

NATIONAL INSTITUTES OF HEALTH,
INDUSTRIAL HYGIENE LABORATORY
(National Institutes of Health, Building 2)
9000 Rockville Pike
Bethesda
Montgomery County
Maryland

HABS No. MD-1102-A

HABS
MD
16-BETH,
3A-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
National Park Service
Northeast Region
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

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- Location:** 9000 Rockville Pike, Bethesda, Montgomery County, Maryland.
- USGS: Kensington, Maryland Quadrangle
Universal Transverse Mercator Coordinates:
18.318050.4318925
- Present Owner:** United States Government. Department of Health and Human Services.
- Present Occupant:** Vacant.
- Present Use:** Vacant.
- Significance:** The Industrial Hygiene Laboratory, constructed in 1938, is one of the original laboratory buildings built for the National Institute of Health (NIH) in Bethesda, and the first laboratory built solely for the study of industrial hygiene in the nation. The Georgian Revival building is one of a set of buildings built to serve as the nucleus for the national research center. The other two buildings constructed in 1938 were the Administration Building (Building 1) and the Public Health Methods & Animal Unit Building (Building 3). Planned around a central, landscaped square, the Administration Building was flanked to the northeast by the Industrial Hygiene Laboratory and to the southeast by the Public Health Methods & Animal Unit Building.
- As one of the three earliest buildings erected on the NIH campus, Building 2 contributes to the early history of the institution as a center for the study of disease. The Division of Industrial Hygiene of the United States Public Health Service was concerned primarily with maintaining the health of industrial workers across the country, and investigating the causes and effects of occupational accidents and diseases. The research conducted by NIH scientists in the Industrial Hygiene Laboratory produced dramatic improvements in working conditions and in the overall health of the civil population. These developments proved crucial to meeting the challenge of keeping the American people healthy during World War II, preventing disease, and providing military personnel with the finest medical care in history.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. **Dates of erection:** The original building plans date to August 23, 1937. The cornerstone was laid on May 3, 1938. According to records on the building's construction housed at the Federal Records Center in Suitland, Maryland, the building was opened by the fall of 1938.
2. **Architect:** The building was designed by the Treasury Department, Procurement Division, Public Buildings Branch, with J. Winthrop Wolcott, Jr., acting as consulting architect. J.W. Wolcott received a B.S. in Architecture from the Georgia Institute of Technology in 1916, and completed a special course in Reinforced Concrete Construction at the Johns Hopkins University in 1921. He was a Consulting Architect with the United States Treasury Department from 1933 to 1937. Mr. Wolcott was an architect with the renowned design firm of Skidmore, Owings & Merrill in 1944, and formed his own practice, Finney, Wolcott & Associates in Baltimore, Maryland, from 1947 to 1955. Mr. Wolcott became a member of the American Institute of Architects, Baltimore Chapter, in 1948.
3. **Original and subsequent owners:** The owner of the property since the building's construction has been the United States Government, Department of Health and Human Services (formerly the United States Public Health Service).
4. **Builder, contractor, suppliers:** The general contractor for the building was the George A. Fuller Company of Bethesda, Maryland. The George A. Fuller Company was a highly acclaimed design and construction company. Other notable projects completed by the firm include: the Evening Star Building and the Willard Hotel in Washington, D.C.; the Frick Building in Pittsburgh; the Fuller Building (Flatiron) in New York; and the Monadnock Building in Chicago. The George A. Fuller Company is now headquartered in Washington, D.C.

According to records on the building's construction housed at the Federal Records Center in Suitland, Maryland, the following contractors/suppliers worked on the original structure: wrought-iron railings were supplied by Samuel J. Crewell Iron Works; granite was from Walter S. Phelps Granite Company; Sweet's Steel Company supplied steel for basement walls and columns; Aerofin Corporation supplied fan blast radiation; B.F. Sturtevant Company supplied unit heaters; Ohio Injector Company supplied injectors for the boilers; and Reading, Pratt and Cady supplied valves.

5. **Original plans and construction:** The building was one of three original structures to form the NIH campus. (The other two original buildings are Buildings 1 and 3, also executed in the Georgian Revival style by the same government architects.) Building 2 is a rectangular, Flemish-bond-brick, three-story, hipped-roof structure with a sub-basement, basement, and attic. It is straightforward in its execution, with a regular

fenestration pattern along its long walls. At either end of the building, two, double chimney "pents" hark back to Colonial Maryland architecture. The original structure featured elegant entrance doors and Palladian windows on the north and south faces, and capped pilasters on the east and west walls that frame the second and tenth bays. Today, the entrance and windows on the north face have been obscured by a fire stair addition.

The interior of the building is based upon a central corridor with a set of stairs at either end. To either side of the corridor are offices and laboratories. Each of the laboratories was outfitted with special equipment, designed to furnish each lab station with hot and cold water, air, a vacuum, a waste outlet, and electricity. The conduits for these services were contained within precast concrete service blocks, built into the walls. Although supplemented over the years with modern HVAC systems, some of the original laboratory equipment can still be found throughout the building.

Information on the original appearance of the building is derived primarily from the original drawings, housed on computer at the National Institutes of Health, Design Engineering Services Branch, and from construction photographs, also available at NIH, in the National Library of Medicine, and in the Historical Office and Museum.

6. **Alterations and additions:** The building has undergone many renovations over the years, but most of these alterations have been in the form of upgraded laboratory equipment, rather than full-scale demolition of spaces. The floor plan of the building, therefore, remains relatively intact. The only major visible changes to the exterior of the building have been the construction of the fire stair enclosure on the building's north face, and the eastward extension of the sub-basement. The 1967 stair enclosure resulted in the addition of a gabled bay on the north wall. The sub-basement extension, constructed in approximately 1942, resulted in a concrete block addition that extends from the first to the tenth bay along the east elevation.

B. Historical Context:

1. The Wilson Estate

Building 2 is one of the first three buildings constructed for the National Institute of Health in Bethesda, Maryland. The NIH campus was established on the former estate of Luke and Helen Wilson. In 1923, Helen Woodward Wilson purchased 95 acres of land, known as the Britton farm, on the southwest corner of the Rockville Pike and Cedar Lane in Montgomery County. At the time, Bethesda was emerging as a wealthy suburb of Washington. The Rockville Pike was being transformed from farmland into a corridor featuring grand 20th-century estates, and several country clubs were enhancing the prestige of the area. Rockville Pike was home to many prominent citizens, including Canon Freeland Peter of the Washington Cathedral; Merle Thorp, editor of the "Nation's Business;" and Dr. Gilbert Grosvenor, Director of the National Geographic Society.

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Luke and Helen Wilson commissioned architect Edward Clarence Dean to design their estate, "Tree Tops," in the English Arts and Crafts Style. They moved into the house in 1926.

Luke Wilson was a progressive Democrat, and sympathetic to the social programs of President Franklin Delano Roosevelt. During the Depression, in the mid-1930s, the Wilsons expressed an interest in donating a portion of their estate to the federal government. The property was described as an estate 1.5 miles from Bethesda, Maryland, consisting of 94 acres on the Rockville Pike. The Wilsons were eager to dispose of the land, but made it very clear that they would prefer to vest it in the Federal Government rather than in any state or county agency in Maryland. In January 1933, Luke Wilson further defined this disposition, stating in a letter to the Assistant Secretary to the President, Marvin McIntyre, that he would like "to give away this property for some educational or international purpose."

Suggestions for the use of the Wilson estate, generated by T.C. Jeffers, Landscape Architect with the National Capital Park and Planning Commission, included: an educational center; a convalescent Home for Government Employees; the Woodrow Wilson Foundation "International Center;" a public golf course; a new Naval Hospital or other government department whose work was of a scientific nature. At the time, the U.S. Public Health Service was looking to establish a farm on which to raise animals for the National Institute of Health, which at that time was located at 25th & G Streets in downtown Washington, D.C. Records of the Public Health Service indicate that a tract of ground from 100 to 150 acres was necessary for this purpose.

2. The United States Public Health Service Proposes a Use for the Wilson Estate

On December 7, 1933, the Surgeon General of the Public Health Service submitted a memorandum to Assistant Secretary of the Treasury, L.W. Robert, Jr., containing a list of new construction projects for the Public Health Service. One of the items included on this list was for the National Institute of Health in Washington, D.C. The memorandum requested the construction of a laboratory building of three stories and a basement, three sets of officers quarters, and research equipment. This request, having gone without response for almost a year, was followed up by the Acting Surgeon General, John McMullen, on November 12, 1934. The General revised the earlier request by indicating that, although it was originally contemplated to construct the new facilities on the present site of the National Institute of Health in Washington, D.C., representatives of the Public Health Service had been informed of the offer made by Mr. Wilson and were very interested in developing this ground for the National Institute of Health. The request stated that \$100,000 had already been allocated by the Secretary of the Treasury for an animal house, and that it would be of the greatest benefit to the Public Health Service if the laboratory and quarters could be developed in conjunction with the animal house in Bethesda, Maryland, rather than in the District of Columbia.

In a letter sent to Luke I. Wilson on December 5, 1934, the Acting Surgeon General outlined the proposed use of the property by the Public Health Service. The immediate use of the ground was to be in the development of an Experimental Station for the raising of animals used in the control of biologics. It was the intention of the Public Health Service (PHS) to eventually enlarge the station to contain the various laboratories necessary to carry out investigative studies connected with malaria, industrial hygiene, milk sanitation, and nutrition. Mr. McMullen noted that \$675,000 had been requested from the Treasury Department for the construction of laboratories and quarters, in addition to the \$100,000 that had already been designated for the animal house.

3. History of the National Institute of Health

An article appearing in the *Washington Star* in 1934, entitled "New Buildings Here to Intensify War on Disease," defined the National Institute of Health as the research center of the Public Health Service, under the Treasury Department. The institute was set up to study the cause, prevention and cure of every disease of man, and its purpose was to bring together, in the battle against disease, every branch of science connected with plant and animal life. The National Institute of Health had its origin in a small clinical laboratory in New York in 1887, which was later transferred to Washington, D.C. In 1901, an Act of Congress established a separate institution under the Public Health Service known as the Hygienic Laboratory. The Laboratory was charged with the "investigation of contagious diseases and matters pertaining to the public health."

The scope of the Hygienic Laboratory was widened greatly, and its name changed to the National Institute of Public Health by an Act of Congress on May 26, 1930. The 1930 legislation gave the institute the property, equipment, and scientific organization of the former Hygienic Laboratory and \$70,000 for the construction of additional buildings. This Act also gave the Secretary of the Treasury the authority to accept gifts for the general work of the institute and for the establishment of fellowships in scientific research.

4. Wilson Transfers Property to the United States Government

On March 16, 1936, Assistant Surgeon General, L.R. Thompson, sent a letter to Luke Wilson, encouraging the transfer, and assuring Mr. and Mrs. Wilson that the National Institute of Health was fundamentally a research organization dealing with the study of the diseases of man, and that research would always be its function. On March 18, 1935, Luke Wilson notified the Treasury Department, in writing, of his approval of the Public Health Service project.

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I wish, therefore, to officially inform you that it is our intention to donate to the Secretary of the Treasury, as a gift to the National Institute of Health of the Public Health Service, a major part of this property, to be used in the development of an experimental station by that Service, the deed or the property to be given to the Government as soon as the exact boundary lines can be determined.

- Letter from Luke I. Wilson to the
Secretary of the Treasury Department
March 18, 1935

The Treasury Department officially accepted the Wilson donation on May 15, 1935. This acceptance was pursuant to authority contained in the Public Buildings Act, approved May 25, 1926, and the Emergency Appropriation Act, approved June 19, 1934, which authorized the acquisition of a site for an Experimental Station for the United States Public Health Service at Bethesda, Maryland.

Despite opposition from the community, the Maryland-National Capital Park and Planning Commission, and the Board of County Commissioners, the Wilson's deeded forty-five acres of land to the United States Government, Department of the Interior on August 10, 1935.

A Bill authorizing the Secretary of the Interior to accept title to the Luke Wilson property reads:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the Secretary of the Interior, acting for and in behalf of the United States, is hereby authorized to accept as a donation unencumbered title to all or any part of the property of Luke I. Wilson, comprising 93 acres, more or less, known as "Treetops", located on the Rockville Pike about two miles north of Bethesda, Montgomery County, in the State of Maryland, and upon acceptance of good and sufficient title, the property so acquired may be devoted to such appropriate public purpose as may be determined by the President or as may be provided by law.

5. The Public Health Service Requests to Expand NIH Facilities in Bethesda

Shortly thereafter, the Public Health Service informed the Treasury Department of an urgent need to expand the facilities of the National Institute of Health. At this time, the Institute was housed in four buildings in Washington, D.C. Two of the buildings had been recently constructed, while the other two were much older, one having been built in 1901. The buildings were fully occupied, leaving no room for further, necessary expansion. Due to a lack of adequate facilities, the central offices of the Public Health Service, having to do with field research in malaria, industrial hygiene, and the like,

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were located in the Public Health Service Administration Building at 19th Street and Constitution Avenue, N.W., in space originally intended for departmental personnel.

In his letter to the Treasury, Acting Surgeon General, W.F. Draper, stressed that the need for space would become even more urgent with the passage of the Social Security Bill, which would provide an annual appropriation of \$2,000,000 for further research into the cause and prevention of disease. Mr. Draper's letter further stated that:

the site which Mr. Wilson is donating to the Public Health Service comprises 45 acres. Under the authority granted to the Secretary of the Treasury and the Postmaster General in the Emergency Appropriation Act, fiscal year 1935, \$100,000 has been set aside for the construction of an animal building. The site, however, is of such acreage as to allow adequate room for the development of laboratory units and quarters for both officers and attendants.

The Public Health Service estimated that it would cost approximately \$2,500,000 to construct the complete unit at Bethesda. The completed project would include an administration building, laboratory buildings, field offices, quarters for officers and attendants, a sewage disposal plant, road construction and necessary landscaping. On February 24, 1936 the Public Health Service submitted a detailed estimate of project costs to the Procurement Division of the Treasury Department, and requested \$1,363,000 to cover the costs of an experimental laboratory facility at Bethesda. A supplemental letter sent to the Treasury on May 9, 1936 confirmed that \$2,500,000 were required to complete the entire project — an increase of \$1,137,000 to the initially requested amount for the first phase of construction.

On June 22, 1936, a total of \$1,363,000 was appropriated for the construction of three buildings for the National Institute of Health at Bethesda. The funds were appropriated by the Emergency Construction of Public Buildings Act of June 22, 1936. Initial architectural sketches and space requirements for the expanded research center were begun within a month, and ground was broken for the new campus in February 1938. The first three buildings included an Administration Building (Building 1), an Industrial Hygiene Laboratory (Building 2), and a Public Health Methods and Animal Unit Building (Building 3). The buildings were occupied by the National Institute of Health by December 1938.

6. History of the Public Health Service and Industrial Hygiene in the United States

Section 1 of an Act approved by Congress on August 14, 1914, charged the Public Health Service with studying and investigating the diseases of man and conditions influencing the propagation and spread of such illnesses. The Public Health Service developed into a national health agency in conformity with laws enacted by Congress over several centuries.

Such legislation included the following:

- Act of July 16, 1798 creating a Marine Hospital Service
- Act of July 1, 1902 to change the name of the Marine Hospital Service to the United States Public Health and Marine Hospital Service
- Act of February 3, 1905 providing that the Public Health Service and Marine Health Service should remain under the jurisdiction of the Treasury Department unless otherwise specified by law
- Act of August 14, 1912 to change the name of the Public Health and Marine Hospital Service to the Public Health Service

Activities of the Public Health Service involved protecting the health of American seamen; examining, mentally and physically, millions of aliens that formed an increasing army of recruits to the industries; investigating women and child labor in the United States; and inspecting working conditions in mills and other industrial environments. To effectively carry out these investigations, the Public Health Service, in 1915, created an Office of Field Investigations into Occupational Diseases. In 1917, the name of this office was changed to the Office of Field Investigations in Industrial Sanitation, and when transferred to Washington, D.C. in October, 1918, became known as the Division of Industrial Hygiene and Medicine. On July 1, 1919, the name of the division changed again to the Office of Industrial Hygiene and Sanitation.

Field Activities of the Office of Industrial Hygiene and Sanitation involved conducting surveys in industrial plants into occupational health hazards, studies of occupational diseases, and investigations of working conditions in government buildings. Industrial hygiene investigations were prompted by the increasingly high death rates among workers in certain occupations, inquiries regarding the cause of fatigue, and the effects of constant exposure to dust and other industrial pollutants. In essence, industrial hygiene researchers were charged with keeping the civil population, especially those working in essential industries, in good health.

7. Achievements in Industrial Hygiene

Studies in industrial hygiene, conducted by the National Institute of Health — a separate institution created under the Public Health Service — examined specifically the hazards of industrial operation in factories across the country. With new facilities and better laboratory equipment, the Industrial Hygiene Laboratory at the National Institute of Health began intensive investigations into some of the most serious threats. One of the dramatic studies involved the hazard of toluene, the first ingredient of TNT. After six months' work with laboratory animals and human beings, new devices were created and standards enforced to protect munitions workers from its toxic vapors. Similar standards were developed to reduce the hazards of other gases, dusts, fumes, vapors, and mists that pollute factory air. Important contributions to basic medical knowledge were made on the spread of contagious diseases, the effects of metal poisons, the gains of preventive medicine, and the effects of ventilation and lighting on worker's health.

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Some of the more outstanding contributions to come out of the Industrial Hygiene Laboratory (Building 2) were directly related to the war effort. During World War II, scientists and researchers at the National Institute of Health, Industrial Hygiene Laboratory, were charged with conserving the health and strength of America's "rearguard" — the fifty million workers, machinists, welders, and riveters doing the jobs that were considered so "vital to victory." Scientists used white mice and guinea pigs to make preliminary studies of gas fumes, dust and any other substances that could affect "efficiency at the machine." One of the most fascinating war-related experiments was undertaken in the division's pressure chamber, a temporary unit once contained within the sub-basement extension of Building 2. In this chamber, the temperature and pressure of different altitudes could be reproduced so that, on solid ground, the effects of flight and thinning air on the airplane pilot could be observed — and answers found to the dangers of sudden climbs to high levels and swift dives.

The value of this research, and the significance of improvements in industrial hygiene, was recognized as crucial to the success of American servicemen — and the nation — during World War II, as summarized in an article that appeared in *Popular Mechanics* in September 1942. The author closed his review of the tasks and accomplishments of the Industrial Hygiene Laboratory with the following statement: "So the great battle goes on, for victory over industrial hazards means victory elsewhere."

The National Institute of Health became the National Institutes of Health in 1948, as research expanded and additional individual institutes within the center were formed. In 1950, the Industrial Hygiene Laboratory was absorbed into the National Institute of Arthritis and Metabolic Diseases, and became the Laboratory of Physical Biology, which still exists today. In 1956, the National Institute of Dental Research was formed and accommodated in Building 2 until 1962, when the entire building was given to the National Institute of Arthritis and Metabolic Diseases (NIAMD). This institute included the Laboratory of Molecular Biology, the Laboratory of Physical Biology, and the Laboratory of Chemical Physics. In 1972, the Laboratory of Physical Biology moved to Building 6. The last tenant to occupy Building 2 was the National Institute of Diabetes and Digestive and Kidney Diseases.

PART II. ARCHITECTURAL INFORMATION

A. General statement:

1. **Architectural character:** Building 2 is a Georgian Revival structure constructed originally as an industrial hygiene laboratory. It draws upon Colonial Maryland domestic architecture for its red-brick walls, hipped roof, and prominent, end-wall, double chimneys.
2. **Condition of fabric:** The overall condition of the building is good. The exterior has been well maintained and appears much as it did when first constructed. The interior of the building has received numerous alterations and has suffered considerably due to a lack of occupancy and maintenance over the past year and a half.

B. Description of Exterior:

1. **Overall dimensions:** The building is 48'-6" wide by 150'-0" long (or, three bays wide by eleven bays long). The building is comprised of three full stories above ground, an attic story, a sub-basement, and a raised basement. (The topography of the site makes the basement a full height above grade on the east wall and partially below grade on the west wall.) Rectangular in shape, the building features offices and laboratories laid out along a central corridor plan. There is one primary entrance to the building, located on the south wall.
2. **Foundations:** The foundation of the building consists of reinforced concrete spread footings.
3. **Walls:** The building is composed of red-brick, Flemish bond walls with both brick and cut limestone trim. A belt course running between the basement and first floor levels, and all of the window sills, are constructed of cut limestone. Jack arches are composed of red brick. The long east and west walls are relieved at the second and tenth bays by three-story-high, brick pilasters that frame each bay. The pilasters are capped with painted Ionic capitals. Original drawings identify the capitals as constructed of cast stone. Shallow brick recessed spandrels can be found beneath the first-floor windows. Projections from the north and south walls lend interest to the building's wall surface. The projection at the south end of the building is original, while that at the north end is a 1967 alteration. At the south end, a wide center bay extends beyond the plane of the wall to contain an original stair hall and two chimneys above, and harks back to Colonial "pents" of 18th-century Maryland domestic architecture. At the north end, the original building face, which was once similar to that of the south face, has been concealed behind a four-story, gabled fire stair enclosure. Today's north face contains a service door at the basement level, windows in the three stories above, and a boxed

cornice gable with an operable porthole window at the apex. Behind this north gable, the double chimney stack pent is still visible, the parapet of which was raised with the 1967 stairwell addition. The parapet also features a 1967 louver for a fan exhaust.

4. **Structural system, framing:** The building is framed in reinforced concrete beams and columns. The roof is framed in structural steel. The floors are reinforced concrete slabs.
5. **Porches, stoops, balconies, porticoes, bulkheads:** There are two shallow, cast- and wrought-iron balconies at the second and ninth bay windows of the first floor, on both the east and west walls. These balconies feature arabesque detailing, and extend the full width of the shallow brick niches that frame the windows.

The building originally featured two areaways, approached from the north via concrete steps. That on the west side is still intact, and has been further stabilized by concrete tie rods set between the building's face and the areaway retaining wall. The areaway is guarded by an original cast- and wrought-iron railing that extends the length of the building along the west retaining wall. The areaway on the east side of the building has been infilled with a concrete-block sub-basement addition. The addition features skylights and mechanical equipment on its roof. This infill section necessitated the removal of the original cast- and wrought-iron railing along the building's east elevation and its replacement with a sturdier brick wall.

An original marquee projects from the building's north face at the level of the belt course to protect a basement-level loading platform at the northwest corner of the building. The loading platform is reached via an original drive that leads down to the loading dock area from the building's west side. The drive is bordered to the north by an original, curvilinear, concrete retaining wall.

6. **Chimneys:** There are four brick chimneys contained within two end-chimney "pents." A 20th-century adaptation, these massive chimney forms are based upon 18th-century, Colonial Maryland precedents, such as those found in Charles and Calvert Counties. At Building 2, the chimneys located on the north and south walls of the building are part of central, projecting wall elements which rise through the cornice and above the hipped roof in the form of two chimneys connected by a parapet wall. The parapet wall features a window and a decorative, corbelled brick band. The chimney stacks are decorated near their caps with three narrow brick niches on their outer faces and shallow brick panels on their sides. The chimneys are capped in cast-in-place concrete.

Another rooftop feature is the penthouse situated on the west slope of the roof, in the center of the building. It is a flat-roofed element finished in brick and containing three small square, pivot windows with stone sills and brick jack arches.

7. **Openings:**

- a. **Doorways and doors:** The main entrance is located on the south end of the building. The round-arched entrance features a pair of doors flanked by sidelights, over which is a large fanlight with a wrought-iron grille. The entrance remains, for the most part, intact to its original design, although the doors and rectangular transom lights have been altered. While the original doors and transom featured an elegant division of polished plate glass panes, the current doors feature the original wood panels but have simpler door and transom lights. Original pilasters to either side of the doors and at the entrance frame support a Doric frieze, above which is the original round-arched fanlight.

There are two service entrances at the basement level on the north wall: a single-leaf fire-door in the center bay, and an original, two-panel service door with glazing, located underneath the marquee. There is also an original double-door at the sub-basement level which leads to the west areaway.

- b. **Windows and shutters:** The original windows are still intact and are eight-over-eight-light, double-hung sash with wood frames. (Two bays of windows on the west wall have two-over-two exterior window screens placed over the original windows.) The first-floor windows in the second and tenth bays are distinguished in several ways: their placement within round niches, their keystone lintels, and their length (in the form of an added four panes below the standard eight-over-eight sash). The stair-hall window in the center bay of the south wall (directly over the entrance) at the second-floor level is the most distinctive window of the building, and is a modified Palladian in type. Contained within a round-arched opening the same width as the entrance below, the central, double-hung sash section is separated by pilasters from shorter sidelights. The entire composition is contained within a stucco arch set within the wall's opening. The original center-bay windows of the north elevation were removed for the fire stair enclosure. These were elegant, oversized, classical, round-headed openings which emitted light into an original stair hall.

Window sills throughout the building are made of cut stone, while window heads are jack arches fashioned in the ground brick of the walls.

8. **Roof:**

- a. **Shape, covering:** The hipped roof of the main structure is clad in slate. The penthouse has composition roofing.
- b. **Cornice, eaves:** The boxed wood cornice features a denticulated frieze. Original drawings indicate that the downspouts and gutters are metal.

- c. **Dormers, cupolas, towers:** There are nine hipped dormers with a six-over-six-light sash on each of the long slopes of the roof. The sides of the dormers are faced with slate. Each of the chimney parapet walls contain a three-part window with a central four-over-four-light sash and four-pane lights.

C. **Description of Interior:**

- 1. **Floor plans:** The building features a central corridor plan, wherein a long north/south corridor is flanked by a series of offices and laboratories. Each of the floors is laid out in similar fashion, in a stacked arrangement. At either end of the building are stairs, although those at the north end are not original to the building's construction. Double, wire-glass and wood panel doors separate both stair halls from the main corridors. The restrooms are located in the center of the building in the west bank of offices/laboratories. The elevator bank also is located in the center of the building, on the west side, adjacent to the restrooms. (The current elevator cabs and equipment are not original.) The sub-basement differs from the other floors in its plan, featuring a shortened corridor and larger rooms -- especially at its corners.

The building has been renovated numerous times over the years, with certain projects having a much greater impact on the building than others. One of the first significant alterations was the extension of the basement level out along the east areaway. This concrete-block addition was constructed during the onset of World War II. According to Mr. Howard F. Brubach, an employee of the National Institutes of Health for over forty years (until the mid-1970's), the extension was built in approximately 1942 to serve as an altitude chamber. The chamber as used to conduct unique tests on how human beings and mechanical equipment would function at high altitudes. (The areaway extension preceded a temporary building that was constructed to further carry out these studies. The temporary building was constructed on the lawn, east of the building, and adjacent to the earlier chamber. Construction of the temporary building was necessary, as the earlier chamber did not have a refrigeration unit and scientists were unable to simulate "high flight" without this system.)

Renovations were made to the attic story continuously as the need for more laboratories and offices increased. According to Mr. Brubach, the attic originally contained large animal rooms with only a few laboratory spaces. (The animals were placed in exposure chambers in the attic, away from other research areas, where the greatest level of ventilation was available through the roof.) The attic story was built out periodically between 1940 and 1950, and today repeats the stacked arrangement of laboratories and offices seen on the lower stories.

Another substantial alteration was made to the building when a second elevator bank was added at the north end. Records of the Design and Engineering Services Branch of the National Institutes of Health indicate the preparation of detailed elevator plans and diagrams between October 1967 and June 1968. It was during this period that plans were

being made for the north stair-hall addition, which was completed in 1968. It is very likely that these improvement projects were undertaken simultaneously and that the north elevator bank was also installed at this time.

The cold rooms which appear on several floors of the building do not appear on the 1938 drawings and appear to be unoriginal. These include: Room 116/Chemical Physics Cold Room; Room 202/Molecular Biology; Room 318; and Room 419. At least some were added in 1954, when drawings document their installation. These rooms are vault-like in character and are sealed from the corridors by heavy metal doors.

2. **Stairways:** The southern stairway is simple, but light-filled. It is a set of double-run stairs, originally constructed with brass divider strips on the treads. The north stair hall is enclosed for fire protection, and is institutional in character, featuring metal, pipe-railing handrails.
3. **Flooring:** Most of the laboratory, corridor, and bathroom floors are finished in linoleum tile. The office spaces are also tiled. The "cold rooms" have concrete floors.
4. **Wall and ceiling finish:** The walls in the building's offices are finished in plaster with wood trim. The walls in the laboratories feature rectangular salt-glazed (ceramic) wall units of a golden color. The walls in the attic feature terra-cotta tiles. Walls surrounding the cold-storage areas are concrete block. Those in the 1967 stairwell addition are pumice block. Original stair-hall walls are finished in plaster. Bathroom walls are faced in ceramic tile wainscoting with plaster above. Original bathroom partitions were marble, some of which remain.

The ceilings throughout the building are either of suspended plaster or painted concrete.

5. **Openings:**
 - a. **Doorways and doors:** There are heavy, wide wooden doors which lead from the central corridors into the laboratory and office spaces. These doors typically feature glazed upper panels with louvers below.

Aluminum framed door plates on the doors themselves appear to be original or early fixtures.

There are several, heavy metal doors and door surrounds in what are identified as cold rooms. The original hardware on these doors appears to have been retained. Each of the doors has slightly different characteristics. For instance, the door on the third floor cold room, Room 318, was manufactured by Jameson Cold Storage Door Company, Hagerstown, Maryland. Patented 1938/39 and 1941. The door on Room 419 was manufactured by J.P. Pfeiffer & Son of Baltimore, Maryland.

- b. Windows:** The windows are framed on the interior in wood. The molding is not decorative, but a simple surround. Many of the windows throughout the building still display their original blinds. The windows operate on a chain system and many have built-in "black-out" screens that appear to have been added at a later date.
- 6. Decorative features and trim:** There are no decorative features of note in the building's interior.
- 7. Hardware:** The majority of the hardware throughout the building appears to be original and consists of brass doorknobs, door plates and window fixtures.
- 8. Mechanical equipment:**

 - a. Heating, air conditioning, ventilation:** The building featured a fully integrated mechanical system related to its laboratory equipment. Precast concrete service blocks, located within the walls of the laboratories, made it possible to pipe in air, gas, vacuum, cold water, and hot water, and to pipe out waste. At the base of some of the cabinetry units were ventilator panels.

Ventilating fume "hoods" were located throughout the laboratories of the building, and some units appear to remain. These fixtures feature a wire-glass-faced hood set above a steel cabinet. Along a front panel, they contain an air or electrical switch, and four remote-control valves for cold water, gas, air, and vacuum services.

Records of the Design and Engineering Services Branch indicate that modifications to mechanical and electrical systems have been made continuously throughout the life of the building. Today, additional HVAC equipment is evidenced by the more recent exposed piping, ductwork, and electrical conduits running along the ceilings and walls of the building. Prior to July 1956, the building was outfitted with air conditioning. One window on the south elevation, however, still contains a window air-conditioning unit in its lower sash. Portions of sash have been removed from some of the dormer windows to accommodate louvers for ventilation.
 - b. Electrical:** Located in the building are several original electrical distribution systems set within rectangular salt-glazed wall units. According to Dr. Erwin Becker, specialist in Nuclear Magnetic Resonance at NIH who worked in Building 2 for many years, beginning in 1955, these systems, which appear as panels, were critical to the successful completion of laboratory experiments, as they provided a good, stable, electrical source-free of any fluctuation in line voltage. The panels could distribute electrical power to any laboratory in the

building. A series of cables could be patched into the system allowing scientists to hook up a variety of laboratory equipment. (An original panel, complete with cables, exists in the north wall of Room B2-02.)

- c. **Lighting:** The original exterior light fixtures remain to either side of the south entrance. These are cast bronze wall sconces with opaque glass sides, similar to carriage lights.

On the interior, all early light fixtures appear to have been removed, and the primary light source consists of recent fluorescent fixtures suspended from the ceilings.

- d. **Plumbing:** The original plumbing consisted of a variety of laboratory sinks integrated within the steel cabinetry. Toilet fixtures were standard.

- 9. **Original furnishings:** The laboratory cabinet fixtures located throughout the building appear to be a combination of original and replacement equipment. The original drawings show steel cabinets with both soapstone (1 1/4" thick) and wooden (3" thick) tops and drawers of various sizes below, and both versions of this fixture can be found in the building. Glazed cases with sliding doors affixed to wall surfaces also appear to be original in several locations, as are the wooden shelves with metal brackets tap-screwed into wall channels. Originally, most of the equipment was located around the perimeter of the rooms, with some of the larger spaces, such as the chemical laboratory, outfitted with islands of cabinetry. In 1951, and again in 1954, some of the cabinetry was changed during renovation of several laboratory structures on the campus.

D. Site:

- 1. **Historic landscape design:** As one of the first three buildings constructed for the National Institute of Health in Bethesda, Building 2 is an integral part of this national research center. In 1938, in an effort to provide better facilities for the National Institute of Health, the Public Health Service designed a group of buildings to serve as the nucleus of the institute. The structures, erected simultaneously, included an Administration Building (Building 1), the Industrial Hygiene Laboratory (Building 2), and the Public Health Methods & Animal Unit Building (Building 3). The three buildings were sited prominently off the Rockville Pike on Wilson Drive and clustered around a central, landscaped square. The central Administration Building, having a frontage of 186 feet and a depth of 100 feet, was flanked on either side by the Industrial Hygiene Laboratory and the Public Health Methods Building. The later two buildings were identical in size and design, 150 feet long and 48 1/2 feet wide. Along with two additional buildings (Buildings 4 and 5), constructed shortly thereafter, this grouping constituted the earliest quadrangle of laboratory facilities at the National Institute of Health.

Existing privet hedges at the south entrance of Building 2 may represent early plantings. The original cast- and wrought-iron railing which encircled the building in 1938 now only remains along a portion of the south and along the entire western perimeter of the site. It features an "X" motif with rosettes and alternates between narrow bays with circles and wider bays with a central vertical spear. Today, the railing is painted white. A brick wall has replaced the original railing along the east perimeter.

The site's uneven topography resulted in the need for a retaining wall along the north side of the building. The asphalt driveway which leads to the building from Center Drive becomes a concrete-paved loading dock surface at the building's north end. This loading dock area is protected by an original, curvilinear, concrete retaining wall at the site's north perimeter. The top of this driveway retaining wall is heavily planted with ivy and myrtle.

2. **Outbuildings:** There are no outbuildings.

PART III. SOURCES OF INFORMATION

- A. **Architectural Drawings:** The only extant copies of original drawings are located at the National Institutes of Health on Integraph computer microfilm. These drawings can be printed out on a Computer Aided Design (CAD) system. They are accessible through the Design Engineering Services Branch of the National Institutes of Health.

B. **Early Views:**

From the National Library of Medicine/Prints and Photographs Collection:

- "Views of NIH Buildings and Grounds." Undated. Photograph of Building 2. Videodisc Frame No. **A1487**.
- "Dedication of First Six Buildings at NIH." Undated. Videodisc Frame No. **A14569**.
- "Aerial views of NIH Buildings and Grounds." Undated. Photograph by Ellis. Undated. Videodisc Frame No. **A16586**.
- "Aerial Views of NIH Buildings and Grounds." Undated. Photograph by Stone. The Administration, Industrial Hygiene, Public Health Methods, Chemistry and Pharmacology, Infectious Diseases, and National Cancer Institute buildings. Videodisc Frame No. **A16588**.
- "NIH-NIAID Infectious Disease Research." Videodisc Frame No. **A17614**.
- "NIH - Unidentified Laboratory Photos." Undated. Videodisc Frame Nos. **A17689** and **A17690**.

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- "Development of a New Pain-Killing Drug." Undated. Photograph by National Institutes of Health. Videodisc Frame No. **A17904**.
- "Determination of Fluoride in Plant and Animal Materials." 1957. Photograph by National Institutes of Health. Interior view of a laboratory. Videodisc Frame No. **A18601**.
- "Peter A. Cole." 1940. Conducting Ultraviolet Experiment with Dr. F.S. Brackett. Videodisc Frame No. **B4891**.
- "Retirement Ceremonies for Dr. Folla E. Dyer." 1950. Photograph by Sam Silverman, NIH Photographic Research Section. Partial view of audience. Videodisc Frame No. **B5173**.
- "Alice Hamilton." Undated. Founder of Industrial Medicine. Videodisc Frame No. **B14009**.
- "Dr. Haldan K. Hartline." 1965. Photograph by Illustration Service, Rockefeller Institute. Photograph of Dr. Hartline wearing white lab coat and glasses. Videodisc Frame No. **B14231**.
- "James P. Leake." 1932. Photograph by Harris & Ewing. Senior Surgeon, USPHS - Epidemiology and Industrial Hygiene. Videodisc Frame No. **B16857**.
- "Wolfgang G. Oettingen." 1940. Toxicologist Observing Progress of Experimental Studies of Gases. Videodisc Frame No. **B25591**.

C. **Interviews:** On August 29, 1994, Joan M. Brierton held a telephone interview with Dr. Edwin Becker, specialist in Nuclear Magnetic Resonance at the National Institutes of Health. Dr. Becker worked in Building 2 for many years, beginning in 1955, and is very familiar with the equipment and various systems specific to the building.

On August 29, 1994, Joan M. Brierton held a telephone interview with Mr. Howard F. Brubach, employee of the National Institutes of Health for over forty years (until the mid-1970's). Mr. Brubach is extremely knowledgeable about the history of the National Institutes of Health, in particular the Industrial Hygiene Laboratory, and other research divisions housed in Building 2 over the years.

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Records of the Public Health Service. Record Group 90. General Records, General Subject File, 1924-1935.

Records of the Public Health Service. Record Group 90. General Classified Records, Group IX, 1936-1944.

Records of the National Capital Park and Planning Commission. Record Group 328. 1924-1961. Compiled by Dorothy S. Provine.

National Institutes of Health.

Real Property Record, Building 2. History of construction authorization and changes from 1936 through 1958.

Vertical Files from the NIH Historical Office and Museum. (Located at NIH, Building 31.)

Oudens + Knoop Architects, PC and Florance Eichbaum Esocoff King Architects (with Robinson & Associates):

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"Health Institute Moving Time Set." The Washington Star. 7 September 1938. B6.

"Health Service Asks \$1,363,000 for Laboratories." The Evening Star. 7 May 1936. A1.

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Koyl, George S. American Architects Directory. Second Edition. New York: R.R. Bowker Company, 1962.

"Layout Planned for Laboratory." The Evening Star. 12 November 1936. B1.

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"Parran Launches Health Institute." The Evening Star. 11 January 1938. A2.

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"Surgeon General T.Parran Rates Cancer Institute Biggest Advance of the Year." The Evening Star. 10 January 1938. A6.

"The National Institutes of Health, A Bethesda Landmark Celebrates Its Centennial." The Montgomery County Story 30 (February 1987): 247-261.

Thompson, Lewis R. "Contributions to Public Health of the Federal Government." Scientific Monthly 52 (January 1941): 91-94.

"Three New Buildings Planned for NIH." The Washington Star. 26 August 1937. B1.

Townsend, J.G. "Industrial Hygiene Activities in the Public Health Service." American Journal of Public Health 33 (1945): 324-329.

"Tract for Cancer Institute Near Bethesda Donated by Late Luke Wilson." The Washington Star. 25 July 1937. A1.

"Treasury Officials Begin Study of Public Health Plant Near Bethesda." The Evening Star. 27 June 1936. A3.

E. Likely Sources Not Yet Investigated: None.

F. Supplemental Material: None.

PART IV. PROJECT INFORMATION

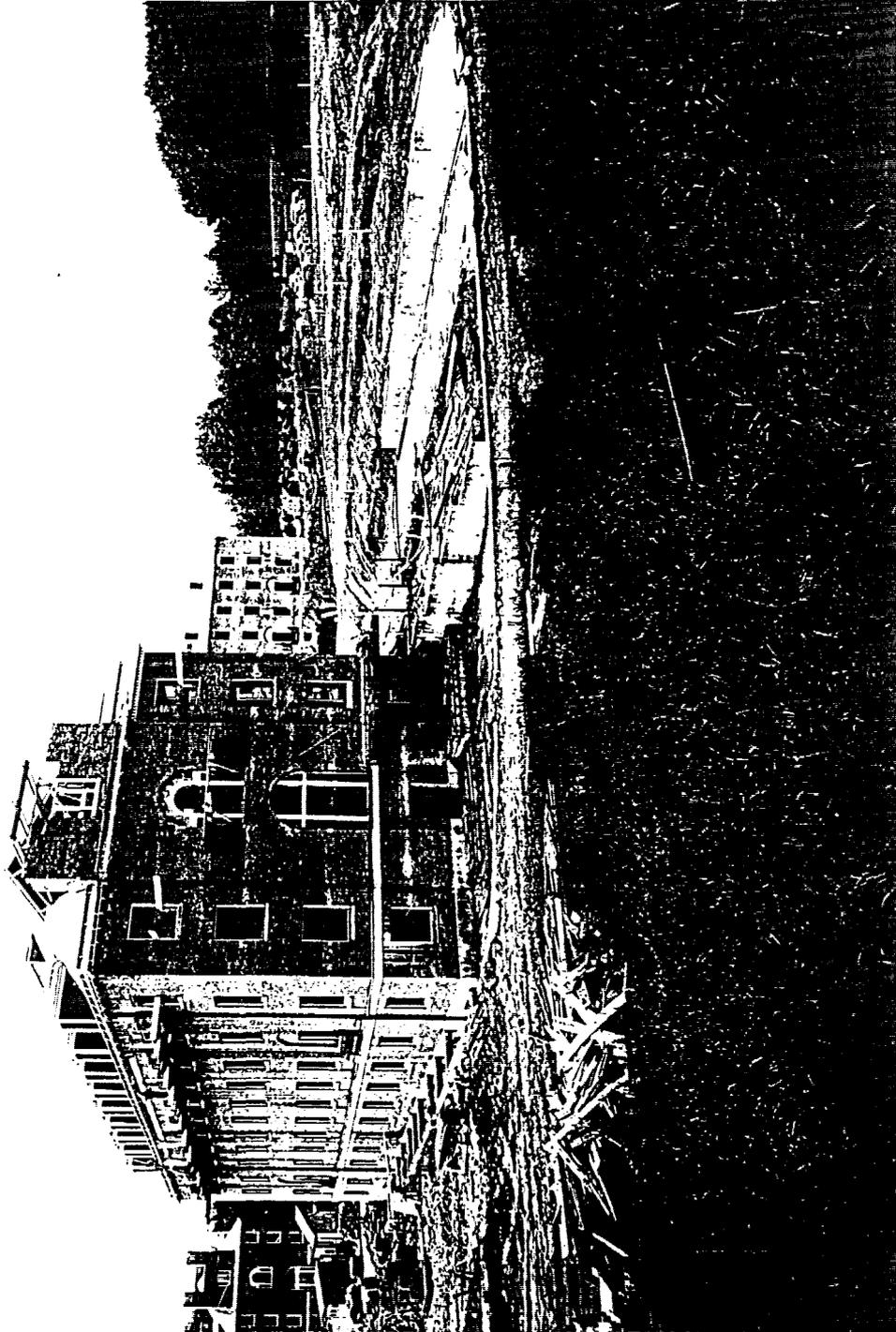
Building 2, constructed in 1938, is one of the original laboratories on the NIH Bethesda Campus, and, according to the Maryland State Historic Preservation Office, is eligible for listing on the National Register of Historic Places in accordance with the criteria set forth in 36CFR 60.4. The building is currently vacant. Building 2 was to be renovated under the Round Robin Program, a program that was developed in 1979 to provide major upgrading of existing older laboratory facilities which were, in spite of their age, deemed structurally sound and worth the substantial proposed investment. Three buildings have been renovated under the Round Robin Program. A review committee of the United States Army Corps of Engineers (USACE) recommended that an alternative use to laboratories be found for the remaining buildings in the Round Robin Program because the renovated facilities will not offer the degree of flexibility necessary for a dynamic biomedical research organization due to the existing physical constraints that the renovation projects will not and cannot correct. Rehabilitation as laboratories would also adversely effect the historic exterior character of these facilities. Building 2 will be reused as offices.

NIH has consulted with the Maryland State Historic Preservation Office (SHPO) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and determined that the proposed demolition and rehabilitation is an adverse effect on the National Register—eligible Building 2, in accordance with 36CFR 800.9(b)(1). To mitigate the adverse effect of the proposed undertaking, a Memorandum of Agreement (MOA) was prepared. The MOA requires that Building 2 be recorded to Historic American Building Survey (HABS) standards, outline format.

This project was completed in 1994 for the National Institutes of Health by architectural historians, Joan M. Brierton (historical research and author, Historical Information), Carol Hooper (historical research), Elizabeth Lampl (author, Architectural Information), Kristin Fetzer (historical research and graphics), and Judith Robinson (project manager and editor) of Robinson & Associates, Inc., Washington, D.C., in association with William A.L. Gaudreau of Gaudreau, Inc. Walter Smalling, Jr., provided all photography.



Progress Shot Buildings 1, 3, 2, National Institutes of Health, 1938.
Source: National Institutes of Health, Historical Office and Museum.



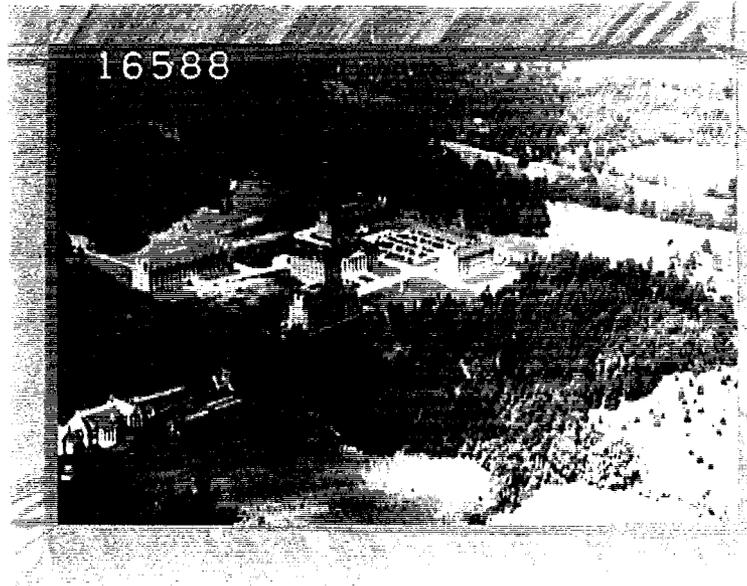
Building 2 (construction), Looking South, National Institutes of Health, 1938.
Source: National Institutes of Health, Historical Office and Museum.

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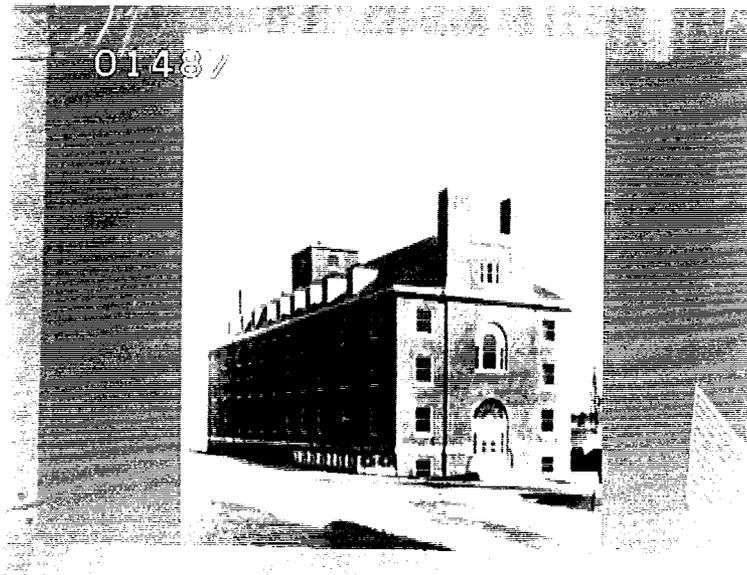


South and West Elevation of Building 2, National Institutes of Health, 1938.
Source: National Institutes of Health, Historical Office and Museum.

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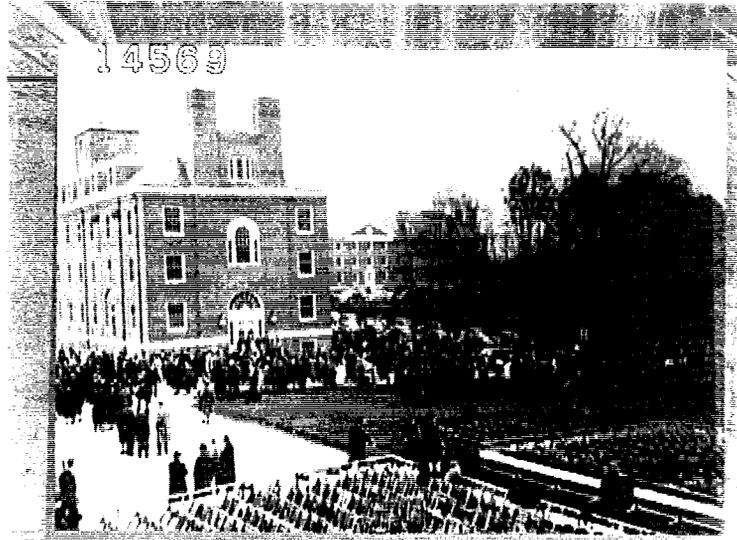


Aerial view of NIH Buildings and Grounds. Showing the Administration, Industrial Hygiene, Public Health Methods, Chemistry and Pharmacology, Infectious Diseases, and National Cancer Institute Buildings. No date.
Source: National Library of Medicine, Prints and Photographs Collection.



View of Building 2 (west and south facades), National Institutes of Health. No date.
Source: National Library of Medicine, Prints and Photographs Collection.

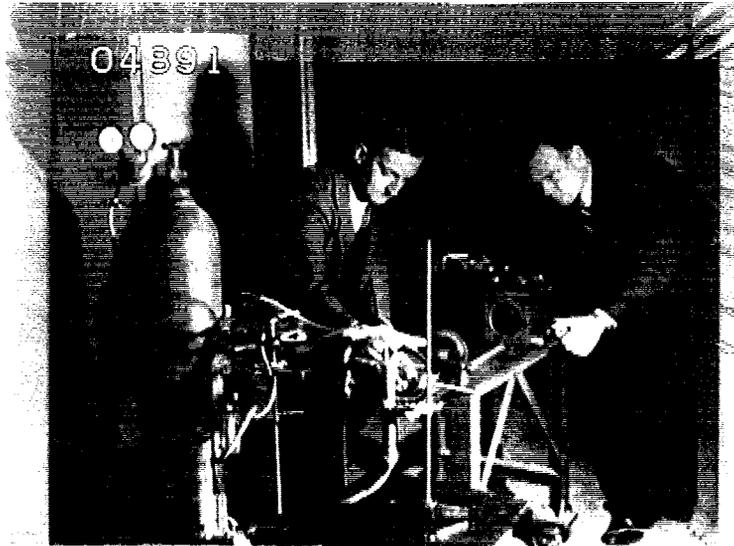
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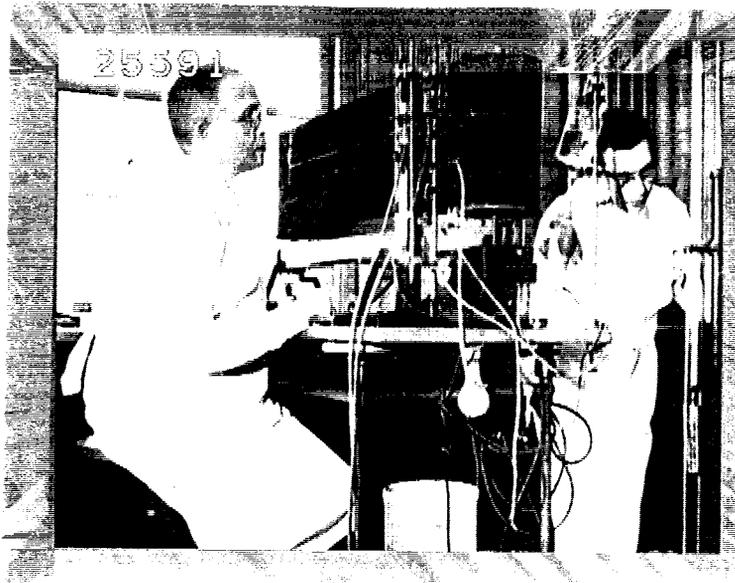
Building 2 at Dedication of First Six Buildings, National Institutes of Health. No date.
Source: National Library of Medicine, Prints and Photographs Collection.



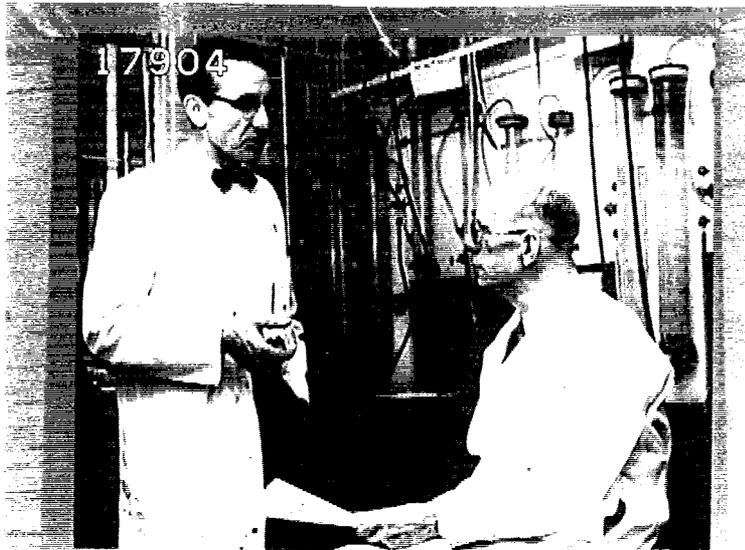
Retirement Ceremonies for Dr. Rolla E. Dyer Showing West and South Facades of Building 2 and Partial View of Audience, National Institutes of Health, 1950.
Source: National Library of Medicine, Prints and Photographs Collection. Photo taken by Sam Silverman.



Ultraviolet Experiment Conducted in Division of Industrial Hygiene, National Institutes of Health, 1940.
Source: National Library of Medicine, Prints and Photographs Collection.



Wolfgang G. von Ottingen, three-quarters length, seated at moving graph, showing Dr. Dennis D. Donahue to the right, Division of Industrial Hygiene, National Institutes of Health, 1940.
Source: National Library of Medicine, Prints and Photographs Collection.



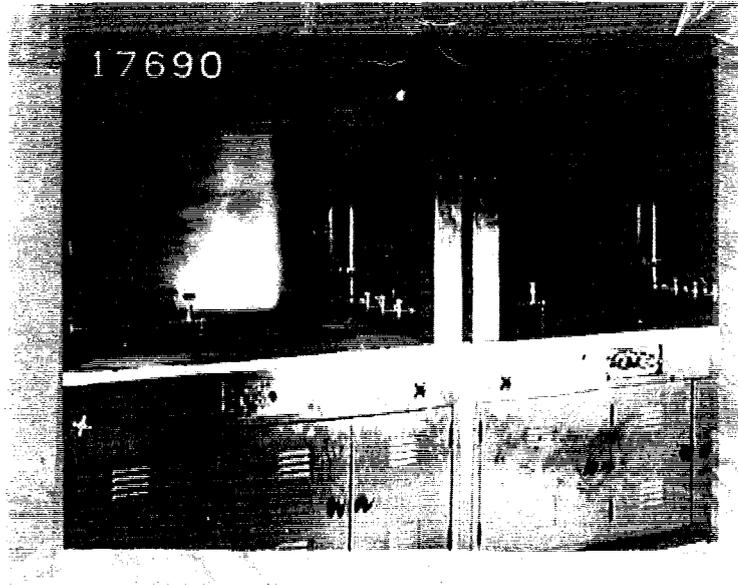
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Source: National Library of Medicine, Prints and Photographs Collection.



Laboratory Photo, Unidentified Location, National Institutes of Health. No date.

Source: National Library of Medicine, Prints and Photographs Collection.



Laboratory Photo, Unidentified Location, Detail of Equipment, National Institutes of Health. No date.
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