

**MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM**

NR Eligible: yes
no

Property Name: National Library of Medicine Inventory Number: M: 35-9-8

Address: 8600 Rockville Pike City: Bethesda Zip Code: 20892

County: Montgomery USGS Topographic Map: Washington West Quadrangle DC-MD-VA

Owner: United States of America (National Institutes of Health) Is the property being evaluated a district? yes no

Tax Parcel Number: _____ Tax Map Number: _____ Tax Account ID Number: _____

Project: NHPA Section 110 compliance Agency: US Dept. HHS/National Institutes of Health

Site visit by MHT Staff: no yes Name: _____ Date: _____

Is the property located within a historic district? yes no

<i>If the property is within a district</i>		District Inventory Number: _____
NR-listed district <input type="checkbox"/> yes	Eligible district <input type="checkbox"/> yes	District Name: _____
Preparer's Recommendation: Contributing resource <input type="checkbox"/> yes <input type="checkbox"/> no Non-contributing but eligible in another context <input type="checkbox"/>		

<i>If the property is not within a district (or the property is a district)</i>	
Preparer's Recommendation: Eligible <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	

Criteria: A B C D Considerations: A B C D E F G None

Documentation on the property/district is presented in: Maryland Historical Trust, MIHP Form M: 35-9-8

Description of Property and Eligibility Determination: *(Use continuation sheet if necessary and attach map and photo)*

The National Library of Medicine is a complex comprised of: Building 38, the original library facility of 1962; Building 38A, the Lister Hill National Center for Biomedical Communications that opened in 1981; an adjoining courtyard; an adjoining underground level; a multilevel parking structure (MLP 7) attached directly to Building 38A; and the surrounding grounds and landscape features. The original library facility was determined to be eligible for listing in the National Register of Historic Places under Criteria A and C, with Consideration G (Exceptional Significance consideration for structures less than 50 years old). Significantly, the Lister Hill Center propelled the National Library of Medicine into the Information Age; its architecture respects that of the original facility by carrying over the limestone cladding material and coursing, yet serves as a strong counterpoint to the low horizontal form of the original building. The adjoining courtyard, adjoining underground level, and attached parking structure—along with the surrounding grounds and landscape features—give the complex a distinct, cohesive identity separate from the nearest laboratory and office buildings. The entire National Library of Medicine complex is hereby determined to be eligible for listing in the National Register of Historic Places.

Prepared by: Phillip W. Neuberg
Phillip W. Neuberg, AIA, NIH FHPO

Date Prepared: 5/12/2014

MARYLAND HISTORICAL TRUST REVIEW	
Eligibility recommended <input checked="" type="checkbox"/>	Eligibility not recommended <input type="checkbox"/>
Criteria: <input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	Considerations: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input checked="" type="checkbox"/> G <input type="checkbox"/> None
Comments: _____	
<u>Janeth Sages</u> Reviewer, Office of Preservation Services	<u>5/12/14</u> Date
<u>[Signature]</u> Reviewer, NR Program	<u>5/2/14</u> Date

201401758

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Name of Property: **National Library of Medicine**

Location: **8600 Rockville Pike, Bethesda, MD (38.99536, -77.09894)**

The National Library of Medicine, a National Historic Landmark (NHL) eligible resource located on the Bethesda, MD campus of the National Institutes of Health (NIH), is a complex comprised of:

- Building 38, the original library facility of 1962,
- Building 38A, the Lister Hill National Center for Biomedical Communications that opened in 1981,
- an adjoining courtyard,
- an adjoining underground level,
- a multilevel parking structure (MLP 7) attached directly to Building 38A, and
- the surrounding grounds and landscape features.

About the National Library of Medicine

The National Library of Medicine (NLM) has been a center of information innovation since its founding in 1836. The world's largest biomedical library, NLM maintains and makes available a vast print collection and produces electronic information resources on a wide range of topics that are searched billions of times each year by millions of people around the globe. It also supports and conducts research, development, and training in biomedical informatics and health information technology. In addition, the Library coordinates a 6,000-member National Network of Libraries of Medicine that promotes and provides access to health information in communities across the United States

Figure 1 below is a map of the southeast corner of the Campus showing the components and relative boundaries of the NHL eligible National Library of Medicine.

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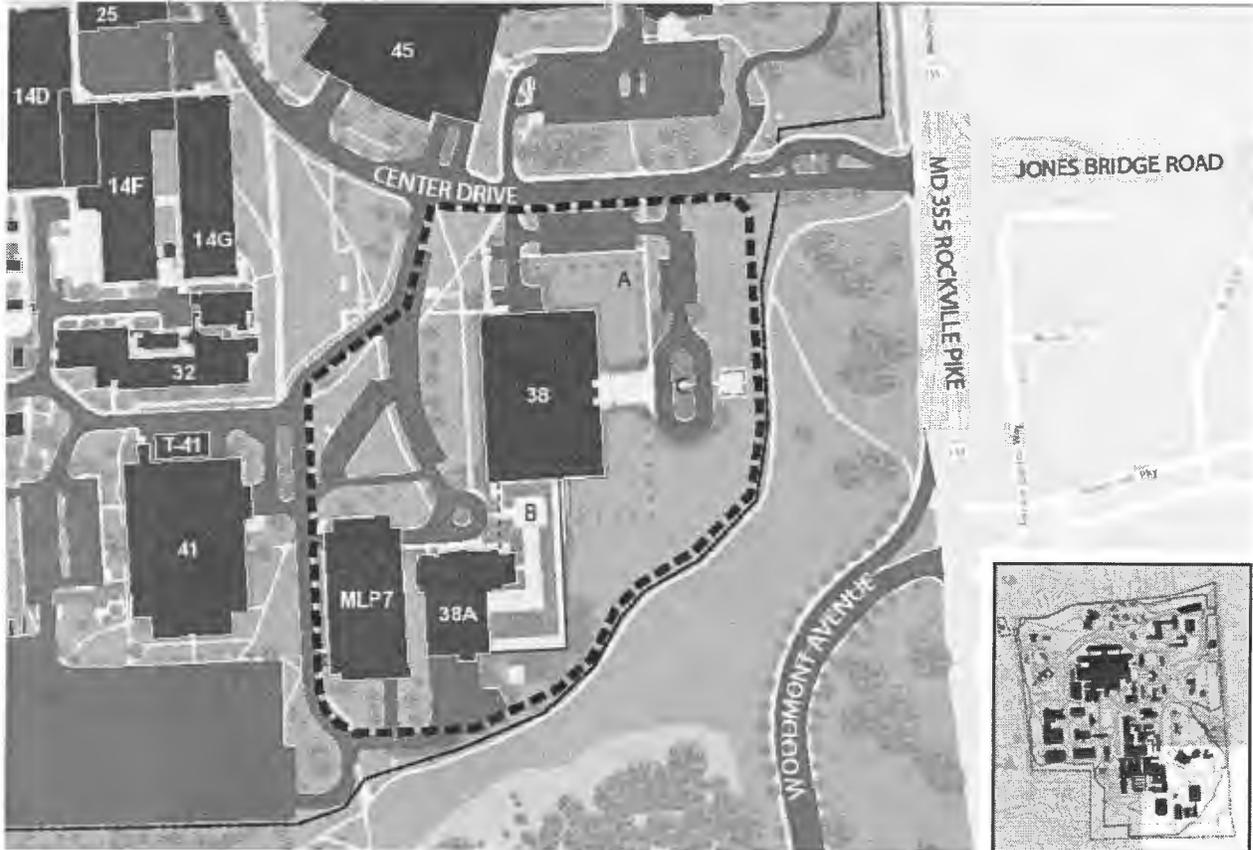


Figure 1: Map of the southwest corner of the National Institutes of Health Bethesda Campus, with the boundary of the National Library of Medicine complex marked with a dashed line. On the southeast edge, the perimeter fence can be seen. "A" indicates the 24 crabapple trees in front of Building 38; "B" indicates the placement of the sculpture within the plaza between Buildings 38 and 38A; "C" indicates the flagpole in front of and on axis with the center of Building 38.

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Background and Context

Building 38 was determined eligible for listing in the National Register of Historic Places as a NHL under the Exceptional Significance criteria for structures less than 50 years old (see MIHP M: 35-9-8, entered into the record in 2000, based upon research documented in the original Determination of Eligibility dated December 20, 1995). This Addendum shall serve to update that Determination of Eligibility (DOE) with additional information concerning the significance and character defining features of the surrounding resources that together comprise a distinct precinct of the Bethesda campus, functioning holistically as the National Library of Medicine complex. Located at the far southeast corner of the campus, the recognizable landscape and architectural features form a distinctive and complementary enclave that was conceived and, executed over time as an integrated entity. So, while they were built two decades apart, the two primary structures of 38 and 38A were conceived visually and operationally as complementary facilities which are connected physically on the B1 Level by support spaces and corridors, seamlessly functioning as one entire enterprise. The verticality of the later 38A Tower serves aesthetically as a deliberate counterpoint to the broad horizontality of the original Library structure. The circumstances surrounding the design and construction of Building 38A are noted in brief detail under the Expansion of the Library, Section 8, page 11 of the original DOE document. A fuller description and statement of significance for 38A follows. The Courtyard and Multi-Level Parking Facility are also described below. Finally, the landscape features that characterize the site and are original to the building designs are also noted.

Building 38

Building Modifications

When the National Library of Medicine (NLM) building was constructed in 1961, it was designed to hold 1.5 million volumes. But the NLM collection grew steadily, adding about 37,000 bound serials and monographs to the collection every year. It is now the largest medical library in the world. In the 1970s, NLM recognized that collection space would become a problem and added compact shelving to the lowest level of the library which sits on bedrock. The addition of compact shelving on parts of the B3 level extended the collection capacity of the building until 2010. The NLM began a major planning, design, and construction project in 2007 to increase collection space within the original Library building and thus defer the need for an additional building structure. The 2007 project began with sending parts of collection to an off-campus location to provide construction swing space. Staff was relocated from B3 to B2 level to allow installation of

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compact shelving on the B3 level. The original installation of the compact shelving was on B3 level of the building. Being the lowest level and partially on bedrock, this presented little engineering challenge since the floor was on grade and structurally suitable for the additional loads of the compact shelving and the collection. In 2007 it was also determined that in order to extend collection storage capacity of the original building beyond 2010, installation of compact shelving on the B2 level of the building would also be necessary. To confirm the feasibility of this approach, a number of structural tests were performed and it was determined that the B2 level floor needed strengthening before any compact shelving could be installed. A multi-phase design and construction project then commenced to not only strengthen the floor and install compact shelving, but to also upgrade the original building infrastructure to current building codes, specifically for fire suppression and fire alarm systems. In September 2013, the collection that had been stored off-campus to provide swing space for above noted construction and renovation was returned to Building 38. It is anticipated that the building can now store the NLM collection until 2025.

Due to advancements in computer technology, the advent of the internet and widely accessible electronic bibliographic databases, the need for the central card catalogue originally designed and housed in the central rotunda of the building was eliminated. With the removal of the physical card catalogue came much needed public informational exhibition space located below the hyperbolic dome of the central rotunda.

Building 38A

Architectural Description

Building 38A, also known as the Lister Hill National Center for Biomedical Communications, is located on the National Institutes of Health (NIH) Bethesda Campus in Bethesda, Maryland. It is situated south of Building 38 (National Library of Medicine). Construction was completed in June of 1981. The facility is a ten-story structure with two basement levels, and has a total floor area of approximately 212,000 square feet. The building form is comprised of two primary building masses, a high rise section and an auditorium, set upon a stepped "podium", or platform, which has as its top a terrace extending east of the entry and wrapping around the southeast corner of the high rise. Below, a lawn stretches toward the perimeter fence and Rockville Pike.

The superstructure of the building is a structural steel frame tower atop the reinforced cast-in-place concrete frame basement levels. The floor and roof structure consists of concrete filled metal decking.

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Unique to the building's function are "raised floors" which were designed specifically to facilitate cabling, befitting the building's unique status as NIH's first computer cabled building planned to readily disseminate images and data globally.

The building's high rise section has an aluminum and glass curtain wall system on the north and south. Clear vision glass forms the exterior walls of the lobby level. Upper floors have tinted glass. At the base of the curtain wall is a short granite clad knee wall. The building's main entrance and vehicle drop-off are on the north. The building's main entrance has doors with glazing and aluminum frames (other exterior doors are hollow metal). The east and west elevations hold the vertical circulation for the building and are clad with limestone panels that subtly refer to the coursing of the original library building's limestone panels. The roofing system is built-up insulated rubber roofing. On the south elevation, at the foot of the high rise section, the form of the auditorium can be seen, high above a loading dock. Its exterior is clad in limestone panels.

The main lobby is on the first floor, where there is also an auditorium, small exhibition space, coat room, and elevator access. The upper floors of the building (2 to 10) primarily house administrative space. There are mechanical rooms and the HVAC chase at the south end of each floor. The B1 level contains the main server room and a below-grade connection to Building 38. The B2 level contains a television studio, offices, and the main electrical and mechanical room. Both basement levels extend beyond the floor plates of the tower above. The building is equipped with three passenger elevators and one freight elevator. There are a total of 10 stairwells or stairways in the building. The building's main lobby functionally and visually provides access to the B1 level by a carpeted monumental stair.

The spacious Lobby walls are clad in Imperial Danby marble panels, arranged in butterfly patterns. On axis with the front doors, a monumental stair of generous proportions descends to the B1 level. Mounted on the back wall of the Lobby over the stair landing is a colorful quilt commissioned specifically for this site, 'Art and Science' by Alfred Jensen. It is composed of 16 panels of Belgium linen bolted together and is 25 feet high by 15 feet wide. It is readily visible upon entry to the Lobby. Openings in the back wall of the Lobby provide access to a cloak room as well as stepped corridors leading directly into the 300-seat Lister Hill auditorium. The walls of the auditorium feature teak-covered aluminum battens mounted over acoustical paneling. At the bottom of the stair, on the B1 level is located the connector corridor to the original Library, Building 38 as well as the Lister Hill cafeteria.

Interior flooring is typically vinyl composition tile or carpeting over the raised floors; ceilings are finished with acoustical tiles in a suspension grid, painted gypsum wallboard, or painted concrete; and walls are painted

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gypsum board or concrete masonry unit. Unique modifications to the north and south interior walls on most levels of the tower include the introduction of short sections of gypsum wallboard, presumably to provide wall space, adding a modicum of insulation and reducing heat gain along the continuously glazed, floor to ceiling exterior curtain walls. The restrooms typically have ceramic tile flooring, ceramic tiled walls, and painted concrete/gypsum wallboard ceilings or acoustical tiles in a suspension grid. Typically, interior doors are flush metal type with a combination of glazed lites and ventilation louvers set in metal frames with knob hardware.

The outdoor terrace has a concrete paver walking surface surrounded by planter areas. The 'Tree One' sculpture, by Kenneth Snelson, is in the terrace courtyard between the Lister Hill Center and the original library building.

Minor renovations of the fourth, fifth, sixth and half of the seventh floors were carried out in 2000 and 2001. In the last few years much of the original HVAC equipment has been changed out with the addition of more sophisticated temperature control systems.

Significance

Martin M. Cummings, MD, Director of NLM from 1964-1984, was always interested in making NLM more than just "a traditional medical library." [Miles, 419] He felt strongly that there should be both a research component and a high tech information center. He approached Surgeon General Luther Terry in 1965, seizing the opportunity when Terry asked the NLM Board of Regents to consider the role of the new communications media in the future of medical libraries. That interchange became the genesis of the Lister Hill National Center for Biomedical Communications, which would eventually be housed in building 38A. As Cummings later said in an oral history interview conducted by the Medical Library Association in 1987:

"I wanted the National Library of Medicine to grow along the lines of the NIH model. Having created an extramural program, having succeeded in getting authorization to spend 120 million dollars, roughly, in behalf of the various programs, I thought it was time to look inside to see whether we couldn't improve library processes, library systems, by creating an intramural research activity. We had no physical facility, though, in which such work could be done, nor did we have a really committed trained staff to do research and development." [Cummings OH, 8].

Cummings approached Congressman John Fogarty and Senator Lister Hill for their support in the Congress. He also worked with Congressman Paul Rogers, who in 1967 was heading a subcommittee examining what was then the Department of Health, Education, and Welfare. The upshot was Senate Joint

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Resolution 193, signed by President Lyndon Johnson in July of 1968. In his statement accompanying the signing, Johnson wrote:

"Last year, I proposed that our country develop and apply the new technologies of communications to enable us to share nationally and internationally our enormous scientific and cultural information resources through a 'network of knowledge.' Nothing could be more fitting than that the first implementation of this proposal should be concerned with the further education of those in whose hands our health is entrusted." [Cummings Papers, MS C 554, Box 20, Folder 5]

Funding for the design of the 38A Building was appropriated in 1971 and released by OMB in 1973. Final drawings were completed in early 1976 by Carroll, Grisdale & Van Alen of Philadelphia, in association with Bucher – Meyers Associates, Inc. of Silver Spring, and \$26 million was appropriated for FY'76. The main construction contract was awarded to the George Hyman Construction Company in June of 1977.

The initial occupants of the building were:

1. The Lister Hill National Center for Biomedical Communications (3 floors)
2. Extramural Programs (1 floor)
3. Bibliographical Services Division (1 floor)
4. Specialized Information Services (1 and 1/2 floors)
5. Office of Computer and Communication Services (1 and 1/2 floors)
6. National Medical Audiovisual Center (1 and 1/2 floors).

Although not shown on the original plans, the Fogarty International Center (FIC) was moved from offices in Building 31 and allocated 1350 square feet in the new building. The FIC was in place by the time the building opened in 1980. [Cummings Papers, box 20, folders 15 and 16]. The FIC is no longer located in Building 38A. NIH has commemorated the Fogarty's exceptional commitment to the NIH scientific research mission by making the National Register-eligible Peter Estate (Building 16) the home of the *Fogarty International Center*.

Cummings moved swiftly to gather the advanced communications hardware that the new center would require. When a sophisticated ATS-6 satellite antenna became available in 1979 after the completion of a research protocol at the NIH Clinical Center (CC), he coordinated with the CC director, Dr. Mortimer Lipsett, to have it transferred to the Lister Hill Center building. The cumulative result was to make the Lister Hill Center a leader in the field of telecommunications and the first biomedical library to have such a research and development capability.

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From the very beginning, the Lister Hill Auditorium was seen as an attractive and well-equipped venue for lectures, seminars, panel discussions, and a host of other programs. There were (and are) named lecture series such as the Florence Mahoney Lectures, the Joseph Leiter Lectures (shared with the Medical Library Association), the James Cassedy History of Medicine Lectures, and many independent programs all open and accessible to the greater public. Among the distinguished speakers have been Albert Sabin (1990), Michael DeBakey (1990), Francis Collins (2002), Bernadine Healy (2005), and Anthony Fauci (2006).

MLP- 7

The attached four-level multi-level parking structure, now known as MLP-7, was constructed as an integral part of Building 38A and features direct access to the B1 level. It is located on the west side of Building 38A and has parking spaces for approximately 400 cars.

Featuring a structural system of reinforced cast-in-place concrete, the North, West and South elevations employ battered concrete drop panels to match the adjacent concrete base of the Lister Hill Center. Concrete scoring and recessed horizontal banding act as both control joints and visually reinforce the architecture. An electrical service transformer enclosure was recently added to the north side of the Garage, carefully employing a similar concrete wall treatment and scale articulation. Interior finishes primarily consist of exposed concrete flooring and walls. Interior partitions are typically painted concrete masonry units (CMU) at electrical and mechanical rooms. The building has two exit stairwells that service all four levels each.

LANDSCAPE FEATURES

Notable plantings include 24 crabapples that frame the original library building, spaced evenly in a straight line extending symmetrically from both sides of the entrance stair (seven to each side) and turning 90-degrees to continue back in straight lines to the north (six after the corner) and south (four after the corner). The planting of crabapple trees in a formal layout strongly frames the building and creates a transition zone between the open lawn and pavement. Yet the trees' short stature allows the building—not tall itself--to dominate the setting. Having a limited life expectancy, replacement crabapples of the same variety have been placed in the exact positions of the original plantings. Of much less significance is the foundation

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plant material around the original library building. Most of this is Japanese holly, and most have died away and have not been replaced over the past five to six years.

A theme throughout the landscape is the use of plantings to soften the edges of the large building masses—especially around the base of Building 38A—and to screen back-of-house areas. Along the base of the terrace of Building 38A, various small shrubs plus trees including dogwood, white pine, ash, red maple soften what would otherwise be an abrupt meeting of the battered concrete walls and the expansive surrounding lawn. Working clockwise, at the southeast corner a Montgomery County Champion black willow tree may be found. Its circumference exceeds 61 inches. Then along the south end, near the loading dock, there is a low stone wall with viburnum shrubs planted that serve as the edge of the south end of the property. Inside the roadway leading to the loading dock and the lowest level of MLP-7 one will find a stand of white pines. Their close proximity to the garage and their height of nearly 50 feet indicate they were planted soon after completion of the structure.

Elsewhere, trees are used to line the streets around the library complex. The young autumn-blooming Higan cherry trees along Medlars Drive help define the west edge of the library complex. Mature locust trees are planted along the road behind Building 38, marking the transition to the entrance court of Building 38A, and ringing the court's circular drive. Pin oaks line the south side of Center Drive.

The plaza and the plinth upon which it is set are notable site features, joining the Lister Hill Center to the Library. The planters consist of raised beds retained by short granite-faced walls which also serve as benches for sitting. The original plant material did not flourish in the unirrigated, shallow soils. This area was re-landscaped in the fall of 1999—after a severe drought—with a xeriscaping focus, meaning that the plant selection was to be less reliant on supplemental irrigation. All plant material was removed and replaced; no pavement was changed. Notable current plantings are the holly trees along the north side of the plaza adjacent to Building 38; Chinese juniper trees in each of four planters marking the corners of the square open space; dogwood trees at a side door; and crepe myrtle and Japanese black pine along the east and south planters. The tallest Japanese black pine anchors the south east corner of the plaza. Together, these plantings provide enclosure to what would otherwise be a very exposed outdoor area.

Number	Description	Photographer	Photo Date	Filename
1	General view looking southwest, of National Library of Medicine with Building 38 in foreground and Building 38A beyond.	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_01.tif
2	East elevation of Building 38A.	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_02.tif
3	Oblique view of southeast corner of Building 38A, with auditorium on left	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_03.tif
4	South elevation of Building 38A, with loading dock. Short stone wall in the foreground marks the south edge of the property.	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_04.tif
5	Oblique view of southwest corner of Building 38A and Multi-Level Parking 7, with a stand of white pine trees in the foreground.	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_05.tif
6	Oblique view of northwest corner of Building 38A.	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_06.tif
7	General view looking south, showing Building 38A tower with Building 38 on left.	David A. Derenick	4/25/2013	M; 35-9-8_2013-04-25_07.tif
8	North elevation of Building 38A. A number of locust trees rings the circular drive in front of the building.	Phillip W. Neuberg	7/5/2012	M; 35-9-8_2012-07-05_01.tif
9	View of courtyard looking north toward Building 38.	Phillip W. Neuberg	7/5/2012	M; 35-9-8_2012-07-05_02.tif
10	'Tree One' sculpture in courtyard, by Kenneth Snelson.	Phillip W. Neuberg	7/5/2012	M; 35-9-8_2012-07-05_03.tif
11	View of courtyard looking south.	Phillip W. Neuberg	7/5/2012	M; 35-9-8_2012-07-05_04.tif
12	View of courtyard from southeast corner, looking west.	Phillip W. Neuberg	7/5/2012	M; 35-9-8_2012-07-05_05.tif
13	Detail view of Building 38A tower window system and limestone cladding.	Phillip W. Neuberg	7/5/2012	M; 35-9-8_2012-07-05_06.tif
14	Detail view of limestone panels.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_01.tif
15	View of main entrance to Building 38A.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_02.tif
16	Interior view of Building 38A lobby, looking toward entrance doors.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_03.tif
17	Interior view of Building 38A lobby with Imperial Danby marble and 'Art and Science' mural by Alfred Jensen.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_04.tif
18	Interior view of Building 38A lobby at bottom of main stairway.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_05.tif
19	Interior view of Building 38A auditorium.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_06.tif
20	Interior view of Building 38A tower office space.	Andrew Armetta	7/12/2012	M; 35-9-8_2012-07-12_07.tif



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NATIONAL LIBRARY OF MEDICINE
MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MD SHPO

"GENERAL VIEW LOOKING SOUTHWEST,

4369661, 38A_general view looking southw

OF NATIONAL LIBRARY OF MEDICINE
WITH BUILDING 38 IN FOREGROUND
AND BUILDING 38A BEYOND.

<ILFORD>, <Fromex True B&W>, 07/10/13



M:35-9-8

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NATIONAL LIBRARY OF MEDICINE
MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MDSHPO

"EAST ELEVATION OF BUILDING 3BA"

4369661, 3BA_east elevation 3-bw_001

<ILFORD>, <Fronex True B&W>, 07/10/13



M:35-9-8

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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MDSHPO

"OBLIQUE VIEW OF SOUTHEAST CORNER OF BUILDING 38A,
WITH AUDITORIUM ON LEFT."

4369661. 38A_oblique view of south eleva

(ILFORD), (Fomex True B&W), 07/10/13



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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MD SHPO

"SOUTH ELEVATION OF BUILDING 38A, WITH
LOADING DOCK. SHORT STONE WALL IN
THE FOREGROUND MARKS THE SOUTH EDGE
OF THE PROPERTY."

4369661_38A_south_elevation-bu.006



M: 35-9-8

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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MDSHPO

"OBLIQUE VIEW OF SOUTHWEST CORNER OF BUILDING 38A

AND MULTI-LEVEL PARKING 7, WITH A STAND OF WHITE

PINE TREES IN THE FOREGROUND."

(ILFORD), (Fromex True B&W), 07/10/13



M:35-9-8

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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MDSHPD

"OBLIQUE VIEW OF NORTHWEST CORNER
OF BUILDING 38A"

4369661. 38A_northwest corner-bw_004

<ILFORD>, <Fronex True B&W>, 07/10/13



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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: DAVID A. DERENICK

4/25/2013

DIGITAL FILE AT MDSHPO

"GENERAL VIEW LOOKING SOUTH, SHOWING BUILDING 38A
TOWER WITH BUILDING 38 ON LEFT"

4369661. 38A_general view looking south

<ILFORD>, <Fromex True B&W>, 07/10/13



LISTER
HILL
CENTER

M: 35-9-8

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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: PHILLIP W. NEUBERG

7/5/2012

DIGITAL FILE AT MD SHPO

"NORTH ELEVATION OF BUILDING 38A. A NUMBER
OF LOCUST TREES RINGS THE CIRCULAR DRIVE
IN FRONT OF THE BUILDING."

<ILFORD>. <From: True BSU>. 07/10/13



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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: PHILLIP W. NEUBERG

7/5/2012

DIGITAL FILE AT MD SHPO

"VIEW OF COURTYARD LOOKING NORTH
TOWARD BUILDING 38"

4369661, DSC_0888-bw_010

(ILFORD), (Fomex True B&W), 07/10/13



M: 35-9-8

10 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: PHILLIP W. NEUBERG

7/5/2012

DIGITAL FILE AT MD SHPO

" 'TREE ONE' SCULPTURE IN COURTYARD,

BY KENNETH SNELSON"

4369661, DSC_0002-bw_009

<ILFORD>, <Fronex True B&W>, 07/10/13



m:35-9-8

#11 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: PHILIP W. NEUBERG

7/5/2012

5445927, H 35-9-8_2012-07-05_05_001

DIGITAL FILE AT MD SHPD

"VIEW OF COURTYARD LOOKING SOUTH."

(ILFORD), (Fomex True 83M), B4/02/14



M: 35-9-8

#12 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: PHILLIP W. NEUBERG

7/5/2012

5445927, M 35-9-8_2012-07-05_06_002

DIGITAL FILE AT MD SHPO

"VIEW OF COURTYARD FROM SOUTHEAST CORNER,
LOOKING WEST."

<ILFDRD>, <Fromex True B&W>, 04/02/14



M:35-9-8

#13 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: PHILLIP W. NEUBERG

7/5/2012

DIGITAL FILE AT MDSHPO

"DETAIL VIEW OF BUILDING 30A TOWER
WINDOW SYSTEM AND LIMESTONE CLADDING"

4369661, DSC_0089-bw_011

<ILFORD>, <Fromex True B&W>, 07/10/13



M: 35-9-8

#14 of 20

NATIONAL LIBRARY OF MEDICINE
MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/12/2012

DIGITAL FILE AT MDSMPO

"DETAIL VIEW OF LIMESTONE PANELS"

4369661, IMG_0768-bw_016

<ILFORD>, <Fronax True B&W>, 07/10/13



M: 35-7-8

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NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/12/2012

DIGITAL FILE AT MDSHPO

"VIEW OF MAIN ENTRANCE TO
BUILDING 3BA"

4369661. IMG_0764-bw_017

<ILFORD>, <Fromex True B&W>, 07/10/13



M: 35-9-B-

#16 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/12/2012

DIGITAL FILE AT MD SHPO

" INTERIOR VIEW OF BUILDING 3BA LOBBY,
LOOKING TOWARD 4369661, IMG_0738-bw_014
ENTRANCE DOORS "

<ILFORD>, <Fromex True B&W>, 07/10/13



M:35-9-8

#17 OF 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/12/2012

DIGITAL FILE AT MD SHPO

"INTERIOR VIEW OF BUILDING 38A LOBBY WITH IMPERIAL DANBY
MARBLE AND 'ART AND SCIENCE' MURAL BY ALFRED JANSEN"

4369661, IMG_0735-bw_013

<ILFORD>, <Fronlex True B&W>, 07/10/13



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M: 35-9-8

#18 of 20

NATIONAL LIBRARY OF MEDICINE
MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/2/2012

DIGITAL FILE AT MD SHPO

"INTERIOR VIEW OF BUILDING 38A
LOBBY AT BOTTOM OF STAIRWAY"

4369661, IMG_0752-bw_016

<ILFORD>, <Fomex True B&W>, 07/10/13



M: 35-9-8

#19 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/12/2012

DIGITAL FILE AT MD SHPO

"INTERIOR VIEW OF BUILDING 38A AUDITORIUM"

4369661, IMG_0743-bw_015

<ILFORD>, <Frolex True B&W>, 07/18/13

M: 35-9-8

#20 of 20

NATIONAL LIBRARY OF MEDICINE

MONTGOMERY COUNTY, MD

PHOTOGRAPHER: ANDREW ARMETTA

7/12/2012

DIGITAL FILE AT MDSHPO

"INTERIOR VIEW OF BUILDING 38A

TOWER OFFICE SPACE"

4369661, IMG_0720-LW_012

<ILFORD>, <Fromek True B&W>, 07/10/13

**INDIVIDUAL PROPERTY/DISTRICT
MARYLAND HISTORICAL TRUST
INTERNAL NR-ELIGIBILITY REVIEW FORM**

Property/District Name: National Library of Medicine Survey Number: M: 35-9-8

Project: Expansion of Building 10 Agency: F/NIH

Site visit by MHT Staff: no yes Name _____ Date _____

Eligibility recommended Eligibility not recommended

Criteria: A B C D Considerations: A B C D E F XG None

Justification for decision: (Use continuation sheet if necessary and attach map)

The National Library of Medicine is housed in a block and limestone building on the Bethesda campus of the National Institutes of Health (NIH). Designed by O'Connor and Kilham and completed in 1962, the library contains one of the largest collections of medical literature originally begun in the 19th century. The architects collaborated with Keyes Metcalf, well-known in the 1960s for his library planning, to produce the innovative design of the hyperbolic paraboloid shell. The architects also addressed the concerns about nuclear war by placing the collections underground. Due to its national significance, the National Library of Medicine was determined eligible for the National Register.

Documentation on the property/district is presented in: NIH Historic Resources Inventory Form

Prepared by: Robinson and Associates

Lauren Bowlin 2/16/00
Reviewer, Office of Preservation Services Date

NR program concurrence: yes no not applicable

B. Kinty 8/23/00
Reviewer, NR program Date

[Handwritten signature]

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA - HISTORIC CONTEXT

I. Geographic Region:

- Eastern Shore (all Eastern Shore counties, and Cecil)
- Western Shore (Anne Arundel, Calvert, Charles, Prince George's and St. Mary's)
- Piedmont (Baltimore City, Baltimore, Carroll, Frederick, Harford, Howard, Montgomery)
- Western Maryland (Allegany, Garrett and Washington)

II. Chronological/Developmental Periods:

- Paleo-Indian 10000-7500 B.C.
- Early Archaic 7500-6000 B.C.
- Middle Archaic 6000-4000 B.C.
- Late Archaic 4000-2000 B.C.
- Early Woodland 2000-500 B.C.
- Middle Woodland 500 B.C. - A.D. 900
- Late Woodland/Archaic A.D. 900-1600
- Contact and Settlement A.D. 1570-1750
- Rural Agrarian Intensification A.D. 1680-1815
- Agricultural-Industrial Transition A.D. 1815-1870
- Industrial/Urban Dominance A.D. 1870-1930
- Modern Period A.D. 1930-Present
- Unknown Period (prehistoric historic)

III. Prehistoric Period Themes:

- Subsistence
- Settlement
- Political
- Demographic
- Religion
- Technology
- Environmental Adaptation

IV. Historic Period Themes:

- Agriculture
- Architecture, Landscape Architecture, and Community Planning
- Economic (Commercial and Industrial)
- Government/Law
- Military
- Religion
- Social/Educational/Cultural
- Transportation

V. Resource Type:

Category: building
 Historic Environment: suburban
 Historic Function(s) and Use(s): education, library

Known Design Source: O'Connor and Kilham, Keyes Metcalf

**NIH Historic Resources
Inventory Form**

M: 35-9-8

1. Name

Historic Name National Library of Medicine

Common Name and Building Number Building 38

2. Location

Street and Number 8500 Rockville Pike

City, Town Bethesda Congressional District 8

State and Zip Code MD 20892 County Montgomery

3. Classification

Category	Ownership	Status	Present use (Government)
<input type="checkbox"/> District	<input checked="" type="checkbox"/> Public	<input checked="" type="checkbox"/> Occupied	<input type="checkbox"/> Laboratory
<input checked="" type="checkbox"/> Building(s)	<input type="checkbox"/> Private	<input type="checkbox"/> Unoccupied	<input type="checkbox"/> Animal Research
<input type="checkbox"/> Structure	<input type="checkbox"/> Both	<input type="checkbox"/> Work in Progress	<input type="checkbox"/> Hospital
<input type="checkbox"/> Site	Accessible		<input type="checkbox"/> Administrative
<input type="checkbox"/> Object	<input type="checkbox"/> Yes: Restricted		<input type="checkbox"/> Support
	<input checked="" type="checkbox"/> Yes: Unrestricted		<input checked="" type="checkbox"/> Other (Library)
	<input type="checkbox"/> No		

4. Owner of Property

Name National Institutes of Health

Street & Number 9000 Rockville Pike Telephone No. : (301) 496-5037

City, Town Bethesda State and Zip Code MD 20892

5. Location of Legal Description

Courthouse, Registry of Deeds, etc. Liber# _____ Folio# _____

Street & Number

City, Town State and Zip Code

6. Representation in Existing Historic Survey

Yes No

Title NIH Master Plan, Phase I; Task 5, Part II: Cultural Asset Inventory

Date September 17, 1985 Federal State County Local

Depository for Survey Records

City, Town State and Zip

M:35-9-8

7. Description

Condition

Excellent

Good

Fair

Deteriorated

Ruins

Unexposed

Unaltered

Altered

Original Site

Moved

SEE CONTINUATION SHEETS

Overview

Completed in 1962, the National Library of Medicine is situated in the southeast sector of the National Institutes of Health's Bethesda, Maryland campus. It is one of the largest medical library collections in the world and services an international readership. The building is a low-lying rectangular block, faced with limestone. It is topped by a distinctive hyperbolic paraboloid shell, which is elevated on four pillars, providing light to the heart of the building. More than half of the structure (three of the five floors) is below grade, a precaution against the kind of atomic bomb attack envisioned by civil defense planners of the 1950s. Concerns about nuclear war influenced not only the architectural design of the library, but also its siting outside of downtown Washington.

The National Library of Medicine was designed by O'Connor and Kilham, a New York firm known for sophisticated library design. Prior to the National Library of Medicine, the firm had designed libraries for Princeton, Colgate, and several other major universities. For the National Library of Medicine, the architects were joined by a host of outstanding practitioners in various areas of planning and design. Expanding on modern planning advances achieved in the Princeton design, the National Library of Medicine features a modular system, allowing the greatest flexibility in interior planning. In this aspect of design, the architects were assisted by Keyes Metcalf, one of the most prominent library consultants of the era. The considerations of the Cold War also required extensive structural planning, and the architects were assisted in this area by the structural engineering firm of Severud, Elstad and Krueger, one of the government's primary consultants in the area of nuclear-bomb-blast-proof construction.

Architectural Description

Located in the southeast sector of the National Institutes of Health's Bethesda campus, the National Library of Medicine sits on a grassy hill, set back from Rockville Pike. The library is accessed not from the Rockville Pike thoroughfare but rather by a side drive off of NIH's Center Drive entrance. The site is bordered on the east by Rockville Pike, on the west by a service drive to the Lister Hill Building, on the north by Center Drive, and on the south by the edge of the Lister Hill building and Woodmont Road.

The building, a large rectangular block measuring 276' by 192', is faced with limestone. Limestone, admired for its austere formality and used in many government buildings in the 1930s and 1940s, was economically feasible for the National Library of Medicine because much of the building, being underground, did not require facing. The building's structural frame consists of reinforced concrete below grade and steel above grade. The main facade faces east, over an expanse of manicured lawn, toward Rockville Pike. It is seven bays wide, with a central entrance bay. Each bay consists of twenty-five sheer limestone blocks, which are set off in a grid-like format by narrow limestone borders. This subtle patterning of the facade provides some variation in the building's imposing appearance; as part of the design, these border stones are slightly recessed, "in such a way as to

emphasize shadow lines."¹ Narrow vertical windows, located between each bay, punctuate the facade every 42 feet. These windows are glazed at right angles to the walls; they function like reverse bay windows, with the area parallel to the wall executed in solid stone rather than glazed. The windows were designed in this way to protect the building and the collection from the effects of a nuclear war. In the event of a nuclear explosion, these windows would shatter sideways along the walls rather than into the central, public spaces.

The entrance doors of the recessed central bay are concealed by a large, full-story wall panel, comprised of six polished green granite slabs. At the time of the library's construction, these stones were said to be the largest ever taken from their Ogunquit, Maine, quarry.² The granite wall panel, which has "National Library of Medicine" inscribed on it, is capped by a concrete marquee that protrudes slightly below the cornice line, at the level of the top row of border stones in the adjacent bays. The underside of the marquee is a light blue mosaic, with recessed lighting. A large staircase, terraced in the manner of the landscaping, leads to this central bay entrance.

The other facades continue the pattern established along the main facade. The rear, or west facade, is unbroken by any door openings. Likewise, the south facade, which is five bays to the front's seven, has no entry openings. It has, however, been altered by the construction of the Lister Hill building, which is connected to the library by a tunnel; the construction is visible on the surface level as a series of terraced concrete walls. From the upper terrace level at the front of the building, the north facade also appears unbroken. Towards the rear of the building, in the two rear bays, however, the uppermost terrace drops away, revealing the building's loading dock. The dock accesses the building's A level, or first below-grade floor, where many of the library's services are located, in addition to the first section of library stacks.

Above the building's main massing is the small square mezzanine, set back dramatically from the primary elevations. Punctuated by numerous narrow vertical windows, this mezzanine block is also faced with limestone. It serves as a platform for the building's most distinctive feature: a hyperbolic paraboloid roof shell. A hyperbolic paraboloid is saddle-shaped, defined as a surface generated by sliding a parabola with a downward curvature along a parabola with upward curvature.³ In the 1950s and '60s, when the potential of concrete shells as space frames was being fully explored, hyperbolic paraboloids were hailed as the shell equivalents of suspension bridge cables.⁴

The roof shell is elevated on four piers, providing space for bowed, multipaned clerestory windows. While this raised concrete shell functions architecturally like a traditional dome, furnishing natural

¹Walter Kilham, Jr., "Housing the Library, Part II: The New Building," *Bulletin of the Medical Library Association*, p. 408.

²Kilham, Jr., "Housing the Library," p. 408.

³Francis D.K. Ching, *A Visual Dictionary of Architecture*, p. 219.

⁴"Shell Concrete Today," *Architectural Forum*, August 1954, p. 157.

light to the interior and highlighting the heart of the building (the card catalog), the clerestory projectory actually evolved out of concern for protection from bomb blast damage. Contemporary studies had shown that some centralized opening was required in the building to provide an opportunity for the equalization or relief of pressure in the event of a nuclear bomb blast.

Interior

The arrangement of interior space was dictated early on in the planning process by the need to protect the collection. The stacks are located on three underground levels, which are not open to the public. The stacks are serviced by centrally located gravity chutes and dumbwaiters. The free-standing steel bracket stacks were supplied by the Virginia Metal Products Company. These floors of stacks also house storage and equipment areas.

The principal floor is at ground level, and is the only floor to which the public has access. It is approached by the main entrance at the east end of the building. The entrance leads into a central vestibule, which also serves as an exhibition space. Leading off the lobby to the right, towards the north side of the building, is the History of Medicine division, a special collection of rare books and manuscripts; this room features reading tables, a reference desk, and a glassed-in area for displaying the collection's incunabula, or early printed books. Directly beyond the front lobby is the public catalog space, located in the center of the building, underneath the circular atrium formed by the shell roof structure. The catalog area is artificially lit by a distinctive circular light fixture, suspended from the atrium; natural light enters from the clerestory windows in the mezzanine above. Encircling the balcony of the mezzanine is a ceramic tile mural designed by artist Frans Wildenhain. To the left, or south, of the central catalog area is the main reading room, and encircling the catalog area on the north and west sides are the support facilities such as reference, bibliographic, technical, and information services. Each of the main spaces of the first floor is faced in a different material: the lobby in golden buff marble, the public catalog space in walnut, the main reading room in red birch, and the History of Medicine room in butternut. These materials are used not only in the wall panelling and furniture, but also in the floor; the History of Medicine room, for example, features a geometric floor pattern using contrasting woods. The furniture for the library, from the charging desk to the catalog cases and reading tables, was all designed by the architectural firm.

The mezzanine area above the central catalog area sits directly under the hyperbolic paraboloid roof shell. Square in plan and approximately half the square feet of the main floor, the mezzanine houses the offices of the director, the administrative support, and the board room of the library.

Landscape

The building is located in the southeast sector of the National Institutes of Health, on the site of a former golf course.⁵ It faces east across an open expanse of land to Rockville Pike. A grassy knoll

⁵The land was originally owned by the Peter family, and subsequently became the Town and Country Club, also named the Woodmont Country Club.

some distance back from the road provided the ideal setting for the structure. Dirt from the excavation for the structure was used around the building to accentuate the siting, giving the relatively low (20' high) exterior walls of the library additional impact and lending the library "a special individual character in an area already dominated by tall buildings."⁶

This open expanse to the east was central to the building's design. Parking and the allowance for future expansion were planned for the rear and the side of the building, so that, as the architect argued, "as a significant public building, its established impression from the front would be preserved." Today, there is a parking lot at the foot of the main facade, but because it is well landscaped and nestled in a slight depression below the first terrace, there is no significant impact on the vista from Rockville Pike.

Given the striking visual severity of the exterior of the building, the architects made a special effort to soften its appearance by enhancing the natural setting. While the primary facade is the focus of most of the landscaping, all other facades of the building have sensitive plantings. The landscaping of the southern facade has been altered by the erection of the Lister Hill building, which is connected by underground tunnels to the National Library of Medicine. These tunnels project above grade at varying height degrees, creating their own terracing effect. According to the architects, the location of the building in Bethesda, a "neighborhood which has high standards of landscape development, particularly characterized by the variety of its flowering shrubs and trees," dictated a need for careful attention to landscaping. Flowering crab apple trees were selected because of their low height, which complemented the horizontal feeling of the building.⁷

⁶Kilham, Jr., "Housing the Library," p. 405.

⁷Kilham, Jr., "Housing the Library," p. 409.

8. Significance

M:35-978

Period	Areas of Significance			
<input type="checkbox"/> Prehistoric	<input type="checkbox"/> Archeology-Prehistoric	<input type="checkbox"/> Community Planning	<input type="checkbox"/> Landscape Architecture	<input type="checkbox"/> Religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> Archeology-Historic	<input type="checkbox"/> Conservation	<input type="checkbox"/> Law	<input type="checkbox"/> Science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Economics	<input checked="" type="checkbox"/> Literature	<input type="checkbox"/> Social/Humanit
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> Architecture	<input type="checkbox"/> Education	<input type="checkbox"/> Military	<input type="checkbox"/> Theater
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> Art	<input type="checkbox"/> Engineering	<input type="checkbox"/> Music	<input type="checkbox"/> Transportation
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> Commerce	<input type="checkbox"/> Exploration/Settlement	<input type="checkbox"/> Philosophy	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> Communications	<input type="checkbox"/> Industry	<input checked="" type="checkbox"/> Politics/Government	
		<input type="checkbox"/> Invention		

Specific Dates	Architect				Builder	Area
Applicable Criteria:	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D		
Applicable Exception	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D	<input type="checkbox"/> E	<input type="checkbox"/> F <input type="checkbox"/> G
Level of Significance	<input checked="" type="checkbox"/> National		<input type="checkbox"/> State		<input type="checkbox"/> Local	

SEE CONTINUATION SHEETS

Overview

The National Library of Medicine comprises one of the world's largest collections of medical literature. Referred to as "the Fort Knox of health information" because of the richness of its holdings, the Library contains over 3.5 million medical books, journals, pamphlets, rare manuscripts, films, and other items. It was formed by the Surgeon General in the first half of the nineteenth century, at that time comprising only a small bookcase full of volumes. Housed in several buildings, including Ford's Theater, the library occupied for about seventy years the Army Medical Museum and Library on the National Mall. Efforts at publication began early in the history of the Library, resulting in widespread knowledge of and great accessibility to the vast collection. In the 1880s, the Library began to publish the *Index-Catalogue*, a comprehensive bibliography of medicine indexed by subject, author, and title, as well as a monthly listing of titles, the *Index Medicus*. At the outset of World War II, the Library established the Photoduplication Service, furnishing microfilm copies of journals to medical personnel throughout the world. Although its greatly expanded mission required a larger building, it was not until 1962 that the Library finally moved to its current facility at the National Institutes of Health. Today, the Library continues to produce the *Index Medicus*, listing articles appearing in nearly 3,000 of the world's leading medical journals. The Library also operates a computerized *Index Medicus*, known as MEDLINE, and has pioneered the use of computer-assisted publishing. The National Library of Medicine serves as a national resource for all U.S. health science libraries, filling approximately two million requests for information per year.

Designed in post-war years when library planning was undergoing major new developments, the National Library of Medicine was the product of collaboration among the foremost practitioners in the field: architects, library consultants, and engineers. The architects, O'Connor & Kilham of New York, designed the other major library monument of the era in this country, the Firestone Library at Princeton University. Keyes Metcalf, the former director of Harvard Libraries, was the library consultant; author of the classic textbook to library planning, he was one of the top in the field. The structural engineers, Severud, Elstad and Krueger, were among the government's top consultants in the matter of bomb-proof construction.

The National Library of Medicine, designed and constructed between 1958 and 1962, at a time of greatly heightened tensions between the Cold War superpowers, is a product in many ways of the nuclear age. The building of bomb shelters, promoted by President Kennedy, swept through government design and through the private realm, with many families erecting their own personal shelters.¹ Both the site and the architectural form for the National Library of Medicine were determined in great part by the demands of the Cold War era. Safeguarding the national collections from the possibility of nuclear attack on Washington necessitated a site removed from "ground zero," i.e., downtown Washington. Placing the collections underground for protection resulted in a low-lying structure; other features of the building, such as the vertical slats along the exterior walls and the distinctive hyperbolic paraboloid shell on the roof, evolved from efforts to allow for equalization of

¹Fredric M. Miller and Howard Gillette, Jr., *Washington Seen: A Photographic History, 1875-1965*, p. 207.

pressure in the case of a bomb blast.

History of the National Library of Medicine

The National Library of Medicine began in 1818 or 1819 as a small collection of books in the office of the first and newly appointed Surgeon General of the U.S. Army, Joseph Lovell.² The official birth of the library, however, is observed in 1836, when Thomas Lawson was appointed Surgeon General after Lovell's death. Under Lawson's tenure, in 1840, the first known catalogue of the books, listing 134 titles, was made. By the end of 1870, this collection had been expanded to nearly 10,000 books, more than 8,000 of which had been accumulated since the middle of the Civil War. The collection at that time was exceeded only by those at the Pennsylvania Hospital and the College of Physicians in Philadelphia.³

More space was needed to house this enormously expanded collection and the records of the Medical Department, which had grown with the Army during the Civil War. After the assassination of Lincoln at Ford's Theatre in 1865, the government purchased the building, since the public protested against further performances there. The Surgeon General's Library, as it was called, was placed on the second floor of the theatre, along with all of the records of the wounded, beginning in 1866. The burgeoning Army Medical Museum was located on the third floor of the converted structure. Over the next two decades, the library continued to expand, and it began to publish the *Index-Catalogue*, which made the collection available to physicians across the United States. By 1880, Ford's Theatre had outlived its role as home for the library. In addition to being severely overcrowded, the building was not fireproof and was surrounded by flammable houses and sheds. Both of these factors convinced Congress to authorize the construction of a new building to house the library and museum on property on the National Mall owned by the government.

The Army Medical Museum and Library

In 1887, the library found its new home in a multistoried, U-shaped, red brick building on the Mall, now demolished. Designed by the prominent local architectural firm Cluss & Schulze, it was located adjacent to the United States National Museum, which was another building designed by the German-born architects. The west wing of the new Army Medical Library and Museum housed the library and the east wing the museum. The halls, ringed by a wide gallery, rose 47 feet to trussed and skylighted roofs.⁴ Within several decades the Army Medical Library, as the Surgeon General's collection was called, was already filled to capacity, sharing the building space with the Army Medical Museum and,

²Author Wyndham Miles points out that there were officers with the title Surgeon General in the Continental Army and after the Revolution in the U.S. Army, but that the present-day Medical Department began in 1818 with the reorganization of the Army and Lovell's appointment. Wyndham D. Miles, *A History of the National Library of Medicine: The Nation's Treasury of Medical Knowledge*, p. 1.

³Miles, *A History of the National Library of Medicine*, pp. 1-34.

⁴James Goode, *Capital Losses: A Cultural History of Washington's Destroyed Buildings*, pp. 323-25.

at various times, the Army Medical School and laboratories, as well as 50 years worth of Civil War pension records.

By the turn of the century, the collection was already deemed irreplaceable and was rapidly filling all available space. John Shaw Billings, Librarian for some 30 years, stated before an International Medical Congress in London that "if the entire medical literature of the world, with the exception of that which is collected in the United States, were now to be destroyed, nearly all of it that is valuable could be reproduced without difficulty, but that which is here [at the National Library of Medicine] cannot be."⁵

Billings, one of the most famous librarians during 150 years of the Library, started the *Index-Catalogue*. In 1880, just prior to the move to the building on the Mall, the Library had produced the Index's first volume. Part of an enormous undertaking to create a bibliography of medical literature indexed by subject as well as author and title, the book represented several years of indexing by a small army of volunteers culled from across the country. Among the myriad testimonials came one from Oliver Wendell Holmes, who praised the publication, saying "You are raising a monument to science ... more enduring than brass, and a great deal more valuable to mankind than palace or pyramid."⁶ The *Index-Catalogue* made the Library accessible to people across the country. Through the inter-library loan system, researchers had access to books and journals they likely would never have known about. Simultaneously, the Library also initiated the *Index Medicus*, a monthly journal listing the titles of current medical literature. Still published today, the *Index Medicus* is the longest existing and most widely used medical bibliography of all time.⁷ These publications contributed to the national character of the library, widening its constituency immeasurably, and fulfilling an essential service to libraries and scholars across the country.

Pressures for a New Library Building

While there had been some discussion of a new building for the collection as early as 1916,⁸ the library administration began pressuring Congress for a new library building in earnest as the

⁵Herbert P. Ramsey, Past President of the Medical Society of D.C., quoting John Shaw Billings. Undated clipping from the National Library of Medicine, History of Medicine Division, MS C 47, Box 1.

⁶Miles, *A History of the National Library of Medicine*, p. 130.

⁷Miles, *A History of the National Library of Medicine*, pp. 127-33.

⁸Miles, *A History of the National Library of Medicine*, pp. 232-34. William Owen, named Director of the Army Medical Museum in 1916, planned a new building that would house the museum, library, and the Army Medical School, and Field Medical Supply Depot, as well as providing classrooms for medical and scientific society meetings. This building, with a proposed location on the Mall, was not funded. Congress, however, had been favorably impressed and, in 1919, passed a bill appropriating money for the purchase of land adjacent to Walter Reed, part of plans to establish a grand medical center.

(arbitrarily determined) Centennial approached.⁹ The library at its 100th anniversary in 1936 was experiencing some of the lowest years of its existence. Budget cuts from the Depression had decimated the staff, the service work, and the book acquisition department. From 1933 to 1935, there were only 16 books purchased for the library, and the *Index-Catalogue* was discontinued in 1932, restored a few years later only after pressure from the medical professional community. Nevertheless, the library was still praised as the best medical collection in the country, and Franklin D. Roosevelt at the anniversary lauded the library, stating that it had during this century "attained the highest position among the scientific libraries of the world."¹⁰

In 1934, the Library of Congress was constructing a new addition; it was proposed to house the Army Medical Library on one floor of this new annex. An idea that had been suggested periodically throughout the history of the Army Medical Library, this merger was lobbied against time and again by the Librarian and by marshalled forces of medical professionals and librarians throughout the country. Pressure from a number of influential friends and officials resulted in the War Department placing the Army Medical Library and Museum building on a list of proposed Public Works Administration construction projects, and ultimately, in a bill quickly ratified by Congress in 1938.¹¹

Although the bill passed, no money was appropriated for the construction or the purchase of a site. Finally, in 1940, Congress gave the Army \$130,000 to plan the building. Eggers and Higgins, a New York firm, were selected to develop a series of plans.¹² The proposed site for the new building was on Capitol Hill. The Army Medical Library and Museum was to be part of a cultural corridor envisioned by the Commission of Fine Arts, which would encompass the Folger Shakespeare Library, the Library of Congress, the National Archives, and various museums, to run along East Capitol Street from the U.S. Capitol to Anacostia. All the buildings were to be of marble or granite and similar in

⁹Miles suggests that Librarian Edgar Hume may have selected 1936 because it would have permitted a celebration during his tenure, and because it was an effective rallying point for a new building. Miles, *A History of the National Library of Medicine*, p. 273.

¹⁰Translation of an article in *Nosotros*, a Havana, Cuba, publication, May 27, 1944, p. 9. National Library of Medicine, History of Medicine Division, MS C 47, Box 1.

¹¹Miles, *A History of the National Library of Medicine*, p. 283. Also during this time, the Construction Division of the Quartermaster General's Office drew up plans in 1937 for a proposed building, to be located on the campus of Walter Reed. Library officials harshly condemned these plans as inadequate and lacking in consideration for the programmatic needs of a library. Staff members attached a 44-item list of rooms and spaces that had been omitted from the plan, such as an archives, map room, book repair, staff lockers and restrooms, etc. Among their criticisms, they argued that the two institutions were not adequately separated, with only one entrance for both the "noisy large group of laymen, and a quiet small group of scholarly people." MS Map Case I, History of Medicine Division, National Library of Medicine.

¹²Miles, *A History of the National Library of Medicine*, p. 284. Otto Eggers was chief draftsman in the firm of John Russell Pope, where he worked on the National Gallery of Art, the Thomas Jefferson Memorial, and the National Archives building, among others.

style to the Folger Shakespeare Library.¹³ Eggers and Higgins' proposed Army Medical Library fit perfectly within this mandate. It was a monumental building faced in limestone, its main elevation symmetrically punctuated by a series of full facade windows. Both the stripped classicism of the design and the building's prominent placement on Capitol Hill were lauded as enabling the Library to "stand as a thing of dignity and beauty, filled with priceless cultural treasures: an object of lasting pride to the nation."¹⁴ Although the project moved forward quickly, the entry of the United States in World War II after the attack at Pearl Harbor terminated the government's new construction plans.

The Library During World War II

During World War II, the status of the library changed from departmental to field installation, making the institution comparable to a medical supply depot. As the war progressed, in ever-increasing numbers Army and Navy hospitals requested information, translations, bibliographies, etc.¹⁵ While conducting extensive reference and bibliographic work for military personnel, the librarians were also cataloguing all European medical material that was available in film format, as well as searching for all publications from Latin America.

The Photo Duplication Section, one of the Library's most important projects, had been initiated in 1940. This service enabled people in the field to have access to all the latest information in the medical world. Six pounds of journals could now be contained on a six-ounce roll of film. Each month, 90 different overseas installations received a complete library of current literature, including 45 standard journals; more than 3,000 orders a month of journal articles were sent to servicemen and civilians overseas. Correspondents in remote regions could read the films with a microscope or other basic equipment; one doctor in China wrote that he read the materials religiously, using a candle as a projecting light.¹⁶

Along with the increased workload came a concern for the safety of the collection, which was still housed in the old brick building on the Mall, in the shadow of the U.S. Capitol. Harold Wellington Jones, Librarian from 1930 to 1945, secured a site for the Library's rare book collection at the Allen Memorial Library (owned by the Cleveland Medical Library Association) in Cleveland, Ohio. This part of the collection, which was not returned to the Library until the present building was completed in 1962, subsequently became known as the History of Medicine Division. Even with the transfer of this collection out of the building, the Library was still in dire need of additional space for its rapidly expanding collection. In addition to the original building on the Mall and the outpost in Cleveland,

¹³Col. Harold W. Jones, "The Army Medical Library: Its History and Future Obligations," *Journal of American Medical Association*, August 14, 1943, vol. 122, pp. 1074-79.

¹⁴Leon Gardner, "A Forward Glance," *Bulletin of Medical Library Association*, July 1946, p. 227.

¹⁵Miles, *A History of the National Library of Medicine*, pp. 289-90.

¹⁶Betty Wixcey, "Army Medical Library Played Vital War Role." *Washington Sunday Star*, October 28, 1945.

the Library operated out of the old Bureau of Fisheries Building and its Annex, which were also located on the Mall. The library was able in 1947 to expand within the building, when a portion of the Army Medical Museum was moved temporarily to a wartime barracks on Independence Avenue.

During the war (1943-44), a group of honorary advisors to the Army Medical Library received funding from the Rockefeller Foundation to conduct an extensive study of the Library. Their findings revealed, not surprisingly, that the building was overcrowded and poorly maintained. Considered an event of the highest importance in the history of the Army Medical Library,¹⁷ the survey included among its members Keyes Metcalf, at that time Director of Libraries at Harvard University.¹⁸ Metcalf later became the library consultant for the construction of the new building on the Bethesda campus. The survey found that librarians were working with an outdated classification system. The building lacked a comprehensive lighting system; while gas fixtures had given way to electricity, flashlights were still being used in the stacks. Further, there was no cafeteria, and the building boasted the only government outhouse, which was used until the Library moved to the new building (even after a toilet was installed in 1950).¹⁹ As an immediate step, the committee proposed a new organizational structure for the library, with five divisions: Acquisitions, Reference, Index-Catalogue, Cataloguing, and Rare Books. They also recommended as basic requirements the building of a trained staff and the provision of a strong organization within which the staff could work. In capital letters, the survey stated that a new building for the collection was an absolute necessity.

At the conclusion of the war, Congress prepared once again to authorize construction of a new building. However, the service function of the library and the size of the collection had so greatly expanded during the war that the original programmatic scope for a new building was entirely outdated. In a few years, the staff had more than quadrupled in size, from 30 in 1941 to a requested 207 in fiscal year 1949. The Library had also assumed new duties: the Library of Congress, as part of an effort to avoid duplications of effort among governmental libraries, had relinquished all responsibility for procuring medical publications to the Army Medical Library; in addition, the Army Medical Library was to receive an estimated 275,000 additional volumes from the Library of Congress as part of this transfer of responsibility. Most significantly, the library had implemented the Photoduplication System during the war.²⁰

The war highlighted the need for service as the most important consideration of a new programmatic

¹⁷Wyllis E. Wright, "Reorganization of the Army Medical Library," *Bulletin of the Medical Library Association*, vol. 34, no.3, July 1946, p. 223.

¹⁸Metcalf at this time was also Chairman of the Library of Congress Planning Committee. *Library of Congress Information Bulletin*, October 29-November 4, 1946. MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

¹⁹Miles, *A History of the National Library of Medicine*, p. 357.

²⁰Surgeon General Memo on Legislative Program for the 80th Congress, 2nd Session, September 3, 1947. MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

library design. The significance of the collection and the service of the institution to the medical community at large was already well documented. The late Dr. William H. Welch of Johns Hopkins University was quoted as saying:

I have been asked on more than one occasion what have been the really great contributions to this country to medical knowledge. I have given the subject some thought and believe that four should be named. 1) the discovery of anesthesia; 2) the discovery of insect transmission of disease; 3) the development of the modern public health laboratory in all that the term implies; 4) the Army Medical Library and its Index-Catalogue. This Library and its catalogue are the most important of the four.²¹

In addition to the need to reconsider the scope of a proposed new building, legislators also felt the need to reconsider the location; with the onset of the atomic age, it no longer seemed advisable for such a valuable collection to be housed on East Capitol Street at the foot of the U.S. Capitol. Additionally, a building erected on the perimeter of town would be less costly.

The 1950s: New Designs and New Directives

In 1952, the Library was renamed the Armed Forces Medical Library (AFML), a joint agency of the three military departments, the Army, Navy, and Air Force. The mission of the Library was redefined to serve as the central medical library of the Department of Defense. In its new incarnation, the Armed Forces Medical Library was to encompass the former Army Medical Library collection and the vaguely articulated "other collections deemed appropriate." As the national library of medicine and related sciences, the AFML was to be generally concerned with the advancement of medicine in the United States. During the year, the Navy, interested in having a hand in planning and constructing a new library building, suggested housing the library on its Naval Medical Center campus in Bethesda, directly across Rockville Pike from the National Institutes of Health. This proposal would have placed an institution historically under Army control on Navy property; while a new concept, it was one that remained popular within the Defense Department for several years.²²

As part of these plans for a new building at the Naval Medical Center, the Navy assigned Commander John Oley to the Library in April 1953 to work with the staff. Oley, who had attended a summer course on medical librarianship at Emory University, set out to determine the basic elements of the library and the requirements that would enable the collection to be housed for a minimum of fifty years. His diagrammatic plans, charting the operations flow within the Library, were highly praised

²¹Editorial, *Minnesota Medicine*, May 1946. MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

²²File Memo, "Status of the Building Program and Basic Legislation," Armed Forces Medical Library, October 31, 1952. Also, Resolution passed by the House of Delegates of the American Medical Association in San Francisco, June 1954. Both from MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

by Keyes Metcalf, the honorary consultant at that time.²³ With this material in hand, the Bureau of Yards and Docks drew up plans for a proposed building. Significantly, Keyes Metcalf's appointment would provide important continuity of design when the Library was actually built. [See section on Library Consultant.]

A number of the features in the projected plans were ones that characterized the National Medical Library as it was finally constructed. Movable walls and partitions created a flexible interior that was much needed in modern, modular library design. Most importantly, this preliminary proposal already featured special considerations for bomb-proof construction, many of which would be carried over into the final design several years later. Oley, in describing his efforts, explained:

We have planned a building in which the *entire* book stack areas are placed within a bomb-blast proof shell of reinforced concrete, perhaps even buried or placed in a natural or man-made depression. There will be no window openings within this shell; instead, air conditioning and dehumidification will be provided. A major portion of the "technical services" area will be located over the stack area forming an additional protective layer...²⁴

Congress in April 1955 authorized plans and specifications for a new Library building at the Naval Medical Center in Bethesda, appropriating \$350,000; the project, however, was deferred and the money never allocated. Efforts began around this time to establish the Library as an independent agency, with status similar to the Smithsonian Institution.²⁵ As the Library's future developed along these diverging paths -- one as an independent agency, and one as a military department, Senators Lister Hill and John Kennedy, both heavily involved in health legislation, took on the Library project. After much debate, several hearings, and numerous drafts, they proposed a bill in which the Library be transferred to civilian management, administered by an independent Board of Regents, and placed within the Public Health Service. The bill, successfully passed by both the House and Senate and signed into law by Eisenhower, raised the status of the Library from a department within the Armed Forces, secondary to the mission of the Defense Department, to the level of a national library. Most importantly, "it moved the institution into the mainstream of American medicine by placing it in the nation's primary health organization, the Public Health Service."²⁶

Selection of Site

While the 1956 bill established the National Library of Medicine as a new entity, it did not determine

²³Miles, *A History of the National Library of Medicine*, p. 352.

²⁴John A. Oley, "Basic Elements in the Planning of a New Building for the Armed Forces Medical Library," *Bulletin of Medical Library Association*, p. 457.

²⁵There was also an effort to place the National Library of Medicine within the Smithsonian Institution, which Secretary Leonard Carmichael recommended against. MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

²⁶Miles, *A History of the National Library of Medicine*, p. 355.

the new building's future site. Because Chicago had campaigned fiercely for the Library, with eleven representatives and one Illinois senator introducing bills that specified Chicago as the site, the final bill avoided naming a site for the Library. After Eisenhower appointed the Board of Regents in 1957, they met to consider the ten possible sites that had been proposed. All were in the Washington area except for the Chicago Medical Center offer.²⁷ The list included Capitol Hill, the Mall, the Naval Medical Center, the Soldier's Home, the Naval Observatory, and the National Institutes of Health. Each site was evaluated for its proximity to a medical center, the amount of land, the transportation facilities, the freedom to expand, the early availability of the site, and whether the site was on the periphery of town or in the center and more prone to bomb attacks.²⁸ Papers in Washington and in Chicago editorialized about the appropriateness of locating the building in each respective city. The Regents ultimately decided on a site at the National Institutes of Health that had served as a golf course for the Woodmont Country Club. The site provided access to two large medical centers, adequate land and room for growth, and an existing transportation network.

History of the Bethesda Site

The property selected for the site of the National Library of Medicine had served since 1921 as home to the Woodmont Country Club. The club, which had been founded in 1916 as the Town and Country Club in Petworth by German Jews, purchased 116 acres from members of the Peter family. Because of its location on Woodmont Circle, the club name had been officially changed to the Woodmont Country Club in 1930.²⁹ Their club house was "Winona," an old brick manor house that had been built in the nineteenth century by Armistead Peter, the original owner of the property.³⁰ The Rambler,

²⁷Miles, *A History of the National Library of Medicine*, p. 354. The Chicago Medical Center Commission offered as incentive a nine-acre site, valued at \$500,000, gratis if the Library were to move to the midwestern city.

²⁸National Library of Medicine Site Selection, undated manuscript, ca. 1956. MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

²⁹William Offutt, *Bethesda: A Social History*, p. 312.

³⁰The Peter family was one of the region's prominent families. Robert Peter, the first of the family to come to America from Crossbasket, Scotland purchased a large tract of land (believed to be approximately 600 acres) from Walter Clagett in ca. 1760. A successful farmer and merchant, he owned land throughout what are today Montgomery and Prince George's Counties, and he became Georgetown's first Mayor. The Peter property, known as "Clagett's Purchase," passed through several generations of the Peter family. Robert bequeathed it to his daughter, Margaret Peter Dick, who in turn passed it to her heirless son, Robert. Robert deeded the land to his first cousins, Armistead, James, and George Peter in 1873. Shortly thereafter, Armistead purchased James' share. The G.M. Hopkins *Atlas of Fifteen Miles Around Washington Including the County of Montgomery Maryland* (published 1879), indicates that George Peter's property was on the east side of Rockville Pike, and that Armistead's was on the west side (the site of future Naval Medical Center). The atlas shows structures on both properties; in all likelihood, the house on the Armistead Peter land was Winona, a large brick summer house for which the exact date of construction is unknown. George Freeland Peter, a son of Armistead, was deeded a portion of the property to the north of the National Library of Medicine site. In 1930 he erected on

a regular columnist of the *Star*, wrote of a visit out to the property in 1919:

That house [Winona] faces the Rockville Pike, which is about 200 yards to the east and ... the path to the house is a curving lane bordered by old and majestic maples. ... The view from this house commands a wide area of green, rolling, peaceful country, a section which was taken up by American pioneers in the latter part of the eighteenth century... Kennon [Peter, a descendent] has rented the big brick house and part of the grounds to the Young Women's Christian Association, and there were about twenty girls there, living in the house and in tents, in the grounds when the Rambler found his way there.³¹

In 1922 Winona was transformed into the clubhouse for the Town and Country Golf Club. During World War II, military officers stationed at the Bethesda Naval Medical Center and on defense duty for the Public Health Service at NIH were invited as temporary members into the club. NIH ultimately acquired the land from the club in 1948, in an arrangement that allowed the Club to remain rent-free on the property for three years. The Woodmont Club remained only until 1950, at which time the Maryland National Capital Park and Planning Commission operated the property as a public golf course until 1955.³²

The New Building: The National Library of Medicine, 1957-62

Immediately after the Regents selected the golf course site for the future library, the architecture firm of O'Connor and Kilham from New York was awarded a \$20,000 contract to provide cost estimates for the construction.³³ The General Services Administration then contracted with the firm for the development of plans. [See section on The Architects.]

Plans for the Library began with the plotting of square footage per floor. With the ground level main floor being the most important, requiring space for the public catalogue, administration, the general reading room, reference librarians, acquisitions and cataloguers, the architects came up with a trial number of 55,000 sq. feet. Figuring 125,000 sq. feet for stacks and related functions, together with 38,000 feet for the receiving, shipping, photographic, and binding services, the architects concluded that there should be three underground floors (all at 55,000 like the ground floor). These calculations

that site a Colonial Revival house, called the Stone House, which was designed by his brother Walter G., a well-known Washington architect. It is used today by NIH as a conference center.

³¹The Rambler, *The Washington Star*, September 17, 1919. The Rambler article stated that the house was built by Armistead Peter for his family in 1836. However, Peter was not born until 1840. It is possible that the date was a misprint, and that, in fact, the correct date may have been closer to 1876 -- a few years after Peter inherited the land, but before the publication of the Hopkins atlas.

³²*Woodmont Country Club: A History*. Rockville, MD: Woodmont Country Club, limited edition, 1988.

³³"Medical Library Cost Estimates Being Drafted," *Washington Post*, May 11, 1957. MS C 47, Box 1, History of Medicine Division, National Library of Medicine.

left 20,800 sq. feet, resulting in a smaller mezzanine floor above the ground level.

In early versions of the plan, the administration and central reference sections occupied much of the main or ground floor. The History of Medicine division was to be located on the first level below ground to protect the rare books. Ultimately, in the final plans, the reading room and staff functions of this division were moved up to ground level, consolidating all public functions on the ground level. The below ground floors, restricted to staff only, contained the stacks of the History of Medicine Division in a separate section from the rest of the collection.³⁴

Plans continued to develop through 1958, with input and suggestions from many staff members. Bids were accepted for construction in 1959, and the Arthur Venneri Company was selected as the lowest bidder. Venneri devoted much time to the construction, and was constantly present at the site, regarding it "as his monument in the Nation's capital."³⁵ The groundbreaking took place on June 12, 1959, with Senator Lister Hill turning the first spade of earth. Work progressed smoothly until a large rock formation, a micaceous schist, delayed construction. The need to blast the rock added \$200,000 to the cost of the building and greatly disturbed neighbors, raising public opposition to the project. The building was dedicated in December 1961, several months before its actual completion. It was occupied in April 1962.

Expansion of the Library

Five years after the building was completed, O'Connor and Kilham were hired once more, in early 1967, when the Librarian had received an indication that Congress would fund a new library building, dedicated to research in biomedical communications. The architects were to draw up a preliminary plan for an annex or addition, as well as plan a renovation of the original National Library of Medicine building, the interior of which had been modified somewhat by the advent of the computer age. The architects proposed three alternatives for a new design: one, an annex the same height as the library; two, a tower 15 stories high; three, a tower of medium of height. The architects suggested the placement of the new building close to the south side of the building, connected by a tunnel and equipped with underground parking.³⁶ The architects had always anticipated that the library would expand, and their original design had left the south facade deliberately simple. Although they were not in the end selected as the architects for the Lister Hill National Center for Biomedical Communications, as the building was called when it was finally funded in 1972, they probably would have approved the design as complementary to the original National Library of Medicine. The new building, designed by Carroll, Grisdale and Van Alen, was a ten-story tower with three below-grade levels.

³⁴Material in the above two paragraphs from Kilham, Jr., "Housing the Library."

³⁵Miles, *A History of the National Library of Medicine*, p. 363, note 28.

³⁶Miles, *A History of the National Library of Medicine*, pp. 420-21.

The Architects

On June 24, 1957, the General Services Administration (GSA) contracted with the New York firm of Robert B. O'Connor and Walter H. Kilham to develop preliminary plans for the building. The firm was known for their library design, having designed library buildings for Princeton, Colgate, Louisville, and other universities.

The architects formed their partnership after working together during World War II in the office of the Zone II Constructing Quartermaster of the United States Army. O'Connor was the chief engineer of the office, in charge of all War Department construction (except fortifications) in New York, New Jersey, and Delaware. Kilham served in the office as principal architect, later becoming chief of the site-planning section of the United States Engineers.³⁷ Many members of the newly-formed firm O'Connor & Kilham had worked for one of the two men in their respective firms prior to the war.

Robert Barnard O'Connor was born in Manhasset, New York, on November 21, 1895 (d. 1993). He received his bachelor's degree from Trinity College, and his master's from Princeton (D.F.A. from Colgate in 1959, and a Litt.D. from Trinity in 1976). In 1921 he began his practice, joining with Trowbridge & Livingston, Hyde & Shepherd, and then with Benjamin Wistar Morris, his father-in-law, from 1924 to 1929. From 1930 to 1942 he was a partner with Morris in the firm Morris and O'Connor. His partnership with Walter H. Kilham, Jr., began in 1943, and continued until 1968.³⁸

O'Connor, who joined the AIA in 1930, played a key role in the creation of the AIA's College of Fellows. Prior to 1952, the AIA nominated fellows for achievement in architecture, but there was no organization through which their collective expertise could be mobilized. O'Connor, elected a Fellow in 1948 for his "distinguished work in the science of construction," was one of nine fellows who laid the foundations for the College of Fellows. These efforts to organize and tap the opinions of the most esteemed and experienced members of the profession were recognized at the 1952 AIA Convention, where the measure was passed creating the College.

O'Connor was a modernist with a very specific aesthetic, exemplified by his 1944 plan for the modernization of the Metropolitan Museum of Art's grand entrance foyer. O'Connor's partnership with Benjamin Wistar Morris during the 1930s had produced what was considered at the time the most modern art gallery in the country, the Avery Wing of the Wadsworth Atheneum in Hartford, Connecticut.³⁹ Both this achievement and the fact that Morris was a trustee and chairman of the Metropolitan Museum's building committee (his name did not appear on any drawings, d. 1944) cemented the firm's selection for the Metropolitan's modernization program. O'Connor proposed to strip bare Richard Morris Hunt's monumental Beaux-Arts Great Hall. While the enormous

³⁷*Princeton Alumni Weekly*, Harvey S. Firestone Memorial Library Issue, April 1949, pp. 25-26.

³⁸*Who's Who in America, 1982-1983*, 42nd edition, vol. 2.

³⁹Morrison Heckscher, "The Metropolitan Museum of Art: An Architectural History," *The Bulletin of the Metropolitan Museum of Art*, p. 59.

geometrical forms of the hall were to be left intact, the classicizing ornamentation was all to be stripped away, the cast bronze torches removed, the balustrade simplified. All these efforts and others were part of a movement to reveal the building's pure form, as seen in a modernist perspective. The exterior monumental stair so essential to the building's approach was to be replaced with a raised curving driveway, again preferring a simple line or form to a more ornate, classical appearance. The entire program in hindsight has been labeled an "exercise in purging the past."⁴⁰

With just a few really outstanding library projects, all designed by a cadre of the country's preeminent consultants, O'Connor built a reputation as one of the finest architects of library buildings in America. Ralph Ellsworth, the library consultant who worked with O'Connor and Kilham on the Firestone Library project, called O'Connor "the most articulate of contemporary architects on the aesthetics of library building."⁴¹

Walter Harrington Kilham, Jr., was born in Brookline, Massachusetts, in 1904, the son of a prominent Boston architect.⁴² He attended Noble and Greenough School in Boston and the Ecole Alsacienne in Paris, and received his bachelors and masters degrees from Harvard University. From 1928 to 1930 he worked for Raymond Hood on preliminary designs for the Daily News Building and early schemes for Radio City. After several years of work on plans for Rockefeller Center, he became principal designer for Wallace K. Harrison.

Kilham brought some experience in library and educational building design to the partnership with O'Connor; from 1937 to 1942, he was a partner in the firm of Van der Gracht and Kilham. Their projects included the Bennington College addition, Carroll College Library in Waukesha, Wisconsin, and Lincoln Hall gymnasium and chapel in Westchester County, New York.

Among the many projects Kilham designed with O'Connor during their partnership are a dormitory for the Putney School; the science building at Carroll College; a school in Wilton, Connecticut; and most notably Firestone Library at Princeton University. For both the Carroll College Library and the Princeton Library, Kilham was awarded the Gold Medal of the New York State Association of Architects.⁴³ In 1944, Kilham made a community survey for the Board of Education of problems faced in school building planning. Kilham was elected an AIA Fellow in 1951, the same year as Welles Bosworth and William Lescaze, for achievement in design. He served on several important national and local AIA committees and was president of the New York chapter in 1949-50.

⁴⁰Morrison Heckscher, "The Metropolitan Museum of Art," p. 62.

⁴¹Ralph Ellsworth, *State of Library Art*, pp. 104-05.

⁴²Kilham's father, Walter H. (1868-1948) FAIA, was a prominent Boston architect whose firm designed numerous educational buildings: Whitman and Bernard Halls at Radcliffe, Dedham High School, the Lincoln School at Framingham, the Tucker School in Milton, and the Faneuil branch of the Boston Public Library among other buildings. Henry F. Withey and Elsie Rathburn Withey, *Biographical Dictionary of American Architects (Deceased)*, pp. 342-43.

⁴³Vertical files, Architect Members, at the American Institute of Architects Library.

Library Consultant

Dr. Keyes Metcalf (1889-1983), hired for the planning and design consultation of the National Library of Medicine, was preeminent in the field of library planning consultation. Metcalf during his distinguished career had held key positions at both the largest public library and the largest academic library in the United States: he had served as the head of the Reference Department of the New York Public Library, and later, for 18 years, was the director of libraries at Harvard University, as well as serving as President of the American Library Association.⁴⁴ At the time of his work on the National Library of Medicine, he was about five years into a prodigiously active "retirement," which lasted until 1980 and included several publications and some 600 consultations, most of them relating to library buildings; Antarctica is the only continent lacking libraries that he helped to plan.⁴⁵

A few years after the completion of the National Library of Medicine building, Metcalf published the comprehensive and authoritative guide to the process, entitled *Planning Academic and Research Library Buildings*. Complete with several references to the National Library of Medicine, the book examined every aspect of planning, from how to assemble a team, to how to consider programmatic space needs. Metcalf referred to the architectural team of O'Connor and Kilham on several occasions, as well as to their highly successful plans to the challenging projects of Princeton's Library and the NIH facility. Metcalf consulted with the architects O'Connor and Kilham during the writing of the book, requesting comments from them on Chapter Two, "Library Objectives and Their Relation to Aesthetic Problems, Quality of Construction, Function & Cost." These comments, from architects the author obviously regarded very highly, resulted, according to Metcalf, in substantial changes to the chapter. *Planning Academic and Research Library Buildings* remained the authoritative work in its field throughout Metcalf's life; at the time of his death it was being revised by a "Metcalf alumnus" who was the Director of Libraries at Stanford University.⁴⁶

The role of the library consultant in the process involved supervising and controlling cost overruns, analyzing drawings, the layout of furniture, lighting and ventilation, as well as planning the arrangement and capacity of the stacks. Metcalf, familiar with every aspect of designing and operating a library, explained in an interview that if he did "have a special interest, it [was] in the sensible construction of new library buildings. Enormous sums are being spent on libraries today, and I would like to see them spent wisely. I'm more interested in spending money for books than for bricks and mortar."⁴⁷

⁴⁴Joseph A. Wilkes, ed., "Libraries," *Encyclopedia of Architecture: Design, Engineering and Construction*, vol. 3, p. 236.

⁴⁵"Keyes De Witt Metcalf, Born April 13, 1889, Died, November 3, 1983," *Harvard University Gazette*, August 24, 1984.

⁴⁶"Keyes De Witt Metcalf," *Harvard University Gazette*.

⁴⁷Robert Melville, "Retired Librarian Has Crowded Life," *The Boston Sunday Herald*, February 7, 1960.

Metcalf was part of a group of pioneer consultants, which included August Snead Macdonald, the designer of the modular stack system; Ralph Ellsworth, director of libraries for University of Colorado and the University of Iowa (where he designed the first modular modern library); and Alfred Morton Githens. O'Connor and Kilham had worked with Ellsworth on the Princeton Firestone Library. The *Encyclopedia of Architecture* elucidates the difference between these two prominent consultants thusly: Metcalf "had a New Englander's dry, scholarly intensity with special concern for the perpetual growth of collections," and Ellsworth "held a Midwestern populist view in which the library's mission focused on service to an ever-expanding readership..."⁴⁸

Structural Engineers

The structural engineering firm of Severud, Elstad and Krueger that was hired for the design of the National Library of Medicine was one of the government's top consultants on the issue of bomb-blast-proof construction. They had assisted in the design of hospitals, research centers, airports, housing developments, theaters, and industrial buildings of all types. Fred N. Severud, the senior partner and one of the most distinguished engineers of his time, had first begun his independent practice in 1928. Within a few years he had become a recognized authority on problems of structural design, noted for his solutions throughout the mid-twentieth century -- to issues of brick and block masonry in the early 1930s, high-rise hospital construction in the 1940s, and large span construction in the 1950s.⁴⁹ Severud was also the author of *The Bomb, Survival, and You*, published in 1954. This book detailed the nature and effect of the bomb, including data from Hiroshima and Nagasaki; explained how to protect essential equipment and how to strengthen existing structures; and examined the topic of designing new buildings "for the Perilous Atomic Age."

The Modular Library: Changes in Stack Design

The National Library of Medicine, in its modular system, followed in a line of modern library design that was, by the mid-twentieth century, well established. By World War II, a much greater emphasis on serving the public readership had resulted in dramatic changes in the function of libraries. Granting greater access to stacks exposed the inadequacies of the current lighting and ventilation systems, as well as the limitations of circulation posed by fixed bearing wall construction. In the mid-1930s, August Snead Macdonald introduced the concept of rectangular columns at fixed intervals rather than bearing walls in the design of stack systems. This discovery led to the creation of the modular library, as developed by Dr. Ralph Ellsworth, one of the most prominent men in the field of library consultation. The first documented example is Ellsworth's library at Iowa State University. The introduction of columns, forming a pattern of bays based on multiple stack widths, was quickly adopted throughout the country. With it came an acceptance of lower ceiling heights, and a change in ventilation systems.

If one recalls the libraries of Sansavino, Wren, Labrouste, and a host of others, with their orderly and

⁴⁸"Libraries," *Encyclopedia of Architecture*, p. 237.

⁴⁹*Who's Who in Engineering*, 6th ed., p. 593.

repetitive bays of alcoves and windows, it is apparent that architectural regulatory based on the library's essential components -- bookcases and reader tables-- is inherent in its typology. Nevertheless, it was Macdonald who articulated this relationship at a time when modern architecture had not yet grasped the modularity which even today is its fundamental character. And it is doubtful if any libraries designed after 1950 ignored the tenets of the module.⁵⁰

The National Library of Medicine was based on a 21' span its in module, a fairly standard size. Keyes Metcalf in his 1965 book, *Planning Academic and Research Library Buildings*, discussed a 35' span for the National Library of Medicine. Although this great length would typically have been rejected for its unwieldy size, in a Library where the stacks were off limits to all but the staff, a larger format for the modules did not automatically equal incredibly complex circulation patterns.

Library Planning in the Mid-Twentieth Century

The professionals involved in the design and planning of the National Library of Medicine in the late 1950s were part of a select group that had associated or worked together already for over a decade. In 1944, President Harold W. Dodds of Princeton University called together a group in preparation for the planning of a new library facility at the college. Called the "Cooperative Committee on Library Building Plans," the group was composed of librarians from MIT, the Universities of North Carolina, Pennsylvania, Rutgers, and Missouri, all of which were contemplating expanding or building new facilities. Notably, the group also included the two major library consultants of the period, Metcalf and Ellsworth, as well as architects O'Connor and Kilham, and also Alfred Githens, and Angus Snead Macdonald. This was the same year in which the survey of the Army Medical Library, financed by the Rockefeller Foundation, was undertaken by Keyes Metcalf. Perhaps this Princeton meeting was the first time the future architects and consultant of the National Library of Medicine met one another. While Ellsworth was the one ultimately to work as consultant with O'Connor and Kilham on the Princeton project, Metcalf and these architects had evidently begun a working relationship.

In their design for the Princeton Firestone Library the architects employed the "Macdonald doctrine." This was described by the *Encyclopedia of Architecture* as:

a modular structural layout of 18x27 ft bays, each column split to allow for an air conditioning duct in the middle, freestanding stacks on structural floors, and fluorescent lighting. The building's irregular massing of terraced roofs and matching exterior stone veneer reflected in scale, materials, and details the neighboring gothic chapel. A main reading room adjoining the entrance recalled the earlier 'great hall' tradition. The open stacks, accessed by stairs, are largely below the entry level, interspersed with study 'oases' and rimmed with studies and special reading areas adjoining the windows. The result neither confirmed nor refuted the Macdonald hypothesis. The 'library of the future' had arrived, with its advantages and limitations illustrated.⁵¹

The Macdonald scheme devised a flat slab construction with split columns for use with free-standing

⁵⁰"Libraries," *Encyclopedia of Architecture*, vol. 3, p. 236.

⁵¹"Libraries," *Encyclopedia of Architecture*, p. 238.

stacks. This modular plan presented a flexibility of plan which was open to changeable uses, a feature which could satisfy new ideas about the educational uses of a library. The concept of a modular system had a major impact on library design in the United States.

In addition to the flexible plan created by the use of modules, there were other features in the Princeton design that the architects employed later with the National Library of Medicine. The division of interior space through the use of color, achieved at Princeton through the different colors used in the carrels and stacks, was similar to the use of wood in the National Library of Medicine, which differed in each of the public spaces. In anticipation of expansion, both libraries were designed with one formal, prominent facade, and other facades which could easily accommodate additions. In one important way, the two library plans differed: Princeton was modelled around the concept of open stacks and accessibility of the collection to students. The National Library of Medicine, designed specifically to protect this irreplaceable collection, was predicated on the idea that the stacks, placed below grade, would not be accessible to any but staff.

Shell Construction in 1960: Hyperbolic Paraboloids

While the National Library of Medicine was being designed, one of America's major landmarks of modern architecture was going up -- to great and heated discussion around the country. The TWA Terminal at JFK Airport employed the parabolic arch, freeing the building from the constraints of a simple box, and exploring an architectural expression of flight. The use of concrete shell design, and the concomitant exploration of shapes such as barrel and groin vaults, domes, and hyperbolic paraboloids, gained increasing popularity in the 1950s and '60s. Saarinen's work exemplified such construction, in the auditorium at MIT, the St. Louis Arch, and the Ingalls Hockey Rink at Yale. The concrete shell was also captivating architects internationally, evidenced by works such as Pier Luigi Nervi's Salt Warehouse in Tortona, Italy (1950) and Kenzo Tange's Memorial Peace Center in Hiroshima (1951).

Walter Kilham, in an article describing the evolution of the National Library of Medicine's design, referenced a Mexican architect Felix Candela, as the inspiration for the use of a hyperbolic paraboloid for the roof. Candela, born and trained in Spain, fled to Mexico at the close of the Spanish Civil War in 1939, after serving as an officer in the Republican Army. He started a firm specializing in concrete construction, and soon achieved international recognition for his outstanding structural designs. During his career, he enjoyed a variety of prestigious chairs at American and European universities. In 1978, after seven years in the United States, he became a citizen of the United States. During the 1950s, Candela published extensively on his approach to spanning space with concrete shells. Calling himself a building contractor first, Candela was committed to solving the problem of "covering habitable spaces economically."⁵² It was this aspect of design that drew the attention of the National Library of Medicine architects, who were faced with finding a feasible way to dome the proposed aperture in the center of the library building. Architectural magazines of the period dealt extensively with buildings that employed such shells. The shells were extolled not only for their economy of

⁵²Keith Eggener, "Felix Candela," in Randall Van Vynckt, *International Dictionary of Architects*, pp. 144-45.

construction, but also because they made possible excellent natural lighting for interior spaces. Called in one article the "high sky factor," this abundance of clerestory light was certainly attractive to the architects of the National Library of Medicine. As the architect described the hyperbolic paraboloid shell in the library building:

The result is somewhat like a starched handkerchief supported at the four corners and raised in between. The gable so formed permits windows to be placed giving the clerestory through which light comes down through the opening in the mezzanine to the catalog below.

The unusual shape that resulted, of course, gave some misgivings to many people, but as time went on it came to be accepted and finally liked by practically everyone; it gives a special character to this building. The final estimates indicated it would not have the adverse affect on the budget that some were afraid of at first.⁵³

Cold War Atmosphere

The National Library of Medicine was constructed during the height of tensions between the West and the Soviet Union. The contract was awarded in June of 1959, and the building was occupied in April of 1962. During this time, numerous events in international politics further escalated American fears of nuclear holocaust, precipitating government efforts to plan for protection of the populace through the construction of bomb shelters, and the protection of national resources through new design precautions.⁵⁴

The January 1962 *Architectural Record* contained a 16-page booklet insert providing information to architects on the effects of a nuclear attack, plans to survive, and preparations for post-attack recovery. Other articles highlighted aspects of designing for survival. Also in 1962, NIH undertook a survey of buildings on the campus to identify areas suitable for shelter against a nuclear attack. Part of a long-range civil defense program authorized by Kennedy, the inspection resulted in a selection of areas extant on the NIH grounds that would provide adequate protection; these areas were then marked and stocked with essential food, water, first aid kits, and radiation detection meters. (source) For many years after its completion, the lower levels of the National Library of Medicine were stocked with

⁵³Kilham, Jr., "Housing the Library," p. 408.

⁵⁴Richard N. Current, and T. Harry Williams, and Frank Friedel, *American History: A Survey*, p.774. In the spring of 1960, two weeks before a planned summit between Khrushchev and Eisenhower, an unarmed American U-2 reconnaissance plane was shot down over Soviet territory. Eisenhower defended the espionage and refused to apologize for the flights, precipitating Khrushchev's walk-out of the summit conference. A year later, the disastrous Bay of Pigs invasion took place on April 17, 1961, in which then-President Kennedy sought and failed to stem Communist influence in this hemisphere. Khrushchev's efforts in the summer of 1961 to oust Western powers from West Berlin prompted Kennedy to increase American armed forces in Europe. By the end of the summer, the government of East Germany, backed by the Soviet Union, had constructed the Berlin Wall. During the fall, the Soviet government began a series of extensive nuclear tests, exploding approximately fifty devices, which produced on the whole double the amount of fallout of all previous tests. America responded with initiatives to resume its own tests, out of fear that it would fall behind in the arms race.

food, medical kits, and other emergency supplies.⁵⁵

In the design of the library, this Cold War atmosphere resulted in especially elaborate protections for the collection. As the architect explained, "characteristic of the age we live in, particular consideration had to be given to bomb blast effect where it might influence structural design."

Three elements of the National Library of Medicine -- including the most distinctive element of the building, the hyperbolic paraboloid roof structure -- were specifically derived from efforts to make the building bomb-proof (not from a direct hit, but from effects of nearby bomb-blasts). The idea of a circular hole cut in the massive solid of the building block was not primarily an architectural concept, but rather a requirement established by the government to protect the collection from the impact of a bomb by providing equalization of pressure within and without the building.⁵⁶ Other measures were taken to equalize the pressure from a bomb-blast in the vicinity; the vertical slats in the facade, with side rather than frontal glazing, provided a measure of safety to the occupants and material inside, as they were to explode laterally along the building's wall rather than into the central spaces. Initial plans also included a moat around the building with louvered ventilators, designed to allow air underneath the building in the event of an attack to counteract that pressure coming from above. This last measure was ultimately dropped for lack of funds.⁵⁷ The building's overall presence as a low-lying structure is due in large part to the decision to place the collection underground for purposes of protection.

⁵⁵Miles, *A History of the National Library of Medicine*, p. 358.

⁵⁶Foster E. Mohrhardt, "A Building for the National Library of Medicine," *Libri*, vol. 12, 1962, pp. 235-39.

⁵⁷Mohrhardt, "A Building for the National Library of Medicine."

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M:35-9-8

SEE CONTINUATION SHEETS

10. Geographical Data

Verbal Boundary Description

The site is bounded on the east by Rockville Pike, on the north by Center Drive, on the west by a service drive to the Lister Hill Building, and on the south by the edge of the Lister Hill Building and Woodmont Road. The boundaries encompass a large rolling green area that rises from Rockville Pike to the knoll upon which the library is situated. Significant in the delineation of the boundaries is the preservation of this cone of vision between Rockville Pike and the National Library of Medicine.

11. Determination of Eligibility to be Included into the National Register

 Eligible Not Eligible

SEE CONTINUATION SHEETS

12. Form Prepared by

Name/Title	Heather Ewing, Judith Robinson, Architectural Historians		
Organization	Robinson & Associates, Inc.	Date	December 20, 1995
Street & Number	1909 Q Street, NW Suite 300	Telephone	202/234-2333
City or Town	Washington, D.C.	State	20009

Approved by the NIH Federal Preservation Officer

Concurrence of State Preservation Officer

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Determination of Eligibility

The National Library of Medicine has significant architectural and historical associations as outlined below and justified in the discussion that follows. **The building appears to be eligible for listing in the National Register of Historic Places, under Criteria A and C at the national level of significance.**

The relevant National Register criteria, from the *National Register Bulletin 16* (U.S. Department of the Interior, National Park Service, Interagency Resources Division), read as follows:

The quality of **significance** in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. **that are associated with events that have made a significant contribution to the broad patterns of our history; or . . .**

- C. **that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; . . .**

Even though the building has yet to reach 50 years of age, the typical age for the Interior Department to begin considering significance, there are instances in which more recent properties may be nominated if they are considered of great importance or are integral parts of National Register districts. As explained in the *National Register Bulletin 22*, these nominations require proof of exceptional significance.¹ The National Library of Medicine appears to meet this test. Housing one of the most important and vast medical research collections in the world, the Library serves an international readership and has provided this valuable service for over one hundred years.

The building was conceived during the height of the Cold War, and the development of the building's design was driven and directed by the need to protect this unique and irreplaceable collection from the effects of a nuclear bomb blast. Despite having ended only recently, the Cold War was of undisputed importance in our nation's history, and numerous properties significant for their associations with Cold War history have been nominated to the National Register. Most of these properties to date that have

¹*National Register Bulletin 22*, "Guidelines for Evaluating and Nominating Properties That Have Achieved Significance Within the Last Fifty Years," Washington, D.C.: National Park Service, n.d.

been deemed significant are military resources.² The National Library of Medicine, while not constructed as part of efforts to win or end the Cold War, is illustrative of the impact of the Cold War on American architectural design and engineering.

Criterion A - Historical Association

The National Library of Medicine appears to be eligible under Criterion A. It was built to house one of if not the largest, most significant medical library collections in the world. Begun by the Surgeon General in the first decades of the nineteenth century, the Library today serves an international readership with an extensive inter-library loan system. Its efforts to index the vast medical scholarship began over one hundred years ago with the *Index-Catalogue* and the *Index Medicus*; these publications brought the library to millions who would never otherwise have had access to such resources. The *Index Medicus* remains today the most widely used medical bibliography of all time. During World War II, the Photo Duplication Service, a result of new developments in microfilm technology, supplied critical and up-to-date information to people stationed abroad. Individual articles and entire journals were supplied to both servicemen and civilians, at a rate of more than 3,000 articles a month.

The collection was housed in several structures before its present home on the Bethesda campus, including Ford's Theater after Lincoln's assassination and the Army Medical Museum on the Mall. The construction of its current building marked the 125th anniversary of the collection. Convenient to both the National Institutes of Health and the Naval Medical Center, the Library was intended as a significant resource both for the military and for the general populace.

Criterion C - Design Significance

The National Library of Medicine, completed in 1962, appears to be eligible under Criterion C, as embodying the distinctive characteristics of state-of-the-art library architecture from the Cold War era. A complex planning venture, the library was designed by the architectural firm of O'Connor & Kilham, which was also responsible for one of the other major library edifices of the era: the Firestone Library at Princeton University. Planned on a modular system, the library had flexibility in its interior arrangement; the circulation patterns of staff and public were carefully charted, and these movements were incorporated into the plan by one of the preeminent library consultants of the day, Keyes Metcalf. Metcalf was integrally and continuously involved with the planning and development of the collection beginning as early as 1944, when he served as part of the Rockefeller study of the Library. The former head of Harvard Libraries, Metcalf was an author of the seminal book on library planning, *Planning Academic or Research Library Buildings*. O'Connor & Kilham, a firm clearly held in high regard by the author, made substantive contributions to the second chapter, which concerned library design and cost, according to the acknowledgements. The structural engineers on the project,

²Center for Air Force History, *Coming in From the Cold: Military Heritage in the Cold War*, Report on the Department of Defense Legacy Cold War Project, Legacy Resource Management, 1994. Representatives from the Legacy Program in November 1992 identified the Cold War time boundaries as beginning with Winston Churchill's 1946 "Iron Curtain" speech and concluding with the fall of the Berlin Wall in 1989.

the firm of Severud, Elstad and Krueger, were among the foremost of the government's consultants in the matter of bomb-proof construction.³

That the building is a product of the height of the Cold War is evinced in the sophisticated planning for protection systems, in the placement of the stacks below grade, and in the structural efforts to counter the effects of nuclear-bomb-blast. These expenditures in anticipation of a nuclear holocaust were representative of a particular era of American history; exceptional efforts were made in the case of the National Library of Medicine to protect this irreplaceable collection from damage. The most distinctive exterior design feature of the building is the hyperbolic paraboloid roof shell, a technological element being explored by architects around the world during the 1950s as a method of roofing large spans that was both an expression of the modern age and economical. In the National Library of Medicine, this modern variant on a dome evolved quite unusually out of concerns for the effects of a nuclear bomb blast. A central clerestory opening, which it was believed could act as a pressure-relief or equalizer, was deemed essential in the planning for the building. The experiments in modern shell construction and the publications on the subject by architects such as Felix Candela in Mexico illustrated to the National Library of Medicine architects a cost-effective way to dome the library building and provide natural light to the interior. Despite its curved appearance, the hyperbolic paraboloid consists of a series of straight lines, which means that straight boards can be used in creating the framework in which the concrete is poured.

Integrity

The National Register defines seven "aspects of integrity" that have been considered in analyzing whether the National Library of Medicine conveys its historical significance. "To retain historic integrity a property will always possess several, and usually most, of the aspects."⁴ The National Library of Medicine has the potential to meet all of the aspects of integrity, as discussed below.

Location	The Library is in its original location.
Design	The architects' original design for the building has not been substantively altered, neither on the exterior nor in the primary public interior spaces. From the conception of the design, the architects intended for the library to be able to expand easily. The construction of the Lister Hill Tower to the south does not negatively impact on the National Library of Medicine's original design. Five years after the NLM was completed, the architects were hired to draw up preliminary plans for an annex or addition; one of their design suggestions was a tower placed to the south of the original building.
Setting	The original terraced landscaping, designed to augment the low exterior walls

³Walter Kilham, Jr., "Housing the Library," *Bulletin of the Medical Library Association*, p. 406.

⁴"How to Evaluate the Integrity of a Property," *National Register Bulletin 15*, p. 45.

of the Library, remains unaltered. Set apart on a raised hill, the building is approached as originally intended, not from Rockville Pike but rather from the NIH campus. The construction of the Lister Hill building has not significantly altered the building's integrity, as expansion of the collection was always anticipated in the original plan. The architects designed the building with one primary facade and a clean line of sight from Rockville Pike, deemed so important by them in the estimation of the building as a major public landmark. This aspect of design has not been disturbed by the new construction.

Materials

All of the characteristic materials from the property's period of significance survive; these include, on the exterior, the limestone facing, the large slab of green granite, and the light blue mosaic on the exterior, the various woods and the granite and marble used in the different interior public spaces. The primary furniture, including the card catalog, the reference desks, and the reading tables, is original to the building and was designed by architects.

Workmanship

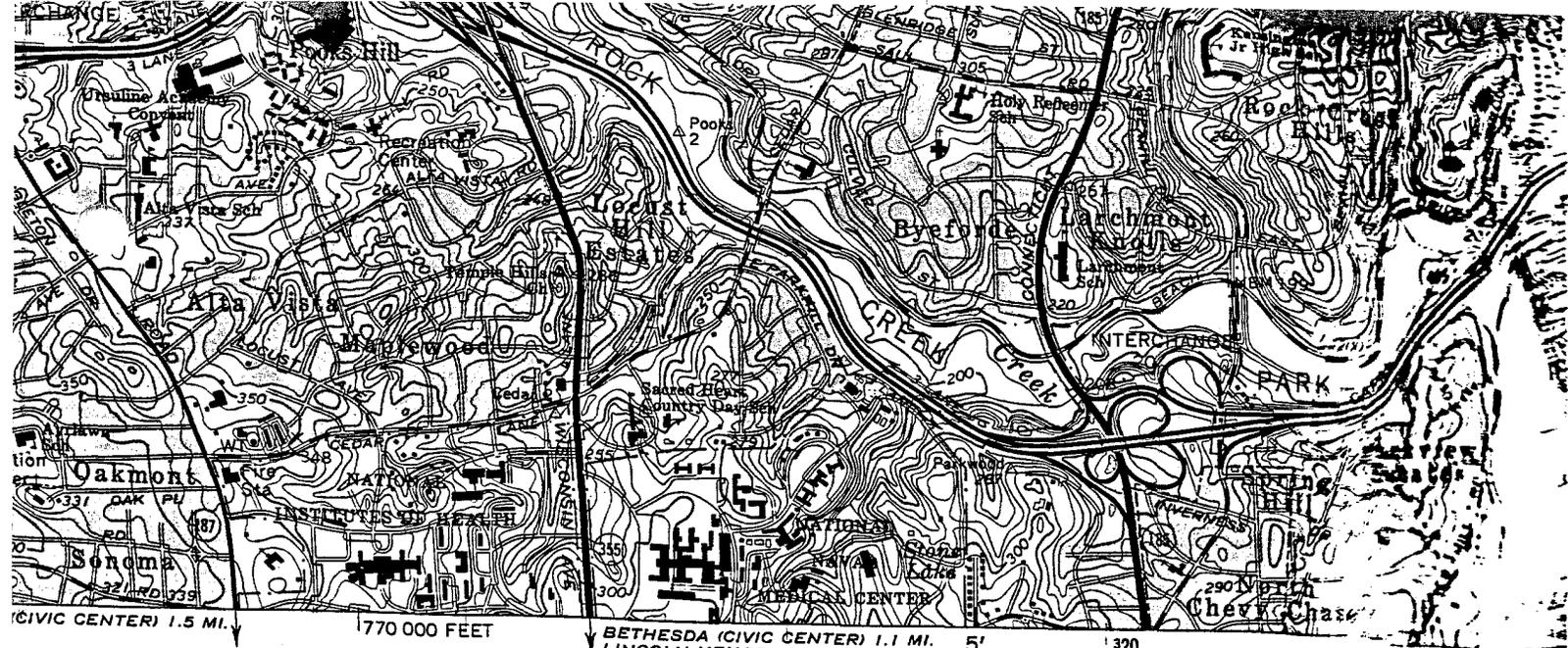
Both interior and exterior workmanship on this building is evident.

Feeling

The feeling of the building is very evocative of the period of its construction. In particular, the use of materials both on the interior and the exterior, and the distinctive hyperbolic paraboloid roof shell, which was being explored extensively in architectural journals of the period, contributes to the 1960s feel of the building.

Association

The building's design reveals strong associations with the nuclear preparedness campaign of U.S. government launched in the late 1950s and early 1960s. The modular plan of the library, which was developed by one of the preeminent library consultants of the time, is based on state-of-the-art principles of library planning of the 1950s and 1960s. Additionally, the setting of the library, surrounded by open land and grassy rolling hills, evokes the use of the land prior to the Library's establishment at NIH: the Armistead Peter estate and the Woodmont Golf Club.

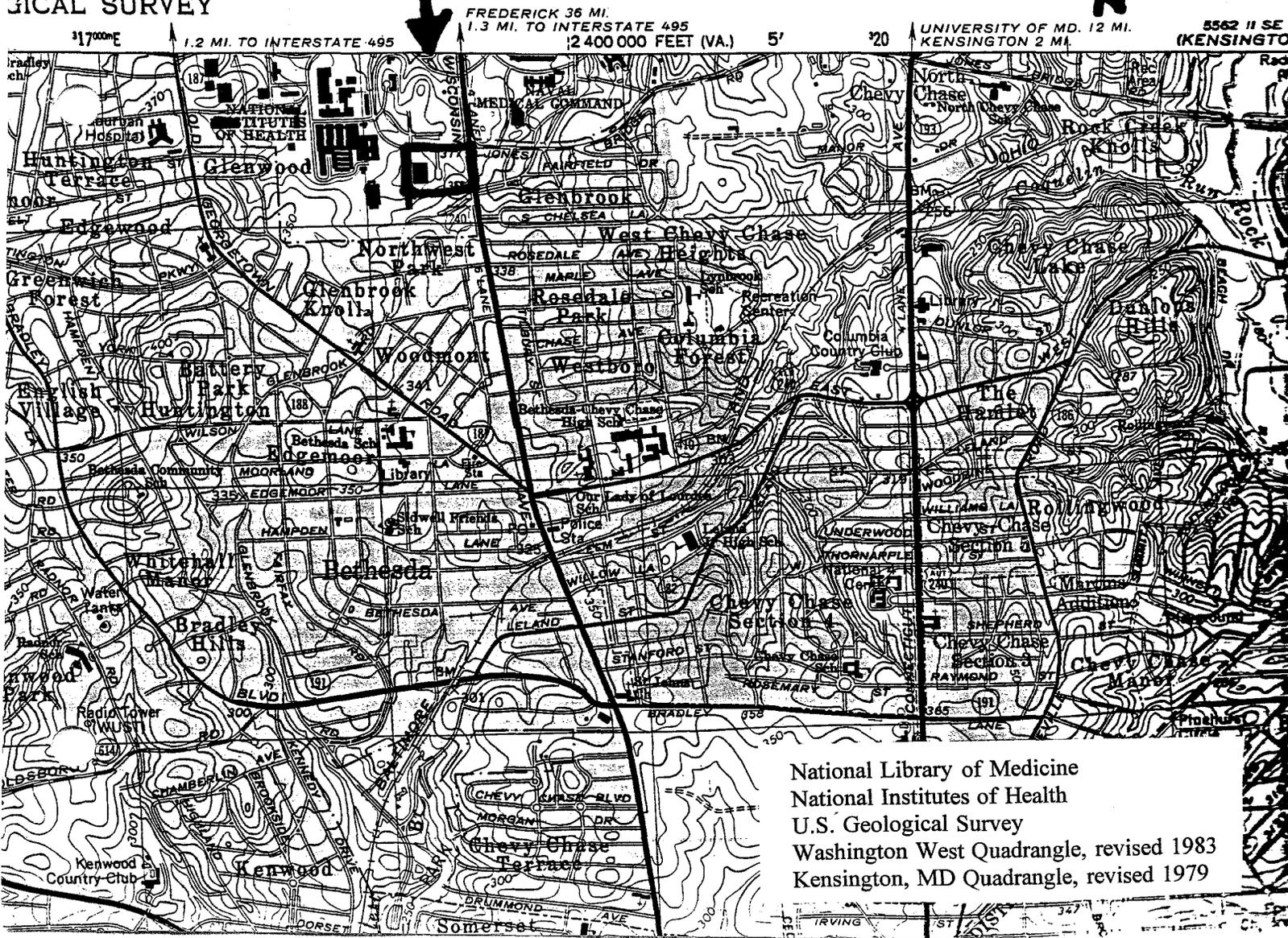


and published by the Geological Survey
JSC&GS, and WSSC



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

M: 35-9-8



National Library of Medicine
National Institutes of Health
U.S. Geological Survey
Washington West Quadrangle, revised 1983
Kensington, MD Quadrangle, revised 1979

M: 35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates



Figure 1.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO

View of Main (East) Facade, looking southwest, with the Lister Hill Building in the background.

M: 35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates



Figure 2.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO
View of Main (East) Facade, looking northwest.

M:35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates

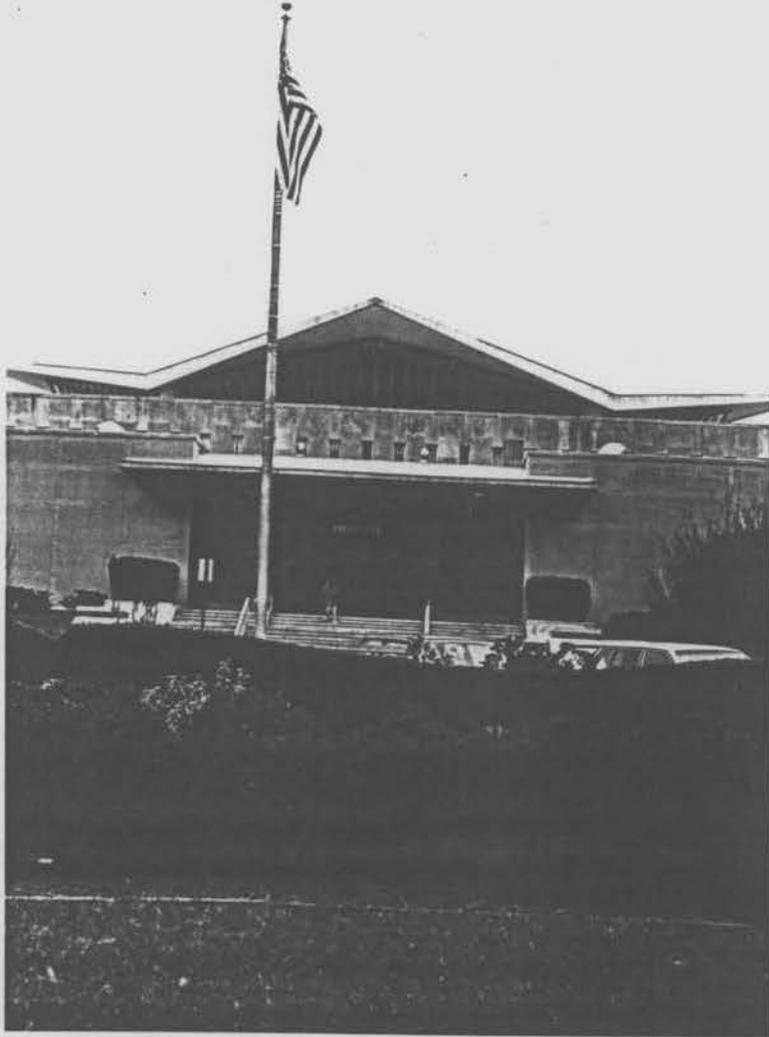


Figure 3.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO
Detail of Main (East) Facade, showing entrance.

M:35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates

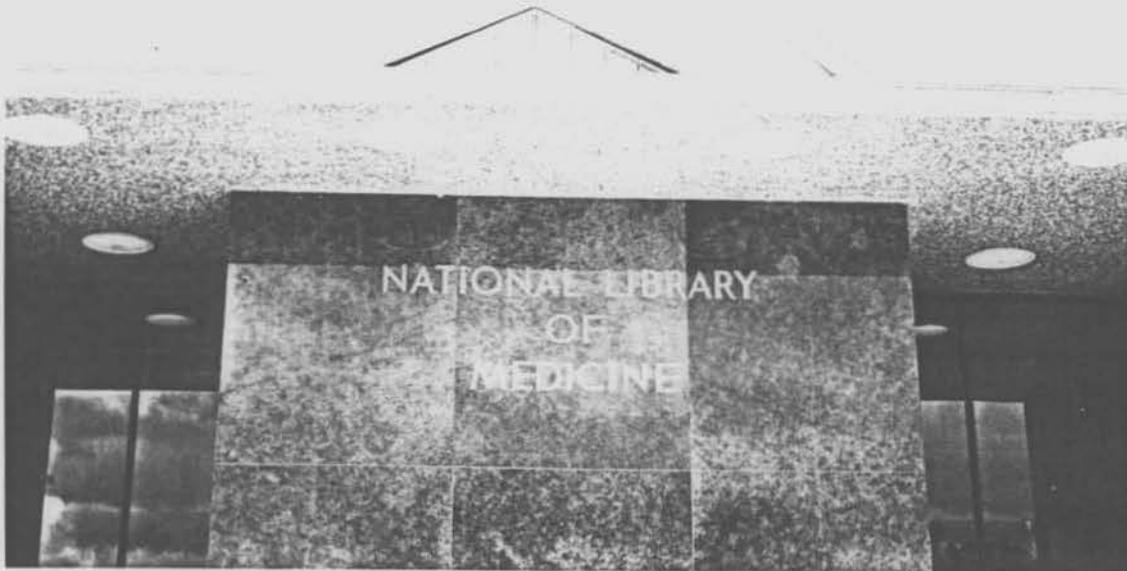


Figure 4.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO
Detail of Main (East) Facade entrance.

M:35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates

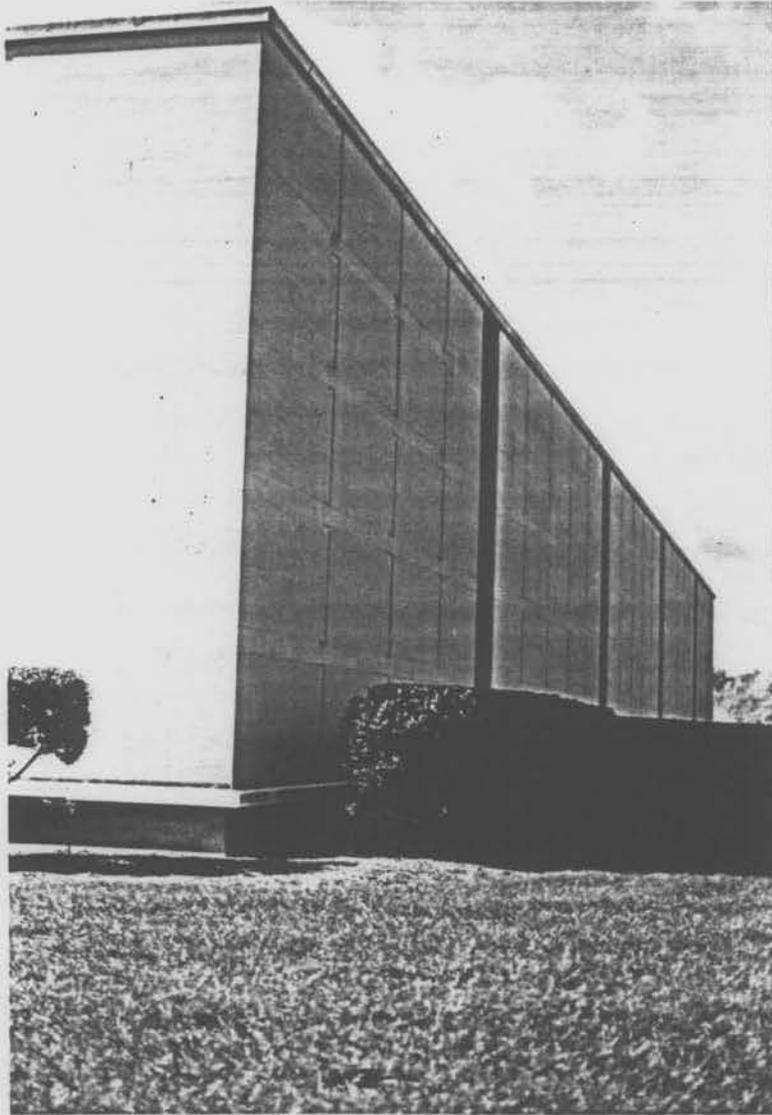


Figure 5.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO
View of North Facade, looking west.

M:35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates

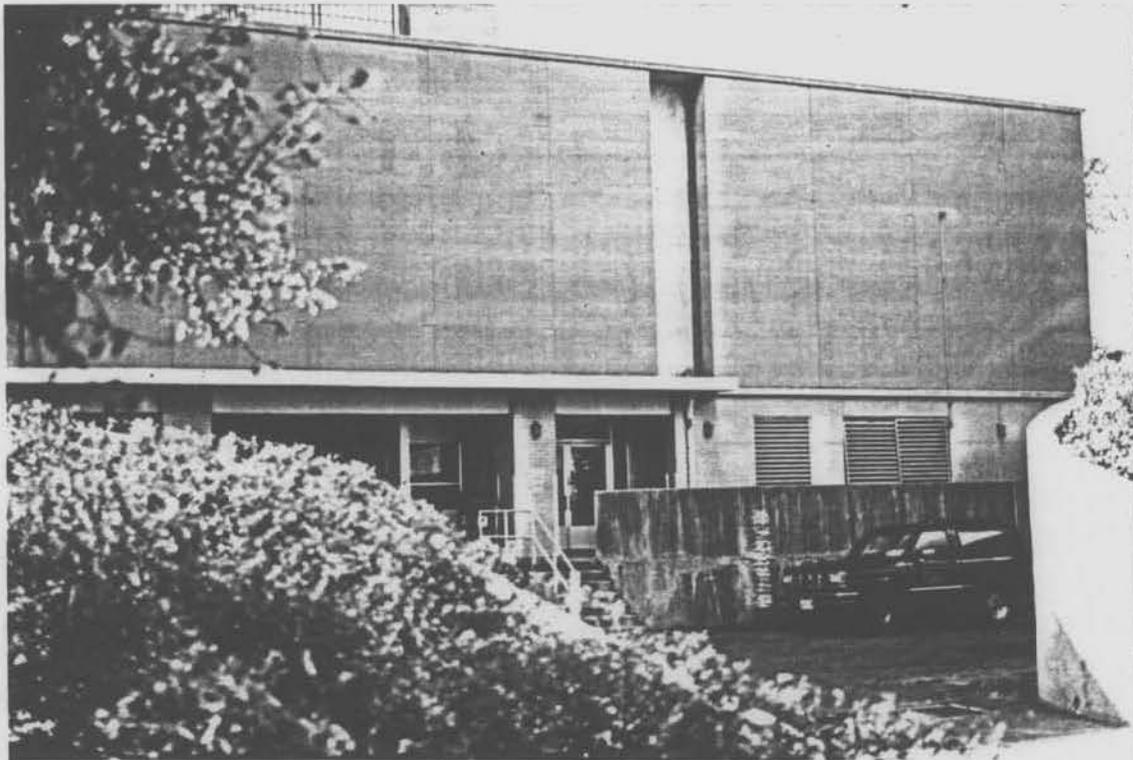


Figure 6.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO

Detail of North Facade, showing the loading dock at the western end of the facade.

M: 35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates

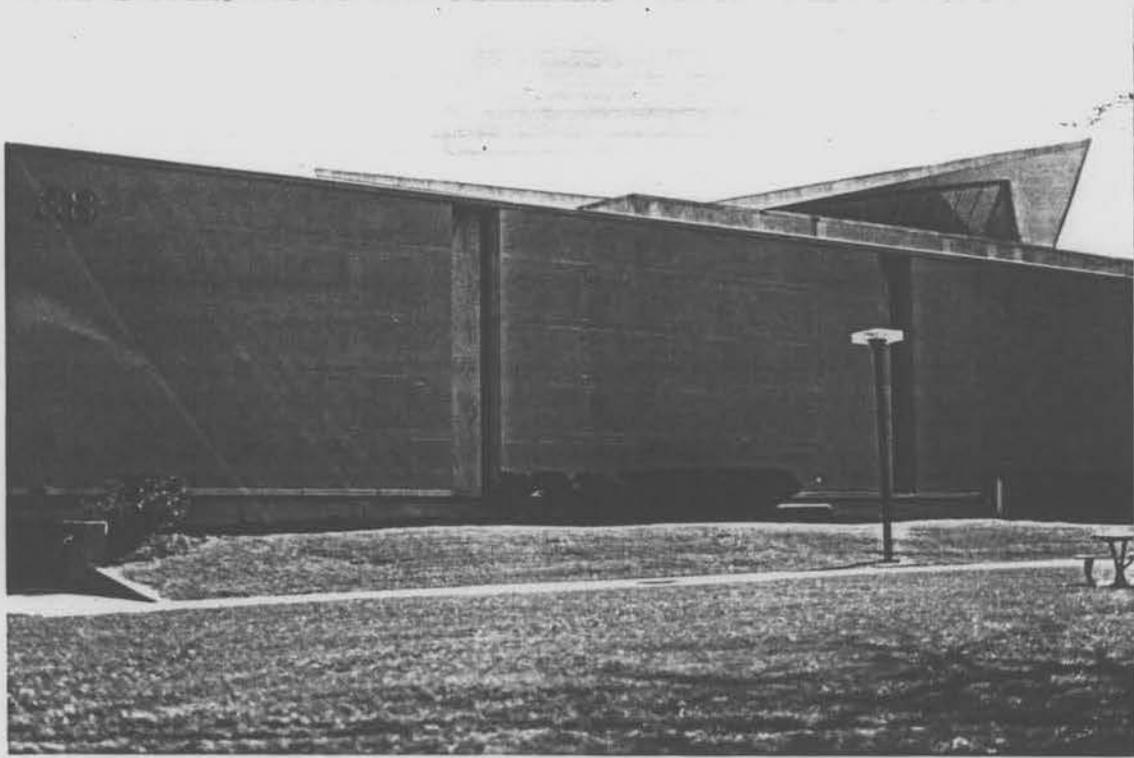


Figure 7.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO
View of West Facade, looking east.

M:35-9-8

NIH Historic Resources Inventory Form
The National Library of Medicine
Robinson & Associates

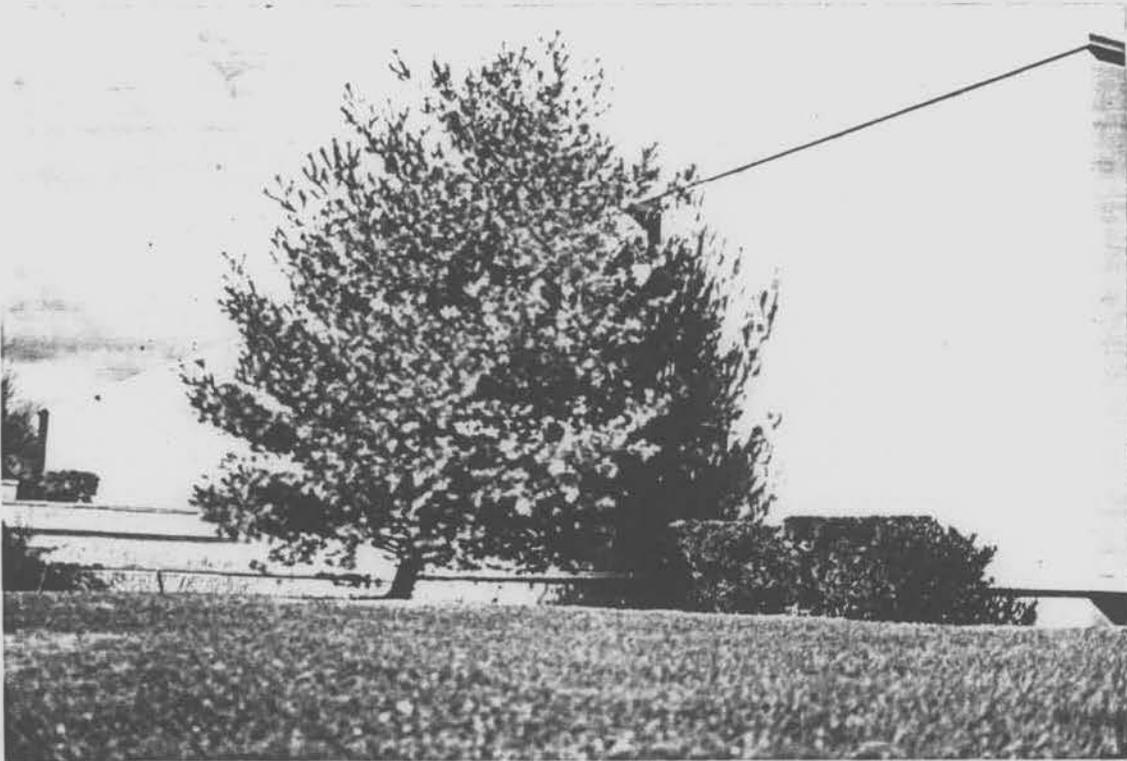


Figure 8.

The National Library of Medicine
National Institutes of Health
Montgomery County, Maryland
Regina L. Arlotto, November 1995
Negative at MD SHPO
View of South Facade, looking west.