on weekdays and weekends.

The dual use of the Gold Mine Site as the headquarters for the Survey and a geological park adheres to goals established in the "Plan for the Year 2000" for preservation of green open spaces. The site would enlarge an existing chain of park land already devoted to retaining the natural beauty along the Potomac River.

The National Park Service property, extending from the Great Falls area to the north and along the Potomac and Chesapeake and

Ohio Canal side of the site, also connects to proposed Maryland Park property. The weekday and weekend use of the site assures the Survey of ideal facilities for its operations and also an ideal natural setting to illustrate to the public in a park setting the work and goals they stand for.

Of the six sites investigated, only the Gold Mine Site can so dramatically fulfill the program and operational requirements, reflect environmental and planning goals, and so appropriately capture the spirit of the Geological Survey.

The following tables tabulate the pertinent statistics relating to square footage, building costs, and site costs for the project:

Preliminary Cost Estimates Based on Program Requirements

Space Type	Room Type Code	Net Sq. Ft. NSF	Gross Sq. Ft. GSF	Allotted Costs/Sq. Ft.	Total Per Space Type
Office Areas	1, 2, & 7	267,794	446,323	$25.00	$11,158,075
Dry Labs (Drafting,etc)	3	78,222	130,370	$22.00	2,868,140
Dry Labs (Geol. Labs)	4	90,982	151,637	$34.00	5,155,658
Wet Labs	5	70,070	116,783	$34.00	3,970,622
Auditorium	7	5,000	8,333	$22.00	183,000
Kitchen and Cafeteria	7	12,800	21,350	$30.00	640,500
Warehouse	2 & 6	52,000	72,857	$12.00	874,284
Workroom	6	37,440	53,485	$18.00	962,730
Printing (Repro.)	6	97,054	161,757	$22.00	3,558,654
Library	7	41,426	69,044	$22.00	1,518,968
		752,088 NSF	1,231,939 GSF	$24.00 (Average Cost/S.F.)	$30,890,631

Comparative Project Cost Estimates by Site

Division of Work	Goldmine	B.P.R.	Congressional Manor
Utilities			
Water	$160 ,000 (1)	$ —	$ —
Sewer		500,000 (2)	80,000 (3)
Electricity	—	—	—.
Gas	50,000 (4) —	(5)	—
Tree Removal & Grading	100,000	50,000	25,000
Landscaping	10,000	200,000	300,000
Buildings	30,890,631 (6)	30,890,631 (6)	30,890,631 (6)
Parking (1500 Cars)	450,000	450,000	450,000
Contingency @ 5%	1,400,000	1,400,000	1,400,000
TOTAL:	$33,150,631 (7)	$33,490,631 (7)	$33,143,631 (7)

(1) Extension of 20" water line in Falls Road 1.5 miles.
(2) Construction of new sewer to Pimmit Run trunk line.
(3) Construction of new sewer line.
(4) If demand is 85,000 CFH - $50,000 deposit; if 3,000 CFH - $274,000 maximum.
(5) If demand is 85,000 CFH - no charge: if 3,000 CFH - $50,000 deposit.
(6) Assuming minimum basement construction.
(7) Exclusive of Architect - Engineer's Fees, Laboratory and Office Equipment Furnishing and land acquisition costs.

Area Totals by Organization

Division	Existing No. of Persons	Programmed No. of Persons	Programmed No. of Spaces	Programmed Area - Total Net Sq. Ft.
Common Use: Auditorium Cafeteria-Kitchen Credit Union		3	4	19,782
Office of the Director	32	34	28	7,335
Administration	266	272	101	69,975
Publications	364	478	133	217,941
Water Resources	259	278	275	50,010
Topography	653	703	402	114,715
Conservation	61	81	56	11,200
Geology	717	777	568	261,130
TOTALS	2,352	2,626	1,567	752,088 NSF

Area Totals by Room Type Code

Room Type Code	Area (Net Sq. Ft.)	No. of Employees
1. General Office Use	150,803	1,251
2. Storage	142,553	88
3. Dry Labs	88,606	502
4. Dry Labs	90,982	345
5. Wet Labs	103,550	248
6. Industrial	108,480	126
7. Special Units	66,812	66
Totals:	752,088	2,626

Current Facilities and Environment

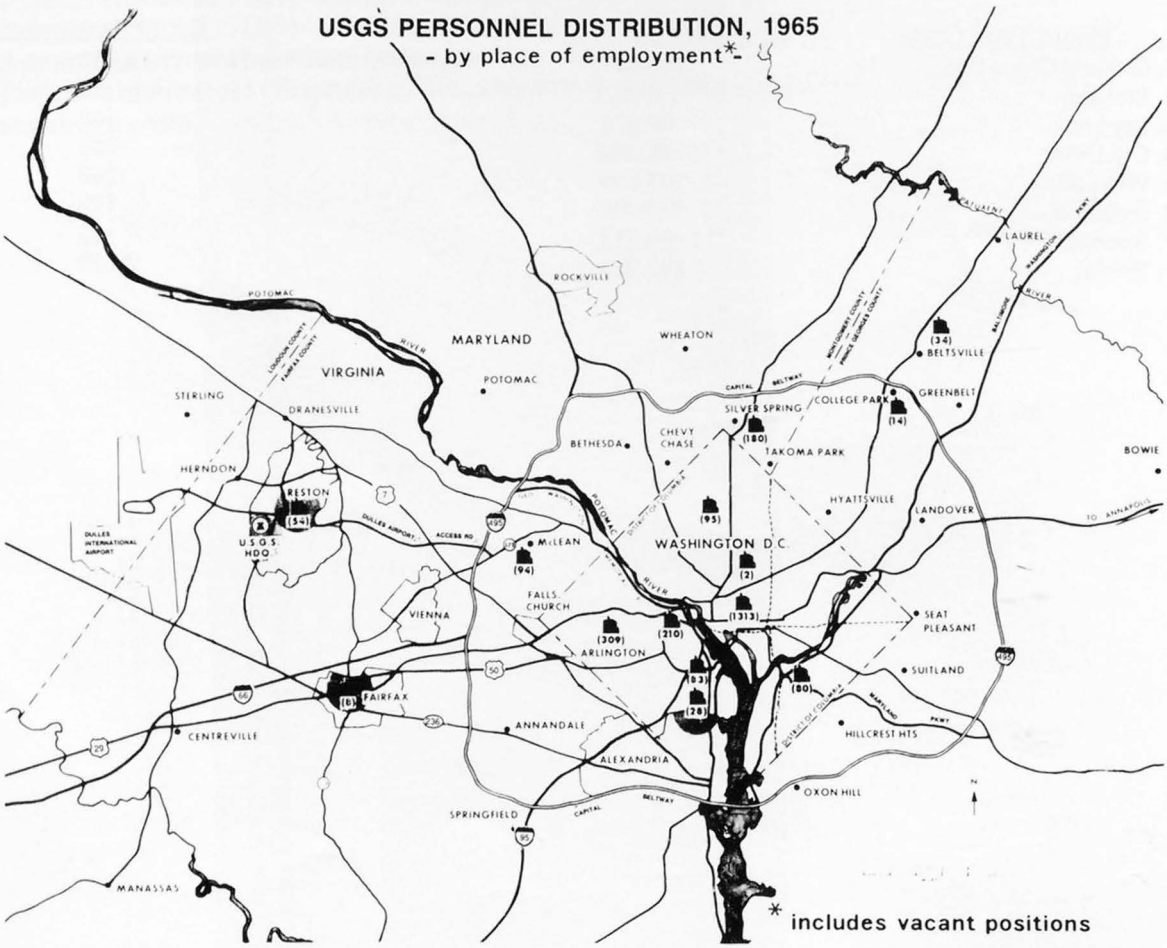
The more than 2,000 employees of the Geological Survey stationed in the Washington Metropolitan Area are housed in over 20 widely-separated locations, ranging from Arlington, Virginia, on the South, to Beltsville, Maryland, on the North. With such an inefficient housing arrangement, the Survey cannot achieve the best results from its endeavors. This problem has been of long-standing concern to the Survey.

Many of the structures presently housing the Survey's present operations were designed in a different era for much different functions. The operations of today's Survey require the sophistication of mechanical and electrical services that are found in the Nation's most up-to-date laboratories and industrial operations. It is only at great expense and inefficiency that these can be adapted into old buildings. The continued technological growth and advancement will only continue to aggravate the problem or hamper the service to be rendered.

It is this pressing need for consolidation and special-purpose buildings designed for their appropriate need that makes this report a step in the growth and advancement of the Geological Survey.

The following chart illustrates the locations of the Geological Survey's facilities in the Washington, D.C., Metropolitan Area and the number of employees located at that location.

USGS PERSONNEL DISTRIBUTION, 1965
- by place of employment* -



* includes vacant positions

General Housing Plan and Expansion

The purpose of the Design Study is to assemble the program requirements for Geological Survey Headquarters Facility; assemble data on organizational functions and relationships related to the Survey and its operations; investigate six selected sites and their influences; and correlate program and organization information into a set of criteria that may be utilized to evaluate sites, establish a housing plan and resulting cost estimates for the programmed 752,088 net square feet. From this assembled background material must come the Pre-Design Study's broad goals. First, they are to have the site selection and recommendations reflect the desired functions, operations, and the spirit of the Geological Survey. Secondly, the use of the site must take into consideration the nature of the site and its surrounding environment and recognize its obligation to that environment. Thirdly, the location of the Survey Headquarters must augment and support existing area planning goals.

Each division has its own administrative group that directs the internal operations of that division. This administrative group, in turn, is responsible to the Office of the Director. As a result of this, there is a daily contact between the Director and Administrative Division, with the administrative groups of the various divisions.

Another strong relationship exists between the Geologic, Topographic, and Water Resources Divisions with the Publications Division. The end result of work carried out in these three divisions must be prepared for publication by the Publications Division, which is also responsible for the printing of the maps and the coordination of the printing of the book reports by the Government Printing Office. The degree of the contact between the originating divisions and that of the Publications Division depends, in part, on the nature of the work involved. This relationship would pertain to both staff contact and, to a lesser degree, interchange of materials.

All the divisions use the computer and the library. The heaviest use of the computer will be by the Administrative, Geologic, and Water Resources Divisions. Most frequent use of the library will be by the Geologic Division.

The common-use facilities, such as: an auditorium, cafeteria, health service, and Credit Union, are functions that must be accessible to all the Survey's employees.

It becomes apparent, then, in analyzing the inter-relationships and inter-actions between the divisions that the administrative groups will have the most need for frequent contact, and the second circle of contact will be between the administrative and supervisory groups of the technically-oriented divisions. It is also important that the Office of the Director should be related to the main entrance to the complex.

The Geological Survey also has expressed the desire that the new headquarters be designed around a campus plan. This has merit, both from the contemplative quality of the work performed and the sheer size of the square footage involved.

The nature of the work performed by the large professional and technical staff is one of lengthy research and development, which finally results in a meticulously-detailed technical report or piece of graphic material for publication. There is a close relationship between this atmosphere and that of the university or advance research laboratory. It is this quality of scholarly atmosphere that should be emphasized. It is this quality that attracts the professionals to join the Survey and induces them to remain.

The campus plan also permits a logical break-up of the Survey's operations into separate buildings by use-type for organizational and functional reasons. This will also foster economic savings. The programmed area for the new headquarters building is 752,088 net square feet. For office areas, dry laboratories, wet laboratories, reproduction areas, auditorium, library, kitchen and cafeteria, a normal relationship of the net square footage, representing 60 percent of the total gross square footage, has been used. On areas requiring less mechanical sophistication and circulation, such as distribution areas, shops and warehouses, the net square footage has been calculated at 70

percent of the total gross square footage for those areas. The combined gross square footage for all programmed areas is 1,231,939 square feet.

Because of the functional relationships and diverse building types involved, it would be inefficient to consider this amount of square footage in one or two buildings. A high-rise solution is also inappropriate to the problem. The printing plant and certain laboratories require large bay spaces with industrial floor loadings. Large bays required for laboratory areas with sophisticated mechanical and electrical services and flexibility requirements would penalize the functions and the economics of office and drafting space construction.

The goal of the Pre-Design Study is to search out the unique qualities of the Geological Survey and its functions, and to interpret these functions as they relate to one another within a division as well as between the divisions. The various use-types should be grouped together for advantages in flexibility, as well as expansion internally and possible future construction externally.

The complex of separated buildings reflecting the construction by use-type also affords the outdoor green spaces to participate in the architecture. The offices and laboratories can have outside exposure and, by the use of one- to three-story buildings, mechanical vertical transportation can be kept to a minimum. At the time of developing the preliminary design, if any area seems appropriate for development as a fall-out shelter, this shall be investigated.

After reviewing all the program requirements and organizational functions and relationships, the only element of the program that is capable of being moved to a different location would be the Map Distribution Area. This constitutes an area of some 77,810 net square feet of predominantly warehouse space used for mailing and distribution of maps and other printed material. This unit does not require daily contact with the personnel of the other divisions. Its requirements are oriented to adequate trucking access for mailing and delivery of material. Its inclusion in the project complex makes for a more closely-knit unit, but immediate proximity is not mandatory.

The only other logical separation of functions to another location would be that of all functions of the Atlantic Area Groups (Eastern Region) of the various divisions. This would result in an elaborate duplication of facilities and should only be considered when the combined size of the headquarters operation and the Atlantic Group is physically unmanageable, and that further expansion on one site is impossible.

Therefore, the only element that could logically be considered for relocation from the headquarters group without serious loss of efficiency would be that of Map Distribution.

FINAL SITE SELECTION

Participants in the site studies and deliberations were representatives from the National Capital Regional Planning Council, GSA, USGS, BOB, National Park Service, and the National Capital Planning Commission. The study narrowed the consideration to two: the Public Roads Site and the Gold Mine Site for first study; after presentation to Secretary Udall, it was generally agreed that the Gold Mine Site was number one.

The National Capital Planning Commission at its December 3, 1964, meeting approved the Gold Mine Tract in Montgomery County, Maryland, as the site for the proposed Geological Survey building, subject to the concurrence of the National Capital Regional Planning Council and the Maryland National Capital Park and Planning Commission. In commenting, the NCPC reported this proposal provides for a low-intensity Federal employment center in a park-like setting on a portion of the tract, and contemplates the acquisition of the remainder of the tract as part of the George Washington Memorial Parkway. The Commission was of the opinion that this proposal is consistent with the Policies Plan for the Year 2000 for the National Capital Region. Local community opposition to the site selection began to build up.

Representatives of local civic associations petitioned Secretary Udall that, although a low-intensity facility in a park-like setting was being proposed, it was their belief that such a concentration of employment would in time lead to the development of shopping facilities and high-density housing to accommodate the employees. Also, such a development would be contrary to a program the Administration and the Department of the Interior were then advocating to retain the natural beauty of the Potomac Palisades through the restriction of development. Secretary Udall agreed with their position.

While the studies were going on, the Administration became interested in the "New Town" concept, which was developing rapidly in the area with the new towns of Reston in Fairfax County, Virginia, and Columbia in Howard County, Maryland. Robert Simon, founder and developer of Reston, engaged former Ohio Governor, Michael V. DiSalle, hoping that with his national contacts he would help bring a major Federal agency to Reston. Contacts were made with the U.S. Patent Office, Bureau of Public Roads, and the U.S. Geological Survey. Also, with DiSalle's help, Reston would be able to break through the barriers imposed on the Dulles Access Highway by the Federal Highway Administration. Bob Simon personally met with GSA and USGS and offered to donate 50 acres of a site to be selected in Reston's proposed area for light industrial use (scientific research, development and training, offices, etc.). The Architect/Engineers, GSA, and USGS visited Reston and met with representatives of Reston to consider Robert Simon's offer. Dr. William T. Pecora, who had succeeded Dr. Nolan as Director, wrote Secretary Udall on October 15, 1965, as follows:

> It is my recommendation that we accept Mr. Simon's offer of a site at Reston for the Geological Survey. My own observation during our visit led me to hope for a different parcel of ground and I feel more strongly now that I have talked with members of our staff who have made on-site inspection.
>
> In my telephone conversation with Mr. Simon this morning he emphasized that the parcel of land he would make available should be completely satisfactory to us with respect to area, shape, and location to permit the development of a fully useful and attractive facility. He also offered the assistance of his staff planners in consultation with our people in selecting a more suitable site.
>
> My proposal is, therefore, that you convey to the General Services Administration

the decision on Reston and ask GSA to modify its current contract with the architects (Skidmore, Owings and Merrill) the purpose of which would be (1) to drop the study of the Public Roads and Gold Mine sites and (2) to extend the job at Reston to include not only their participation in selection of the actual site but also the completion of the full design operation in order to avoid further delay in getting this project moving. I hope you will feel justified in urging GSA to follow this course.

Secretary Udall approved the recommendation on October 27, 1965.

Reston Site Study

The Professional Services Contractor, Skidmore, Owings and Merrill, and H. D. Nottingham and Associates, Inc., were authorized under a new contract dated February 3, 1966, to prepare a new site study selection recommendation for the USGS Headquarters in the new town of Reston, Virginia. *(The following is condensed from the Site Study Report submitted by Walter A. Netsch on April 11, 1966, for the Joint Venture.)*

The site selection study includes investigation of the following areas of interest:

I. Utilities

A. Determine availability and capacity of all utilities necessary for serving the site.
B. Determine influences of site topography and subsurface conditions on routing of utilities on site including costs.
C. Determine the Survey Headquarters utilities' requirements in terms of the future expansion plans.
D. Determine the effect of existing or proposed utility services in regard to disturbances to functions carried on in the Survey Headquarters.

II. Topography, Subsurface Conditions & Tree Cover

A. Determine existing topography, proposed grading of adjacent land areas and roads, and existing and proposed drainage patterns and reservoirs.
B. Determine subsurface soil conditions for bearing, water, stability and drainage characteristics.
C. Determine areas with appropriate characteristics for seismic instrument locations.
D. Determine type, quality and potential of existing trees, shrubs and ground cover on the site in relation to the proposed project.
E. Determine method and attitude toward tree removal in area of proposed buildings, thinning of unnecessary or inappropriate trees, and effect of tree and ground cover removal on drainage patterns.

III. Circulation, Parking and Transportation

A. Determine effect of existing and proposed highway, roads and transportation to site access.
B. Determine Inter-Reston and metropolitan origin and destination points that would affect adjacent areas and the proposed site.
C. Determine site parcel circulation and on grade parking potential.

IV. Land Use and Zoning

A. Determine zoning and land use in Reston and surrounding area.
B. Determine with Reston potential of parcel in terms of density and anticipated schedule of development.

V. Geological Survey Headquarters Allocation Studies

A. Determine specific functional and divisional relationships of elements with the Survey, including new program changes, revisions, and expansion.
B. Determine special areas of the program that require specific relationship and demands on the site, such as public access, road access, orientation, vibration, floor area, bearing capacity, and expansion.

C. Determine attitudes as to division of occupancy by building types, circulation parameters, flexibility, and future expansion potential.
D. Develop diagrammatic allocations of gross program groupings along with site circulation and expansion.
E. Develop exterior vehicular circulation, parking, and landscaping.
F. Develop tree utilization and implementation design.
G. Make recommendations as to the attitude and potential of the parcel containing the site.
H. Delineate immediate and surrounding area environmental attitudes.

VI. Cost Estimate

Develop an estimate of the cost for extending the existing water and sewer lines to the boundary of the site recommended and also a cost estimate for extending an access road from an existing suitable road to the boundary of the site recommended for selection.

Summary and Recommendations of Reston Site Study

The Geological Survey designated a specific parcel in Reston to be investigated for a site. They also requested that the study for the site be within the 335-acre parcel, in which the geological formation is Manassas Sandstone.

Three general areas within the parcel were studied as being most appropriate in terms of existing slopes suitable for minimum grading. Each were investigated in terms of relationship to Reston's Master Plan, adjacent zoning and land use, access road, utilities, topography, tree cover, subsoil conditions, technical easements, environmental factors, buildable area, site potential, and off-site costs. Four different types of campus plans were overlaid on each of the three sites to show the potential and implications of planning. It was mutually agreed that a site in the south central area of the parcel best suited the needs of the Survey Headquarters. The study also indicated the extension of Reston's green open space within the parcel as a means of providing walking links to the residential and town centers to the east. The preservation of the green spaces also assured open area within the parcel and permitted retention of natural drainage patterns on the site.

Reston, after discussions with the Government, submitted its proposal as to the area for site selection for the Geological Survey Headquarters. We have found this to be acceptable. This proposal was used as the basis for final study of the site and its potential. The acceptance of Reston's proposal is based on the assumption that the Government be assured that the following requirements will be met:

1. A minimum site for Geological Survey Headquarters of 85 acres will be available.
2. A four lane access road from Highway 602 must be provided adjacent and parallel to one boundary of the site.
3. The four lane access road must have two points of access with Highway 602 prior to implementation of the complete building program.
4. The intersection of the access road and Highway 602 be located to provide the best possible sight lines for safety of approach.
5. The four lane access road must be designed for heavy duty loads and traffic.
6. Availability of an adequate water supply to meet the Geological Survey's ultimate demands plus that of surrounding development in the areas served by the water line.
7. The two proposed sanitary sewer extensions must be extended to assure connection at the boundary of the site for Geological Survey. In order not to penalize the cost of the project, assurances should be given by Reston that connection can be to either or both of the sewer extensions as required by building locations.

8. The sanitary sewer must have a capacity to handle the Geological Survey's ultimate needs plus surrounding development in the area served.
9. Within the access highway right-of-way will be the easements for underground distribution of electrical, water, and gas services to the site for the Geological Survey Headquarters.
10. The natural drainage runs must be maintained and adequate culverts provided to handle all run-off associated with any development within the total parcel.
11. Reston must assure the Government that the Geological Survey's air pollution, vibration and other technical easement requirements will be honored in regard to any future development under Reston's control.
12. Reston must give the Government assurance that any development in the areas immediately adjacent to the Survey site and under their control may be reviewed by the Survey, shall be in keeping with the Reston Master Plan and goals, and shall be in the best interest of the U.S. Government and the Geological Survey.

The estimated off-site costs for extending the sanitary sewer line to the boundary of the site from the Washington and Old Dominion Railroad is $220,000; for extending the 14-inch water main from the Paddock on Highway 602 to the site is $170,000; and for building a four-lane heavy duty access road from Highway 602 to the site is $95,000. This totals $485,000 including contractor's overhead and profit. The construction cost of the Geological Survey Headquarters must not be penalized by having to absorb these off-site costs.

The architects feel that the location at Reston and the site itself can provide an excellent location for the Geological Survey Headquarters. It affords the project an opportunity to participate in one of the country's best-planned and exciting new towns. Reston can offer the Survey a special environment in which to work and live. We also feel that the combination of the site and the Geological Survey program can combine to produce an exciting and unique headquarters project.

Negotiations between GSA and Reston followed with Reston, VA, Inc., submitting an "Offer of Sale and Donation of Land" dated May 16, 1966, giving the Government 90 days within which to accept. The offer was accepted on August 5, 1966. Salient features of the offer included: description of a specific site of 85.0559 acres, 50 acres of which were donated and balance purchased for $245,000; a 6-year option to purchase an additional 20.0114 acres for $140,000 (by deed dated December 17, 1969, the Government exercised the option); Reston to revoke and remove all covenants, conditions, reservations, and restrictions against the property imposed by it; Reston construct and maintain a permanent access road from Highway 602 (now Reston Parkway) along the northerly boundary to the northwest corner of the site; a private right-of-way easement 50 feet wide extending from the northerly boundary to the right-of-way of the Dulles Airport Access Highway; and Reston restrict the use of land owned or acquired by Reston specified conditions as covenants running with the land. Another feature which became extremely important to Reston and the Government in getting the project construction underway is Section 24 of the offer quoted hereafter:

> Reston has an established policy of encouraging those who work in Reston to live there, regardless of income level, race, color, creed or national origin. Reston is presently planning housing for future construction in Reston designed to provide a variety of housing accommodations for rental or purchase by anticipated residents of Reston, based on the above policy.
>
> In order to permit Reston to plan for and construct housing units for the employees of the Government agency occupying the property who wish to live at Reston, a housing survey committee will be established, consisting of one representative of Reston, the Government agency occupying the property, and the Department of Housing and Urban Development. The

chairman of the Committee shall be the representative of the Government agency occupying the property. The Committee, eighteen (18) months before the scheduled occupancy of the first building shall conduct a study to ascertain the number of employees of the using agency who are interested in purchasing or renting the various types of housing units being or to be constructed at Reston in accordance with the above-stated policy. Reston shall include the housing need identified by the study in its plan for housing construction and will offer, to the employees of the Government agencies to be located at Reston, to construct a variety of housing units at reasonable prices and without regard to race, color, creed, or national origin.

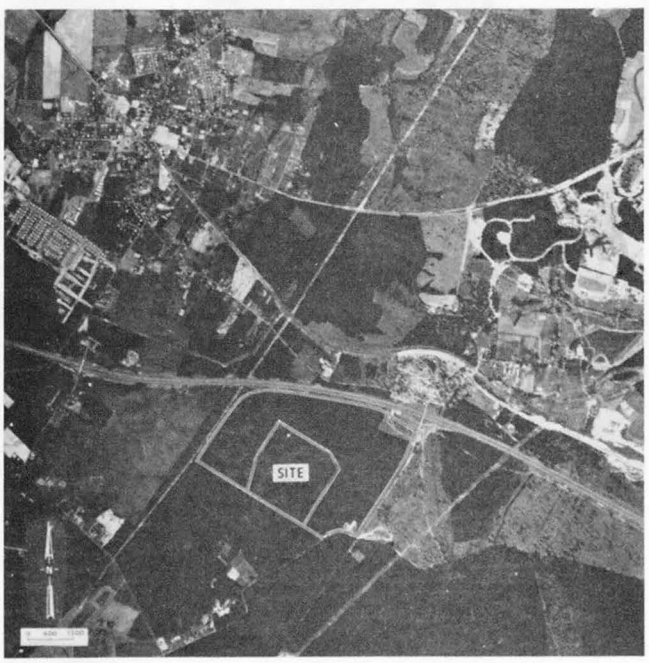
Also, important later in the project life was a clause in the offer; although not legally binding it did help to keep the project alive:

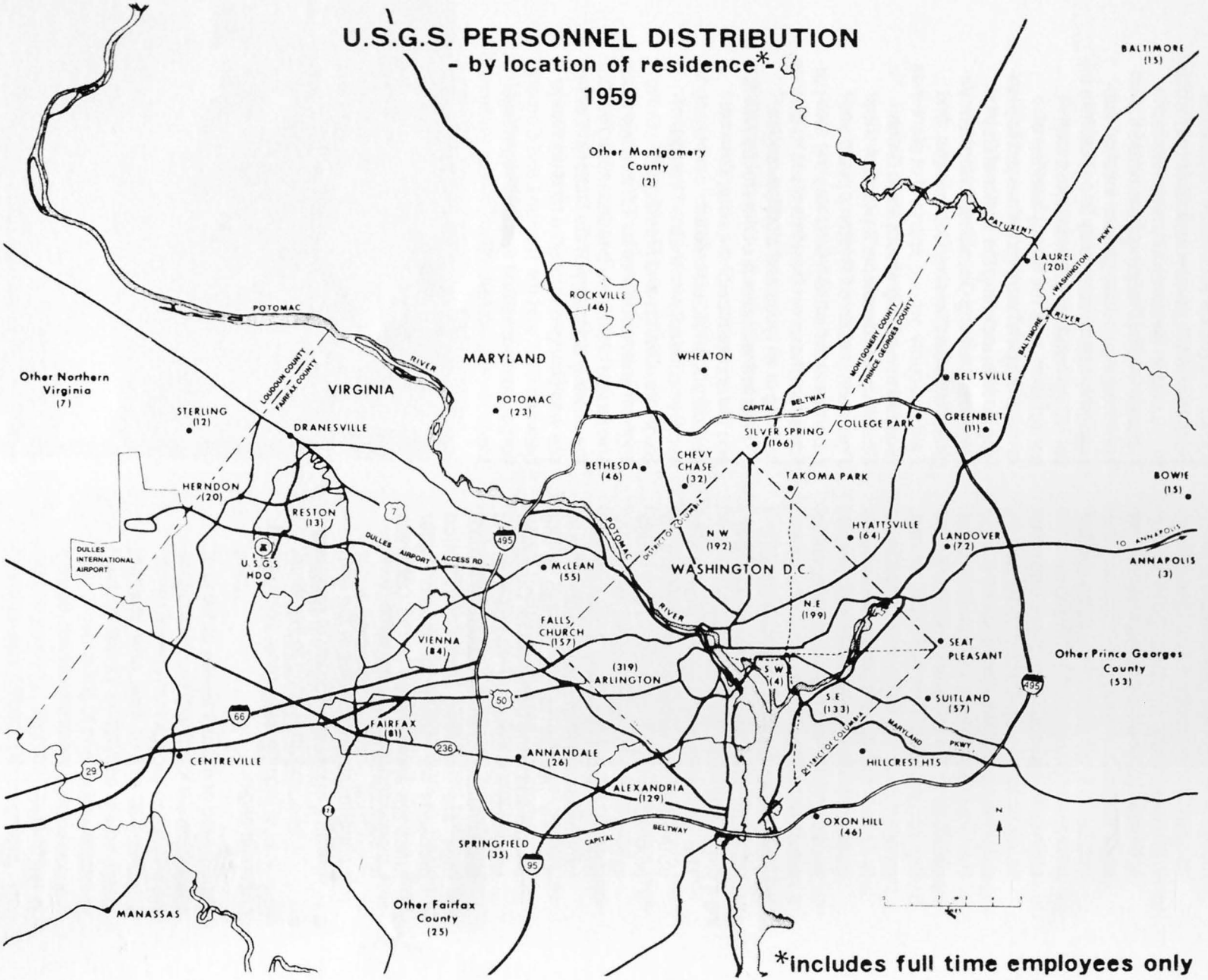
> The Government agrees that it will authorize its architect-engineers to proceed as rapidly as possible and to use its best efforts to insure that the necessary requests and supporting materials and information are prepared and submitted in a timely manner to the Bureau of the Budget and to the Congress for Congress to appropriate funds for the buildings and that contracts for construction of the buildings are awarded and construction proceeds as rapidly as possible after funds are appropriated by the Congress for such construction.

Influential in the acceptance of the offer was Reston's established policy of encouraging those who work in Reston to live there, regardless of income level, race, color, creed, or national origin.

Prior to acceptance of the offer, which had complete approval of Director Pecora and Secretary Udall, the Geological Survey's plan to relocate in Reston was presented to the National Capital Planning Commission at an open hearing and the general location subsequently approved on July 21, 1966. The initial NCPC hearing, which followed staff consultation, was the first of a series of reviews in open hearings before public planning bodies, including the National Capital Regional Planning Council, the Northern Virginia Regional Planning Commission, and Fairfax County, whose approval of plans was required at each significant step. Glenn Saunders, the developer's (Reston) Vice President, presented Reston's plans and progress at the initial NCPC hearing with particular emphasis on Reston's plans to provide housing of all types and all price ranges.

Prior to the approval of the site by NCPC and the acceptance of the offer, GSA on February 3, 1966, entered into a professional services contract with the joint venture of Skidmore, Owings and Merrill, and H.D. Nottingham and Associates for Reston site study and design of the new headquarters. (In 1982 the easterly boundary of the National Center site was changed through a land exchange between GSA and the Reston Land Corporation, successor to Gulf Reston Properties, Inc.).

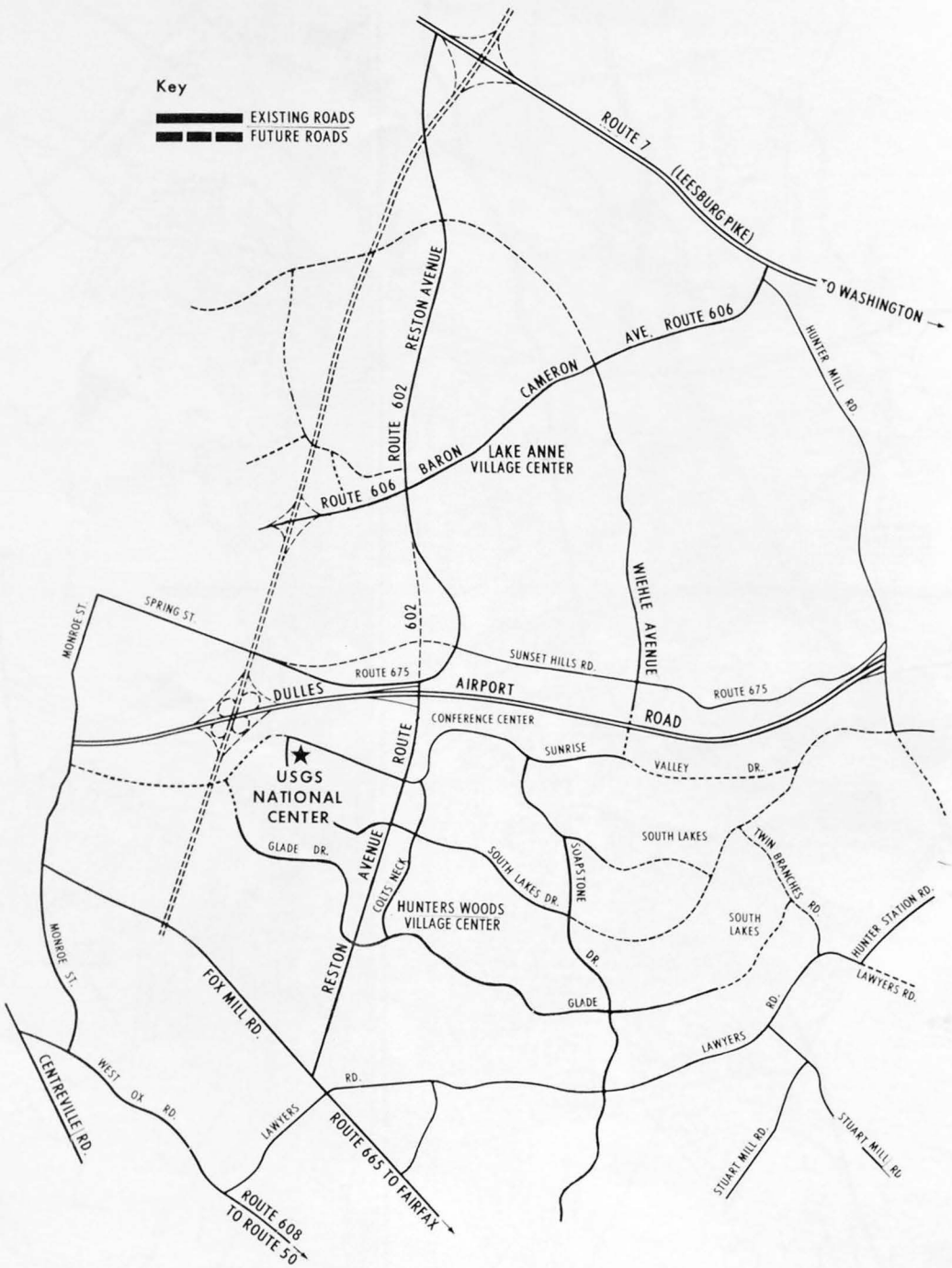


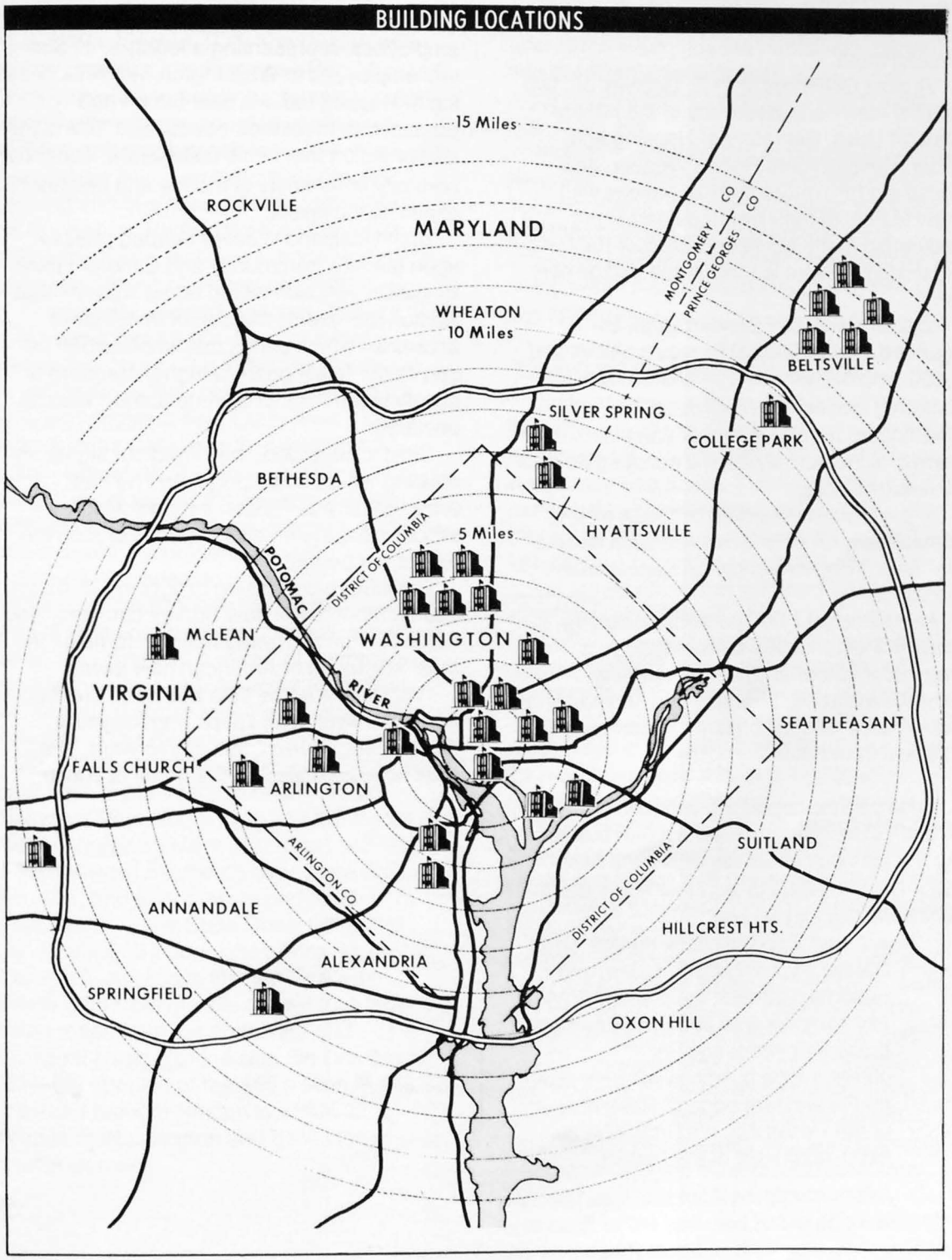

U.S.G.S. PERSONNEL DISTRIBUTION
- by location of residence*-
1959
Other Montgomery County (2)
BALTIMORE (15)
ROCKVILLE (46)
WHEATON
MARYLAND
POTOMAC (23)
VIRGINIA
Other Northern Virginia (7)
STERLING (12)
DRANESVILLE
HERNDON (20)
RESTON (13)
DULLES INTERNATIONAL AIRPORT
U S G S HDQ
DULLES AIRPORT ACCESS RD
McLEAN (55)
BETHESDA (46)
CHEVY CHASE (32)
SILVER SPRING (166)
COLLEGE PARK
GREENBELT (11)
TAKOMA PARK
BELTSVILLE
LAUREL (20)
BOWIE (15)
HYATTSVILLE (64)
LANDOVER (72)
ANNAPOLIS (3)
N W (192)
WASHINGTON D.C.
N E (199)
S W (4)
S E (133)
FALLS CHURCH (157)
VIENNA (84)
(319) ARLINGTON
SEAT PLEASANT
Other Prince Georges County (53)
SUITLAND (57)
FAIRFAX (81)
ANNANDALE (26)
CENTREVILLE
ALEXANDRIA (129)
HILLCREST HTS
OXON HILL (46)
SPRINGFIELD (35)
MANASSAS
Other Fairfax County (25)
*includes full time employees only

Reston


Reston Sports Park
Lake Anne Village Center
Fairfax County Governmental Complex
Town of Herndon
Town Center
Reston Golf and Country Club
Tall Oaks Village Center
International Inn & Conference Center
Sunrise Valley Drive
USGS
Dulles Airport Access Highway
Post Office
Educational Associations
Hunters Woods Village Center
18 Hole Public Golf Course
South Lakes High School
Ridge Heights Road
Proposed South Lakes Village Center
Lawyers Road
Fox Mill Road
Hunter Mill Road
0 800 2400 4000 N
April 1979
Undeveloped or Unsold Land

RESTON STREET DIRECTORY




BUILDING LOCATIONS
15 Miles
ROCKVILLE
MARYLAND
WHEATON
10 Miles
MONTGOMERY CO
PRINCE GEORGES CO
BELTSVILLE
SILVER SPRING
COLLEGE PARK
BETHESDA
HYATTSVILLE
5 Miles
DISTRICT OF COLUMBIA
POTOMAC
McLEAN
WASHINGTON
VIRGINIA
RIVER
SEAT PLEASANT
FALLS CHURCH
ARLINGTON
ARLINGTON CO.
SUITLAND
ANNANDALE
DISTRICT OF COLUMBIA
HILLCREST HTS.
ALEXANDRIA
SPRINGFIELD
OXON HILL

RESTON DEDICATION

Reston, the fast-developing satellite city in Fairfax County, was dedicated May 21, 1966, in ceremonies highlighted by an announcement that the new $30 million headquarters of the U.S. Geological Survey would be housed there.

Virginia Governor Mills E. Godwin, Jr., two cabinet members, Secretary of the Interior Stewart Udall, Secretary of Housing and Urban Development Robert Weaver, and diplomats from more than 20 nations with "new towns" of their own took part in the dedication in the futuristic setting of Reston's Washington Plaza in Lake Anne Village center.

Interior Secretary Stewart Udall announced the Geological Survey's offices and 2,400 employees would be shifted from 26 scattered locations throughout the Washington area to a "sort of campus in the woods" at Reston, which will donate 50 of the 85 required acres.

In a telegram President Johnson welcomed the birth of "a new town such as Reston" as a "living influence" on future urban planning.

An estimated 1,000 persons, including many of Reston's 692 current residents, watched the hour-long official opening beneath a blazing, noonday sun. In sparkling Lake Anne close by, children in bathing suits watched from boats.

Udall said he hoped the Johnson Administration's decision to locate a major bureau like the Geological Survey at Reston "will give a fresh impetus to the New Town Movement here and elsewhere."

> Now under final review by the National Capital Planning Commission and regional planners, the Geological Survey complex was authorized by Congress four years ago. Its campus-type buildings will be located on the western edge of Reston, south of the Dulles Access Road and 20 miles northwest of the District.
>
> The area has been set aside for light industrial, research, and government facilities by Reston's planners, but the Geological Survey will be the first Federal agency to settle at Reston.

Udall predicted most of the new facility's employees, representing a fourth of all Survey employees in Washington, will seek housing at Reston, too. He said Simon had promised to meet their needs, and "this is the sort of action that helps build a true, equal opportunity community of friends and neighbors of all income levels."

Both Udall and Weaver heaped praise upon the new community and Simon. "I think President Johnson would agree with me that Reston represents the sort of imaginative enterprise which brings this whole urban nation closer to his goal—a higher standard of quality in the lives of all Americans," Weaver declared.

Simon, he added, "has lifted our sights, indicating what can be done, and he has provided here at Reston a model which should raise the level of expectations on the part of our people."

Godwin, reexpressing delight in Udall's announcement of the new Survey complex, also noted Reston's growing national fame as the most advanced of American new towns.

"Virginia for some time has been credited with moonlight, mint juleps and magnolia," Godwin said. "I trust, this day forward, she shall be known also as the home of Reston."

THE SURVEY'S RESTON LOCATION

The town of Reston covers some 11.5 square miles of Virginia countryside in the rolling piedmont hills of Fairfax County, 18 miles west of Washington, D.C. The Reston community provides a wide range of facilities and services including housing, churches, public and private schools, libraries, community centers, and medical services. There are also research facilities, an industrial complex, banking and business offices, and public transportation. Parks, lakes, golf courses, swimming pools, walkways, trails, and riding paths provide ample recreational facilities.

The heavily wooded National Center site contained almost 9,000 trees of 8-inch diameter or more. The trees are mostly oak, including red, white, pin, black, post, blackjack, and chestnut oak. Other trees include hickory, red maple, beech, poplar, black locust, sassafras, flowering dogwood, and black gum. Holly shrubs and ground covers such as partridge berry, pipsissewa, and tree club mosses are present, as well.

The site is underlain largely by Triassic Manassas Sandstone, which in this area consists of scattered pebbles of schist, sandstone, and quartz in a matrix of red or purple micaceous silty sand. Adjacent formations are Triassic diabase to the west and lower Paleozoic Wissahickon Schist to the east.

The Center is located about one-half mile southwest of the intersection of Reston Parkway (State Route 602) and the Dulles Access Highway. Present access is north from U.S. Highways 50 and 66 over State Routes 665, 608, and 602, or west and south from State Route 7 over State Routes 606 and 602. Route 606 is four lanes from Route 7 to Route 602. Access to Reston Parkway (Route 602) from the site is over four-lane paved roads from the northwest and southeast corners of the site. On October 1, 1984, the opening of the $59 million Dulles Toll Road brought Reston to within 20 minutes of Washington and 6 minutes of Tysons Corner.

The National Center has an environment relatively free of air pollution, interference, and vibration. Manufacturing or processing operations which release particulate matter into the atmosphere through exhausts of smokestacks are not permitted within 5,000 feet of the site.

Industrial, mechanical, or quarrying operations that generate excessive vibrations are not permitted in the vicinity. Radio, television, and telecommunications interference is restricted and no major power lines can be located within 1,000 feet of the site without Survey approval.

Trees at the Reston Site

It was necessary to clear about 45 acres of the 105-acre site to permit construction of the headquarters building, utility plant, roads, and surface parking areas. It was planned that the parking areas conform to existing grade as closely as possible as clusters of trees will be left standing throughout. The remaining 60 acres will be left in their natural state with no clearing of underbrush, etc.

A 1"=20' scale, 2' contour interval, topographic map of the 105-acre site was prepared by the architect/engineers. This map located and identified by number each of 8,878 trees of 8" girth or over on the site and each of these trees was catalogued as to girth, species, and condition.

It was planned to clear the trees before the general contract was let to permit a slower paced and hence less destructive operation. The limits of construction and the trees to be left standing in the parking areas were prominently marked on the ground. These limits were marked on the ground by Richard M. Doolittle and Robert S. Sigafoos by identifying the trees from the map location and tree list. One tree, #8271, a 36-inch white oak, listed as a specimen tree in excellent condition, located within the construction area, thus to be removed, was surreptitiously marked outside the construction area, thus was retained. It is located approximately 15 feet north of the trail next to the pond west of the Pecora Memorial.

Preservation of existing trees of landscape value on the heavily wooded Reston site has from the start been a primary concern of both the Geological Survey and the architects selected to design the new headquarters building. The 105 acres forming the Geological Survey's headquarters site at Reston, Virginia, were completely forested with a mixture of unevened aged, second growth pine, yellow poplar, oak, hickory, and red maple trees. The adjoining 250 acres were also forested except for a cleared area in the northeastern corner. Most of the forest on the site and adjoining land is composed of oak species. Valley bottoms and draws are characterized by the predominance of red maple and sour gum.

The Pre-Design Study conducted in 1966 stressed the preservation of green spaces and indicated the potential of extending Reston's green open spaces within the parcel as a means of providing walking links to the residential and town centers to the east. Development has always been considered as an extension of the Reston Master Plan concepts and goals.

In cooperation with the landscape architects, Robert S. Sigafoos, a research botanist with the Geological Survey, made a detailed reconnaissance of the timber and ground cover on the site and prepared two reports with maps showing the occurrence of various tree types, the effect of general construction on trees in the Reston area, and a recommendation for optimum siting of the facility from the standpoint of timber preservation and retention of natural drainage. This plan was followed by the architects to the fullest extent possible. Paul Sanger and Don Winslow, forestry specialists of the Department of the Interior's Bureau of Land Management, reconnoitered the site with Bob Sigafoos and also made recommendations as to how best to retain the woodland character of the Reston area.

Robert S. Sigafoos on his site study

One-hundred-year-old white and southern red oak trees along the property line

CONSTRUCTION FUNDING

Gulf Reston, Inc., Offer to Construct and Fund for Lease

With design underway and an approximate two-year schedule for completion and required approvals of National Planning Commission, regional planning and local planning authorities, and Commission on Fine Arts, it was not too early to implement action leading towards an appropriation for construction. In view of the special purpose nature of the facilities (laboratories and map printing), it was agreed between GSA and Interior that DOI would seek an appropriation for construction in its budget for FY 1969. However, early in 1968 prospects for the timely appropriation of construction funds became more remote because of budgetary constraints. The Deputy Director of the Bureau of the Budget, Phillip S. Hughes, in commenting on the proposal of DOI financing the project instead of GSA, did not offer much encouragement with the comment "we have no evidence that Interior could get money for the Reston building more easily than the GSA. Problems from 1969 budget constraints will, of course, apply to both agencies." Because of the restrictions to new federally financed facilities, Gulf Reston, Inc. (with some encouragement from USGS and GSA), indicated it would be willing to discuss with GSA and USGS a long-term lease on the proposed building with an option to purchase.

As the Government had agreed with Reston, Inc., that it, GSA, would: (1) authorize its architect-engineers to proceed as rapidly as possible with the design of the buildings to be erected on the site; (2) use its best efforts to insure that the necessary requests and supporting materials are prepared and submitted in a timely manner to the Bureau of the Budget and to the Congress for the Congress to appropriate funds for the buildings; and (3) assure that contracts for construction would proceed as rapidly as possible after funds are appropriated by the Congress for construction, Director Pecora, Robert H. Ryan (Gulf Reston, Inc., Developer, Successor to Reston, VA, Inc.), and William A. Schmidt (Commissioner of Public Buildings), met to discuss the possibility of obtaining private financing of a new building under a lease construction agreement with an option to purchase, if efforts to obtain Federal funds in 1969 failed. GSA agreed to establish guidelines for such a venture and inform Ryan. The discussions with Gulf-Reston, Inc., culminated in an offer from the developer to secure private funds for the construction of the building, advertise for construction bids utilizing the Government's approved plans and specifications, and award a construction contract to the contractor whose bid was considered by Gulf-Reston, Inc., and GSA to be in their best interest. The building would be leased to the Government for a firm term of 20 years, with fee title to the building conveyed to the Government at the end of the 20-year lease term at no cost to the Government, with the Government having the option to buy at any intermediate time upon six months notice to Gulf-Reston. On the basis of Gulf-Reston's proposal, it would be paid for its administrative costs, but no profit would accrue to the corporation.

Authorization to Lease

Negotiations with Gulf-Reston continued toward refinement of the offer with discussions between GSA, the Survey, DOI, and BOB on the funding. A prospectus for the proposed lease was submitted to BOB on June 28, 1968. On August 26, 1968, BOB approved GSA's presentation of a "fact sheet" to the Committees on Public Works in lieu of a prospectus. The BOB approved the method of financing the project under the lease-purchase arrangement. However, as the project had been authorized by the Congress under the Public Buildings Act of 1959, the Administration was of the opinion that further Congressional authorization was not

necessary and that the Committees on Public Works needed only to be informed of what GSA proposed to do in proceeding with the project. Although GSA's attorneys did not agree, the Committees were informed that GSA was proceeding with the project with private financing on a lease basis. However, on October 29, 1968, Senator Jennings Randolph, Chairman, Senate Committee on Public Works, informed GSA that the Committee would require a revised prospectus under the provisions of the Independent Offices and Department of Housing and Urban Development Appropriation Act, 1969, which provided:

> No part of any appropriation contained in this Act shall be used for the payment of rental on lease agreements for the accommodation of federal agencies in buildings and improvements which are to be erected by the lessor for such agencies at an estimated cost of construction in excess of $200,000 for the payment or the salary of any person who executes such a lease agreement: Provided, that the foregoing proviso shall not be applicable to projects for which a prospectus for the lease construction of space has been submitted to the Congress and approval made in the same manner as for the public buildings construction projects pursuant to the Public Buildings Act of 1959.

Administrator Lawson B. Knott wrote Director Charles J. Zwick on November 5, 1968, requesting that BOB review the prospectus sent to them on June 28, 1968, for conformance with Executive Order 9384 of October 4, 1943. The Bureau gave its approval on December 23, 1968, and the prospectus was submitted to the Committees on Public Works of the Congress on January 6, 1969. The prospectus for the proposed lease was approved by the Public Works Committee of the Senate on April 25, 1969, and by the Public Works Committee of the House of Representatives on May 5, 1969.

Protest of the Noirair Engineering Corp., Washington, D.C.

The Noirair Engineering Corp. on May 6, 1969, registered a formal protest to the Comptroller General (CG) of the United States against the action of GSA in soliciting only Gulf-Reston, Inc., for construction and lease of a proposed new Geological Survey Building at Reston, Virginia. After a review of the facts and history relevant to the project, the CG denied the request.

Quoted are significant parts of the CG decision:

> You state that since the new Geological Survey Building is to be built on ground presently owned by the United States Government, you do not understand why this lease-purchase development is not being offered to other qualified developers.
>
> In its report, GSA states that while it is recognized that the building under consideration is to be constructed on a predetermined site in accordance with prescribed drawings and specifications, within a predescribed time limit, nonetheless the requirement for attendant services, that is, rights of way for roads, utilities and sewers to make the site usable, which are available only with the acquiescence of Gulf-Reston under the existing circumstances, make advertised procurement unrealistic and impracticable.

Section 210(h)(1) of the Federal Property Administrative Services Act of 1949, as amended, 40 U.S.C. 490(h)(1), provides as follows:

> The Administrator is authorized to enter into lease agreements with any person, co-partnership, corporation, or other public or private entity, which do not bind the Government for periods in excess of twenty years for each such lease agreement, on such terms as he deems to be in the interest of the United States and

necessary for the accommodation of federal agencies in buildings and improvements which are in existence or to be erected by the lessor for such purposes and to assign and reassign space therein to federal agencies.

Lease negotiations are authorized where it is impracticable to secure competition. In the ruling, the CG went on to say that the record sufficiently justified the negotiation of a lease with Gulf-Reston as the sole source for the facility contemplated. The facts, circumstances, and conclusions in the record clearly and convincingly establish that formal competitive advertising would be impracticable and that Gulf-Reston was the only source for procurement of the lease under negotiation procedures.

The CG in his decision stated further that:

> The record indicates that when budgetary restrictions on construction funds precluded the planned construction of the new Geological Survey Building by the Government with appropriated monies, GSA submitted a new lease construction prospectus to the Committees on Public Works for approval pursuant to the provisions of the Independent Offices and Department of Housing and Urban Development Appropriation Act, 1969, Public Law 90-550, 82 Stat. 944. The lease construction prospectus provided for the construction of the new Geological Survey Building by Gulf-Reston with its own funds and for the leasing of the building to the Government.
>
> While Gulf-Reston by ownership of adjoining land is the sole source for the construction and lease of the proposed new Geological Survey Building at Reston, Virginia, and competition is precluded because of this particular circumstance, the lease agreement will provide that Gulf-Reston will advertise for bids for construction of the facility utilizing GSA bidding documents modified in a mutually acceptable manner. The construction contract will be awarded t o the contractor whose bid is considered by Gulf-Reston and GSA to be in the best interest of the Government and Gulf-Reston.

Deferral of Federal Construction

The plans and specifications for the project were completed by the Architect-Engineers on July 29, 1969. On August 28, 1969, GSA and Gulf-Reston, Inc., established a tentative schedule which provided for an issuance of the invitation for construction bids on October 15, 1969, contract award on February 1, 1970, and start of construction on March 15, 1970. On September 8, 1969, Gulf-Reston, Inc., sent letters to about 40 general contractors informing them of the forthcoming invitation to bid on construction of the Survey building. Nineteen contractors expressed an interest in bidding on the job. However, on September 12, 1969, by direction of the President and the Bureau of the Budget, a moratorium was imposed on 75 percent of all Federal construction, which included the Survey building even though its construction was contemplated under a lease arrangement. The moratorium expired on June 30, 1970, permitting GSA to proceed with the project.

Following authorization of the project in May 1969 for lease-construction, GSA started negotiations with Gulf-Reston, Inc., and the drafting of the lease-construction agreement which was consummated on August 13, 1970. The lease-construction agreement was essentially an extension of the original Land Sale and Donation Agreement substituting, in substance, Gulf-Reston's proposal for financing the construction through a lease-arrangement in lieu of direct appropriation.

Agreement to Construct for Lease

Significant portions of the agreement provided that:

> Gulf-Reston shall arrange for the construction of the facility for the USGS in accordance with the design plans and specifications prepared by the firms of Skidmore, Owings and Merrill, and H. D. Nottingham and Associates under contract to GSA; and lease the facility to the Government for a term of 20 years, said term to commence when the facility has

been constructed and a determination is made by the Government that it is ready for occupancy.

The Government shall furnish at no cost to Gulf-Reston completed design plans and specifications, approved by GSA, with an estimate of the cost of construction and the time to be allowed for completion; lease to Gulf-Reston for a term of 20 years the 105.0673-acre site on which the facility is to be constructed, plus the period of time required for construction or until conveyance of the facility to the Government; lease the entire facility from Gulf-Reston for a firm term of 20 years without service and utilities, when in the sole judgment of the Government that the facility has been constructed and is ready for occupancy; and that upon certification by Gulf-Reston to GSA that portions of the premises are substantially completed in accordance with the plans and specifications and are available for use the Government may occupy said completed portions.

Gulf-Reston and the Government mutually agreed that all of the terms and conditions of the Land Sale and Donation Agreement of May 16, 1966, which were dependent upon the appropriation of funds for the construction of the Government buildings on the site, would be binding upon the Gulf-Reston in the same fashion as if funds had been appropriated for construction; Gulf-Reston would advertise for construction proposals based on the approved project plans and specifications said proposals to be reviewed jointly by Gulf-Reston and GSA and the terms and provisions of the construction contract shall be mutually acceptable to GSA and Gulf-Reston prior to making an award; and Gulf-Reston would proceed with construction, provided it received a bid by a responsible contractor, supported by acceptable performance and completion bonds, permitting completion of the project at a cost which will permit the Government to lease the facility at an annual rental, permitted by the approved prospectus, and assure completion of the project for full occupancy within 900 calendar days from the date of notice to proceed is issued to the contractor.

The Government reserved the right to require changes during the progress of the work, provided such changes did not increase the construction cost in excess in of the amounts of the loans; Gulf-Reston would be responsible for supervision of the construction, inspection of the work and perform all accounting functions, including field accounting, the Government reserving the right to have access to all work and make inspections.

The agreement and the facility lease were contingent upon and subject to Gulf-Reston receiving construction and permanent financing for the entire project mutually satisfactory to the Government and Gulf-Reston.

The Government has the option to purchase the facility at any time during the 20-year lease term at a purchase price not to exceed the remaining unpaid principal of Gulf-Reston's construction cost and accrued interest. In the event the Government does not exercise its option to purchase, Gulf-Reston will convey fee title to the facility to the Government at the expiration of the 20-year lease term.

In announcing the agreement with Gulf-Reston, Inc., Arthur F. Sampson, GSA Deputy Administrator for Special Projects and Commissioner of the Public Buildings Service, said the project will "provide a long needed solution to problems covered by inadequate and fragmented working quarters for the U.S. Geological Survey."

"This project fits hand and glove into the Nixon Administration's program of assisting the development of new communities," Sampson said. "It is a model project for new administration criteria requiring consideration of socio-economic conditions in that Reston will provide convenient housing for employees at all income levels."

By letter of June 23, 1971, to Hart T. Mankin, General Counsel, GSA, from Thomas E. Kauper, Acting Assistant Attorney General Office of Legal Counsel, Department of Justice, provided the opinion as to the validity of the proposed lease acquisition of the building at Reston, Virginia, to house the Geological Survey.

Amendment to Agreement

On June 28, 1971, Gulf-Reston, Inc., the Government, action by and through GSA, mutually agreed to update certain basic provisions.

Significant provisions are as follows:

The ground lease to Gulf-Reston for the site was reduced to the 85.0559 acres (the initial acquisitions under the Land Sale and Donation Agreement). The term set was 25 years, plus the time required for construction, subject to termination by the Government, at the time the facility is conveyed to the Government. The amendments refined the limitations under which Gulf-Reston would: award the construction contract and extended the construction time to 930 calendar days; refine the limitations under which changes could be made; refine the procedures and limitations related to financing; provide for accommodation of time of completion extension due to approved change orders and force majeure, including but not limited to strikes, acts of God, fire and other hazards; and provide authority for the Government to enter the premises subsequent to the award of the contract to conduct ceremonies for ground-breaking, cornerstone laying, and dedication.

Clearing the Site for Construction

While construction of the Survey project was included in the 75 percent deferral of all Federal construction, it was decided to advance the project by clearing trees from 45 acres of the site within the construction boundary. Plans and specifications were drafted by the Survey, and the GSA negotiated an agreement with Gulf-Reston, Inc., whereby Gulf-Reston, Inc., administered a non-Federal contract for the clearing. A contract in the amount of $24,975 ($577 per acre) for this work was awarded in March 1970. A Manassas firm logged off much of the timber under a subcontract. Eight clumps of trees spaced throughout the parking areas were preserved. The clearing was completed on June 1, 1970.

In compliance with the provisions of the lease-construction agreement, on October 16, 1970, Gulf-Reston, Inc., issued invitations to bid for the construction of the building. Bid invitations were sent to 20 construction firms. Bids were received and opened on January 18, 1971. The George Hyman Construction Co., of Bethesda, Maryland, submitted the lowest of four bids received, ranging from $43,498,000 to a high bid of $47,979,268. Gulf-Reston had 90 days from the bid opening date or until April 17, 1971, to award a contract for the construction of the building to the low bidder.

Private Funding of the Project

Prior to issuance of the invitations to bid Gulf-Reston, Inc., on September 11, 1970, solicited the views of eight mortgage brokerage firms and financial institutions relative to probable financial terms and fees to provide financing for the project. No firm financial proposals were solicited by Gulf-Reston, Inc., until after receipt of the construction bids and a firm fix was established as to the total estimated project cost to be financed. The firm, Walker and Dunlop, Inc., whose finance proposal was considered to be in the best interest of both the Government and Gulf-Reston, advised the corporation that it was not possible to complete all of the financial arrangements, obtain signed purchase agreements from investors, and complete all of the necessary legal work incident to the permanent financing and lease documentation preparation by April 17, 1971, the deadline date for Gulf-Reston, Inc., to award the construction contract. In view of this, it was necessary for Gulf-Reston, Inc., to request the low bidder to extend its offer an additional 60 days through June 17, 1971. Although the construction firm extended its offer as requested, this action resulted in an increase in the firm's construction bid price of an additional $700,000, subsequently reduced through negotiation to $620,000.

As of May 19, 1971, the brokerage firm employed by Gulf-Reston, Inc., had obtained either firm or conditional investor commitments for 100 percent of the permanent

financing for the project. Executed written commitments from the investors had to be obtained no later than June 14, 1971, in order to permit GSA and Gulf-Reston to execute a lease contract, and Gulf-Reston to award a construction contract no later than June 17, 1971.

The permanent financing was arranged through 7.95 percent First Leasehold Mortgage Bonds (secured by a direct lease obligation of the United States of America), under a Bond Purchase Agreement dated June 28, 1971, executed by Gulf-Reston Properties, Inc. Construction financing was arranged through the American Security Trust Company of Washington, D.C., at 7.25 percent.

Legal Action to Prohibit the Award of Construction Contract

Before the construction contract could be awarded, the Metropolitan Washington Planning and Housing Association, on May 10, 1971, filed suit in the U.S. District Court for the District of Columbia seeking a temporary restraining order prohibiting the GSA from approving a construction contract award by Gulf-Reston, Inc., until the Government makes a "firm and detailed commitment" to provide low and moderate income housing in Reston for Survey employees. (Civil Action No. 440-70)

Judge William B. Bryant of the U.S. District Court set May 24, 1971, for a hearing on the motions filed by the Planning and Housing Association. Prior to the hearing, Hugh Latimer, Attorney for the Association, in a briefing hearing to Judge Bryant stated that, "We feel it's time for the Federal Government to comply with its own regulations." Prior to the hearing, the U.S. Attorney for the District of Columbia filed with the Court a motion to strike and opposition to the plaintiff's motion for preliminary injunction for want of equity and because it is not within the scope of the claims presented by the plaintiffs in the action. Alternatively, the defendants opposed plaintiff's motion for a preliminary injunction. There were filed with the motion affidavits of Robert L. Kunzig, Administrator, General Services Administration; William A. Radlinski, Associate Director of the Geological Survey, DOI; and the joint affidavit of A. F. Sampson, Commissioner, Public Buildings Service, GSA, and William A. Schmidt, Special Assistant to the Director, Geological Survey (former Commissioner) with accompanying exhibits. Also filed with the motion was a memorandum of points and authorities. On May 19 copies of the defendant's motion to strike and opposition to plaintiff's motion for preliminary injunction, and affidavits of Robert L. Kunzig, William A. Radlinski, and A. F. Sampson and William A. Schmidt, with accompanying exhibits, were served by hand upon Hugh Latimer and Lionel Kastenbaum, Esquires, Attorneys for the plaintiffs by Nathan Dodell, Assistant U.S. Attorney. The Robert L. Kunzig affidavit dealt with the Administrator's issuance of the following regulation, which amended 41 C.F.R. Subpart 101-18.1 "Acquisition by Lease" by adding a new paragraph (d) as follows:

"101-18.102 Basic Policy.

(d) GSA will avoid locations which will work a hardship on employees because (1) there is a lack of adequate housing for low and middle income employees within a reasonable proximity and (2) the location not readily accessible from other areas of the urban center."

The William A. Radlinski affidavit dealt with the U.S. Geological Survey's employment and fragmentation of occupied facilities and residencies in the Washington, D.C., Metropolitan Area; the Survey's preparation for the relocation to Reston; employee counseling with respect to the move and to take steps to assure that the needs of the employees with respect to transportation and housing will be met; establishing internal administrative organizations to plan and implement all phases of the proposed employee relocation; and maintaining liaison with Reston organizations and others to assure an orderly and helpful accommodation of employee relocation difficulties. The joint affidavit of A. F. Sampson, Commissioner, PBS, GSA (who had supervision over the project to construct the USGS facility), and William A. Schmidt, former Commissioner, PBS (who successively as Assistant Commissioner for Planning, Assistant Commissioner

for Buildings Management, Deputy Commissioner and Commissioner, over a period from 1956 to 1969 in GSA, and since then with the Geological Survey as Special Assistant to the Director of the U.S. Geological Survey, had been intimately involved with the project from its inception), covered all critical aspects in the planning, authorization, site selection, design approvals, and private financing, dealing directly with the Congress, Bureau of the Budget, Federal and local planning interests, the developers, Reston, Virginia, Inc., and Gulf-Reston, Inc., other interested Federal agencies, and private interests concerned with the project, including the potential loss to the Government if award of the contract was delayed. Affidavits from officials of Gulf-Reston, Inc., and O. Mallory Walker, Vice President of Walker and Dunlop, were also filed with the Court.

The Court, after considering the motion, the memoranda, the affidavits, and the exhibits, filed in support of and in opposition to the motion, and having heard oral argument in open court, entered its findings of fact and conclusions of law. United States District Judge William B. Bryant, on June 11, 1971, denied the plaintiff's motion for a preliminary injunction.

The Conclusions of Law entered by the Court:

1. The Government has acted reasonably to assure that when the Geological Survey headquarters facility is completed, there will be adequate housing for low and middle income employees within a reasonable proximity of the facility.

2. The public interest will suffer if the move to Reston is prevented or delayed. See *Udall v. D.C. Transit System, Inc.*, 131 U.S. App.D.C. 381, 383, 404 F.2d 1358 (1968).

3. The Government and third parties would be irreparably injured if the preliminary injunction were granted.

4. Plaintiffs will not be irreparably injured if the injunction is denied.

5. Plaintiffs are not entitled to injunctive relief.

On June 28, 1971, Gulf-Reston, Inc., and the Company, Gulf-Reston Properties, Inc., entered into the Bond Purchase Agreement to provide at closing the permanent financing through the issuance of 7.95 percent First Leasehold Mortgage Bonds secured by a direct lease obligation of the United States of America and the Agreement to Lease. Construction financing was arranged through the American Security Trust Co., of Washington, D.C., at 7.25 percent interest.

On June 29, 1971, Gulf-Reston, Inc., awarded the construction contract to the George Hyman Construction Company in the amount of $44,118,000. (Base Bid $40,998,000, add alternate print plant $2,500,000, plus $620,000 adjustment for inflation due to delay in award). The lease construction was under the overall direction of GSA and George Culfogienis Construction Engineer was selected to represent GSA at the construction site.

As construction progressed, the Survey continued its surveillance of progress in providing housing, maintaining continuous liaison with Gulf-Reston, Inc., GSA, and the Department of Housing and Urban Development, as well as the solicitation of information through employee surveys. Quoted below is GSA's General Counsel's report to the Planning and Housing Association, Attorney Hugh Latimer, by letter of September 5, 1972. Similar reports were made to the Court by GSA.

> This refers to our interim reply to you of June 30, 1972, concerning Judge William Bryant's Order and Findings of Fact and Conclusions of Law of June 11, 1971, allowing General Services Administration to proceed with construction of the Geological Survey headquarters facility in Reston, Virginia.
>
> Attached is information relating to Finding of Fact 29 of Judge Bryant's Order. We include in the attachment information relating to the references to resale by

owners and turnover in tenants in Finding 29, although not specifically requested in your letter.

As noted in the Court Order, Finding 32a, an employee survey had not yet been conducted at that time. Since then, an employee survey was conducted in October 1971, and the survey revealed that 532 employees indicated they would move closer to Reston. Of this number, 211 indicated they would move to Reston and 74 would move prior to 1974. We wish you to know that a second survey is scheduled for this coming October. We expect that the results of the forthcoming survey will provide us with more meaningful up-to-date information about the housing requirements of Geological Survey personnel.

We have also been advised that Geological Survey arranged for their employees to tour Reston with the specific purpose of inspecting the existing and proposed housing projects."

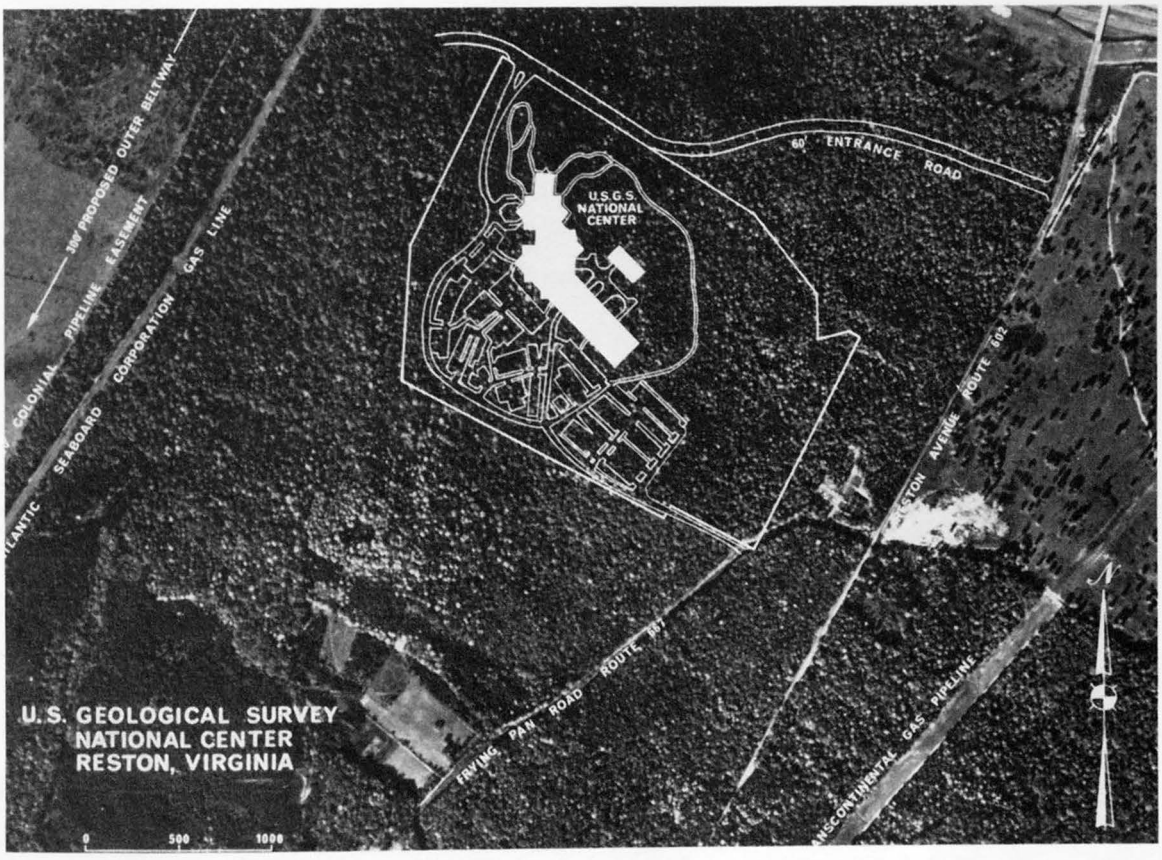
NATIONAL ENVIRONMENTAL POLICY ACT ASSESSMENT

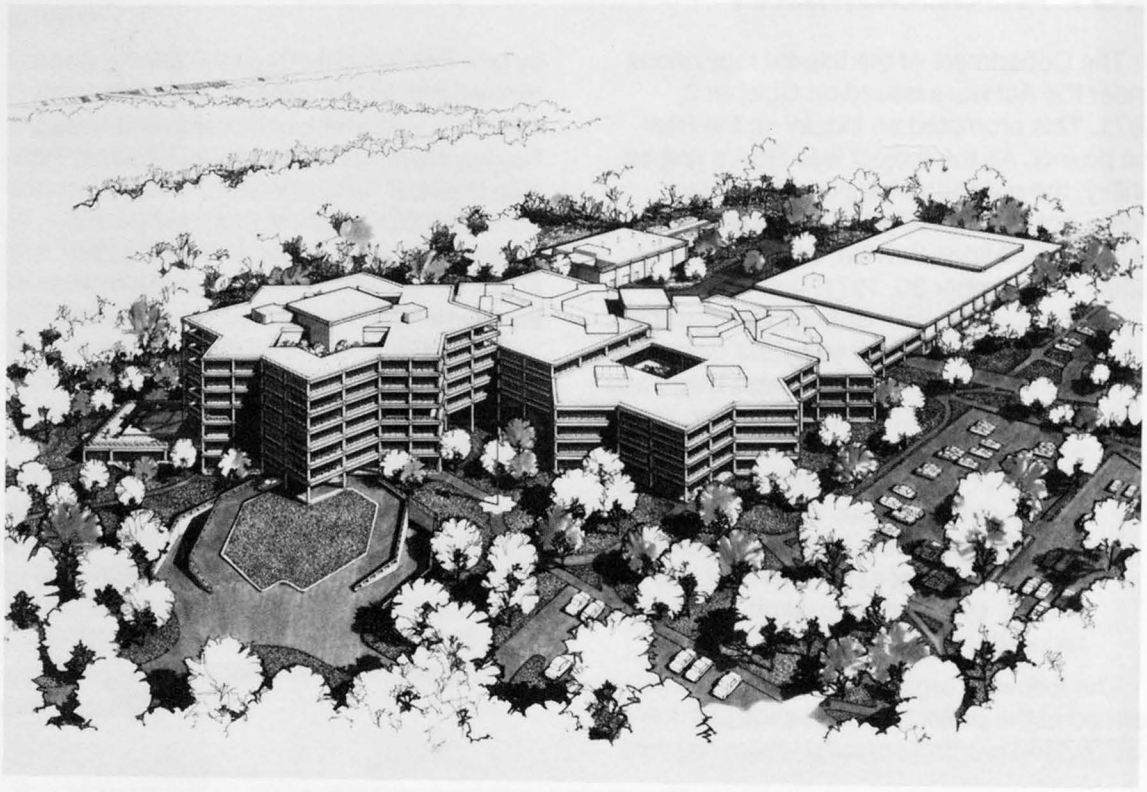
The Department of the Interior regulations under the Act were issued on October 2, 1971. This prompted an inquiry on the Reston project. As the project was GSA's responsibility, the question of applicability of the Policy Act was raised with the Commissioner of Public Buildings Service, who reported by letter of November 30, 1971, that:

> The Geological Survey headquarters project was authorized by the Congress, a site selected, a lease award made and construction is currently underway. We do not believe the project constitutes a major federal action significantly affecting the quality of the human environment since the building is being leased to the Government and all necessary reviews and approvals by planning organizations were secured.

The following organizations had been informed of the project, reviewed the plans and design, and granted approval where required by law: The National Capital Planning Commission and its committees; Fine Arts Commission; Department of Housing and Urban Development; National Capital Regional Planning Council; Federal Water Pollution Control Administration; Federal Aviation Agency; Northern Virginia Regional Planning and Economic Development Commission; and the Fairfax County Planning Commission.

The facility design and construction met all required Federal, State, and local environmental quality standards, codes, and other regulations. Measures and safeguards were included in the design and construction to protect the existing environment and mitigate any adverse impact on the environment. In view of the foregoing and an environmental assessment of the project, it was administratively determined that an environmental impact statement was not required.





DESIGN

Architectural Concept

At the outset, serious consideration was given to a campus-type plan involving separate buildings for either each division or a group of associated activities. The Reston site, because of its size and natural characteristics, could easily accommodate a campus-type installation. However, in further study of the program of requirements and because of construction costs, the Architect-Engineers determined that the Survey's facility needs could be efficiently housed in a single structure.

The National Center's John Wesley Powell Federal Building is a continuous structure about 1,200 feet long, built along a low ridge. Although it is one structure, it can be considered as consisting of three sections: the administration, laboratory, and map reproduction wings. The building ranges in height from about 120 feet in the seven-story administration section to about 25 feet in the single-story printing plant on the upper end of the ridge. The 1-million-square foot building accommodates about 2,500 employees, and there are adjoining parking facilities for 1,600 vehicles.

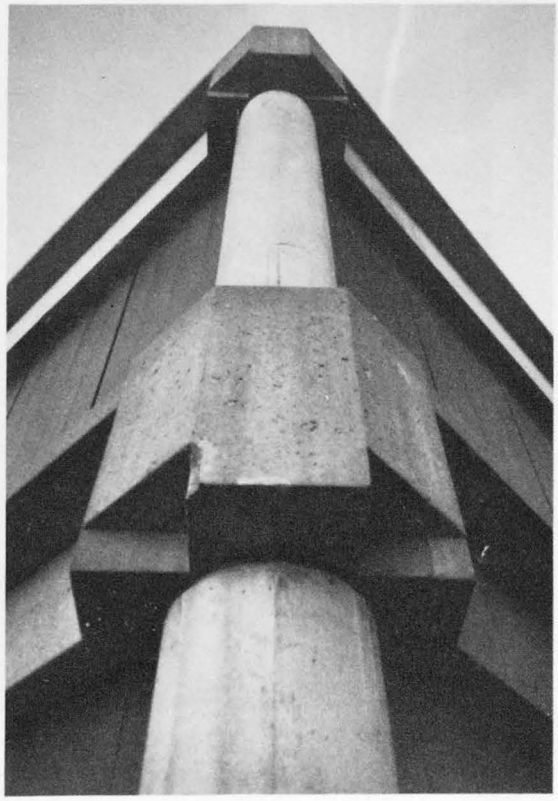
The precast concrete exterior of the Powell Building, including exposed columns, window wall panels, and terrace handrails, is a natural buff color. Mullions and window frames are satin-black extruded aluminum. The mechanical penthouse, printing plant, and central utility plant have steel panel exteriors with satin-black porcelainized enamel finish. Formal landscaping at the National Center includes some 900 trees and 15,000 plants.

A two-story central utility plant, measuring 110 by 180 feet, is located 200 feet northeast of the headquarters building. It houses the heating and refrigeration equipment. Cooling towers are adjacent to the utility plant.

The design concept also provided, for future expansion, an attached additional five-story wing north of the laboratory wing, west of the power plant for future expansion. It also contemplated a one-floor extension on the east end of the print plant wing.

Walter A. Netsch, SOM's principal architect on the design, is deemed best qualified to describe the concept. The following is quoted from an interview of Carol Wersich, Family/Leisure Editor of the Evansville Press (Indiana), which appeared in the March 12, 1986, issue:

> Walter takes pride in the fact he was "chopping off corners of high rise buildings very early—long before it was a popular thing to do." A prime example of his work in that respect is the very eye-appealing John Wesley Powell National Center of the U.S. Geological Survey, a Reston, VA, complex of offices and laboratories that visitors to the Washington, D.C., area marvel over.



Chopped-off corner

The seven-story, 1 million square foot center, noted for its design and triangular wings, emerges as a giant out of a dense woods. The center and a parking lot for 1,600 cars sprawl across 45 acres.

"The Reston building" completed in 1973, "was considered to be quite radical at the time. But I doubt that it is now," said Netsch, who played a major role in the concept and design of the $45 million center.

Sixty picturesque acres of woods surround the center with no less than 9,000 striking oak and other trees of eight-inch diameter or more, and 15,000 shrubs and other plantings. The center and the woods complement one another, exactly as the institution designer planned.

"Our design followed a formal rhythm of geometry rather than an arbitrary one. We kind of hoped the building would appear to have just grown out of the trees. Its columns and chopped off corners express an extension of the forest," said Netsch in a telephone interview. He was an architect with the Chicago firm of Skidmore, Owings and Merrill at the time the center was planned. He also designed other government buildings, including the $125 million U.S. Air Force Academy in Colorado Springs.

The Reston building is constructed mainly of glass and precast concrete.

"If we had the building to design over," Netsch said, "I think we probably would add a little touch of color. When we did that building, there weren't many glasses available. We would have gotten more richness from materials that now are available."

"I also would have liked to have been able to design special furniture for the center; then the center would have looked truly elegant. But to keep the cost down, we had to use a lot of office and laboratory furniture that was from other Washington,

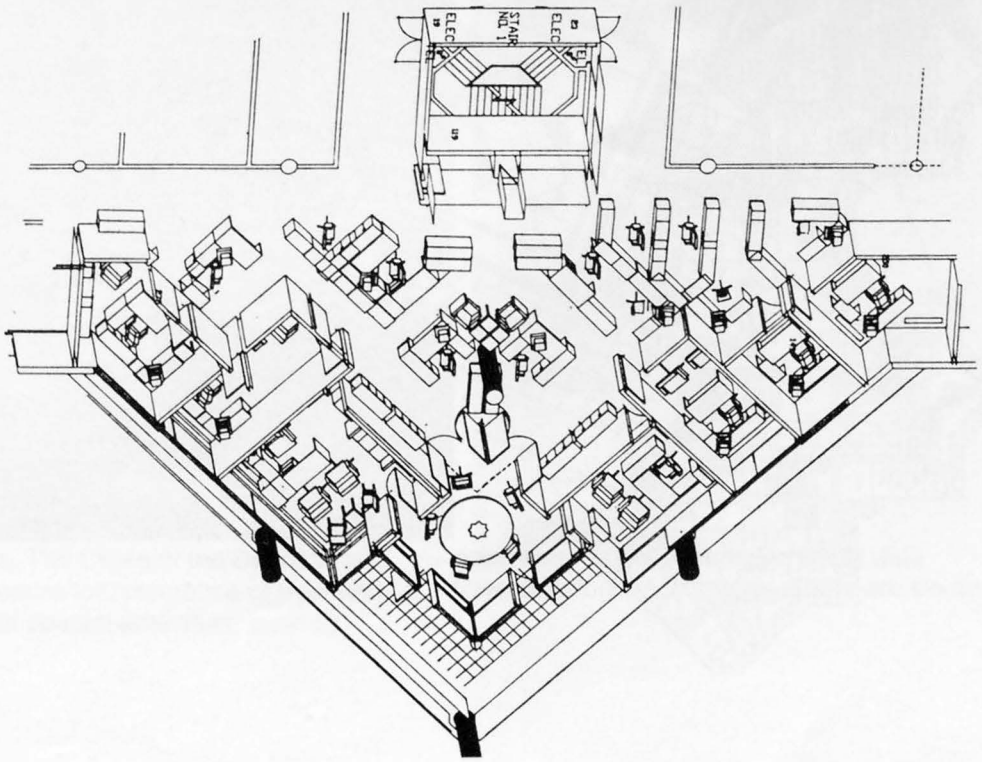
Geometrical design

D.C. buildings. We were allowed to design modern furnishings for the lobby, however."

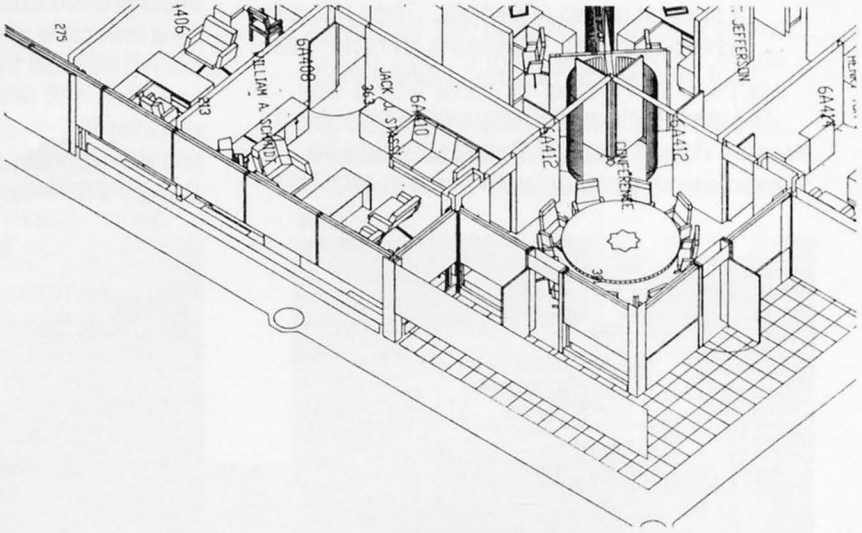
At the time, the Geological Survey was helping NASA with moon studies. The facility's 2,500 employees also were working on earth projects in topography, geology, water resources and conservation. "We had to keep in mind they (Geological Survey staff members) were a special group of people. They not only were geologists, engineers and scientists, but also academicians," Netsch said.

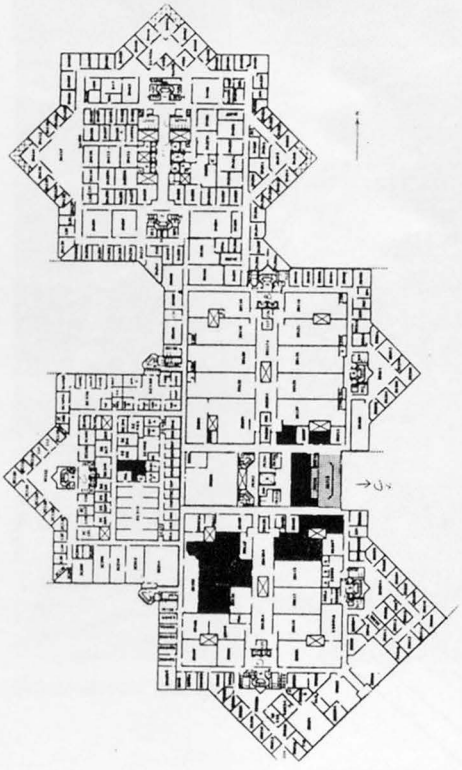
The architectural development of the John Wesley Powell Federal Building should be viewed as concomitant with modern architecture as found in major cities at this time. The Survey's National Headquarters expresses in architectural terms the earth science mission of the bureau in optimizing the blend of form and function. This new architecture became the defining context of Reston and clearly surpasses typical speculation office complexes. The site provides a large preserved expanse of open green space and forested land.

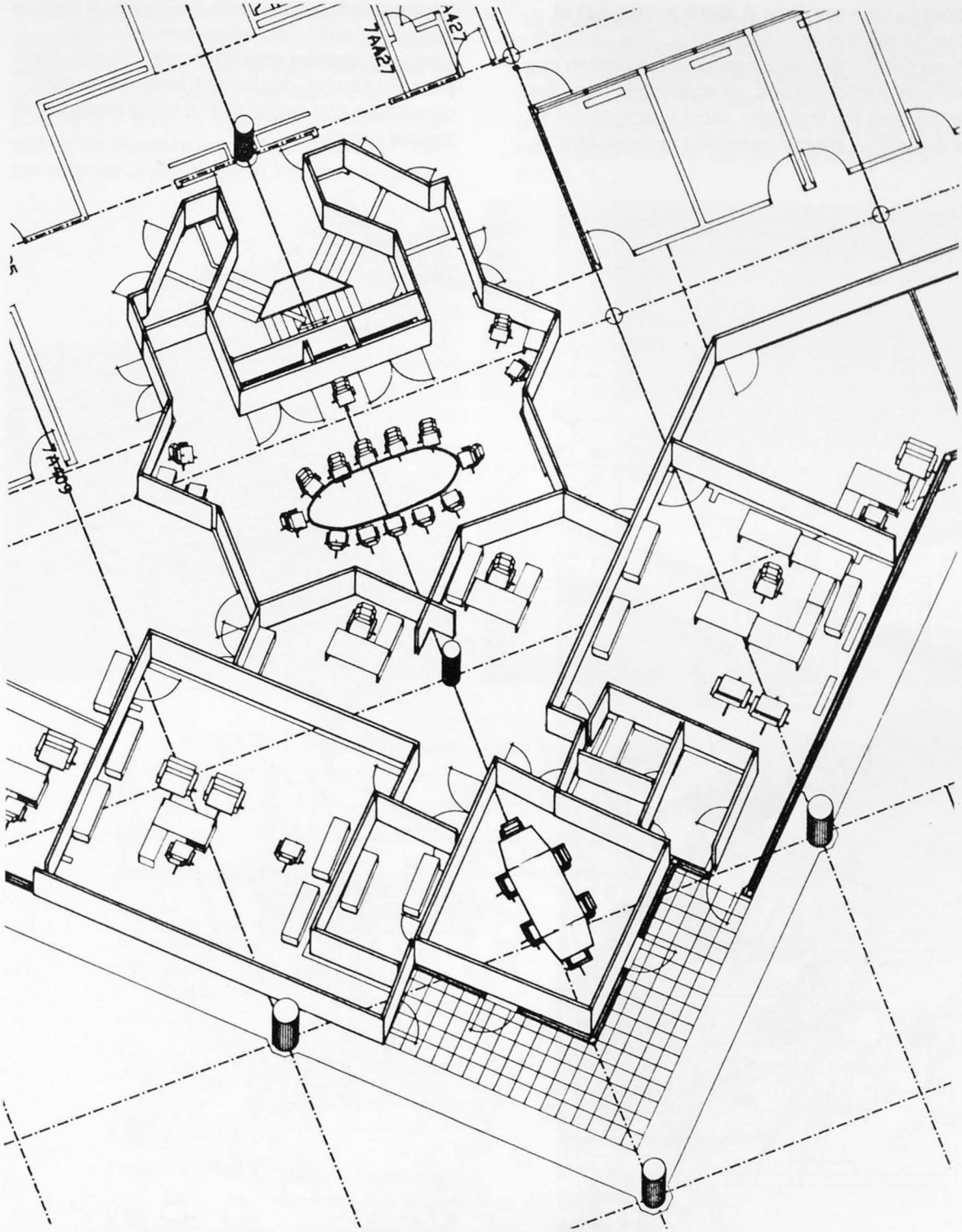
Every visitor is welcomed with an extensive circular drive and overhead canopy, followed by a reflective glass entry through revolving doors. Next on the visitor's line of sight is the luminous and reflective metallic information desk for the reception of the variety of scientific and support personnel that comprise the Survey's diverse discipline.



Those who were instrumental in the initial design layout and program criteria had deliberated over an idea of architectural organization of the USGS subordinate divisions into a contemporary campus of distinct structural units and bridge links between critical groups of labs. The chart of functional branch operations then became a literal layout of 11 separate rectangular buildings. Upon further architectural refinement, the final scheme has been a successful synthesis of the organizational chart scheme and a powerful structural composition of symbolic 25-foot modular star compass forms. This format is a fitting expression of the historic geological compass tool and the initial instrument of surveyor's symbology in plain view. The compass point extensions from a 90-degree rectangle allow for the maximum linear glass and naturally

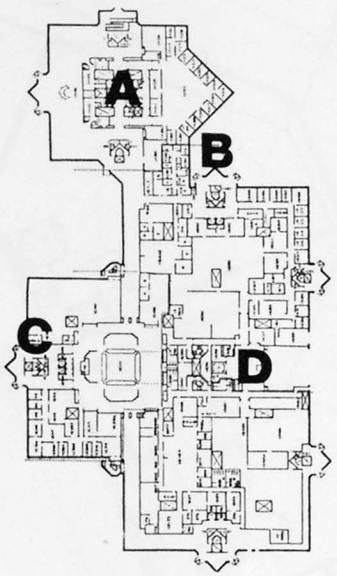


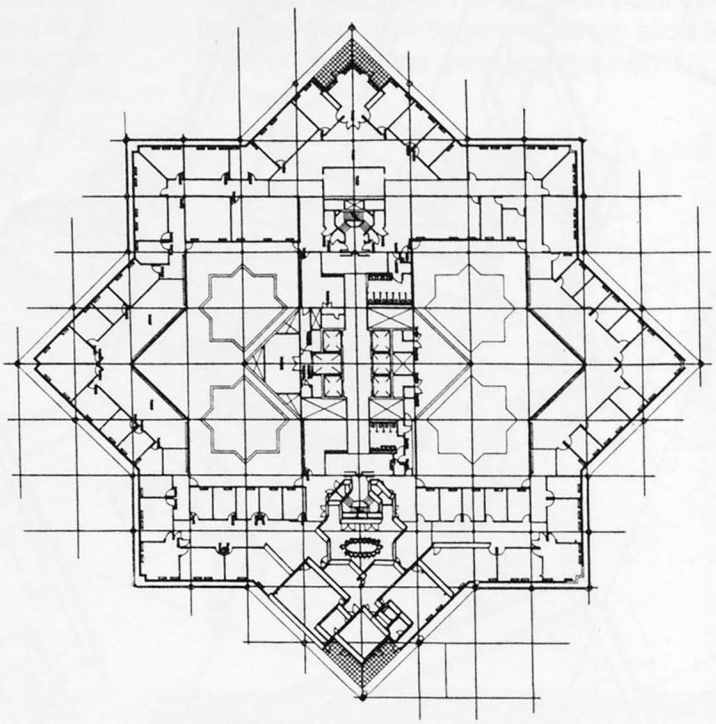


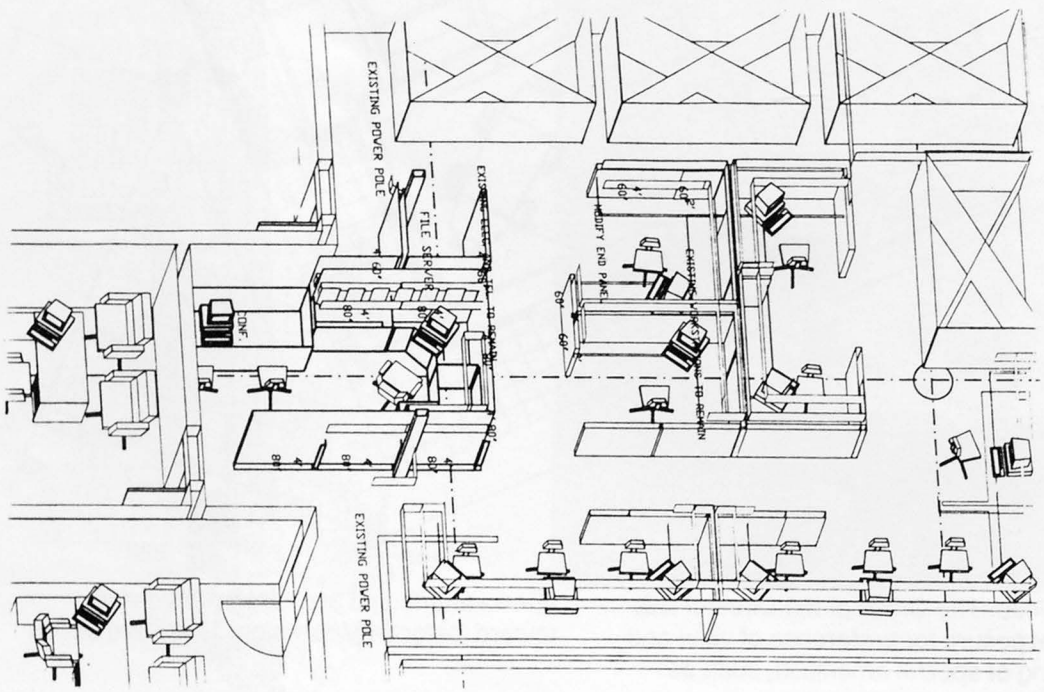


lighted offices. The Office of the Director has northern exposure for preference of view and conditioning of special amenities, such as open atriums and an uninterrupted vista toward Catoctin Mountains. There are seven

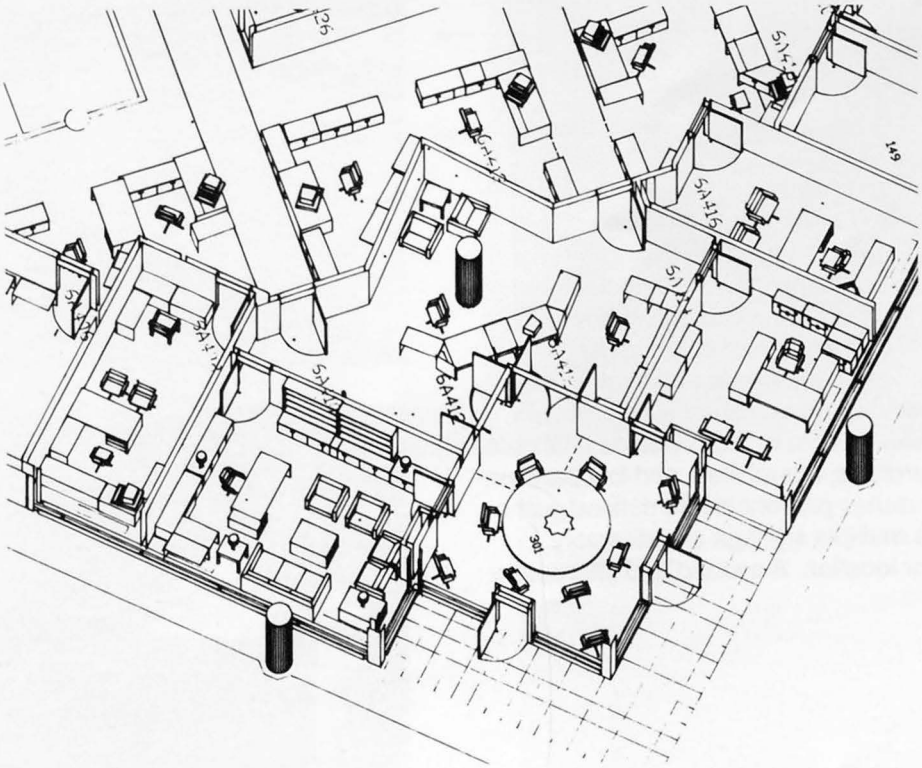
floors of the entry, or A stack as the first of four general compass clusters. The architectural design prioritizes general circulation in vertical traffic options, all accessible from the lobby and the first floor. Most buildings have a horizontal room numbering system, and by contrast this design reinforces vertical links in common public circulation between units. Centrally located elevator cores in each compass, or cluster, control the funnel of public circulation and separate the more private and secure areas.



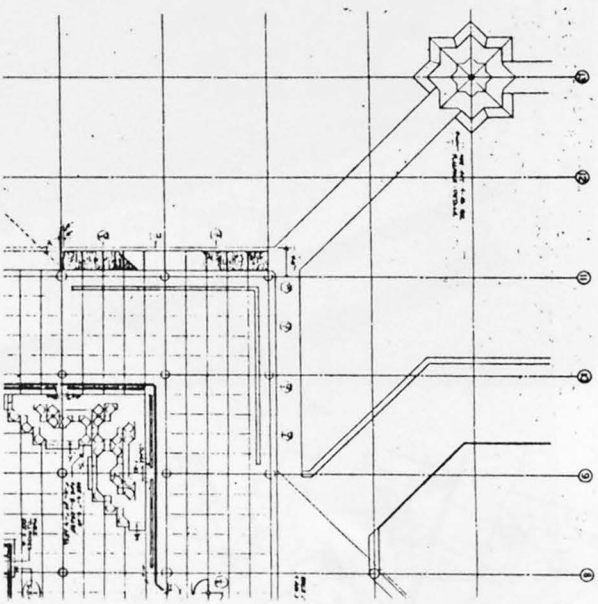


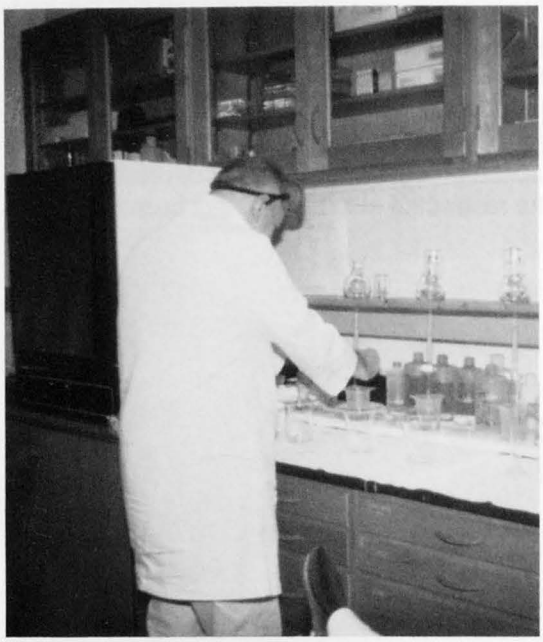


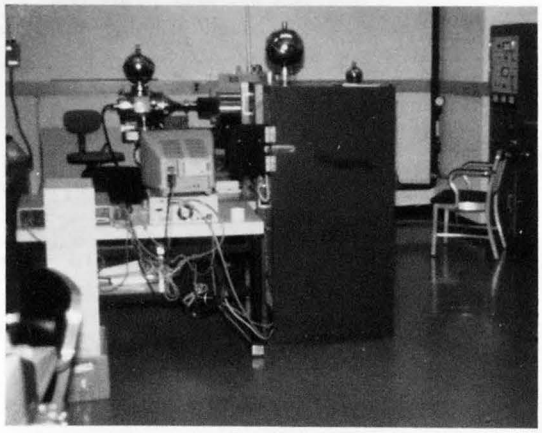
The structural predominance of the facade envelope has an impact from all other complexes in the area. This unique massing of exposed skeletal columns provides honest cornice and balcony detail of interest without tacked on decorations and is consistent with the respectful efficiency of this bureau. The 12 column by 12 column matrix format and 25-foot bay accommodates office and open-plan furniture with the maximum linear feet of perimeter glass. The plan grid is the 90-degree juxtaposition of two rectangles that offer two interior walls of light for key conference areas.



This radial layout reflects an interpretation consistent in high-end progressive architecture. The architect must also be credited with exploring structural expression and contributing to the late 1960's and early 1970's design dialogue, while under Federal restrictions. The structural shape of the atrium court, the shape of the information desk, as well as the stone paving of the flag pole area, are compass shapes to continue the motif of this design scheme.







The importance of the design from a safety and security standpoint is fundamental to the many and various functions. Emergency overhead showers in chemical labs, rock sample storage, computer support, and auditorium exits must be planned for optimum safety. An acceptable fire rating is achieved in the barrier wall of the perimeter set of offices, and the central core is thus open as a flexible plan of furniture, lateral files, and low partitioning. This routes personnel into defined paths that have multiple signage and directory boards for location. A second and impressive

fire protection concept is the use of "Rockville" Cold Spring, Minnesota, granite wall surfaces and terrazzo finishes of the first floor lobby space. As nonflammable materials and "flame cut granite" and stainless steel secure the entry, the entire lobby acts as a flame retardant shell and securely allows escape for people in case of fire. The timeless use of durable and geologically significant stone speaks, simultaneously, as sculptural display in the corridors. Respect for the samples of fossils and cemetitious forms on exhibit also continues in floor material. Brilliant steel gray and bronze accents proudly and graphically display the Great Seal and the U.S. Department of the Interior title. The inscription is surface mounted on two-way glass for security observation. USGS stone carvings are a strong mural backdrop on line, with the visitor's line of sight to complete the theme of this bureau officiation and National Headquarters.

The John Wesley Powell Federal Building of the USGS National Headquarters, with its picturesque setting, like the many monumental buildings of our Nation's Capital, serves as an unusual geologic museum. The styles of architecture in the Nation's Capital, influenced by the types of building stone, have been constructed primarily from rock quarried throughout the United States. Rarely seen in the early construction of Washington's Government buildings, when because of regional and political interests, and the difficulty and cost of transportation, materials were selected from nearby sources, Minnesota granite was selected to enhance the design of the Powell Building. An estimated 62,800 square feet of the stone, almost a million tons, lines the walls of the main lobby and the lobby wall of vertical transportation cores of the building. In addition, the stone was used for the flagpole plaza, the information desk, and the urn bases for the lobby lounge. The geological description of the

granite from Cold Springs in the St. Cloud District of Stearns and Sherburne Counties is "red (oxidized) potassium feldspar crystals average about one-quarter inch in diameter, about 75 percent of the rock. Quartz, hornblende and biotite comprise the remainder of the rock. Medium to coarse grained. Precambrian age." "Rockville" from the quarries of Cold Springs is a granite believed to be one of the oldest rocks in North America, as determined by the Geological Survey to be about 3.5 billion years old. Granite from the same area was used on the exterior and first floor of the Civil Service Building in Washington, constructed in the early 1960's.

The Fine Arts Commission approved the Powell Federal Building design on January 15, 1969.

Structural and Mechanical Details

The building structure is a reinforced concrete framework of beams and columns, with walls set back from the exterior columns. The setback recesses the six-foot-high tinted glass windows and provides exterior service walkways on each floor. Interior areas are subdivided by gypsum-board and metal-stud partitions.

Each floor of the structure consists of a series of 200-foot-square modules, superimposed on 212-foot-square modules, and rotated 45 degrees. This arrangement provides a floor with as many as 16 sides, permitting more window space.

The building contains a central elevator core of five passenger elevators and one freight elevator in the administration wing and three pairs of passenger elevators and one freight elevator in the laboratory wing. There are 11 stairwells distributed through the building, and 12 service cores provide mechanical service to all laboratory floors.

The entire building, except for the truck loading dock and first floor bulk storage areas, is air conditioned. Perimeter office areas in the laboratory and administration wings are served by a four-pipe fan-coil system, with a separate one-row hot-water coil, and a three-row cooling coil. The fan-coil units are the 100 percent recirculation type, and ventilation to perimeter areas is supplied from sidewall diffusers off the interior systems. Low-velocity reheat systems serve interior spaces in the administration wing.

Offices, conference rooms, drafting rooms, and other areas with relatively low air change, have air supply and return built into the light fixtures. Laboratories and other high air change areas have square or rectangular standard ceiling diffusers and return air grilles.

Ventilation and humidity control for the computer facility are supplied from the interior system. A separate air-handling unit with a chilled-water coil supplies air in the computer floor plenum for cooling.

Fume hoods are of the bypass-type and are in continuous operation. Induced-type hoods, with a maximum of 70 percent nonconditioned air introduced directly into the hood, reduce the amount of air required and the possibility of drafts in laboratories that have excessive exhaust requirements. Those laboratories with high heat loads are ventilated by 100 percent recirculation fan-coil units.

Chilled water from the central utility plant is piped to each laboratory pipe shaft and to the air-handling units in the computer room, where equipment has special cooling requirements. Oversized pipes afford a large amount of future cooling capability as laboratory requirements change.

Space Use by Areas

The building was designed and constructed to accommodate the work of the then Survey's organization of four primary operating and three supporting divisions. Since the operating divisions needed varying amounts of laboratory space, the building's variable height was achieved by stepping back the laboratory floors and thereby decreasing their areas proportional to that of adjoining administrative areas. A full laboratory floor contains 110,000 square feet, while a full administrative floor contains 50,000 square feet. The administrative offices of each of the Survey's seven divisions are thus accessible by vertical circulation to the

Director's Office, with the laboratories of each division horizontally connected with the administrative wing.

The design of the National Center started in 1966 and was completed in 1969. The Center was designed to the then identified specifications and requirements of the U.S. Geological Survey, updated to the state of the art. It was not a replacement of existing facilities, as some special purpose facilities and laboratories did not exist.

Although there have been organizational changes since the initial occupancy of the Center in 1973, for the historical record of the planning, construction, and acquisition of the Center, it was considered best to describe its space use by areas and floors as designed. Where major changes have occurred, such as elimination of the property maintenance shops and the relocation of the computer center from the sixth floor to the vacated shop space on the first floor of the Print Plant Wing, it has been noted in the text. With the establishment of the Minerals Management Service in the Department, the transfer of the Conservation Division to that Service, and their move from the Center, a major reassignment and space adjustment occurred in the building. A major change in the reassignment of that space was moving the Administrative Division back to the sixth floor. Such a major change afforded the opportunity to upgrade the lighting and other amenities in the space, including the utilization of the space.

The administrative wing consists of seven floors of office-type space, including conference rooms. The 270,000 net square feet of space on initial occupancy was assigned by floors essentially as follows:

7 - Director's Office, Conservation Division
6 - Administrative Division, Publications Division, and Computer Center Division
5 - Water Resources Division
4 - Survey Library
3 - Geologic Division
2 - Topographic Division
1 - Lobby, Survey Personnel Office
Basement - Cafeteria, Custodial Shops

The laboratory wing is a horizontal extension of the administrative wing, the laboratories associated with each division being located on the same floor with and adjacent to the staff. A flexible laboratory environment was obtained by the assignment of scientists to individual lab-offices, which are grouped around the more complex laboratory facilities. The 276,500 square feet of space devoted to laboratories varies according to the needs of the divisions. The laboratory wing has six passenger elevators in three banks of two, a large freight elevator, and seven stairwells.

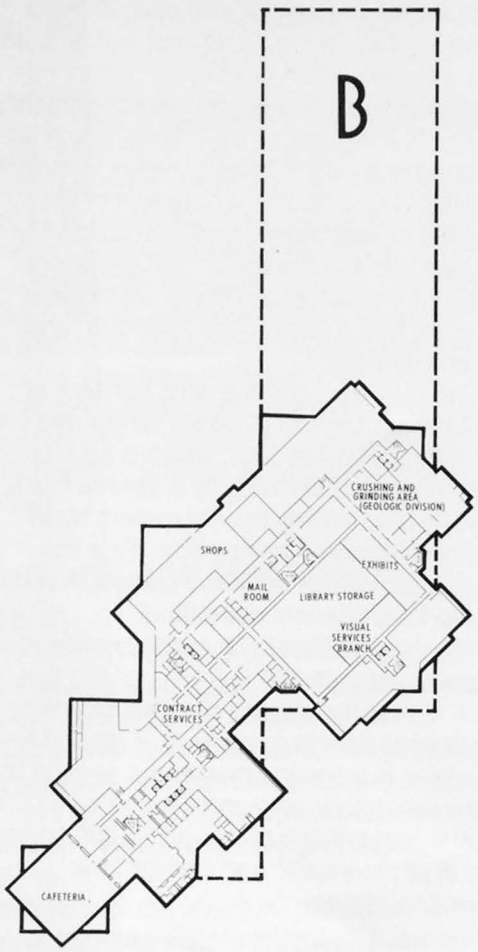
The map reproduction wing consists of 107,000 square feet of space distributed on two floors. The first floor, which is separated from the laboratory wing by a service roadway, housed initially the Equipment Maintenance Section. The first floor area has since been converted to the computer center for the headquarters operations.

The second floor bridges the service road way and extends 250 feet beyond the first floor. Due to the sloping site, the extension of the second floor is essentially at ground level. This floor is a continuation of the second floor of the laboratory wing and houses a 21,000-square-foot printing plant and 56,000 square feet of photographic and cartographic laboratory space.

Space Use by Floors

The following space-use-assignments by floor are stated here as designed and constructed. Changes have been made in space-use assignments and are still being made. Some of the major changes are noted in the text:

Basement.

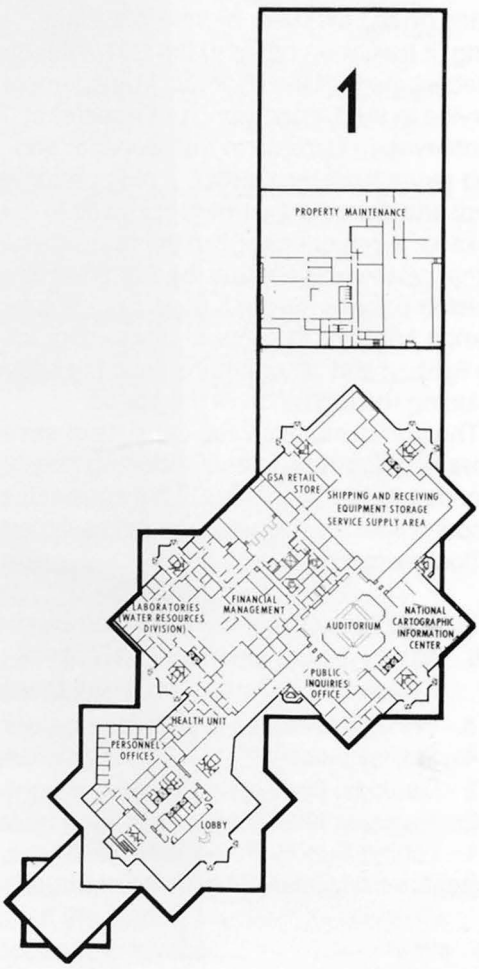


The cafeteria seats 600 people and is located off the lower lobby at ground level. Window walls on three sides provide diners with an unobstructed view of the surrounding wooded hillsides. The main dining area is a one-story structure projecting from the administration wing. The roof is railed and serves as an observation platform. In the center of the platform is a combination skylight and exedra, which seats about 100 people.

In addition to the space used for food services, areas of this level are reserved for contract services, building maintenance shops, library storage, general storage, a mail room, and the Branch of Visual Services. The staff of this branch prepares publications and exhibit panels that illustrate and explain the technical and scientific aspects of the work of the Survey. Over 200 of these panels are available on loan for use at professional meetings, technical conventions, and similar gatherings. Most recently, the Library's Cartographic Information Center has been moved to the basement.

The Geologic Division also has an area on this level devoted to the preparation of rock and mineral samples. The facilities include a variety of crushing and grinding equipment, sieving facilities, and special handling areas to minimize sample contamination. They are equipped with all the devices needed to pulverize and grind rock materials into powder for chemical and spectrographic analyses, as well as to saw and polish thin sections of rocks and ores for petrographic and mineralogic studies. The sample storage and field equipment storage areas are nearby.

First Floor.



All entrances and elevator lobbies are connected to allow personnel to enter near their parking places and proceed to the elevator cores serving their offices. Escalators connect the main and lower lobbies near the cafeteria, and a central corridor connects the main lobby and reception center with the opposite end of the building.

At the Information Desk in the main lobby, the security guard on duty provides information about the location of people, offices, and services in the National Center. The reception center also includes two small offices. The Guard Office, initially under the control of the General Services Administration (GSA), supplies protection services. Initially, the second office provided keys and made photographs for identification cards. In August 1987, management of the Center was delegated to the Survey by GSA.

Offices of the Branch of Personnel are adjacent to the main lobby. The staff of this office advises the Survey on the policy and means of achieving its broad aim of providing equal opportunity in all phases of personnel management. As well as recruiting employees and planning training programs for the Survey's highly diversified staff, they are responsible for health and retirement benefits, job classification, and Bureau of Employee Compensation actions.

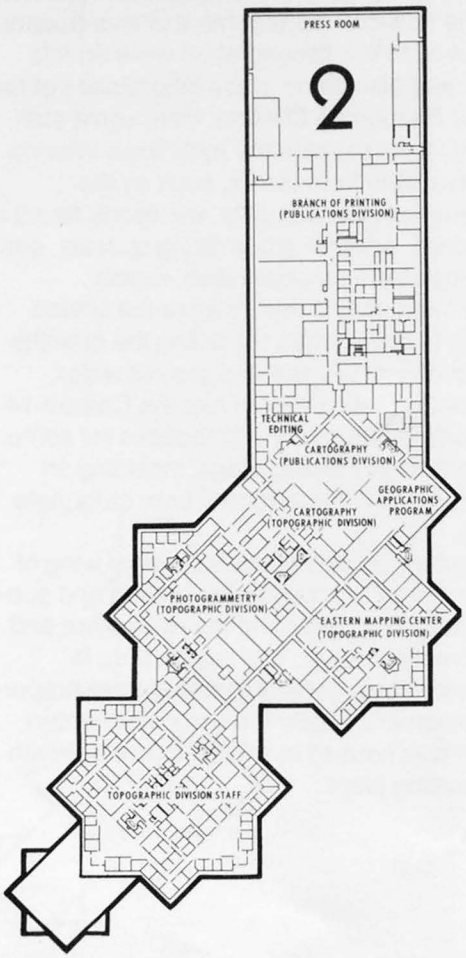
The Employee Health Unit, the Auditorium-Conference Center, the Branch of Visual Services, the Public Inquiries Office, and the National Cartographic Information Center, line the central corridor. The Branch of Visual Services (since moved to the basement) prepares a series of popular publications. These are distributed by the Survey to provide the general public and interested students with basic knowledge of geology, water resources, and topographic mapping, as well as descriptions of the Survey's programs and activities. The Public Inquiries Office provides over-the-counter sales of Survey book reports and geologic and topographic maps of the area. This office also maintains a library of Survey publications and selected open-file reports. The National Cartographic Information Center coordinates data on maps and map-making. Records on the sources and status of mapping, geodetic control, and aerial photography are available for reference.

The financial management offices (recently moved to the second floor) were on this floor, and also some of the laboratories of the Water Resources Division. Here some staff scientists investigate the hydrologic information available from plants, such as the evidence of past droughts and floods found in tree rings. Another group designs, tests, and develops the instrumentation, mostly automated, that is used across the United States to collect data regarding the quantity and quality of surface and ground water.

The Geologic Division has the Carbon-14 age-dating laboratory and facilities for some paleontologic investigations, including an acid room to remove fossils from carbonate rocks.

Another section of the laboratory wing of the first floor is occupied by service and supply operations, including the retail store and equipment storage. The supply area is separated by a service roadway from property maintenance (now the computer center), which was housed in a large space beneath the printing plant.

Second Floor.



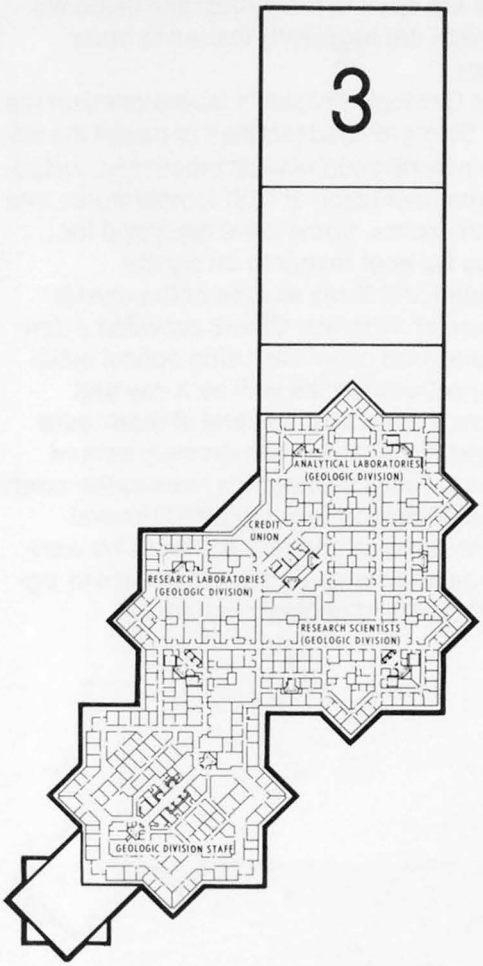
The Topographic Division prepares and revises the maps of the National Topographic Map Series, which show both the natural and man-made features of the Nation's land surface. These maps are the starting point for many geologic and hydrologic studies, such as comparing and selecting dam sites, planning and installing communication and highway systems, and developing programs for flood control, soil conservation, and reforestation. Topographic maps are also popular with recreationists in planning their activities.

The staff was housed in the administration wing of the second floor, and extensive cartographic and photogrammetric laboratories were available for research in topographic surveying and mapping. The Eastern Mapping Center occupied one part of the division's laboratory space. This section prepares maps providing basic information for land use planning and evaluation of the natural resources of the eastern region. Similar facilities are available for other parts of the country at Rolla, Missouri, Denver, Colorado, and Menlo Park, California.

The Office of the Geographic Applications Program was in another corner of the laboratory wing. This office, headed by the Chief Geographer of the Geological Survey, planned and organized research and applications programs applying the science of geography to the support of basic Survey missions in geology, topography, and hydrology. The principal approach is to produce a national land use inventory to identify trends in population distribution, urban development, agricultural land use, and energy requirements, and to predict the probable nature and effects of changes caused by these trends.

The rest of the second floor was occupied by the Cartographic Sections of the Topographic Division and some parts of the Publications Division. Staff offices of the Assistant Chiefs for Management and Administration, and for Research and Technical Coordination are located here. The Chief of the Eastern Region, Publications Division, also has his office on this floor, together with his Administration, Plans and Production staffs, and the Branches of Cartography, Technical Editing, and Printing. A 460-foot extension of this level provides space for the Branch of Printing and its fully equipped plant and photographic laboratories.

Third Floor.



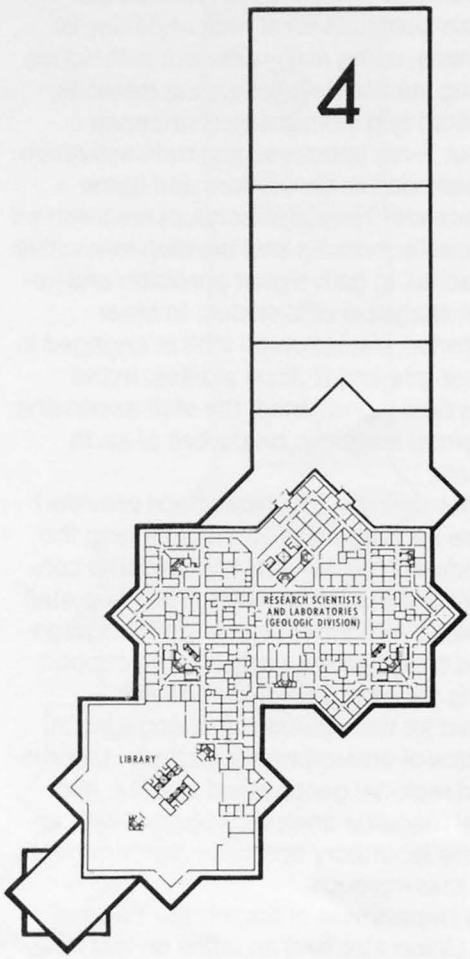
The Chief Geologist and the staff of the Geologic Division conduct highly diversified research programs to increase understanding and aid in the management of the mineral, energy, and land resources of the United States and the adjacent continental margins. Information developed in this work also provides the basis for critical decisions and actions relating to land use, urban planning and development, construction practices, environmental and health programs, and earthquake, volcanic, and other natural hazards. This program is wide-ranging in scope and was supported by about 100 specially designed and equipped laboratories of the Geologic Division located on the first, third, and fourth floors.

In laboratories on the third floor, staff members provided analytical services on the chemical composition of rock and mineral specimens, using many different techniques including standard wet chemical methods, automated and instrumented wherever feasible; X-ray spectroscopy; radioactivation analyses; atomic absorption; and flame fluorescence. They also conduct research on analytical techniques and develop innovative approaches to gain higher precision and improved analytical efficiencies. In other laboratories, the research staff is engaged in lunar sample and isotope studies. In the geophysical laboratories, the staff ascertains the thermal magnetic properties of earth materials.

Instrument and machine shops provided facilities for calibrating and maintaining the multitude of complex mechanisms and controls used in the laboratories. The shop staff also works with the research staff in designing and creating new equipment to support ongoing projects. Lab office space is provided for the scientific staff engaged in programs of environmental geology, theoretical and regional geophysical studies, and mineral resource analysis, together with appropriate laboratory space for the common use of these groups.

The Department of the Interior Federal Credit Union also had an office on this floor to serve the employees of the USGS.

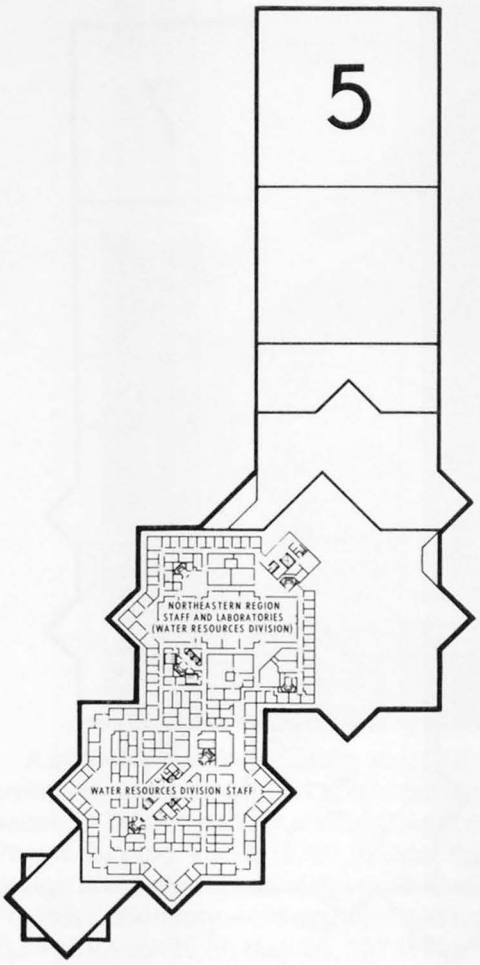
Fourth Floor.



Nearly all of the administration wing of the fourth floor was occupied by the Survey library, which has one of the largest collections of earth science literature in the world. Combined with those of three large branches in Denver, Colorado, Menlo Park, California, and Flagstaff, Arizona, this collection contains almost 600,000 bound volumes, 325,000 maps, and 350,000 pamphlets, articles, and documents. Yearly acquisitions average more than 30,000 items, including about 1,600 periodicals. The exhaustive collection, including technical literature in many languages, is maintained primarily to furnish research and reference materials for Survey scientists. The library also serves the Department of the Interior, other government agencies, universities, and research organizations all over the country. The library's reading rooms are open to the public, and its books and maps are frequently loaned to other libraries.

The Geologic Division's laboratories on the fourth floor provided facilities to model the different natural geochemical processes, including experimentation at high temperatures and high pressures. Some were equipped for various types of research on crystal chemistry and X-ray studies of the crystal structure of minerals. Others provided extensive analytical capability using optical emission spectroscopy, as well as X-ray and electron microscopy. Several of them were equipped for analysis of extremely minute samples. Other laboratories housed the scientific staff engaged in energy and mineral resource studies and researchers who were studying and comparing field samples of significant suites of geologic materials.

Fifth Floor.



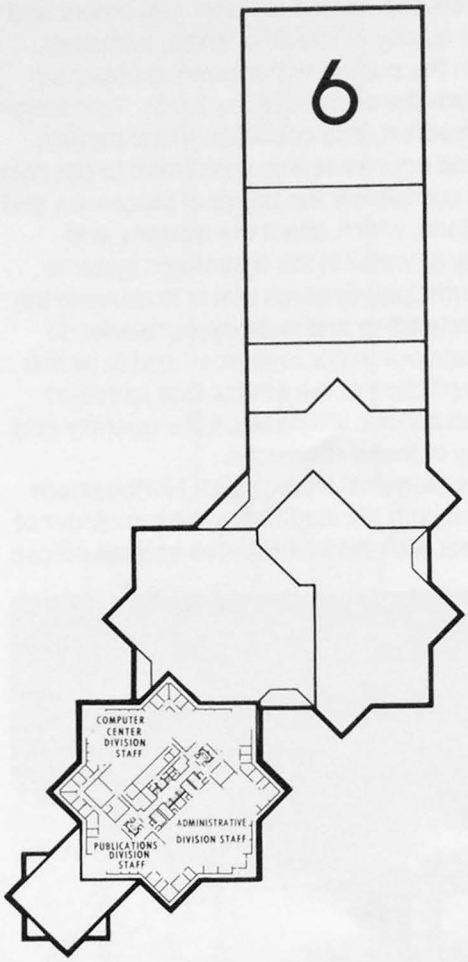
The administration wing of the fifth floor housed the Water Resources Division. The Chief Hydrologist and his staff determine the source, quantity, quality, distribution, movement, and availability of surface and ground waters. They investigate the magnitude of floods and droughts and evaluate water in river basins for domestic, industrial, and agricultural purposes. This division maintains a national network and a central catalog of information on water data and acquisition activities.

The Water Resources Division conducts special research programs to improve the scientific basis of investigations and provide technical assistance in hydrologic fields to other Federal agencies. The programs include development of digital-computer and electric-analog models to simulate phenomena related to water movement and water quality in streams, lakes, estuaries, and in the porous water-bearing materials beneath the surface of the Earth. The design, construction, and operation of the models depend upon research performed to describe more completely the physical processes and reactions, which affect the quantity and quality of water in the hydrologic systems. The principal research aim is to develop the understanding and techniques needed to evaluate our water resources and to permit the prediction of the effects that specified human actions will have on the quantity and quality of these resources.

The Regional Hydrologist, Northeastern Region, and his staff share the remainder of the floor with the laboratories and lab offices.

Fifth floor Phase I looking Northeast under construction

Sixth Floor.



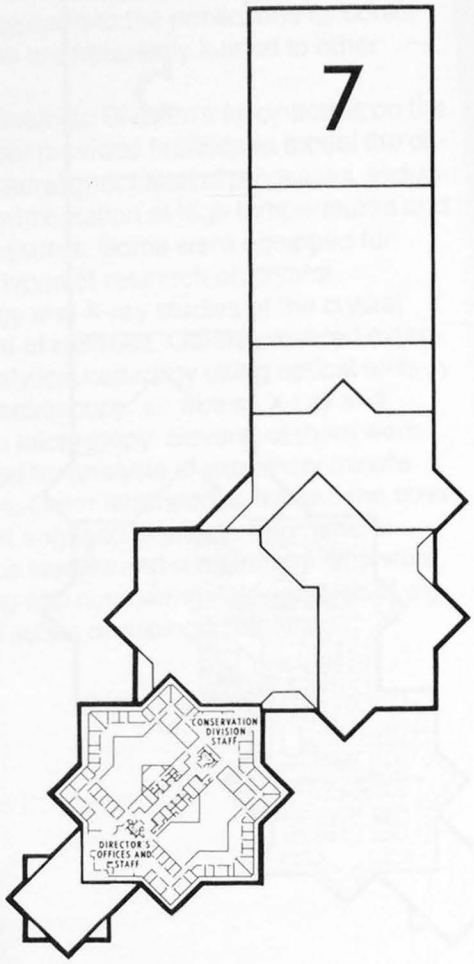
Support services for all sections of the Survey were centered on the sixth floor. They were provided by the staffs of the Administrative, Computer Center, and Publications Divisions, since reassigned to other locations in the Powell Building.

The results of Survey investigations and research are published in bulletins, professional papers, water supply papers, circulars, and topographic, geologic, and related map series by the Publications Division (now part of the Geologic Division).

The Publications staff also prepares reports to be printed in cooperation with other agencies and in trade and technical journals.

The Computer Center Division (now called Information Systems Division) staff advises the Director on all matters relating to automatic data processing and provides computation, data processing, and systems analysis and design services to the rest of the Survey.

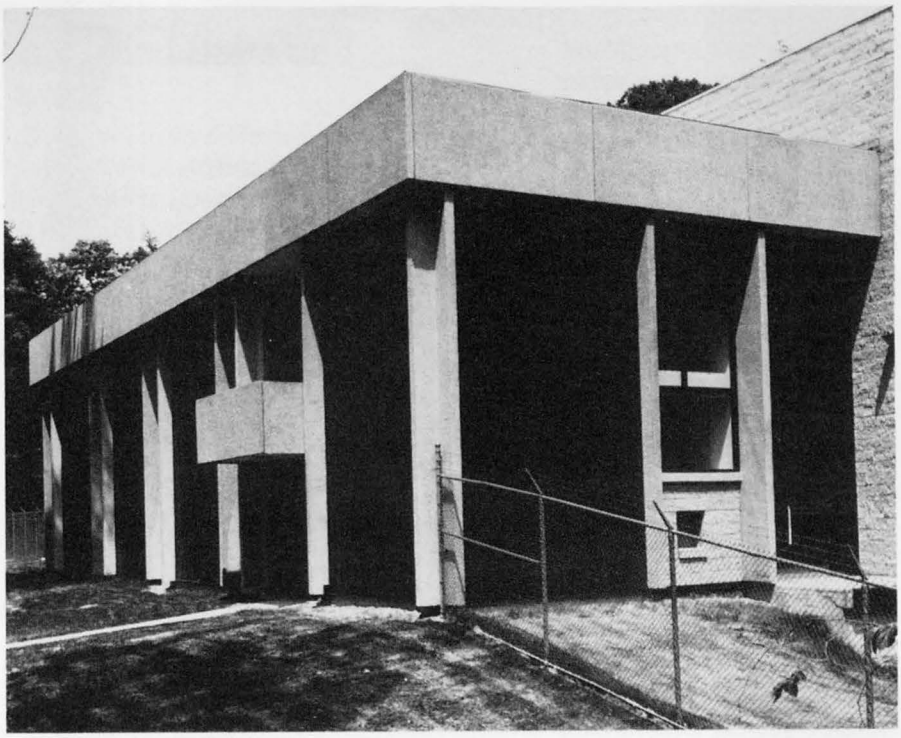
Seventh Floor.



The Director of the Geological Survey and his staff shared the seventh floor with the Conservation Division. The Director's staff is responsible for the overall direction and supervision of the activities of the Geological Survey. The Public Affairs Office prepares press and feature releases and related visual arts materials about Survey activities and programs for use by the news media.

The Conservation Division (now part of the DOI Minerals Management Service) was responsible for the management and disposition of the public domain. This responsibility included classifying Federal lands as to their value for certain leasable fuels and minerals or for waterpower and geothermal development and supervising the operations of private industry when a lease is issued. The division also maintained production accounts and collects royalties and rentals.

SOLID STATE PHYSICS LABORATORY

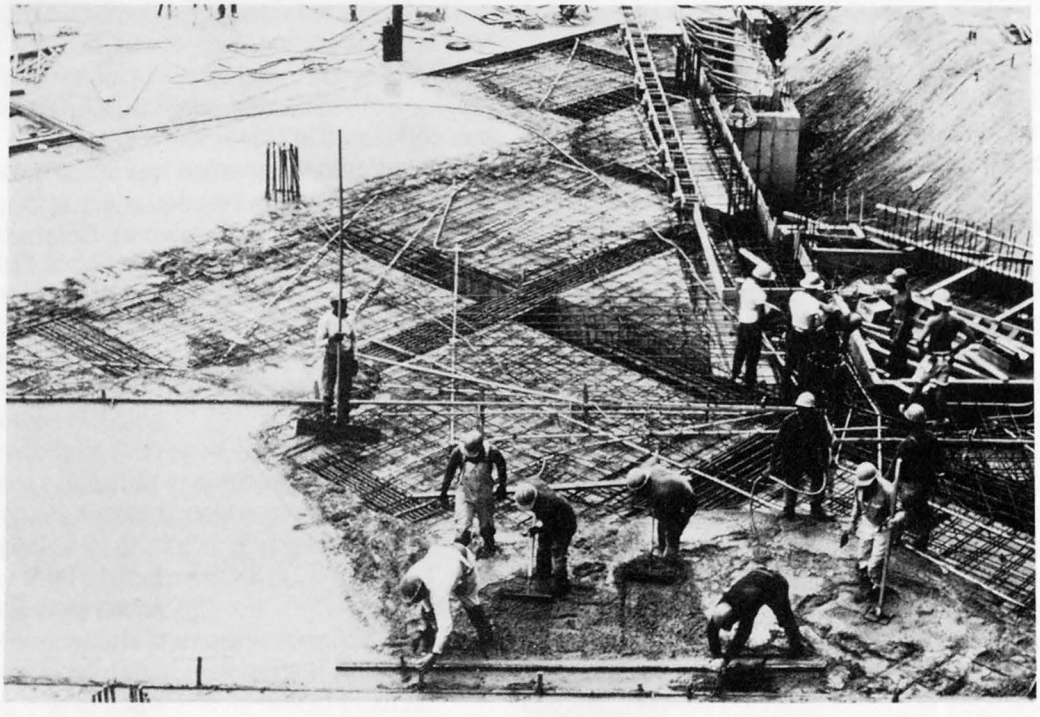


A separate building housing about 12 scientists, technicians, and administration personnel is located nearby and southeast of the Powell Building. Funds ($750,000) for the design and construction of the Solid State Physics Laboratory were appropriated under Public Law 92-18 on May 25, 1971. The laboratory, formerly located at the National Bureau of Standards on Connecticut Avenue, N.W., in Washington, D.C., was forced to move when the Bureau moved to its new facility in Gaithersburg, Maryland.

With the cooperation of the U.S. Atomic Energy Commission and the National Aeronautics and Space Administration, the Geological Survey has pursued the use of both portable accelerators and neutron-emitting radioactive material to make chemical analyses of elements in the field. Such analyses can be performed on bedrock exposures, in boreholes, on the sea bottom, or on the surface of the moon or the planets. The objectives of the program are the design and fabrication of analytical equipment for field use in the Survey's mineral exploration program. The Solid State Physics Laboratory enables the Survey to develop such equipment under laboratory-simulated field conditions.

The facility was designed by H. D. Nottingham and Associates, Inc., of McLean, Virginia, and constructed by Kerr Construction Co., Inc., of Alexandria, Virginia. Construction was completed in November 1973.

The laboratory operation has since moved to the Central Region Headquarters at Denver Federal Center, in Lakewood, Colorado.



CONSTRUCTION

Supervision and State and Local Codes

On August 13, 1970, Gulf-Reston, Inc., and the United States of America, acting by and through the General Services Administration, entered into an agreement to obtain an engineering consultant to advise Gulf-Reston, Inc., and firms interested in contracting or subcontracting for the construction of the Geological Survey Headquarters Building prior to awarding the construction contract and to provide on-site construction supervision, monitoring of construction progress, and administration of the construction contract. With GSA's approval, Gulf-Reston, Inc., engaged the professional services of Frederic R. Harris, Inc., Consulting Engineers of Woodbridge, New Jersey, to provide the services. The contractor was represented by James A. Strosnider, Manager, Ed McManus, Resident Engineer, Donald Crew, Engineer, and Paul B. Marxen, Architect.

As the USGS facility was being acquired on a term lease with an option to purchase, it raised questions as to the application of state and county codes. Gulf-Reston Properties, Inc., queried the County as to procedures to be followed in construction and received the following response from C. W. Porter, Director of County Development, in a memorandum of July 14, 1969, to the County Executive and County Attorney:

> Dewey Croy, Director of Inspection Services, has discussed the question of enforcing the State Fire Code with the State Fire Marshall who advises him that the state would treat it just as if it was a government owned and occupied building until such time as, if and when, it might be occupied by other than the Federal Government.
>
> In discussing the matter of permits, plan review and inspection with Mr. Croy, it is our thought that we would only give the place a cursory review, not require the building permit and inspection fees for review of plans and inspections and accept a certification from the architect on completion for the proposed use by the Federal Government in lieu of detailed inspection of the building before issuance of the occupancy permit. If, in the future, the building should be occupied by Reston or a private lessee other than a governmental agency, it may become necessary to require any modifications needed to meet the then current standards of Fairfax County.
>
> I think we should review the site plan similar to the manner in which we review the site plans for a school building and as we did with the Northern Virginia Technical College. We would not provide detailed inspection of the site plan improvements unless requested by Gulf-Reston. Gulf-Reston would be expected to handle permits for road access connections to streets in the state system to be located as shown on the approved site plan. I think it would be appropriate to charge reasonable fees for site plan and plan review to reimburse the County for actual out-of-pocket expenses. If Reston wants the County to provide any detailed inspection, I believe it appropriate for the County to be reimbursed to cover the costs. Harry Hale says that the Department of Public Works has already advised Gulf-Reston with reference to County requirements concerning sewer services including necessary line extension.
>
> I have discussed the matter of taxes briefly with Mr. Ferguson who feels that the building and Reston owned personal property and equipment should be taxed until such time as the title to it has been

transferred to the Federal Government under the lease-purchase agreement.

All of the above, except the matter of taxation, is based on the thought that the project would be treated very nearly the same as if it were a federally owned building being constructed by the Federal Government for itself. As a matter of convenience in this regard, I am quoting Section 101 for the Building Officials and Code Administrators (BOCA) Code which reads as follows: The provisions of the Basic Code shall apply to all buildings and structures and their appurtenant constructions, including vaults, area and street projections, and necessary additions; and shall apply with equal force to municipal, county, state and private buildings; except where such buildings are otherwise specifically provided for by statute. No specific mention is made of federally owned or constructed buildings in the code.

The Federal Government in the design of a Federal building required the Architect/Engineer to follow the Uniform Building Code (UBC) and other national codes.

Contract Award

On the 28th day of June 1971, Gulf-Reston Properties, Inc., the "owner," a subsidiary of Gulf-Reston, Inc., entered into an agreement with the George Hyman Construction Company, the "contractor," for the construction of the USGS Headquarters facility. Significant provisions of the agreement provided for:

1. The contractor agreed to and with the owner that for the construction set forth, it will well and significantly provide all materials and equipment, perform all labor, and do all else required to complete the United States Geological Survey National Headquarters project at Reston, Virginia, in strict compliance with the contract documents as prepared by Skidmore, Owings and Merrill, 30 West Monroe Street, Chicago, Illinois, 60603, and H. D. Nottingham and Associates, Inc., 1400 Wilson Boulevard, Arlington, Virginia, 22209 (later moved to McLean, Virginia).

2. The contractor shall complete the whole of the work comprehended in the agreement within 930 calendar days after date of this contract and agrees to pay as liquidated damages, the sum of $5,000 for each consecutive calendar day thereafter as provided in the commencement, completion, and liquidated damages of the special conditions of the contract documents.

3. The owner, if the contractor shall well and faithfully fulfill this contract, will pay the contractor the sum of $44,118,000 in accordance with the following tabulation, subject to additions and deductions, as may be agreed upon accordance with the terms of the contract documents.

A Summary of the Contract Sum is as follows:

Base Bid		$40,998,000
Add Alternate	Add	2,500,000
Add Increase of April 16, 1971	Add	500,000
Add Increase of June 16, 1971	Add	120,000
Contract Sum		$44,118,000

4. The agreement shall embrace and include all of the contract documents as follows:

Instructions to bidders as issued
Bid Bond, dated January 18, 1971
Performance Bond, dated June 28, 1971
Labor and Material Bond, dated June 28, 1971
Specifications for U.S. Geological Survey National Headquarters, Reston, Virginia, dated August 22, 1969
Drawings for U.S. Geological Survey National Headquarters, Reston, Virginia, dated August 22, 1969, and issued for bidding October 28, 1970
Addenda, No. 1, No. 2, No. 3, and No. 4

Proposal, received from contractor, dated January 18, 1971
Letter, Extension Agreement, dated April 16, 1971
Letter, Extension Agreement, dated June 16, 1971

As the construction was a private undertaking, to extend and protect the U.S. Government's interest, the following provisions were included in the agreement:

> The contractor agrees in this contract, and agrees to include in all of its subcontracts hereunder a provision to the same effect, that if the contractor or any subcontractor under this contract, or the officers or agents of the contractor or any subcontractor, shall refuse or have refused, except as provided by the terms of this prime contract, to furnish to any agency of the Government of the United States of America or any establishment in the legislative or judicial branches of such Government, information or records reasonably pertinent in this contract, the following action may be taken:
>
> (1) In the case of a refusal by the contractor, its officers or agents, the Government may, after affording the owner an opportunity to obtain from the contractor an explanation or justification for such refusal, require the owner to terminate the contractor's right to proceed with the work under this contract, and thereafter, the Government and the owner may avail themselves of the rights and remedies provided in paragraph (a) and (b) of the clause entitled, "Termination for Default–Damages for Delay–Time Extensions," of this construction contract, in addition to any other rights and remedies provided by law or under this construction contract.
>
> (2) In the case of a refusal by a subcontractor, its officers, or agents, the Government may, after affording the owner an opportunity to obtain from the contractor an explanation or justification for such refusal on the part of the subcontractor, its officers or agents, require the owner and the contractor to terminate the subcontract without cost to the Government or the owner, or if the contractor fails or refuses to effect such termination, the Government may require the owner to terminate the contractor's right to proceed with the work under this contract and thereupon the Government and the owner may avail themselves of the rights and remedies referred to in subparagraph (1) above.
>
> (3) The term "subcontract," as used in this paragraph, means any contract entered into, or any purchase order issued, by the contractor under its contract with owner, in connection with the performance of the contractor's obligations under such contracts.
>
> (4) The term "subcontractor," as used in this paragraph, means a party to a subcontract other than the contractor under the related construction contract with the owner.

On June 29, 1971, Gulf-Reston Properties, Inc., at a formal signing ceremony at the GSA Building, awarded the construction contract. Signing for the owner was William H. Magness, President, Gulf-Reston Properties, Inc.,

and for the contractor, A. J. Clark, President, the George Hyman Construction Company. Attendees at the ceremony, in addition to the signators, for USGS were: Dr. William T. Pecora, Director, William A. Radlinski, Associate Director, and William A. Schmidt, Special Assistant; for GSA, A. F. Sampson, Commissioner, Public Building Services, Wilbur Sanders, Deputy Commissioner, Douglas Harvell, Special Assistant, and Hugh Brister, Assistant General Counsel; for Gulf-Reston Properties, Inc., James Lawrence, Vice President, and R. Dennis McArver, Assistant Secretary; and for Walker and Dunlop, Inc., O. Mallory Walker, Vice President.

Seated: A.J. Clark (left), William H. Magness
Standing: (left to right): Unidentified, O. Mallory Walker, R. Dennis McAner, Art Sampson, James Lawisky, Dr. William T. Pecora, Wilbur Sanders, Douglas Harvell, William A. Schmidt, William A. Radlinski, Unidentified, Hugh Brister.

Ground Breaking Ceremony

On July 31, 1971, a formal ceremony was held for the official ground breaking. Master of Ceremonies was the Honorable Robert L. Kunzig, Administrator of General Services. After the Pledge of Allegiance, the Invocation was pronounced by the Reverend William J. Scurlock of the Washington Plaza Baptist Church. Welcoming remarks were delivered by the Honorable William S. Hoofnagle, Chairman, Fairfax County Board of Supervisors, followed by the introduction of distinguished guests, including Centreville District Supervisor Martha V. Pennino, officials of USGS, GSA, and Gulf-Reston, Inc. The program followed with remarks by the Honorable William R. Scott, Member of Congress, Eighth District of Virginia, and William H. Magness, President, Gulf-Reston, Inc. The Honorable Rogers C. B. Morton, Secretary of the Interior, delivered the Dedicatory Address, followed by a signal to the operator of a giant bulldozer to turn the first earth on the site. In closing, the Benediction was pronounced by the Reverend Harris M. Findlay, Pastor of the St. Thomas a Becket Church of the Reston Catholic Community. During the brief ceremonies, the U.S. Marine Corps Band provided the music.

Administrator Kunzig's Remarks

When completed in early 1974, the new national center for the U.S. Geological Survey will house about 2,200 employees now scattered in more than 30 buildings throughout the Washington Metropolitan area. Located in the Reston, Virginia, industrial complex, the new facility fulfills President Nixon's goals of locating federal installations in areas where there is ample low and middle income housing, and where they provide an economic boost to new communities.

Phase I

The $44 million structure will consist of a continuous building varying in size from a seven-story star-shaped administrative wing to a single-story printing plant. Its location will be 18 miles from Washington, D.C., along a wooded range adjacent to the Dulles access road. The building will be constructed of poured in-place concrete and contain a cafeteria, library, auditorium and a public health unit. Employee parking will be provided in a series of surface lots which adjoin pedestrian malls leading to the entrance lobbies.

The new structure was designed by the architect/engineer firms of Skidmore, Owings and Merrill of Chicago, and H. D. Nottingham and Associates of Arlington, Virginia. The facility will be constructed by the George H. Hyman Construction Company of Bethesda, Maryland, under a contract with Gulf-Reston, Inc. The General Services Administration will lease the building for use by the Geological Survey.

Construction Phasing

With the construction area of the site having been previously cleared, construction work began immediately with the earthwork, such as site-grading and excavations for building sections. The general contractor separated the facility construction into three phases for construction and management purposes, with basic work proceeding on all phases, especially as related to excavations and foundations.

Phase I, the utility building (heating and refrigeration plant), the seven-story administration building (400,000 square feet), and about 230,000 square feet of the laboratory wing.

Phase II, about 330,000 square feet of laboratory space.

Phase III, space for the Geological Survey shops and the Branch of Map Reproduction, including the printing plant, a total of about 100,000 square feet.

Foundation Changes

The ranges in which the various types of foundation elements were applicable had been estimated from the available subsurface information and were reflected in the drawings. The contractor at his own expense was required to engage a soil testing agency to probe the site by installing test holes, as indicated in the drawings, or perform other tests to either verify or redefine the ranges of applicability of the various foundation types before proceeding with the final installation. As a result of the site probing, the contractor was required to prepare a schematic plan for the approval of the Contracting Officer, defining the material quantities and the areas in which the various types of foundation elements would be installed. An adjustment to the base contract price would be established at the time, with future price adjustments for variances from the plan being made only as specified.

The general contractor engaged Schnabel Engineering Associates, Consulting Engineers, to investigate the subsurface conditions and to evaluate the data and recommend the applicability of various foundation types in the areas investigated in the main building. They also furnished a plan indicating the area and estimated depths in which the various foundation elements will be installed. In addition to additional borings of the site, the firm also analyzed data obtained during its investigations under contract with Skidmore, Owings and Merrill in 1969, and from a March 1968 report by Seif Consultants, Inc.

The 43 borings drilled under the Hyman contract indicated that the rock surface was more regular than expected from the original borings. Only one of the 43 new borings suggested the presence of a sizeable fault zone as found in the original investigation. Based on this information, the consultant felt that piles might not be necessary for foundation support. The consultant in its plan recommended caissons and spread footings. The consultant also made extensive construction recommendations.

The consultant's report was submitted to Skidmore, Owings and Merrill for review. The following is quoted from their report in a letter dated August 26, 1971, from William N. Larson:

> We have reviewed the Foundation Test Report, dated August 17, 1971, which was prepared for George Hyman Construction Co., by Schnabel Engineering Associates, Bethesda, Maryland. We feel that the recommendations can be accepted, since the report reflects the intent and purpose of the provision in the Foundation specification that the contractor must engage a soil testing agency to verify or redefine the applicability of the various foundation types which are shown on the drawings.
>
> Based on the new borings that were recently taken, the report indicates that the rock surface is more regular than expected from the original borings which were used in our foundation design. We would like to caution, however, that before costs for foundation changes are adjusted, Gulf-Reston and Hyman Construction should concur that the probing has been extensive enough to assure that the "fault zone" which we originally contemplated is not somewhere else under the building. Should this occur, the pile type foundation system may still be required.

Regarding applicability of the various foundation types after review by Gulf-Reston, Harris, and GSA:

> 1. Permission was given to change column foundations shown on the contract drawings as piles to either caissons, spread footings, or caisson-type pedestals. Permission was also given to change column foundations shown on the contract drawings as caissons to either spread footings or caisson-type pedestals. This was in accordance with the recommendations made by Schnabel Engineering Associates in their report of August 17, 1971.

This permission was given subject to compliance with the following provisions:

(a) The type column foundation that we elect to use in lieu of a pile or caisson is to be of a type designed to support the column load as shown on the contract drawings.

(b) Foundations are to rest on suitable bearing surface, as determined by examination of the subsurface conditions, after excavation to the estimated bearing elevations.

2. Permission was also given in the event that it is determined that a caisson-type pedestal can be used. The contractor is allowed to excavate, form, and pour a square pedestal of suitable cross-sectional area, in lieu of a drilled caisson-type pedestal. These square type pedestals will generally be those located in the areas which must be excavated to a lower elevation, due to elevator pits and the underground ductwork.

Backfill around pedestals, poured in this manner, is to be placed and compacted by a procedure that will prevent any movement of the pedestal.

Designation of USGS Construction Representative

By memorandum of September 28, 1971, the following delegation was issued by the Director to William A. Schmidt, Special Assistant to the Director:

You are hereby designated the Survey's representative responsible for the following activities during the entire period of construction:

a. To periodically review job progress with GSA and GRI for coordination and resolution of problems which affect the builder, the owner, and the tenant;

b. To provide a continuing point of contact for the Survey to review and resolve contract changes due to:

(1) Change requirements of the Survey

(2) Job conditions

(3) Design corrections (major)

c. To arrange with GSA, GRI, and Fairfax County for temporary and permanent access to the site; and

d. To arrange for utility service to the site.

Mr. R. N. Doolittle will continue to assist you in carrying out these responsibilities as well as perform the additional assignment on the Move Committee.

With reference to item b (1) above and in support of the policy to minimize agency generated changes each Division Chief will consult and coordinate with you on all pertinent matters which may arise from time to time during construction of the building.

You are authorized to approve, based on documented justification, all agency generated change orders not to exceed $2500. All agency generated change orders in excess of $2500 with recommended action shall be submitted to the Executive Committee for review and my approval.

Early Construction

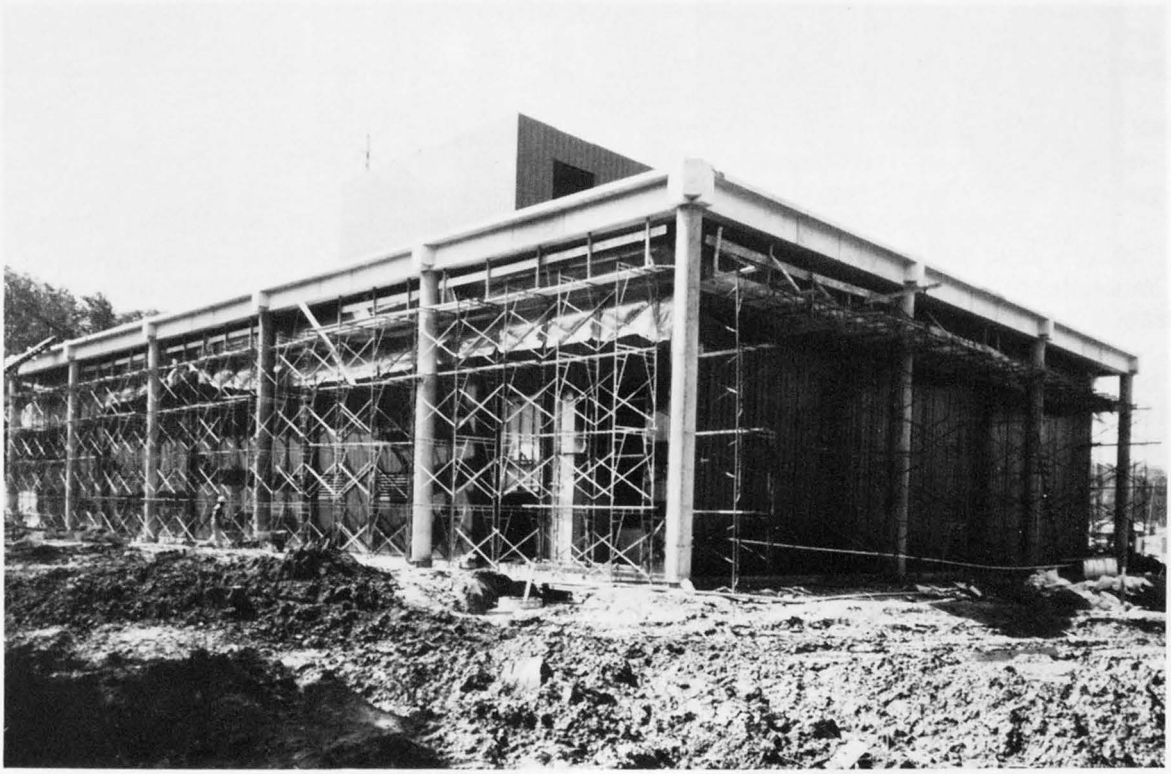
Early work on the site was slowed because of abnormal rainfall and heavy rains and flooding due to "Hurricane Agnes." Much of the mechanical equipment in the basement was in place when "Agnes" hit the Washington area and there was some equipment damage. The project was also delayed for 42 days because of several strikes. Elevator constructors went out on strike March 31, 1972, which affected manufacture, delivery, and installation. Sheet metal workers, steamfitters, and plumbers went out on April 22, 1972, concrete truck drivers went out from May 18, 1972 to June 13, 1972, followed by a walkout of laborers.

At mid year 1972 progress was reported as follows:

Phase I

Essentially, all of the concrete has been poured for this portion of the building. The architectural precast panels, which with the tinted glass, make up the exterior walls, are in place on the first five floors, and window frames are being roughed in.

The utility building is substantially complete and equipment is being installed. Virginia Electric Power Company is installing the transformers for the permanent power source. The four large boilers and four refrigeration units for the air conditioning are in place.



Phase II

Phase III

Phase II

The basement and first floor areas have been poured and the second floor pour has been started. Mechanical equipment has been installed in the basement machine rooms.

Phase III

The foundations for this two-story portion of the building are in place.

The parking lot, which will provide 1600 parking spaces or about one for every 1.4 employees, is 90 percent complete.

Although plagued by delays due to strikes, wet weather and "Hurricane Agnes," work is now progressing at a good pace.

Changed Conditions and Change Orders

The design of the USGS project, a special-purpose facility, from the preliminary design program to the working drawings and specifications extended over a period of about five years. During this period, because of program changes and changes in the state of the art, field changes had to be made in the construction drawings and specifications. The funding limitations in the congressional authorization, plagued by continuing escalation in the cost of construction and loan commitments, placed great limitations on the contingency allowance. Accordingly, changes affecting the scope of the contract and affecting the contract cost had to be closely

monitored by Gulf-Reston Properties, Frederic R. Harris Co., GSA, and the USGS.

First priority in funding were the mandatory field changes, which in any construction project, especially one as sophisticated as the USGS facility, could not be avoided. Changed work not contemplated at the time of the design to accommodate USGS program changes was carefully reviewed and was subject to Director's approval. Only changes which were an inseparable part of the work being performed under the contract, which were of such nature as to make it reasonably impracticable of delay and performance by other than the original contractor, and were in the best interests of the United States, were approved. Changed conditions, change orders, and claims increased the construction contract cost by about 6 percent or from $44,118,000 to $46,759,059.

Construction progress remained at a good pace until late in 1973 when problems developed in the print plant wing (Phase III). The heavy duty topping on the press room floor and in other industrial areas in the wing began lifting from the structural slab.

Press Room Floor

The initial design for the printing plant floor provided for isolated reinforced concrete footings for the presses. High pressure air, electricity, and a solvent were to be distributed to the presses in trenches covered with steel plate. The size and location of these footings and trenches were to be verified with the mechanical drawings and/or the press manufacturer's shop drawings.

The decision as to the size and type of presses that would actually be installed could not be made for a year or more. Flexibility in the location of the presses was, therefore, very desirable.

From information available and not to delay construction, it was determined that use of 500 lb./sq. ft. (live load) reinforced concrete floor, in lieu of the specified 300 lb./sq. ft. in that portion of the press room reserved for printing presses, would permit the elimination of the isolated footings and the trenches, and provide complete flexibility in the selection and location of presses. The presses could then be located anywhere in the press room. Air, electricity, and solvent would be conveyed to the presses in overhead pipes and conduit. This change was approved and the structural slab on grade was redesigned for the 500 lb./sq. ft. live load. To ensure adequate compaction of the subgrade, compaction tests were conducted during preparation of the subgrade. The design also provided for a 3-inch-thick heavy duty topping applied over the structural slab to provide a wearing surface for heavy machines and rolling equipment.

The heavy duty topping was applied in late 1973. Early on it was observed that the topping in some places had lifted from the structural slab. From the appearances of core drillings, it was apparent that there was no bond between the topping and the structural slab. There was every indication that, at least within the central area of the press room floor, the topping would have to be replaced. The extent to which this condition prevailed in the fringe bays and on the first floor was still to be determined. By letter of December 28, 1973, the contractor was advised that the topping in the printing plant area was inspected and found to be deficient and unacceptable.

There appeared to be no question about the strength of the structural slab. H. D. Nottingham and Associates and SOM were requested to reexamine the specification for design adequacy, and also field records to provide assurance as to the structural integrity of the base slab. GSA, through Gulf-Reston, Inc., was authorized to engage a consultant to examine the design and the work in place (topping) and report findings, conclusions, and recommendations for remedial action.

The need for an early decision and action was emphasized by USGS. As the George Hyman Company had previously protested the specifications, and had yet to acknowledge full responsibility for correction of the floor, the owner Gulf-Reston Properties, Inc., would probably have to direct the contractor

to do whatever corrective work is recommended, to avoid further delay in completion of the project.

To complicate matters and further delay completion, the USGS received word from the Harris-Intertype Corporation, manufacturers of the new five-color press on order, that contrary to information previously made available to the Survey,

> Unit construction presses must be mounted on stiff foundations to maintain level of each printing unit and distance between printing units within a small tolerance under dynamic loads. Obviously, good print quality cannot be realized if the foundation does not support the machine properly. Our company cannot be responsible for press performance if the foundation is not adequate.
>
> We have furnished Harris drawings for this contract which contains foundation recommendations. Marked in red is information about soil and concrete thickness of 12" minimum. Much depends upon the type of soil supporting the concrete. In some cases, pilings have had to be sunk into the soil for good bearing surfaces. Because of the difficulty in evaluating soil conditions, we are now recommending a minimum concrete thickness of 15 inches. If there is any possibility of voids developing under the six-inch concrete floor which will cause misalignment of key parts of the press, we recommend cutting the floor out and excavate for a 15-inch thick slab of reinforced concrete. At that time, soil conditions could again be checked for bearing load.

This change had to be accommodated in the repair of the press room floor.

Schmidt and Culfogienis met with Russell McNutt, Vice President for Construction, Gulf-Reston Properties, Inc., on January 31, 1984, to discuss the condition and unacceptability of the press room floor and the employment of a consultant with expertise in heavy duty floor toppings to investigate and evaluate the press room floor to determine possible causes of slab separations and recommendations for feasible corrective measures. It was essential that the Government not only obtain an acceptable floor but also fix responsibility for corrective measures. H. D. Nottingham and Associates recommended the firm of Law Engineering and Testing Company, and a proposal for the consulting and testing services was received by Frederick R. Harris Associates, GRI's construction manager. Upon completion of its investigation and evaluation work, Law Engineering would submit a report to include the following:

> 1. A brief review of all test data and test procedures utilized in conjunction with the project;
>
> 2. A review of all construction specification and procedures information collected in conjunction with the investigation;
>
> 3. Evaluation of probable and possible causes of the slab separation; and
>
> 4. Recommended feasible corrective measures.

The general contractor had previously questioned the adequacy of the specification, a GSA standard guide specification, which it was understood had been used successfully by the GSA for a number of years on heavy duty floor installations. In addition to proceeding with the investigation and evaluation study by Law Engineering, Culfogienis suggested Gulf-Reston obtain the opinion of a contractor specializing in heavy duty concrete floors as to the adequacy and feasibility of the specification. Also, McNutt indicated that he had consulted informally with a New York engineering firm available to GRI to obtain information on probable causes for failure of the floor and feasible remedial measures.

Schmidt, again, emphasized the need for an early decision and corrective work, and that the Survey would not accept the press room without assurances by experts that it had an acceptable and serviceable floor. McNutt agreed to obtain the courtesy information from the engineering source available to GRI, and would obtain the opinion of a contractor on the specification used, GSA to furnish the name of a firm.

H. D. Nottingham and Associates determined that the 500 lb./sq. ft. floor installed in the press room would not support the five-color press and recommended a 15-inch reinforced isolated structural mat. Similar support mats would also be required for the two-color presses. Drawings were being prepared so that the preparatory work could proceed. The cost of cutting the installed floor, removal of debris, and installing the new mats it was estimated would cost about $10 per sq. ft.

Following the notification to the contractor that the floor was unacceptable, there was no immediate response from the contractor. There followed visits to the job site, but no response or decision. On April 4, 1974, a meeting was held to brief Director McKelvey, Ed Grant (Assistant Director for Administration), and Harry Wilson (Chief, Publications Division) on the status of major building items, including the press room floor. The following are substantive portions of the report of the meeting:

Director's Briefing

McNutt (GRI) briefly related the background on the floor problem and that Law Engineering and Testing Co., employed as consultants, had submitted a preliminary report on April 4, which was being reviewed. He reported that the contractor will have removed the base slab for the press pads by the end of the week and that removal of the topping in the press room was about 65 percent completed.

McNutt reported that the consultant had concluded from its investigation, thus far, that the primary cause of failure of topping was due to curling caused by differential lateral movement, probably caused by drying of the upper portion and swelling of the lower portion; poor bond, due to lack of grout and dirty bonding surface, allowed the slab to act essentially as an unbonded topping and to crack freely at points of weakness, such as construction joints and over conduit runs; and that studies as to the possibility of topping having swelled due to certain chemical phenomena are continuing. However, the consultant feels that reapplication of the same topping system would result in another failure.

The need for an early decision on replacement of the topping was emphasized. Installation of the press pads does not have to await the decision. Even in the absence of the consultant's final report, GRI and the GSA may have to reach a decision and order the contractor to proceed with a replacement because of the probable cost of further delays. George Hyman Co., has also retained a consultant to analyze the problem. There followed discussion on the difficulty experienced obtaining re-bars for the pads. The required steel has been located and should not hold up installation of the pads.

The deterioration of topping in areas adjoining the press room area was also discussed. Dependent upon the results of studies to determine the overall extent of delamination of the topping, it is possible that corrective measures by partial replacement may be adequate. Some of these areas are not subjected to the same severe traffic and use as the press room floor. The importance of an early decision on these areas was emphasized, but their individual areas are substantially smaller than the press room floor and are not as great a problem to replace.

Wilson questioned the floor capacity in the negative and plate file storage area. The combined floor and structural system was designed for 600 lb./sq. ft. Marxen (SOM) would check the design and actual loading to determine if overloading is causing excessive deflection or excessive differential in the floor level.

The Director asked why the press pads had not been provided for in the original design and construction. Schmidt reported that the original design of the press room floor provided isolated pads for presses and the remainder of the floor designed for 300 lb./sq. ft. or 4000 lb. concentrated load. However, before the construction work proceeded (1971), it was determined that the decision as to size and type of presses that would actually be installed would not be made for a year or more and that flexibility in the location of the presses was, therefore, very desirable. Accordingly, GSA was informed that use of

500 lb./sq. ft. live load in the press room would permit the elimination of the footings and utility trenches, as designed, and provide complete flexibility in the selection and location of presses. Air, electricity, and solvent would be provided overhead. It was subsequently learned, when a final decision was made on the presses, that the framing system for the press foundations created concentrated loads, which could not be supported by the 500 lb./sq. ft. floor, and isolated press pads would be required.

Crow of Frederic R. Harris reported that George Hyman Co. had submitted its proposal for press room utilities in the amount of $223,708 to Gulf-Reston for the work which was estimated to cost $115,000, the amount transferred to GSA. McNutt commented that the proposal is negotiable and, if an acceptable offer cannot be negotiated, it may be necessary for Gulf-Reston to solicit other offers. For example, the price of a five-rectifiers unit, on which a price of $10,000 had been quoted only recently, was listed in the proposal at more than double that quotation. This same pricing problem may well apply to other materials, especially the electrical. Purchase of $25,000 worth of critical materials by the general contractor was authorized weeks ago so as to avoid delay in completion of the work which is being coordinated with other floor work. Culfogienis (GSA) responded that it is expected that the utility work will be completed by the time the floor work is completed.

Crow reported that the remaining work in the auditorium included the installation of the carpeted wall panels and the installation of 174 permanent seats. The covered wall panels are ready for installation—no problem. Delivery of the seats is expected by April 15 and installation completed by May 1. The auditorium can be used with portable chairs as soon as the wall panels are installed.

Metal lab equipment—Paul Marxen (Frederick R. Harris) reported that equipment in priority spaces designated by USGS on the fourth floor, which constitutes 65 percent of the lab space on that floor, is 88 percent complete and, except for occasional piece shortages, will be completed for move-in April 15. The balance of the fourth floor space (35 percent), which is now 70-75 percent completed, will be ready for occupancy by May 15.

The priority space designated by USGS on the third floor, which constituted 15 percent of the lab space on that floor, is 86 percent complete and, except for occasional piece shortages, will be completed by April 15. The balance (85 percent) is 70 to 75 percent completed and will be ready for occupancy June 1.

Lab office furniture—perimeter offices on the fourth floor are 45 percent complete and on the third floor 30 percent complete. Priority areas designated by USGS will be 100 percent completed by April 15 and the balance totally completed no later than June 1.

Propane Gas Service

Culfogienis reported on the work involved in providing a storage system for propane gas use necessitated when Washington Gas Co. indicated it could not honor its initial commitment to supply natural gas. Design work on the propane system by GSA is near completion and the work should be ready for bid by the end of April. The installed distribution system for natural gas within the building for laboratory use is suitable for use with propane. Propane gas is also needed in the utility plant for starting the boilers.

McNutt indicated that he recently had discussions with Washington Gas and they are prepared to provide limited additional service in the Reston area. He was asked to explore the possibility of obtaining limited natural gas service for our laboratories and boiler start-up.

Contract Work Deficiency in Heavy Duty Topping Placement

In the absence of any response from the George Hyman Co. on the press room floor, it was not until April 10, 1974, that representatives of Gulf-Reston, GSA, and USGS met with Pete Moore, George Hyman's on-job site manager. The following are significant portions of the discussions and decisions of the meeting:

McNutt, Gulf-Reston, opened the meeting by emphasizing the need for an early decision and action on the replacement of the deteriorated topping in the map reproduction area. He stated that a preliminary report had been obtained from the consultant, Law Engineering and Testing Co., and commented on the following findings:

1. Inadequate cleaning of base slab—evidences of dirt on the slab surfaces.

2. Inadequate exposure of base slab aggregate—simple broom finish with no cleaning or other preparation to expose aggregate.

3. Inadequate grout—little to no evidences of grout having been applied.

4. Foreign materials in the topping. Wood wedges and conduit were placed in the topping. The wedges caused localized distress situations.

Samples of the removed topping and grout were examined. Moore indicated he did not agree with the findings and that the samples only evidenced an isolated situation not prevalent throughout the area. He maintained that the failure was a design deficiency, especially the topping specification. He was asked whether Hyman's consultant had completed its report. Moore stated that he did not know and that Messrs. Goetsinger and Clark were out of the city so he could not consult with them on their consultant's work.

McNutt, again, indicated that timing was critical and, if necessary, Gulf-Reston would have to direct a replacement as they had done on the removal of the topping. However, he would prefer to reach agreement with Hyman on an equitable sharing of the responsibility so that the work could proceed without delay. Moore responded that he could not commit Hyman but would certainly convey any proposal to Messrs. Clark and Goetsinger. McNutt explained that in his judgment a 50-50 sharing represented an equitable division of responsibility, which could be divided workwise by Hyman, removing and disposing of all the deteriorated topping at its expense and Gulf-Reston Properties, Inc., (the Government paying the cost of the replacement installation). GSA representatives agreed that this represented an equitable arrangement and Moore commented that he considered it reasonable and would carry it to his superiors.

There followed considerable discussion on replacement of the topping. There was agreement that because of the thickness of the topping required the same specification should not be followed in the replacement. Moore mentioned "Masterplate by Masterbuilders" as a possible solution. However, no one present was able to state whether Masterplate would guarantee their application under the prevailing circumstances (thickness, etc.). It was agreed that GRI, through Frederic Harris Co., would get the Masterplate representatives to visit the site within the next few days (the earlier the better) and discuss a replacement topping. Moore stated he would participate but felt GRI should make the request of the Masterplate people.

It was also suggested that the loading platform, and other adjoining areas (finishing room and negative plate file room) where the topping was installed, be checked to determine the extent of delamination and deterioration and that a plan be developed for partial replacement and corrective measures so that this work could proceed expeditiously. GRI will take the necessary action using Law Engineering and Testing Co. Moore suggested that in any replacement of topping, a light wire mesh be used. There was agreement on this.

Moore reported that the reinforcement steel for the press pads had been delivered to the job site.

The George Hyman Co. had asked for comments of its consultant, Levi S. Brown, on the extensive cracking and widespread bond failure between topping and base. The press room floor and other areas had received the heavy duty topping. Significant comments are included from his report of April 17, 1974, *You Asked For My Comments In Cause And Cure.*

> This method of floor construction is both appealing and fairly common. It was especially appealing in this case because a

"heavy duty" floor was desired, to be obtained by incorporating specially hard and tough materials in a special high strength mix.

Everybody shares the view that enduring service by a topping slab requires firm bond with the base concrete. Everybody looks upon "bond" in the sense of pure tensile adhesion. Everybody thinks of such 'bond' as being best established by application of neat cement grout over the base concrete as the topping concrete is placed.

Along in the early 1940's the matter of "bond" for thin overlays became of especial interest and concern to the Portland Cement Association, looking to the re-surfacing and rehabilitation of worn old pavements. A broad study was initiated, which was carried out over the next few years. Without detailing the many means and methods they devised and tested, the first trials and tests involved the neat cement grout applications, as would be expected. Much to everyone's surprise, it turned out that the neat cement grout was about the least effective, in the sense of pure tensile adhesion. Far better bond was developed, for example, by simple placement of new concrete over the dry old surface, and it did not make much difference whether the old surface was meticulously cleaned or not. These findings have been repeatedly verified in my own experience.

You told me the neat cement grout method was used in this new construction. In the light of the above observations, the "bond" failure reported here arouses in me no thoughts whatever of anything particularly wrong in the construction. There simply was no significant tensile bond developed in the first place.

It was stated above that "everybody" looks upon firm bond as essential. I do not hold that view, except in very special cases. Actually, my view is quite the opposite, as will be seen in ensuing paragraphs, which further set forth reasons for my view.

You told me allegations already had been made that the bond failure had occurred because the surface of the base slab was "dirty". To pursue and assess this thought further you sent me a couple of samples of the new construction for direct examination. Each sample was some 10 to 12 inches square on the floor surface, and cut through the full two-course depth, one taken in a separated area, the other from a "sound" area. The latter, however, separated during the sampling, again illustrating the frailty of the supposed "bond".

These samples have been carefully examined. The top of the base slab in each case shows the original broomed finish, clean and sharply defined. Much more significantly, in my view, the same and matching broom marks show up just as sharply on the bottom of the overlay. No fouling whatever by "dirt" is found. Insofar as exhibited by these samples, the allegation of "dirty" surface is unsupported.

You ask me then, what was the cause of the cracking and separation? I don't know. That, however, does not leave us quite at a dead end. Permit me to offer a few more observations, that may be of some help in resolving the question.

There are at least two other approaches to such displacement problems in concrete construction, seldom perceived and less often pursued. A prime one of these is physical analysis of the strain pattern. Cracking, separation, and other displacement in concrete works are caused by very powerful forces acting against varied restraints. The strain pattern must bear some pictorial, graphic, relations to loci exertion and restraint. We are trying to find and identify the moving forces, and the only direct approach is analysis of the strain pattern.

You said it looked like a matter of drying shrinkage. I am in no position at the moment to dispute that finding, though my experience makes me very skeptical. While neither here nor there in the present matter, my experience suggests that con-

crete construction, and highway engineering in particular, would be much better understood today if "drying shrinkage" had never been heard of.

For a second approach, it is generally not perceived that every concrete unit is an entity by itself, with its own properties and behavior. If bond between units, and composite action, if desired, the two concretes should be made the same, as nearly as possible. You said that elsewhere in this same building there was much two-course floor construction that was untroubled. I suspect that is because the two concretes were relatively the same, though I have not seen the specifications, for the most part, plus a better mutual accommodations between lower strength concretes. It is significant that the concretes in the troubled areas are widely different, the topping being a very high strength concrete. The strain pattern shows very clearly a behavioral difference between base and topping, a stress differential of some sort and magnitude between the two members.

Then again concrete initially is a plastic mass, with substantially zero shear strength. Through complex chemical interactions the mass gradually acquires the properties of a solid, with very substantial shear strength. It is inevitable that these reactions should be accompanied by varied volume changes, of one sort or another which, however, are of no particular moment so long as the mass remains plastic. These restrictions are not necessarily over with by the time solid properties are acquired. Continuing thereafter gradually leads to directional stress build-up, within and by the solid. It is logical further that such directional stress build-ups should be far more likely and prominent with high strength concretes, as is the case in this new construction. My experience has had several of these bond separation problems in two-course construction. In every case the separated topping has been a high strength concrete.

The words "cause and cure" were used at the beginning of this discussion. The meaning of "cure" as there entered is prevention from the outset rather than restoration after the damage has been done. As to prevention of such cracking and separation troubles, my comments above I think are sufficiently informative. In my further opinion, single course design and construction is always to be preferred. That is particularly advisable where the thickness of the envisioned overlay is two inches or less. If two-course construction is desired, with thickness greater than two inches, by all means tie it together with wire mesh at midsection. Overlay thickness in this new construction was about three inches. Again, by all means, isolate the overlay from the base with a thin sand bed covered with a plastic film. The topping cannot go anywhere downward. There is no need for 'bond' to hold it down. And by all means isolate the topping placements laterally with felt strips. 'Bond' vertically or laterally means restraint, and restraint is very much a hazard than a help.

As for the "cause" of the trouble in this new construction, these comments may not be too specifically informative. What they do say, however, is that the background cause of trouble is insufficiency in the art and specification. What my inquiry shows is that the "bond" failure was a failure of the art, and not mal-execution of specification.

On May 23, 1974, the following general agreement was reached on the problem in a joint meeting of Russell A. McNutt, Gulf-Reston Properties, Inc., George Culfogienis, GSA, Don Crow, Frederick R. Harris, Inc., Pete Moore, George Hyman Construction Co., and William A. Schmidt, USGS.

It was agreed that:

the George Hyman Construction Co. would be responsible for the removal and cost of removal of the heavy duty topping in the finishing room (P-273), the receiving room (P-119), and a portion of the carpentry shop (P-112). It was also agreed that no topping would be removed

in the negative and plate file rooms and the photographic rooms. In these two major areas, the cracks will be sealed. A sample crack will be sealed by the George Hyman Construction Company for approval. The George Hyman Construction Company will share the costs equally with the owner for sealing cracks and for vinyl asbestos floor tile to be furnished and installed in all rooms in the photographic area. This cost will be determined between Gulf-Reston and the contractor in the near future.

Frederick R. Harris, Inc., and the George Hyman Construction Co. will prepare shop drawings covering the entire replacement topping problem for approval by GSA. It was further agreed that a small area in the receiving room will be treated with an epoxy bond coat applied through a small hole to try to achieve solidity with the base course. The material to be used in this experiment will be Rhoflex-E330. If adequate bonding is achieved, this area will not be removed and replaced.

There was a final agreement between Gulf-Reston Properties, Inc., Frederic R. Harris, Inc., and the George Hyman Construction Co. on July 19, 1974. In the meantime, work had proceeded on the removal of topping in room numbers P-112, P-119, P-273, and part of room P-290; sealing of cracks in room numbers P-273, P-291, pressure grouting in certain areas in room numbers P-273 and P-291, and installation of vinyl asbestos tile in the second floor photographic section.

Final Work in Print Plant Wing

In addition to the work in the press room and adjoining service areas, major changes were authorized in the photo laboratory area located on the second floor. This work progressed as final decisions were being made on the press room floor and other areas scheduled to receive the heavy duty topping. The concrete design work and agreement on the specification for topping was completed and approved in late July 1974. The press room floor with isolated pads was completed by August 20, 1974, as well as replacement of the finishing room floor and loading dock floor, repair of negative plate storage area, and repair of negative plate storage area was also completed. Installation of photo-lab floor covering was completed on August 27, 1974. Except for remaining "punch list" items, this date marks substantial completion of the entire facility.

All of the above work being completed, the installation of new presses could proceed. The installation included two 36-inch two-color presses and one 60-inch five-color press. Effective February 3, 1975, the two 36-inch presses were placed on a three shift operation and the 60-inch press continued to run two shifts. With these operations in place, the final move of the 60-inch two-color press in the GSA building could be started with the dismantling of the press and move, and installation in Reston started in early April 1975.

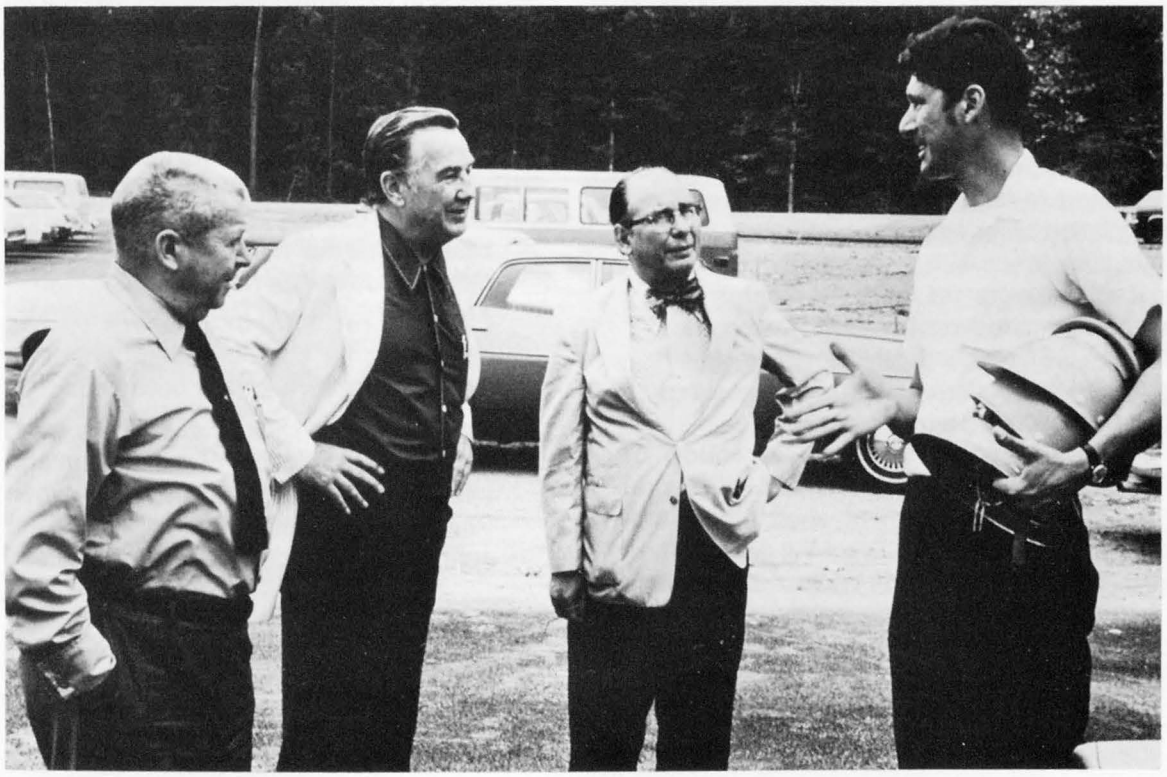
PROGRESSIVE OCCUPANCY

Status of Construction as of Mid-August 1972

Construction of the project for management purposes was divided into three principal phases with work being performed in all three. The project was about 40 percent completed, with all trades back on the job and work progressing as scheduled after delays due to weather and strikes. All reinforced concrete work was scheduled to be completed by December.

Work on the main building included in Phase I, which contains about 590,000 gross square feet, was well advanced with reinforced concrete structure work and floor and roof slabs completed. The mechanical and electrical work had progressed on schedule keeping pace with the concrete work. Precast architectural concrete and window walls were about 30 percent in place being followed by glazing to enclose the floor areas. Interior partitioning (white coat plaster on gypsum board and steel stud) had been started and interior granite finishes were being installed in the lobby areas. The utility plant structure, a separate building, was substantially completed. Boilers, compressors, and chillers were in place and connections and auxiliary equipment were being installed. Virginia Electric Power Company was installing the transformers and making connections for permanent power. The contractor planned to use the plant in the coming winter for temporary heat.

The reinforced concrete structure for the remaining laboratory section in Phase II, which contains about 325,000 gross square feet, had been poured to the second floor slab with about 50 percent of that slab completed, and the pour started for second to third floor columns. Excavation and the foundation system for the Phase III portion, which contains about 140,000 gross square feet, had been completed.



Most of the parking surfacing had been completed, with overall work on the parking areas about 90 percent completed.

Progressive Occupancy Proposal

Completion of construction of the National Center, originally scheduled for mid-January 1974, had slipped to about mid-February 1974 due to strikes and bad weather.

Notwithstanding this estimated delay for the entire facility, the general contractor reported that portions thereof could be completed in accordance with the following schedule:

1. April 1973, Phase I, comprising the seven-floor administrative section, including the cafeteria, five floors of a portion of the laboratory section, about 590,000 square feet, or 55 percent of the total space and the utility plant.

2. October 1973, Phase II, comprising the remainder of the laboratory space, about 330,000 square feet.

3. February 1974, Phase III, comprising the printing plant and reproduction area, about 140,000 square feet.

The general contractor informally inquired whether the Survey would consider occupying the building in accordance with the foregoing schedule rather than waiting for overall completion before moving.

In connection with the foregoing, Schmidt met with representatives of the George Hyman Construction Co., Gulf-Reston, Inc., and the GSA, and indicated an interest, provided the Government could be assured of the following requirements:

Final Inspection and Correction of Defects and Omissions: Gulf-Reston and the Government shall have completed final inspection of the areas turned over and corrections made of major punch list items prior to occupancy.

Security: The areas turned over for occupancy shall be completely isolated with such temporary enclosures installed as are necessary to maintain security.

Heating and Air Conditioning: The heating and air conditioning systems shall be operable so as to ensure adequate heating and air conditioning of the occupied areas. The system shall be controllable so as to avoid unnecessary heating and air conditioning of unoccupied areas. A mutually acceptable arrangement shall be made for furnishing temporary service to construction areas.

Electric Service: Arrangements shall be made to ensure uninterrupted service to occupied areas.

Passenger Elevators: The passenger elevators Numbers 1, 2, 3, 4, and 6 in the administrative section and Numbers 7 and 8 in the laboratory section shall be completed and turned over for the exclusive use of the Survey.

Freight Elevator: Freight elevator Number 5 in the administrative section will be turned over to the Survey for its exclusive use. It would be highly desirable to have elevator Number 9 for the exclusive use of the Survey, including the loading dock and access corridor to the administrative area. If this cannot be arranged on an "exclusive use" basis, the Survey shall be assured that the "move-in" can be accommodated on an "as needed" basis.

Escalators: The escalators to the cafeteria area shall be operable before the administrative area is occupied.

Cafeteria: The kitchen and dining area, including installation of all equipment, shall be completed and operable when Phase I is occupied. This shall include the cafeteria service drive and loading dock.

Telephone Equipment and Switchboard Rooms: Because of the lead time required for installation, these rooms, one of which is in Phase II, shall be available 120 days in advance of delivery of Phase I, with assurance that the immediate surrounding area will be free of dust and dirt. Cables to the administrative area shall be in place with no disturbing construction in the vicinity.

Fire Protection: The fire-protection system for the Phase I areas shall be completed and operable.

Access Roads: Access roads from Reston Avenue, Route 602, Frying Pan Road, and Route 667 shall be completed and surfaced before the delivery of Phase I.

Parking: The lots adjacent and nearest to the administrative section to accommodate 1,000 cars shall be available for use solely by the Survey after occupancy begins. All contractor personnel shall be required to use the lots in the southeast portion of the site.

It was also suggested that a date of July rather than April for Phase I would be to the best interest of the Survey. This would provide time needed for telephone equipment and switchboard installation and a cushion for placing the cafeteria and elevators in operating condition, each of which are identified as critical items.

The contractor scheduled an August 29, 1972, meeting, at which time a decision was necessary in order that the contractor could adjust his construction schedule to accommodate the Survey's requirements if the earlier occupancy was accepted.

Comparison of Early Progressive Occupancy to Normal Move

Advantages

—Move during the summer in advance of the fall school term should be more acceptable to the employees.

—Early occupancy of a substantial portion of the building will provide the Survey with time for a more orderly move and will ensure better performance by the contractor and subcontractor in correcting defects and omissions.

—Would provide relief to present overcrowded conditions in space now occupied.

—Management economies through earlier consolidation can be achieved even though only partial.

—More favorable period for employees to obtain housing (selection and price) if they decide to relocate residence to or nearer Reston.

—Earlier move is better timed with Gulf-Reston's housing projects and program.

—Occupancy during period of construction loan as opposed to no use of the facility during this period is economically advantageous to the Government.

—Space in laboratory section would be available for NIC (not in contract) equipment installation and should afford better price for furnishing and installation cost.

—About $1.2 million savings in housing costs to the Government by affording an earlier release of space for backfill or lease cancellation (8 months of rental for approximately 300,000 square feet at $6.00 per square foot per year).

—The cost of the physical move and advanced purchase of equipment will avoid about $150,000 in increased costs due to escalation if delayed for about 8 months.

—No rental payments under the lease will be due until the project is completed and converted to permanent financing.

Disadvantages

—Even the best planned move and occupancy before building completion may result in some inconvenience.

—Later move affords more time to prepare for the move.

—Occupancy before construction contract completion date will afford contractor the opportunity to avoid liquidated damages for delay in completion.

—Later move affords more time for financing NIC equipment items.

—During the period of occupancy in advance of the total completion, the Survey will have to pay operation, maintenance, and protection costs.

Conclusions

The earlier occupancy of the Center is advantageous to the Government, as well as the employees of the Survey, with a potential minimum savings of $1.35 million. Passing up an opportunity for earlier occupancy only prolongs the day for many decisions on the move which is inevitably scheduled to occur about 8 months later. The earlier occupancy makes up for a part of the period lost and the increased costs when construction was deferred for budgetary reasons. The move to Reston, whether beginning July 1, 1973, or February 15, 1974, will extend over a period of about 6 months, but delaying the move to completion will increase the cost.

Recommendation

It was recommended to the Director and the Survey's Executive Committee that GSA be instructed to proceed on the basis of earlier occupancy, provided that: (1) the contractor meet the Survey's stated conditions of occupancy; and (2) mutually acceptable arrangements can be made between the contractor, Gulf-Reston, GSA, and the Survey.

The recommendation was approved and Schmidt instructed to develop with GSA, Gulf-Reston, Inc., the contractor, and others concerned an early occupancy agreement. The Survey began immediately to organize and make preparations for an early move. A formal Early Occupancy Agreement between Gulf-Reston, Inc., and the United States of America, acting by and through the Administrator of General Services (GSA), was consummated on May 30, 1973. The Early Occupancy Agreement was not an agreement, with respect to which the Government was without authority to enter into, in that it did not constitute a lease and had no bearing on the lease, which the Government had agreed to execute upon completion of the entire building, either as to lengthening or shortening its term. Thus, the Government was not then bound to a lease for a period in excess of 20 years. Also, Gulf-Reston, Inc., and the Government desired to accomplish such partial occupancy without in any way jeopardizing the interim and permanent financing or the timely completion of the entire building, and the Government was prepared to make certain undertakings to assure that such did not occur. It was agreed that:

> Upon the completion of that portion of the building described in the general description clause, in accordance with the Basic Agreements and its readiness for partial occupancy, scheduled to occur on or about July 1, 1973, after certification by the company that such portion of the building is substantially completed in accordance with the plans and specifications, and available for use by the Government, the Government shall take, and the Gulf-Reston, Inc., shall grant, occupancy thereof, in accordance with the terms of the Early Occupancy Agreement.

1. The utility building and all of its equipment, the Phase I portion of the main building, including all elevators, mechanical and electrical systems, safety devices, and the alarm systems serving the Phase I portion of the build-ing shall be available for the use of the Government.

2. Parking lots for at least 1,000 cars adjacent to and nearest to the Phase I area of the main building shall be available and reserved for the sole use of the Government.

3. Freight elevator Number 9 and the loading platform shall be available for joint use by the George Hyman Construction Co., general contractor, and the Government.

4. The only portions of the Phase II area of the main building comprising a part of the premises to be occupied are stairs, Number 9, and Number 10, and they should be be used only as emergency exit ways from the Phase I area.

Planning for Relocation of Headquarters to Reston

The Geological Survey had some 2,200 employees in the Washington area in about 30 buildings scattered over 180 square miles, some as much as 27 miles apart and some 18 miles from the General Services Administration building in downtown Washington, which housed the Director and his staff and approximately 800 of the total employment of the Geological Survey in the area. Employees of the Geological Survey were commuting daily from all sections of the Washington Metropolitan Area, and outside, some from as far distant as Annapolis and Baltimore; 45 percent (984) resided in Northern Virginia, 29 percent in Fairfax and Loudoun Counties and 16 percent elsewhere; 31 percent (685) resided in Maryland, 14 percent in Montgomery County and 15 percent in Prince Georges County; and 2 percent elsewhere.

The Geological Survey had for several years been preparing for its move to the new headquarters facility in Reston. In this preparation, the well-being of the employees of the Geological Survey had been a paramount concern. In order to place the Geological Survey in a position competently to counsel employees with respect to the move and to take steps to assure that the needs of employees with respect to transportation and housing would be met, studies had been made classifying employees of the Geological Survey in the Metropolitan area, with respect to salary distribution and location of residence. An analysis was made of "Personnel Distribution by Geographic Location of Residence and Salary." The analysis showed that of those employees (202) whose salaries were $7,000 per year or less, 48 percent (97) resided in the District of Columbia, 26 percent (53) resided in Virginia, and 26 percent (52) resided in Maryland. Of those employees (412) in the salary range of $7,000-$10,000, 34 percent (139) resided in the District of Columbia, 40 percent (166) resided in Virginia, and 26 percent (107) resided in Maryland. Of those employees (1545) whose salaries were over $10,000, 17 percent (254) resided in the District of Columbia, 49

percent (765) resided in Virginia, and 34 percent (526) resided in Maryland.

Paragraph 24 of the "Offer of Sale and Donation of Land to the United States of America" made by Reston, Virginia, Inc., and accepted by the Government on May 16, 1966, provided for the establishment of a housing survey committee to ascertain the number of employees of the Geological Survey interested in obtaining housing at Reston. In a letter dated September 20, 1969, the then Director of the Geological Survey informed Mr. James H. Harvey of the Task Force on Housing, New Communities and Regional Growth that, at his request, the committee had been established. The Director stated that the committee would not wait to begin its studies until 18 months before scheduled occupancy (as provided in paragraph 24), but would become active when construction of the new headquarters facility began. He pointed out that a reliable schedule of housing needs could not be determined until such time as a tentative moving date could be established.

After the construction contract was awarded in June 1971, planning in the Geological Survey for the move to Reston became extensive. Coordination of the relocation planning was made the responsibility of the Associate Director, William A. Radlinski, and the Assistant Director for Administration, Edmund J. Grant. A "Reston Move Committee" was formed within the Geological Survey. This committee served as a point of contact with outside organizations and was responsible for the planning of pre-move activities. Some of the basic functions of this committee were personnel, housing, transportation, physical move, and liaison with the building contractor through Gulf-Reston Properties, Inc.

To provide coordination with the employees of the Metropolitan area, 36 "move counselors" were designated from all divisions of the Geological Survey and all locations within the Metropolitan area. Of the 36 move counselors, 13 were minority group persons who varied in grade structure from GS-5 through GS-16. The function of the move counselors was to provide employees at all locations with a means of becoming informed of the impending move. Each counselor was given a kit which had been assembled and which provided general information related to Reston. The Geological Survey had requested and received all available information on other Federal agency relocations, and many agencies had been visited to discuss problems related to moves.

A comprehensive questionnaire was developed, which was sent to all employees. A draft of the questionnaire was sent to the Reston Community Association and the Housing Opportunities Council for comment, and many of their suggestions were incorporated in the final questionnaire. The questionnaire was tested by Geological Survey personnel on a sample of employees at all grade levels in various locations. A pamphlet describing Reston was given to all employees with the questionnaire, so that they would have background information to assist them in answering the questionnaire.

Open house tours on weekends were planned for all employees of the Geological Survey. Reston officials were available to brief Survey employees and officials of the Reston Community Association served as guides.

After the selection of Reston as the site of the headquarters facility for the Geological Survey, the Geological Survey had maintained liaison with several organizations who would be most concerned with the move, including:

Reston Community Association—Liaison with this group was on a continuing basis and the point of contact with this organization was Lewis Douglass.

Task Force on Housing, New Communities and Regional Growth—Representatives of the Geological Survey met and corresponded with Carol Rende, who chaired the Task Force's Federal Agency Relocation Subcommittee. Members of the Task Force included the Housing Opportunities Council of Metropolitan Washington, and other organizations and persons concerned with urban problems.

General Services Administration—A psychologist on the personnel staff was consulted on employee housing and

related matters in order to identify areas of consideration in personnel relations resulting from a move of this magnitude. Liaison with its real estate staff on employee housing needs, building services and contract requirements, was continuous.

Department of Housing and Urban Development—Staff members of HUD were contacted for preliminary discussions concerning financing and other information related to the projected availability of federally subsidized housing in Reston and vicinity.

Gulf-Reston, Inc.—Several meetings were held with the President, Gulf-Reston, Inc., and other company officials to express the concern of the Geological Survey with respect to housing. Data respecting the Geological Survey employees in the Metropolitan area were furnished to Gulf-Reston.

Concerning the questionnaire, a total of 1,654 employees returned the questionnaire representing a response of 79 percent of the metropolitan area employment, which several years before the actual move was considered an above normal response to a questionnaire. Every attempt was made to protect the privacy of the employee in answering the questionnaire. A summary of significant responses as related to housing were:

- 523 employees responded that they would move closer to Reston
- 211 employees responded that they would move to Reston
- 74 prior to the actual move
- 29 employees, with an income of less than $10,000, reported that they would move to Reston

Housing Survey Committee

The following Housing Survey Committee was designated, pursuant to Paragraph 24 of the Land Donation and Sale Agreement:

USGS--William A. Schmidt, Chairman

GSA--I.J. Gural, Member (Director, Planning Division, Office of Operational Planning, PBS)

Jay Cohen, Planning Division

HUD--Bernard Horn, Member (Deputy Director, Economic and Market Analysis Division, HPMC-FHA)

G.R., Inc.--James W. Todd, Member (Vice President, Residential Marketing)

The Housing Survey Committee reviewed the results of the questionnaire and recommended that (1) a second questionnaire be sent to all Survey employees in the Washington Metropolitan Area in October or November 1972; (2) the questionnaire be revised to reduce it in length and to confine it principally to questions related to providing the information needed to respond to the obligation under Paragraph 24; and (3) the Survey advise employees on eligibility for reimbursement for moving and real estate expenses in connection with the move prior to issuance of the second questionnaire.

A series of Geological Survey National Center news bulletins were sent to all Survey employees in the Washington Metropolitan Area. The second bulletin provided specific information on eligibility for reimbursement for moving and real estate expenses. The second questionnaire was released with a covering memorandum dated November 27, 1972. All returns were received by mid-December; the results made available for review by the Housing Survey Committee by mid-January. The results provided more detail as to housing, such as number of bedrooms, rent or buy, and other relocation needs.

Reston Move Committee

On July 1, 1971, the Acting Director, William A. Radlinski, appointed the Committee with the following responsibility assignment:

> Because the various activities necessary for our move to Reston will require close coordination, a Reston Move Committee is hereby established. William B. Overstreet will serve as Move Coordinator, and in this capacity, act on behalf of the Director's Office. The attached chart shows the basic organization of the Committee and responsible personnel. With the creation of the Reston Move

Committee, the New Building Committee (Washington) is abolished.

Some of the basic functions of this Committee are listed below. This checklist is not intended to be complete but does reflect the general areas of responsibility.

Building Construction Liaison

Coordinate special laboratory requirements

Develop sign requirements—design, colors, etc.

Coordinate with physical move phasing of construction for equipment

Coordinate all changes in building construction

Physical Move

Prepare list of office furniture needs

Prepare list of office non-lab equipment needs

Prepare phasing plan for above items

Phase move from various locations

Develop budget for procurement of furniture and equipment

Develop budget for physical move

Records survey

Communications needs

Personnel

Develop move counselor's kit

Prepare newsletter

Prepare move pamphlet for use in preparing questionnaire

Prepare questionnaire

Arrange for Reston tours

Employee services (cafeteria, health, etc.)

Housing and Transportation

Compile listing of real estate agencies

Compile listing of local builders

Seminars on home buying

Coordinate public transportation—possible charter service

All contracts, procurements, and actions were programmed and implemented through the assigned divisional responsibilities. All divisions were encouraged to make a concerted effort to dispose of excess furniture, records, etc., before the scheduled move.

Furniture and Furnishings

The following was approved by the Director as policy concerning furniture and furnishings for the new headquarters:

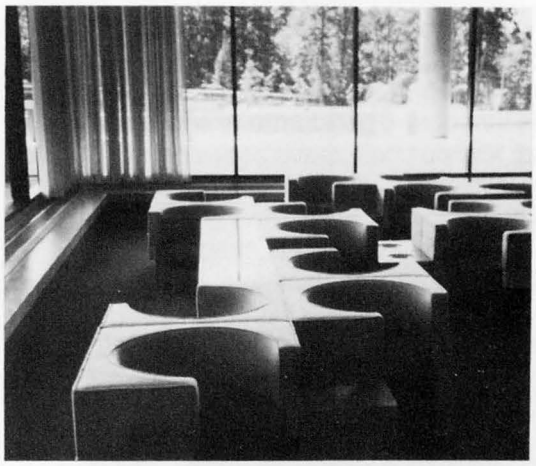
An item of critical concern in the occupancy of our new National Center will be the office furniture and furnishings, especially for those clerical/secretarial areas which are open to view. It would be ideal if we could equip the entire building with new furniture and furnishings. Much as we should like to do this we will have to utilize to the fullest extent possible the furniture we now have, if otherwise suitable, even though it may not conform to the building plan.

To obtain uniformity and to provide guidance in the selection of new furniture and furnishings we have engaged the building architect to prepare a handbook of prototypical layouts for selected offices and open areas. Furniture selections will be made from GSA's Federal Supply Schedules in accordance with the above noted handbook. I should like the Survey to work toward furnishing the building to the design standards as it becomes feasible to do so under our normal replacement program. We do not intend to budget for new furniture for the building. Hopefully a great deal of the furniture we now have may be suitable. Also, I have asked Bill Schmidt to explore with the General Services Administration the possibility of exchanging furniture so as to obtain furniture that does conform to the design standards. The above does not apply to laboratory office equipment and furniture.

The Move

The first elements of the Survey were moved to Reston on August 16, 1973. The Fairfax County Office of Zoning Administration issued a non-residential-use permit for the building dated December 18, 1973. Although the completion of the facility was scheduled for early 1974, the delays due to strikes, weather, and especially the problems which developed with the heavy duty topping on the print plant floor and other industrial areas delayed the final completion to mid-1974. Except for the dismantling and move of the printing presses from the GSA building,

the move was accomplished over a year's time. All of the presses in the GSA building could not be shut down, until the new presses and some of the presses moved from the GSA plant and installed in the new plant in Reston were in production.



NAMING THE HEADQUARTERS BUILDING

In late 1972, with construction progressing on schedule, the Survey began making preparations for occupancy and the dedication of the building. The Survey proposed to the General Services Administration that the headquarters building of the National Center be appropriately named the "John Wesley Powell Federal Building" to honor the late John Wesley Powell, Director of the U.S. Geological Survey from 1881 to 1894 under the authority contained in 40 U.S.C. 298d. However, GSA responded that naming the building in memory of the late Major John Wesley Powell would be an exception under their authority, and it would be more appropriate if the action originated in the Congress rather than the GSA. Accordingly, the following draft legislation and justification were transmitted informally to the Congress, eventually, to the Senate and House Committees on Public Works.

The Bill

To name the headquarters building in the Geological Survey National Center under construction in Reston, Virginia, as the "John Wesley Powell Federal Building."

> *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.* The headquarters building in the Department of Interior's Geological Survey National Center, now under construction in Reston, Virginia, shall hereafter be known and designated as the "John Wesley Powell Federal Building." Any reference in a law, map, regulation, document, record, or other paper of the United States to such building, shall be held to be a reference to the "John Wesley Powell Federal Building."

Justification

The Geological Survey was established as an agency in the Department of the Interior in 1879. In 1881, the late Major John Wesley Powell was appointed Director of the Survey, a position which he held through June 30, 1894. Major Powell, veteran of the Civil War, teacher and scientist, played an important role in organizing and directing scientific activities of the U.S. Government and the establishment of the Geological Survey. A man gifted with imagination, yet always tempered by the scientist's appreciation for facts, Major Powell became one of the country's most vigorous proponents for the orderly development of the public domain and the prudent use of its natural resources. Throughout his lifetime he stood firm in his belief that science, as a sound basis for human progress, should serve all people. He was the principal force in expanding geologic studies and topographic mapping throughout the entire country, and in stimulating investigations of soil, ground water, rivers, flood control, and irrigation. During the 13 years of Powell's directorate, the growth of the Geological Survey was remarkable. Its field operations, which at first were restricted to the far West, became nationwide. The growth of its scientific and engineering investigations has paralleled the growth of the United States as a great industrial nation and has contributed much to that development.

As the Survey's program responsibilities were expanded, its facilities for research in hydrology, geology, geochemistry and geophysics, and development of new techniques and methods for appraising and conserving our natural resources became increasingly fragmented and inadequate. In 1969, the Congress authorized the construction of a new headquarters facility for the Survey, a National Center for scientific research, expansion of our knowledge of the earth sciences, and management of our national

resources. Construction of the Center in the new town of Reston, Virginia, which began almost two years ago, is nearing completion, with occupancy to begin in July 1973. It will be the beginning of a major scientific center, which will attract scientists from all over the world. Therefore, the Department of the Interior believes that it would be most appropriate to honor the late Major John Wesley Powell, pioneer statesman of federal science, by naming in his memory the headquarters building of the Geological Survey National Center the "John Wesley Powell Federal Building."

Congressional Action

Representative Joel T. Broyhill joined Representatives Kenneth Gray of Illinois and James Grover of New York in introducing legislation (H.R. 6862, 93rd Congress), to name the building the "John Wesley Powell Federal Building."

Broyhill said,

> It is fitting and proper that the new Geological Survey National Center be named after Major John Wesley Powell, a soldier, teacher, explorer, and scientist—a true public servant who throughout his lifetime played such a dedicated role in organizing and directing scientific activities of the U.S. Government and the establishment of the Geological Survey. A man gifted with imagination, yet always tempered by the scientist's appreciation for facts, Major Powell became one of the country's most vigorous proponents for the orderly development of the public domain and the prudent use of its natural resources.
>
> Throughout his career, he stood firm in his belief that science, as a sound basis for human progress, should serve all the people. During his tenure as Director of the Geological Survey (1881 to 1894), Powell was the principal force in expanding geological studies and topographic mapping throughout the entire country and stimulating investigations of soil, ground water, rivers, flood control, and irrigation.
>
> Powell was not without recognition in his own time. He was elected a member of the Philosophical Society of Washington in 1874 and its president in 1883; and a member of the National Academy of Sciences in 1880. He was a founder of the Cosmos Club and its president during 1878 and 1888; a founder and president of the Anthropological Society of Washington, one of the earliest members of the Biological Society of Washington, and an organizer of the Geological Society of Washington.
>
> He helped establish the National Geographic Society and the Geological Society of America. In 1888 he was president of the American Association for the Advancement of Science, then considered the highest honor for an American scientist, and he received honorary degrees from several universities both at home and abroad.

H.R. 6862 was favorably reported by the House Committee on Public Works.

A companion bill, S.1618, was introduced in the Senate and favorably reported by the Senate Committee on Public Works, with the following noted in its report submitted by Senator Scott of Virginia:

Committee Views

> The Committee believes it would be most appropriate to name the headquarters building of the U.S. Geological Survey National Center, being constructed in Reston, Virginia, the "John Wesley Powell Federal Building" as a tribute to Major Powell's farsighted contributions to the Geological Survey and our national development.

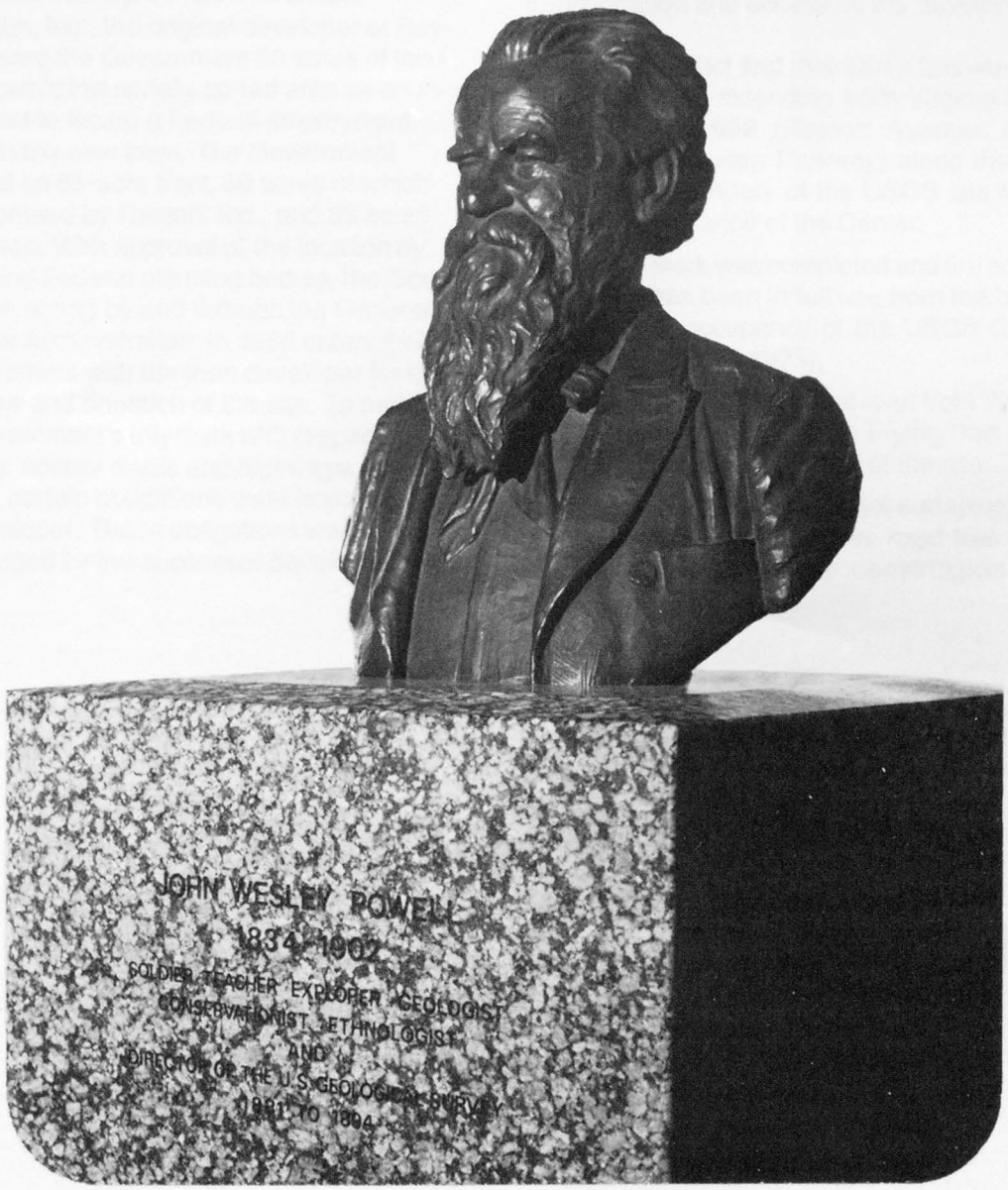
S.1618 was considered and passed by the Senate June 27, 1973. It was considered and passed by the House in lieu of H.R. 6862 on December 3, 1973, and approved by the President on December 15, 1973.

The Building

"Salute to Major Powell" was presented by Director V. E. McKelvey at the dedication at the John Wesley Powell Federal Building, U.S. Geological Survey National Center, Reston, Virginia, on July 12, 1974.

The bronze bust of John Wesley Powell, which for years was located in the Survey library in the "Old Interior Building" now the General Services Building, is mounted on a solid pedestal of polished Rockville-Pearl Gray (Cold Spring, Minnesota) granite (same as the interior granite in the building, except for finish) with the inscription:

John Wesley Powell
1834 - 1902
Soldier, Teacher, Explorer, Geologist
Conservationist, Ethnologist
and
Director of the U.S. Geological Survey
1881 - 1894



ACCESS AND TRANSPORTATION TO THE NATIONAL CENTER

One of the most time consuming and frustrating problems of the relocation of the Geological Survey to Reston, Virginia, was the transportation and access problems not uncommon even today in Northern Virginia development.

Background and Agreement with Developer of Reston

Reston, Inc., the original developer of Reston, offered the Government 50 acres of land in the town's industrially zoned area as an inducement to locate a Federal employment center in the new town. The Government selected an 85-acre tract, 50 acres of which were donated by Reston, Inc., and 35 acres purchased. With approval of the location by public and Federal planning bodies, the Government, acting by and through the General Services Administration, in 1966 entered into an agreement with the then developer for the purchase and donation of the site. To protect the Government's interests with respect to housing, access roads and highways, and utilities, certain obligations were imposed on the developer. These obligations were acknowledged by the successor developer, Gulf-Reston, Inc. The agreement also provided an option, subsequently exercised by the Government, for the purchase of 20 acres of additional land, increasing the site to 105 acres.

The "OFFER OF SALE AND DONATION OF LAND TO THE UNITED STATES OF AMERICA" accepted August 5, 1966, placed the following obligations concerned with transportation and access on the developer of Reston:

1. Construct and maintain a four-lane access road extending from Virginia State Highway 602 (Reston Avenue, since named Reston Parkway) along the northerly boundary of the USGS site to the main entrance of the Center.

   (This work was completed and the access road has been in full use from the beginning of occupancy of the USGS Center since August 1973).

2. Construct an access road from Virginia State Highway 602 via Frying Pan Road to the southeast corner of the site.

   (This work, including final surfacing, was completed. This access road has been passable since the construction was

started in 1971 and with final surfacing has been in full use).

3. Gulf-Reston, Inc., shall use its best efforts to have the Virginia State Highway Department and Fairfax County improve and widen the public highways in the vicinity of the property and construct additional public highway, if necessary, in order that there will be adequate access to the property (USGS Center) by employees of the Government and others doing business with the Government.

Improvements to existing highways—Virginia State Highway 606 was widened to four lanes from State Highway 7 to State Highway 602. Negotiations between Gulf-Reston, Inc., and the Virginia State Highway Department for improvements to State Highway 602 from State Highway 606 to the Dulles Access Road had been underway in 1972. The right-of-way was available and agreement had been reached on the division of costs of design and construction. The completion of the latter improvement needs was advanced from the Highway Department's 1975 program.

Additional access—Wiehle Avenue, a four-lane arterial roadway through Reston from State Highway 606 in 1973 terminated at Sunset Hills Road. Right-of-way existed for connections to a proposed overpass at the Dulles Access Road and connection with Sunrise Valley Drive, the extension of which is the four-lane access road to the USGS site. Gulf-Reston, Inc., authorized the State Highway Department to prepare the design for a Dulles Access Road overpass, crossing at Wiehle Avenue in Reston. The design was underway, but the overpass was not completed until 1976.

Other Actions by USGS to Improve Transportation

Beginning with the approval of the Survey project by the Congress in 1969 for acquisition of the Survey headquarters in Reston by lease-purchase, the USGS staff was actively engaged in pursuing with members of the Congress, Federal agencies, State agencies, Fairfax County Government, and Gulf-Reston, Inc., for political and administrative support-seeking solutions to the transportation and access problems.

Federal and State Agency Assistance

On December 1, 1972, by letter to the Chairman of the National Capital Planning Commission, the USGS strongly endorsed and urged early approval of the Federal Aviation Administration proposal to construct commuter bus ramps connecting Virginia State Highway 602 and the Dulles Access Road, thereby opening the Access Road to commuter bus traffic. (The FAA request was approved, the ramps constructed and opened in early September 1973).

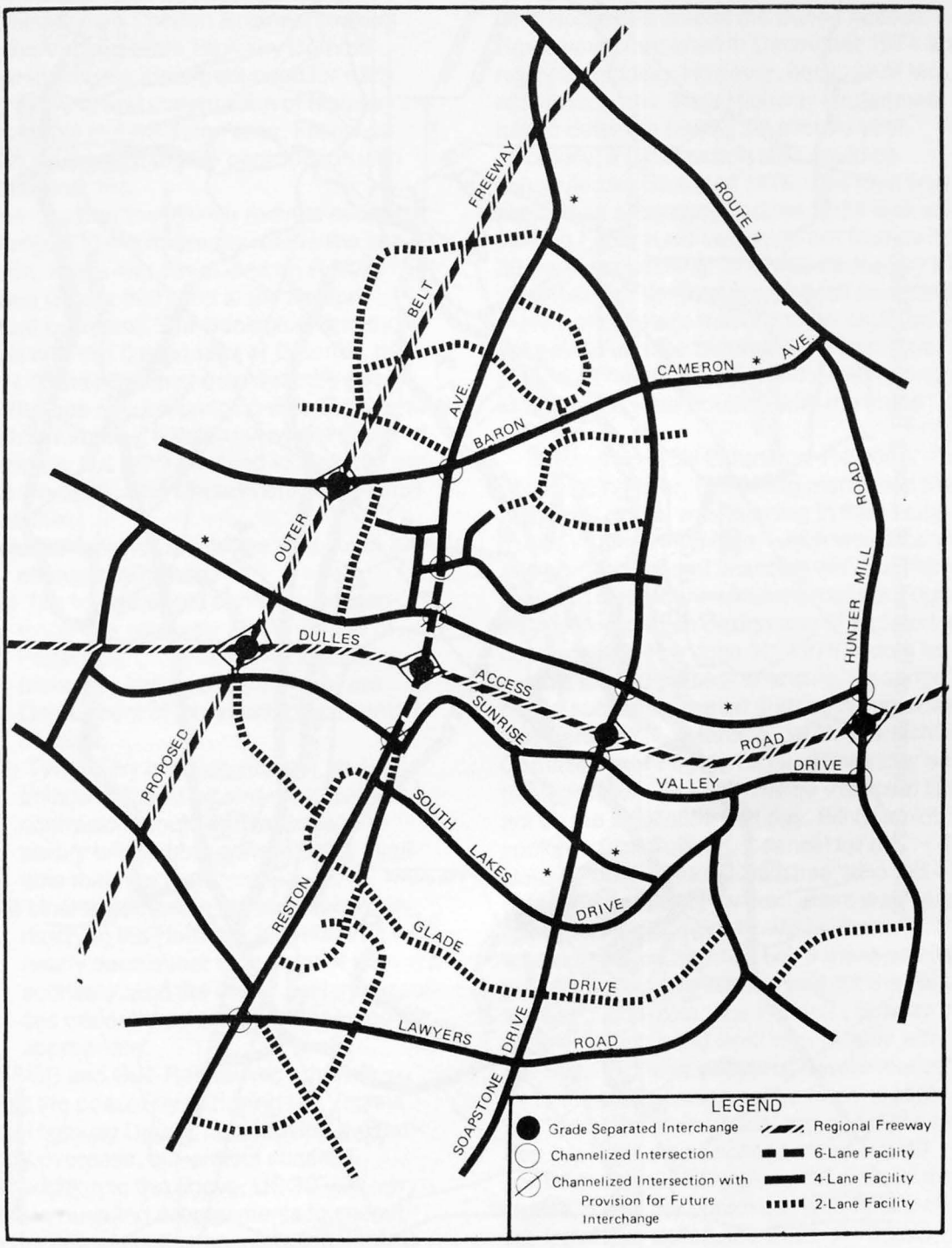
On January 2, 1973, the Department of the Interior, by letter to Secretary John A. Volpe, solicited the help of the Department of Transportation in the improvement of transportation to and from Reston. The Department of the Interior solicited DOT assistance to:

(1) Open Dulles Access Road to bus traffic and construction of the necessary ramps at Reston;
(2) Open Dulles Access Road for commuter vehicular traffic as a temporary expedient;
(3) Urge State or Federal construction of Wiehle Avenue overpass at the Dulles Access Road;
(4) Intercede with the State of Virginia for early programming and construction of other highway improvements; and
(5) Support early action on legislation to extend the Metro Rapid Transit System to Dulles, with stations to serve Reston and the communities on the corridor.

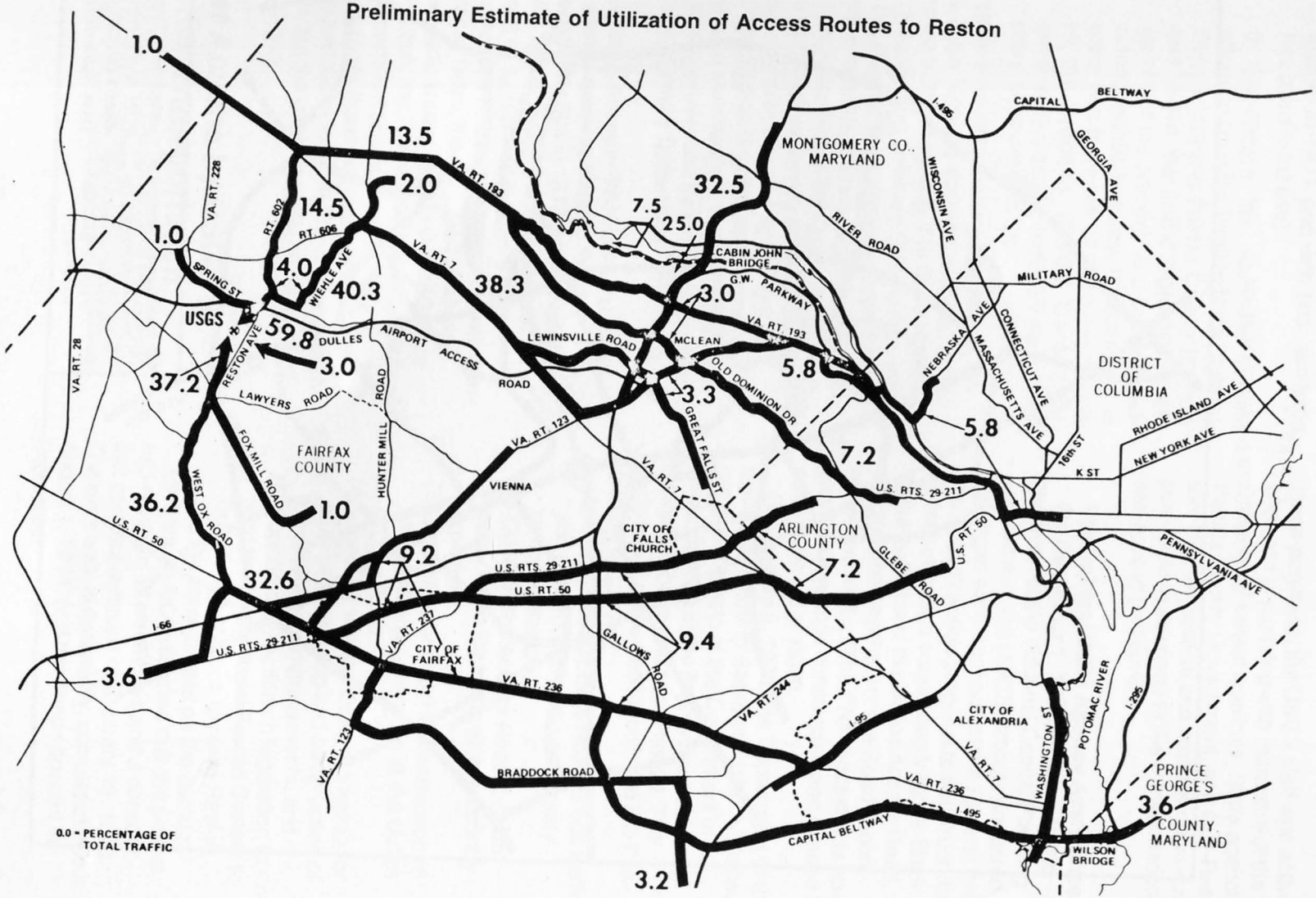
On item (1) DOT reported that the project had received all clearances and a construction contract awarded on January 19, 1973. The work was, substantially, completed about August 1, 1973, and the ramps opened in September.

FIGURE V-7

RECOMMENDED HIGHWAY PLAN



Preliminary Estimate of Utilization of Access Routes to Reston



On item (2) the response was negative as it was contrary to Department policy.

On items (3) and (4) arrangements were made through the Federal Highway Administration's Division Engineer to meet with the Virginia State Highway Commissioner to discuss the urgent need for early programming and construction of highway improvements in the Reston area. Follow-up continued through USGS participation with Gulf-Reston, Inc.

The need for the Wiehle Avenue overpass was critical. It would greatly relieve the congestion, which had developed on Reston Avenue (Route 602) and at the Reston Avenue overpass. The Geological Survey explored with the Department of Defense, the use of "Bailey Bridges" as temporary bridging. The use of such bridging was considered feasible, following a field visit by the Corps of Engineers, but DOD declined to make its services available. The Department of the Army stated that:

(1) The need for the bridge was not of an emergency nature;

(2) The bridge would serve the convenience of a relatively small number of Federal employees and would not materially improve the ability of the Department of the Interior to perform its mission;

(3) Temporary bridging was not an item unique to the Army and most general contractors could erect such a temporary bridge from commercially available material;

(4) Unemployment in the construction industry in the Northern Virginia area was nearly double that of the rest of the economy, and the use of military resources under these conditions seemed inappropriate.

USGS and Gulf-Reston, Inc., then explored the possibility of having the Virginia State Highway Department provide the temporary overpass, but without success.

In addition to the above, USGS was very active in pursuing arrangements to encourage the use of public transportation, installation of traffic controls at strategic locations, and engaging a professional study of the traffic problems at the USGS Center.

Plans for the improvement of Route 602 from Route 606 across the Dulles Access Road were completed in December 1974 and ready for bidding. However, because of lack of financing, the State Highway Department had to defer the project for about a year. Hopefully, a construction start could be scheduled for Spring of 1976. The road was classed as secondary and the State was entitled to Federal aid and could not finance its 30 percent matching. This was caused by the ideal weather the past year, which permitted more work in place than normally could be scheduled and the fact that revenues were down $10 million (gas tax and registrations). Many states were troubled with the same problem.

In a call from Bill Schmidt to Hal King, Division Engineer, FHA, King mentioned that a bill, H.R. 3786, was pending in the House Public Works Committee, which would permit 100 percent Federal financing with the states repaying their share within 18 months. Highway work on which design was completed for contract award by June 30, 1975, would be eligible for 100 percent financing. Hearings by the subcommittee on surface transportation were held on March 5, 1975, at which Commissioner Fugate testified favorably on the legislation. The Committee expected to act on the legislation that day. Bill Schmidt spoke to Dick Sullivan, Counsel for the House Public Works Committee, who indicated the possibility for enactment was very good. The Senate Public Works Committee was working on a similar bill. If the legislation passed, it could be used to bail out the Reston Avenue project. The Federal Highway people in Richmond work very closely with the State Highway people and were alerted as to the USGS interest. The Federal Highway Administration (Washington) did not support the legislation because of the overall considerations. Although the bill passed the House, it was not approved. With failure of the legislative action, the State of Virginia

decided to use other resources to pay their 30 percent share.

The total cost of the Reston Avenue project was $2 million, of which Gulf-Reston's commitment was $700,000. The balance, $1.3 million, was shared on a 70-30 basis (Federal and State).

In the pursuit of highway improvements, Gulf-Reston, Inc., represented by William Magness, James Todd, Francis Steinbauer, James Cleveland, and John Guinea, were most helpful not only in meeting its commitments under the Offer of Sale and Donation of Land but on other improvements to serve the Reston area. Also contributing immeasurably were Congressmen Joel T. Broyhill and Joseph L. Fisher and Fairfax County Councilwoman Martha V. Pennino; Regional Federal Highway Administration (FHA) officials, Division Engineer Hal King, and Don Holloway; Virginia Department of Highways and Transportation (VDH&T), Commissioner Douglas B. Fugate, J. C. Cleveland, and local representatives, D. E. Keith, Resident Engineer, Fairfax County, and Don Hops, Resident Engineer, Culpeper.

Initially, the Virginia Highway Department plans to improve Route 602, extended from Route 606, to the Dulles Access Road Crossing, but through the persistent efforts of USGS and assistance of FHA Richmond Office; the improvements were extended to at least Sunrise Valley Drive. As the highway projects became eligible for substantial Federal assistance in financing, FHA approval was required as well as public hearings and environmental assessment. Widening of Route 602 south, beyond Sunrise Valley Drive, was not started until late in 1987.

Public Transportation

The Geological Survey actively pursued the use of buses in three modes. First, regular route service via Metro; second, contract commuter buses similar to the Reston Commuter Bus Association; and third, internal community buses.

USGS was successful in obtaining an extension of regular route service on two buses between downtown Washington and Reston during peak hours. While the service was rather slow and followed routes not ideal for Survey employees, it was used by 26 of the 800 employees in the first occupancy of the National Center. This was considered a good response for the short period of time. If demand warranted service, it could have been expanded to additional buses.

The use of contract commuter buses was negotiated by an employee group under Survey aegis. Unfortunately, as an agency, USGS did not have legislative authority to provide financial support to transportation of this kind. However, to the extent it could, the Survey provided administrative assistance.

Particular problems existed for employees in contracting for buses. At $100 per day charter for a 50-passenger bus, employees would pay $2 a day for transportation and prepayment; the employees could only expect any single bus to run about 75-80 percent full. In order to accommodate this, the employees will have to pay $2.50/day. This cost was not attractive, even though in reality car trips would be more costly. Additionally, the Survey did not have enough employees working in the National Center to support charter buses until January or February of 1974.

Internal community bus transportation was explored in conjunction with the Reverend Embry Rucker of Reston's Common Ground Foundation. It was hoped that this service would provide alternatives to automobiles for the more than 200 Geological Survey employees residing in Reston.

Traffic Lights and Roads

On April 10, 1973, members of the Survey staff conferred with Virginia Highway and Federal Highway Administration officials in Richmond concerning the impact on roads and traffic in the vicinity of the National Center. There, while greeted cordially, the staff came away without any commitment from the Department of Highways for lights or road improvements. Road improvements, they were

told, were the responsibility of the developer, Gulf-Reston, Inc., and the State could make no commitment. The Survey staff with the developer, Gulf-Reston, Inc., followed up that meeting with a meeting on April 26, 1973, with the Fairfax County Police. At that meeting the Survey again presented its case for additional traffic control. The presentation was taken under advisement by Major Dodson of the Fairfax County Police.

On June 15, 1973, the Survey requested further information from the Commonwealth of Virginia concerning traffic densities on the road network within and adjacent to Reston and the existing plans for signaling the intersections. Their response indicated that installation of traffic signals at the locations recommended by USGS had been approved. However, the response provided no dates as to when the installation would be completed.

On September 11, 1973, Associate Director William Radlinski spoke by phone with John E. Harwood, the Deputy Commissioner and Chief Engineer of the Virginia Department of Highways, concerning the potential traffic problems. This was followed by a call from Mr. Mills, the State Traffic and Safety Engineer for the Fairfax County geographical area, to Mr. Radlinski. Mr. Mills informed him that traffic lights had been scheduled for installation at key intersections in Reston. Specifically, on the Survey's priority list these locations were at Sunrise Valley Drive and Reston Avenue; Reston Avenue and Sunset Hills Road; Reston Avenue and Route 606; and Fox Mill Road and Lawyers Road. Mr. Mills stated the initial construction would begin shortly.

Professional Assistance

As an adjunct to its own surveys, questionnaires, and other formal studies of traffic and transportation, the Survey commissioned a comprehensive study by Stephen Petersen, P.C., Traffic Planning and Engineering Consultant. Generally, Mr. Petersen's report of July 1973 supported the need for signalization of key intersections and the widening of Reston Avenue to four lanes. In addition, Mr. Petersen suggested the additional step of constructing the Wiehle Avenue Bridge over the Dulles Access Road and, finally, the necessity to stagger work hours. The Survey fully supported Mr. Petersen's conclusions concerning road improvements and instituted the plan for staggered work hours. Staggered work hours were approved by GSA in accordance with the applicable Federal Property Management Regulations commencing May 1975, later replaced by "flexitime," which accommodated both the traffic problem and personnel management advantages.

Car Pools

The Geological Survey had for several months been operating a computerized car pool locator system. This system was installed in some 30 locations, wherever there were concentrations of Geological Survey employees. The locator system used grid locators on a metropolitan area map and computer printouts of where people were located and how to contact them. This system was compared with one being supported by the Northern Virginia Transportation Commission, with whom the Survey had been having close contact and discussion. The systems were quite similar.

Of the 480 cars coming to the USGS site daily, 36 percent arrived and departed with more than one person in the vehicle. The occupancy per vehicle averaged 1.51 which, by accepted standards, was excellent for that stage of occupancy. The Survey expected this ratio to improve as more people moved into the National Center. Car pool management was made a specific assignment within the Survey's Administrative Division and positive means to create car pools is still continuing.

On April 1, 1980, the Federal Aviation Administration (FAA) announced the opening of the Dulles Access Road to four-person (or more) car pools. The Reston Avenue ramps were opened to such use between 6:00 a.m. and 9:00 a.m. and between 3:30 p.m. and 7:00 p.m. on workdays.

Car pools had to have had at least four occupants in the car to use the ramps. A visual check of the number of riders was made daily by employees of the Virginia State Highway

PROJECTED RATIOS OF VOLUME TO CAPACITY
AT 10 IMPORTANT RESTON INTERSECTIONS
DURING MAXIMUM 15-MINUTE INTERVAL OF U.S.G.S. TRAFFIC FLOW

	Morning (7:30-7:45)			Evening (4:15-4:30)		
	Projected		Existing	Projected		Existing
Intersection	Volume[1]	V/C Ratio	V/C Ratio	Volume[1]	V/C Ratio	V/C Ratio
Route 7 and 606	400	1.07	0.63	225[2]	0.60	0.60
Route 606 and Wiehle Ave.	335	0.89	0.57	615 Rt. turn only	2.05	0.58
				440	1.17	0.38
Route 606 and Reston Ave.	255	0.68	0.37	300	0.80	0.22
Wiehle Ave. & Sunset Hills Rd.	225	0.60	0.18	350	0.93	0.19
Reston Ave. & Sunset Hills Rd.	570	1.52	0.38	335[2]	0.89	0.45
				530 Rt. turn only	1.77	0.17
Reston Ave. & Spring St.	625	1.67	0.65	235[2]	0.63	0.58
				805 Rt. turn only	2.68	0.48
Reston Ave. & Sunrise Valley Rd.	235[3]	0.63	0.51	860	2.29	0.63
	455 Rt. turn only	1.52	Negligible			
Reston Ave. & South Lakes Dr.	460	1.23	0.44	135[4]	0.36	0.36
				425 Rt. turn only	1.42	Negligible
Reston Ave. & Fox Mill Road	390	1.04	0.19	530	1.41	0.23
Fox Mill Road & Lawyers Rd.	395	1.05	0.34	525	1.40	0.26

[1] Total of conflicting movements

[2] Exclusive of right turn from south to east.

[3] Exclusive of right turn from north to west.

[4] Exclusive of right turn from east to south.

Department stationed at the Reston Avenue ramps.

USGS was told by FAA officials that no exceptions to the rules for using the Reston Avenue ramps would be made in either the hours the ramps are open to car pools or the number of passengers per vehicle. Therefore, the Survey shuttle and other official vehicles could use the ramps only during the specified hours and when they carried at least four passengers.

Long awaited in the solution of traffic problems and transportation to and from Reston was the completion of the toll roads paralleling the Dulles Access Road. On October 1, 1984, the opening of the $59 million Dulles Toll Road brought Reston within 20 minutes of Washington and 6 minutes of Tysons Corner.

CLOSING

Following the early occupancy of the National Center beginning in August 1973, the Survey began pressuring the General Services Administration to advance the closing date, as the interest on the construction loan for progress payments was approaching $10,000 per calendar day, or $300,000 per month. A meeting was held on November 20, 1973, with representatives of the General Services Administration, Gulf-Reston, Inc., and Special Counsel to the Bond Purchasers to discuss "Closing" (conversion to permanent financing) under the National Center Lease-Construction Agreement. The date set for closing was December 20, 1973. This date would be the beginning date of the 20-year lease.

The required documentation was reviewed and responsibility for preparation assigned. Gulf-Reston, Inc., with the assistance of GSA, prepared the breakdown of the purchase price ($55,100,000) on which the rental payments were computed at the interest rate of 7.95 percent. The capitalized cost included construction contract cost, commitment fees, interim interest on construction progress payments, construction management and supervision by Frederick Harris, Gulf-Reston's administration costs, legal fees, and other related costs. All of the costs were audited by GSA's audit staff, including the final costs when all contract items and claims were settled. Converting to permanent financing did not relieve the General Contractor of any of its obligations under the construction contract. Sufficient funds were withheld from payments due to the contractor to protect the Government's interest and, also, as an incentive to ensure completion of corrective work.

Clearance With Senate and House Committees on Public Works

By early December 1973, the building was substantially completed, except for usual "punch list" matters and full completion of certain minor work not essential to the Government's use and occupancy of the premises. The closing of the transaction, encompassing execution of the lease, delivery of the bonds, and related matters were scheduled for December 20, 1973. In order to effect closing on that date, it was necessary to deposit $3.2 to $4.0 million of the proceeds of the bond sale into an escrow account. That sum was then estimated to comprise the following:

Uncompleted construction and unresolved construction claims	$2,300,000
Construction contract retainage	1,000,000
Legal and construction manager fees and contingencies	270,000
	$3,570,000

Payments from the escrow account would be made only upon the joint approval of Gulf Reston Properties, Inc. (GRPI) and GSA.

The amount of the escrow fund was determined to be adequate to insure that funds would be available to complete construction and to pay all related unpaid project costs. It was GSA's intention to provide, by agreement with GRPI, that any surplus remaining in the escrow account, after payment of all such construction and related costs, would be applied against the next due rental payment or payments under the lease.

The proposal to establish an escrow account, and to apply any surplus therein as described above, resulted in a question arising out of the following provision of the pertinent prospectus:

> The building will be leased to the Government for a firm term of 20 years, without services and utilities, at an annual rate equal to the amortized cost of construction, interest, insurance, taxes, and administrative costs....

By letter of December 6, 1973, GSA proposed to the General Counsel of Committees that, assuming a surplus would occur in the escrow account, it is apparent that the rental rate for the building will exceed the rental rate necessary to amortize actual project costs, which latter rate is the limit imposed by the prospectus as strictly construed. Precise project costs cannot be finally determined until the construction contractor finally completes construction and all claims and change orders are resolved. As is the usual case with respect to large construction projects, such final completion and resolution of changes and claims may take place 6 months to a year after the building is substantially completed and ready for occupancy. Were the Government to delay closing until such final cost could be precisely determined, it would be deprived of full use of the building for an extended period and its rental cost would increase substantially. Interest on GRPI's construction loan (a project cost to be amortized by the Government rental payments) was accruing at the rate of approximately $10,000 per day. Based on amortization over the 20-year firm term of the lease, with interest at the agreed rate of 7.95 percent per annum, it would ultimately cost the Government approximately $20,000 to amortize the construction interest accruing each day, or approximately $600,000 for each 30-day delay.

The cost of effecting a prompt closing by using the proposed escrow procedure would be nominal as compared with the costs of delay. The interest costs incurred in amortizing each $1,000 of escrow surplus (over the term and at the rate referred to above) was approximately $1,000. Even if the surplus amounted to as much as $600,000 (which was most unlikely), the interest costs (at $1,000/thousand) of amortizing that amount would be $600,000, or equal to the costs of only a 30-day delay.

Because the escrow proposal might be construed as in conflict with a strict reading of that provision of the prospectus referred to above, counsel for the purchasers of the GRPI bonds requested GSA to obtain as additional assurance of the legality of the proposed lease, the opinion of counsel for the Committees on Public Works concurring in GSA's opinion that the approved lease prospectus authorizes the execution of a lease specifying a rental rate in the amount necessary to amortize project costs determinable as of the date of execution plus an escrow amount, reasonably calculated to allow for contingencies, to be disposed of in accordance with the procedures described above.

Chief Clark and Chief Counsel M. Barry Meyer of the Senate Committee by letter of December 10, 1973, responded as follows:

> I have reviewed your letter of December 6 and the lease construction prospectus for this building approved by the Senate Committee on Public Works on April 25, 1969. It is my opinion that the prospectus for this project approved by the Committees on Public Works includes authority to execute a lease specifying a rental rate in an amount necessary to amortize project costs determinable as of the date of execution of such lease plus an escrow amount, reasonably calculated to allow for contingencies and to be disposed of in accordance with the procedures described in your letter of December 6."

Richard J. Sullivan, Chief Counsel for the House Committee, by letter of December 21, 1973, responded as follows:

> After consultation with the Chairman of the full Committee, the Honorable John A. Blatnik, and the Chairman of the Subcommittee on Public Buildings and Grounds, the Honorable Kenneth J. Gray, and due to the pressing circumstances that you enumerate, particularly in connection with the proposed loss of $10,000 per day to the Federal Government, I am in a

position to advise you that you may proceed with this lease.

I would advise you further, however, that in my opinion, in the future if such circumstances develop, the proper procedure for you would be to submit to the Committees on Public Works of the House and the Senate a revised prospectus for the Committee's perusal and approval.

In other words, this approval at this time is not to be considered a precedent in any form, and that future situations of any type should follow the normal procedure under the Public Buildings Act of 1959, as amended. Due to the pressing circumstances of the present situation and the emergency nature thereof, I am constrained at this time to support your position and agree that this lease should be entered into.

Fire Safety Corrections

In response to a request to Fairfax County for an occupancy permit in advance of closing, an inspection of the facility was made by the County, and the County took the position that the construction and use of the building must comply with building and use ordinances of the County. As a result, the Urban County Board of Supervisors and other complainants filed suit in the Circuit Court of Fairfax County against Gulf-Reston, Inc., and other defendants. However, the Government took the position that County ordinances do not apply to the building, but agreed to cooperate with the County with respect to certain provisions of certain County ordinances in order not to delay the closing. An agreement was entered into on December 18, 1973, that in consideration of the mutual understandings, certain renovations would be performed within specified timeframes. The County, accordingly, issued the Occupancy Permit to Gulf-Reston Properties, Inc., and caused the suit to be dismissed with prejudice. It was, also, agreed that neither the execution of the agreement by the Government, nor any other act by the Government, shall be construed as an admission by the Government as to the applicability of any law, ordinance, or regulation of the County to the construction, use, or occupancy of the building.

GSA and Fairfax County had agreed on 18 fire safety corrections to bring the facility into agreed conformance. Fifteen of the items were assigned to the building manager for implementation and the necessary description of the work provided. The remaining three items, one of which involved a corridor exit from stairways 10 and 12, had to await the necessary drawings from Skidmore Owings & Merrill in Chicago. The new corridor exit required the release of a minor amount of space by USGS.

Corrective work was GSA's responsibility to be performed under its Repair and Improvement Program. USGS had no responsibility for the corrections.

Signing of the Documents

Closing was held on December 20, 1973, and the following documents executed in accordance with the Bond Purchase Agreement, dated as of June 28, 1971, and the agreement to lease between the Company and the Government, dated as of June 28, 1971.

Lease agreement between the company as Lessor, and the Government as Lessee, dated as of December 20, 1973.

Assignment of lease agreement from the company to the Trustee, dated as of December 20, 1973.

Consent to assignment of lease agreement by the Government as Lessee, dated as of December 20, 1973.

Ground lease between the Government as Lessor, and the company as Lessee, dated as of June 28, 1971.

Indenture and Deed of Trust between the company and the Trustee, dated as of December 20, 1973.

Pledge agreement between Gulf-Reston, Inc., and the Trustee as Pledgee, dated as of December 20, 1973.

Gulf intercompany agreement between Gulf Oil Corporation and Gulf Reston Properties, Inc. (GRPI), dated as of December 20, 1973.

GRI intercompany agreement between GRI and GRPI, dated as of December 20, 1973.

Bond purchase amount calculation, dated December 20, 1973.

Insurance waiver.

Escrow agreement.

Management of the National Center

The lease agreement, although referred to as a lease, is not similar to a normal lease, wherein the Government merely leases space with no interest to eventual ownership of the facility. It is similar and subject to the same ground rules as GSA's Purchase Contract Program, under which the USGS headquarters facility was initially authorized with the improvements becoming the property of the Government at the end of the 20-year term or sooner, should the Government exercise the option to purchase the premises from the Lessor for a price equal to the purchase price for the building, the amount required to prepay in full on the date of purchase all of the bonds outstanding under the indenture in accordance with the provisions of the indenture.

The facility is treated as a Government-owned facility for management purposes, with all management, operation, maintenance, protection, and repair costs paid by the Government. As a matter of policy, the Government acts as self insurer and protects the Lessor and Bondholders against any loss, as a result of damage or destruction of the buildings and appurtenances thereto. During the life of the lease, the Government is responsible for all tax assessments and all other governmental charges of any nature which may be levied, assessed, or imposed against the Lessor.

FINE ARTS PROGRAM

The Theme—Earth Science

The goal of the Geological Survey was to provide a fine arts collection of high quality to complement the architecture of its new headquarters in its natural and new community setting. The policy of the General Services Administration (GSA) is to incorporate fine arts, as appropriate, in the design of selected new public buildings. Fine arts, including painting, sculpture, and artistic work in other mediums, will reflect the national cultural heritage and emphasize the work of living American artists (FPMR 101-19 003-4). Generally, GSA would set aside one-half percent of the construction appropriation for fine arts. However, as no funds were appropriated for construction of the USGS National Center, no funds were allocated by GSA for fine arts.

In preparation for the move to the new headquarters in Reston, Director McKelvey, by memorandum of April 10, 1972, established the National Center Fine Arts Committee, a permanent organization reporting to the Director for the Fine Arts Program, and for matters other than fine arts to the Assistant Director for Administration. The purpose and function of the committee is to review, on a continuing basis, the aesthetics of the National Center building and grounds, and make recommendations to the Director for the purpose of providing an interesting and pleasing environment. The committee advises on a fine arts program, which includes painting, sculpture, mural work, woven fabric, etching, photography, and other art media, and makes recommendations as to the type and location of material to be exhibited, both inside and outside the building. The committee also considers and makes recommendations regarding other materials and objects used at the National Center, which affect its appearance and aesthetic appeal.

Jerald M. Goldberg, Geologic Division, was named Chairperson, and the membership comprised representatives of the program and support divisions of the Geological Survey and other occupants of the National Center interested in furthering the fine arts program. William B. Overstreet, Special Assistant in his capacity as coordinator of the move to Reston, served as technical advisor to the committee.

Principal	Alternate
Director's Office	
Linda Sue Wither	Talmadge W. Reed
Administrative Division	
Gene Rogers	Ed Robertson
Publications Division	
Larry Frost	James L. Caldwell
	Irene Pannill
Water Resources Division	
Joan Rubin	James L. Hatchett
Topographic Division	
Eugene Zang	James G. Waters
Conservation Division	
Florence Lee	Betty Ludington
Land Information and Analysis	
Theresa Sousa	Priscilla Woll
Computer Center Division	
Sharon Harris	Charles Eastman
Geologic Division	
Doug Kinney	Ozzie Girard

The first assignment of the committee was to develop a master plan for fine arts collection. The committee's first report proposed a fine arts collection using traditional art media confined to the display of art within the building. The second report introduced into the fine arts collection unusual media such as geologic specimens, artifacts, maps, and sculpture created from paraphernalia used by the earth scientist to communicate the theme "Earth Science" in an interesting and stimulating way. It also covered plans to extend the fine arts collection outward to the grounds surrounding the buildings.

The Geological Survey engaged the services of Mildred Constantine, under a phased contract, to prepare (Phase I) a master plan based upon an Earth Science theme and, upon the Director's approval under Phase II, to formulate and design exhibits, which reflect the provisions of the master plan and in so doing recommend sources and obtain quotations of acquiring art objects through loans, gifts, and purchases.

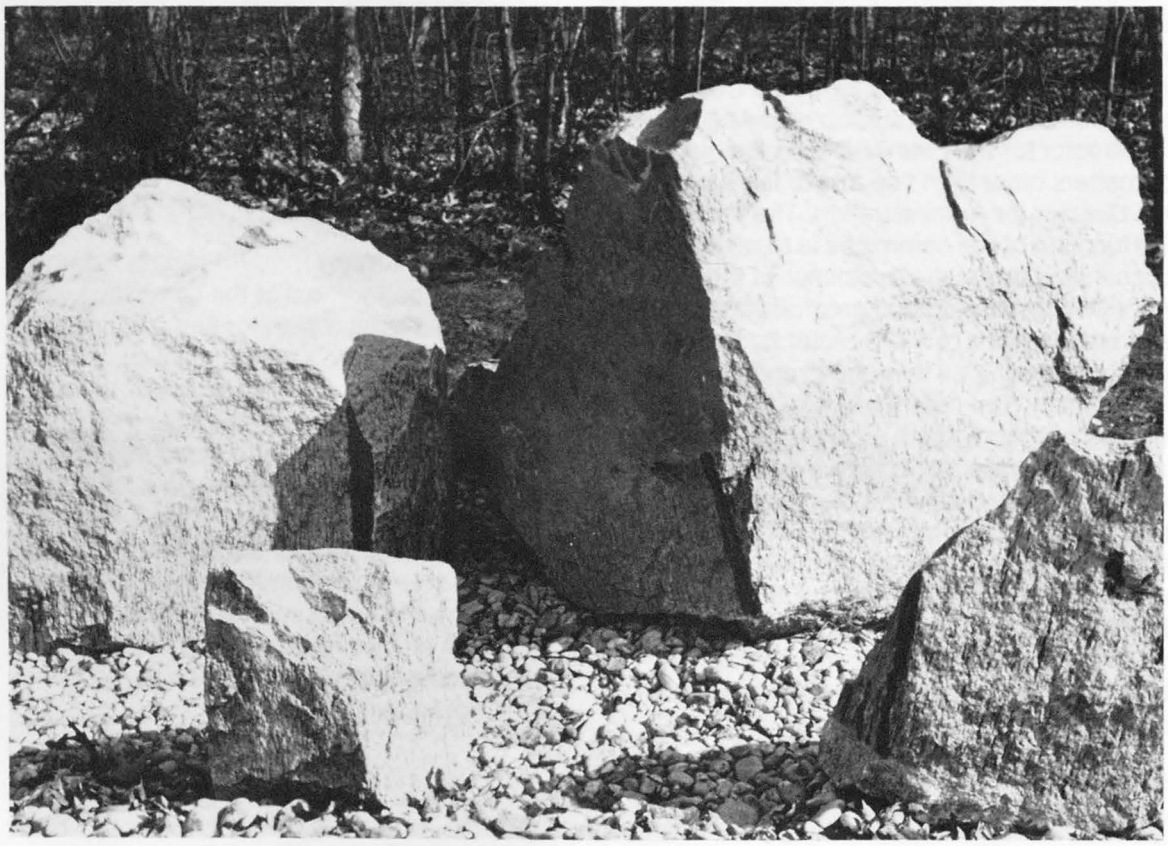
Director McKelvey personally reviewed and accepted the master plan dated April 3, 1974, noting suggestions and comments on the plan and made the overall comment, "an excellent beginning, let's do as much of it as possible." He urged that the Survey begin with Phase II immediately.

The architect's master plan to the National Center site, the land support areas surrounding the building, and the advanced design of the building offered unusual opportunities for displaying fine arts, sculptures, and interesting natural materials.

The National Center Site

The main building, satellite buildings, surrounding parking lots, and roadways occupy roughly one-half of the 105-acre National Center site. Care was taken to blend the buildings with the natural, wooded area of diverse native Virginia vegetation. The composition of the woodlands reflects the influence of residual soils developed on the underlying bedrock, the availability of water, and the site's past and current land use. The site displays the harmony that can be achieved between people and nature. It provides a favorable habitat for many resident and migratory birds, insects, and large and small mammals.

The development plan focuses on the geology and hydrology of the National Center site and on two trails that wind through it. One trail displays the diversity of the tree population in the woodland areas. The other leads past the large, varied rock specimens placed on gravel pads throughout the site.



Rock specimens placed on a gravel pad.

In addition to the laboratories and other offices, the Powell Federal Building houses the world's largest earth science library, the National Cartographic and Geographic Information Services, and the Earth Science Information Center. Permanent exhibits about the Survey's history, research projects, and mineral specimens abound, and one of the main floor corridors is the site of periodic fine arts exhibits. Engraved copper printing plates of early USGS maps, fashioned as sculptures, decorate the cafeteria walls. Other exhibits illustrate studies of current national interest, on free-standing panels, prepared for scientific meetings or for special topics such as the 1964 Alaskan earthquake.

The exhibits show how the USGS fulfills its responsibilities for "the classification of public lands and examination of the geological structure, mineral resources and products of the national domain," as mandated by Congress in 1879. This work includes production of topographic and geologic maps and preparation of reports on: (1) ground water and mineral resource potential; (2) probabilities and causes of natural hazards such as landslides, mudflows, earthquakes, or volcanic eruptions; (3) estimates of energy resources, both onshore and on the outer continental shelf; and (4) geologic and hydrologic processes and products in general.

Dr. William T. Pecora Memorial

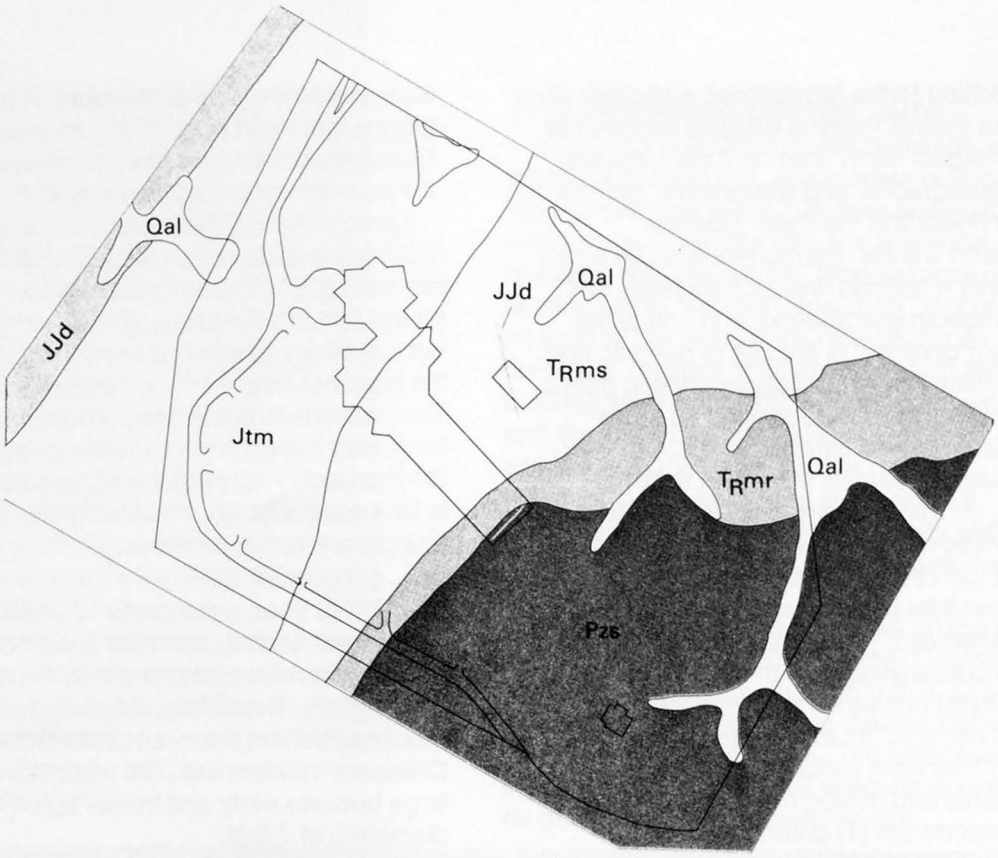
Dr. William T. Pecora, Director of the Survey (1965-1971), and Under Secretary of the Interior, made a significant contribution to the National Center project, which has been appropriately memorialized in the rock garden walk around the USGS site. Two "dawn redwood" trees have been planted near the large tinguaite specimen, immediately west of the entrance drive. Dr. Pecora was especially fond of this rare deciduous tree, which lives in central China. Fossils of the same genus *(Metasequoia)* were found in 60-million-year-old rocks from Dr. Pecora's field area, the Bearpaw Mountains of Montana. A bronze plaque, provided through the courtesy of Government Services, Inc. memorializing Dr. Pecora, is installed at the location.

Dawn redwood trees (*Metasequoia glyptostroboides)* are native to central China. The two transplanted on the USGS National Center in 1974 are the progeny of one of several hundred trees grown from seed brought to the National Arboretum in 1948 and 1949. The parent tree has a narrow, pyramidal form, with bright green summer foliage retained in the progeny, because propagation is by rooted cuttings. The tree grows rapidly. The parent tree in northeast Washington, D.C., grew to 35 feet in 10 years from seed. The USGS trees were about 12 years old when transplanted, and after a year of recovery from transplanting they began to grow rapidly. Eventually, they will overtop the oak trees behind them, as dawn redwoods in China are 100 feet tall. The trees develop a large buttress early and trunks reach diameters of 7 feet.

Dawn redwood was first described from fossil deposits and assigned to the genus, *Taxites,* a relative of the yew. Later, it was believed to be a Sequoia redwood. Later, the Japanese paleobotanist, Shigeru Miki, in 1941 believed the specimens not to be *Sequoia,* and established the new genus, *Metasequoia.* Fossils have been described from Tertiary deposits throughout the northern hemisphere.

In 1941, a Chinese forester, Tsang Wang, found a tree in west central China near Chungking that was unlike, but similar to, redwood. It proved to be the living specimen of the fossil, *Metasequoia.* Trees in this area were the source of seed brought to the United States in 1948-49.

The trees, selection cutting from the parent tree, were obtained through the courtesy of Dr. John Creech, Director of the National Arboretum, and transplanted by the National Capital Region of the National Park Service.



GEOLOGIC MAP OF THE U.S.G.S. NATIONAL CENTER SITE

ROCK UNITS AND GEOLOGIC CROSS SECTION OF THE NATIONAL CENTER SITE

CENOZOIC

Qal — Alluvium (Quaternary)—layered stream deposits of sand, gravel, silt and clay

MESOZOIC

JJd — Diabase (Jurassic)—about 195-million-year-old, dark-colored, intrusive igneous rock composed primarily of plagioclase feldspar and pyroxene.

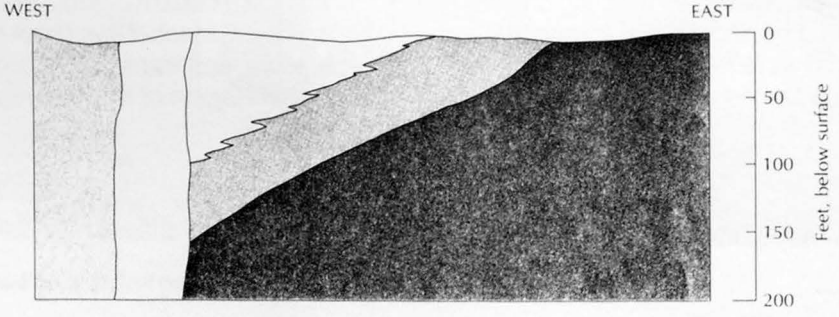
Jtm — Hornfels (Jurassic)—about 195-million-year-old, gray to mauve metamorphic rock. Intrusion of the diabase changed the original Triassic shale and siltstone, from soft sediments to hard, brittle hornfels.

T_Rms — Sandstone (Triassic)—about 220-million-year-old, red brown to gray, feldspar and mica-bearing sandstone interbedded with siltstone and shale (member of Manassas Sandstone).

T_Rmr — Conglomerate (Triassic)—crudely bedded quartz and schist pebbles in a sandstone and shale matrix (member of Manassas Sandstone).

PRECAMBRIAN

Pzs — Schist (Late Proterozoic)—about 550-650-million-year-old, shiny dark green to gray, foliated metamorphic rock containing mica, chlorite, feldspar and quartz; commonly cut by quartz veins (Peters Creek Schist).



Typical cross section of the rock units ot the eastern margin of the Triassic Lowland and Piedmont crystalline rock province. Geology has been based on outcrops, soil distribution and foundation borings.

Summary of Geology and Hydrology

The USGS National Center site straddles the boundary of the eastern edge of the Triassic Lowland and the margin of the Piedmont crystalline rock province. The Piedmont Upland, at the east side of the site, is underlain by the Peters Creek Schist, a foliated metamorphic rock that is probably 550 to 650 million years old. The schist is overlain, at an erosion unconformity, by a layered sequence of conglomerate, sandstone, siltstone, and shale. These sedimentary rocks of late Triassic age are typically dark red. The sedimentary sequence was intruded by 195-million-year-old diabase, some of which lies 1,640 feet west of the site. The rocks in contact with the diabase intrusion were thermally metamorphosed (changed by heat) into hornfels, a brittle gray and mauve rock containing abundant green epidote crystals. The layered rocks are locally cut by normal faults and tilted 10 to 30 degrees to the west. The rocks were eroded over time and are weathered near the surface. A veneer of Quaternary alluvial sand, gravel, silt, and clay occupies the two small stream valleys that drain most of the National Center site.

Stave Run and Smilax Branch are tributaries of Sugarland Run, which flows north and empties into the Potomac River. The two streams were greatly affected by the construction of the Powell Federal Building and Sunrise Valley Drive. During the early phases of construction in 1972 and 1973, the volume of sediment carried by the streams increased greatly. In 1972, it was 42.6 metric tons per hectare, 40 times the previous annual average. The volume decreased to 23.1 metric tons per hectare in 1973, and finally to 1.04 metric tons per hectare in 1974. The sediment yields in 1972 were especially high because Hurricane Agnes drenched the open construction site from June 21to 23. The streamflow rates and sediment yields were stabilized by the completion of construction, paving and sewer installation, the replacement of topsoil, regrading, and landscaping.

The Water Resources Division of the USGS continuously monitors the groundwater level at several observation wells on the National Center site. Between 1976 and 1980, the wells were drilled, or cored, to depths of 63 meters (205 feet) to 184 meters (605 feet). An observation well, containing a continuous water level recorder (hydrograph), is northeast of the main building in a small enclosed hut. Display panels explain its operation and provide additional information on the local and regional hydrogeology. The observation well can be reached by taking the woodland walk.

NATIONAL CENTER DEDICATION

In Summary

Ceremonies marking the formal dedication of the U.S. Geological Survey's new National Center were held at Reston, Virginia, July 10-14, 1974.

Activities started with a two-day earth science symposium held in the Survey's auditorium, featuring presentation of several papers by some of the Nation's top natural resource and environmental authorities. The symposium, "Earth Science in the Public Service," included discussions of such topics as appraisals of the Nation's mineral, energy, and water resources; meeting the needs of a "Second America"; surveying the Earth from space; and plans to reduce hazards of natural disasters, such as earthquakes.

Outdoor ceremonies were held on Friday, July 12 at 10:30 a.m. to officially dedicate the John Wesley Powell Federal Building, the major part of the Survey's facility, being named in honor of the pioneer explorer of the Colorado River, who is now recognized as the Nation's earliest proponent of dynamic conservation.

Rogers C. B. Morton, Secretary of the Interior, was the keynote speaker at the outdoor ceremonies. Platform guests included members of the Congress, other Federal, State, and county officials, as well as representatives from industry.

Included in the ceremonies of July 12 was a presentation by Secretary Morton and James Fletcher, NASA Administrator, of the first William T. Pecora Award to William A. Fischer, Chief, Earth Resources Observation Systems. Sponsored jointly by NASA and Interior, the award will be presented annually in recognition of "outstanding contributions of individuals or groups toward the understanding

Hon. Rogers C. B. Morton speaks at Reston dedication ceremony.

of the Earth by means of remote sensing." The award was established to honor the memory of the late Dr. William T. Pecora, former Director of the U.S. Geological Survey, and later Under Secretary of the Interior.

On July 12 between 1:00 p.m. and 4:00 p.m. and on July 13, the final day of the dedication ceremonies, between 9:00 a.m. and 4:00 p.m., the Survey's National Center was opened to the general public. Survey personnel were available to assist visitors to the facility and to explain how the agency conducts geologic, hydrologic, and topographic mapping investigations and how its earth science research, environmental monitoring, and data-gathering work is used in coping with natural resource and environmental problems.

Schedule of Events

July 10, 1974 - Auditorium

SYMPOSIUM: "EARTH SCIENCE IN THE PUBLIC SERVICE"

I. "The National Energy, Mineral and Water Resource Base—A Survey"

Moderator - Frank E. Clarke, Senior Scientist, USGS

- Welcoming Remarks
  Vincent E. McKelvey, Director, USGS
- The Geological Survey in the Public Service
  C. H. Smith, Assistant Deputy Minister, Department of Energy, Mines and Resources, Ottawa, Canada
- Energy Resource Appraisal and Analysis
  Joseph L. Fisher, Director, Resources for the Future, Inc., Washington, D.C.
- Mineral Resource Quantity and Quality
  John D. Ridge, Head, Department of Mineral Economics, Pennsylvania State University, University Park, Pennsylvania
- Water Resource Quantity and Quality
  M. Gordon Wolman, Chairman, Department of Geography and Engineering, Johns Hopkins University, Baltimore, Maryland

II. "Resource Development and Environmental Conservation—A Quest for Balance"

Moderator - Henry W. Coulter, Assistant Director, USGS

- Environmental Analysis
  Beatrice E. Willard, Member, Council on Environmental Quality, Washington, D.C.
- Lease Management and Resource Conservation
  Donald Kash, Director, Science and Public Policy Program, University of Oklahoma, Norman, Oklahoma
- Resource and Environmental Data Analysis
  Daniel F. Merriam, Chairman, Department of Geology, Syracuse University, Syracuse, New York
- Discussion

July 11, 1974 - Auditorium

III. "Future Directions for Future Needs—A Program to Meet the Needs of the 'Second America'"

Moderator - James R. Balsley, Assistant Director, USGS

- New Directions in Topographic Mapping
  James L. Calver, State Geologist, Virginia Division of Mineral Resources, Charlottesville, Virginia
- Geodynamics
  Charles L. Drake, Professor, Department of Earth Sciences, Dartmouth College, Hanover, New Hampshire
- Earth Resource Surveys
  George J. Zissis, Senior Scientist, Environmental Research Institute of Michigan, Ann Arbor, Michigan
- Federal Interagency Coordination of Natural Resource Studies
  Robert M. White, Administrator, National Oceanic and Atmospheric Administration, Rockville, Maryland

IV. "Interfaces for a National Response to Resource Demands—A Need for Interagency-Interdisciplinary Coordination"

Moderator - Montis R. Klepper, Assistant Director, USGS

- Land Resource Use and Analysis
  John C. Frye, Chief, Illinois State Geological Survey, Urbana, Illinois
- Technology Information Transfer
  A. L. Bettwy, State Land Commissioner, Phoenix, Arizona

- Natural Hazards Reduction
  Frank Press, Chairman, Department of Earth and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, Massachusetts
- Interdisciplinary Approach to the Solution of Natural Resource Problems
  Nathaniel P. Reed, Assistant Secretary for Fish and Wildlife and Parks, Interior Department

Symposium Stressed the Needs for "Second America"

The need and problems associated with finding the mineral and energy resources to build a "Second America" duplicating in the next 25 years, the growth and development of the previous 200 years, was a key theme discussed at the symposium of Federal, State, and university earth science experts.

According to Dr. V. E. McKelvey, Director, U.S. Geological Survey, *"the symposium, Earth Science in the Public Service, will provide an opportunity for a wide range of specialists to pinpoint some of the national problems that lie ahead and deserve attention from earth scientists in general and from the USGS, as the Nation's principal earth resources agency, in particular."*

"The scientists and engineers who have gathered here not only will help us dedicate the John Wesley Powell Federal Building, but more important, will help us, with their fresh insight and viewpoints, rededicate the U.S Geological Survey to a second century of service in appraising and investigating the natural resources and earth hazards of the United States," McKelvey said.

The symposium covered a wide range of earth resource problems, from reducing the effects of natural hazards, such as earthquakes and floods, to methods of developing adequate energy resources with a minimum of environmental damage. Among the papers presented were:

"BARN DOOR CLOSING TOO SLOWLY" ON NATURAL HAZARDS: said Dr. Frank Press, Chairman, Department of Earth and Planetary Sciences, Massachusetts Institute of Technology.

> *"Perhaps nowhere has the value of basic research in solving people problems been more aptly demonstrated than in the field of natural hazards. Yet, despite the great advances in our knowledge of natural hazards and improvements in our ability to predict such hazards as hurricanes, floods, landslides, and even earthquakes, the typical response is still to react after a natural disaster occurs rather than to prepare for the disaster ahead of time."*
>
> *"The yearly cost of not planning ahead on the local and regional level can be measured in hundreds of lives and millions of dollars, and this annual toll does not take into account the less frequent but still predictable large-scale disasters—the San Francisco earthquakes and the Galveston floods—whose cost in lives and property is incalculable. All of which suggests that the most important immediate role that can be played by the Federal Government in general and the U.S. Geological* Survey in particular is to speed *up the process of communication between the scientific community and local government so that the full weight of our scientific knowledge can be applied and used in local zoning ordinances, building codes, and other local actions that can directly reduce the toll from natural disasters."*

GEOLOGICAL SURVEYS NEED TO GO ON WARTIME FOOTING: In tracing the similar growth and developments of the U.S. and Canadian Geological Surveys, Dr. Charles H. Smith, Assistant Deputy Minister, Canada Department of Energy, Mines and Resoures, said,

> *"Our two Geological Surveys today are being put under increasingly severe pressures, the likes of which have probably*

never happened in the peacetime periods of the past since the time of Powell and Logan. In fact, human occupation over the surface of the Earth has grown to such an extent that man is recognized as a geological agent himself. Unfortunately, man's progress has outstripped the rate at which knowledge of our lands and their resource base has been generated, communicated, and understood by policy makers and the public. The aim of Powell to "educate the Nation" has been achieved in only a limited way."

"Now the public and governments are concerned over increased warnings of resource depletion and man's effect on his environment. Who will provide the public with the basic information as to resource depletion or environmental degradation? I submit this is the responsibility of the National Geological Surveys. For Geological Surveys to keep up this increasing responsibility will require focusing talents and efforts on wartime footing. The possibilities of disaster, however, warrant such a reaction, even if only to prove the dire predictions unfounded or premature."

POLITICS, BANDWAGONS, AND THE ADVANCE OF SCIENCE POLICY: According to Dr. M. Gordon Wolman, Chairman, Department of Geography and Environmental Engineering, Johns Hopkins University,

"A review of the "stop-and-go" progress in the field of water resource policy during the past 100 years demonstrates aptly the strange marriage between politics and science. The lessons of the past indicate that scientists will have to learn to adapt to riding current political bandwagons—such as the environmental push and the energy crisis—if they want to see the maximum use of scientific knowledge in determining public policy."

"For example, 100 years ago, Major Powell was able to ride the bandwagon of the popular desire to open the West to initiate a systematic survey of the western territories. But he failed as a hydrographer because his short-lived Irrigation Survey seemed destined to derail the bandwagon and limit growth in the arid West. Similarly, one of the greatest periods in the advancement of public water works construction and theory—including such monuments as TVA, Grand Coulee Dam, and the theories of runoff analysis, flood routing, drought evaluation, and ground water behavior—came in the wake of the floods, droughts, and economic upheavals of the 30's."

"While recent isolated events have stirred the Nation's interest in environmental problems, there have been no dramatic events on the natural scene like those of the 30's to sustain progress in the water resources fields. Perhaps because of this, our monitoring of water quality, to take just one example, remains woefully inadequate, as the USGS Director has pointed out."

TIME FOR SYSTEMATIC EXPLORATION OF U.S. MINERALS "CELLAR", according to Dr. John D. Ridge, Head, Department of Mineral Economics, Pennsylvania State University.

"Although it is impossible for the United States to become self-sufficient in providing for its needs of metallic raw materials, the Nation must obtain the best estimate possible of the quantities its subsoil contains of these materials. Only through a systematic drilling program across the entire United States can we be certain that all deposits of mineral and fuel materials in the outer three miles of the crust of this country will be found."

"Such a systematic drilling program would be a radical departure from present exploration practices, but it would uncover the ore potential of the entire country much faster. Systematic drill prospecting would also be expensive, requiring about 7,500 holes three miles deep at a cost of about $3 billion, certainly beyond the financial resources of individual mining and petroleum companies or even groups of companies. Thus, it seems obvious that the necessary systematic drilling program must be carried out by the U.S. Geological

Survey with the results being made public property. Furthermore, it can be convincingly argued that so much recoverable mineral and fuel material would be found by such drilling that the cost would be repaid many times over".

"DRIFTING CONTINENTS" BRINGING EARTH SCIENTISTS TOGETHER:
Dr. Charles L. Drake, Professor, Department of Earth Sciences, Dartmouth College.

"The plate tectonics theory—developed during the last decade to explain the nature and history of the Earth's crust and its structural features—has been a unifying force on all elements of the geologic community. The theory, which also explains the apparent drifting of the continents, has major implications to a wide range of earth science subjects, from natural disasters to the emplacement of economic concentrations of minerals and hydrocarbons."

"Because of the importance of the plate tectonic model, some 50 countries are now participating in a Geodynamics Project to focus on studies of the new model. The U.S. Geological Survey already has a long association with the development of the model, which was initially based upon USGS magnetic stratigraphy as well as deep focus earthquake data, much of which is derived from the Worldwide Standard Seismograph Network now operated by the USGS. Obviously, because of its interests and responsibilities, the Geological Survey should play a major role in the international Geodynamics Project."

FUTURE LAND USE WILL DEPEND ON GEOLOGIC EVALUATION: Dr. John C. Frye, Chief, Illinois State Geological Survey.

"The demands and needs of our presently increasing population require that we depart from the philosophies of earlier cultures—be they ancient, primitive, or Western—in their approach to the use of our land resources. Social decisions for land use must, in the future, be based on the best and most reliable information that our public decision makers can obtain. We can no longer afford whimsical or emotional decisions, or decisions based on vicious self-interest. Earth scientists must use all of the developing and advancing technology available to furnish our public administrators with these needed data. And, in turn, governmental bodies must support the acquisition of the needed data, at Federal, State, and local levels, by encouragement, funding, and implementation."

July 12, 1974 - National Center Grounds

DEDICATION CEREMONY:
JOHN WESLEY POWELL
FEDERAL BUILDING

Musical Prelude - U.S. Air Force Ceremonial Band
Master of Ceremonies - W. A. Radlinski, Associate Director, USGS
Presentation of Colors - Joint Armed Forces Color Guard
National Anthem - Camille Elias
Invocation - Reverend Harris Findlay
Introduction of Platform Guests
Welcoming Remarks - Vincent E. McKelvey, Director, USGS
Presentation of William T. Pecora Award - Honorable Rogers C. B. Morton, Secretary of the Interior and James T. Fletcher, Administrator, National Aeronautics and Space Administration
Dedication Address - Secretary Rogers C. B. Morton
Benediction - Rabbi E. Arnold Siegel

U.S. GEOLOGICAL SURVEY
DEDICATION PLATFORM GUESTS

Honorable Rogers C.B. Morton
Secretary of the Interior

Honorable James C. Fletcher
Administrator, NASA

Congressman Kenneth Gray (Ill.)

Honorable John C. Whitaker
Under Secretary of the Interior

Honorable Jack O. Horton

Assistant Secretary—Land and Water Resources

Honorable Royston C. Hughes
Assistant Secretary—Program Development and Budget

Mr. Tom Burgess
Executive Director, Reston Home Owners Association

Mrs. Diana H. Hausly
President, Reston Community Association

Rabbi E. Arnold Siegel
Northern Virginia Hebrew Congregation, Reston

Rev. Harris Findlay
Church of St. Thomas a Becket, Reston

Mr. A. J. Clark, President
The George Hyman Construction Company

Mr. Walter Netsch
Partner, Skidmore, Owings and Merrill

Honorable James T. Clark
Assistant Secretary—Management

Honorable C. King Mallory
Acting Assistant Secretary—Energy and Minerals

Mr. H.D. Harvell
Assistant Commissioner, Public Building Service

Dr. V.E. McKelvey
Director, USGS

Mr. William A. Radlinski
Associate Director, USGS

Mr. William A. Fischer
Recipient of William T. Pecora Award

Mrs. Jean R. Packard
Chairman, Fairfax County Board of Supervisor

Mr. Malcolm Belt
Vice President, American Security Corporation

Mr. James A. Strosnider
Fredric R. Harris, Inc.

Mr. William H. Magness
Chairman of the Board, Gulf-Reston, Inc.

Dr. Robert White
Administrator, NOAA

Lt. General Howard W. Penney
Director, Defense Mapping Agency

Mr. William A. Schmidt
Special Ass't to the Director, USGS

Mr. Robert Lyddan
Chairman, Building Committee, USGS

Mrs. V. E. McKelvey

Mrs. Martha V. Pennino
Fairfax Supervisor—Centreville District

Dr. Charles H. Smith
Assistant Deputy Minister, Department of Energy, Mines & Resources, Ottawa, Canada

Mrs. William T. Pecora

Mrs. John A. Smith
Powell family representative

Camille Elias
Office of the Secretary, Department of the Interior

REMARKS OF SECRETARY OF THE INTERIOR, ROGERS C. B. MORTON AT DEDICATION CEREMONIES, JOHN WESLEY POWELL FEDERAL BUILDING, U.S. GEOLOGICAL SURVEY NATIONAL CENTER, RESTON, VIRGINIA, JULY 12, 1974

"About three years ago to the day I had the pleasure of participating in ground breaking ceremonies for the John Wesley Powell Federal Building, which we dedicate today.

This striking building represents a vision that has become a reality. It is the final product that started with a concept, advanced through the blueprint stage, and emerged as an imposing structure of steel and concrete. It will serve us all as the home and headquarters of the Nation's foremost institute dedicated to the acquisition and dissemination of knowledge about the earth.

This new building will be a needed asset for the great task we face in providing for our future needs. Dr. McKelvey has often referred to this task as that of building a second America.

Between now and the year 2000 we shall have to provide as much in the way of goods and services, homes and schools, food and transportation, as has so far been done in the entire history of the Nation. We shall in this sense, have built America all over again—a Second America.

There is also implicit in this concept the notion that we shall have learned something from our experience in building the First America, and that the new model will reflect a regard for our natural heritage that was sadly deficient in the old one.

But if we are going to build America all over again, and do it with a regard for the world of nature that we never before exhibited, we are going to have to begin with a regard for mineral science and technology that we never before exhibited, either.

It is hard to realize just how vast our mineral requirements are going to be in another 20 to 30 years.

By the year 2000, we can expect demand for a aluminum to be eight times what it is today; demand for copper will nearly quadruple; chromium use will rise 2-1/2 times; demand for phosphorus may triple; and demand for uranium can be expected to expand 15 times. Our needs for water will at least double.

But domestic supply in many minerals is not keeping up with current demand, let alone the large increases we have projected. So the gap between consumption and domestic production is widening every year, and at a disturbing rate.

In 1950, imports of iron ore represented one-eighth percent of our supply. Today they account for one-third.

The share of oil imports in total supply rose from one-eighth percent to more than one-third in the same period; that of potash from one-eighth to one-half; aluminum from two-thirds to seven-eighths.

Consumption of minerals outstripped domestic production by $8 billion in 1973. Less than 60 percent of our metals, by value, now come from domestic mines.

As we turn abroad to satisfy our increasing mineral needs, however, we are finding that the demands of other nations are increasing even faster than our own. A long-term shift in trading advantage from buyer to seller in the world market for minerals is occurring, year by year, commodity by commodity.

This is not to say that the world market for minerals is going to disappear or become unavailable to us. We must continue to supply substantial portions of our needs from abroad.

But increasingly, we shall have less and less to say about the terms under which those supplies are made available to us.

We have long taken the world market for granted. It would be foolish to do so in the future.

So we are bound to look homeward for the satisfaction of the bulk of our expanding energy and mineral needs for building the Second America, and we must do this within the context of rising costs and increasing difficulty in finding and extracting the minerals we need.

The inexorable force of depletion has for the moment at least, gotten ahead of technology. The trend of declining mineral costs that prevailed for decades has been replaced by one of rising costs as we find ourselves scratching harder and deeper for smaller and leaner deposits.

We are, moreover, only now recognizing the social costs of production as being items properly chargeable on the producer's books.

Some of these are transfers from other segments of the economy: others are not. All will increase the price of the commodities against which they are charged.

If we are to meet the challenge of providing minerals for the Second America, we must begin a massive revitalization and rededication of mineral science and technology.

If new resources are to be discovered—as they must—we shall need something better than yesterday's techniques. And yesterday's methods of mining and processing will have to be examined critically in order to develop new technologies that will permit more effective exploitation of the mineral resources now being mined.

Moreover, all these things must be done with due regard to health and safety, environmental protection and land use.

Downstream, our technology with respect to reuse of mineral commodities—their recycling into productive channels—must be improved and the application of new methods accelerated.

The job to be done is immense. Can we solve these problems? The answer will depend upon the sense of commitment, of involvement, of cooperation that we can muster.

I choose to be optimistic. The merest glance at history shows the phenomenal advance of Man over a period of 10,000 years from food-gathering to industrial societies. These complex societies were developed because of Man's capacity to innovate, plan, obtain information, analyze it, pass it along, and, in sum, to increase each level of intellect through research and development.

And we cannot, must not, forget that our problems are not national. The natural processes that forged our planet and created the bases for our crustal resources are planetary. While the efforts we make are for our own account, we must be sensitive to international give and take. We will always be dependent on other nations for chromite because we have none, nor do we have enough mercury, manganese or nickel of our own to say we are ever likely to be self-sufficient in those metals.

I said that I'm optimistic. And this brings me to this occasion, and to the people of the U.S. Geological Survey.

These earth science specialists have come into their own. Theirs is no longer the world of ivory towers. If it is the earth's crust that provides the wherewithal for our survival, then obviously we must have an intimate understanding of the earth.

It is the earth scientist who must inquire into geologic processes that have been at work over the span of our planet's history. The environment and its shaping forces must be analyzed—and Man's interaction with it—on a scale never before achieved.

How we seek our natural resources

- the methods used in obtaining them, the impact of development on the environment

- all of these will be guided in large degree and will be successful only to the extent

that the earth scientist can provide the accurate and timely data needed for wise decision-making.

Most of all, it will depend on the questing search for truth, for knowledge, for understanding that have long been characteristic of the Survey.

Just about 100 years ago, that same spirit was exhibited by John Wesley Powell—pioneer explorer of the Colorado River, the Survey's Director for a 13-year span in its early history, and perhaps the Nation's earliest exponent of dynamic conservation.

Powell was not only a fine scientist, explorer, and administrator, he was an extremely prescient man, and foresaw many of the problems we now encounter. His brilliant work paved the way for water resource and irrigation studies that helped to settle the West. He opened the eyes of the Nation to the need for systematic resource surveys.

In the same spirit, we also honor today the late Dr. William Thomas Pecora, Survey Director and later Under Secretary of this Department who was a man for his time—and for the future.

In one of his last addresses Dr. Pecora said that the National Environmental Policy Act of 1969 represented the expression of a national conscience.

This national conscience, he said, together with other bills before the Congress, would eventually determine the course of our National Conservation Policy. The voice of reason will be heard throughout the land, and prudent judgments will be made on the basis of factual information and thoughtful assessments.

Only by examining man's effects in the light of natural processes, Dr. Pecora said, can we reach long-term decisions that will stand the test of time.

Bill Pecora stressed that any ethic of conservation requires a better understanding of the natural base line before rigorous actions are taken out of apprehension and ignorance.

Science and research, he said, are needed more than ever to provide guidance to courses of national action aimed at fulfilling human needs.

He had confidence. As the most intelligent species on earth, he said, man can certainly provide for himself and yet prudently protect the total ecosystem from unnecessary and unacceptable degradation.

Powell, Pecora, and so many others of the Geological Survey have expressed this recurring optimism about man's intelligence. To underline his confidence in the future, Dr. Pecora used to quote these words from a poem of James Russell Lowell:

"New times demand new measures and new men;

The world advances, and in time outgrows

The laws that in our father's day were best;

And doubtless, after us some better scheme

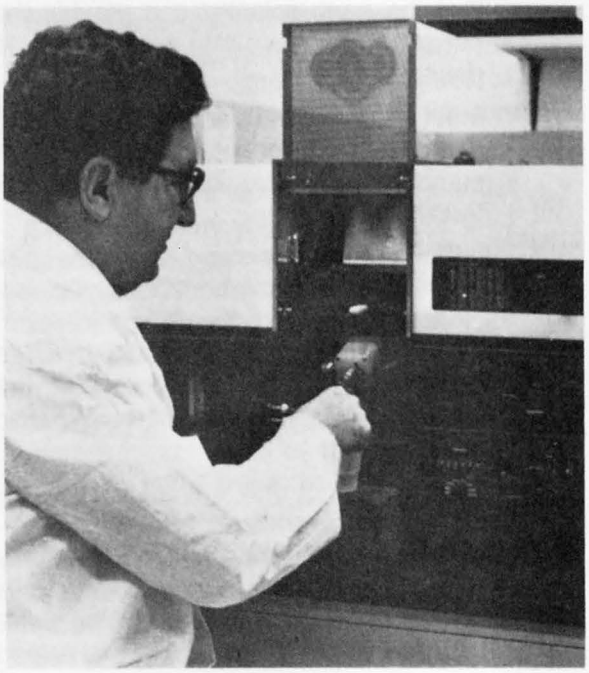
Will be shaped out by wiser men than we,

Made wiser by the steady growth of truth."

It is to the growth of truth that the U.S. Geological Survey has been dedicated throughout its history, and it is to the continued growth of truth that we dedicate the John Wesley Powell Federal Building today."

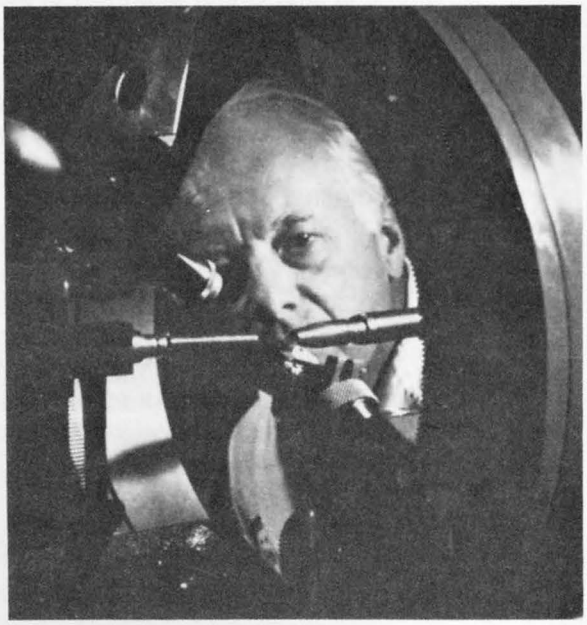
OPEN HOUSE—TOURS OF THE NATIONAL CENTER
July 12 and 13, 1974

Open house tours of the National Center facilities began following the dedication ceremony on Friday and continued through Saturday. The tours started in the auditorium with a brief orientation of the activities of the U.S. Geological Survey. The tours following the orientation were unstructured, in order to allow the public an opportunity to see those areas of particular interest to them. At various tour stops throughout the Center, persons were available to explain the operations conducted in that area. All events associated with the four-day program were open to Survey employees, their families and friends, with an official welcome from Director McKelvey.

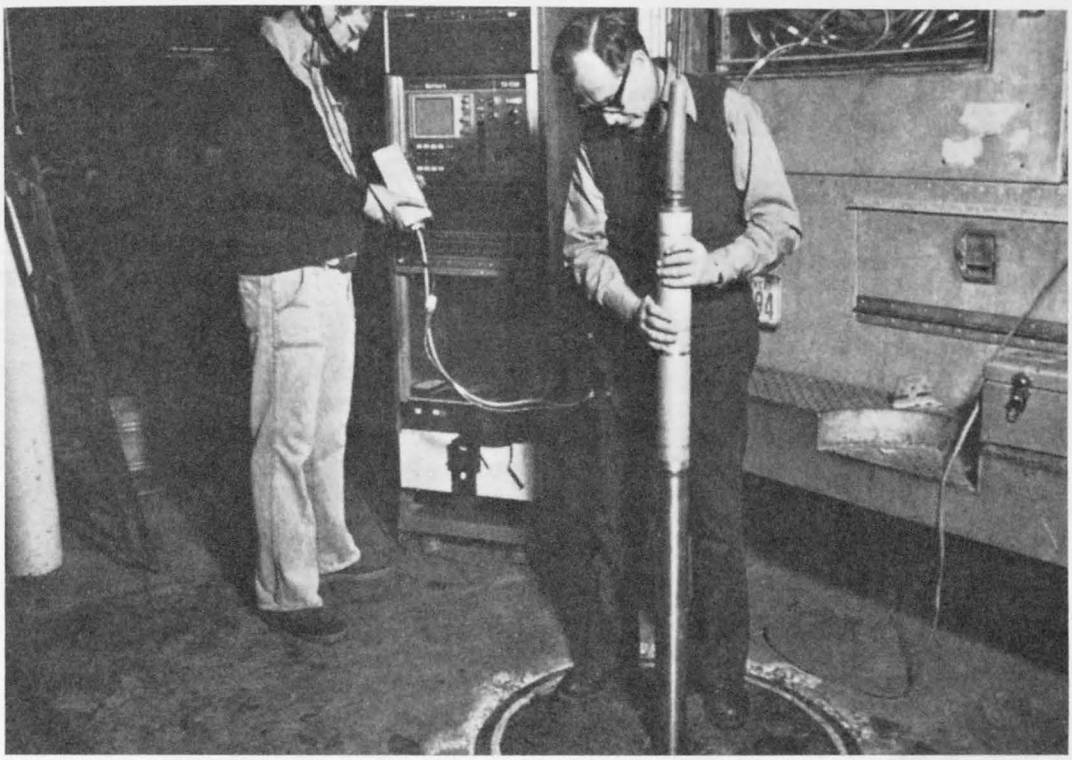


Water Lab

Modern Mapping Equipment



X-Ray Lab



Physics Lab

Computer Center

APPENDIXES

A. Offer of Sale and Donation of Land
B. New Towns: Geological Survey Has Key Role in Experiment
C. Contributory Administration Acknowledgments
D. Source of Materials
E. Principal Subcontractors or Suppliers
F. Schedule of Values
G. Lease Agreement

OFFER OF SALE AND DONATION OF LAND TO THE UNITED STATES OF AMERICA

In consideration of the sum of One Dollar ($1.00), receipt of which is hereby acknowledged, and other valuable considerations, the Seller, RESTON, VA., INC., (hereinafter called "Reston"), on this 16th day of May 1966, hereby offers and agrees to convey to the Buyer, THE UNITED STATES OF AMERICA, acting by and through the Administrator of General Services (hereinafter called the "Government"), the following described real property (hereinafter called the "property") upon the terms and conditions hereinafter set forth:

1. (a) Eighty-five (85) acres of land, lying and being in Fairfax County, State of Virginia, together with any and all improvements thereon, as shown on the attached plat, the metes and bounds description of which is as follows:

BEGINNING at a point in the south line of Parcel 10 of the land of Reston Va., Inc., said point being N. 62° 47′ 54" W. 572.51 feet from the old west right-of-way line of Frying Pan Road, Route #667;

thence with the said south line of Parcel 10 N. 62° 47′ 54" W. 1707.49 feet to a point;

thence through Parcel 10 of the land of Reston Va., Inc., the following courses and distances:

N. 4° 30′ 00" E. 795.00 feet to a point;
N. 25° 02′ 19" E. 1212.09 feet to a point;
S. 60° 20′ 00" E. 905.00 feet to a point;
S. 57° 30′ 00" E. 850.00 feet to a point;
S. 37° 00′ 00" E. 365.00 feet to a point; and
S. 27° 51′ 25" W. 1668.48 feet to a point to the point of beginning.

(b) Conveyance shall be effected within sixty (60) days after the Attorney General approves Reston's title, as provided in paragraph 6.

2. (a) Fifty (50) acres of the property shall be conveyed by Reston and accepted by the Government as a gift. Thirty-five (35) acres of the property shall be sold to the Government by Reston, for which the Government shall pay Reston the sum of Two Hundred Forty-Five Thousand Dollars ($245,000.00). The rights-of-way described hereinbelow in paragraph 8-II shall be conveyed to the Government by Reston without additional cost in accordance with the provisions therein set forth.

(b) Reston hereby grants to the Government an option to purchase an additional twenty (20) acres of land adjacent to the property described in paragraph 1(a) hereinabove at the location shown in blue on Exhibit "A" hereof. This option shall expire six (6) years after the date of

acceptance of this offer. The Government shall exercise the option by delivering to Reston written notice of its intention to purchase. If the Government exercises its option to acquire the additional twenty (20) acres it shall be considered property within the meaning of "property" as defined in the preamble to this Agreement, and title will be conveyed in accordance with paragraphs 3, 5, 6, and 7 hereof, upon payment by the Government to Reston of the sum of One Hundred Forty Thousand Dollars ($140,000.00) if the option is exercised within three (3) years from the date of acceptance of this offer and the sum of One Hundred Sixty Thousand Dollars ($160,000.00) if the option is exercised thereafter.

3. Prior to conveying the property to the Government, Reston shall cause to be permanently revoked and removed from the property, all covenants, conditions, reservations and restrictions that were attached to the property by Reston, including but not limited to those that are set out in "Reston Center for Industry and Government - Declaration of Protective Covenants and Restrictions" recorded in the Office of the Clerk of Fairfax County, Virginia, January 12, 1965, Deed Book 2562, Page 34.

4. (a) As additional consideration moving to the Government under this agreement, Reston hereby grants to the Government the right of immediate access to the property for the purpose of conducting surveys and test borings and developing other data concerning physical characteristics of the property.

(b) The Government agrees that it will authorize its architect - engineers to proceed as rapidly as possible with the design of the buildings to be erected on the property and to use its best efforts to insure that the necessary requests and supporting materials and information are prepared and submitted in a timely manner to the Bureau of the Budget and to the Congress for Congress to appropriate funds for the buildings and that contracts for construction of the buildings are awarded and construction proceeds as rapidly as possible after funds are appropriated by the Congress for such construction.

5. Reston shall, at its own cost and expense, furnish a survey of the property acceptable to the Government and shall install permanent stone or concrete markers at each corner or bound of the property in order that the property may be located on the ground.

6. Reston shall convey title to the Government by general warranty deed, the form and content of which shall be satisfactory to the Attorney General of the United States. Reston shall prepare and submit to the Government a draft of such deed, which shall include the description of the property as set out in paragraph 1(a) hereof. Reston's title to the property shall be satisfactory to the Attorney General, and any and all title evidence on the property which Reston has in its possession shall be furnished to the Government for its review and return to Reston. The deed conveying the property shall be recorded at Government expense. Reston shall obtain and affix to the Deed prior

to its recordation at Reston's expense any and all documentary revenue stamps required by law.

7. (a) In event title to the property is not satisfactory to the Attorney General, Reston agrees to deliver, or cause to be delivered to the Government, at Reston's expense such deeds, releases, affidavits and other curative documents as the Attorney General may require to satisfy such title defects. Should Reston be unable to cure such defects within sixty (60) days after notice thereof has been received by Reston from the Government, the Government may elect to terminate this agreement by giving notice of such termination to Reston, or to acquire title to the property by the institution of a condemnation proceeding in the United States District Court for the district in which the property is situated. If the Government should give notice of termination of this Agreement to Reston, then this Agreement shall be deemed terminated as of the date of such notice and the Government shall not be liable to Reston for any obligation assumed hereunder.

(b) If the Government elects to institute a condemnation proceeding to acquire title to the property, Reston agrees to cooperate with the government in the prosecution of such condemnation proceeding and expressly consents to the use of this agreement as a basis for a stipulation therein for the purpose of fixing just compensation for the property. Reston further agrees that any and all awards of just compensation that may be determined by judgment of the court on behalf of any and all persons, corporations, or associations, other than Reston, shall be deducted from the purchase price, and Reston consents to the entry of such judgments, if any, and to accept the remaining balance as full and just compensation for the taking of the property described.

(c) In event the Government elects to acquire title to the property by condemnation and if at the time a condemnation proceeding is instituted against the property Reston has not complied with the provisions of paragraph 3, Reston agrees to indemnify and save the Government harmless from any and all damages and liability claims and lawsuits arising from any alleged violation by the Government of any covenants, conditions, reservations and restrictions, that have heretofore been imposed on the property by Reston.

8-I. After Reston has conveyed the property to the Government, Reston shall, at its own cost and expense, construct operate, maintain, and repair or cause to be constructed, operated, maintained and repaired the following facilities to serve the property:

(a) A permanent access road extending from Virginia State Highway NO. 602 along the northerly boundary of the property to its northwesterly corner at the precise location as shown in green on Exhibit "A" hereof. This permanent access road shall be a four (4) lane road at least forty-four (44) feet wide, the standard cross section of which shall consist of 12 inches of VDH specification #208 grade one sub-base material placed shoulder to shoulder, the thickness of such sub-base material being subject to revision based on tests to be made

and evaluated in accordance with the Virginia Department of Highways standard procedure for determining flexible pavement design 5 1/2" of VDH specification #H-3 bituminous concrete base and 3 inches of VDH specification #I-3 bituminous concrete riding surface, VDH herein meaning the Virginia Department of Highways. The permanent access road shall be completed by Reston at least ninety (90) days prior to the occupancy of the first building to be erected on the property by the Government, provided, however, that the Government shall give notice to Reston at least nine (9) months prior to the scheduled date of said occupancy. After completion of the permanent access road, the Government agrees to its conveyance by Reston and Reston agrees to convey said road to the State of Virginia provided the State agrees to accept, maintain, operate, repair and replace it as a public road. Such conveyance shall terminate Reston's obligation hereunder to operate, maintain and repair said road.

(b) A temporary access road extending from Virginia State Highway No. 602 or Frying Pan Road (provided that said Frying Pan Road is paved to the standard hereinafter set out in this paragraph) to the boundary of the property to be used by the Government's contractors as a means of ingress and egress during construction of the Government buildings. This temporary access road may, at Reston's discretion, be located either where the permanent access road will be located or in the right-of-way described in paragraph 8-II-(b) or in said right-of-way as extended by the area shown in orange on the attached Exhibit "A". This temporary access road shall be at least twenty-four (24) feet wide and shall consist of the following, or an equivalent acceptable to the Government: twelve(12) inches of stone, the bottom nine (9) inches of which shall be crushed stone not more that one and one-half (1-1/2) inches in diameter and not less than three-eighths (3/8) of an inch in diameter and the top three (3) inches of which shall be bank run gravel, all of which shall be compacted by a three-wheeled power roller weighing not less that ten (10) tons. The surface of the road shall be oil treated.

After title to the property is conveyed to the Government and funds for the construction of the Government buildings to be erected on the property have been appropriated, this temporary access road, including the paving of Frying Pan Road if a part thereof, shall be completed within ninety (90) days after the Government has given notice to Reston to commence its construction.

(c) Two (2) sanitary sewer lines extending from the boundary of the property at the location shown in crosshatching on the attached Exhibit "A" to a trunk sewer line, to continually receive and carry away from the Government buildings on the property seven hundred twenty-one (721) gallons of sanitary sewage per minute, which lines shall be completed by Reston at least ninety (90) days prior to occupancy of the first building to be erected on the property by the Government, provided, however, that the Government shall give notice to Reston at least nine (9) months prior to the scheduled date of said occupancy. After completion of the two (2) sanitary sewer lines extending from the

boundary of the property to a trunk sewer line, Reston may convey the two (2) sanitary sewer lines to Fairfax County, Virginia, provided the County agrees to accept, maintain, operate, repair and replace them. Such conveyance shall terminate Reston's obligation hereunder to operate, maintain and repair said sanitary sewer lines.

8-11-(a) Upon receipt of a written request from the Government within ten (10) years from the date of this Agreement, Reston shall grant and convey to the Government a private right-of-way fifty (50) feet wide, for vehicular traffic extending from the northerly boundary of the property to the right-of-way of the Dulles Airport Access Highway at the location as shown in yellow on Exhibit "A" attached, together with slope, construction, retaining and other easements necessary for the construction and use of the fifty (50) foot-wide right-of-way; provided, that Reston shall be required to convey the right-of-way only if funds have been appropriated for the construction of the Government buildings to be erected on the property.

(b) After funds have been appropriated for construction of the Government buildings on the property, and upon receipt of a written request from the Government, Reston shall grant and convey to the Government a private right-of-way fifty (50) feet wide for vehicular traffic between the property described in paragraph 1(a) and Frying Pan Road at the location shown in red on Exhibit A attached, together with slope, construction, retaining and other easements necessary to permit construction, and use of the fifty (50) foot wide right-of-way, subject to the following additional terms and conditions;

(i) If, after conveyance to the Government of the fifty (50) foot right-of-way the Government paves it, and if the right-of-way of Frying Pan Road between the end for the Government's right-of-way and Virginia State Highway 602 is not at least fifty (50) feet in width, Reston shall convey to the State of Virginia the necessary additional interests in land so that this portion of the Frying Pan Road right-of-way will be at least fifty (50) feet wide;

(ii) Reston shall thereafter pave or cause to be paved Frying Pan Road between the eastern end of the Government's right-of-way and State Highway 602, such paving to be in accordance with the specifications set out in paragraph 8-I-(a) thereof and to be accomplished within ninety (90) days after the Government paves the right-of-way conveyed to it by Reston.

(c) If, prior to receipt of a written request from the Government to convey the fifty (50) foot right-of-way for vehicular access described hereinabove in subparagraph (b) of this paragraph 8-II, the permanent access road described in paragraph 8-I-(a) of this Agreement is extended to the west and south of the property back to Virginia State Highway 602, or to Frying Pan Road, and if such extended access road (and, any portion of Frying Pan Road between the access road and Virginia State Highway 602, if the access road does not extend to Virginia State Highway 602) is a four-lane road at least forty-four (44) feet wide complying with the design and construction specifications set

forth in paragraph 8-I-(a), and the Government has the right of use of such extended access road and Frying Pan Road, then and in that event Reston shall not be obligated to convey to the Government the right-of-way for vehicular access described hereinabove in subparagraph (b) of this paragraph 8-II.

9. Prior to conveyance, Reston shall obtain letters of assurance from appropriate utilities companies stating that such companies shall, prior to occupancy, provide temporary electric power, potable water, gas, telephone in such quantities and at such times as the Government shall require and shall provide such utilities in the amount set forth below at least ninety (90) days prior to the occupancy of the first building, provided, however, that the Government shall give the companies such notice of its needs as they shall require:

(a) Lines delivering electric power at not less than thirty-six thousand (36,000) kw.

(b) Lines delivering potable water in amounts not less than fifteen hundred (1,500) gallons per minute.

(c) Lines delivering gas at not less than one hundred fifty thousand (150,000) gallons per minute.

(d) Telephone service of not less than four thousand (4,000) lines.

To insure that the utilities companies will have sufficient interests in land for the installation, maintenance, operation, repair, and replacement of their lines servicing the Government buildings on the property, Reston will, where required, grant to the utilities companies easements over Reston's lands between the boundaries of the property and the points of connection to the existing utilities lines of the companies.

10. Prior to commencement of construction of the buildings on the property by the Government, Reston shall provide at the boundaries of the property adequate drainage facilities to receive and carry away from the property all surface runoff water, including but not limited to storm water and natural drainage. These drainage facilities shall be operated, maintained, repaired and replaced by Reston for so long as title to the property is in the Government, or until such time as said facilities are transferred to and accepted by the County of Fairfax or such other political body as may assume the operation, maintenance, repair and replacement of said facilities.

11. Prior to and as a condition to the payment of the purchase price referred to in paragraph 2 hereof, Reston shall procure and maintain in force and effect until released by the Government a performance bond with a corporate surety satisfactory to the Secretary of the Treasury executed on Standard Form 25, Performance Bond (FPR 41 CFR 1-16.901-25) in the amount of Two Hundred Thousand Dollars ($200,000.00) to assure the Government that the obligations assumed by Reston under paragraphs 8-I, 8-II-(b), and 10 are fully performed. The provisions of this paragraph shall apply not only in the event the property is conveyed,

pursuant to paragraph 6, but also in the case condemnation proceedings are instituted pursuant to paragraph 7(b).

12. Reston shall use its best efforts to have the Highway Department of the State of Virginia and Fairfax County improve and widen the public highways in the vicinity of the property and construct additional public highway, if necessary, in order that there will be adequate access to the property by employees of the Government and others doing business with the Government. Reston and the Government agree, however, that Reston shall be under no obligation to maintain, improve, or widen Reston Avenue designated as State Highway No. 602.

13. Reston shall, unless precluded by the operation of State law, restrict the use of the land owned by Reston, or title to which may hereafter be acquired, so long as the eighty-five (85) acre tract described in paragraph 1(a) is owned and used and the following conditions shall be covenants running with the land by the Government, and recorded in accordance with paragraph 22:

(a) Without the express written permission of the Government agency occupying the property, no manufacturing or processing operation shall be conducted which releases particulate matter into the atmosphere through exhausts and smokestacks for a distance of three thousand (3,000) feet from the boundaries of the eighty-five (85) acre tract described in paragraph 1 (a), including in particular but not limited to:

(1) All rock crushing, rock, san d and concrete mixing operations, except those incident to construction.

(2) All power production facilities involving the release of large quantities of waste by smokestacks.

(3) All chemical refining operations which exhaust large quantities of waste products into the atmosphere.

(4) All junkyard and refuse reduction operations.

(5) All waste and trash disposal operations by burning, except those of a limited and temporary nature. This provision shall not be construed to prohibit the disposal by burning of confidential materials on a regular and continuing basis in volumes normally associated with such activity. Notwithstanding the general prohibition against such activities within three thousand (3,000) feet of the eighty-five (85) acre tract described in paragraph 1 (a), waste and trash disposal operations by burning may be conducted within three thousand (3,000) feet but not within two thousand (2,000) feet of the boundaries of the eighty-five (85) acre tract described in paragraph 1 (a) if such operations are located both south and west of the southernmost point on the property

(b) No industrial, mechanical or quarrying operations shall be conducted which cause ground movements at any building erected at any time on the eighty-five (85) acre tract described in paragraph 1 (a), exceeding the following limits:

(1) Up to frequencies of ten (10) cycles per second, amplitudes must be less than thirty (30) thousandths of an inch;
(2) From ten (10) to fifty (50) cycles per second, amplitudes must be less than fifteen (15) thousandths of an inch;
(3) At all frequencies above fifty (50) cycles per second, amplitudes must be less than five (5) thousandths of an inch.

(c) No radio, television or telecommunications installation which transmits in excess of five hundred (500) watts on a continuing basis shall be located within one thousand five hundred (1,500) feet of the boundaries of the eighty-five (85) acre tract described in paragraph 1 (a), without the express written permission of the Government agency occupying the property.

(d) No radio, television or telecommunications installation which transmits in excess of five thousand (5,000) watts on a continuing basis shall be located between one thousand five hundred (1,500) feet and three thousand (3,000) feet of the boundaries of the eighty-five (85) acre tract described in paragraph 1 (a) without the express written permission of the Government agency occupying the property.

(e) No major power transmission lines or power reduction installations, except those used solely by the Government, may be located within one thousand (1,000) feet of the boundaries of the eighty-five (85) acre tract described in paragraph 1 (a) without the express written permission of the Government agency occupying the property. However, it is understood and agreed that this provision shall not apply to any such line or installation existing at the date of this Agreement.

14. No variation or departure from the terms of this Agreement shall be binding on the Government unless previously agreed to in writing by the Administrator or his duly authorized representative.

15. No Member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share of part of this Agreement, or to any benefit that may arise thereupon, but this provision shall not be construed to extend to the Agreement if made with a corporation for its general benefit.

16. Reston warrants that no person, or selling agency has been employed or retained to solicit of secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by Reston for the purpose of securing business. For breach or violation of this provision, the Government shall have the right to annul this Agreement without liability or in its discretion to deduct from the contract price the full amount of such commission, percentage, brokerage or contingent fee.

17. Reston agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three (3) years after the date of this Agreement, have access to and the right to examine any directly pertinent books, documents, papers, and records of Reston involving transactions related to this Agreement.

18. Unless the property described herein, exclusive of the property referred to in paragraph 2(b) and shown in blue on Exhibit "A", is conveyed to the Government and the purchase price paid therefor within one hundred twenty (120) days of the date of acceptance of this offer, this Agreement shall be null and void and of no effect.

19. All terms and conditions with respect to this Agreement are expressly contained herein, and Reston agrees that no representative or agent of the Government has made any representation or promise with respect to this Agreement that is not expressly contained herein.

20. All the terms, covenants and conditions of this Agreement which involve the performance (or the non-performance) of any act or obligation after delivery of the Deed, shall survive such delivery, it being intended that no provision of this Agreement shall be deemed to be merged into the Deed and the Deed shall not be deemed to affect or impair the provisions of this Agreement.

21. GSA Form 1714 entitled "Equal Opportunity Clause" marked "Exhibit B," is attached hereto and made a part hereof. The terms "Contractor" and "Contract" as used therein shall be deemed to mean Reston and this Agreement, respectively.

22. Reston agrees that it will not sell, nor encumber, any portion of the property described in paragraph 2(b) and 8-II-(a) and (b) for the periods specified in said paragraphs and in evidence thereof and of the obligations in paragraph 13 will file a summary of the relevant portions of this Agreement, together with any necessary exhibits, with the Clerk of the Court in charge of the land records of Fairfax County, Virginia, immediately upon notification of acceptance of this offer by the Government.

23. The Government may accept this offer at any time within ninety (90) days after the date hereof, in which event this offer and its acceptance will become a binding contract. In recognition of this right in the Government, Reston agrees that this offer will not be withdrawn nor modified in any way whatsoever before the expiration of ninety (90) days from the date hereof.

24. Reston has an established policy of encouraging those who work in Reston to live there, regardless of income level, race, color, creed or national origin. Reston is presently planning housing for future construction in Reston designed to provide a variety of housing accommodations for rental or purchase by anticipated residents of Reston, based on the above policy.

In order to permit Reston to plan for and construct housing units for the employees of the Government agency occupying the property who wish to live at Reston, a housing survey committee will be established, consisting of one representative of Reston, the Government agency occupying the property, and the Department of Housing and Urban Development. The chairman of the Committee shall be the representative of the Government agency occupying the property. The Committee, eighteen (18) months before the scheduled occupancy of the first building shall conduct a study to ascertain the number of employees of the using agency who are interested in purchasing or renting the various types of housing units being or to be constructed at Reston in accordance with the above stated policy. Reston shall include the housing needs identified by the study in its plan for housing construction and will offer, to the employees of the Government agencies to be located at Reston, to construct a variety of housing units at reasonable prices and without regard to race, color, creed or national origin.

25. Any notice or communication under the provision of this offer and agreement by either party to the other shall be sufficiently given or delivered if dispatched by registered or certified mail, postage prepaid, return receipt requested and

(a) in the case of a notice or communication to the Government is addressed as follows:

Administrator of General Services
General Services Building
18th and F Streets, N.W.
Washington, D.C. 20405

(b) in the case of a notice or communication to Reston is addressed as follows:

James B. Selonick
Executive Vice President
RESTON
Reston, Virginia 22070

or is addressed in such other way in respect to either party as that party may, from time to time, designate in writing dispatched as provided in this Section.

26. This offer and Agreement is executed in six (6) counterparts each of which shall be deemed to be an original, and such counterpart shall constitute one and the same instrument.

(SEAL)
ATTEST:
/s/ Leonard A. Fink
Assistant Secretary

RESTON VA., INC.
By /s/ James B. Selonick
Executive Vice President

STATE OF VIRGINIA
COUNTY OF FAIRFAX, to-wit:

I Merritt L. Goggin Notary Public in and for the State and County aforesaid, whose commission expires on the 24 day of May, 1969, do hereby certify that James B. Selonick and Leonard A. Fink, whose names are signed as Executive Vice President and Assistant Secretary, bearing date on the 16th day of May, 1966, have this day acknowledged the same before me in my State and County aforesaid.

GIVEN under my hand this 16th day of May, 1966.

/s/ Merrit L. Goggin
Notary Public

The foregoing offer is hereby accepted for and on behalf of the Government this 5 day August, 1966.

UNITED STATES OF AMERICA
Acting by and Through the
ADMINISTRATOR OF GENERAL SERVICES

By /s/ Lawson B. Knott, Jr.

ACKNOWLEDGMENT

United States of America)
) SS.
District of Columbia)

I, Hazel E. Miller, a Notary Public in and for the District Columbia aforesaid, hereby certify that on the 5th day of August, 1966, Lawson B. Knott, Jr., who is personally well known to me as the Administrator of General Services, acting for the United States of America, and the person who executed the forgoing and annexed contract to sell real property, bearing date on the 16th day of May, 1966, personally appeared before me in said District of Columbia and acknowledged that he, as Administrator of General Services, executed the same for the used and purposes therein accepted at the free and voluntary act and deed of the United States of America.

Given under my hand and seal this 5th day of August, 1966.

/s/ Hazel E. Miller
Notary Public

(SEAL)

My Commission expires February 23, 1967

GSA FORM 1714
AUGUST 1963
(Amended Oct. 1965)

EQUAL OPPORTUNITY CLAUSE

(The following clause is applicable unless this contract is exempt under the rules and regulations of the President's Committee on Equal Employment Opportunity issued pursuant to Executive Order No. 10925 of March 6, 1961 (3 CFR 1961 Supplement), as amended by Executive Order No. 11114 of June 22, 1963 (28 F.R. 6485).)

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the said labor union or workers' representative of the Contractor's commitments under this nondiscrimination clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, as amended, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(e) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, as amended, and by the rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to his books, records and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clause of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, as amended, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to section 303 of Executive Order No. 10925 of March 6, 1961, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

NOTE: a. The above Equal Opportunity Clause is amended by deleting references to the President's Committee on Equal Employment Opportunity, Executive Order No. 10925 of March 6, 1961, as amended, and section 303 of Executive Order No. 10925 of March 6, 1961, as amended; and substituting therefor the Secretary of Labor, Executive Order No. 11246 of September 24, 1965, and section 204 of Executive Order No. 11246 of September 24, 1965, respectively.

b. In accordance with regulations of the Secretary of Labor, the rules, regulations, orders, instructions, designations, and other directives referred to in section 403(b) of Executive Order No. 11246, remain in effect and, where applicable, shall be observed in the performance of this contract until revoked or superseded by appropriate authority.

B-100-P1

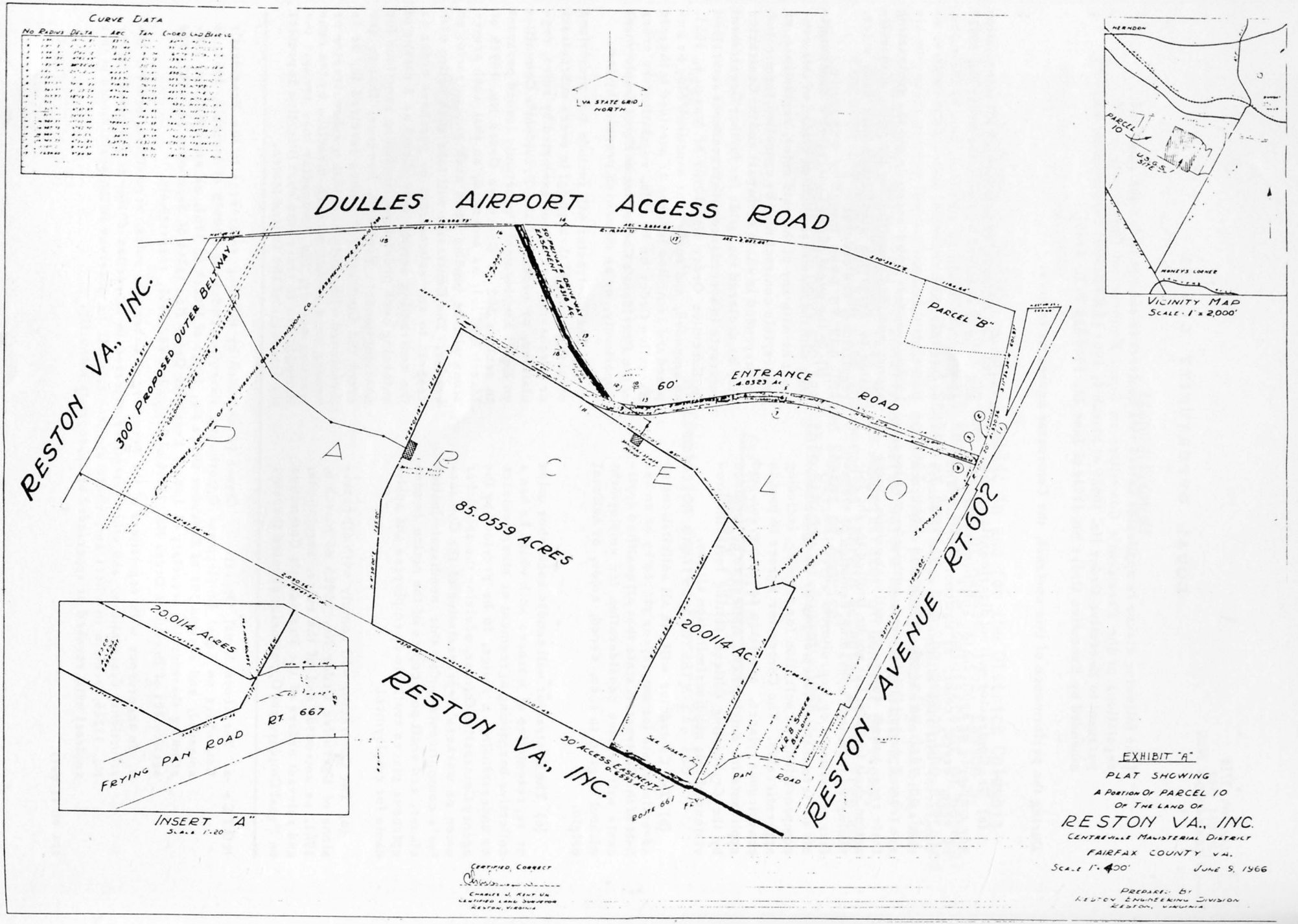


EXHIBIT "A"

PLAT SHOWING

A PORTION OF PARCEL 10

OF THE LAND OF

RESTON VA., INC.

CENTREVILLE MAGISTERIAL DISTRICT

FAIRFAX COUNTY VA.

SCALE 1"=400' JUNE 9, 1966

CERTIFIED CORRECT

CHARLES V. KENT VA. CERTIFIED LAND SURVEYOR RESTON, VIRGINIA

PREPARED BY

R.E.&T.C.V. ENGINEERING DIVISION

RESTON, VIRGINIA

New Towns: Geological Survey Has Key Role in Experiment

Reprinted from SCIENCE 10 November 1967, volume 158, pp. 752-755

The outstanding contemporary U.S. example of a "New Town" is Reston, Virginia, a community being developed on a 7400-acre tract of rolling countryside 18 miles northwest of Washington. Reston aspires to be much more than just another residential suburb, and hopes that many of its breadwinners will work as well as live in the community. Accordingly, Reston's promoters were delighted last year when it was announced that the U.S. Geological Survey, one of the government's most venerable scientific agencies, would come to Reston and build a $35-million headquarters housing nearly 2800 employees.

However, the effect of this decision—once Congress provides the money to implement it—is likely to go well beyond that of bringing hundreds of new families and jobs to the infant community. Indeed, the Survey's most important influence locally may be to reinforce Reston's resolve not to become merely another complacent outpost of the affluent society.

At Reston's dedication ceremonies in May 1966, Secretary of the Interior Stewart L. Udall prefaced his disclosure of plans to put the new Survey facility in Reston with some cautioning remarks. If Reston were to achieve more than the limited success of earlier New Towns, Udall said, it would have to surmount two hurdles—income and color. "A true New Town," he said, "must be a cross-section of America or it must be deemed a failure, despite the brilliance of its design and the insight of its community planning. In this land of equal opportunity, *no* town can claim to be truly American if it is an enclave of the well-to-do or the private preserve of any single ethnic or racial group."

Udall was expressing more than a mere hope that Reston would be a broadly representative community. In the formal agreement by which the government accepted a gift of 50 acres of land from Reston and bought another 35 acres, Reston promised to meet the housing needs of Survey employees by building a variety of reasonably priced housing units for them. This would be in keeping with Reston's avowed policy of encouraging all who work in the community to live there, regardless of race or level of income.

To date, the evidence that Reston will live up to this policy is incomplete. Those middle-class Negroes who have been attracted to the community do appear to have received a warm welcome. But no low-income Negro or white family could afford to rent or buy the apartments and houses thus far made available. The cheapest houses have sold at about $22,500, and few have been offered at that price. Rent for three-bedroom apartments now starts at $225 a month.

According to an announcement by the new town's managers, however, Reston has just been promised a low-interest loan from the Department of Housing and Urban Development (HUD) for the construction of 200 units of low-cost housing. Another sign of Reston's good intentions is the major part it is playing in a HUD-financed study and pilot project on the use of new technology to produce such housing.

Even though still a middle-to-upper middle-class enclave, Reston cannot fairly be said to have lacked high-mindedness. On the contrary, had it been less concerned with creating an environment of extraordinarily high quality for all of its residents, it probably would not now be $45 million in debt. Reston is, in truth, the carefully reared brainchild of a man who has the look of an idealist.

Reston's founder—and, until recently, its manager—is Robert E. Simon, Jr., a 53-year-old New York real estate developer whose initials form the first three letters of the community's name. Simon bought most of the Reston tract in 1961, then proceeded to act on his vision of what a New Town should be. This vision, which borrows from a variety of contemporary and traditional sources, is, briefly, as follows.

When fully developed, Reston would be a community of about 75,000 people, who would live in seven villages of 10,000 to 12,000 population each. The village centers, offering the kinds of stores and services typically found in a shopping center, together with such facilities as a library and community hall, would be pedestrian-oriented, with automobiles banished to a parking area on the outer fringe.

Lake Anne Village, the first of Simon's villages to be built, faces an arm of a 30-acre lake—its waterfront plaza giving Reston a touch of Venice and tempting strollers to linger. Its massive sculptures generally please the adult eye and always challenge the climbing instincts of small children. In spring and summer, dwellers in the high-rise apartment on the plaza and those living in apartments over the vil-

lage stores tend to make the plaza a lively place even during evening hours —a contrast to the barrens most shopping centers and many downtown areas become at the close of the work day.

According to Simon's plan, Reston would also have an industrial park of about 1000 acres, plus a 100-acre central commercial district serving an area much wider than Reston itself. One of the community's most distinctive features, however, would be its distribution of high-density areas throughout most of the 7400-acre tract. Seventy percent of the residents would live in clusters of common-wall "town houses" and in garden apartments, while, of the remainder, half would live in high-rise apartments and the other half in detached houses. The emphasis on the town-house cluster concept was intended to preserve woodlands and provide land for such things as a music center, ball fields, golf courses, lakes, and riding stables.

Indeed, the master plan sets aside 42 percent of the Reston tract for public use. Before the plan was adopted, the Fairfax County government had to agree to accept a new "Residential Planned Community" zoning concept, for under traditional zoning laws Reston would not be able to plan for both high population density and abundant green space.

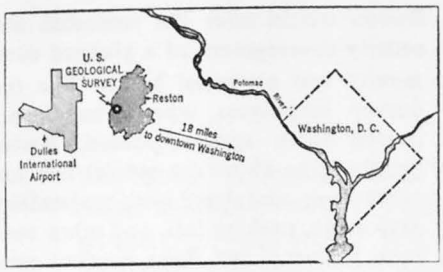
Thus far, Reston is clearly a success in the view of many architects and professional planners. Although the New Town has only 2700 residents, completion of the Lake Anne Village center and of a number of town-house clusters and garden apartments permits some evaluation. Last year an awards jury of the American Institute of Architects praised Simon for his "courage and vision," saying he had tried to achieve high standards of community planning and building design in an undertaking having few precedents and involving high risks.

Despite such praise, Reston is in financial trouble. Prospective home buyers have been less enthusiastic about the town houses than the professional critics, and sales have lagged. At best, Reston's heavy debt would be hard to carry. The Gulf Oil Corporation, to save its $15-million investment in Reston, assumed control of the new town's affairs in September, allowing Simon to retire gracefully from the active management and become chairman of the board of what is now called Gulf Reston, Inc.

But on 27 October the board voted to drop Simon as chairman and a director, leaving him no connection with Reston except as a minority shareholder. "It became apparent that he could not accommodate himself to the new management situation," a Gulf spokesman said. One element in the new situation was the departure of many, though not all, of the top staff people Simon had assembled. Moreover, when Simon proposed that he be included on the board's new executive committee, he was turned down. "Apparently, they wanted me to be just a figurehead," Simon later commented.

In an interview with *Science,* Simon discounted the possibility that Reston's new management would depart sharply from any of his basic policies. But this remains a matter of speculation. His

Secretary of the Interior Stewart L. Udall at Reston's dedication in 1966.

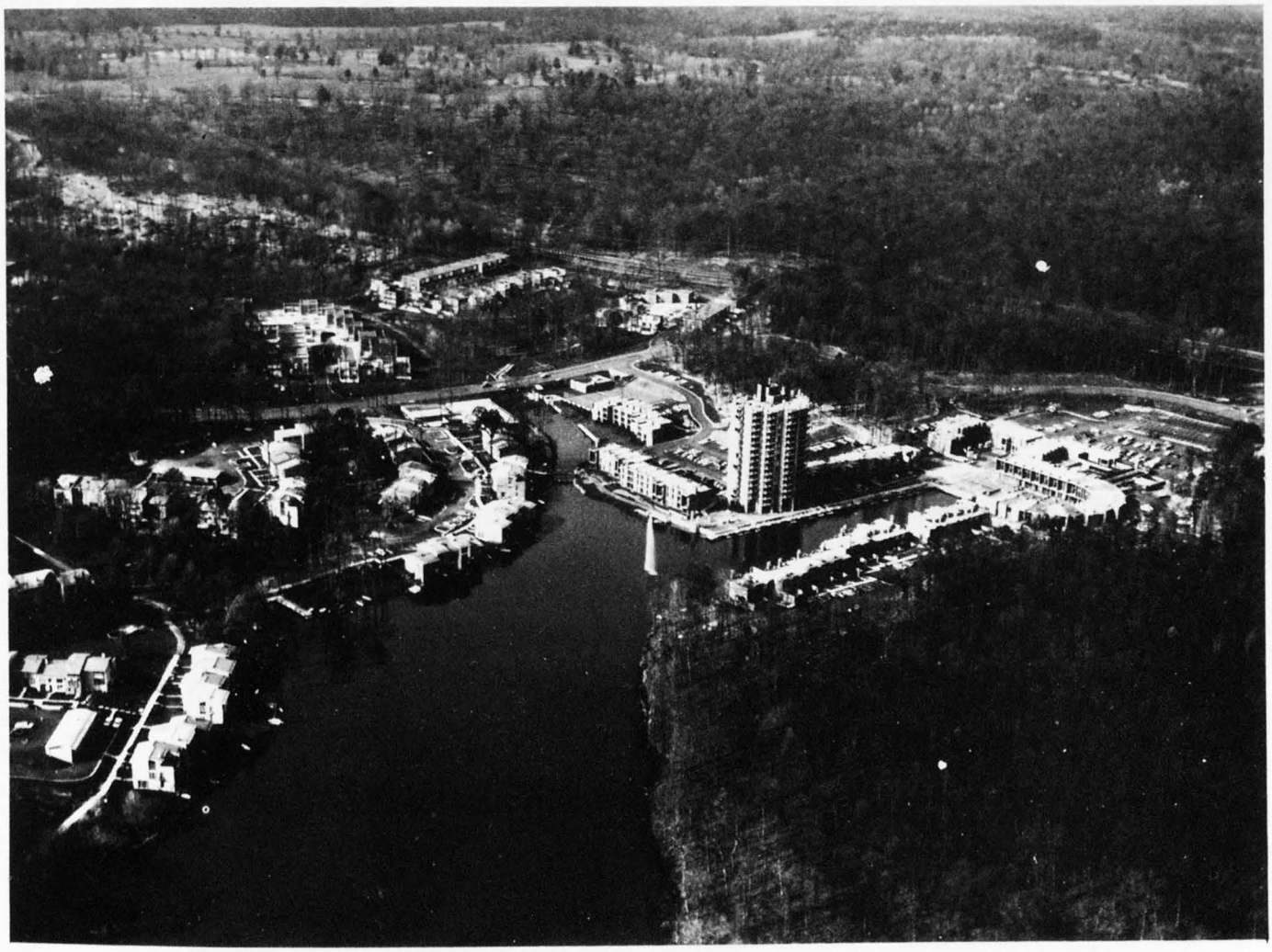


successor as president is Robert H. Ryan, 47, a self-styled "brash, opinionated Irishman" who holds degrees from Harvard College and the Harvard Graduate School of Business Administration.

Ryan, whose background has been chiefly in real estate and industrial development work in Boston and Pittsburgh, is addressing himself to the question, "Can these New Towns that promise so much make economic sense?" Gulf Reston plans to stick to Simon's master plan, Ryan says, but for the moment it will put less emphasis on town houses and modern architecture in the hope of stimulating the sale of homes. It is clear, however, that if the development of traditional, detached houses is allowed to go much beyond what Simon planned, green space will be sacrificed and Reston will come increasingly to resemble a conventional subdivision. Moreover, an emphasis on promoting sales and minimizing risks might keep Gulf Reston from pursuing wholeheartedly its plans to provide the inexpensive housing which low-income whites and Negroes can afford.

The Geological Survey's early arrival on the scene quite clearly would help Reston hold to its avowed course. The Survey headquarters is by far the largest of the "industries" thus far committed to come to Reston. (Eight firms, all technically oriented, have established plants there, and a number of others are committed to follow suit.) Before construction of the Survey facility was completed Reston would be bound, under its agreement with the government, to take steps to provide hundreds of units of low-cost housing. More than half of the Survey employees are in the non-professional and lower professional ranks, and earn no more than $10,000 a year, and sometimes as little as $4000. Many of the lower-income employees are Negroes.

The HUD-sponsored study in which Reston is participating may point the way to satisfying the housing needs of such personnel. Various possible solutions are being considered—town-house clusters, terraced hillside housing, and garden and highrise apartments. If carried through as announced, the study will include a test of factory-



Lake Anne Village center and nearby clusters of town houses. Ultimately, Reston is to have seven village communities.

fabricated steel houses of 1200 square feet and two, three, and four bedrooms. Homes built in Reston as a follow-up to the study are not to be set apart in a low-income ghetto. People living in them are expected to share the schools, playgrounds, and other public facilities used by Reston's more affluent families.

While construction of the Survey building would force the pace of Reston's development and mix some low-income people in with the attaché-case set, the principal reason for establishing the facility is, of course, to permit the Survey to bring together its badly scattered Washington offices. Survey functions are now housed in 31 buildings in various parts of the metropolitan area. "By any yardstick of good management, this situation demands correction by the swift completion of a centralized facility," Secretary Udall has said. Not only is efficiency impaired by the fragmentation of the facilities but much of the space the Survey now occupies is leased at a high price. The new Survey building would be a campus-type facility designed to encourage intellectual exchange among the geologists, hydrologists, and other technical people who are employed in its laboratories.

Reston was not the Survey's first choice for a headquarters site, but when other desirable sites nearer Washington proved to be unavailable, Reston's proffered gift of a 50-acre tract was attractive, especially in view of the assurances of adequate housing. The idea of establishing this major federal facility in a satellite town was in keeping with the government's "Year 2000 Policies Plan" for guiding the national capital region's growth and discouraging further urban sprawl. Two other scientific agencies, the Atomic Energy Commission and the National Bureau of Standards, already had left Washington for sites in Germantown and Gaithersburg, Maryland, respectively.

To the Survey, the prospect that Reston would offer the amenities and orderly development of a planned community was a special bonus. The few Survey employees who already have moved there appear pleased. Reston people gripe about the special fees and other costs associated with maintaining play areas, parking lots, and other common property, but these burdens seem tolerable.

In short, the decision to put the Survey headquarters in Reston was felicitous. It is not at all certain, however, that Congress will appropriate the money to begin construction next year, or even that the President will include a request for such funds in his budget. The budgetary exigencies of the Vietnam war leave little room for optimism. Yet to postpone this Survey project would delay not only construction of a much-needed government facility but also the government's taking a possibly critical role in an experiment for meeting urgent problems of urban culture.

—LUTHER J. CARTER

CONTRIBUTORY ADMINISTRATION ACKNOWLEDGEMENTS

The completion of the National Center of the U.S. Geological Survey, the John Wesley Powell Federal Building, in 1974, climaxed a period of dedicated planning and work, beginning after World War II, spanning five administrations, to consolidate the U.S. Geological Survey's widespread activities into one location which could truly serve as a National Center. It owes its existence to the dedication, hard work, and perseverance of many people. This publication owes its existence to these same people, especially to those who were active during the period from 1950 through to the dedication of the Center in 1974. An earnest effort has been made to remember and identify those who shared in the projects' authorization, planning, design, construction, and acquisition.

Administrations

President	Secretary of the Interior	Administrators of General Services
Harry S. Truman 1945-1953	Harold Ickes 1945-1946	Jess Larson 1949-1953
	Julius A. Krug 1946-1949	
	Oscar Chapman 1949-1953	
Dwight D. Eisenhower 1953-1961	Douglas McKay 1953-1956	Edmond F. Mansure 1953-1956
	Frederick Seaton 1956-1961	Franklin G. Floete 1956-1961
John F. Kennedy 1961-1963	Stewart L. Udall 1961-1969	John L. Moore 1961
		Bernard L. Boutin 1961-1964
Lyndon B. Johnson 1963-1969		Lawson B. Knott, Jr. 1965-1969
Richard M. Nixon	Walter J. Hickel 1969-1971	Robert L. Kunzig 1969-1972
	Rogers C. B. Morton 1971-1974	Arthur F. Sampson 1972-1975

Bureaus and Services

Director, U.S. Geological Survey	Commissioner, Public Buildings Service
William E. Wrather 1943-1956	Winchester E. Reynolds 1949-1954
	Peter A. Strobel 1954-1955
Thomas B. Nolan 1956-1965	F. Moran McConihe 1956-1959
	Ralph G. Macy 1959
	Karl E. Wallace 1959-1962
	Robert T. Daly 1962-1964
	Casper F. Hegner 1965
William T. Pecora 1965-1971	William A. Schmidt 1966-1969
	Raymond F. Myers 1969
Vincent E. McKelvey 1971-1978	Arthur F. Sampson 1970-1972
	Larry F. Roush 1973-1974

Principal Participants in Acquisition

Department of the Interior

William T. Pecora, Under Secretary of the Interior
Otis Beasley, Assistant Secretary
George E. Robinson, Assistant Secretary
Richard Bodman, Assistant Secretary

U.S. Geological Survey Directors

William E. Wrather, 1943-1956
Thomas B. Nolan, 1956-1965
William T. Pecora, 1965-1971
Vincent E. McKelvey, 1971-1978

U.S. Geological Survey Associate and Assistant Directors

Arthur A. Baker, Associate Director
William A. Radlinski, Associate Director
Edmund J. Grant, Assistant Director, Administration
Robert A. Lyddan, Assistant Director, Topographic Division
Henry W. Coulter, Assistant Director, Engineering Geology
James R. Balsley, Assistant Director, Land Resources

U.S. Geological Survey Staff

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Frank P. Ishmael, Professional Services Specialist
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Glendon J. Mowitt, Executive Officer
Willard F. McCornack, Executive Officer (Chief, Admin. Div.)
Lewis Menen, Deputy Assistant Director for Administration
Robert S. Sigafoos, Research Botanist
Harry D. Wilson, Jr., Publications Division
Frank Forrester, Information Officer

Building Committee (Appointed by Dr. Nolan, 5-15-56)

Robert H. Lyddan, Chairman
P. B. Simms, Administrative Division
R. E. Spratt, Conservation Division
K. E. Lohman, Geologic Division
C. P. VanCamp, Topographic Division
W. H. Hastings, Water Resources Division

Move to Reston

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Al Reichman, Building Operations Specialist
Jerry M. Chapman, General Supply Specialist
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Kathleen B. Rutledge, Employee Relations
W. E. Kyser, Chief, Branch of Management Analysis

General Services Administration

Administrators

Edmund F. Mansure
Franklin G. Floete
Bernard L. Boutin
Lawson B. Knott, Jr.
Robert L. Kunzig
Arthur F. Sampson

Commissioners - PBS

Winchester E. Reynolds (1949-1954)
Robert T. Daly (1962-1964)
Casper F. Hegner (1965)
William A. Schmidt (1966-1969)
Arthur F. Sampson (1970-1972)
Larry F. Roush (1973-1974)

Deputy Commissioners

Harry G. Hunter (1949-1954)
William A. Schmidt (1962-1966)
Robert B. Foster, Jr. (1966-1969)
Wilbur A. Sanders (1970-1972)
John F. Galuardi (1973-1974)

Assistant Commissioners

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Wilbur A. Sanders, Planning (1962-1969)
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Karel Yasko, Design and Construction
Loy Shipp, Space Management
Doug Harvell, Project Development

Design and Construction Staff

Frank P. Ishmael, Director, Professional Services
Roland Snyder, Director, Design Division
Charles Palmer, Director, Estimates Division
N. Patrick Shealy, Director, Project Coordination
Russell M. Clarvoe, Project Manager (Design)
Joseph A. Shields, Jr., Project Manager (Design)
Claude G. Bernier, Chief D&C (GSA Region)
Robert Shreeve, Chief Construction (GSA Region)
George Culfogienis, GSA Project Manager
Joseph Murphy, GSA Project Manager

Corporate Involvement in the USGS National Center

Reston, VA., Inc.
Gulf Oil Co.
Gulf Oil Real Estate Development Co. (GOREDCO)
Gulf Reston, Inc., (GRI) (Subsidiary of Gulf Oil)
Gulf Reston Properties, Inc. (Subsidiary of GRI)
Walker and Dunlop, Inc.
American Security and Trust Co.

Individuals Involved

Robert E. Simon, Jr., President, Reston, VA (Developer of Reston)
Glenn W. Saunders, Chief Engineer (Executive Vice-President, GRI and GOREDCO)
William L. Henry, Executive Vice-President, Gulf Oil Corp.
Robert H. Ryan, President, Gulf Reston, Inc.
Claude C. Wild, Jr., Vice-President, Gulf Oil Corp.
William H. Magness, President, GRI (Succeeded Ryan)
John W. Guinee, Jr., Executive Vice-President, GRI and GOREDCO
James N. Todd, Vice-President Marketing, later President, Reston Land Corp.
Donald A. Cummings, Vice-President, GRI, Planning, Engineering, and Project Coordination
Francis C. Steinbauer, Engineer, GRI, later President, Reston Land Corp.
James Lawrence, Treasurer, GRI
William C. Cox, Controller, GRI and GOREDCO
A. F. Dellentash, Vice-President Construction
James C. Cleveland, Director, Residential Marketing, later President, Mobil Land Corp.
Michael C. Was, General Manager and Executive Vice-President, Mobil Land Corp.
R. Dennis McArver, Outside Counsel
John J. Guilfoyle, Jr., Assistant Secretary, GRI
Allen Astrove, Construction
Mallory Walker, Vice-President, Walker and Dunlop, Inc.

Architects - Engineers

Skidmore, Owings and Merrill:

Walter A. Netsch, Partner
William E. Hartman
Donald E. Ohlson
William N. Larson

Nottingham and Associates:

H. D. Nottingham, Architect
George C. Gerber, Architect

National Capitol Planning Commission

Mrs. James H. Rowe, Jr., Chairperson
Walter C. Louchheim, Jr., Vice-Chairman

Dr. G. Franklin Edwards
Paul Thiry
Conrad L. Wirth

Ex-Officio Members:

Brig. Gen. Charles M. Duke, Engineer Commissioner
George B. Hartzog, Jr., Director, National Park Service
Walter J. McCarter, Administrator, National Capital Transportation Agency
William A. Schmidt, Commissioner, Public Buildings Service
Lt. Gen. William M. Cassidy, Chief of Engineers, U.S. Army
Rex M. Whitton, Federal Highway Administrator

Congressional Members:

Honorable Alan Bible, Chairman, Committee on the District of Columbia, U.S. Senate
Honorable John L. McMillan, Chairman, Committee on the District of Columbia, House of Representatives

Staff:

Charles H. Conrad, Executive Director
George H. F. Oberlander, Director, Long Range Planning and Regional Affairs
Donald F. Bozarth, Director, Current Planning

Commission of Fine Arts

William Walton, Chairman
Burnham Kelly (City Planner)
Gordon Bunshaft (Architect)
Theodore Roszak (Sculptor)
J. C. Warnecke (Architect)
Hideo Sasaki (Landscape Architect)
Aline B. Saarinen (Art Critic)
Charles H. Atherton, Secretary and Administrative Officer

U.S. Geological Survey

Staff participants in various phases of design, construction, and equipment of the Building Committee (BC); Office Equipment Committee (OC); and the Laboratory Facilities and Equipment Committee (LC).

Office of the Director:

Jane H. Wallace - BC and OC

Administration Division:

Glendon J. Mowitt - BC
Stephen G. Lynch - BC
Marion E. Nelson - OC Chairman

Bob Wieland - LC

Publications Division:

John Eric - BC
Richard Hoefs - BC
Charles Sleeper - OC
Gilbert G. Miller - LC
Oscar W. Mueller, Jr.
Rollin F. Nelson - BC
Bob Morauete

Water Resources Division:

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Frank Trainer - BC
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Delmar Berry - OC
Bruce B. Hanshaw - LC
Herman Feltz - Alternate
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Penrod Northcutt - OC - Alternate
Thomas A. Hughes - LC - Alternate
Frank Mann

Conservation Division:

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George Varan - OC
R. E. (Jack) Spratt - BC

Computer Division:

Ronald Nelson - BC
Arthur Hopkins - OC

Geologic Division:

Paul B. Barton - BC
B. Carter Hearn - BC - Alternate
William Roberts - OC
Irving May - LC - Chairman
George E. Becraft, Chief, Mineral Research
George H. Goodwin, Chief Librarian
Brian Skinner
Robert S. Sigafoos, Research Botanist

Ad Hoc Shop Committee:

E. Ray Warner - Chairman
Joseph L. Ramisch - GD
Arthur R. Shope - TD
George F. Smoot - WD

Geologic Division Subcommittee:

Irving May - Chairman
David B. Stewart
Joseph L. Ramisch
Robert I. Tilling
Frank G. Whitmore, Jr.
Jerry Hadley

Construction

Gulf Reston, Inc.:

Russell A. McNutt

George Hyman Construction Co.:

G. J. Clark, President
Richard Goetszinger, Vice-President
Pete Moore, Superintendent (On-Site)

Frederick R. Harris, Inc.:

James A. Strosnider, Manager
Ed McManus, Resident Engineer
Donald Crow, Engineer
Paul B. Marxen, Architect

Skidmore, Owings and Merrill:

William E. Hartman, Architect

SOURCE OF MATERIALS

In collecting the materials for this publication, we have had the interested cooperation and assistance of many persons in the U.S. Geological Survey and the General Services Administration. The library was particularly helpful in providing materials relating to the history of the Survey's earlier headquarters as reported by the Directors in their annual reports. RESTON, The First Twenty Years, by Tom Grubisich and Peter McCandless, was especially helpful in providing the history of Reston development.

- Government Records:

  Legislative history of the project.

  The project files of William A. Schmidt, Special Assistant to the Director.

  The files of the Office of Facilities and Management Services, Administrative Division, USGS.

  The construction files of Gulf Reston Properties, Inc.

  The records of the National Capital Planning Commission.

  The dedication files of W. A. Radlinski.

- Publications by USGS and Others:

  History of the U.S. Geological Survey, by Mary M. Rabbitt.

  Historical Notes by Cliff Nelson and Mary M. Rabbitt included in the publication.

  Project Status Report 1967.

  Project Status Report 1972.

  Dedication Booklet (USGS INF 74-25).

- Newspapers and Periodicals:

  GEOTIMES 1970, USGS Plans New National Headquarters.

  The Evansville Press, March 12, 1986, Family/Leisure, A Building Ahead of Its Time, by Carol Wersich.

  New Towns: Geological Survey Has Key Role in Experiment, by Luther Carter (SCIENCE, 10 November 1967, Vol. 158, pages 752-755).

The Washington Post.

The Evening Star.

Reston Times.

PRINCIPAL SUBCONTRACTORS OR SUPPLIERS

Work, Material, or Equipment	Subcontractor or Supplier
1. Paving, Bituminous	Tri-County Asphalt Co. Leesburg, Virginia
2. Roofing Systems: - Sheet Metal - Roof Insulation (excluding foamglass insulation under membrane and thermo-setting insulation)	Warren-Ehret-Linck Co. Rockville, Maryland
3. Elastomeric Roof Coating Dampproofing and Membrane Waterproofing Roof Insulation (foam-glass insulation under membrane waterproofing)	Prospect Industries, Inc. McLean, Virginia
4. Roof Insulation (thermo-setting insulation)	The Bonitz All-Weather Crete Co. Greensboro, North Carolina
5. Thermal Insulation (Building) Refrigeration Construction	Lockwood Co., Inc., of Virginia Beltsville, Maryland
6. Glazing Window Wall Construction	PPG Industries, Inc. Hyattsville, Maryland
7. Metal Wall Panels	H. H. Robertson Co. Pittsburgh, Pennsylvania
8. Furring, Lathing, and Plastering Drywall Construction	C. J. Coakley Co. Falls Church, Virginia
9. Acoustical Ceiling Systems	Anning-Johnson Co. Alexandria, Virginia
10. Plumbing Enclosures and Partitions	The Sanymetal Products Co. Cleveland, Ohio
11. Wall Coverings	William S. Alt and Son Arlington, Virginia
12. Flagpole	Montague-Betts Co. Lynchburg, Virginia

13. Vertical Blinds	Louver Drape, Inc. Baltimore, Maryland
14. Elevated Floor Systems	Severn Products Co. Severna Park, Maryland
15. Cafeteria and Kitchen Equipment	Marenka Stainless Steel Corp. Laurel, Maryland
16. Elevators	Haugton Elevator Co. Washington, D.C.
17. Escalators	Montgomery Elevator Co. Rockville, Maryland
18. Vertical Mail Conveyor	American Chain & Cable Co. Franklin Park, Illinois
19. Watchman's Clock System Emergency Generator System	E. C. Ernst, Inc. Washington, D.C.
20. Foundation Drainage Systems Incinerator Dust Collection Systems	Pierce Associates, Inc. Alexandria, Virginia
21. Structural Steel Open Web Steel Joint Steel Roof Deck Miscellaneous Metal	Montague-Betts Company, Inc. Lynchburg, Virginia
22. Earthwork	Hutchinson Brothers Escavating Co. Washington, D.C.
23. Painting and Finishing	William S. Alt and Son Arlington, Virginia
24. Mechanical and Plumbing Systems	Pierce Associates, Inc. Alexandria, Virginia
25. Electrical Systems	E. C. Ernst, Inc. Washington, D.C.
26. Metal Laboratory Casework and Equipment	Brown Morse Co. Muskegon, Michigan
27. Wood Casework	Conrad Protzman, Inc. Baltimore, Maryland

THE GEORGE HYMAN CONSTRUCTION CO.
ENGINEERS AND CONTRACTORS
4930 DEL RAY AVENUE
BETHESDA, MARYLAND 20014

PHONE: (301) 657-2750

Re: USGS National Headquarters Building
Reston, Virginia

SCHEDULE OF VALUES

	GENERAL CONDITIONS.	1,233,903.00
5.	EARTHWORK	1,034,921.00
7.	FOUNDATIONS	111,000.00
	-7. PILES, GENERAL	230,000.00
8.	PAVING - CONCRETE, BITUMINOUS	405,000.00
	-4. PORTLAND CEMENT CONCRETE PAVING	13,084.00
11.	CHAIN LINK FENCE	3,800.00
14.	CONCRETE; REINFORCING STEEL, MESH, LABOR.	11,845,189.00
15.	STRUCTURAL STEEL; 22. MISCELLANEOUS METAL; 53. FLAGPOLE; 16. OPEN WEB STEEL JOISTS; 17. STEEL ROOF DECK; ERECTION OF STRUCTURAL STEEL, JOISTS AND DECKING	912,000.00
18.	ARCHITECTURAL PRECAST CONCRETE; ERECTION OF PRECAST	470,240.00
19.	MASONRY; 20. MORTARS	1,158,070.00
21.	INTERIOR STONE; 44. TERRAZZO; 45. POLYESTER RESIN TERRAZZO; 46. CERAMIC TILE	410,400.00
23.	ARCHITECTURAL METAL.	306,450.00
24.	WOODWORK; MILLWORK ERECTION; ROUGH CARPENTRY.	263,018.00
25.	ROOFING SYSTEMS; 26. ELASTOMERIC ROOF COATING; 27. SHEET METAL; 30. ROOF INSULATION; 28. DAMP-PROOFING AND MEMBRANE WATERPROOFING.	749,099.00
29.	RESILIENT FLOORING.	191,700.00
31.	THERMAL INSULATION (BUILDING)	83,800.00
32.	SEALING	71,750.00
34.	METAL WALL PANELS	370,000.00
35.	WINDOW WALL CONSTRUCTION; 33. GLAZING	1,266,115.00
36.	HOLLOW METAL	254,720.00
37.	STEEL ROLLING CURTAINS AND OVERHEAD DOORS; 38. STEEL ROLLING SERVICE DOORS; 39. OVERHEAD DOORS (SECTIONAL METAL)	37,794.00
40.	FINISH HARDWARE; .7.3.10, 11, 12. AUTOMATIC DOOR OPERATORS	200,290.00

SCHEDULE OF VALUES

41.	FURRING, LATHING AND PLASTERING; 42. DRYWALL CONSTRUCTION; 43. ACOUSTICAL CEILING SYSTEMS	2,500,000.00
47.	PAINTING AND FINISHING; 51. WALL COVERING	376,865.00
48.	PLUMBING ENCLOSURES AND PARTITIONS	22,428.00
49.	FIRE HOSE VALVE CABINETS AND FIRE EXTINGUISHER CABINETS.	7,500.00
50.	METAL SPECIALTIES	28,585.00
52.	WALL CARPETING.	5,000.00
54.	PROJECTION SCREENS	800.00
55.	MAIL CHUTES AND EQUIPMENT	11,300.00
56.	LABORATORY EQUIPMENT	667,500.00
57.	PHOTOGRAPHIC EQUIPMENT.	104,100.00
58.	VERTICAL BLINDS	97,000.00
59.	LOUNGE SEATING.	12,452.00
60.	AUDITORIUM SEATING	19,000.00
61.	ELEVATED FLOOR SYSTEM.	19,000.00
62.	REFRIGERATION CONSTRUCTION	10,955.00
63.	MECHANICAL AND ELECTRICAL EQUIPMENT GENERAL REQUIREMENTS; 10. FOUNDATION DRAINAGE SYSTEM; 64. OUTSIDE UTILITIES; 65. UNDERGROUND STEAM DISTRIBUTION SYSTEM; 66. UNDERGROUND CHILLED WATER AND CONDENSING WATER SYSTEMS; 67. PLUMBING AND PROCESS PIPING; 68. GAS PIPING; 69. FIRE PROTECTION SPRINKLER SYSTEM; 69A. LAWN SPRINKLER SYSTEM; 71. HEATING APPARATUS; 72. SHEET METAL AND AIR-HANDLING APPARATUS; 73. KITCHEN REFRIGERATION; 74. AIR CONDITIONING; 75. STEAM PLANT BOILER EQUIPMENT; 76. TERMPERATURE CONTROL SYSTEM; 77. THERMAL INSULATION (MECHANICAL); 78. AIR AND WATER BALANCING; 92. INCINERATOR; 93. DUST COLLECTION SYSTEMS	11,961,000.00
70.	CAFETERIA AND KITCHEN EQUIPMENT.	224,809.00
79.	ELECTRICAL SYSTEMS; 80. CLOCK AND CIVIL DEFENSE SYSTEM; 81. FIRE ALARM SYSTEM; 82. UNDERFLOOR DUCT SYSTEMS; 83. LIGHTING FIXTURES; 63. MECHANICAL AND ELECTRICAL EQUIPMENT GENERAL REQUIREMENTS; 89. WATCHMANS CLOCK SYSTEM; 90. EMERGENCY GENERATOR SYSTEM	5,116,000.00
84.	ELEVATORS; 85. ESCALATORS.	1,010,000.00
86.	VERTICAL MAIL CONVEYOR.	50,000.00
87.	ADJUSTABLE LOADING RAMPS	6,000.00
88.	SCALE.	3,663.00
91.	BRIDGE, CRANE AND HOIST WORK	61,700.00
BOND.		180,000.00
		$ 44,118,000.00

[SCHEDULE 1
To
Agreement to Lease]

UNITED STATES GEOLOGICAL SURVEY BUILDING
RESTON, VIRGINIA

Lease Agreement

GULF RESTON PROPERTIES, INC.,
Lessor

UNITED STATES OF AMERICA, ACTING BY AND THROUGH
THE ADMINISTRATOR OF GENERAL SERVICES,
Lessee

Dated as of December 20, 1973

INDEX

U. S. GOVERNMENT
LEASE FOR REAL PROPERTY

Date of Lease: December 20, 1973 Lease No.: GS-03B-6404

THIS LEASE AGREEMENT, made and entered into this 20th day of December, 1973 by and between GULF RESTON PROPERTIES, INC., a corporation organized and existing under the laws of the State of Delaware, whose address is 11440 Isaac Newton Square, North, Reston, Virginia (herein called the "Lessor") and the UNITED STATES OF AMERICA, acting by and through the Administrator of General Services (herein called the "Government"),

RECITALS

The General Services Administrator has determined and deems that the terms of this Lease Agreement are in the interest of the United States and necessary for the accommodation of the United States Geological Survey (Department of the Interior), a Federal Agency, in the Building (as hereinafter defined) and that this Lease Agreement does not bind the Government for a period in excess of twenty years.

A prospectus for the lease construction of the space comprising the Building has been duly submitted to the Congress of the United States and approval has been duly made on the same basis as for public buildings construction projects pursuant to the Public Buildings Act of 1959 and appropriations under the following public laws are available for use for the payment in full of Fixed Rent and Additional Obligations under this Lease Agreement through June 30, 1974:

Department of the Interior and Related Agencies Appropriation Act, 1974, Public Law 93-120, 87 stat. 429.

To the extent that funds have not been appropriated under the above referred to public laws, funds are authorized to be appropriated for payment of the foregoing amounts but such appropriations have not been made.

All action required to be taken under any public law of the United States, or any rule or regulation adopted thereunder, for the validity, binding effect and enforceability against the Government of the obligation to pay Fixed Rent and Additional Obligations and performance by

the Government of all of its other obligations under this Lease has been taken and all such action has become final and is not subject to appeal or review.

WITNESSETH:

The parties hereto, for the considerations hereinafter mentioned, covenant and agree as follows:

Lessor hereby subleases to the Government, and the Government hereby hires from Lessor, all of the Lessor's right, title and interest in and to a certain parcel of land in Reston, Fairfax County, Virginia, (the "Land") owned by the Government and consisting of approximately 85 acres of land acquired by the United States by deed dated December 7, 1966, and recorded in the land records of the Clerk's Office of the Circuit Court of Fairfax County, Virginia, in Deed Book 2847, page 743 and more particularly described in Schedule B hereto, and leased by the Government to the Lessor pursuant to a lease dated as of June 28, 1971 (herein called the "Ground Lease"), recorded in such land records in Deed Book 3461, page 362 together with the buildings and improvements constructed or caused to be constructed by Lessor upon the Land and consisting of the Headquarters Facility of the United States Geological Survey (Department of the Interior), together, in each case, with all buildings and improvements hereafter erected on the Land and including any and all equipment, fixtures, appurtenances, roadways, parking areas and all open areas, and together in each case with all and singular the rights, easements and appurtenances of Lessor thereunto belonging or in any wise appertaining, and, in each case, for the term, at the rental and subject to the provisions herein set forth.

UNDER AND SUBJECT, NEVERTHELESS, to the following:

1. All of the terms, covenants and conditions contained in the Ground Lease; and

2. Such rights, easements, covenants, conditions, restrictions and interests of persons other than Lessor or the Government as may appear in the Land Records of Fairfax County or would be revealed by an inspection of the Premises.

To Have and to Hold the said Premises, subject as aforesaid, and subject to the provisions and conditions hereinafter set forth unto the Government for the term specified in Section 2.01 hereof, unless this Lease is sooner terminated as hereinafter provided.

This Lease is made upon the following terms, covenants and conditions and the parties respectively covenant and agree as follows:

ARTICLE I

Definitions and Rules for Construction

Section 1.01. *Defined Terms.* As used in this Lease, the following words have the meanings herein specified, unless the context otherwise connotes:

"Architect" or "engineer" shall mean architects or engineers selected by the Government with the approval of Lessor;

"Building" means the buildings and improvements constructed on the Land and any building or buildings and improvements constructed in place thereof or in addition thereto;

"Indenture" means the Indenture and Deed of Trust to be executed in substantially the form attached as Exhibit D to the Purchase Agreements;

"Land" means the parcel of land herein above described;

"Lessor" means Gulf Reston Properties, Inc.;

"Person" means any individual, partnership, firm, corporation or governmental authority;

"Premises" means the Land and the Building and the grounds, sidewalks, curbs, gutters and streets located on such Land;

"Purchase Agreements" means the several Bond Purchase Agreements dated as of June 28, 1971 between Lessor and certain purchasers;

"Purchase Price for the Building" means, as of any particular date of termination, an amount equal to the sum of (i) the amount required to prepay in full on such date of termination all of the

Bonds outstanding under the Indenture in accordance with the provisions of Articles VII and VIII of the Indenture at the applicable prepayment price set forth in Schedule 2 to the Indenture and (ii) trustee's fees, attorneys' fees and any other costs paid or payable in connection with the purchase of the Building at such time in accordance with the provisions of this Lease and the prepayment of the Bonds in accordance with the provisions of the Indenture;

"Term" means the term commencing as provided in Section 2.01 hereof and ending at any time in accordance with any provision of this Lease, whether at the expiration of the Term as provided in Section 2.01 hereof or earlier pursuant to any other provision hereof;

"Trustee" means the Trustee under the Indenture.

SECTION 1.02. *Notices.* No consent, demand, designation, notice, opinion, request, waiver or other communication to be made under this Lease shall be effective unless it be in writing and mailed, postage prepaid, addressed to the addressee as follows:

A. If to Lessor, c/o Gulf Reston, Inc., 11440 Isaac Newton Square, North, Reston, Virginia 22070, Attention: President, or such other address as Lessor designates; and

B. If to the Government, Director, Space Management Division, Office of Operating Programs, Public Buildings Service, General Services Administration, 18th & F Streets, N. W., Washington, D. C. 20405 or such other address as the Government designates.

ARTICLE II

TERM

SECTION 2.01. *Term.* The Term of this Lease shall be a term of 240 months, commencing at 12:01 A.M. on December 20, 1973 and expiring at 12 o'clock midnight on December 19, 1993.

ARTICLE III

Rent

Section 3.01. *Fixed Rent.* As fixed rent, the Government shall pay to Lessor, at its principal office above set forth, or at such other place as Lessor may designate in writing to the Government, and at the times hereinafter set forth, without previous demand therefor and in money of the United States of America which at the time of payment shall be legal tender for public and private debts, the amount of $5,509,984.44 per annum, payable in equal constant monthly installments of $459,165.37 each, in arrears on the business day next preceding the twentieth day of each calendar month during the Term. Each installment of fixed rent shall bear interest computed at the rate of 7.95% per annum for each day such installment is past due, payable by the Government upon demand by Lessor. It is the purpose and intent of Lessor and the Government that the obligation of the Government to pay the fixed rent shall be absolute and unconditional and that the fixed rent shall be absolutely net to Lessor so that this Lease shall yield, net, to Lessor, the fixed rent specified in this Section 3.01 in each month during the Term of this Lease, free of any charges, assessments, or impositions of any kind charged, assessed, or imposed on or against the Premises, and without abatement, deductions, setoff, counterclaim, recoupment, defense or other right which the Government may have against the Lessor or any other Person and without being affected by any defect in title, compliance with specifications, condition, design, operation or fitness for use of, or total or partial damage to the Building or by any other reason whatsoever, and Lessor shall not be expected or required to pay any such charge, assessment or imposition, or be under any obligation or liability hereunder except as herein expressly set forth, and the Government covenants and agrees to pay and discharge all costs, expenses and obligations of any kind relating to the maintenance, preservation, care, repair and operation of the Premises, including all replacements, alterations, and additions as hereinafter provided, which may arise or become due during the Term of this Lease. Notwithstanding the foregoing, the Government shall, from and after the execution of the assignment to the Trustee permitted by Section 7.01, make all payments of fixed rent pursuant to this Section 3.01 directly to the Trustee at its corporate trust office as specified in the Indenture, or at such other place as the Trustee may designate in writing to the Government.

SECTION 3.02. *Additional Obligations.* In addition to the fixed rent specified in Section 3.01, the Government shall pay or cause to be paid as additional obligations hereunder (whether ordinary or extraordinary, foreseen or unforeseen and without regard to the nature thereof and whether general or special), all:

1. Taxes, assessments (including special assessments) and all other governmental charges of any nature whatsoever arising prior to or during the Term which shall be levied, assessed, or imposed by any governmental authority against Lessor, or upon or with respect to the ownership, possession, occupation, operation, alteration, maintenance, repair, restoration, financing and use of and receipt of rental from the Premises, or the making of any additions thereto, subject, however, to the following conditions and limitations:

(a) Nothing in this Lease contained shall be construed to require the Government to bear the expense of any tax based on net income imposed upon Lessor; and

(b) In the case of any assessment for public improvements wherein such assessment is permitted to be paid in installments, then, and in such event, with respect to such assessments and regardless of the date of confirmation, the Government may pay the same in installments. Any such installments, whether falling due prior to or during the Term of this Lease, shall be payable by the Government;

2. Water and sewer rents, water frontage charges, water meter rents and all other charges of a similar kind, transit taxes, county taxes and charges, charges for public utilities, excises, levies, license and permit fees and other governmental charges of any kind or nature whatsoever which at any time prior to or during the Term of this Lease may be assessed, confirmed, levied, imposed upon or become a lien on the Premises, or any part thereof or any appurtenances thereto, or grow or become due or payable out of or in respect of, (i) the rent and income received by the Government from sub-tenants of the Premises, or any part thereof; (ii) any use or occupation of the Premises, and (iii) such franchises as may be appurtenant to such use or occupation;

3. Insurance premiums;

4. Expenses of occupying, operating, altering, maintaining, repairing, restoring or using the Premises and of making any additions thereto (including structural as well as nonstructural alterations, additions, restorations and repairs) all as set forth in Article IV;

5. An amount equal to the fees and expenses of any Person, acting as Trustee for securityholders of Lessor, to which this Lease may be assigned; and

6. Expenses (other than expenses referred to in Section 3.01 hereof) incurred by Lessor pursuant to this Lease, the Ground Lease, the assignment to the Trustee as permitted by Section 7.01, or the Purchase Agreements.

SECTION 3.03. *Payment of Additional Obligations.*

A. The Government shall pay each sum payable pursuant to Section 3.02 when the same becomes due and payable; provided, however, that if any authority having jurisdiction or alleging to have jurisdiction assesses taxes or assessments (including special assessments), or levies any other charges against the Premises as contemplated and provided for in this Lease and the Government or the Lessor or any agent acting on behalf of the Government or the Lessor deems the same or any of them excessive, improper or illegal, and provided further that failure to pay said taxes, assessments (including special assessments) or other charges will not result in a forfeiture of the Lessor's title to the Premises or a sale thereof for such nonpayment, the Government may defer compliance therewith to the extent permitted by law so long as the validity or amount thereof is contested by the Government in good faith, in its name, or at the Government's option, in Lessor's name but at the Government's expense.

B. The Government shall pay all sums due hereunder to the persons to whom the same are payable, but, if any person refuses to accept any payment from the Government, the Government shall forthwith notify Lessor thereof and pay such sum to the Lessor and Lessor shall thereupon pay the same forthwith to the person or persons entitled thereto, and thereupon the Government shall be relieved of any further obligation for the payment of any such sum.

SECTION 3.04. *Receipted Bills.* The Government shall exhibit or cause to be exhibited to Lessor a receipted bill for any tax, assessment (including special assessment), governmental charge or water or sewer rent which has become due and payable under this Lease, or any other evidence satisfactory to Lessor of the payment thereof within thirty (30) days after the date the amount is due and payable, and at any other time upon request.

ARTICLE IV

USE, OPERATION, MAINTENANCE AND ALTERATION

SECTION 4.01. *Compliance with Laws.* The Government shall, at its own expense, comply with, and maintain the Premises in compliance with, all laws and all requirements of all governmental authorities applicable to the Premises and to the use thereof (including those requiring alterations, additions, restorations or repairs of a structural as well as a nonstructural nature) and shall maintain the Premises in compliance with any requirements of the insurance companies with which insurance coverage is maintained as required by Article V hereof.

SECTION 4.02. *Repairs.* The Government shall, at its own expense, keep the Premises in good repair, operating condition and working order and shall make all structural, exterior and interior repairs, renewals and replacements necessary to that end, and shall commence promptly and proceed diligently with any repair or restoration required.

SECTION 4.03. *Alterations.* The Government shall make no alterations to the structure of the Building or other alterations which will change the character of the Building or its adaptability for use as a U.S. Government-occupied facility without the consent of Lessor.

SECTION 4.04. *Liens.* Except as provided in Sections 3.03 and 12.01, the Government shall not create, or permit to exist, any lien or encumbrance which might be or become a lien or encumbrance having priority over or ranking on a parity with Lessor's interest in the Premises or under this Lease.

SECTION 4.05. *Liabilities, etc.* Subject to the provisions of Section 12.01, the Government will pay and discharge all liabilities, obligations, damages, penalties, claims, costs, charges and expenses, including reasonable architects' and attorneys' fees, which may be imposed upon or incurred by or asserted against Lessor by reason of any of the following occurring during the Term of this Lease:

(a) any work or thing done in, on or about the Premises or any part thereof;

(b) any use, nonuse, possession, occupation, condition, operation, maintenance or management of the Premises or any part thereof or any street, alley, sidewalk, mall, garden, curb, vault or passageway located thereon;

(c) any negligence on the part of the Government or any of its agents, contractors, servants, employees, licensees, concessionaires or invitees;

(d) any injury or damage to any person or property occurring in or on the Premises or any part thereof or any street, alley, sidewalk, mall, garden, curb, vault or passageway located thereon; or

(e) any failure on the part of the Government to perform or comply with any of the covenants, agreements, terms or conditions contained in this Lease on its part to be performed or complied with.

In case any action, proceeding or claim is brought or made against Lessor, Lessor will promptly give the Government notice thereof and the Government will at the Government's expense resist, defend or otherwise discharge such action, proceeding or claim.

SECTION 4.06. *Inspection.* Lessor shall be entitled to make inspections of the Premises during business hours, but shall be under no obligation to make any such inspections nor to perform any act or do anything required to cure any default of the Government.

SECTION 4.07. *Equal Opportunity Clause.* The Equal Opportunity Clause and other general clauses attached hereto as Schedule A are hereby incorporated by reference herein and are made a part of this Lease as though set forth herein in full.

ARTICLE V

Insurance

Section 5.01. *Coverage; Indemnity Against Loss.* The Government or an agent of the Government (which may include Lessor or a parent or affiliate of Lessor acting on behalf of the Government) shall maintain at the Government's sole cost and expense, for the benefit of Lessor, insurance with respect to the Premises, of the following types and in the following amounts:

A. Public liability insurance (including elevator insurance, if applicable) with limits of at least $1,000,000 for the injury of one person, $5,000,000 for the injury to more than one person in one accident or occurrence and $1,000,000 for damage to property.

B. At all times when any work is in progress in connection with altering, repairing or making additions to the Premises, the Government shall require its contractors to maintain workmen's compensation insurance covering all persons employed by them and engaged in such work and with respect to whom claims for death or bodily injury might be asserted against Lessor, the Government or the Premises. Such insurance shall contain a waiver of subrogation in favor of the Lessor and the Government.

C. Such other insurance as the Lessor and the Government agree upon from time to time.

D. The Government has determined that it will act as a self-insurer with respect to fire and extended coverage insurance, boiler damage insurance, and vandalism and malicious mischief insurance.

Notwithstanding the insurance requirements specified in this Section 5.01, or the amounts thereof or the failure of Lessor to require insurance against any casualty, loss or liability other than as specifically mentioned in this Section 5.01, the Government covenants and agrees to pay for all injury or damage to the Premises resulting from any casualty whatsoever and all loss or liability resulting from any accident or occurrence taking place upon the Premises or upon the areas adjacent thereto with respect to which the Government has the obligation for the

care and maintenance thereof, whether pursuant to the terms, covenants and provisions of this Lease or pursuant to any provision of law or statute applicable thereto. Such obligation shall be in effect whether or not the Government has placed or caused to be placed and maintained insurance against such injury, damage, loss or liability and whether or not such insurance having been placed and maintained, proceeds therefrom are actually received from one or more of the insurance companies furnishing such insurance.

SECTION 5.02. *Policies.* A. Each insurance policy shall:

1. be issued by an insurance company of recognized standing satisfactory to Lessor; and

2. be in the standard form customarily in use in the State of Virginia.

B. The Government shall procure or cause to be procured renewals of all insurance policies at least ten (10) days before the expiration thereof.

C. Each policy or certificate therefor obtained by the Government pursuant to Section 5.01 of this Lease shall to the extent obtainable contain an agreement by the insurer that such policy shall not be cancelled without at least thirty (30) days' prior written notice to Lessor and the Government.

D. The Government shall furnish or cause to be furnished to Lessor originals or copies certified by the insurance companies or certificates of all insurance policies or in lieu thereof, upon receipt of written notice from Lessor and until further written notice from Lessor to the contrary, file with Lessor upon the execution hereof and annually thereafter on the anniverary of such execution, a certificate over the signature of one of its officers or agents that the insurance required hereunder in the form required by Section 5.01 hereof, is in full force and effect as of the date of said certificate.

SECTION 5.03. *No Adjustments.* Except as provided in Section 5.04 of this Lease, notwithstanding any injury to or destruction of the Premises or any failure of title or interference with use, the Govern-

ment shall not be entitled to any adjustment of rent or of any of Lessor's or the Government's rights or liabilities under this Lease or to surrender this Lease, and the Government shall continue to be liable to pay the full fixed rent and additional obligations hereunder, and waives any right to any such adjustment or surrender with respect to any such injury or destruction, at any time conferred upon it at law, in equity, by statute or otherwise.

SECTION 5.04. *Destruction; Termination of Lease.* Anything in this Article V to the contrary notwithstanding, if any substantial portion of the then aggregate floor space in the Building shall have been injured or destroyed and made unusable, the Government at its option exercisable by notice to Lessor within three months after the injury or destruction occurred, either shall promptly repair, restore or reconstruct the Building as nearly as practicable for use as a Government-occupied facility, or shall terminate this Lease effective as of a date specified in such notice, which shall be at least six months after the date such notice is given to Lessor. If the Government exercises its option to terminate this Lease, it shall purchase the Premises from Lessor on the date of such termination for a price, in cash, equal to the Purchase Price for the Building.

ARTICLE VI

CONDEMNATION

SECTION 6.01. *Government Option in Case of Condemnation.* If during the Term of the Lease any substantial portion of the Premises is taken or condemned under power of eminent domain (such a taking or condemnation being herein called a "Condemnation"), the Government at its option exercisable by notice to Lessor within 30 days after such Condemnation, either shall at its own expense promptly cause such Condemnation to be vacated and removed, or shall terminate this Lease effective as of a date specified by such notice, which shall be at least six months after the date such notice is given to Lessor. If the Government exercises its option to terminate this Lease it shall purchase the Premises (or so much thereof as shall not be subject to the Condemnation) from Lessor on the date of such termination for a price, in cash, equal to the Purchase Price for the Building.

ARTICLE VII

Sales, Mortgages, Assignments and Subleases

Section 7.01. *Lessor Not to Convey.* Lessor shall not be entitled, without the consent of the Government, (i) to convey or otherwise dispose of its interest in the Premises and its interest under this Lease at any time or (ii) to transfer, encumber or otherwise dispose of its interest under the Ground Lease; provided, however, that Lessor's interest under this Lease and under the Ground Lease may be transferred and assigned to the Trustee and mortgaged pursuant to the Indenture, and provided, further, that Lessor may convey the Premises to the Government upon exercise by the Government of its option to purchase the Premises as provided herein.

Section 7.02. *Assignment and Subletting.* The Government may assign, sell or otherwise dispose of its interest in this Lease or sublet the whole or any part of the Premises for any lawful purpose not inconsistent with this Lease; provided, however, that no assignment, sale, disposal, or subletting, nor the acceptance of rents or other payments from, nor any other dealing by the Lessor with any assignee, undertenant, occupant, or other person, shall release the Government from its obligation to pay fixed rent and additional obligations herein reserved and perform all the terms, covenants and conditions as set forth in this Lease.

ARTICLE VIII

Default

Section 8.01. *Event of Default; Termination.* If any one or more of the following events (each of which is herein sometimes called "Event of Default") shall happen:

(a) if default shall be made in the due and punctual payment of any fixed rent or additional obligations payable or other sums required under this Lease or any part thereof when and as the same shall become due and payable, and such default shall continue for a period of 10 days after notice thereof from Lessor to the Government;

(b) if a default shall be made by the Government in the performance of or compliance with any of the covenants, agreements, terms or conditions contained in this Lease other than those referred to in the foregoing paragraph (a), and such default shall continue for a period of 30 days after notice thereof from Lessor to the Government, provided, however, that the Government's time to cure such default shall be extended for such additional time as shall be reasonably required for the purpose if the Government shall proceed with due diligence during such 30 day period to cure such default and is unable by reason of the nature of the work involved to cure the same within the said 30 days, and if such extension of time shall not subject Lessor or the Government to any liability, civil or criminal, and the interest of Lessor in this Lease shall not be jeopardized by reason thereof;

then and in any event covered by subdivision (a) or (b) hereof, Lessor at any time thereafter may give written notice to the Government specifying one or more such Events of Default and stating that this Lease and the term hereby demised shall expire and terminate on the date specified in such notice, which shall be at least five days after the giving of such notice, and upon the date specified in such notice, subject to the provisions of Section 8.02 hereof, this Lease and the term hereby demised and all rights of the Government under this Lease shall expire and terminate.

SECTION 8.02. *Purchase by Government.* Upon any such expiration or termination of this Lease, the Lessor shall have the right to demand that the Government exercise its option to purchase the Premises on the date specified in the notice given pursuant to Section 8.01 hereof and in accordance with the provisions of Section 14.01 hereof at the Purchase Price for the Building. No such expiration or termination of this Lease shall relieve the Government of its liability and obligations under this Lease and such liability and obligations shall survive such expiration and termination and the Government shall continue to pay to Lessor the fixed rent, additional obligations, and all other charges required to be paid by the Government under this Lease up to and including the date of receipt by the Lessor of the Purchase Price for the Building at the settlement provided for in Section 14.02 hereof.

SECTION 8.03. *No Waiver.* No failure by Lessor to insist upon the strict performance of any covenant, agreement, term or condition of this Lease or to exercise any right or remedy consequent upon a breach thereof, and no acceptance of full or partial rent during the continuance of any such breach, shall constitute a waiver of any such breach or of such covenant, agreement, term or condition. No covenant, agreement, term or condition of this Lease to be performed or complied with by the Government, and no breach thereof, shall be waived, altered, modified or terminated except by a written instrument executed by Lessor. No waiver of any breach shall affect or alter this Lease, but each and every covenant, agreement, term and condition of this Lease shall continue in full force and effect with respect to any other then existing or subsequent breach thereof.

SECTION 8.04. *Remedies.* In the event of any breach by the Government of any of the covenants, agreements, terms or conditions contained in this Lease, Lessor, in addition to any and all other rights, shall be entitled to enjoin such breach and shall have the right to invoke any right or remedy allowed at law, in equity or by statute or otherwise for such breach.

ARTICLE IX

INVALIDITY OF PARTICULAR PROVISIONS

SECTION 9.01. *Severability.* If any term or provision of this Lease or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remaining terms and provisions of this Lease, or the application of such terms or provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each term and provision of this Lease shall be valid and be enforced to the fullest extent permitted by law.

ARTICLE X

COVENANT OF QUIET ENJOYMENT

SECTION 10.01. *Quiet Enjoyment.* Lessor covenants and agrees that the Government, upon paying the rents reserved herein and observing and keeping the covenants, agreements and stipulations of this

Lease on its part to be kept, shall lawfully, peaceably and quietly hold, occupy and enjoy the Premises during the Term of this Lease without hindrance, ejection or molestation by Lessor, or anyone claiming by, through or under Lessor.

ARTICLE XI

Machinery, Equipment and Fixtures Installed

Section 11.01. *Installation and Removal.* The Government from time to time during the Term of the Lease may install machinery, equipment and fixtures of various kinds and descriptions, and upon any of such machinery, equipment and fixtures being so installed in or placed on the Premises by the Government, the same shall remain at all times the property of the Government, and, at any time during the Term of the Lease and at the termination of the Lease, the Government shall be entitled to remove any and all of such machinery, equipment and fixtures; provided, however, that if any such machinery, equipment or fixtures are so attached to the Building as not to be readily removable without damage to the Building, then in such event, if the Government shall remove the same, the Government shall promptly repair and replace any damage caused to the Building by such removal.

ARTICLE XII

Miscellaneous

Section 12.01. *Contest.* Subject to the provisions of Section 3.03A hereof the Government, upon prior notice to Lessor, shall be entitled to contest, in good faith, in the name of Lessor or the Government, but at the expense of the Government, by appropriate proceedings diligently conducted, the validity or applicability, as the case may be, of any:

A. law or requirement or any proposed law or requirement of any governmental authority;

B. tax, assessment (including special assessment) or other governmental charge, or any proposed tax, assessment or any other governmental charge, subject to Section 3.03 hereof;

C. lien or encumbrance;

D. requirement of any insurance carrier; or

E. other expense, charge or claim,

which, during the Term of this Lease, shall be levied, assessed, imposed, demanded or threatened to be levied, assessed, imposed or demanded by any governmental authority (provided noncompliance therewith or nonpayment thereof, as the case may be, does not impose any criminal liability upon the Lessor or subject the Lessor's title to the Premises to forfeiture), insurance carrier or other person upon or with respect to, or alleged by any person to have been insured in connection with the possession, occupation, operation, alteration, maintenance, repair or use of the Premises or the making of any additions thereto. The period of any such permitted contest shall be excluded in computing the period during which a default shall be deemed to exist, if such default would not have occurred but for such contest.

SECTION 12.02. *Liens and Encumbrances.* The Government will not create or permit to be created or to remain, and will discharge, any lien, encumbrance, or charge (levied on account of any tax, other than a tax based on Lessor's net income, or on account of any other municipal assessment or charge or any mechanic's, laborer's or materialman's lien or any mortgage, conditional sale, title retention agreement or chattel mortgage, or otherwise) which might be or become a lien, encumbrance or charge upon the Premises or any part thereof or the income therefrom, having any priority or preference over or ranking on a parity with the estate, rights and interest of Lessor in the Premises or any part thereof or the income therefrom and the Government will not suffer any other matter or thing whereby the estate, rights and interest of Lessor in the Premises or any part thereof might be impaired; provided that any tax or other municipal assessment or charge may, after the same becomes a lien on the Premises, be paid or contested in accordance with Article XII hereof and any mechanic's, laborer's or materialman's lien may be contested by the Government provided the same is discharged in accordance with Section 12.03 hereof.

SECTION 12.03. *Mechanic's Liens.* If any mechanic's, laborer's or materialman's lien shall at any time be filed against the Premises or any part thereof, the Government, within 30 days after notice of the

filing thereof, will cause the same to be discharged of record by payment, deposit, bond, order of a court of competent jurisdiction or otherwise.

SECTION 12.04. *No Consent by Lessor.* Nothing in this Lease contained shall be deemed or construed in any way as constituting the consent or request of Lessor, express or implied by inference or otherwise, to any contractor, subcontractor, laborer or materialman for the performance of any labor or the furnishing of any materials for any specific improvement, alteration to or repair of the Premises or any part thereof, nor as giving the Government any right, power or authority to contract for or permit the rendering of any services or the furnishing of any materials that would give rise to the filing of any lien against the Premises or any part thereof.

SECTION 12.05. *Passage of Title upon Termination.* Upon the expiration of the Term of this Lease pursuant to Section 2.01 or upon the earlier termination of the same upon purchase of the Premises by the Government as provided in Articles V, VI, VIII or XIV hereof, title to the Premises shall immediately vest in the Government and Lessor shall have no further right, title or interest therein. Notwithstanding the passage of title to the Government, the Government shall continue to be liable for the payment of all obligations incurred by it hereunder prior to the expiration or termination hereof. Lessor shall execute and deliver all documents reasonably necessary to convey title to the Government.

SECTION 12.06. *No Waste.* The Government will not do or suffer any waste or damage, disfigurement or injury to the Building or any part thereof.

SECTION 12.07. *Remedies Cumulative.* Each right, power and remedy of Lessor provided for in this Lease shall be cumulative and concurrent and shall be in addition to every other right, power or remedy provided for in this Lease or now or hereafter existing at law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by Lessor of any one or more of the rights, powers or remedies provided for in this Lease or now or hereafter existing at

law or in equity or by statute or otherwise shall not preclude the simultaneous or later exercise by Lessor of any or all such other rights, powers or remedies.

SECTION 12.08. *Headings.* The headings of the Articles and the numberings and headings of the Sections and paragraphs in this Lease are inserted as a matter of convenience to the parties and shall not affect the construction of this Lease.

SECTION 12.09. *Counterparts.* This Lease may be executed in any number of counterparts, each of which shall be an original and the counterparts shall constitute but one and the same instrument.

SECTION 12.10. *Successors Bound; Modifications.* Subject to the provisions of Section 7.01, this Lease shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns. This Lease may not be modified, altered, terminated or discharged orally but only by an agreement in writing signed by the parties hereto.

SECTION 12.11. *Discharge of Lessor's Obligations.* In the event that Lessor, pursuant to the provisions of any restriction, covenant or agreement affecting the Premises (and whether or not any such restriction, covenant or agreement is of record), is required to perform any act, or furnish any services, labor or materials, the Government agrees that the Government, at its own cost and expense, during the Term of the Lease, will perform such act, furnish such services, labor or materials and otherwise discharge in full Lessor's obligations under any such restriction, covenant or agreement. The Government further covenants that, in the event the Government requests any modification of this Lease or in the event that Lessor is requested to execute any documents or to participate in any proceeding affecting the Premises, the Government will reimburse Lessor for Lessor's reasonable costs and expenses (including attorneys' fees and disbursements) in executing such modification of this Lease or such documents or in participating in such proceeding.

ARTICLE XIII

Condition of and Title to the Premises

Section 13.01. *No Representations by Lessor.* The Government, by the acceptance of this Lease, represents that the Premises and the title thereto, any subsurface conditions thereof, the present uses and nonuses thereof, and the Building have been examined by the Government and that the Government accepts the same in the condition or state in which they or any of them are at the time of such representation by the Government, without representation or warranty, express or implied in fact or by law, by Lessor and without recourse to Lessor, as to the title thereto, the nature, condition or usability thereof or the use or uses to which the Premises or any part thereof may be put. The Government further represents that all roadways, access roadways, drainage facilities, public utility facilities and lines and all other facilities to be provided for the benefit of the Premises by Reston, Va., Inc., by Lessor or others have been examined by the Government and are accepted by the Government without recourse to Lessor for any purpose under this Lease.

ARTICLE XIV

Terms of Purchase by the Government

Section 14.01. *Option to Purchase.* Lessor hereby grants to the Government the option, exercisable at any time during the Term of this Lease by not less than six months' prior written notice to Lessor setting forth the date of purchase, to purchase the Premises from Lessor for a price, in cash, equal to the Purchase Price for the Building.

Section 14.02. *Contract and Settlement.* In the event of any sale by Lessor to the Government and purchase by the Government from Lessor of the Premises pursuant to any provisions of this Lease:

A. Upon delivery of the applicable notice required by the provisions of this Lease as a condition precedent to such sale and purchase, there shall be in existence, without further action of the parties, a binding agreement, enforceable at law or in equity, for the sale and purchase of the Premises at the applicable price and upon the additional terms and conditions hereinafter set forth.

B. Settlement shall take place at such place in the State of Virginia as may be designated by Lessor upon the date fixed for consummation of such sale and purchase in accordance with the provisions of this Lease pursuant to which such sale and purchase are to be consummated.

C. At settlement, Lessor shall convey the Premises to the Government by a cancellation and surrender of this Lease and the Ground Lease in form and substance satisfactory to the Government and which shall be in sufficient form to be entitled to recordation.

D. The Government shall accept title subject to zoning rules, restrictions, regulations, resolutions and ordinances and to any violations of building codes, fire laws, and other laws and regulations.

E. The Government shall pay all charges incident to the conveyance, including but not limited to escrow fees, if any, recording fees, title insurance premiums, cost of any and all state and local taxes applicable to such sale and conveyance, and the Government's attorneys' fees.

F. There shall be no proration of any taxes, insurance premiums or other charges which the Government is required to pay under and pursuant to the provisions of this Lease.

G. The Government, having examined and being familiar with the state of the title to the Premises and the title examination made for Lessor in connection with the acquisition by Lessor of the leasehold estate under the Ground Lease, will accept title to the Premises subject to those matters disclosed by such title examination, except for so much thereof as may have been taken or condemned by eminent domain, and further subject to: (i) any and all taxes, assessments and other charges which the Government agrees to pay pursuant to the provisions of this Lease, and (ii) any other liens, encumbrances and exceptions not caused by Lessor (but nothing herein contained shall be deemed to permit the Government to create any such lien or encumbrance other than as expressly provided in this Lease).

H. Upon the completion of such purchase and the payment by the Government of the purchase price, this Lease shall terminate,

and all the rights and obligations of Lessor and the Government hereunder shall cease and come to an end.

I. Tender of cancellation and surrender agreement by Lessor and the Government and tender of purchase price by the Government are respectively waived.

ARTICLE XV

Estoppel Certificates

Section 15.01. *From the Government.* The Government agrees at any time and from time to time during the Term of this Lease upon not less than ten (10) days' prior notice by Lessor to execute, acknowledge and deliver to Lessor a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications), and the dates to which the fixed rent and other charges have been paid in advance, if any, and stating whether or not to the best knowledge of the signer of such certificate Lessor is in default in performance of any covenant, agreement or condition contained in this Lease and, if so, specifying each such default of which the signer may have knowledge, it being intended that any such statement delivered pursuant to this Section 15.01 may be relied upon by the Trustee and by any prospective purchaser of Bonds issued under the Indenture.

Section 15.02. *From Lessor.* Lessor agrees at any time and from time to time during the Term of this Lease upon not less than ten (10) days' prior notice by the Government to execute, acknowledge and deliver to the Government a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there shall have been modifications that the same is in full force and effect as modified and stating the modifications) and the dates to which the fixed rent and other charges have been paid in advance, if any, and stating whether or not to the best knowledge of the signer of such certificate the Government is in default in performance of any covenant, agreement, or condition contained in this Lease and, if so, specifying each such default of which the signer may have knowledge, it being intended

that any such statement delivered pursuant to this Section 15.02 may be relied upon by any prospective assignee of the Government's interest in this Lease.

IN WITNESS WHEREOF, GULF RESTON PROPERTIES, INC., Lessor, has caused this Lease Agreement to be signed in its corporate name by its (Vice) President and its corporate seal to be hereunto affixed and attested by its Secretary, and the UNITED STATES OF AMERICA acting by and through the Administrator of General Services, Lessee, has caused this Lease Agreement to be signed in its name by one of its Contracting Officers, all as of the day and year first above written.

GULF RESTON PROPERTIES, INC.

By JAMES LAWRENCE
(Vice) President

[CORPORATE SEAL]

Attest:

JOHN J. GUILFOYLE, JR.
Secretary

UNITED STATES OF AMERICA
Acting by and through the Administrator of General Services

[CORPORATE SEAL]

By LARRY F. ROUSH
Contracting Officer

STATE OF VIRGINIA
COUNTY OF FAIRFAX } to-wit:

I, LOIS C. BELL, a notary public in and for the jurisdiction aforesaid, hereby certify that LARRY F. ROUSH, whose name as Contracting Officer of the United States of America, acting by and through the Administrator of General Services, is signed to the foregoing Lease Agreement dated as of the 20th day of December, 1973, has acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand and notarial seal this 20th day of December, 1973.

My commission expires: 4/9/77

LOIS C. BELL
Notary Public

[NOTARIAL SEAL]

STATE OF VIRGINIA
COUNTY OF FAIRFAX } to-wit:

I, LOIS C BELL, a notary public in and for the jurisdiction aforesaid, hereby certify that JAMES LAWRENCE and JOHN J. GUILFOYLE, JR., whose names as (Vice) President and Secretary, respectively, of Gulf Reston Properties, Inc., are signed to the foregoing Lease Agreement dated as of the 20th day of December, 1973, have acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand and notarial seal this 20th day of December, 1973.

My commission expires: 4/9/77

LOIS C. BELL
Notary Public

[NOTARIAL SEAL]

SCHEDULE A

GENERAL PROVISIONS AND INSTRUCTIONS

(Standard Form 2-A—February 1965 Edition-Modified)

General Services Administration

U. S. Government Lease for Real Property

Officials not to Benefit.

No Member of or Delegate to Congress, or Resident Commissioner shall be admitted to any share or part of this lease contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this lease contract if made with a corporation for its general benefit.

Equal Opportunity Clause.

The following clause is applicable unless this contract is exempt under the rules and regulations of the Secretary of Labor (41 CFR, Chapter 60).

During the performance of this contract (Lease), the Contractor (Lessor) agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in the Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24,

1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

FACILITIES NONDISCRIMINATION.

(a) As used in this section, the term "facility" means stores, shops, restaurants, cafeterias, restrooms, and any other facility of a public nature in the building in which the space covered by this lease is located.

(b) The Lessor agrees that he will not discriminate by segregation or otherwise against any person or persons because of race, creed, color, or national origin in furnishing, or by refusing to furnish, to such person or persons the use of any facility, including any and all services, privileges, accommodations, and activities provided thereby. Nothing herein shall require the furnishing to the general public of the use of any facility customarily furnished by the Lessor solely to tenants, their employees, customers, patients, clients, guests and invitees.

(c) It is agreed that the Lessor's noncompliance with the provisions of this section shall constitute a material breach of this lease. In the event of such noncompliance, the Government may take appropriate action to enforce compliance, may terminate this lease, or may pursue such other remedies as may be provided by law. In the event of termination, the Lessor shall be liable for all excess costs of the Government in acquiring substitute space, including but not limited to the cost of moving to such space. Substitute space shall be obtained in as close proximity to the Lessor's building as is feasible and moving costs will be limited to the actual expenses thereof as incurred.

(d) It is further agreed that from and after the date hereof the Lessor will, at such time as any agreement is to be entered into or a concession is to be permitted to operate, include or require the inclusion of the foregoing provisions of this section in every such agreement or

concession pursuant to which any person other than the Lessor operates or has the right to operate any facility. Nothing herein contained, however, shall be deemed to require the Lessor to include or require the inclusion of the foregoing provisions of this section in any existing agreement or concession arrangement or one in which the contracting party other than the Lessor has the unilateral right to renew or extend the agreement or arrangement, until the expiration of the existing agreement or arrangement and the unilateral right to renew or extend. The Lessor also agrees that it will take any and all lawful actions as expeditiously as possible, with repect to any such agreement as the contracting agency may direct, as a means of enforcing the intent of this section, including, but not limited to, termination of the agreement or concession and institution of court action.

EXAMINATION OF RECORDS.

(NOTE.—This provision is applicable if this lease was negotiated without advertising.)

(a) The Lessor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under this lease, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Lessor involving transactions related to this lease.

(b) The Lessor further agree to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or his representatives shall, until the expiration of 3 years after final payment under this lease with the Government, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract.

SCHEDULE B

DESCRIPTION OF LAND

ALL that certain tract, piece or parcel of land situated in Reston, Fairfax County, State of Virginia, being bounded and described as follows:

BEGINNING at a concrete monument in the south line of Parcel 10 of the land of Reston Va., Inc. (as recorded in Deed Book 1988, page 154 of the land records of Fairfax County, Virginia), said point being N. 62° 47′ 54″ W. 572.51 feet from the old west right of way line of Frying Pan Road, Route 667; and said point of beginning also being N. 62° 47′ 54″ W. 529.33 feet along the south line of said Parcel 10 from its intersection with the new north right of way line of South Lakes Drive (formerly known as Frying Pan Road, Route 667) as dedicated and recorded in Deed Book 3415, page 302, among the land records of the Clerk's Office of the Circuit Court of Fairfax County, Virginia;

thence with the said south line of Parcel 10, N. 62° 47′ 54″ W. 1707.49 feet to a concrete monument;

thence through Parcel 10 of the land of Reston Va., Inc. the following courses and distances:

N. 4° 30′ 00″ E. 795.00 feet to a concrete monument;

N. 25° 02′ 19″ E. 1212.09 feet to a concrete monument;

S. 60° 20′ 00″ E. 905.00 feet to a concrete monument;

S. 57° 30′ 00″ E. 850.00 feet to a concrete monument;

S. 37° 00′ 00″ E. 365.00 feet to a concrete monument; and

S. 27° 51′ 25″ W. 1668.48 feet to the point of Beginning

Containing 85.0559 Acres.

Being the same premises described in deed dated December 7, 1966 from Reston Va., Inc., to the United States of America recorded in the land records of the Clerk's Office of the Circuit Court of Fairfax County, Virginia in Deed Book 2847, page 743.

[EXHIBIT C
to
Bond Purchase Agreement]

UNITED STATES OF AMERICA,
Lessor

AND

GULF RESTON PROPERTIES, INC.,
Lessee

SITE
OF
UNITED STATES GEOLOGICAL SURVEY BUILDING
RESTON, VIRGINIA

Ground Lease

Dated as of June 28, 1971

INDEX

GROUND LEASE

THIS GROUND LEASE, made and entered into this 28th day of June, 1971 by and between the UNITED STATES OF AMERICA, acting by and through the General Services Administration (herein called the "Government"), as lessor, and GULF RESTON PROPERTIES, INC., a corporation organized and existing under the laws of the State of Delaware, whose address is 11440 Isaac Newton Square, North, Reston, Virginia (herein called the "Lessee")

WITNESSETH:

WHEREAS, the Lessee is obligated to construct, or to cause to be constructed, a headquarters facility for the United States Geological Survey (hereinbelow defined as the "Building") on a certain parcel of land in Reston, Fairfax County, Virginia (hereinbelow defined as the "Land"); and

WHEREAS, pursuant to Agreement to Lease made as of even date herewith between the Lessee and Government, and subject to the provisions therein set forth, the Government is obligated to sublease the Land and the Building from Lessee pursuant to the lease agreement (hereinbelow defined as the "Sublease") upon completion of construction of the Building; and

WHEREAS, in order to finance the construction of the Building, the Lessee is borrowing certain funds and is concurrently herewith executing and delivering a note, building loan agreement, deed of trust and other instruments and documents with certain construction lenders to evidence and secure such borrowing (the "Construction Loan"); and

WHEREAS, in order to provide the long-term financing for the Building, the Lessee is concurrently herewith entering into purchase agreements (collectively the "Purchase Agreements") with certain institutional investors for the sale by the Lessee to such investors, upon completion of the Building and execution and delivery of the Sublease, of its leasehold mortgage bonds to be secured by an assignment of Lessee's rights under the Sublease and by an indenture and deed of trust which will, among other things, constitute a first lien on the leasehold estate created by this Lease; and

WHEREAS, the General Services Administrator has determined that this Lease, and the terms hereof, are in the interest of the United

States and necessary for the accommodation of a federal agency in the Building which is to be erected by the Lessee on the Land.

NOW, THEREFORE, for the considerations hereinabove and hereinafter mentioned, the Government and the Lessee covenant and agree as follows:

The Government hereby leases to the Lessee, and the Lessee hereby hires from the Government, for the term, at the rental and subject to the provisions herein set forth, that certain parcel of land in Reston, Fairfax County, Virginia, consisting of approximately 85 acres of land acquired by the United States of America by deed dated December 7, 1966, and recorded in the land records of the Clerk's Office of the Circuit Court of Fairfax County, Virginia, in Deed Book 2847, page 743 and more particularly described in Schedule A hereto, together with all buildings and improvements now or hereafter erected thereon including any and all equipment, fixtures, appurtenances, roadways, parking areas and all open areas, and together with all and singular the rights, easements and appurtenances of the Government thereunto belonging or in any wise appertaining;

UNDER AND SUBJECT, NEVERTHELESS, to easements of record at the date of this Lease for public roads and highways and rights of way for railroads, pipelines and public utilities, to the extent (if any) that the same affect the Land as of the date hereof.

TO HAVE AND TO HOLD the said Premises, subject to the provisions and conditions hereinafter set forth, unto the Lessee for the term specified in Section 2.01 hereof.

This Lease is made upon the following terms, covenants and conditions and the parties respectively covenant and agree as follows:

ARTICLE I

DEFINITIONS AND RULES FOR CONSTRUCTION

SECTION 1.01. *Defined Terms.* As used in this Lease, the following words have the meanings herein specified, unless the context otherwise connotes:

"Building" means the headquarters facility of the United States Geological Survey and related improvements to be con-

structed on the Land and any building or buildings and improvements constructed in place thereof or in addition thereto;

"Construction Loan" means the Construction Loan referred to in the recitals hereto;

"Indenture" means the Indenture and Deed of Trust to be executed in substantially the form attached as Exhibit D to the Purchase Agreements;

"Land" means the parcel of land hereinabove described;

"Lessee" means Gulf Reston Properties, Inc.;

"Person" means any individual, partnership, firm, corporation or governmental authority;

"Premises" means the Land and the Building and the grounds, sidewalks, curbs, gutters and streets adjacent thereto and located on such Land;

"Purchase Agreements" means the purchase agreements defined in the recitals hereto;

"Sublease" means the sublease of the Land and the Building to be executed by the Lessee as Sublessor to the Government as Sublessee substantially in the form of the Lease Agreement attached as Schedule 1 to the Agreement to Lease which is attached as Exhibit A to the Purchase Agreements;

"Term" means the term of this Lease as provided in Section 2.01 hereof.

"Trustee" means the Trustee under the Indenture.

SECTION 1.02. *Notices.* No consent, demand, designation, notice, opinion, request, waiver or other communication to be made under this Lease shall be effective unless it be in writing and mailed, postage prepaid, addressed to the addressee as follows:

A. If to the Government, Director, Space Management Division, Office of Operating Programs, Public Buildings Service, General Services Administration, 18th & F Streets, N. W., Wash., D. C. 20405 or such other address as the Government designates; and

B. If to Lessee, c/o Gulf Reston, Inc., 11440 Isaac Newton Square, North, Reston, Virginia 22070, Attention: President, or such other address as Lessee designates.

ARTICLE II

Term

Section 2.01. *Term.* The Term of this Lease shall commence at 12:01 A.M. on June 28, 1971 and expire at 12 o'clock midnight on the twenty-fifth anniversary of the date of execution and delivery of the Sublease or on June 27, 2001, whichever shall first occur.

Section 2.02. *Lease Not Terminable.* This Lease shall not be terminable or cancellable by either the Government or the Lessee, whether by reason of any default, act or omission of either the Government or the Lessee or for any other reason whatsoever, prior to the expiration of the Term hereof as set forth in Section 2.01; provided, however, that if the Government purchases the Building as provided in the Sublease, this Lease shall terminate effective as of the date of such purchase.

ARTICLE III

Rent

Section 3.01. *Fixed Rent.* As fixed rent, the Lessee has paid to the Government simultaneously with the execution and delivery hereof, as full and complete rental for the entire term hereof, the sum of one dollar ($1), receipt of which is hereby acknowledged.

ARTICLE IV

Mortgage of Leasehold Estate

Section 4.01. *Assignment to Trustee.* Nothing in this Lease shall be deemed to create any right in any Person not a party hereto, and this Lease shall not be construed in any respect to be a contract in whole or in part for the benefit of any third party, except that all right, title and interest of the Lessee hereunder may be mortgaged, warranted, granted, conveyed, pledged and assigned in connection with the Construction Loan, and thereafter to the Trustee pursuant to the Indenture.

ARTICLE V

Invalidity of Particular Provisions

Section 5.01. *Severability.* If any term or provision of this Lease or the application thereof to any Person or circumstance shall, to any extent, be invalid or unenforceable, the remaining terms and provisions of this Lease, or the application of such terms or provisions to Persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each term and provision of this Lease shall be valid and be enforced to the fullest extent permitted by law.

ARTICLE VI

Covenant of Quiet Enjoyment

Section 6.01. *Quiet Enjoyment.* The Government covenants and agrees that the Lessee shall lawfully, peaceably and quietly hold, occupy and enjoy the Premises during the Term of this Lease and any extension or extensions thereof, without hindrance, ejection or molestation by the Government, or anyone claiming by, through or under the Government.

ARTICLE VII

Miscellaneous

Section 7.01. *Headings.* The headings of the Articles and the numberings and headings of the Sections and paragraphs in this Lease are inserted as a matter of convenience to the parties and shall not affect the construction of this Lease.

Section 7.02. *Counterparts.* This Lease may be executed in any number of counterparts, each of which shall be an original and the counterparts shall constitute but one and the same instrument.

Section 7.03. *Successors Bound; Modifications.* Subject to the provisions of Article IV, this Lease shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns and may not be modified, altered, terminated or discharged orally but only by an agreement in writing signed by the parties hereto.

ARTICLE VIII

Conditions of and Title to the Premises

Section 8.01. *Representations by the Government.* The Government represents that the title to the Premises has been examined by or on behalf of the Government to its satisfaction prior to the execution and delivery hereof; that the Government's title to the Premises is free and unencumbered except by this Lease and except as set forth in the subject clause at the beginning of this Lease; and that none of the exceptions therein set forth will have the effect of interfering with the quiet use, possession and enjoyment of the Premises for the purposes of this Lease or the Sublease.

ARTICLE IX

Estoppel Certificates

Section 9.01. *From the Lessee.* The Lessee agrees at any time and from time to time during the Term of this Lease upon not less than ten (10) days' prior notice by the Government to execute, acknowledge and deliver to the Government a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications).

Section 9.02. *From the Government.* The Government agrees at any time and from time to time during the Term of this Lease upon not less than ten (10) days' prior notice by the Lessee or the Trustee to execute, acknowledge and deliver to the Lessee or the Trustee a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there shall have been modifications that the same is in full force and effect as modified and stating the modifications).

In Witness Whereof, The United States of America, acting by and through the General Services Administration, Lessor, has caused this Lease to be signed in its name by one of its Contracting Officers, and Gulf Reston Properties, Inc. has caused this Lease to be signed

in its corporate name by its Vice President and its corporate seal to be hereunto affixed and attested by its Assistant Secretary, all as of the day and year first above written.

UNITED STATES OF AMERICA,
Acting by and through the
General Services Administration

By A. F. SAMPSON
Contracting Officer

GULF RESTON PROPERTIES, INC.

By JAMES LAWRENCE
Vice President

Attest:

R. DENNIS MCARVER
Assistant Secretary

[CORPORATE SEAL]

WASHINGTON, D. C. } to-wit:

I, ROSA BACKENHEIMER, a notary public in and for the jurisdiction aforesaid, hereby certify that A. F. SAMPSON, whose name as Contracting Officer of the United States of America, acting by and through the General Services Administration is signed to the foregoing Ground Lease dated as of the 28th day of June, 1971, has acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand and notarial seal this 28th day of June, 1971.

My commission expires: November 14, 1975

ROSA BACKENHEIMER
Notary Public

[NOTARIAL SEAL]

DISTRICT OF COLUMBIA } to-wit:

I, MARY V. SMALL, a notary public in and for the jurisdiction aforesaid, hereby certify that JAMES LAWRENCE and R. DENNIS MCARVER, whose names as Vice President and Assistant Secretary, respectively, of Gulf Reston Properties, Inc., are signed to the foregoing Ground Lease dated as of the 28th day of June, 1971, have acknowledged the same before me in my jurisdiction aforesaid.

Given under my hand notarial seal this 28th day of June, 1971.

My commission expires: 3/31/75

MARY V. SMALL
Notary Public
D. C.

[NOTARIAL SEAL]

SCHEDULE A

Description of Land

All that certain tract, piece or parcel of land situated in Reston, Fairfax County, State of Virginia, being bounded and described as follows:

Beginning at a concrete monument in the south line of Parcel 10 of the land of Reston Va., Inc. (as recorded in Deed Book 1988, page 154 of the land records of Fairfax County, Virginia), said point being N. 62° 47′ 54″ W. 572.51 feet from the old west right of way line of Frying Pan Road, Route 667; and said point of beginning also being N. 62° 47′ 54″ W. 529.33 feet along the south line of said Parcel 10 from its intersection with the new north right of way line of South Lakes Drive (formerly known as Frying Pan Road, Route 667) as dedicated and recorded in Deed Book 3415, page 302, among the land records of the Clerk's Office of the Circuit Court of Fairfax County, Virginia;

thence with the said south line of Parcel 10, N. 62° 47′ 54″ W. 1707.49 feet to a concrete monument;

thence through Parcel 10 of the land of Reston Va., Inc. the following courses and distances:

N. 4° 30′ 00″ E. 795.00 feet to a concrete monument;
N. 25° 02′ 19″ E. 1212.09 feet to a concrete monument;
S. 60° 20′ 00″ E. 905.00 feet to a concrete monument;
S. 57° 30′ 00″ E. 850.00 feet to a concrete monument;
S. 37° 00′ 00″ E. 365.00 feet to a concrete monument; and
S. 27° 51′ 25″ W. 1668.48 feet to the point of Beginning
Containing 85.0559 Acres.

Being the same premises described in deed dated December 7, 1966 from Reston, Va., Inc., to the United States of America recorded in the land records of the Clerk's Office of the Circuit Court of Fairfax County, Virginia in Deed Book 2847, page 743.