National Register of Historic Places Inventory Nomination Form: Naval Military Hangar – University Shell House (Canoe House/Shell House)

Form No. 10-300 (Rev. 10-74)

25N 4E 2,16

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED
DATE ENTERED K1 155

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC
Naval Military Hangar - University Shell House

AND/OR COMMON
Canoe House/Shell House

2 LOCATION

STREET & NUMBER
University of Washington Campus — NOT FOR PUBLICATION

CITY, TOWN
Seattle — VICINITY OF

CONGRESSIONAL DISTRICT
#1 - Honorable Joel M. Pritchard

STATE
Washington — CODE 53

COUNTY
King — CODE 033

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
__DISTRICT	X PUBLIC	X OCCUPIED	__AGRICULTURE
__BUILDING(S)	__PRIVATE	__UNOCCUPIED	__COMMERCIAL
X STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT
__OBJECT	__IN PROCESS	__YES: RESTRICTED	__GOVERNMENT
	__BEING CONSIDERED	X YES: UNRESTRICTED	__INDUSTRIAL
		__NO	__MILITARY

__MUSEUM
__PARK
__PRIVATE RESIDENCE
__RELIGIOUS
__SCIENTIFIC
__TRANSPORTATION
X OTHER: Recreation & storage

4 OWNER OF PROPERTY

NAME
U.S. Army Corps of Engineers, Seattle District

STREET & NUMBER
4735 East Marginal Way South

CITY, TOWN
Seattle — VICINITY OF

STATE
Washington

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.
King County Administrative Building

STREET & NUMBER
Fourth Avenue and James Street

CITY, TOWN
Seattle

STATE
Washington

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
Seattle City Landmark Survey

DATE
1974 — __FEDERAL __STATE __COUNTY X LOCAL

DEPOSITORY FOR SURVEY RECORDS
Office of Urban Conservation
Seattle Department of Community Development

CITY, TOWN
Seattle

STATE
Washington

Naval Military Hangar - University Shell House
Additions and corrections to the nomination forms

Item Number 4

Revise to indicate the following ownership:

The hangar building itself is owned by the University of Washington, Seattle, Washington.

The building is situated approximately half-way overlapping property of the University of Washington and the adjoining property of the U. S. Army Corps of Engineers, Seattle District.

The Corps of Engineers owns the portion of the site bordering on the Lake Washington Ship Canal. This is a strip of land roughly 100' wide running east and west and tapering with the shoreline as the ship canal widens where it joins Lake Washington.

Item Number 7

In the last paragraph the first sentence should read:

> Still used as a canoe house and sailboat rental concession and storage area, the Canoe House is owned and maintained by the University of Washington. Under terms of a consent agreement a portion of the building for approximately half its length on the end facing the ship canal occupies neighboring property of the U. S. Army Corps of Engineers.

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
__EXCELLENT	__DETERIORATED	__UNALTERED	X ORIGINAL SITE
__GOOD	__RUINS	X ALTERED	__MOVED DATE_____
X FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Canoe House was erected during the First World War when the U.S. Navy occupied a portion of the University of Washington campus fronting Lake Union, the ship canal and Lake Washington. Though built to shelter seaplanes as a feature of the Navy's temporary training camp, the structure apparently was not completed until 1918, late enough to have been of little use to the military during the emergency. It is a straightforward, utilitarian structure ideally suited for its intended function, with a maximum clear span and siting on the lakeshore.

The structure is located in the SE 1/4 Section 16, T25N, R4E of the Willamette Meridian. It is situated at water grade on the north bank of the entrance to the ship canal from Lake Washington. It is oriented on its site southeast to northwest, and in its original context its hangar doors opened advantageously onto the water. The immediate setting is green open space, and the location is presently one of the focal points of water-oriented recreational activities at the University. An embankment rises behind the Canoe House to the north and west, and in the background looms the University's football stadium surrounded by several acres of surfaced parking.

The simple rectangular enclosure on concrete slab measures 88 by 120 feet. Large timber trusses (as many as six or seven) span the central space and are supported at the ends by triangular framing units. Longitudinal joists are bolted to the trusses and end wall plates. The trusses are a modified Howe type with crossed chords and top members which are pitched at a low angle, instead of being straight or flat, and which account for the shape of the shallow gambrel roof. This wooden framework is sheathed and covered with shingles. Asphalt shingles make up the roof cover. The long side walls are raked outward from the eaves, and because their characteristics are stabilizing or rigidifying rather than load-bearing, they are little more than cladding openings which are, typically, large double-hung sash windows, in pairs, with nine lights over nine. Some of the original openings have been filled in or modified, and other openings, such as bay windows, have been added. The interior originally was unfinished and generally remains so today. There are grade level doorways in the north and east walls. Across the south end a large triple-section sliding door with window panes in the upper portions is suspended from an overhead track approximately 24 feet in height. The track is extended beyond the face of the structure with outriggers which enable the doors to be drawn clear of the opening.

Improvements date from 1922, when the hangar became headquarters for campus crew racing activities, and 1949, when the space was converted to use for storage and rental of boats. A 20-foot section across the north end was partitioned off and in it a second floor level added. Reached by an outside stair in the center of the end wall, the damp-free "garret" was the work space in which George Pocock built his celebrated laminated racing shells for twenty-seven years. To allow a maximum of natural light into the studio-garret, a long clerestory window was opened up across the face of the end truss. The partitioned section was further subdivided after 1949. Over the several years it was unused prior to 1922, the hangar suffered the lack of adequate drainage. Freshmen crew members were pressed into service to lay drain tile around the base. Gutters on the eaves of the side walls and corner

downspouts completed the rain drain system. Other modifications include the addition of showers and lockers and a storage shed on the north end of the west wall.

Still used as a canoe house and sail-boat rental concession and storage area, the Canoe House is maintained by the University of Washington under terms of a consent agreement with the U.S. Army Corps of Engineers, the property owner of record. Dry rot and fire prevention are two major maintenance problems at present. The structure is not sprinklered. Construction of a new aquatic recreation facility is being planned for a location elsewhere on campus, and a future use for the existing canoe-rental facility is not contemplated.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE
__1600-1699	X ARCHITECTURE	__EDUCATION	X MILITARY	__SOCIAL/HUMANITARIAN
__1700-1799	__ART	__ENGINEERING	__MUSIC	__THEATER
__1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	__TRANSPORTATION
X 1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	X OTHER (SPECIFY)
		__INVENTION		Aviation Collegiate athletics

SPECIFIC DATES 1918 BUILDER/ARCHITECT United States Navy

STATEMENT OF SIGNIFICANCE

Constructed by the U.S. Navy as a seaplane hangar in 1918, the Canoe House is significant to the state as a rare, if not unique example of an architectural type developed in the early years of aviation. Because the airplane hangar was a response to new technology, its efficient form was essentially without historical precedent. No other examples of the hangar type dating from the period of the First World War are known in Washington. (A dirigible hangar at Fort Worden on the Olympic Peninsula dating from ca. 1922-1923 has an iron or steel frame with corrugated metal cladding. The oldest hangar at Paine Field south of Everett is reported to have been constructed in 1942.) Moreover, no other early hangars are known to have survived in the vicinity of Seattle, which has figured prominently in aviation history since the founding of the Boeing Company in 1916.

In 1917 and 1918 portions of the University of Washington campus were taken over for war preparations. Army Training Corps activities were relegated to the upper campus, and the U.S. Naval Training Camp extended along lower ground fronting Lakes Union and Washington and the ship canal connecting the two bodies of water. Among facilities of this cantonment area were officers' quarters, barracks, miscellaneous store rooms, and tents for the rank trainees. One of the largest of the temporary frame structures, apparently a mess hall and PX, had a roof truss profile similar to that of the Navy's seaplane hangar, but its walls were straight rather than raked. The seaplane hangar was a late addition to these facilities. Completed in 1918, it evidently was never used for the pilot training exercises it was intended to shelter. After the War, indications are that the hangar remained essentially empty, except for the unauthorized storage of a private plane, until it was relinquished to the University around 1922, reportedly for the transactional token of $1.00.

Rowing started on the University campus as early as 1902 and 1904. Speed racing did not become an official sport, however, until 1907, when direction of such activities was assigned to Hiram Conibear. During these early years the Pocock Brothers were brought to campus to fabricate racing shells according to a revolutionary, lightweight design which contributed to the varsity crews' success and subsequent recognition nationwide. Having been interrupted during the emergency, crew racing was resumed under Coach Connibear's successors after the War. George Pocock returned to the campus from a wartime job building seaplane pontoons for the Boeing Airplane Company. All crew activities, including Mr. Pocock's shell-building shop, were housed in the former Naval Military Hangar from 1922 to 1949, when activities were shifted to a new facility designated the Conibear Shell House. During the years they were quartered in

their make-shift facility the University's varsity crews compiled a distinguished record, of which a high point was competing in the World Olympic Games of 1936. During this time also George Pocock was permitted to fill orders for the superior laminated racing shells from Harvard, Columbia, Cornell, Princeton, Syracuse and other universities around the country.

Shortly after the hangar was vacated by varsity crews in 1949, it was converted for use as the University's Canoe House. Presently fulfilling a traditional function on the campus, the Naval Military Hangar is the second or third boat-rental facility operated under University auspices since the turn of the century. The predecessor canoe house, a much re-located building in use for nearly forty years, was torn down in 1950.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Burandt, Bob J. "Good-Bye to U's Old Canoe House", Seattle Times Magazine, January 1, 1950, 11.

Gates, Charles M. The First Century at the University of Washington, 1861-1961, Seattle: University of Washington Press, 1961. pp. 98-100.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1.9 acres (See description)

UTM REFERENCES

	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
A	10	552660	5272120	B			
C				D			

VERBAL BOUNDARY DESCRIPTION

The area proposed for nomination, containing 1.9 acres more or less, is bounded on the south by the natural shoreline of the north bank of the Lake Washington Ship Canal, and on the north by the northernmost boundary of property governed by U.S. Army Corps of Engineers Consent Agreement No. DA (S)45-108-CIVENG-66-2. The west boundary is a line running perpendicularly from said northerly boundary to the end.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE
Elisabeth Walton Potter, Historic Preservation Specialist

ORGANIZATION
Washington State Parks & Recreation Commission

DATE
May 10, 1975

STREET & NUMBER
P.O. Box 1128

TELEPHONE
(206) 753-4117

CITY OR TOWN
Olympia

STATE
Washington

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL X STATE ____ LOCAL ____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

FEDERAL REPRESENTATIVE SIGNATURE Charles H. Odegaard

TITLE Executive Director - Charles H. Odegaard

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: DATE

KEEPER OF THE NATIONAL REGISTER

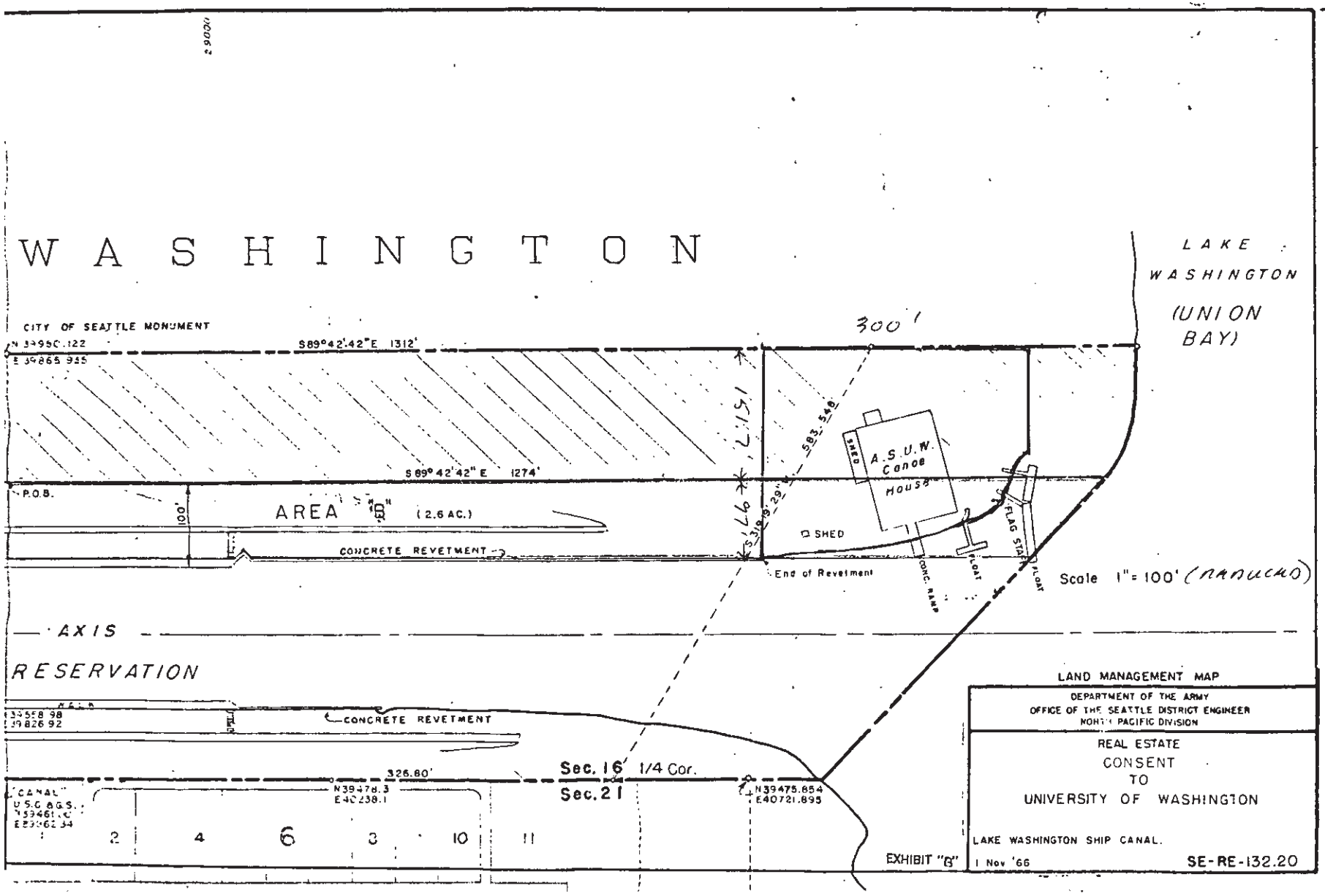
Interview April 17, 1975: Alvin Ulbrickson, University of Washington Crew Racing Coach, retired. Interview April 22, 1975: George Pocock, Racing Shells, Inc., Seattle, Washington.

Photo Albums, U.S. Naval Training Camp, University of Washington. Collections of the Seattle Museum of History and Industry.

Three Quarters of a Century at Washington. Seattle: University of Washington Alumni Association, 1941, pp. 11-12, 20.

of the ship canal revetment, which is a distance of approximately 248.7 feet. The east boundary is a line running perpendicularly from said northerly boundary to its point of intersection with the natural shoreline, which is a distance of slightly less than 150 feet. The distance between the east and west boundaries is approximately 300 feet.

RECEIVED
MAY 12 1975
ARCHAEOLOGY AND
HISTORIC PRESERVATION



Form No. 10-301
(Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY MAP FORM

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- ENCLOSE WITH MAP

1 NAME

HISTORIC
Naval Military Hangar - University Shell House

AND/OR COMMON
Canoe House/Shell House

2 LOCATION

CITY, TOWN Seattle ___VICINITY OF COUNTY King STATE Washington

3 MAP REFERENCE

SOURCE USGS Seattle North Quadrangle

SCALE 1:24 000 DATE 1949

4 REQUIREMENTS

TO BE INCLUDED ON ALL MAPS
1. PROPERTY BOUNDARIES
2. NORTH ARROW
3. UTM REFERENCES

Form No. 10-301a
(Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM

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SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES ENCLOSE WITH PHOTOGRAPH

1 NAME

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Naval Military Hangar - University Shell House

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Canoe House/Shell House

2 LOCATION

CITY, TOWN Seattle ___VICINITY OF COUNTY King STATE Washington

3 PHOTO REFERENCE

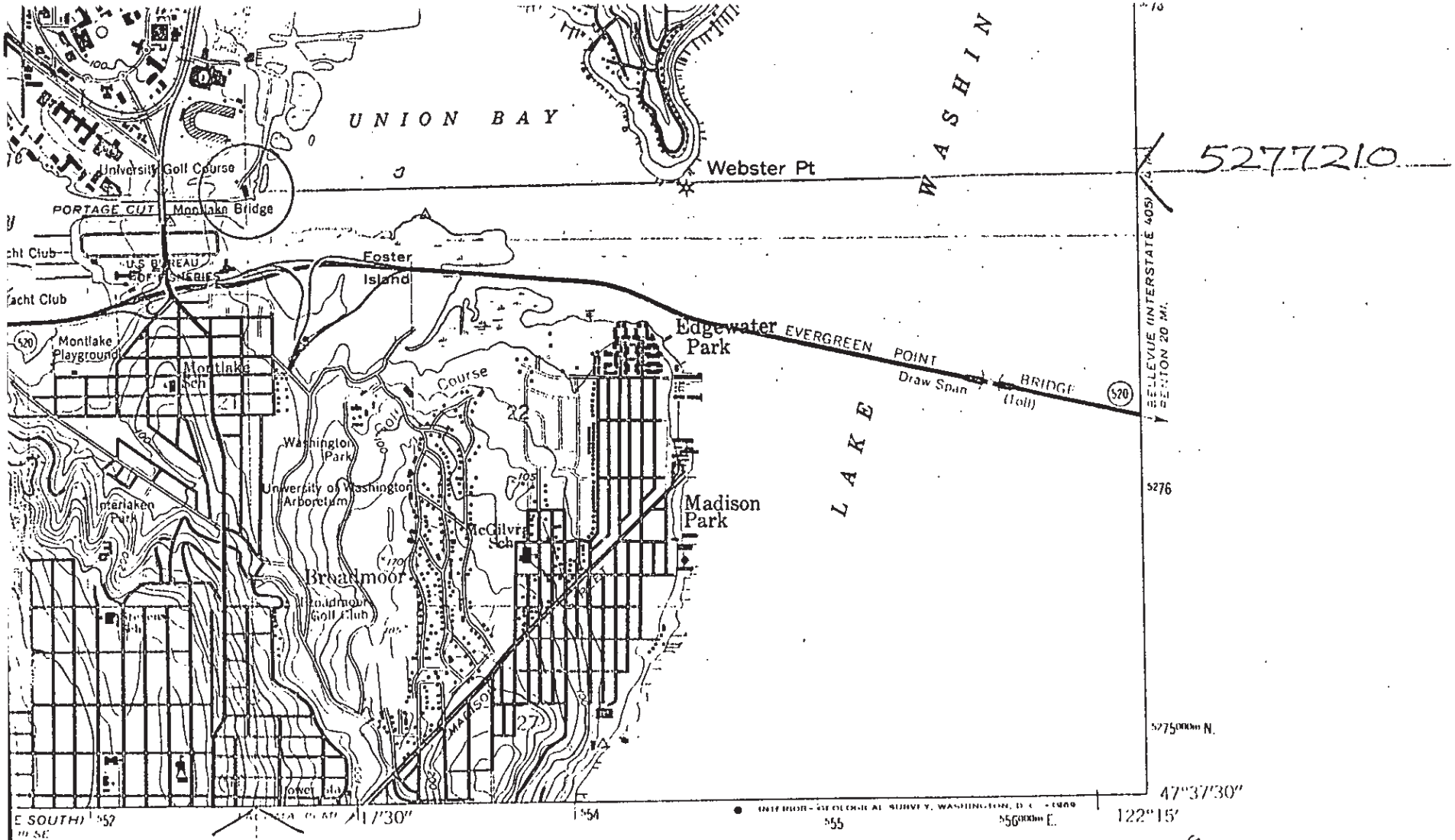
PHOTO CREDIT Jacob E. Thomas DATE OF PHOTO January 1975

NEGATIVE FILED AT Washington State Parks and Recreation Commission
Olympia, Washington

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET PHOTO NO.

View from northeast.


UNION BAY
Webster Pt
5277210
University Golf Course
PORTAGE CUT
Montlake Bridge
Foster Island
Edgewater Park
EVERGREEN POINT BRIDGE
Draw Span
(Toll)
520
BELLEVUE (INTERSTATE 405)
RENTON 20 MI.
Montlake Playground
Montlake Sch
Washington Park
University of Washington Arboretum
Interlaken Park
Broadmoor
Broadmoor Golf Club
McGilvra Sch
Madison Park
LAKE
5276
5275000m N.
47°37'30"
122°15'
556000m E.
555
554
552
(MERCER ISLAND)
1:24000
552660
1 MILE
4000
5000
6000
7000 FEET
1 KILOMETER
WASHINGTON
QUADRANGLE LOCATION
ROAD CLASSIFICATION
Heavy-duty
Light duty
Medium-duty
Unimproved dirt
U.S. Route
State Route
Interstate Route
SEATTLE NORTH, WASH.
NE/4 SEATTLE 15' QUADRANGLE
N4737.5—W12215/7.5
1949
Photorevised 1968
AMS 1579 III NE—SERIES V891
RVAL 25 FEET
SEA LEVEL
APPROXIMATELY 11 FEET
AL MAP ACCURACY STANDARDS
R, COLORADO 80225, OR WASHINGTON, D. C. 20242
AND SYMBOLS IS AVAILABLE ON REQUEST

Form No. 10-301a
(Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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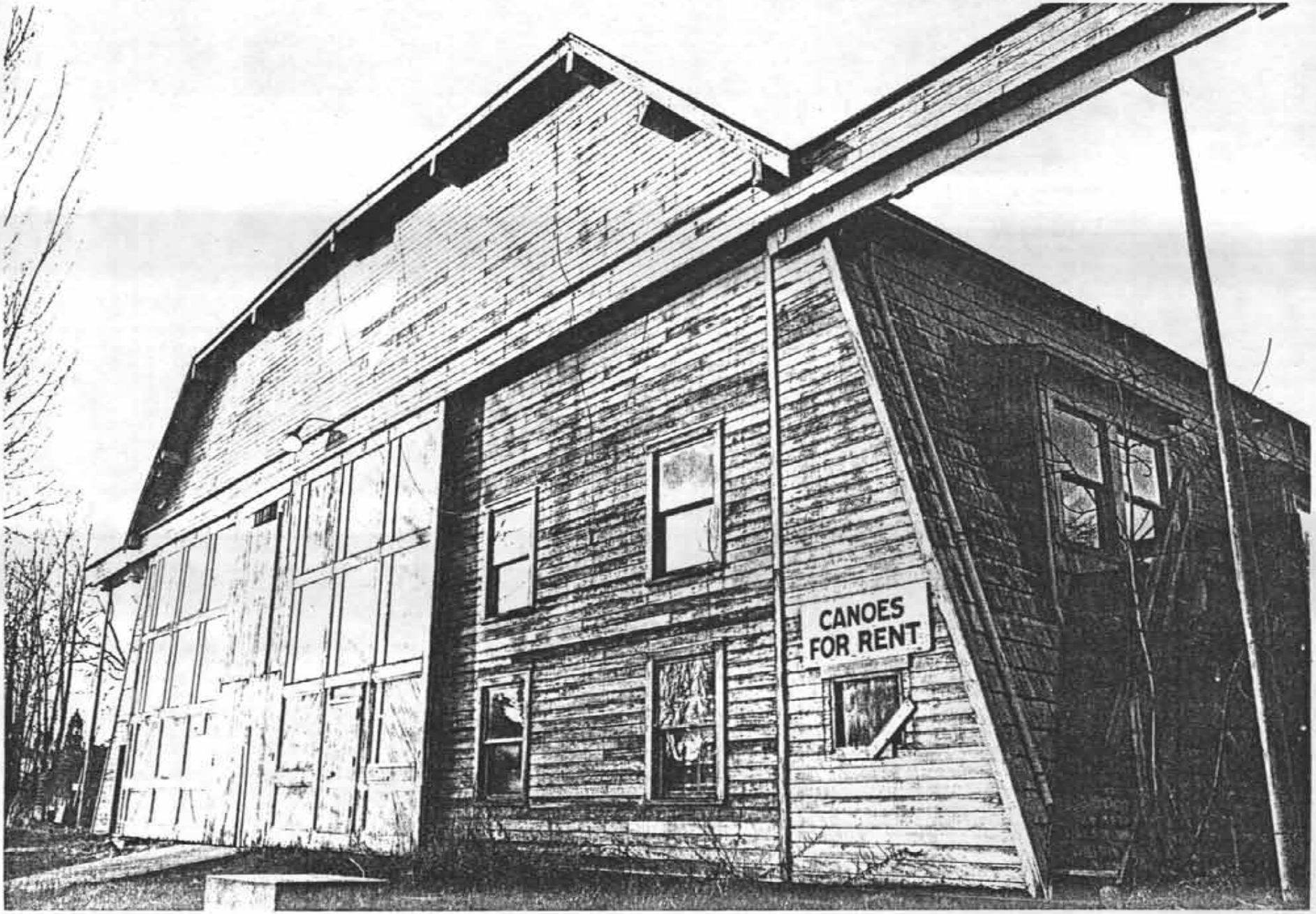
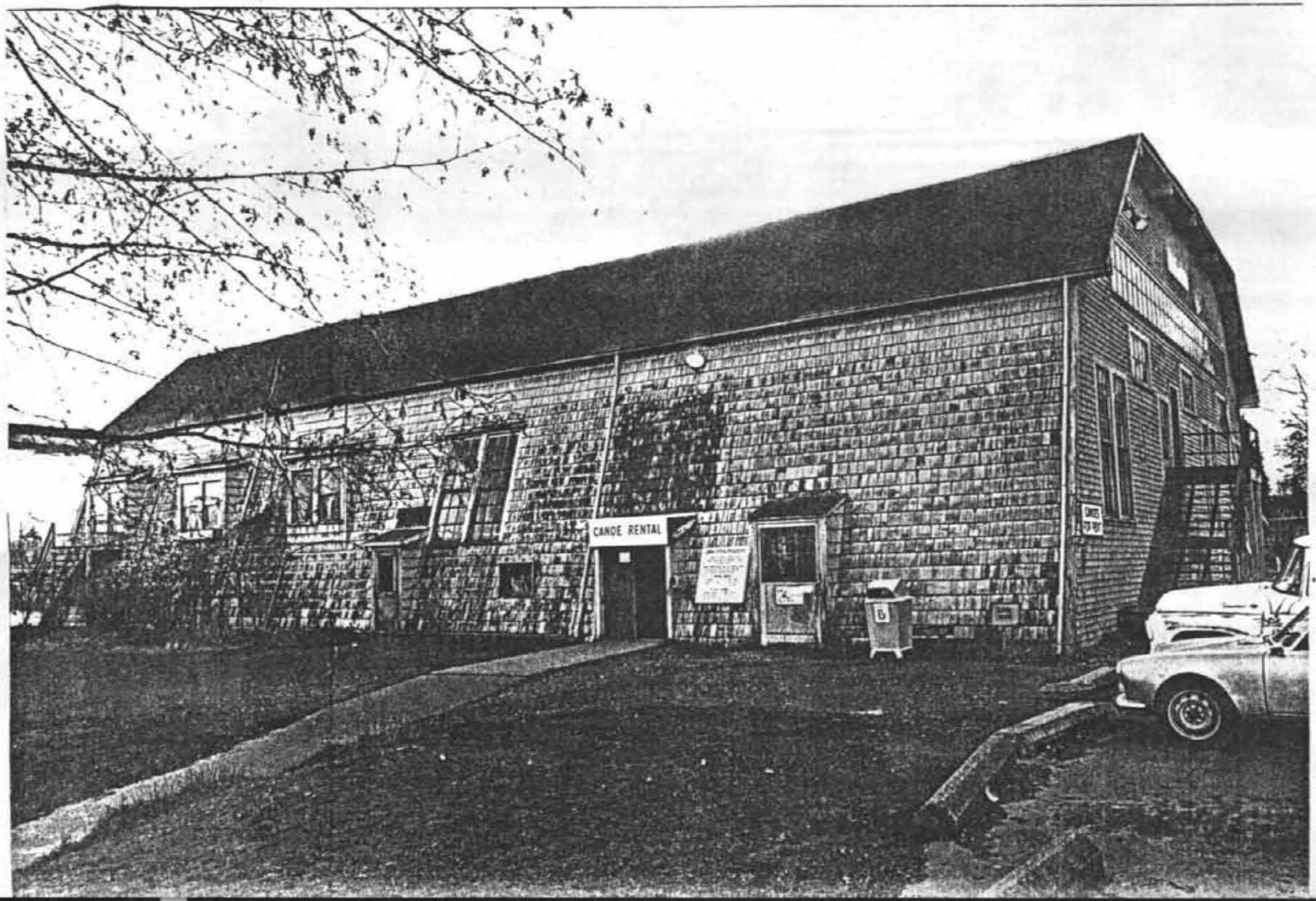
NEGATIVE FILED AT Washington State Parks and Recreation Commission
Olympia, Washington

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET PHOTO NO.

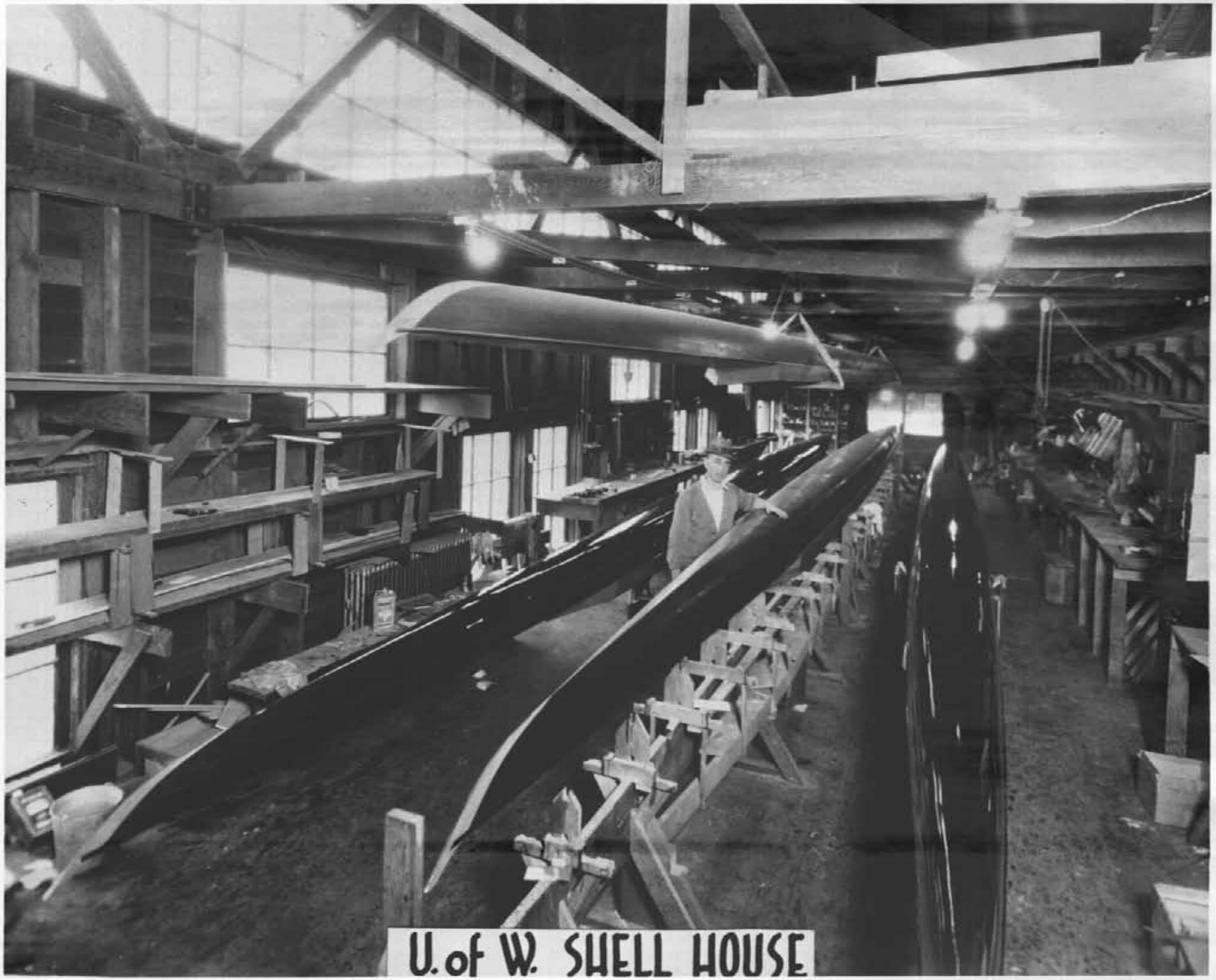
Detail of hangar doors.


CANOES
FOR RENT


CANOE RENTAL

CANOES
FOR RENT

A.S.U.W.
SHELL HOUSE



U. of W. SHELL HOUSE

Historic Inventory Property Form:
Rainier Vista

42555

HISTORIC PROPERTY INVENTORY FORM

Inv# B108

IDENTIFICATION SECTION

Field Site No. OAHP No. 17-02312 Date Recorded Dec-19-2002

Site Name Historic Rainier Vista/Arctic Circle/Geyser Basin/Drumheller Fountain/NP RR Bridge

Common Rainier Vista, Frosh Pond

Field Recorder C. Wickwire

Owner's Name UNIVERSITY OF WASHINGTON

Address 1326 5TH AVE ROOM 418

City/State/Zip Code SEATTLE WA 98101

Status

- [ ] Survey/Inventory
- [ ] National Register
- [ ] State Register
- [ ] Determined Eligible
- [x] Determined Not Eligible RA
- [ ] Other (HABS, HAER, NHL)
- [ ] Local Designation

022103-21-KI

PHOTOGRAPHY

Photography Neg. No. R1:1,14,23,32-34

(Roll No. & Frame No.)

View of Southeast from Red Square

Date Dec-19-2002

Classification [ ] District [x] Site [ ] Building [ ] Structure [ ] Object

District Status [ ] NR [ ] SR [ ] LR [ ] INV

Contributing [ ] Non-Contributing [ ]

District/Thematic Nomination Name

DESCRIPTION SECTION

Materials & Features/Structural Types

Building Type fair/rail-related

Plan N/A

Structural System N/A

No. of Stories N/A

Cladding (Exterior Wall Surfaces)

- [ ] Log
- [ ] Horizontal Wood Siding
  - [ ] Rustic/Drop
  - [ ] Clapboard
- [ ] Wood Shingle
- [ ] Board and Batten
- [ ] Vertical Board
- [ ] Asbestos/Asphalt
- [ ] Brick
- [ ] Stone
- [ ] Stucco
- [ ] Terra Cotta
- [ ] Concrete/Concrete Block
- [ ] Vinyl/Aluminum Siding
- [ ] Metal (specify)
- [ ] Other (specify)

Roof Type

- [ ] Gable
- [ ] Hip
- [ ] Flat
- [ ] Pyramidal
- [ ] Monitor
- [ ] Other (specify)
- [ ] Gambrel
- [ ] Shed

Roof Material

- [ ] Wood Shingle
- [ ] Wood Shake
- [ ] Composition
- [ ] Slate
- [ ] Tar/Built-Up
- [ ] Tile
- [ ] Metal (specify)
- [ ] Other (specify)
- [ ] Not visible

Foundation

- [ ] Log
- [ ] Post & Pier
- [ ] Stone
- [ ] Brick
- [ ] Not visible

Concrete

- [ ] Block
- [ ] Poured
- [ ] Other (specify)

Integrity

	Intact	Slight	Moderate	Extensive
Changes to plan	[ ]	[x]	[ ]	[ ]
Changes to windows	[ ]	[ ]	[ ]	[ ]
Changes to original cladding	[ ]	[ ]	[ ]	[ ]
Changes to interior	[ ]	[ ]	[ ]	[ ]
Other (specify)	[ ]	[ ]	[ ]	[ ]

LOCATION SECTION

Address 4000 15TH AVE NE

City/Town/County/Zip Code SEATTLE King 98195

Twp/Range/Section T25N/R04E/16 ¼ Section ¼ ¼ Section

Tax No./Parcel No. 162504-9001 Acreage 539.25 acres

Quadrangle or Map Name

UTM References Zone 10 Easting Northing

Plat Block Lot Entire Section 16

High Styles/Forms (check one or more of the following)

- [ ] Greek Revival
- [ ] Gothic Revival
- [ ] Italianate
- [ ] Second Empire
- [ ] Romanesque Revival
- [ ] Stick Style
- [ ] Queen Anne
- [ ] Shingle Style
- [ ] Colonial Revival
- [ ] Beaux Arts/Neoclasical
- [ ] Chicago/Commercial Style
- [ ] American Foursquare
- [ ] Mission Revival
- [ ] Spanish Colonial Revival/Mediterranean
- [ ] Tudor Revival
- [ ] Craftsman/Arts & Crafts
- [ ] Bungalow
- [ ] Prairie Style
- [ ] Art Deco/Art Moderne
- [ ] Rustic Style
- [ ] International Style
- [ ] Northwest Style
- [ ] Commercial Vernacular
- [ ] Residential Vernacular (see below)
- [ ] Other (specify)

Vernacular House Types

- [ ] Gable front
- [ ] Gable front and wing
- [ ] Side gable
- [ ] Cross gable
- [ ] Pyramidal/Hipped
- [ ] Other (specify)

NARRATIVE SECTION

Inv# B108

42555

Study Unit Themes (check one or more of the following)

- [ ] Agriculture
- [x] Architecture/Landscape Architecture
- [ ] Arts
- [ ] Commerce
- [ ] Communications
- [ ] Community Planning/Development
- [ ] Conservation
- [x] Education
- [x] Entertainment/Recreation
- [ ] Ethnic Heritage (specify)
- [ ] Health/Medicine
- [ ] Manufacturing/Industry
- [ ] Military
- [ ] Politics/Government/Law
- [ ] Religion
- [ ] Science & Engineering
- [ ] Social Movements/Organizations
- [x] Transportation
- [ ] Other (specify)
- [ ] Study Unit Sub-Theme(s) (specify)

Statement of Significance

Date of Construction 1906-09/1961-62 Architect/Engineer/Builder Olmsted Brothers/Butler Sturtevant/Lawrence Halprin

- [ ] In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.
- [ ] In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).
- [ ] In the opinion of the surveyor, this property appears to meet the criteria of the Seattle Landmarks Preservation Ordinance.

For almost one hundred years, Rainier Vista has provided sweeping views to the southeast of Lake Washington in the foreground and the Cascades and Mt. Rainier in the distance. Although it is impossible to imagine the University of Washington campus without this spectacular scenic vista, it is important to remember that it is the result of visionary thinking and careful planning. When the university relocated to its present campus from downtown Seattle in 1895, the heavily wooded site possessed great potential with its almost 360-degree sweep of vistas, encompassing the Olympics, Lake Union, Portage Bay, Lake Washington, the Cascades, and Mt. Rainier. An early plan, the 1898 "Oval Plan" by A.H. Fuller, sought to direct the course of development on the upper third of the campus before the university hired the Olmsted Brothers in August 1903 to create a comprehensive plan for the full site.

The Olmsted Brothers had initiated their involvement with Seattle landscape design earlier that year when the city hired the nationally prominent firm of Brookline, Massachusetts to prepare plans for a comprehensive park and boulevard system, including suggestions for improvements to existing parks. Thirty years earlier in 1873, the Northern Pacific Railroad had hired Frederick Law Olmsted, Sr. to plan the new city of Tacoma, which would be its western terminus in the Washington Territory. When they reviewed the plan, artfully adapted to the hilly site, the railroad directors rejected it for its lack of straight lines and its overly park-like design. In the intervening years, little happened in the way of formal city planning in the Pacific Northwest as former frontier towns developed into modern metropolises. However, the success of the Klondike Gold Rush in the late 19th and early 20th centuries flooded Seattle with new money, new citizens, and a new impetus to embark upon the first application of broad-scale planning to the city. The national City Beautiful movement, which had begun ten years earlier at the 1893 World's Columbian Exposition in Chicago, provided additional inspiration to improve Seattle through beautification, thus motivating its inhabitants to moral and civic virtue. (See Continuation Sheet)

Description of Physical Appearance

Although many separate elements combine to create Rainier Vista, the dominant feature of the scenic vista is Mt. Rainier looming in the distance. Even when the mountain is not visible, the sense of its powerful presence remains strong. In addition to providing spectacular views of the area's natural environment, Rainier Vista orients and anchors the entire lower campus to the southeast as it sweeps down towards Lake Washington from the cross-axial path called Grant Lane. At its upper end, Rainier Vista proceeds from the heart of the campus, the Central Plaza, more commonly known as "Red Square," which ties it into the Liberal Arts Quad and connects it to the upper campus. From within Red Square, Suzzallo Library on the east and Gerberding Hall on the west perfectly frame Mt. Rainier hovering on the horizon before the rest of Rainier Vista comes into view. From the steps separating the two buildings, the entire vista becomes visible as the hillside slopes to the southeast. The view corridor contains elements within the landscape as well as the buildings, which frame and define its margins.

A single wide asphalt path begins at the bottom of the stairs from Red Square and continues between Mary Gates and Johnson Halls after crossing Grant Lane. Set back from the edges of the path, these two buildings, completed in 1928 and 1930 respectively, enclose the vista beyond Grant Lane, serving as an attractive architectural frame and enhancing the vista with their landscaping. At the southern ends of the buildings, the path crosses Thurston Lane before terminating at Frosh Pond, the circular pool at the heart of the Science Quadrangle. The path encircles the low concrete wall surrounding Frosh Pond and provides access via connecting paths to Bagley Hall on the west and Guggenheim Hall on the east. Low hedges border the four rose gardens located around the pool between these crisscrossing paths. At the center of Frosh Pond, Drumheller Fountain's central jet sends sprays of water 100 feet into the air within two rings of jets shooting water outward.

(See Continuation Sheet)

Major Bibliographic References

Johnston, Norman J. The Fountain and the Mountain, The University of Washington 1895-1995. Woodinville, WA: Documentary Book Publishers Corporation, 1995.

Johnston, Norman J. University of Washington, The Campus Guide. New York NY: Princeton Architectural Press, 2001.

"Frosh Pond to Get Fountain, $40,000 Gift From Drumheller" Seattle Times, Wednesday, December 27, 1961, p. 1.

"Illuminated Fountain to Be Installed in Frosh Pond," Sunday, January 28, 1962, p. 30.

Ochsner, Jeffrey Karl, ed. Shaping Seattle Architecture, A Historical Guide to the Architects. Seattle: University of Washington Press, 1994.

Statement of Significance (continued)
John Charles Olmsted and Frederick Law Olmsted, Jr. formed their partnership in 1898 after working in the office of their illustrious father. John C. Olmsted, the nephew and later stepson of Frederick Law and the senior partner in the firm, spent several weeks in the summer of 1903 studying the topography of Seattle and its existing parks before preparing his report, A Comprehensive System of Parks and Parkways. In the report accepted by City Council on October 19, 1903, the Olmsted Brothers made specific proposals for the development of a park and boulevard system, as well as policy recommendations as to how it should be accomplished. From 1903 until his death in 1920, John C. Olmsted and James F. Dawson, from 1906 to 1941, were the principal landscape architects for the work of the Olmsted Brothers in Seattle.

Unlike the earlier and simpler Oval Plan for the University of Washington campus, John C. Olmsted took into account the full extent of the site. Yet, surprisingly, this inward-looking 1904 plan did not take advantage of the views and vistas available from the spectacular site and filled the campus space with a rigid geometry and a symmetrical placement of buildings. Fortunately, the Olmsted Brothers' plans for the 1909 Alaska-Yukon-Pacific Exposition (AYPE) superseded their earlier design for the mostly undeveloped University of Washington campus. Following the model of Chicago's World's Columbian Exposition of 1893, the exposition was conceived in 1905 as a way to call attention to the wealth of resources in Alaska, to focus on Seattle as its major port of entry, and to celebrate the city's achievements. The plan developed for the AYPE took full advantage of the site's potential and topography by making the view southeast towards the distant Mt. Rainier the central theme.

Rainier Vista was first conceived in the Olmsted Brothers' earliest plan for the AYPE completed in November 1906. Although the "Preliminary Plan for the Alaska-Yukon-Pacific Exposition, 1909" underwent subsequent modifications, Rainier Vista was retained and remained the centerpiece of the design. The exposition's engineer, George F. Cotterill, and his field crew used survey equipment to center the axis of Rainier Vista on the center of the mountain peak with lesser radials towards Lake Washington, the Cascades, and Portage Bay. Under the Olmsted plan, this view southeast down Rainier Vista would provide sweeping views of natural scenery while the view northwest up the sloping hillside would serve as the focal point of the fair. Major buildings would be located on either side of the Arctic Circle at the midpoint, and the U.S. Government Building would be situated at the terminus. All major pathways and roads would radiate from the Arctic Circle and provide connections to all parts of the fair grounds. Although most of the exposition buildings were to be only temporary structures, the Olmsted Brothers' design created a permanent infrastructure planned around the open-ended axis and included the construction of some permanent facilities for future use.

During the 138-day run of the fair, which opened on June 1, 1909 and attracted almost four million visitors, temporary lath and plaster buildings designed in the Beaux-Arts Classical Style and painted a blinding white enclosed the upper half of Rainier Vista. Below the Court of Honor in front of the U.S. Government Building, a water cascade flowed through the Cascade Court, which stepped down the vista, and fed into the Geyser Basin at the center of the Arctic Circle. The circular pool forming the Geyser Basin featured a modest central jet. Beyond the Arctic Circle, Rainier Vista opened up with grassy lawns and sunken gardens extending between formal paths leading to the outer portions of the grounds. Rainier Circle occupied the midpoint along the vista and joined Pacific Avenue on the east and west and Rainier Avenue to the south. The Northern Pacific Railroad Bridge at the southeastern end of Rainier Vista created a subway enabling fairgoers to proceed from the South Entrance Gate and into the fairgrounds via Rainier Avenue. It appears that this bridge was constructed in conjunction with the fair in order to provide this grade-separated access. Its location on axis with Rainier Vista supports this assumption, for had it been constructed earlier, there would not have been the necessity for such a precise alignment

After the close of the fair on October 16, 1909, the Board of Regents of the University of Washington selected the structures and features that would remain. Although some of the temporary buildings were initially retained, most were subsequently demolished as new permanent buildings were constructed. However, most of the roads, paths and landscaping, including Rainier Vista and the Geyser Basin, were preserved and eventually incorporated into later plans guiding development of the campus. The circular pool within the Geyser Basin later became known as "Frosh Pond" on account of an early tradition of tossing freshmen into it. After the removal of the fair's temporary structures and elaborate water features, little changes occurred to the basic infrastructure within Rainier Vista for the next fifty years. During the 1930s, landscape architect Butler S. Sturtevant, a Harvard graduate, prepared a number of drawings for the university, including designs for the junction of Rainier Vista and "Central Walk" (Stevens Way), the Rainier Vista approach and surrounds for Frosh Pond, and the southerly closure of Rainier Vista. However, it is not known the extent to which these plans were realized.

A December 1961 newspaper article announced that Joseph Drumheller, president of the University's Board of Regents, had made a donation of $40,000 to fund the installation of a lighted fountain in Frosh Pond as a centennial gift. Drumheller, a native of Spokane, was the grandson of Leonard Jackson Powell, the UW's eighth president. Completion of the fountain was originally scheduled to coincide with the opening of the Seattle World's Fair Century 21 Exposition in April of 1962, an event originally conceived to commemorate the 50th anniversary of the 1909 Alaska-Yukon-Pacific Exposition. It was expected that the new fountain would be a focal point of attraction for visitors to the Seattle World's Fair and a reminder of the earlier exposition. The fountain's designer, Lawrence Halprin of San Francisco, was a 1923 graduate of the university and also served as a landscape consultant for the campus. Halprin's design called for a central bank of jets shooting water to 100 feet surrounded by two rings of jets directing water at an inclined angle to distances of 15 to 20 feet. Additional features included built-in lighting and separate water pumps to allow for operation singly or together. The previous spring, a new concrete bottom had been installed in the pool to prevent seepage into the campus tunnel system below, replacing the dirt bottom in place for more than fifty years.

While the axis of Rainier Vista remains a dominant planning element, it cannot be isolated from overall campus planning or from its architectural context. First envisioned as a major component of the AYPE, it was retained in Gould's 1915 plan and in all subsequent plans for the campus. It is integral to overall campus design and, in terms of National Register eligibility, can only be considered as part of a larger whole. While individual buildings or groupings of buildings and open spaces on the campus may be eligible for listing in the National Register, it is doubtful that the entire length of Rainier Vista, with its bordering of both historic and modern buildings, would fall within a defined historic district.

Description of Physical Appearance (continued)
Two short paths begin at the lower end of the pool and continue the same alignment all the way to the lower end of Rainier Vista. Evergreen trees line the outer margins of the paths along this full length, giving the lower vista a more natural enclosure in contrast to the manmade structures above. A wide grassy lawn extends between the paths from the Lewis Lane path on the north and the Stevens Way road on the south. South of Stevens Way, a sunken paved roadway separates the two paths and proceeds under two concrete bridges before terminating within the underground Triangle Parking Garage at the far southern end of Rainier Vista. The Burke Gilman Trail, a former railroad right-of-way, crosses the first bridge, and Pacific Place crosses the second. Two rows of cherry trees parallel the paths below Stevens Way. From the lower end of Rainier Vista, the view northwest looks into the heart of the campus, providing an attractive view of the university's built environment.

While the directional axis defined by straight pathways, the circular pool, and the central lawn area of the original design have survived, treatments of the surfaces along the vista have changed over time. The AYPE features -- a dramatic water cascade, multiple stairways, sunken gardens, period light standards and benches -- have long since disappeared. Subsequent terracing, retaining walls, and stairways that characterized the Gould planning decades have likewise been removed. Paved pathways, uninterrupted by stairs or terraces, along with broad open lawns, are now the defining features between the fountain and Pacific Place.

SEATTLE INVENTORY FIELD FORM

42555

I NAME

Historic Rainier Vistas, the Basin (Suzzallo Quad) Year Built Rainier Vista begun 1909 designed by Olmsted Bros.

Present/Common Rainier Vista; Drumheller Fountain

II LOCATION

Neighborhood University of Washington campus.

Street(s) & Number(s) _____

III CLASSIFICATION

Category:

District ____ Building(s) ____ Structure(s) ____ Site ✓ Object(s) ____

Status:

Occupied ✓ Unoccupied ____ Work in Progress ____

Potential Threats Observed none

Present Use pedestrian mall, academic quad.

Original Use A.Y.P. exposition organized around it; BG 1915 plan sited Suzzallo quad around it.

Accessibility

Unrestricted ✓ Restricted, explain _____

IV DESCRIPTION:

General Appearance (structural, stylistic, surroundings, etc.): Approx. 2400' long axial vista beginning with Central Plaza and terminating in a view of Mt. Rainier.

Condition:

Excellent ____ Good ✓ Fair ____ Deteriorated ____ Ruins ____

Unexposed ____

Integrity:

Original Site ____ Relocated ____

Major Alteration and Approx. Dates:

Numerous changes along sides deviating from BG plan. All flanking A.Y.P. buildings razed.

V OBSERVED SIGNIFICANCE

Designed initially by the nationally prominent firm of the Olmsted Bros. for the A.Y.P. exposition. Returned by the 1915 Bebb & Gould Plc Heart of the Exposition.

VI PHOTOGRAPHIC REFERENCES

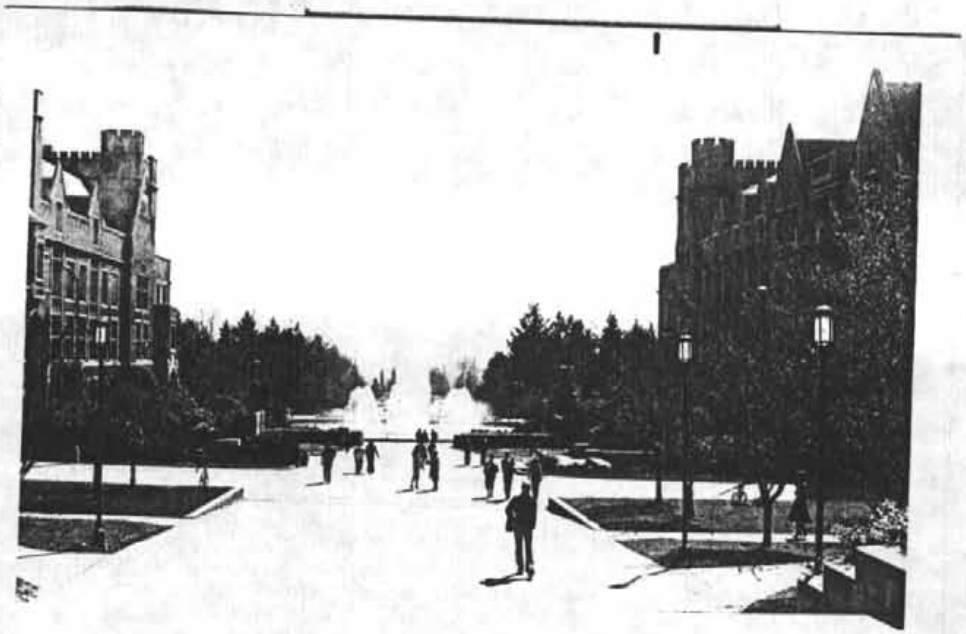
(Roll(s) # 18 N Exposure(s) 14 View(s) S.E. toward Mt. Rainier from Central Plaza

VII SURVEYED BY

Mark L. Peckham — Name

3/23/79 — Date

42555



National Register of Historic Places Registration Form: Nuclear Reactor Building (More Hall Annex)

NPS Form 10-900
(Oct. 1990)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

KI 827

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

Historic name: Nuclear Reactor Building

Other names/site number: More Hall Annex

2. Location

street & number: 3785 Jefferson Road NE ____ not for publication

city or town: Seattle ____ vicinity

State: Washington code: WA county: King code: 033 zip code: 98195

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this __nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets __ does not meet the National Register criteria. I recommend that this property be considered significant __nationally __ statewide X locally. (__ See continuation sheet for additional comments.)

Signature of certifying official/Title — Date: 6.10.09

WASHINGTON STATE HISTORIC PRESERVATION OFFICE
State or Federal agency and bureau

In my opinion, the property __ meets __ does not meet the National Register criteria. (__ See continuation sheet for additional comments.)

Signature of certifying official/Title — Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby, certify that this property is:

Signature of the Keeper — Date of Action

__ entered in the National Register.
__ See continuation sheet

__ determined eligible for the National Register.
__ See continuation sheet

__ determined not eligible for the National Register.

__ removed from the National Register.

__ other (explain:) ____

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ___ private
- x public-local
- ___ public-State
- ___ public-Federal

Category of Property
(Check only one box

- X building(s)
- ___ district
- ___ site
- ___ structure
- ___ object

Number of Resources within Property
(Do not incl. previously listed resources in the count.)

Contributing	Non-Contributing	
1		buildings
		sites
		structures
		objects
1		Total

Name of related multiple property listing:
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

None

6. Functions or Use

Historic Functions
(Enter categories from instructions)

EDUCATION : Research Facility

Current Functions
(Enter categories from instructions)

Vacant/Not In Use

7. Description

Architectural Classification
(Enter categories from instructions)

Modern Movement

Materials
(Enter categories from instructions)

foundation Concrete
walls Concrete, Glass
roof Concrete, Build-up
other

Narrative Description
(Describe the historic and current condition of the property.) SEE CONTINUATION SHEET

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

X A Property is associated with events that have made a significant contribution to the broad patterns of our history.

___ B Property is associated with the lives of persons significant in our past.

X C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

___ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

___ A owed by a religious institution or used for religious purposes.

___ B removed from its original location.

___ C a birthplace or grave.

___ D a cemetery.

___ E a reconstructed building, object, or structure.

___ F a commemorative property.

X G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

ARCHITECTURE

EDUCATION

Period of Significance
1961-1988

Significant Dates
1961, 1967

Significant Person
(Complete if Criterion B is marked above)

Cultural Affiliation

Architect/Builder
The Architect Artist Group (Architect)

Jentoft and Forbes (Builder)

Narrative Statement of Significance
(Explain the significance of the property.) SEE CONTINUATION SHEET

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form.) SEE CONTINUATION SHEET

Previous documentation on file (NPS):

___ preliminary determination of individual listing (36 CFR 67) has been requested
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark #_____
___ recorded by Historic American Buildings Survey Record#_____
recorded by Historic American Engineering Record#__

Primary location of additional data:

___ State Historic Preservation Office
___ Other State agency
___ Federal agency
___ Local government
X University
___ Other

Name of repository:

10. Geographical Data

Acreage of Property Less than one acre

UTM References
(Place additional UTM References on a continuation sheet.)

	Zone	Easting	Northing		Zone	Easting	Northing
1	10	5 52 099	52 77 957	3			
2				4			

Verbal Boundary Description
(Describe the boundaries of the property.) See continuation sheet.

Boundary Justification
(Explain why the boundaries were selected.) See continuation sheet.

11. Form Prepared By

name/title Abby Terese Martin (edited by DAHP Staff - Oct 2008)
organization date May 14, 2008
street & number 515 12th Avenue East telephone (217) 721-3713
city or town Seattle state WA zip code 98102

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items.)

Property Owner (Complete this item at the request of the SHPO or FPO.)

name University of Washington, Capitol Projects
street & number University Facilities BLDG, Box 352205 telephone (206) 543-5200
city or town Seattle state WA zip code 98195

Narrative Description:

The Nuclear Reactor Building in Seattle, Washington, sits within the University of Washington campus on a triangular shaped space is currently bounded by the Mechanical Engineering Building on the north, More Hall to the south, the Allen Computer Science Building and Stevens Way to the west, and Jefferson Road, a campus access road, to the east. The building is oriented on a tilted east west access and is presently vacant, one can see immediately that the building was not built for a general purpose. The building is distinct from the rest of the Engineering complex in visual character and setting; its physical appearance and materiality are unique. It is singled out by it's a surrounding plaza to the west, and the observer must approach the building by ascending four low risers. With no knowledge of the buildings purpose, one approaching the building can see that it is intended to stand apart, not to conform with its surroundings.

In the tradition of modern architecture, the Nuclear Reactor Building is expressive of the materials of which it is constructed. The defined structural elements of the building provide a frame which has been filled in with broad expanses of plate glass. The structure is precisely and vividly articulated, and every member is essential. The concrete of the main haunch beam is square and solid, while the cast-in-place beams which support the roof are tense in shape; their compacted form opens up the sides of the building for observation. Although the building's shape is animated, the window mullions and the form-work pattern of the cast concrete beams create a regular expression of the grid the building is laid out upon. The use of the glass storefront window system as a thin separation of inside and outside contrasts with the massiveness of the concrete structure. The form of the building is evocative of the forward-looking spirit of the period, with an energy in the shape that implies the power that the building was meant to contain.

Exterior

The Nuclear Reactor Building occupies the southeast corner of the space formed by the Engineering buildings, surrounded by an observation deck with a view to the southeast. Stevens Way, a campus ring-road, runs through the engineering complex. The Nuclear Reactor Building and its adjoining plaza are separated from Stevens Way by a small grassy quad. There is a pedestrian pathway called Snohomish Lane crossing through the north side of the Nuclear Reactor Building lot. The lane passes through the engineering complex toward the gym and stadium. The path descends a set of stairs next to the building, in accordance with the slope of the site. At the base of the stair, on the east façade, is where the main entrance to the Nuclear Reactor Building for students and professors is located. The rear of the building on the east side

at.the lower level is fitted with a loading dock, accessed by a service road which runs behind the building to the Physical Plant.

The Nuclear Reactor Building is approximately 70 feet by 76 feet on the inside, on the lower floor. The area of the lower floor of the Nuclear Reactor Building is 5,100 sq.ft. The occupiable space of the upper level overlooking the central reactor room is 645 sq.ft., but the entire upper level space including the outdoor observation deck is 7,558 sq.ft. The area of the building and the adjacent paved plaza is 15,997 sq.ft. The building is laid out on a 4 foot grid, expressed in the rhythm of the mullions between the plate glass on both the observation level and in the south facing rooms of the lower level. The reveals every 2 feet in the cast-in-place transverse beams further enforce this rhythm.

The structural components of the Nuclear Reactor Building are expressed as individual pieces, each serving a defined purpose. The roof rests upon and is shaped by two parallel irregularly shaped beams, which in turn rest upon a square-arched haunch beam. Gerard Torrence, the structural engineer for The Architect Artisan Group (TAAG), developed the shape and dimension of the structural members. To achieve the goal of maximum visibility, the structural load was placed on two large cast-in-place concrete beams, which frame the east and west sides of the building. These beams act like "L's" that have one leg resting on the ground, and the other end resting upon the large transverse concrete haunch beam. The parallel beams must support the roof and the 3-ton beam crane necessary for moving the reactor shield. The roof was designed to be as light as possible, and is composed of precast concrete channels which span the central reactor room, a design which was quite innovative at the time. The structural design of the building was engineered to withstand the seismic activity of the Puget Sound area. The sensitive fuel for the reactor had to be kept in a stable condition, and the main haunch beam serves both as support and stabilizer against any seismic movement.[1]

The materials used in the Nuclear Reactor Building are expressive of their particular qualities. There is no excess use of material, and the details of the building are clear and consistent. Concrete as a material is expressed differently in various conditions of use throughout the building. The concrete of the powerful cast-in-place haunch beam is smooth and square, while the form and rawness of the large parallel beams that support the roof convey the kinetic energy with which concrete can be formed. In the pre-cast roof the relative lightness of the members is evident in their section and the way they simply rest on the beams. Throughout the structure of

1 Interview with Wendell Lovett

the building the connections between the members are simplified so that there can be no mistaking how the load is being carried. The dynamic shaping of the concrete members reflects the energy source contained within the building.

Interior

Inside, the reactor was housed in the central, double height space on the west side of the building, the upper half of which is almost entirely enclosed in glass. Three sides are open to the public via an outside observation deck, while the forth side (to the east) is dedicated to direct study and observation by engineering students and faculty. This observation level includes a control room, a small lecture space and a lobby. The control room and lecture room directly overlook the reactor space below, and are separated from it by a plate glass curtain wall. While the free-standing mechanical console and control panels for the reactor have long since been removed, the spaces retain their original layout, terrazzo floors, canister-type light fixtures, doors and protective railings overlooking the reactor room. Entry to the observation level is via a small entry lobby accessed from the east side of the building. At the northeast corner is a small simple concrete stairwell which leads to the basement or lower level of the building. An original pull-down metal stair at the ceiling of the lobby allows access to the roof.

The lower level floor is much larger in area, extending beneath the outside observation deck on the north and south sides of the building. Here you will find several support spaces including a counting room, an experiment area, a chemistry laboratory, a crystal spectrometry room, restrooms, electronic shop, "dirty shop", an office and classroom spaces. These rooms are all enclosed by utilitarian concrete walls, and are primarily below grade. As the hillside slopes down to the east, several spaces open to natural light via a standard curtain wall system, consisting of plate glass windows and metal insulated wall panels (okra/brown color). The glass and metal panels are articulated with aluminum mullions every 4 feet, in the same manner as the glass walls of the observation area above. These spaces retain their original metal doors, recessed can lights and wall finishes. The floors are currently concrete, and may have been covered in vinyl / asbestos tile. All mechanical fixtures and cabinetry have been removed. Inside the reactor room, the massive high density concrete shield for the reactor remains, but it has been cleaned of its accessory parts when the building was decommissioned. Via historic images, this space remained a fairly open and sparse area, containing only the necessary components and mechanical equipment for the reactor core.

Site

The plaza area immediately adjacent to the Nuclear Reactor Building is of concrete, paved in a trapezoidal pattern echoing the footprint of the building. The pattern is highlighted by sand finished concrete, outlined by exposed aggregate trim. The plaza itself was designed as an extension of the buildings observation deck, and was intended to be a further exhibition space. This paved area steps up four shallow risers to the observation deck overlooking the reactor below. The observation deck continues the trapezoidal paving pattern. Prefabricated board-formed concrete panels were used to form the railing around the edges of the observation deck. The panels are attached to the deck edge, but are not attached to each other. Reportedly there was anxiety about the panels not being strong enough, since a continuous railing does not connect them, but they have proven stable over time. The prefabricated panels and their irregular shape are typical of late modern architecture, and the use of prefabricated technology was a particular trademark of architect Wendell Lovett's.

To the north and west of the plaza area is a manicured lawn area highlighted by extensive planting areas, with some low retaining walls. Here specific plant materials, such as Rhododendrons, Mt. Fugi Flowing Cherry Trees, and Gaulteria shallon were called out in the landscaping plan. Approach to the building was via Stevens Way over a blacktop sidewalk which leads to a small descending set of concrete stairs to the north or a ramp to the south.

Condition / Integrity

The Nuclear Reactor Building maintains a high level of architectural integrity. From the exterior, no changes have been made to the building including the retention of the windows, doors, finishes, as well as the plaza space and other site characteristics. Inside, while all of the mechanical and control equipment have been removed, the original layout out of the building remains, and the flow and use of spaces is easily discernable. The reactor room itself, designed to be observable to the public from the outside observation deck, remains an open two-story space with remnants of the original reactor core attesting to its use as home to a small scale nuclear reactor. And despite the loss of the reactor core itself, the original design intent of the building continues to convey its historic association and function.

Statement of Significance:

The Nuclear Reactor Building, located on the University of Washington campus in Seattle, Washington is eligible for the National Register of Historic Places under criterion "A" for its direct connection to the broad patterns of the development of nuclear energy. More specifically, the structure, housing a small nuclear reactor, served as a teaching tool for a variety of students who learned through hands-on experience, about the daily complexities of running a nuclear reactor facility.

Additionally the Nuclear Reactor Building is historically significant under criterion "C" as a unique example of architecture of the post WWII period and represents the work of several noted Pacific Northwest architects; Wendell Lovett, Gene Zema, and Daniel Streissguth. The building demonstrates modern architecture's close relationship with science, art and technology, blending these ideas into a unified visual statement.

The period of significance for the building begins in 1961, the date the building was completed, and ends in 1988, the date when the reactor shut down. The building was one of the first, if not the first, in the nation, which was specifically designed with the intention of making the nuclear process visually accessible, and open to the public or casual observer. The designers of the University of Washington Nuclear Reactor Building rejected the conventional approach of enclosing the reactor within concrete and instead revealed it through walls of glass. The building was constructed when nuclear technology held great promise as a clean, cheap and efficient energy source. The building design and materiality reflect that optimism. As such the building also meets National Register criteria consideration "G" at the local level of significance as a property that has achieved significance within the past 50 years by expressing the post-WWII optimism for nuclear technology.

The Nuclear Reactor Building was completed to serve as the showpiece for the newly-formed Nuclear Engineering program at the University of Washington (UW). The building is a classic and concise example of modern architecture on the UW campus, a sharp contrast to the traditional brick buildings that surround it. The building was designed by The Architect Artist Group (TAAG), which included architects: Wendell Lovett, Gene Zema and Daniel Streissguth. The group was a collaboration of professionals whose goal was to achieve comprehensive design through the integration of their respective disciplines: art, architecture and engineering. TAAG was the vision of Lovett, a University of Washington professor at the time. In the late 1950s Lovett organized this group of professionals in order to obtain work on larger design projects, mainly to go after projects at the up-and-coming Seattle World's Fair. Lovett asked

architects Daniel Streissguth, a fellow professor, and Gene Zema, a former student, to join him. The other members of The Architect Artist Group were structural engineer and professor of structures in the UW architecture department, Gerard Torrence, and a painter, Spencer Moseley, who was a professor of art at the University. All the members of TAAG taught courses at the University of Washington at the time, with the exception of Gene Zema, who had a private architecture practice. The Nuclear Reactor Building was the only building constructed by The Architect Artist Group, thus serving as an example of this unique collaborative partnership. In 1961, the group submitted a competition design for the proposed Toronto City Hall, but failed to win the commission.

The decision to hire The Architect Artist Group to design the Nuclear Reactor Building was not typical of University of Washington convention at the time. The regular policy of the University was to offer design projects on campus only to outside architectural firms in the state, and, as full time professors, the members of TAAG were excluded, even if they had independent outside architectural practices. Lovett had connections in the Capital Projects Office at the University, specifically Fred Mann, the University Architect. Fred Mann was aware of The Architect Artist Group's organization and broke convention to offer them the project to design the Nuclear Reactor Building. The only stipulation was that the professors had to temporarily become part-time employees.[1]

At the time of the building's design and construction, Seattle was preparing for the 1962 "Century 21" World's Fair, which was being centered around new technologies and futuristic ways of living. The function and purpose of the Nuclear Reactor Building coincided with the ideals about a better tomorrow that drove the 1962 Seattle World's Fair. Two important figures in the design of the Fair, Paul Thiry and Minoru Yamasaki, also served on the University's Design Review Commission at the time the Nuclear Reactor Building was in the design phase. Showcasing its involvement in cutting edge technology was certainly in the forefront of the minds of the University as Seattle was preparing to present itself to the world.

It was also during this time when many architects from Washington and Oregon were beginning to receive national acclaim for designing some of the finest modern buildings in the county. From 1949 to 1961, projects in Washington received 2 honor awards and 7 merit awards from the AIA. Examples of work in the State appeared in regional, national and even international publications. Yet modernism in Washington State followed the trends of other States in terms of specific design idoms.

[1] Interview with Daniel Streissguth

The Nuclear Reactor Building is considered an early work of Brutalism. The term was coined in 1953 to describe the architectural work of a group of British architects. Brutalism in its early phase (originally called New Brutalism) was actually a design philosophy, not a style. The idea was to create an aesthetic based on the exposure of a building's components: its frame, its sheathing, and its mechanical systems (all important features of the nominated building). Quickly however the term began to be applied to buildings that utilized monumental concrete forms and bulky massing. The style represents a revolt by architects against the corporate glass curtain wall and was often seen as a quick and easy way to construct long-lasting buildings.

While the style appeared early in the Pacific Northwest, the best examples date to the late 1960s and early 1970s. The style was rarely used for residential architecture and is mainly found on institutional building such as libraries, classrooms and museums. Small-scale commercial building such as banks also utilized the style.

Brutalism brought out the best and worst in what Modern architecture had to represent. In warmer desert climates, many Brutalist buildings have often come to be regarded as works of art. However, under the damp, grey skies of the Pacific Northwest, Brutalist buildings are often described as being unfriendly, cold and dark. The roughness of the exterior concrete soaks up moisture and turns black with age.

The term Brutalism is derived from the French word for rough concrete or "*beton brut*". Brutalist structures have a heavy mass and scale. And their highly sculptural blocky shapes are often stacked together in various ways, creating an unbalanced look. Common design features include the "Russian Wedge" in which a wall plane projects outward on a slopped angle. Broad surfaces are often interrupted by deep-shadow penetrations of the buildings mass; vertical slots may contrast with broad oblong openings or tall openings with horizontal slots, while "egg-crate" effects are also much employed. The exterior treatment, as the name suggests, is usually exposed concrete, which is left rough to show the wooden formwork. However some examples of brick and stucco can be found. Fixed windows are set deep into the walls and are often small in relation to the size of the structure. Other common features include the use of "Waffle" slabs for floor and roof systems. As the name implies this cast-in-place building system utilized continuous pour of concrete with a coffered underside to reduce the weight of the slab. Such slabs were often left exposed.

Brutalist buildings on the University of Washington campus include McMahon Hall (1965); the Marine Sciences Building & Oceanography Teaching Buildings (1967-69); Schmitz Hall (1970); Kane Hall (1971); Gould Hall (1972) and Condon Hall (1973). The earliest expression of the

style is the Union Avenue Parking Garage in Olympia completed in 1958. The best example in the state is most likely the multi-story Psychology Building on the Central Washington University Campus completed in 1972. The Nuclear Reactor Building, represents a solid example of the style in terms of embodying the distinctive characteristics of the period of construction, which in this case possess high artistic values.

The University of Washington's College of Engineering began offering nuclear engineering classes in 1953, and in 1958 granted its first Master's degree in Nuclear Engineering. Dr. Harold Wessman, Dean of the Engineering College at the time, served as a strong advocate for the formation of the Nuclear Engineering program and pushed for the construction of a reactor on campus. Initially the program was run through the graduate school at the College of Engineering until 1965, when it became its own department.

That same year General Electric's Graduate School of Nuclear Engineering at Richland, Washington was transferred to the University of Washington, further boasting the program.[2] Richland was the site of the Hanford project, which was established in Eastern Washington in 1942 to produce plutonium for the Manhattan Project. The Hanford site was no longer secret after World War II, and continued to produce plutonium for nuclear applications, eventually becoming a site for producing nuclear power.[3] After the transfer of the graduate program in Nuclear Engineering, the University of Washington and Hanford maintained a strong connection, exchanging educators and students throughout the next 20 years.[4]

Such programs in Nuclear Engineering were becoming common place at the university level by the late 1950s (see attached table). North Carolina State became host to the first a university–based nuclear reactor in the world in 1953, followed by Penn State in 1955. By 1968, over 75 nuclear reactors were in operation at universities across the United States. Today there are approximately 27 nuclear reactors in academic settings, down from 40 in 1987. The early 1960s were somewhat of a boom-time in terms of construction of university based teaching reactors. Between 1960 and 1965, nine reactors came on-line across the college campus. In the Pacific Northwest, Washington State and the University of Washington reactors became operational in 1961, preceded by Idaho State (1967), Oregon State (1967) and Reed College (1968).

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[2] A Century of Educating Engineers, p 44

[3] Pope, The Atomic West, p 236

[4] Interview with Dean McFeron

At the University of Washington, Dr. Albert Babb became the first chair of the eight-faculty department, which was made up of engineering professors of different departments. During the 1960s, there was a joint research project with the Critical Mass Laboratory in Hanford supervised by Bob Albrecht. Between its inception in 1965 and 1992, the department granted approximately 300 graduate nuclear engineering degrees.

After WWII, the Atomic Energy Commission was created to continue atomic energy research and the development of practical applications for nuclear energy. Several academic institutions across the United States would play a key role in this effort. However, a research reactor was essential for a competitive nuclear engineering program. Their proximity to the Hanford reservation, and faculty/personnel exchange, enhanced the two state universities in Washington State to garner federal financial support for the construction of a reactor on their campus' as well as for the development of research and educational programs. Washington State University received a $110,000 grant from the Atomic Energy Commission for the construction of a nuclear reactor building, while the University of Washington was able to obtain a grant of $150,000.[5]

Washington State Universities Reactor was designed by campus architect Philip Keene and was housed in an International style concrete box far removed from campus life. In contrast, the University of Washington embraced the idea of having a reactor centrally located and exposed to public view. The design for the Nuclear Reactor Building at the University of Washington was formulated in 1959.

The site chosen for the new Nuclear Reactor Building was a prominent site in the center of the Engineering complex on the old campus, in the middle of a courtyard surrounded by larger buildings. The idea of the building, as a symbol of the University's engineering program, justified its placement on such an important site. The building was executed in the spirit of showcasing nuclear power, "*sort of a crown jewel*," as described by architect Daniel Streissguth. As recorded in the University of Washington Training Reactor Final Hazards Summary Report to the Atomic Energy Commission, it is stated: *"the reactor building is intended to be a campus 'showpiece', since large numbers of visitors are expected, particularly during the Engineering Open House"* [p 13]. Dr. Albert Baab, the professor leading the establishment of the Nuclear Engineering Department, worked closely with TAAG and was deeply involved in the design of the building. Baab's feelings about nuclear power and its hopeful nature are remembered by architect Daniel

[5] A Century of Educating Engineers, p57

Streissguth: *"He wanted to make it a symbol of the School of Engineering, he wanted to show the world what nuclear power looked like."*[6]

As soon as The Architect Artist's Group received the commission, they began to research existing teaching reactors on other university campuses. Many major universities were installing research reactors at the time, including the University of Wisconsin, the University of Maryland, MIT, and the University of Florida (see attached list). As TAAG surveyed these examples, they found only reactors "*hidden in concrete boxes*," as Daniel Streissguth and Gene Zema later remembered. TAAG and Dr. Baab concluded that encasing a reactor of the proposed size in concrete was an unnecessary protective measure. In the reaction process, radiation is contained within the reactor itself, and if any radioactivity should escape, concrete walls cannot contain it. The practice of housing research and training reactors in concrete was psychologically based, as the concrete was perceived as a protective shield. The University of Washington Training Reactor Final Hazards Summary Report to the Atomic Energy Commission states:

"There is no credible way in which the fission products of this reactor can be made to escape, and the amount of contained fission products will be relatively small since it is limited to a maximum power of 10 kilowatts".

Additional research and questioning by TAAG and Dr. Baab determined that if the reactor were located below ground level, any potential released radiation would be absorbed by the ground. The shape and slope of the site in the engineering complex was conducive to this design. The reactor could be protected by the earth and viewed from above, with access to service and loading at the rear of the building at ground level. The main level of the building became an observation deck overlooking the testing process. By placing the reactor below the ground, the walls of the building above the reactor level could be almost entirely glass. A reactor which was housed behind glass walls was completely unprecedented.[7] The design of the building was approved by the University Architectural Commission and the Board of Regents.

The design of the form of the Nuclear Reactor Building has been largely attributed to architect Wendell Lovett. In the words of fellow TAAG member Daniel Streissguth "*the building is all Wendell.*" Although all the members of The Architect Artist Group participated and contributed to the design, Wendell Lovett had the strongest ideas about how the building would be expressed.

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[6] Interview with Gene Zema and Daniel Streissguth

[7] Ibid.

From his boyhood, Lovett had been fascinated with technology and this is evident in the Nuclear Reactor Building. Lovett's design for the building is the physical manifestation of an opportunity to promote nuclear technology unashamedly.[8]

Wendell Harper Lovett was born in Seattle on April 2, 1922. He received his formal architectural education at the University of Washington where he received his bachelor's degree in architecture in 1947. While at the University, Lovett excelled in his studies and was awarded the AIA Student Silver Medal for excellence in design. He continued his education at Massachusetts Institute of Technology where he received his graduate degree in 1948. While there he was awarded the William R. Ware Prize.

On the job training during summer and winter breaks garnered Lovett a variety of experiences. He served as at draftsman for George Groves (summer 1941); a Carpenters helper, American Building Co. (summer 1942); served as a draftsman for Stuart & Durham (fall 1945); NBBJ (1946-47); and worked for Ralph Rapson while in Boston (spring 1948).

After graduate school Lovett accepted a job with the architectural firm of Bassetti & Morse. During this time he joined a group of architects to build a planned community (called Hilltop) east of Lake Washington. There he built his first house (1951). The project received widespread publication, from the American Arts & Architecture magazine to the French l'Architecure d'Aujourd'hui magazine and was presented a State AIA Honor Award in 1953. This was the first of many awards to come.

During this early phase of Lovett's career, he was heavily influenced by the Miesian idiom and the idea of using production components to create minimalist dwellings. Notable projects in this vein include the Wallace H. Lovett House (1954); the Gervais Reed House (1955); and the Gordon Giovanelii House (1959). Each project received numerous design awards and were featured in a variety of domestic and international publications.

With such allocates pouring in, at the young age of 32, in 1954 Lovett was offered a half-time teaching position at University of Washington. He continued working half time for Bassetti until he left Seattle on a Fulbright Scholarship as a guest critic at the Technical Institute in Stuttgart (1959-60 academic year). Before he left, the design for the Nuclear Reactor building was finished and the working drawings were almost complete.

[8] Interview with Daniel Streissguth

While in Europe, Lovett was heavily influenced by the work of Rolf Gutbrod, Fritz Leonhardt, and Ralph Erskine. He notes that he *"discovered the idea of enclosure and containment"* during this time. He would later call this idea his *"stop" and "go"* spaces and his designs began to move away from stark geometrical and industrial layouts, to anthropomorphic expressions of form.

Immediately upon his return to Seattle, Lovett, in collaboration with Seattle architect Ted Bower, was engaged in the design of a pedestrian walkway shelter system for Seattle World's Fair (1961). Other notable projects include the Geber House (1962); the Meiller House (1966); and the Studebaker House (1969).

In 1965, Lovett was appointed as a full professor at the University and continued an independent private practice on the side. Between 1972 and 1981, he designed sixteen custom houses including the Fey House (1973); the Scofield House (1976) on Mercer Island; the Larsen House (1978); the Fujita House; and the Weston House (1981).

Over a span of 40+ years many of his designs were featured in a variety of local, regional, national and international publications including Sunset; House & Garden; Architectural Record and Domus. From 1953 to 1980 over 60 articles appeared. Lovett has also won numerous honors and awards from design competitions for Progressive Architecture; to local, regional and state AIA Honor Awards, to the Seattle Times "Home of Year".

Lovett's desire to link art and architecture also led him to product design. In 1954 he created the "Flexi-Fibre" later "Bikini" Chair, which was displayed at the *International Exhibition of Modern Decorative and Industrial Arts* in Milan. In 1966 he created the "Firehood" and "Toetoaster" hearths for Condon-King Company. After going into mass production, today the hearths can be found in thousands of dwellings across the county.

In 1987 Lovett retired from teaching and began work on the Villa Simonyi, a sprawling multi-phase project in Medina. Other work during the later part of his career include the Cutler-Girdler House (1996); the Vagners-Christianson House (1999); and the Meilleur–Buren House (2001).

Lovett was elected to the AIA College of Fellows in 1978 and in 1993 was awarded the Seattle AIA Medal for distinguished lifetime achievement in architecture, design and design education. Today Lovett is retired and resides in Madrona.

A key member of the TAAG team was artist Spencer Moseley. His job (with the help of Charles Smith) was to help further in revealing the nuclear process to the observer. The Argonaut reactor within the building had a shield that was composed of large blocks of metal filled with

concrete. The shield was composed of many blocks because of their combined weight. A shield of a single piece would have required substantially more structure and a much stronger beam crane to lift it. The limit of the beam crane in the Nuclear Reactor Building was 5,000 lbs, and some of the shield blocks weighed nearly as much. It was necessary to move the blocks periodically to change the fuel rods.[9] Moseley's idea was to color code the blocks in bright primary colors (red blue, yellow and indicative of different radioactive qualities), so that when the blocks were moved they would create a continuously changing visual pattern. The colors of the blocks differentiated them according to their position in the shield. In a building that was composed of concrete and glass with minimal finishing, the colored blocks of the reactor shield drew the observer's eyes directly to the reactor.[10]

Moseley (1926 -1998) was born in Bellingham and taught art at the University of Washington from 1951 to 1971 after receiving a BA and MFA from the University. He served as the director of the School of Art from 1967 to 1977. Moseley was an acclaimed artist whose paintings are included in the collections of many regional museums, including the Seattle Art Museum and the Henry Art Gallery. As a young man he studied in Paris with the legendary modernist Fernand Leger, and for the rest of his life his paintings were inspired by an interest in formal, structural abstraction, often with a cubist spin. Yet despite his lifelong passion for European modernism, Moseley was a champion of the regional art scene and new, experimental art disciplines that in the halcyon days of the '60s and '70s were emerging from craft departments at the University of Washington.

With Lovett in Europe, Gene Zema, Daniel Streissguth, Gerald Torence and landscape architect Robert Chittock completed the construction documentation over the next few months. Zema signed the architectural drawing set on November 9, 1959. Zema supervised the actual construction of the Nuclear Reactor Building, and today recalls that it was a smooth process, *"the building went up without a hitch."* A craftsman himself, Zema's care and attention to detail are recognizable in the details and articulation of materials of the building.[11]

Zema was born on September 2, 1926, and grew up on a farm in the Sacramento Valley in California. He began studies at the University of Washington in 1944. Although he initially studied Engineering, he changed his course of program to Architecture after returning to school from service in the Navy during World War II. In 1950, he completed his Bachelor of

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[9] Interview with Brian Panckow and Stan Addison

[10] Interview with Daniel Streissguth

[11] Interview with Daniel Streissguth and Gene Zema

Architecture degree at the University of Washington, with Lovett serving as one of his main professors.

After receiving his architectural license in 1951 he worked for a variety of architectural firms before opening his own practice in 1953. Located in Seattle's Eastlake neighborhood (200 East Boston), the office was a strong testament to the skills of the young designer and helped him receive many notable architectural commissions over the next thirty years. Zema shared this office with A.O. Bumgardner, and they often formed a partnership to work on larger projects. They each maintained their private residential practices during this time and the partnership lasted only a few years. As partners, the two were invited in 1955 to produce a prototypical residential design for the Grand Rapids (MI) Homestyle Center exhibit featuring nationally known architects. Their design represented a *"budget house for...the Pacific Northwest utilizing natural materials"*. In the early 1950s, Zema had designed a number of standard builder's plans for the development of Bridle Trails Park in Bellevue, WA, which were very similar to the Homestyle Center model he designed later with Bumgardner.

Zema holds the distinction of receiving the first Seattle AIA Home of the Year award in 1955 for his own dwelling completed in 1954 (16040 35th NE, Sheridan Heights). Other award-winning homes were the Holm residence in Richmond Beach (built 1956, AIA honor award 1962), and the Lupton residence (1961) on Mercer Island, which was awarded both a Home of the Year award in 1961 and an Honor Award in 1962. Other notable residential buildings in and around Seattle included the Stephen House (1970) and his own home in Laurelhurst (1965).

Zema's residential and non-residential work was heavily influenced by the work of Paul Hayden Kirk. He especially drew direct inspiration from Kirk's "how-to" book about clinic design (Doctors' Offices and Clinics, 1955) for the eight medical and/or dental clinics he designed. These included the Jefferson Park Medical Clinic (1957) on Beacon Hill, the Rice Dental Clinic (1961) in north Seattle, and the Overlake Park Clinic (1963-65) in Bellevue.

Other non-residential projects also include the Wells-Medina Nursery (1968) and Gould Hall at the University of Washington (with Dan Streissguth, 1972). In 1968 Zema opened a Japanese antiquities gallery in his office, which remained in operation through the 1990s (under different ownership). Zema retired from practice in 1976 and built a third home for his family on Whidbey Island in 1983, where he currently resides.

Daniel Streissguth graduated from the University of Washington in 1947 and received a graduate degree from MIT in 1949. He was licensed by the State of Washington (#648) on July 10, 1951. Upon graduation, he taught at Washington University in St. Louis, Missouri (1953-55). In 1955

he began teaching at the University of Washington, and continued to teach beginning level design courses to undergraduate and graduate students until his retirement in 1993. During his tenure he served two-four-year terms as chair of the Architecture Department, and is primarily know for his excellence in teaching design.

Streissguth maintained a small private practice over his career where he worked on residential projects in addition to his teaching duties. Projects include the Cotton House Remodel in Port Townsend (1956), the Helander House also in Port Townsend (1956), and his own home in Seattle (1958). He joined fellow architect Gene Zema to design the current home of the University of Washington College of Architecture & Planning (Gould Hall) in 1972. He also worked with Zema on the Wells Medina Nursery building and grounds (1968).

The contractors for the Nuclear Reactor Building were Jentoft & Forbes Contractors. Nothing is known of their other construction projects. Landscape architect Robert W. Chittock was a University of Oregon graduate and received his formal landscape architectural license (#86) on June 9, 1971. Chittock began his practice in 1957 and his practice continues today. Projects include Japanese Branch First Presbyterian Church of Seattle (1963), WSU Agricultural Science Building (1969), a roof top deck for Bay Vista Towers (1982); the Seattle Garden Club Fragrance Garden (2007); landscape for the Grace Boyd House (2008) and the Bowman Garden (1982) in Bellevue. Over the years he has been a regular contributor to Sunset Magazine and his work has been featured in several publications including: Practical Guide to Home Landscaping (1972); Sunset Ideas for Landscaping (1972); Landscape for Western Living (1968); and How to Build Fences and Gates (1971).

When Lovett returned to Seattle in 1961 he was pleased with the result of TAAG's work at the Nuclear Reactor Building. With his absence, however the partnership dissolved and each member moved back into private practice.[12]

The Reactor Building was dedicated in 1961, the centennial year of the University of Washington, just before the 1962 Seattle World's Fair. Lovett recalls, when the building was completed, there were some reservations about its appearance. The University president at the time, Charles Odegaard, asked the team after the building was completed, if it was finished and if they were going to paint it. Painting the building was not TAAG's intention, and countered the raw expression of the material in the building. In the end, the concrete haunch beam and the pre-cast roof channels were painted white to reconcile the president.

[12] Interview with Wendell Lovett

However overall, the Nuclear Reactor Building was recognized for its innovative design in a variety of regional, national and international publications such as: *Architecture West*, *Arts and Architecture*, *Architectural Record*, *Progressive Architecture*, *Pacific Architect Builder* and *L'Architecture d'Ajourd'hui.* These articles identified the building as the *"natural focus for the engineering building group"* (*Architecture West*) and describe the nature and materiality of the building as appropriate for the *"dynamic energy source"* contained within (*Arts and Architecture*).

Within the College of Engineering itself, the construction of the Nuclear Reactor Building was greatly celebrated. Dean McFeron, professor in the Mechanical Engineering department at the University of Washington who came to the Seattle in the 1950s to help establish the Nuclear Engineering Program, fondly remembers when the Nuclear Reactor Building began to be used. Since the building was constructed at the same time as the grounds and attractions for the Seattle World Expo, the Engineering Department held a public "Open House" to show off its new building. Professor McFeron recalls that someone had the idea to make a "mini monorail" with a model train and run it through the reactor's portholes. The little train was encased in lead for protection, but made the reactor go a little haywire because reactors do not react well to sudden change. The "mini monorail" was a public success, and many people were watching from the observation deck, "ten people deep".[13]

The reactor reached critical and sustained fission in April 1961 and began operation at 10 kw. The Nuclear Reactor Building was used for testing and teaching consistently throughout the 1960s, and in 1967 the reactor's power production was raised from 10 kw to 100 kw. The only significant accident in the history of the Nuclear Reactor Building occurred in 1972. That year a plutonium foil failed and 42 mg of plutonium dust was spread around the reactor room. The spill was cleaned up, and the floor was painted over and composition tiles laid to protect from contamination. The cleanup was successful, and the building continued to be used as usual. (When the building was decommissioned later, the tiles were removed). The Nuclear Reactor Building underwent safety testing by the Nuclear Regulatory Commission yearly as long as the reactor was in place.[14]

The applications of the nuclear reactor at the University of Washington went beyond the research and experimentation within the Nuclear Engineering department. The reactor's location on campus was convenient for producing short-life isotopes for the University's Hospital, which

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[13] Interview with Dean McFeron
[14] Interview with Brian Panckow

were used for some medical treatments. The reactor was also used for testing for Cystic Fibrosis in infants, which could be diagnosed by the radioactivity levels of the child's fingernails.[15]

In the 1970s there was a general decline in the prosperity of the Nuclear Engineering Department. Both enrollment and funding numbers receded. This decline was due to a combination of skepticism about nuclear power, the energy crisis, environmental concerns, the Vietnam War and the economic recession. Throughout the 1970's, nuclear power in the United States faced growing resistance and gained mostly negative attention due to its expense and safety concerns. In the Pacific Northwest, the issues were largely economic. The Washington Public Power Supply System [WPPSS] had proposed a plan to build five reactors in Washington State, but the project fizzled under political and economic scrutiny. Over a period of two decades, only one power plant was completed. The economic consequences of this venture induced resistance from the public. There were protests against the WPPSS and a few protests against nuclear power itself.[16] In March 1979 the Three Mile Island accident occurred near Harrisburg, Pennsylvania, which solidified a fear and aversion to nuclear power across the nation.

The general dissent against nuclear power brought with it a lack of employment. Many graduates of the Universities Nuclear Engineering program in the 1970s were forced overseas to find work. Brian Panckow, who operated the reactor in its later years of operation and was involved in the decommissioning of the building, recalled that in the late 1970s when he began working in the building, the program was well into decline and research was limited. The Nuclear Reactor Building, less than two decades old, became burdened with the negative attitudes that have kept it trapped in the past. In 1982 there were severe budget restrictions at the University of Washington, and many programs were cut or insufficiently funded. Limited research continued in the Reactor Building on fusion, passively safe nuclear concepts, and nuclear waste management. There was some funding for research from the Department of Energy. In the late 1980s the reactor was used less for teaching and research and more for infrequent testing for a few commercial companies, mostly for medical applications. In 1988 the reactor ceased to be used. From October 1988 to February 1990 the fuel rods were removed to the Hanford site in eastern Washington. In the course of the reactor's operation 304,443 kw hours of thermal energy was produced.[17]

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[15] Interview with Dean McFeron

[16] Pope, The Atomic West, p 236

[17] University of Washington Nuclear Reactor Laboratory Decommissioning Information

In 1992 the Nuclear Engineering program at the University of Washington officially disbanded, due to lack of student enrollment and interest. In 1994 the University's reactor license was converted from operation to possession only. In 1995 the Nuclear Regulatory Commission approved the decommissioning plan proposed by the University, but in 1999 the decommissioning process was put on hold due to lack of funding. The decommissioning plan was reactivated in October 2003. In December 2006 the University requested a termination of its Facility Operating License for the research reactor. On May 21, 2007, the Nuclear Regulatory Commission issued its inspection report (50-139 / 2006-204) declaring the building decommissioned and certified clean for reoccupation. Currently the University plans to demolish the building in the summer 2008.[18]

Although the Nuclear Reactor Building has been dormant for the past two decades, it remains in good condition. The structural elements of the building are sound. There are a few visual defects from water stains, and some leaks from cracks in the observation deck. Inside the building, most of the finishes have been stripped in the process of decommissioning. The floor tiles have been removed and paint from the walls of the reactor room was removed as well. All the original scientific equipment has been removed. Although the reactor itself has been removed, the concrete casing for the reactor still stands in the center of the reactor room. An observer today, seeing the remnants of the concrete casing, can still grasp the building's original intention.

In the tradition of modern Brutalist architecture, the Nuclear Reactor Building is an expressive of the materials of which it is constructed. The defined structural elements of the building provide space for large expanses of glass curtain wall. The concrete of the main haunch beam is square and solid, while the cast-in-place beams which support the roof are tense in shape as they open up the space for observation. Although the building's shape is animated, the window mullions and the form-work pattern of the cast concrete beams create a regular expression of the grid the building is laid out upon. The use of the glass storefront window system with regular aluminum mullions as a thin separation of inside and outside contrasts the massiveness of the concrete structure. The structure is precisely and vividly articulated, and every member is essential. The form of the building is evocative of the forward-looking spirit of the time, with an energy in the shape that implies the power that the building was meant to contain.

[18] Ibid

The Nuclear Reactor Building represents a matchless aspect of the work of three significant Modern architects of the Pacific Northwest, who were part of a short-lived but progressive collaboration: The Architect Artist Group. For The Architect Artist Group, the Nuclear Reactor Building is a result of their combined talents, with significant contributions from structural engineer Gerard Torrence and artist Spencer Moseley. For all parties the Nuclear Reactor Building was a unique project in their careers. Architect Wendell Lovett, the lead designer of the project and organizer of TAAG, was internationally known for his work, and has been elected a Fellow of the American Institute of Architects. Over the course of his career he designed primarily residences, some furnishings, but the Nuclear Reactor Building is his only institutional project. Such work offers an insight into what might have been if the group were to have maintained a long term partnership. Such collaborations between architect and artist were part of the main tenants of modernism. Architects Gene Zema and Daniel Streissguth, who also designed many buildings in the northwest, went on to design some commercial and institutional building including designing together Gould Hall on the University of Washington campus in 1972.

All three of the architects of the Nuclear Reactor Building are still living, but have not practiced for several years. When interviewed regarding the building and The Architect Artist Group, they recalled the experience as unique in their careers. They felt that the Nuclear Reactor Building itself had potential for re-use on the University campus, and was a true expression of the excitement of new technology and research of the time period.

The Nuclear Reactor Building is exemplary of modern architecture's close relationship with science and technology. The building's form and character is driven by technology and its advancement, looking only to the future. In an era of un-precedented change, the Nuclear Reactor Building expresses a need to advance and eliminate boundaries. One can see this clearly while observing the building, set apart and standing out from the conventional academic buildings around it. The building unashamedly promotes technology and communicates it publicly.

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Interview with Wendell Lovett, Architect, by Abby Martin. January 17 2008.

Interview with Brian Panckow and Stan Addison, Radiation Safety Officers at the University of Washington, by Abby Martin, January 24 2008.

Interview with Dean McFeron, Professor Emeritus of Mechanical Engineering, University of Washington, by Abby Martin. January 31 2008.

Verbal Boundary Description

The Nuclear Reactor Building and its adjacent plaza are sited within the central open space of the Engineering Complex at the University of Washington campus in Seattle. The triangular shaped space is currently bounded by the Mechanical Engineering Building on the north, More Hall to the south, the Allen Computer Science Building and Stevens Way to the west, and Jefferson Road, a campus access road, to the east. Bisecting the site on a east/west access is a pedestrian lane, called, Snohomish Lane.

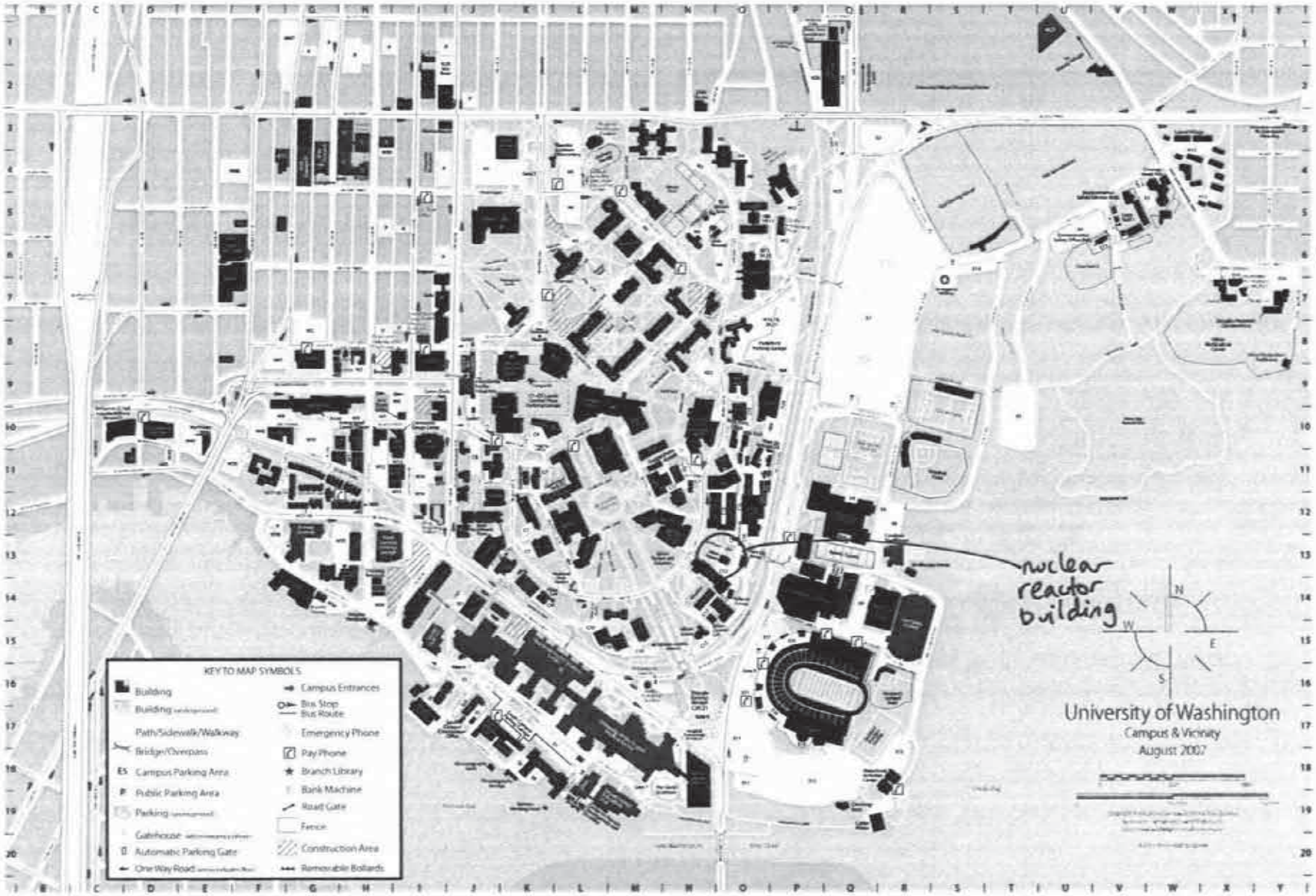
Boundary Justification

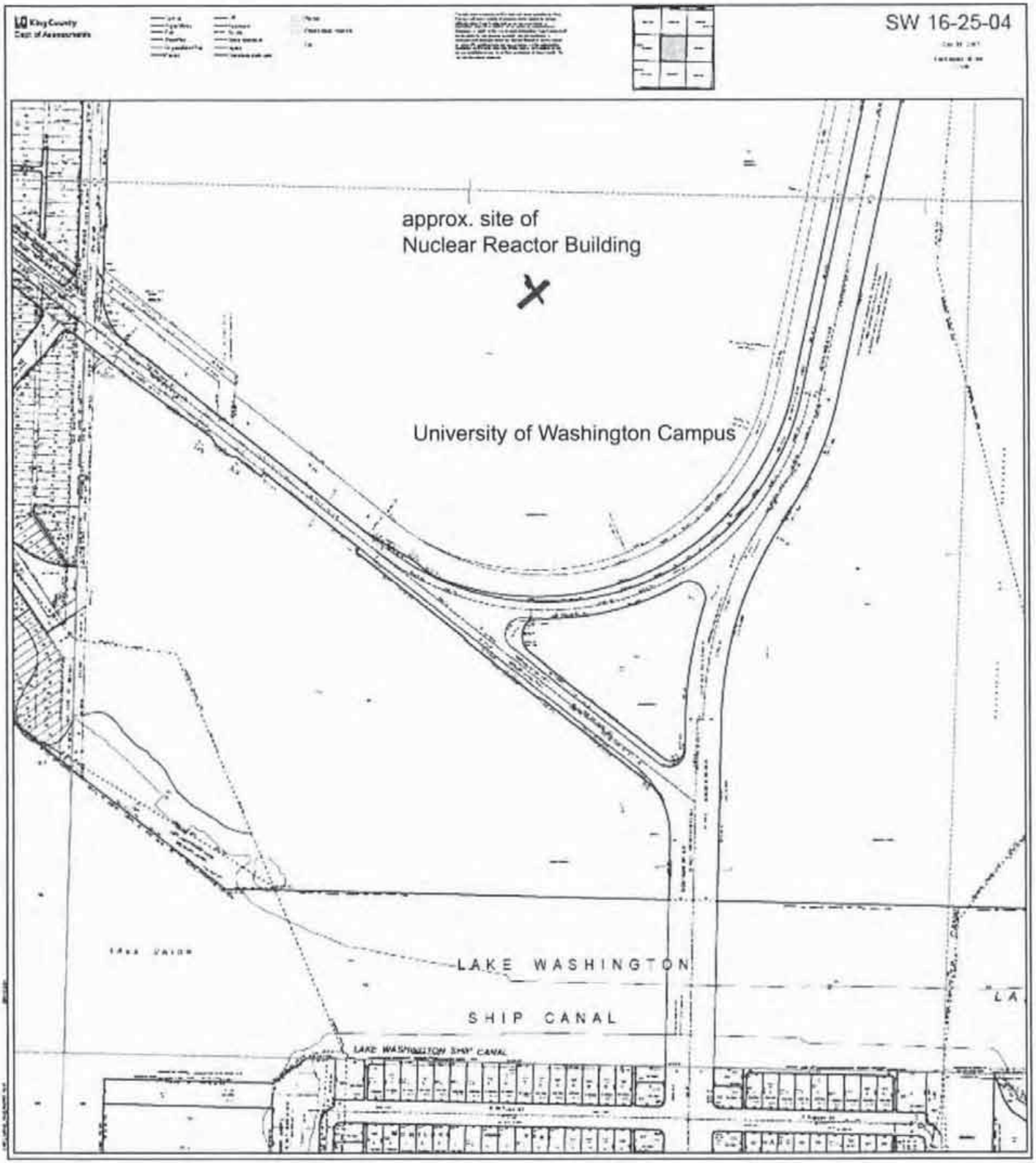
The boundaries of the nominated property include the structure itself and the adjacent plaza facing Stevens way as well as the east side walkway, stairs and path areas, all part of the original landscape design.

Teaching Reactors on University Campus'
by operational date (partial list, unknown status of reactors)

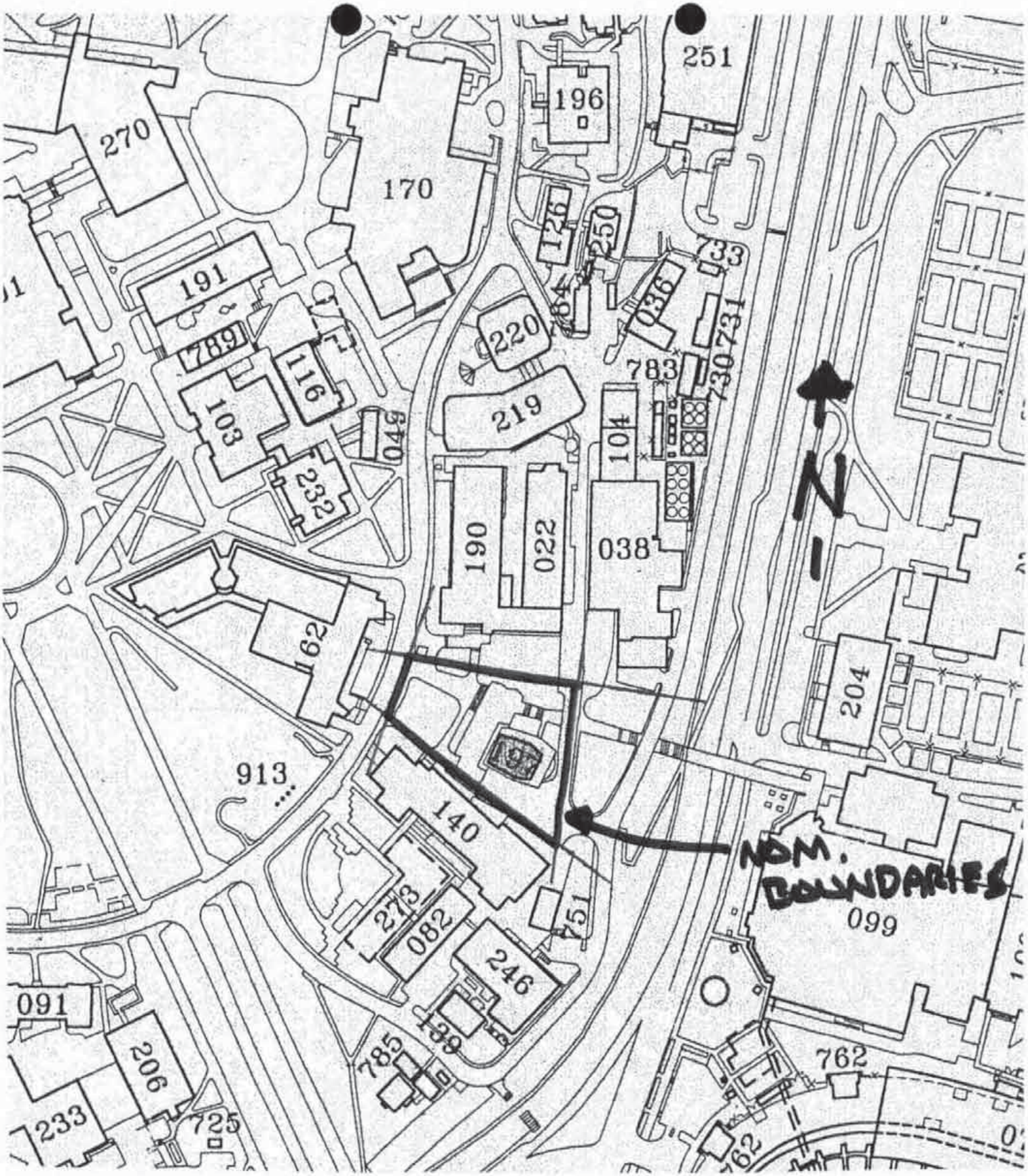
Operator	Location	Operational
North Carolina State	Raleigh, NC	1953
Penn State University	University Park, PN	1955
University of Michigan	Ann Arbor, MI	1957
Massachusetts Institute of Technology	Cambridge, MA	1958
University of Arizona	Tucson, AZ	1958
University of Florida	Gainesville, FL	1959
University of Maryland, College Park	College Park, MD	1959
Worcester Polytechnic Institute	Worcester, MA	1959
Missouri University of Science &Technology	Rolla, MO	1961
Ohio State University	Columbus, OH	1961
Texas A&M University	College Station, TX	1961
University of Wisconsin-Madison	Madison, WI	1961
Washington State University	Pullman, WA	1961
University of Washington	Seattle, WA	1961
Kansas State University	Manhattan, KS	1962
Purdue University	West Lafayette, IN	1962
Rensselaer Polytechnic Institute	Troy, NY	1964
University of Missouri	Columbia, MO	1966
University of New Mexico	Albuquerque, NM	1966
Idaho State University	Pocatello, ID	1967
Oregon State University	Corvallis, OR	1967
Reed College	Portland, OR	1968
University of California-Berkeley	Berkeley, CA	1969
University of California, Irvine	Irvine, CA	1969
North Carolina State University	Raleigh, NC	1973
University of Massachusetts Lowell	Lowell, MA	1974
University of Utah	Salt Lake City, UT	1975
University of Texas at Austin	Austin, TX	1992
University of California-Davis	Sacramento, CA	1998

Ravenna
Hawthorne
Calvary Cem
University Village
University
UNIVERSITY OF WASHINGTON
BM 14.5
Lib
Ship Canal Bridge
Union Bay
Building
Stadium
Hospital
Montlake Br
Marsh Island
Foster Island
Light
N Broadway
US Bureau of Fisheries
Park
Montlake
Footbridge
Arboretum
Edgewater
Madison Park


nuclear reactor building
N
W
E
S
University of Washington
Campus & Vicinity
August 2007
KEY TO MAP SYMBOLS
Building
Building
Path/Sidewalk/Walkway
Bridge/Overpass
Campus Parking Area
Public Parking Area
Parking
Gatehouse
Automatic Parking Gate
One Way Road
Campus Entrances
Bus Stop
Bus Route
Emergency Phone
Pay Phone
Branch Library
Bank Machine
Road Gate
Fence
Construction Area
Removable Bollards

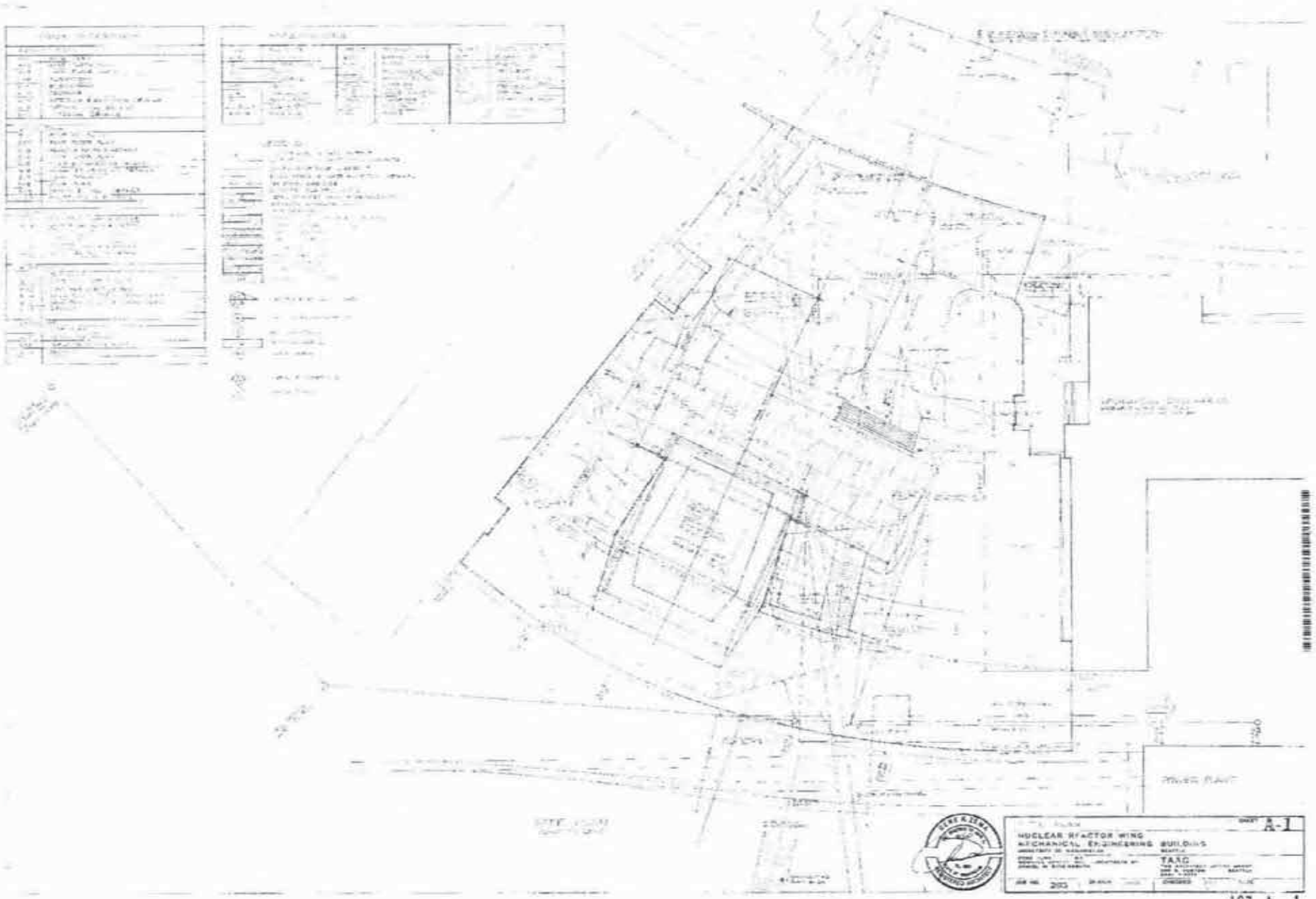


King County Assessor's Map of site, not to scale

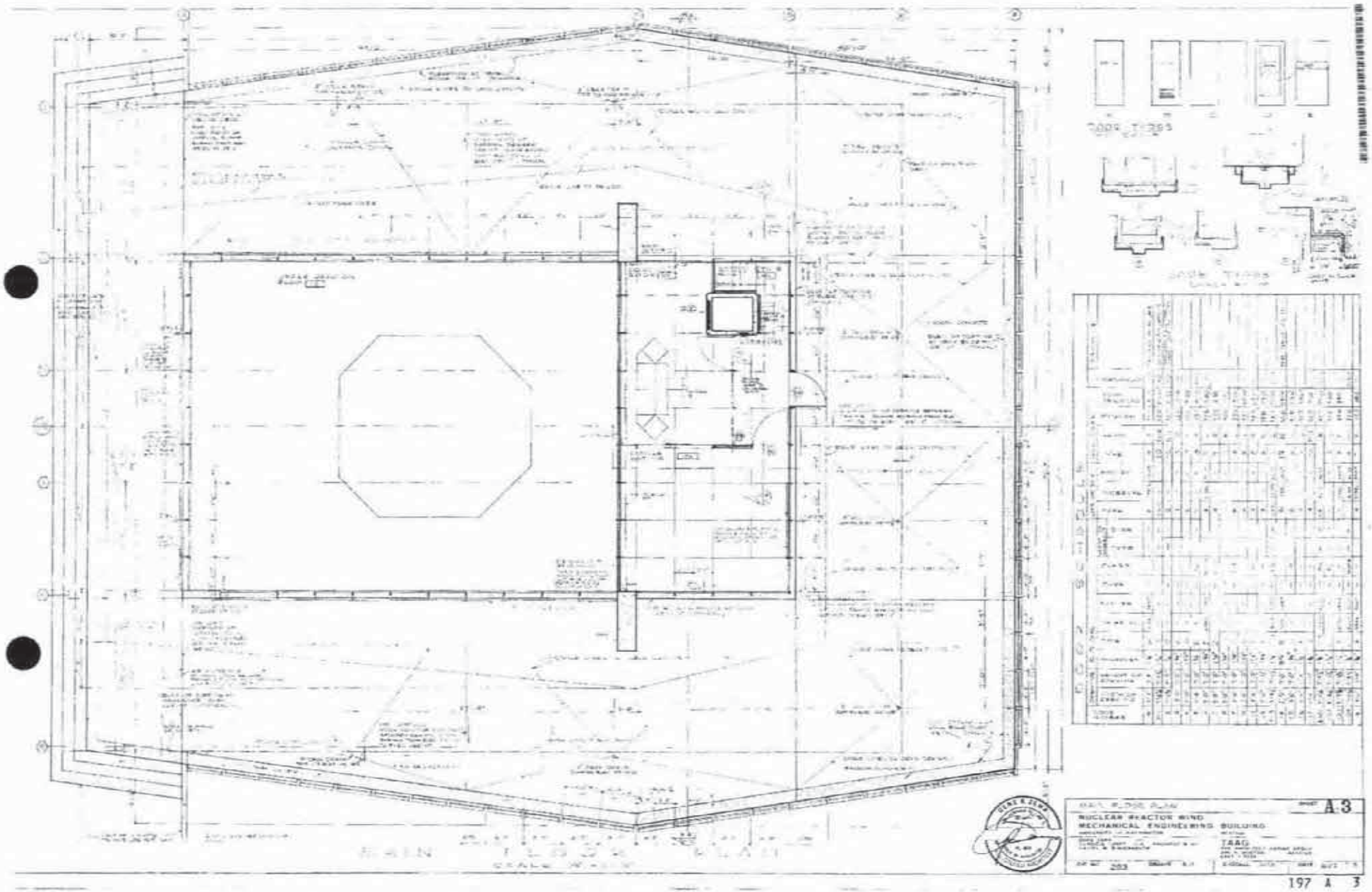


NUCLEAR
REACTOR
BUILDING

SEATTLE. WA

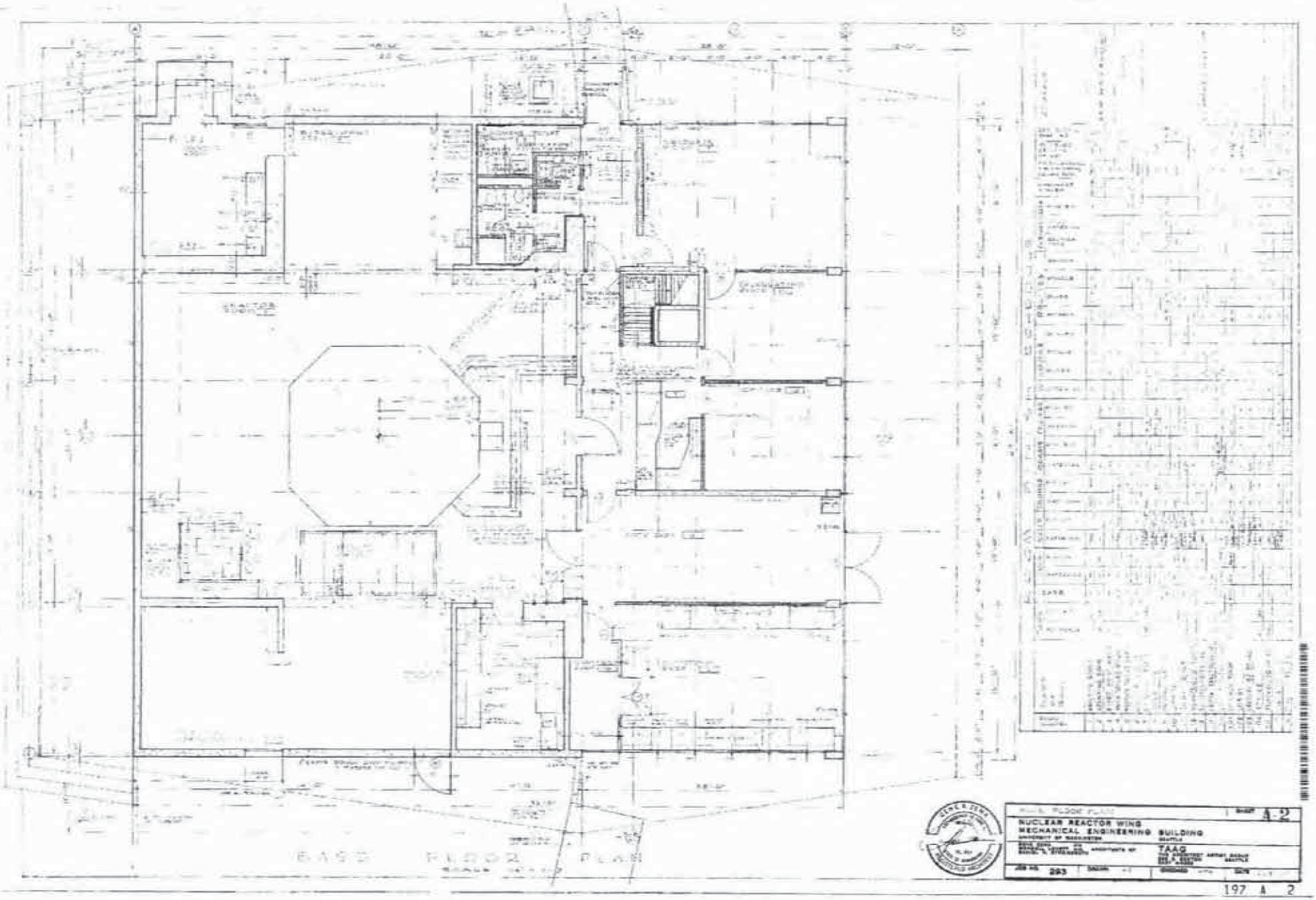

NUCLEAR REACTOR WING
MECHANICAL ENGINEERING BUILDING
A-1
TAAC
POWER PLANT
197 A 1

Not to scale

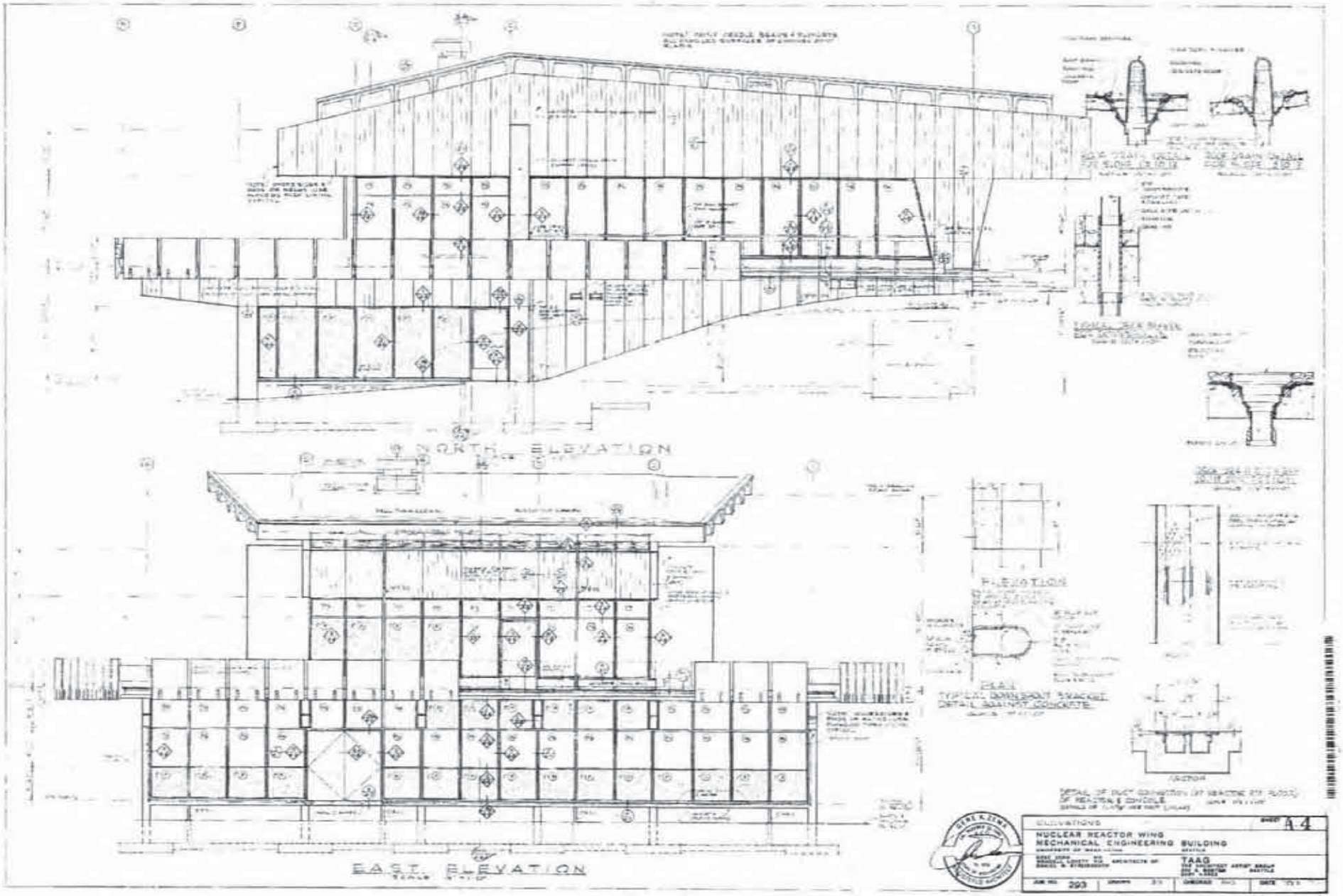


197 A 3

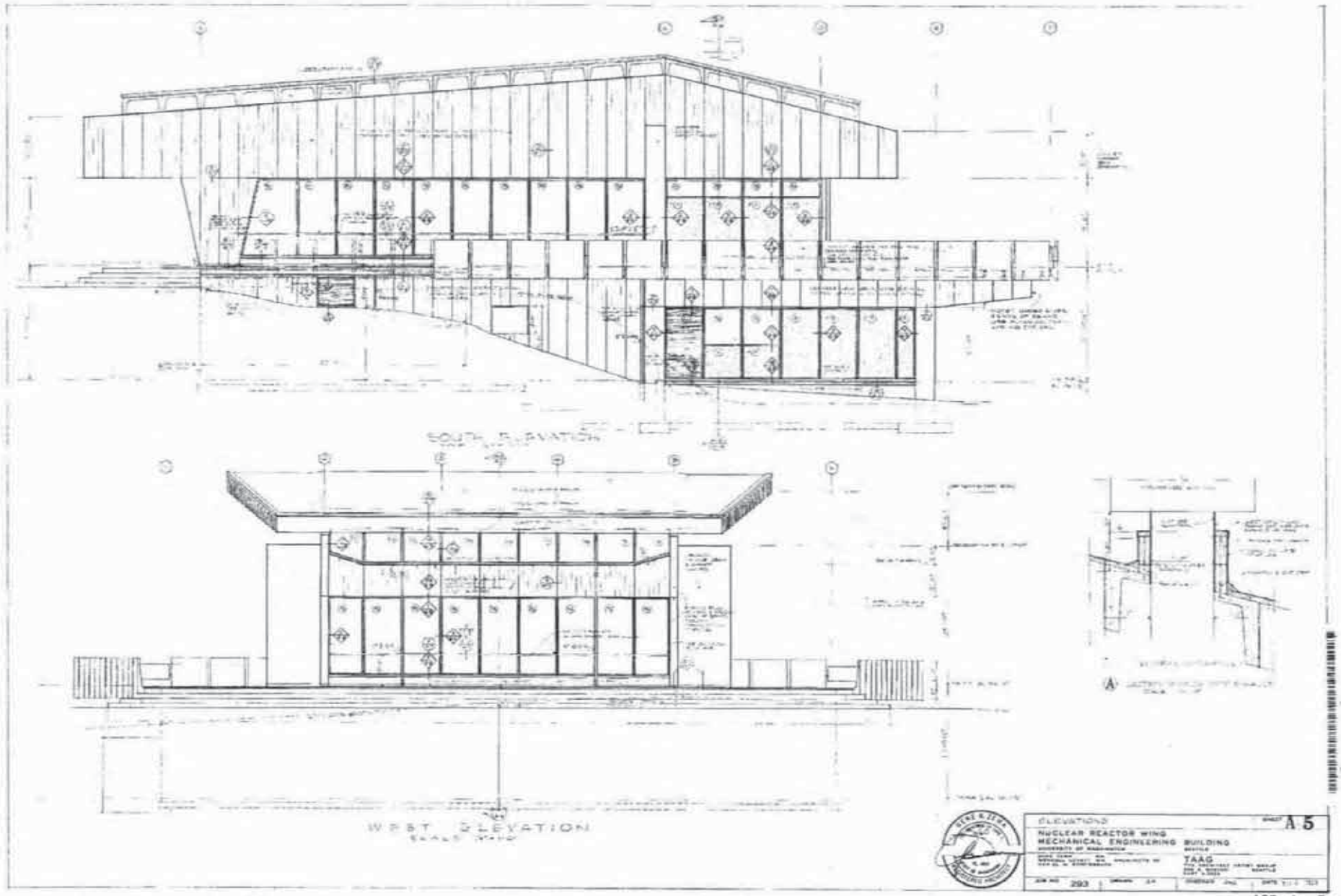
Not to scale


BASE FLOOR PLAN
NUCLEAR REACTOR WING
MECHANICAL ENGINEERING BUILDING
A-2
293
197 A 2

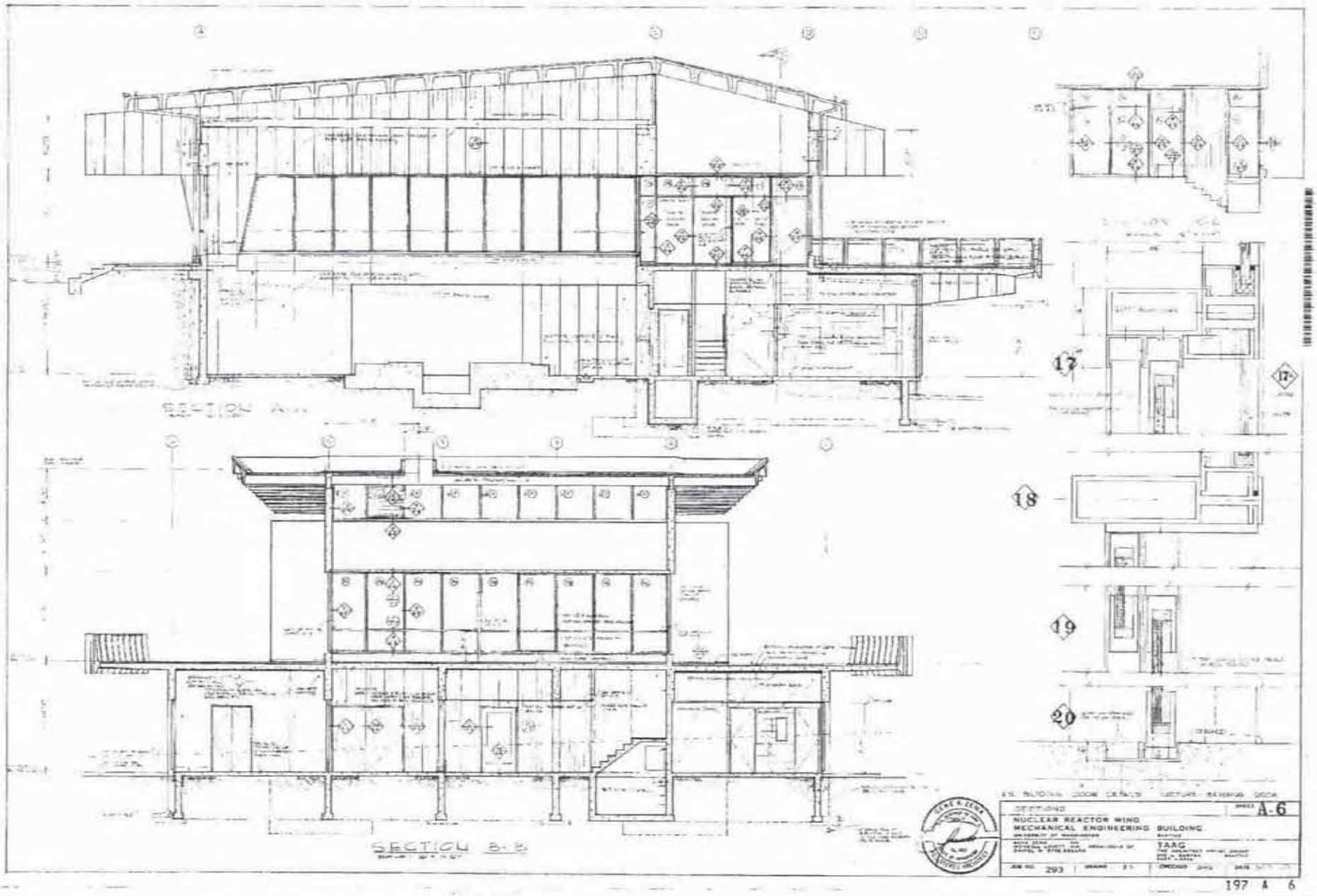
Not to scale


NORTH ELEVATION
EAST ELEVATION
ELEVATIONS
NUCLEAR REACTOR WING
MECHANICAL ENGINEERING BUILDING
TAAG
A-4
293
197 A 4

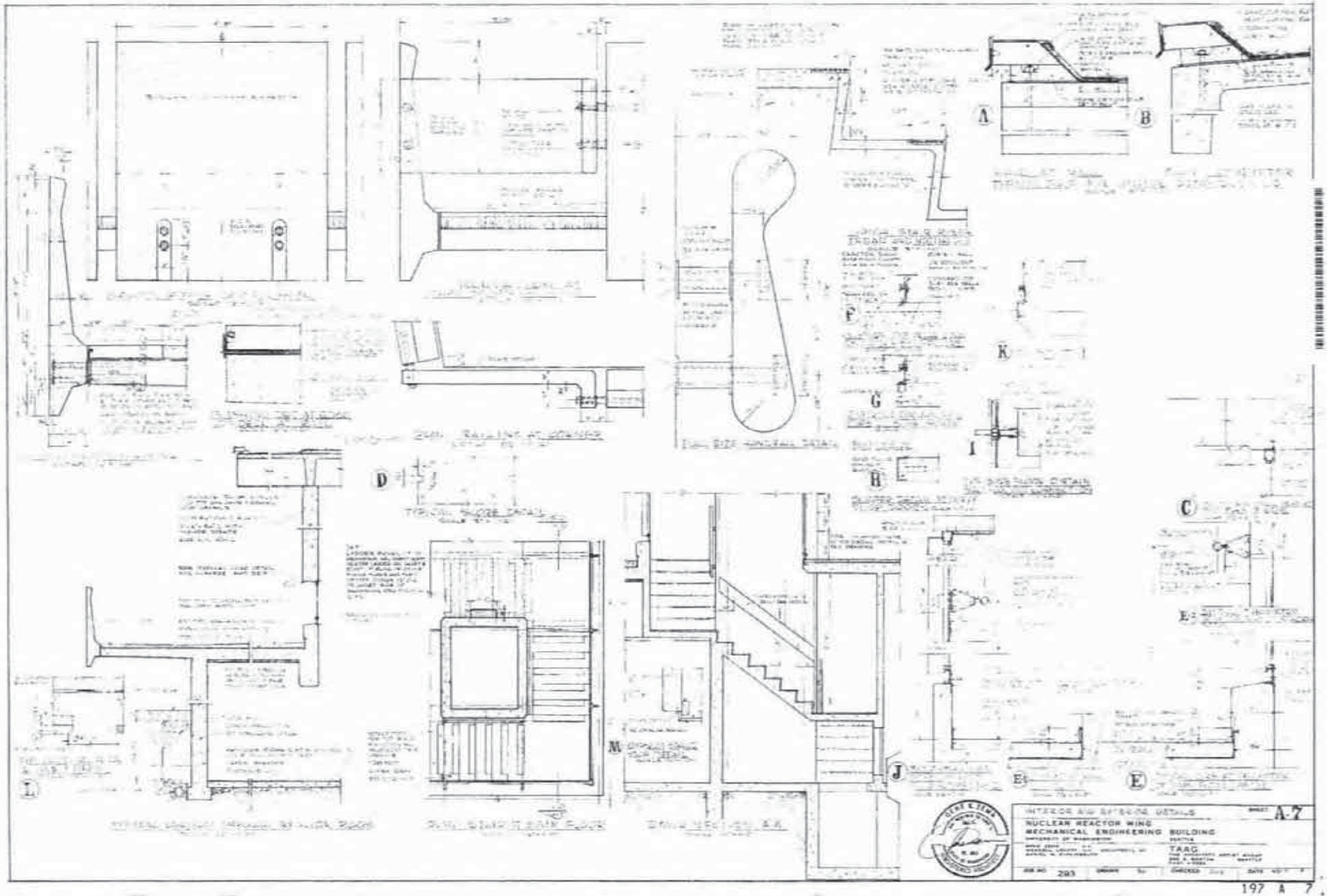
Not to scale


SOUTH ELEVATION
WEST ELEVATION
ELEVATIONS
A 5
NUCLEAR REACTOR WING
MECHANICAL ENGINEERING BUILDING
TAAG
293
197 A 5

Not to scale

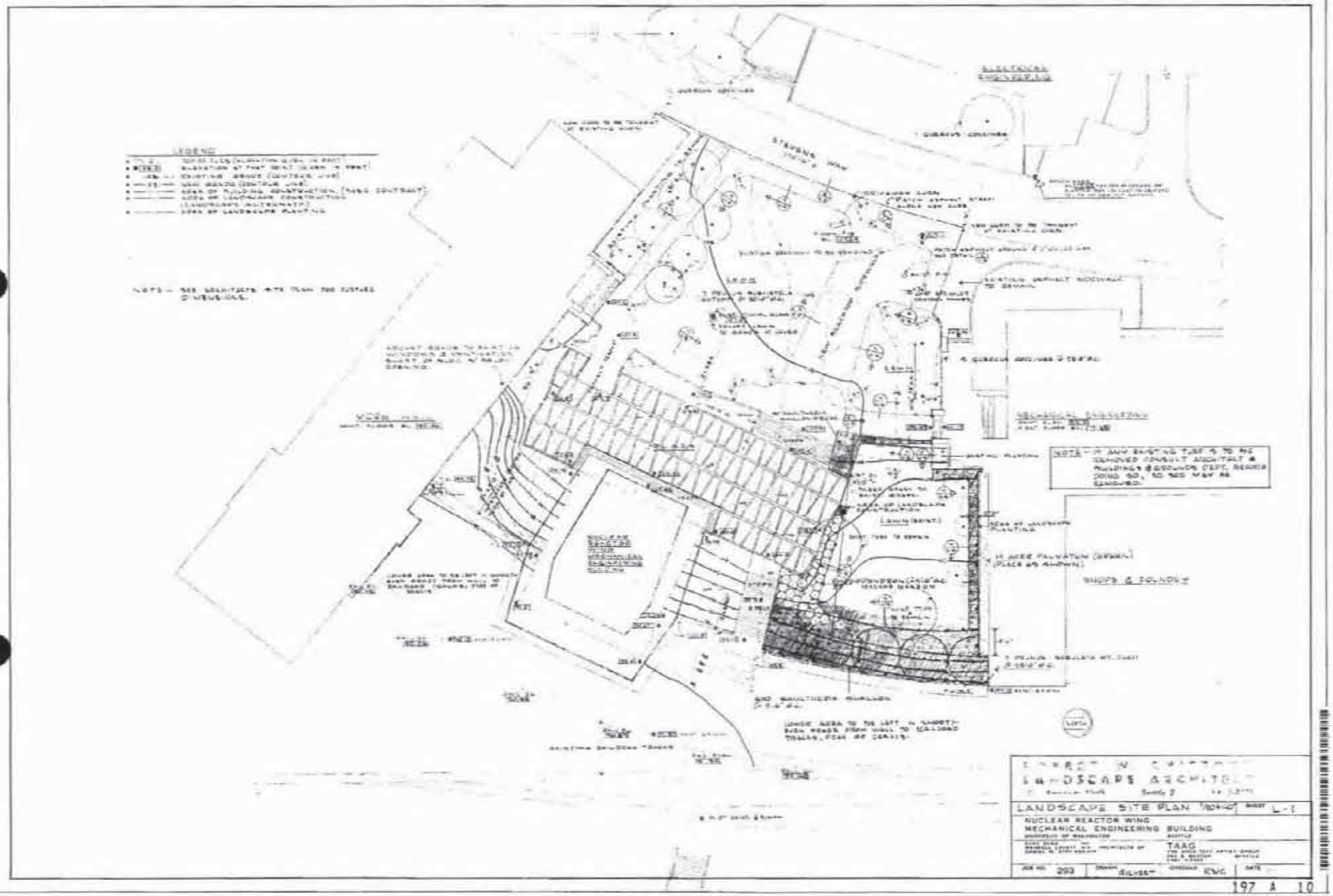

SECTION A-A
SECTION B-B
17
18
19
20
SECTIONS
A-6
NUCLEAR REACTOR WING
MECHANICAL ENGINEERING BUILDING
TAAG
293
197 A 6

Not to scale

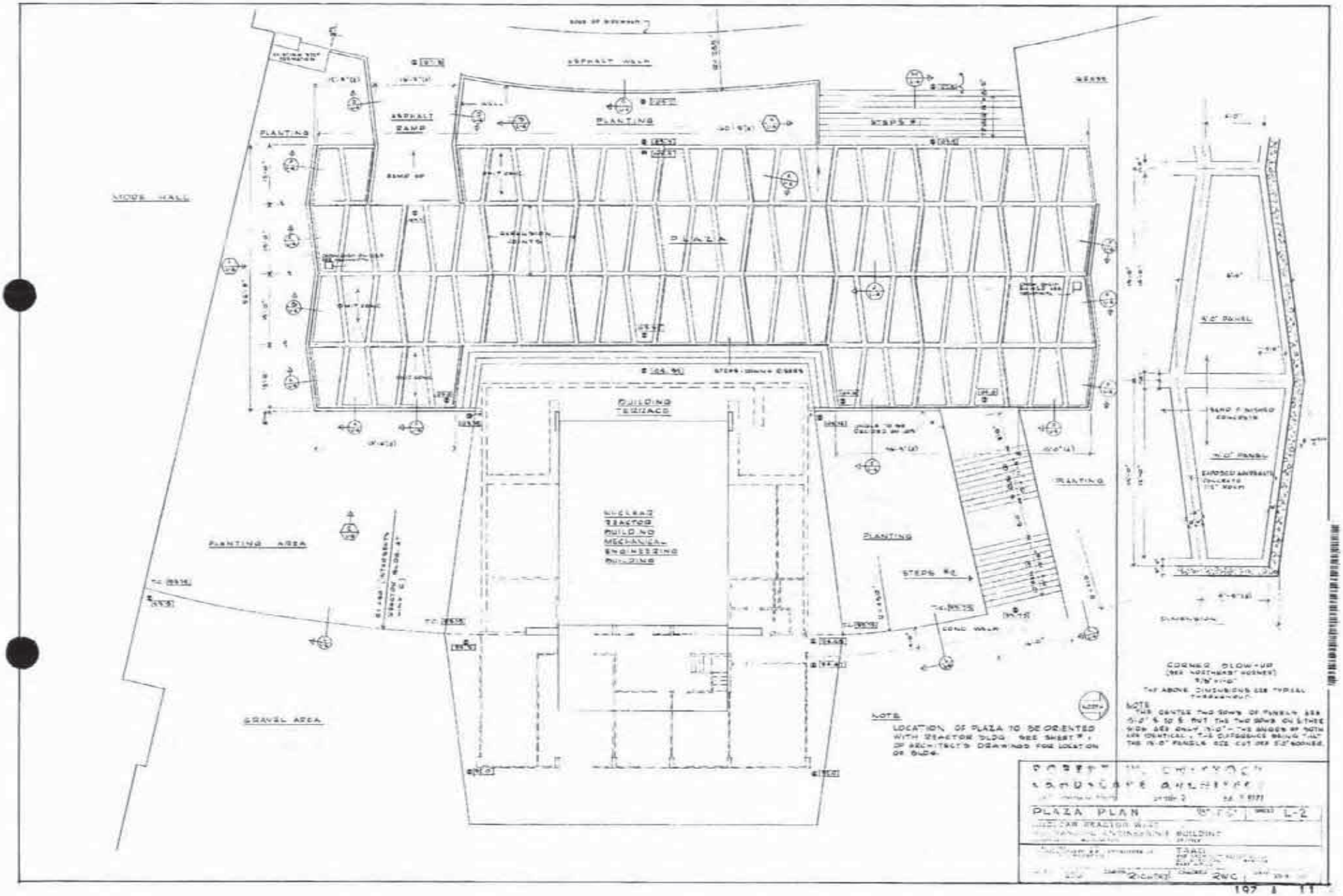


197 A 7

Not to scale

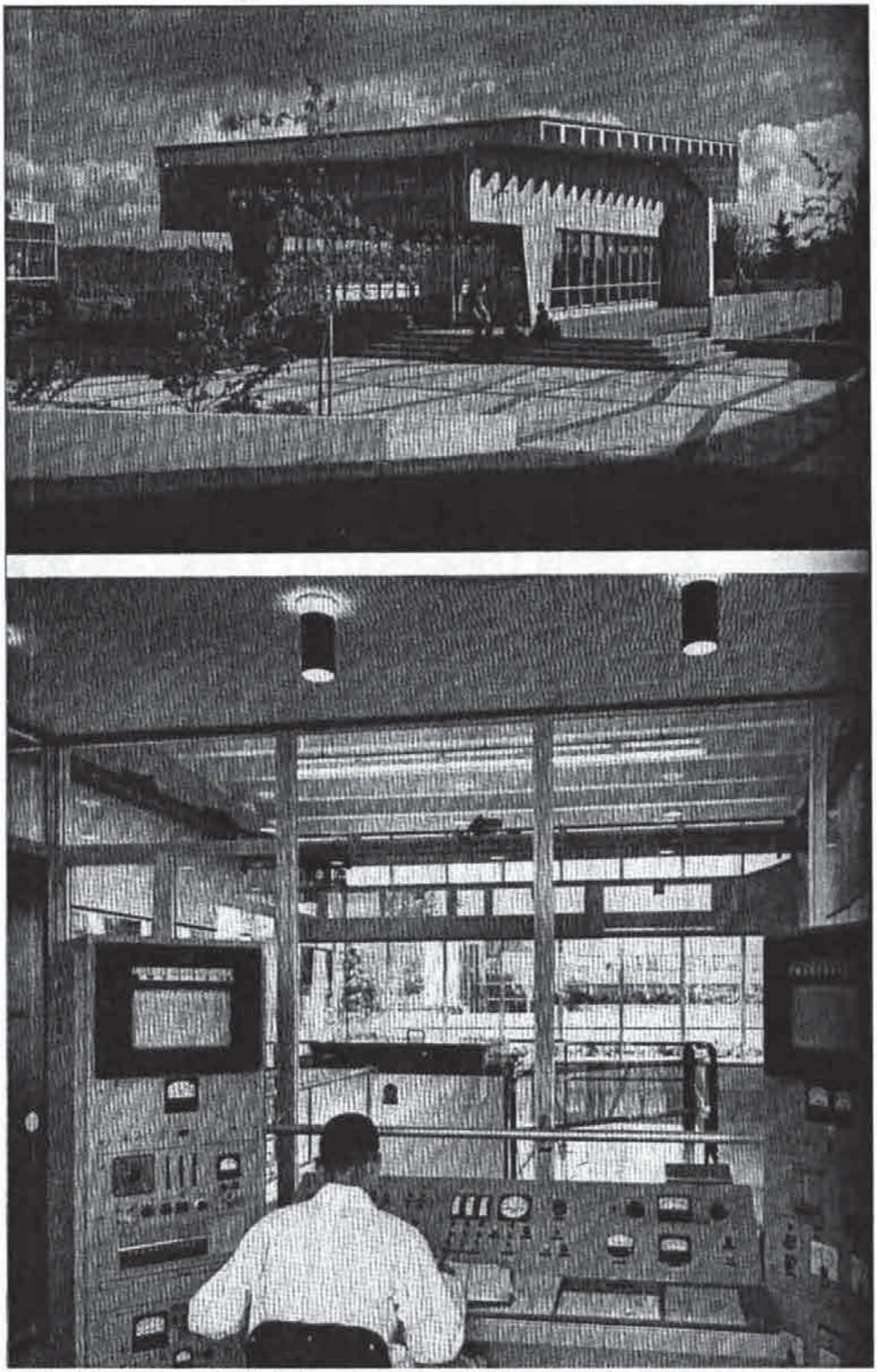

LEGEND
LANDSCAPE SITE PLAN
L-1
NUCLEAR REACTOR WING
MECHANICAL ENGINEERING BUILDING
TAAG
293
197 A 10

Not to scale


ASPHALT WALK
PLANTING
ASPHALT RAMP
PLANTING
MODE HALL
PLAZA
BUILDING TERRACE
NUCLEAR REACTOR BUILD NO MECHANICAL ENGINEERING BUILDING
PLANTING
PLANTING
PLANTING
PLANTING AREA
GRAVEL AREA
STEPS
NOTE
LOCATION OF PLAZA TO BE ORIENTED WITH REACTOR BLDG. SEE SHEET 1 OF ARCHITECT'S DRAWINGS FOR LOCATION OF BLDG.
CORNER BLOW-UP
PLAZA PLAN
L-2

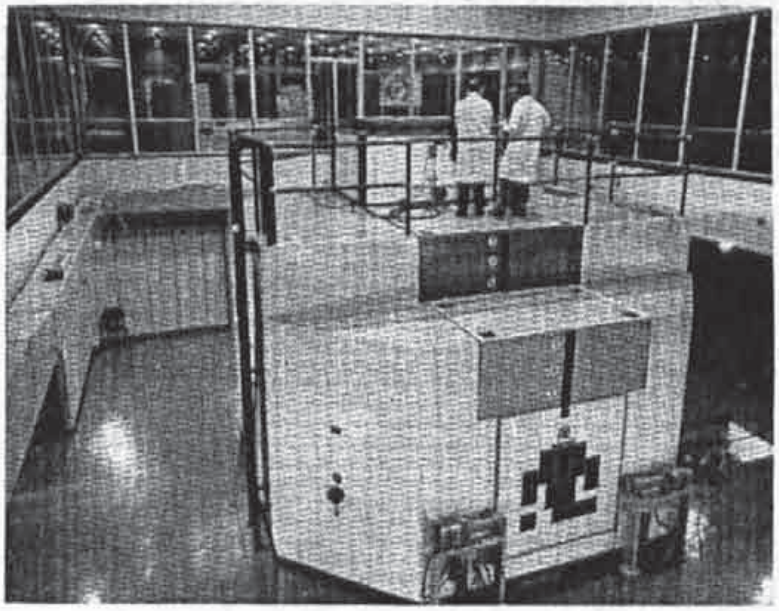
Not to scale

students in the control room

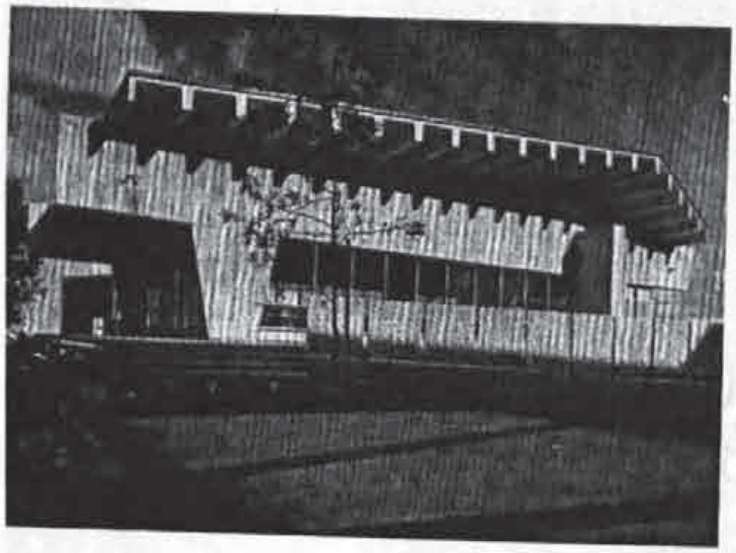


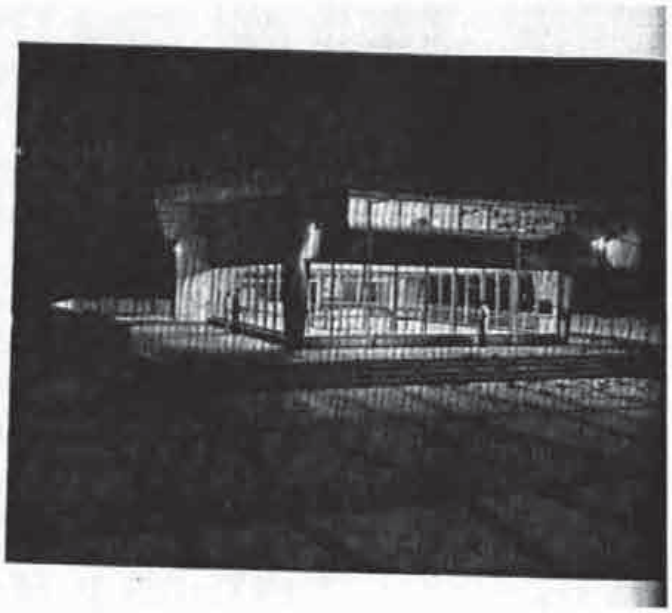
Images of the Nuclear Reactor Building published in *Architectural Record*, September 1963

Art Hupy photos



Images of the Nuclear Reactor Building published in *Architectural Record*, September 1963



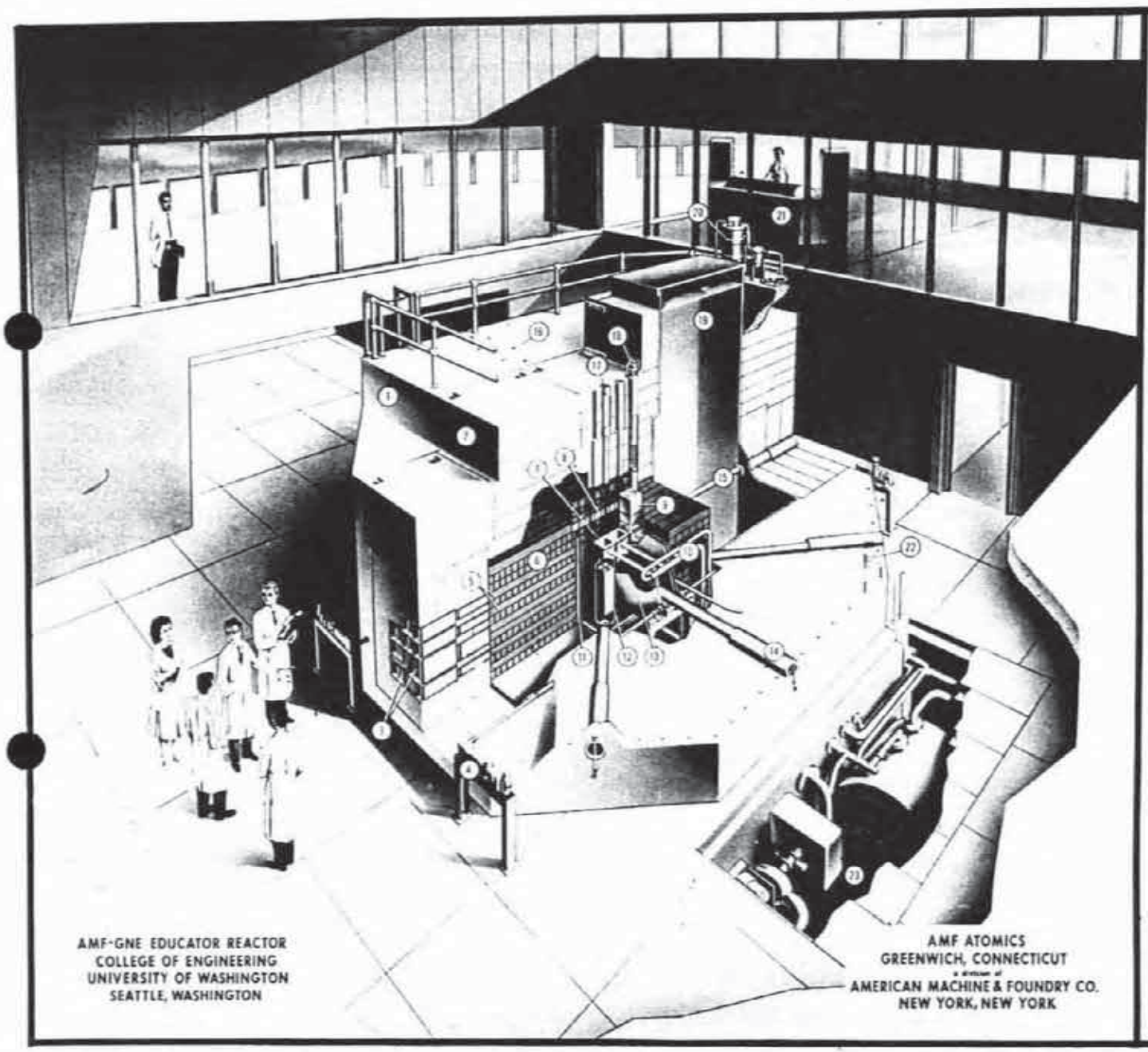


Images of the Nuclear Reactor Building published in *Arts and Architecture*, January 1963

NUCLEAR REACTOR BUILDING
zema, lovett, streissguth architects

UNIVERSITY OF WASHINGTON SEATTLE
TAAG jentoft and forbes contractors

original perspective rendering



1. HIGH DENSITY CONCRETE SHIELD
2. REMOVABLE CONCRETE SHIELD BLOCKS
3. THERMAL COLUMN ACCESS PLUGS
4. RIGHT ANGLE CONTROL DRIVE MECHANISM (4)
5. REMOVABLE GRAPHITE STRINGERS
6. GRAPHITE THERMAL COLUMN
7. FUEL ELEMENT BOXES (6)
8. LEAD BRICK SHIELDING
9. FUEL BOX SHIELDING PLUGS
10. COOLANT PIPING
11. LEAD GAMMA SHIELD
12. ENRICHED URANIUM FUEL ELEMENTS (24)
13. CADMIUM CONTROL BLADE AND PROTECTIVE SHROUD (4)
14. BEAM TUBE FACILITIES (6)
15. REMOVABLE BEAM TUBE
16. FOIL IRRADIATION TUBES (12)
17. VERTICAL EXPERIMENTAL TUBES (3)
18. NEUTRON SOURCE DRIVE MECHANISM
19. EXPERIMENTAL SHIELD TANK
20. SHIELD TANK PURIFICATION SYSTEM
21. REACTOR CONTROL CONSOLE
22. PNEUMATIC RABBIT FACILITY
23. PROCESS EQUIPMENT PIT – REACTOR COOLING AND VENTILATING SYSTEMS

diagram of reactor

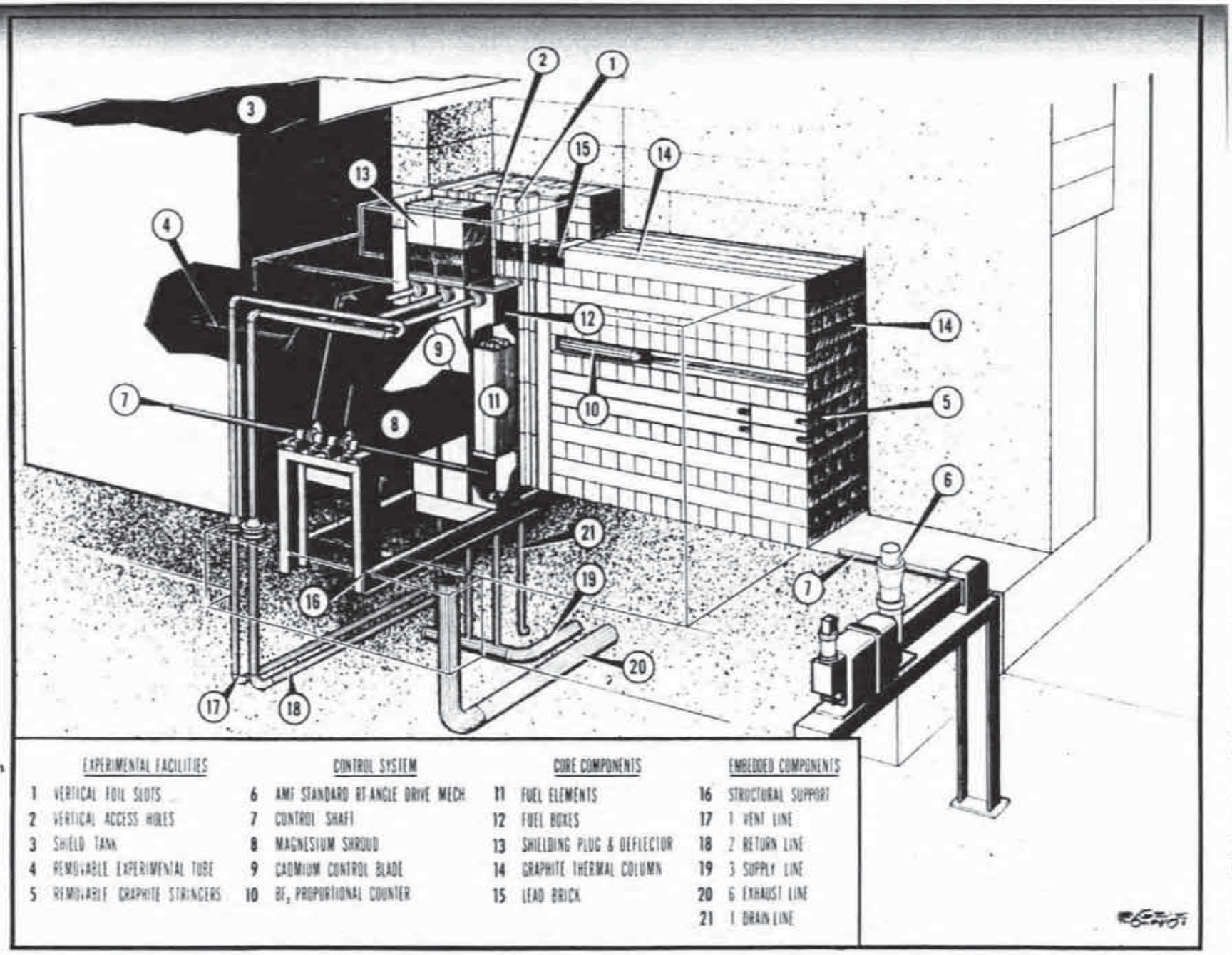


Figure 26. UWTR Core Area

Diagram of University of Washington Argonaut Reactor

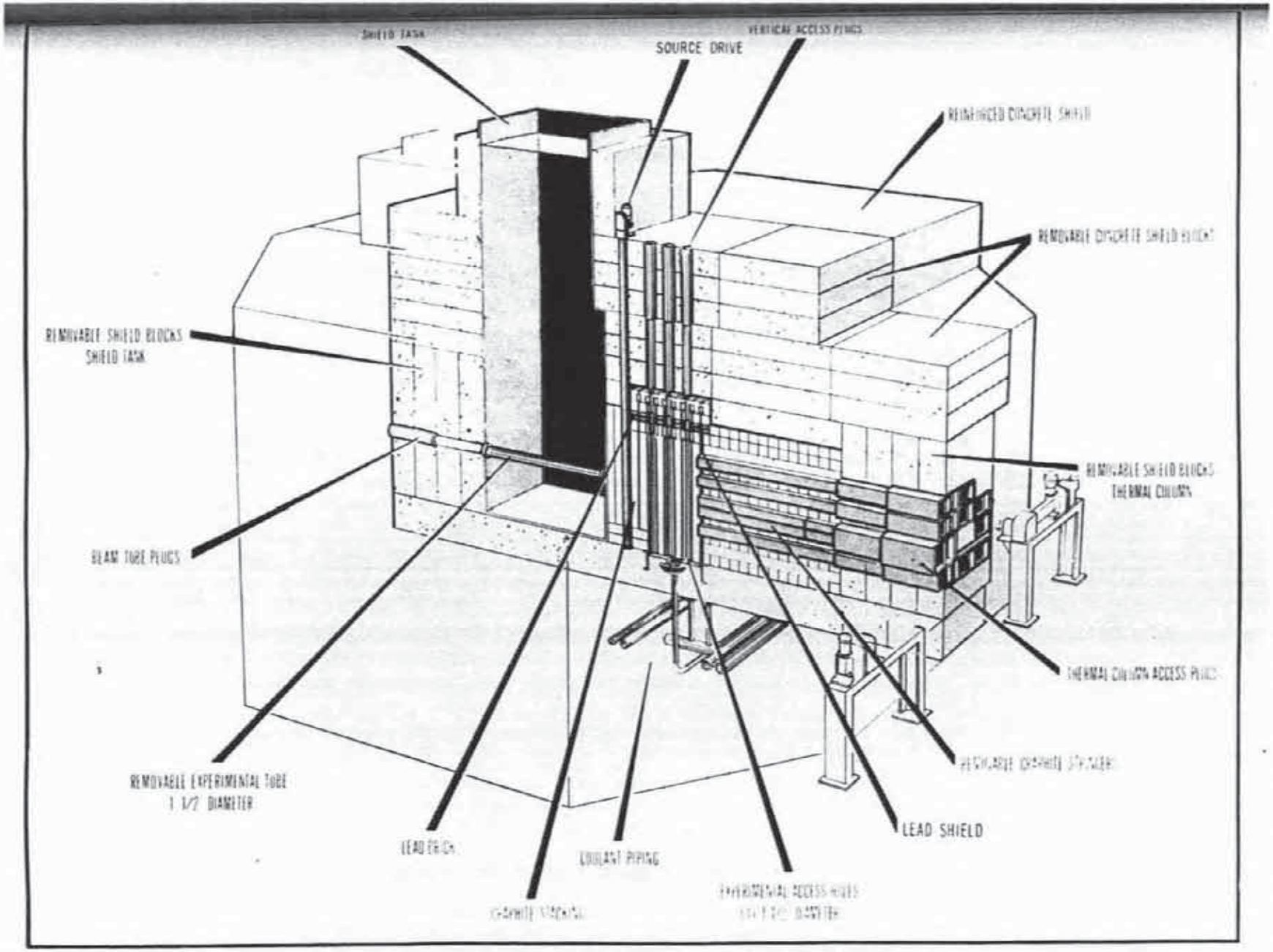


Figure 27. UWTR Longitudinal Section

Diagram of University of Washington Argonaut Reactor

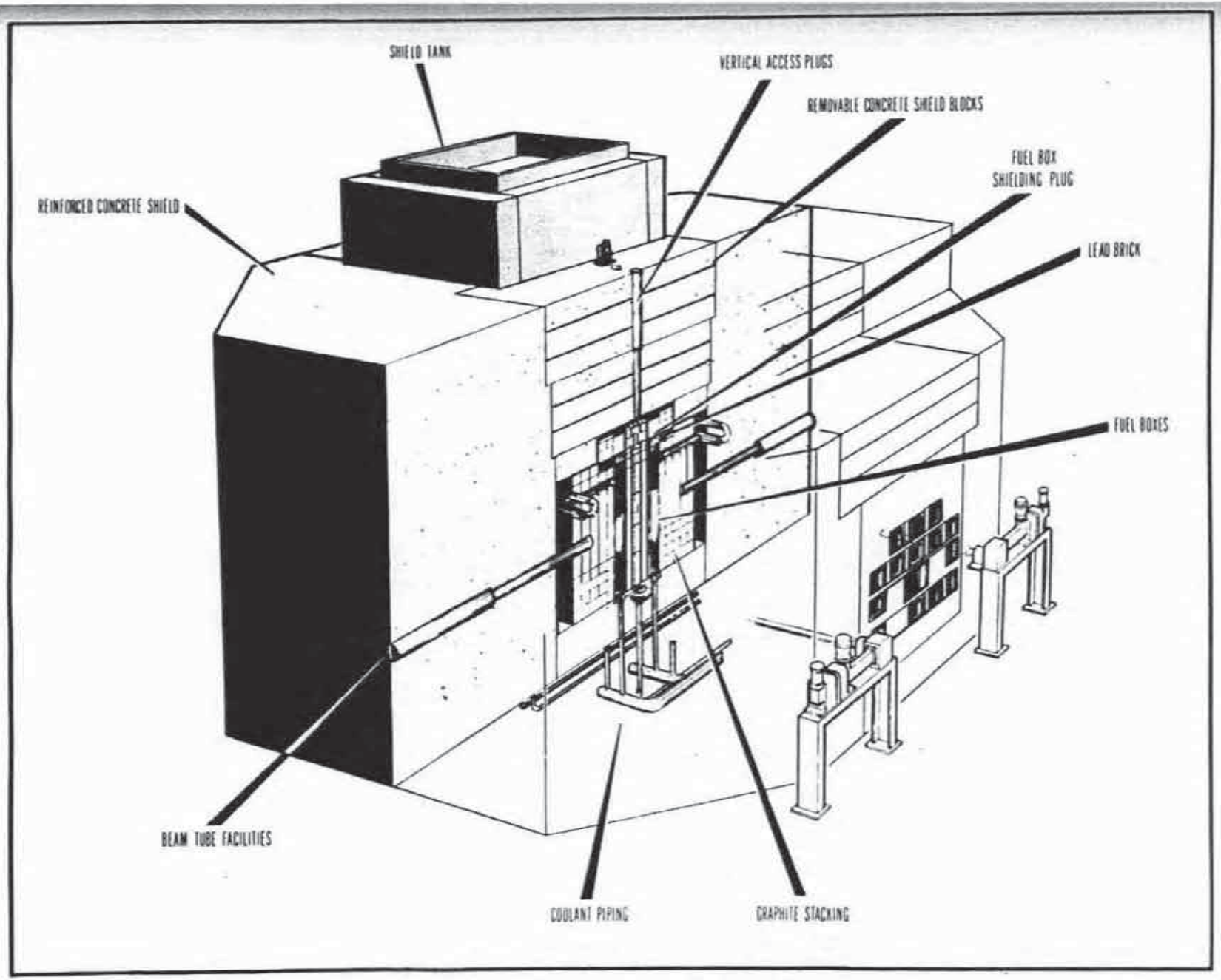


Figure 28. UWTR Transverse Section Through Core Center

Diagram of University of Washington Argonaut Reactor

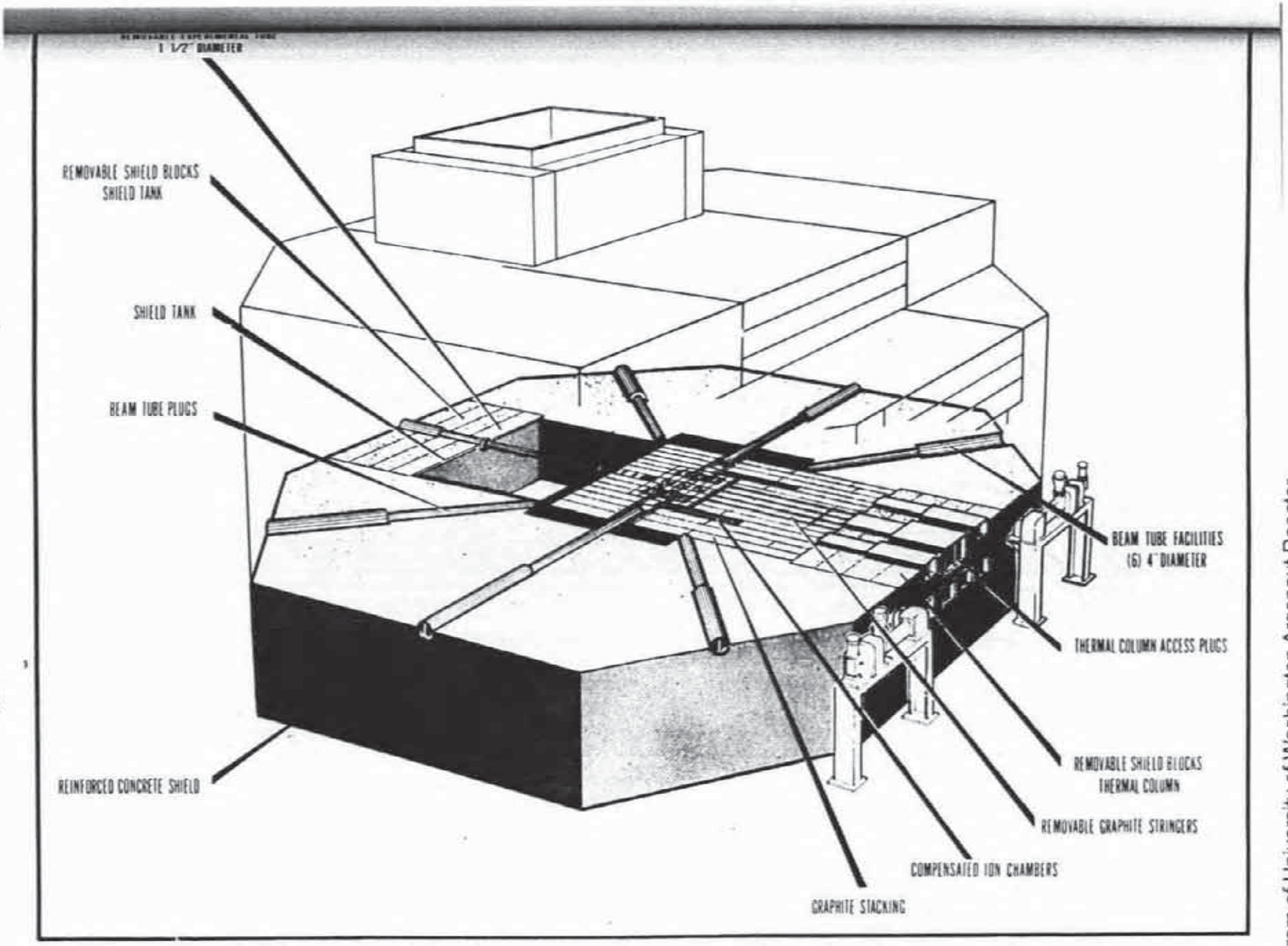
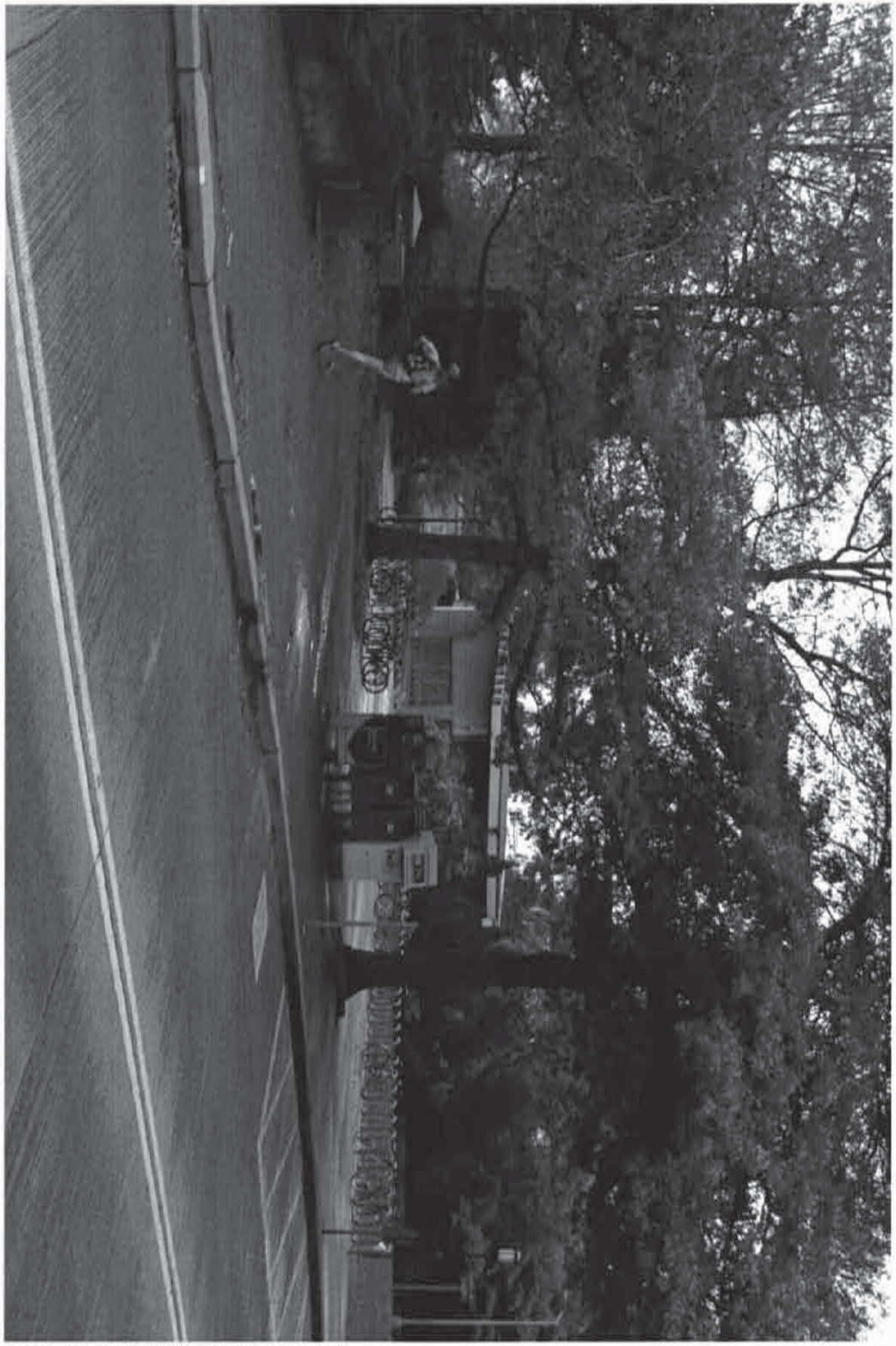


Figure 29. UWTR Horizontal Section at Beam Tube Level

Diagram of University of Washington Argonaut Reactor

Rear of Nuclear Reactor Building, looking North

Nuclear Reactor Building from adjacent plaza in the Engineering complex



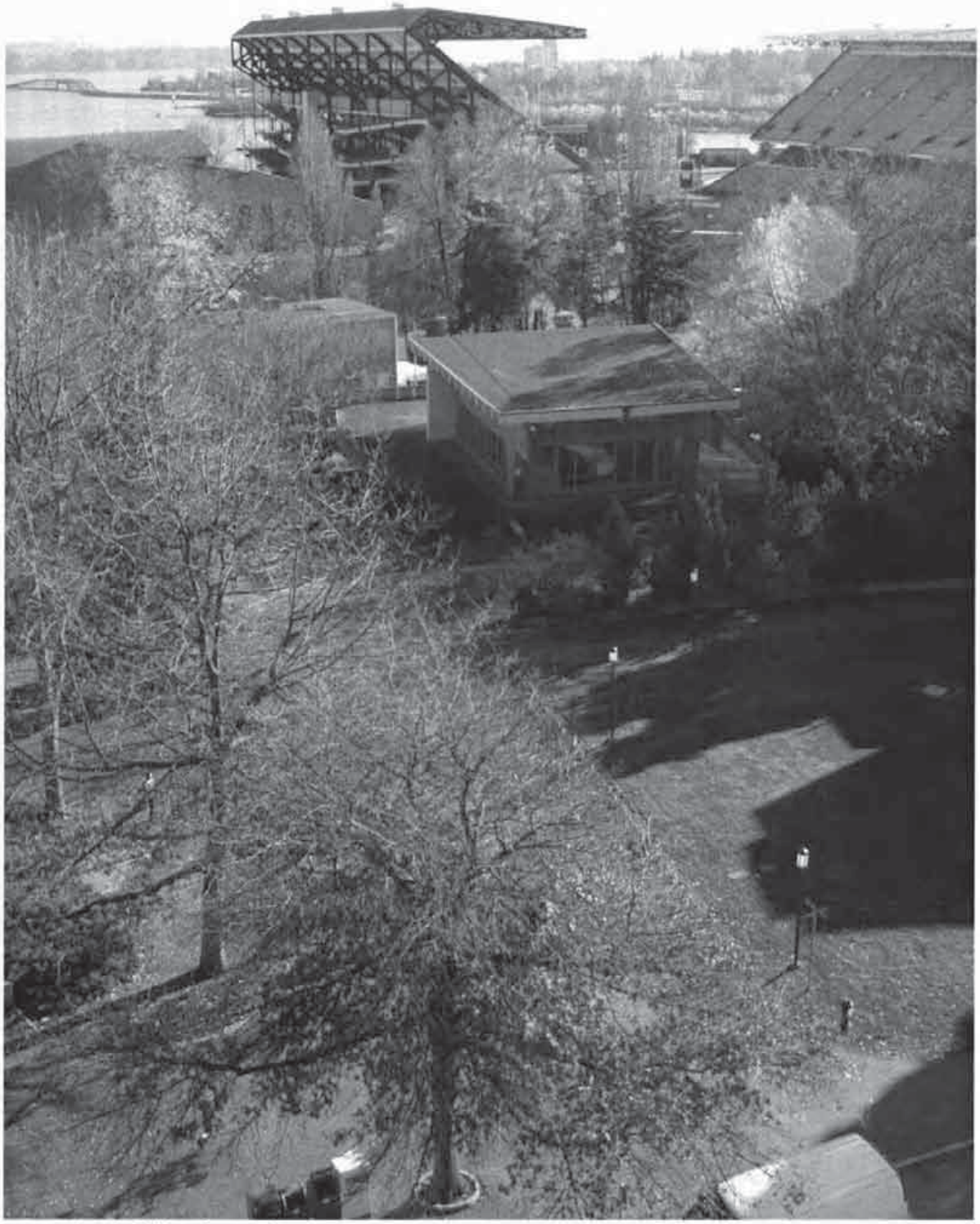
nuclear reactor building from Stevens Way

looking from the front (north) of the Nuclear Reactor Building across Stevens Way

Nuclear Reactor Building, Northwest corner

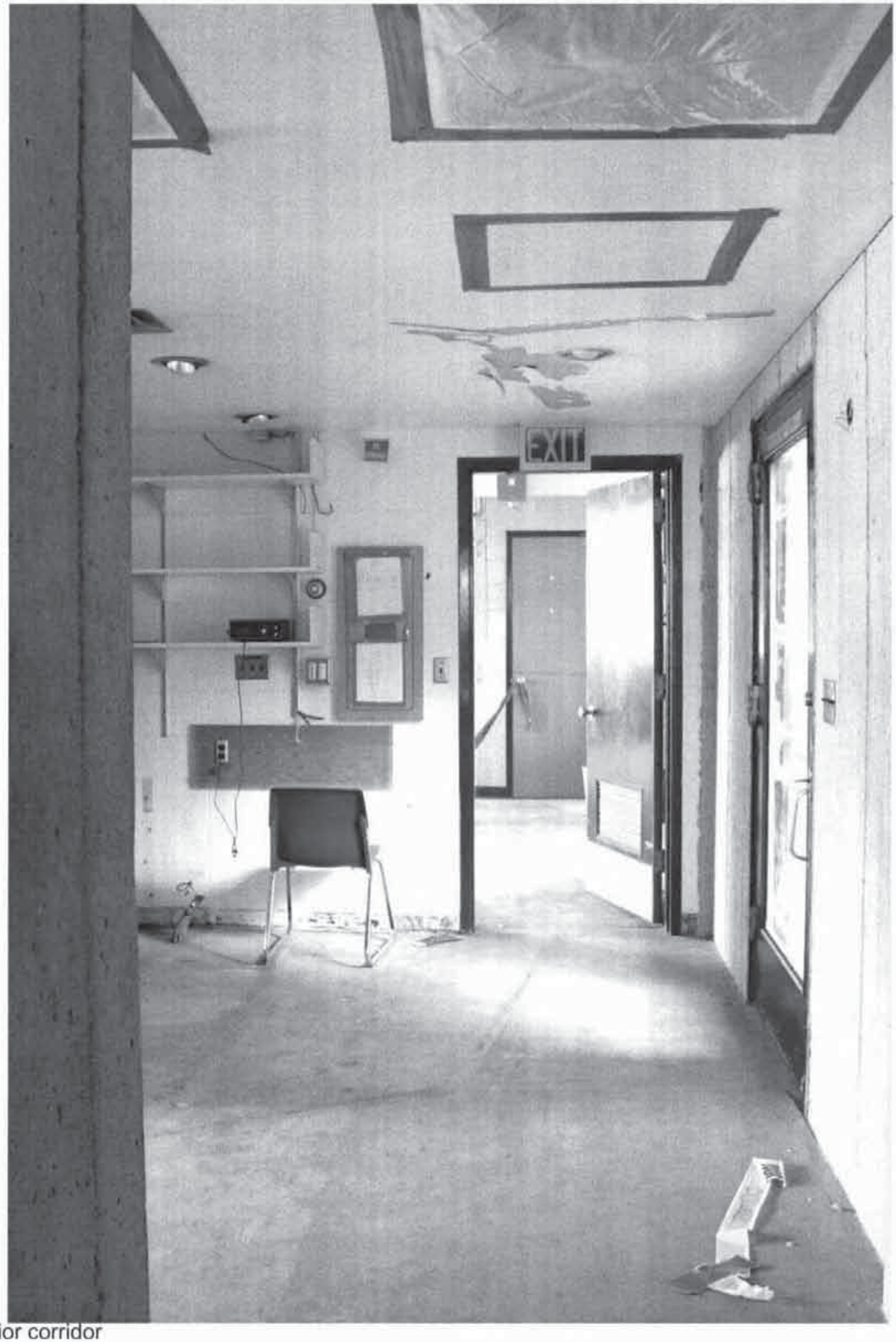
interior, looking into reactor room from control room

interior, looking into reactor room from lecture room

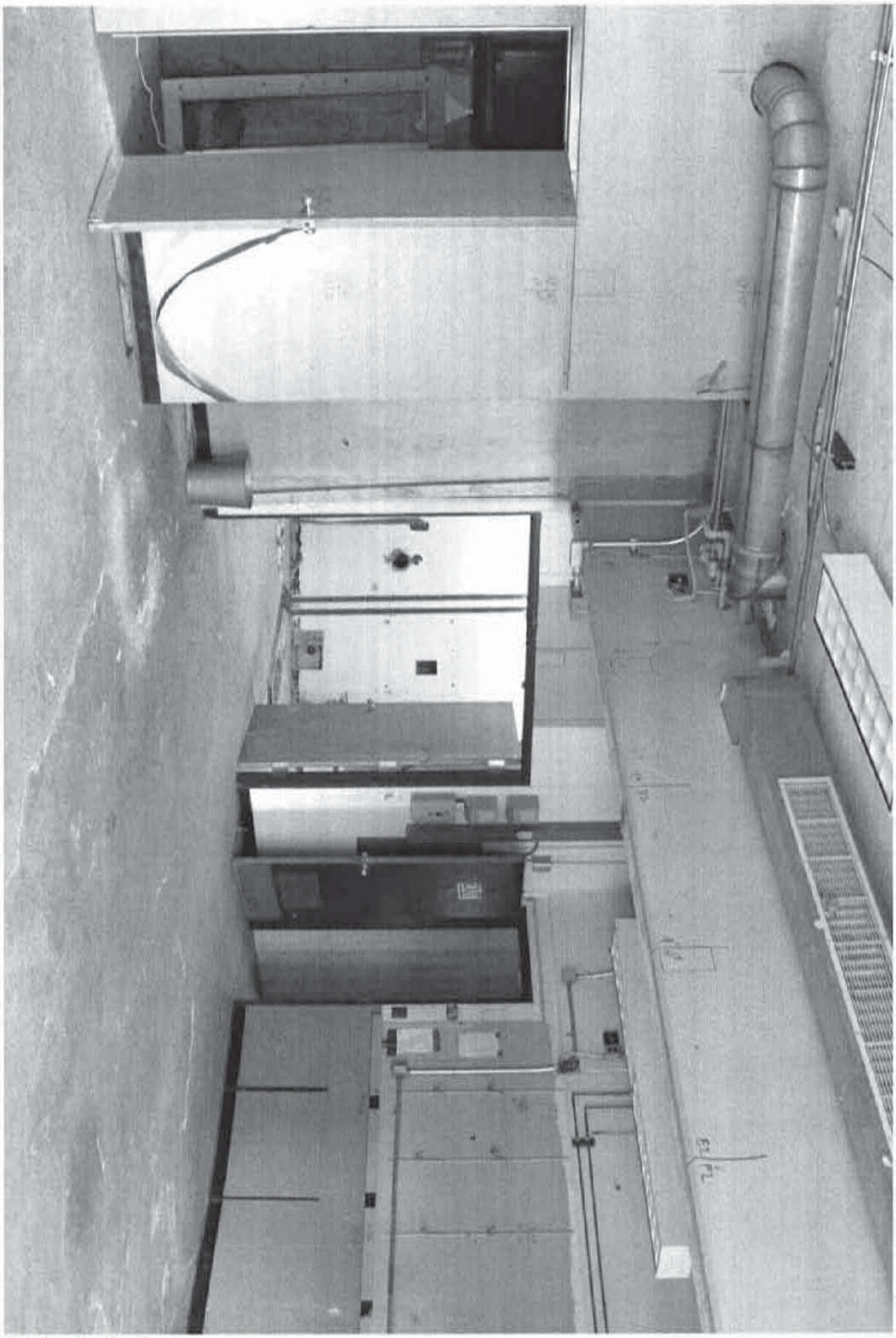


nuclear reactor building from above

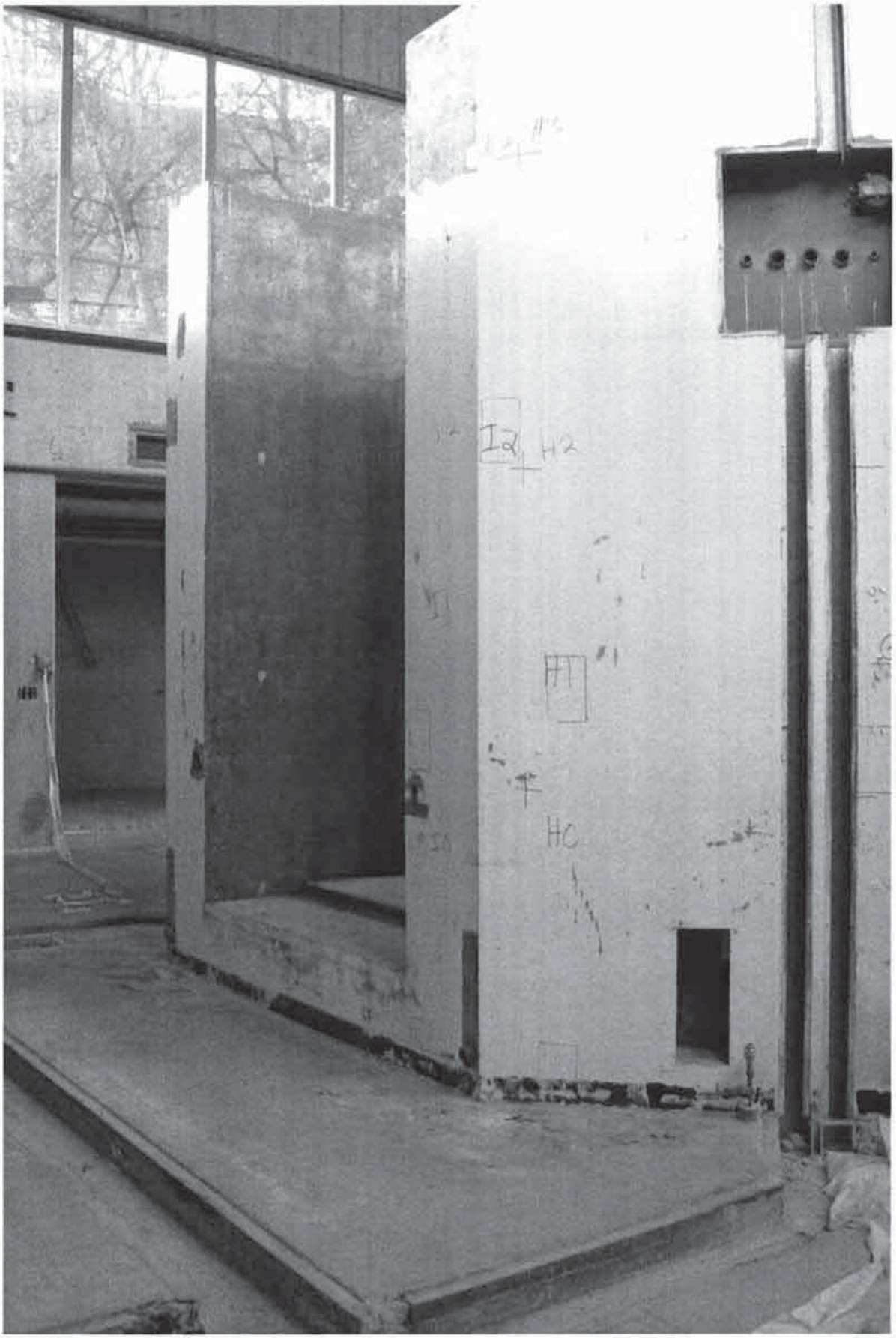
interior, reactor room, looking through reactor shell



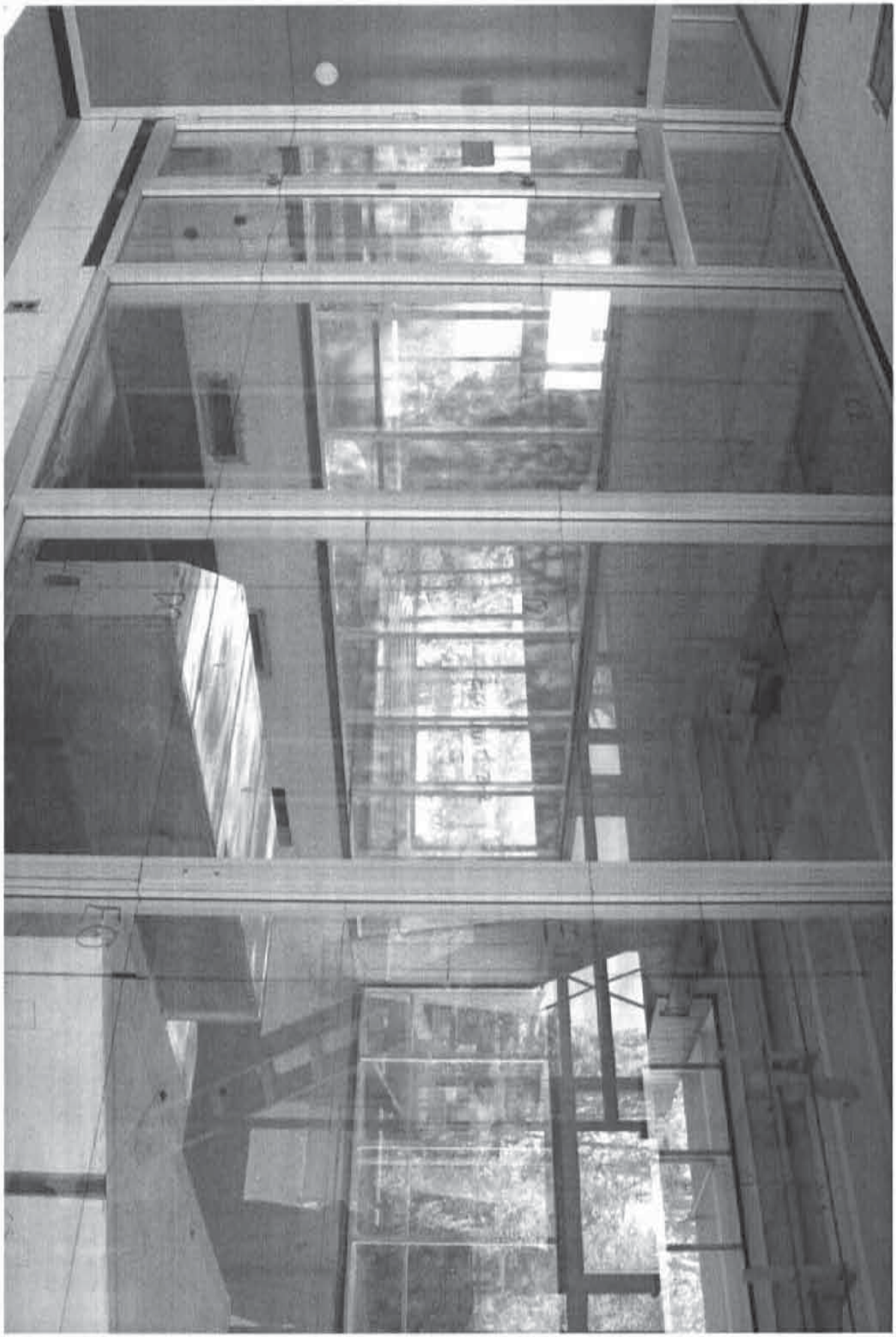
interior corridor



interior, electronic shop



interior, reactor room, looking northwest



interior, looking into reactor room from control room

Landmark Preservation Board Report on Designation: Seattle Japanese Garden

The City of Seattle

Landmarks Preservation Board

Mailing Address: PO Box 94649 Seattle WA 98124-4649
Street Address: 700 5th Ave Suite 1700

REPORT ON DESIGNATION LPB 298/08

Name and Address of Property: **Seattle Japanese Garden**
1075 Lake Washington Boulevard E.

Legal Description:

Washington Park Arboretum Legal Description:
Lots 1 thru 7, Block 1, Madison Park Addition together with Lots 6-7, Block 4, Bard-Foster Washington Park Addition together with portion of vacated Bard-Foster Washington Park Addition together with portion Washington Park in E 1/2 Section 21-25-4 & NE 1/4 Section 28-25-4 together with Blocks 13-14, Lake Washington Shore Lands Addition less State Highway.

Japanese Garden Boundary Description:
A parcel of land, lying within the boundaries of Washington Park, in the N.E. ¼ of Section 28, Township 25 North, Range 4 East, Willamette Meridian in the City of Seattle, County of King, State of Washington described as follows:
Beginning at the intersection of 26th Avenue East and East Highland Drive;
thence along the centerline of 26th Avenue East N 1˜50'20" E, 65.00 feet;
thence S 88˜23'25" E, 289.27 feet;
thence S 21˜13'25" E, 7.70 feet to the True Point Of Beginning;

Thence N 00˜35'23" W, 68.55 feet;
thence N 71˜07'10" E, 159.97 feet;
thence S 16˜20'18" E, 74.57 feet;
thence S 22˜48'37" E, 83.06 feet;
thence S 29˜29'27" E, 99.36 feet;
thence S 33˜07'15" E, 94.70 feet;
thence S 28˜23'23" E, 98.30 feet;
thence S 22˜33'30" E, 86.82 feet;
thence S 19˜04'38" E, 81.24 feet;
thence S 20˜05'38" E, 84.41 feet;
thence S 23˜52'39" E, 49.65 feet;
thence S 24˜57'47" W, 150.55 feet;
thence N 61˜56'17" W, 148.82 feet;

thence N 42˜19'08" W, 100.44 feet;
thence N 44˜36'03" E, 48.20 feet;
thence N 43˜27'58" W, 116.39 feet;
thence N 32˜32'24" W, 305.54 feet;
thence N 18˜51'46" W, 181.83 feet;
thence N 85˜36'34" E, 71.86 feet to the True Point of Beginning. Said parcel containing 4.37 acres. Bearings are based on Lambert Projection for the State of Washington, North Zone.

At the public meeting held on May 21, 2008, the City of Seattle's Landmarks Preservation Board voted to approve designation of the Seattle Japanese Garden at 1075 Lake Washington Boulevard East as a Seattle Landmark based upon satisfaction of the following standards for designation of SMC 25.12.350:

(C.) *It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, city, state or nation.*

(D.) *It embodies the distinctive visible characteristics of an architectural style, or period, or of a method of construction.*

(E.) *It is an outstanding work of a designer or builder*

(F.) *Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or city.*

DESCRIPTION

Current Appearance

The Seattle Japanese Garden is a 3½ acre enclosed site located in the extreme southwest corner of the Washington Park Arboretum. This 230-acre park occupies a long, narrow valley extending south from Lake Washington's Union Bay to East Madison Street. Lake Washington Boulevard winds through the length of the Arboretum west of center and serves as the primary access to the park. South of Madison Street, the Boulevard continues southeast towards the shores of Lake Washington. Arboretum Drive East is a secondary road through the Arboretum that roughly parallels the park's eastern boundary. The Montlake neighborhood borders the Arboretum to the west while the private, gated residential community of Broadmoor lies to the east. Broadmoor's 18-hole golf course wraps around the single family residences clustered at the center of the development and provides a green buffer for the park. East Madison Street, the major arterial along the southern end of the Arboretum, connects downtown Seattle to the southwest with the Madison Park neighborhood to the northeast. Named for the adjoining park, the Washington Park neighborhood lies south of Madison Street to the north of Lake Washington Boulevard.

Nestled at the base of a steep slope on the west, the Japanese Garden has a long, narrow and roughly rectangular outline bordered by Lake Washington Boulevard along its entire eastern margin. The garden's northern end terminates just south of the intersection of East Interlaken Boulevard and Lake Washington Boulevard. Beyond the southern end of the garden is the northern entrance of a large parking lot shared by the Washington Park Playfield situated further to the south. A small wooden sign positioned near the lot's entrance directs visitors to Japanese Garden parking. A second entrance off Lake Washington Boulevard provides access to the lot's southern end.

A short service road extends from the northwest corner of the parking lot to a pair of gates leading into the service area within the southwest corner of the Japanese Garden. The gates are set within a chain link fence topped with barbed wire that encloses the western end of the garden's southern boundary and continues along the entire western and northern boundaries. Just beyond the fence is a rough dirt trail that follows the fence line from the parking lot on the south to Interlaken Boulevard on the north. On the hillsides to the west and north of the garden, the vegetation of native trees, bushes and groundcover is largely untended in contrast to the landscaped areas found on the more public south and east sides and within the garden itself.

The chain link fence terminates at the northeast corner of the garden where a high cedar fence begins and continues the length of the eastern boundary and around the southeast corner of the garden. Following the contour of Lake Washington Boulevard, a paved sidewalk runs along much of the eastern side to a point just beyond the garden's original entrance gate where it transitions to a wide gravel path. North of this gate, a low hedge grows along the fence, while the beds south of the gate are planted with a greater variety of trees, bushes and shrubs. Known as the Emperor's Gate, this wood frame structure features a pair of paneled doors that open inward below a shingled side gable roof supported by carved brackets and simple side posts. Each door contains a narrow bamboo screen in the upper half. When open, the doors rest against wing posts set at angles from the gate posts and connected by short horizontal beams. The gate is recessed inward from the main fence, allowing rolling metal gates to secure the entrance.

At the southern end of the garden, the sidewalk continues to the parking lot, providing pedestrian access for the garden's visitors. A wide paved path leads from the sidewalk to the current entrance, known as the south gate, set within the cedar fence near the southeast corner of the garden. Dense plantings obscure much of the fence from view in this area. Shaped pine trees dot the lawn on either side of the entrance path, framing the view towards the gate. In contrast to the open view of the southeast corner of the garden, a small grove of evergreens screens the southwest corner and service road beyond. Along the sidewalk from the parking area, a small landscaped area features a wood sign mounted on a post indicating the direction to the Japanese Garden adjacent to a large granite boulder set with a small memorial plaque. The plaque honors the efforts of James K. Fukuda, who was with the Consulate-General of Japan in Seattle and was instrumental in the creation of the garden. Sheltering the stone is a *Paulownia tomentosa* or Empress Tree.

At the end of the paved entrance path, a small enclosed plaza is recessed from the main fence so as to allow rolling metals gates to secure the area containing the ticket booth and south gate. Built into the fence along the east side of the plaza, the small wood frame booth has a hexagonal plan with ticket windows set in the two exposed sides. The entrance is located at the rear within one of the four sides facing into the garden. The flat roof structure has small shingled shed roofs over the ticket windows. The wood frame garden gate consists of a pair of doors that open inward below a shingled side gable roof supported by carved brackets and simple side posts. Each paneled door contains a bamboo screen in the upper half. When open, the doors rest against wing posts set at angles from the gate posts and connected by short horizontal beams. On the east side of the plaza, two shallow display cases are mounted on the fence under a side gable roof of similar design to the garden gate. A low wooden bench on a concrete base provides the only seating in this area.

At the threshold of the gate, a large flat shedding stone is set into the pavement. Visitors are meant to pause on the stone and shed the outside world before entering the more contemplative realm of the garden. Beyond the gate, the paved path transitions to gravel as it continues into the garden. Along many of the garden paths, fencing in the form of low wood posts connected by ropes serves to prevent visitors from walking on the delicate mosses and other groundcover in the adjoining beds. Immediately after entering the garden, a large and very old Japanese lace leaf maple grows to the left of the path. To the east, a dry stream bed constructed of rocks, stones and pebbles meanders through banks covered with moss and Mondo grass and planted with trees, bushes and low shrubs. A *yukimi* or snow-viewing lantern, so named because its broad flat roof is designed to catch the falling snow, rests above the eastern bank near another large Japanese maple.

As the wide path proceeds north, a side path leads southwest to the service area, containing a pair of portable toilets, the garden's only restroom facilities, a small wood frame shed, and the ladders, wheelbarrows, hoses, tools and equipment used to maintain the garden. A stand of bamboo partially screens this otherwise open area from view. From the service area, a wide path continues north and parallels the fence along the western boundary of the garden before curving northeast to join the path along the pond's western shore. Just beyond the intersection with this side path, the main path splits into one leading northwest over a stone arch bridge to paths on the western side of the garden and one continuing north to paths along the eastern side.

Designed in 1959 and completed in 1960, the Seattle Japanese Garden contains the features of a stroll garden of the formal (*shin*) type built during the late 16th century Momoyama Period and early 17th century Edo Period. Using the techniques of *miegakure* or "hide and reveal," the stroll garden's design is intended to present a series of scenes as visitors walk through a series of sub-gardens centered on a pond or lake. In addition to the pond, popular garden elements include hills, streams and waterfalls, islands, rocks, groves of plum or cherry trees, paths and bridges, and tea gardens. All of these elements have been included within the design of the Seattle Japanese Garden with the intent of recreating natural and man-made landscapes within a compressed area. One of the garden's initial designers, Kiyoshi Inoshita, described his design intent in a 1959 report:

> The flow of water, which originated at the high mountain ranges, transforms itself as it continues its way through the landscape; first it turns into a waterfall, then into a stream, washing the bank by a tea hut, and finally becomes a lake. At the lakeshore are a variety of features such as a rock promontory, an inlet, and steep slopes, through which water continues its way, until it reaches a village (an image of the village symbolically represented by a cherry grove, iris paddies, and a moon viewing hill). At the village, there appears an island connected to the shore by two different bridges. At the end of the lake is a stone paved boat launch, which symbolically represents a fishing village. There, the water disappears from one's sight, leaving the expectation that it will be joining the greater ocean.

In executing this design intent for the Seattle Japanese Garden, principal designer Juki Iida incorporated an existing pond and existing plant material, primarily maples, and created several distinct landscapes or sub-gardens anchored by the pond at the center and connected by paths that provide various scenes to strolling visitors. Iida also used a compositional technique called *shakkei* or "borrowed scenery" to draw outside elements of the existing Arboretum into the views he created within the garden. This technique serves to extend the scale of the garden beyond its own boundaries.

Covered with a forest of conifers, maples and rhododendrons at the higher southern end, the mountain and hillside area contains two streams, one natural and one man-made, but both appearing to flow from the background hill to the west of the garden. Originating near the southwest corner of the garden, the natural stream follows a man-made rocky bed and flows downhill through a steep moss-covered slope and under the stone arch bridge before joining the second stream to form the lake. A large *Kasuga*-style lantern stands near the southern end of the stone bridge, which was constructed ca. 1936 as part of the original improvements to the Arboretum funded by the Depression-era Works Progress Administration. The man-made stream originates from a point northwest of the 11-tiered Korean-style stone pagoda, representative of a ruined mountain monastery, and flows east before cascading over a four-foot waterfall below the stone pagoda. Constructed of weathered granite boulders buried two-thirds underground, the waterfall is the focal point of the mountain area anchored by the largest stone in the garden, weighing some 8½ tons.

Below the waterfall, the water continues to flow through a rocky course, shifting direction and crossing a path of stepping stones before joining the first stream near the tea house, representative of a mountain villa. A small box-like stone lantern rests directly on the ground along the rocky course, seeming to shed light on the water as it passes. Below the junction of the two streams, water flows around a bridge of stepping stones and then into a wider bed, representative of a valley, and eventually becomes the lake. Just before the outlet to the lake, a second bridge of large, flat rectangular stones, representative of a dam, crosses the wider stream. Another *yukimi* or snow-viewing lantern rests on a nearby rock outcrop.

With its strong rock outcrops, projecting pebble beached cape and inlet, the southern end represents the pond in plateau while the marshy landscape of the more open northern end represents the pond in plain. At the middle of the pond, a rocky island covered with low

pines and bushes and connected to the east and west banks by two bridges separates the two halves. North of this is a second rocky island, known as Turtle Island, that is also covered with low pines and located near the eastern shore. The island's pines are said to symbolize Japanese cranes. Individual rocks dot the water near the pond's shoreline, including one off the southern end of Turtle Island that the pond's turtles often use to sun themselves. Lined with cut stone paths set at right angles, the rectilinear northern shore of the pond represents a fishing village and boat landing or harbor. At the northeast corner of the pond, the water passes under a wisteria arbor before disappearing from view in a culvert, metaphorically flowing out to sea. Due to the use of *miegakure* techniques, a full circuit of the paths around the pond is required in order to view all of its design elements as no one place within the garden offers a full view of everything.

From the southeastern corner of the pond, the gentle grassy bank projects north into a low, narrow rocky cape or peninsula, creating an inlet between the eastern shore. A small stone *misaki-toro* or "cape lantern" at the tip of the peninsula serves as a beacon. The cape is a popular spot for the great blue herons that visit the garden to rest and sun themselves. Along the eastern shore planted with maples, shaped pine trees and low sculpted bushes, the grassy bank slopes gently towards the water's rock lined edge. At the midpoint of the pond, a path leads from the Emperor's Gate, the garden's original entrance, and through a stand of five vertical pines to the eastern bridge. Set amongst the pine trees is a large *Kasuga*-style lantern dedicated to the memory of Carl McNeilan Ballard, who was president of the Arboretum Foundation from 1955 to 1957 when planning for the Japanese Garden initiated.

The eastern bridge is a *dobashi* or earthen bridge constructed of small logs set over a timber frame supported over the water on a pair of posts at the center. A layer of earth or concrete covers the logs before being topped by gravel. A path set with wide flat stepping stones winds across the small island to the western bridge. This *yatsuhashi* or "eight-plank" zigzag bridge has two changes of direction before reaching the western shore. Square posts set in the water support the plank deck and continue above it to support the low railings. It is said that the zigzag form enables one to avoid the evil spirits that flow in straight lines.

Nearby on the western shore is the pond's moon-viewing stand or platform of similar construction. This wood-frame structure has a square plan and extends over the water, facing southeast towards the apparent path of the rising moon. However, the hills beyond the garden obscure the moon rising above the eastern horizon and only allow it to be visible when well up in the sky. Like the *yatsuhashi* bridge, the square posts set in the water at the outer corners support the plank deck and continue above it to support the railing that encloses three sides of the platform. Additional shorter posts set in the water provide structural support around the perimeter and at the center. The focus of late summer ceremonies that celebrate the rising of the moon, the platform is also a good place to view the large colorful koi that inhabit the pond. Along the western shore planted with trees and low shrubs, the grassy bank slopes gently towards the water lined with beds of Japanese iris, reeds, and other aquatic plants. Near the northern end of the shore, a stone reflecting lantern set on a shaft rises above the water adjacent to a large stone. This is another snow-viewing lantern of the *tachi-yukimi* type.

The more natural state of the eastern and western shores contrasts with the more formal appearance of the northern shore, representing the fishing village and boat landing. Beyond the waterline edged with rocks, a nearly flat grassy bank extends upward to a wide path set with narrow bands of cut stone. This path follows a zigzag route near the base of a seven foot stone wall that extends across the full length of the northern shore. Near the western end of the path, a set of wide shallow stone stairs leads down to the water's edge. At the corner of the area representing the boat dock, a stone *omokage* or "face-shape" lantern illuminates the harbor area. Several low benches provide seating within the grassy margin between the path and the wall.

A set of wide stone steps leads up to a path that skirts the top of the wall covered with low sculpted shrubs below a hillside planted with azaleas. Near the top of the slope and the garden's northern boundary, the Kobe Friendship Lantern is reached by a series of irregular stone steps. This *Kasuga*-style stone lantern was a gift from Seattle's sister city and carries a small plaque that reads "May the Light shine Everlastingly upon the Friendship between Kobe and Seattle." The City of Kobe donated a second lantern in the *okazaki* style with a turtle carved at the base that occupies a site near a bench within the grassy area beyond the southeast corner of the pond.

The eastern end of the path along the top of the wall follows a steep slope down to the northeast corner of the garden. Another *Kasuga*-style lantern stands at the base of the path aligned with the end of the cut-stone path of the fishing village area. The path continues south to the wisteria arbor where it splits to cross a low, arched wood plank bridge on the east and a bridge of irregular stepping stones to the immediate west. Cedar corner posts and diagonal braces support a square frame of cedar and bamboo tied together with bark rope imported from Japan. The wisteria's gnarled main trunk grows at the northeast corner with interweaving branches trained upward, over and through the bamboo framework. Dense green foliage covers the top of the arbor and typically fills with blossoms in mid-May. The wisteria arbor covers the outlet to the lake and serves as an entrance to the fishing village.

Above the path along the western shore of the pond, an orchard planted primarily of flowering cherry trees covers the grassy slope. Japan is deservedly famous for its cultivation of cherry trees over the centuries, and its festivals held in conjunction with the tree's spring flowering. Considered the national flower, the cherry blossom (*sakura*) is celebrated in the country's arts, crafts and literature. At the northwest corner of the orchard, an *azumaya* or viewing arbor occupies the high ground near the chain link outer fence screened with bamboo matting in this area. The earthen steps leading up to the open east side of the *azumaya* are constructed of rows of short concrete posts that simulate sections of wood logs set vertically. The wood frame structure is a marvel of Japanese joinery, especially the interior framing of the low-pitch, pyramidal roof. Covered with wood shingles, the roof rests on four tapered corner posts mounted on a concrete pad. A low bench is built into the north and west sides between the posts, providing a restful place to view the cherry orchard and the garden beyond. Attractive plantings of ornamental grasses, low bushes and flowering shrubs grow on the banks beyond the south and east sides.

Further south along the western path on the bank beyond the moon viewing stand is a *Betula pendula* or European white birch tree. Crown Princess (now Empress) Michiko of Japan planted the tree, a symbol of her family, in a formal ceremony during her visit to the garden on October 5, 1960, shortly after it was completed. The Crown Princess had accompanied her husband, Crown Prince (now Emperor) Akihito, on a tour of the United States to commemorate the centennial of the first trade and friendship treaty between the two countries. On the same visit to the garden, the Crown Prince planted a cherry tree to symbolize Japan and his family.

Occupying a knoll above the southwest corner of the pond, the Japanese Tea Garden or *roji* (literally "dewy ground") is an enclosed garden, containing the six-mat *chashitsu* or teahouse, Shoseian (Arbor of the Murmuring Pines), and a *machiai* or waiting arbor. Surrounded by a hedge of boxwood, cedar and osmanthus, the *roji*, a term that originally referred to the path leading to the teahouse, is designed to prepare guests for *chanoyu* or tea ceremony by recreating a tranquil forest glen in a mountain landscape. As in the larger Japanese Garden, the hide and reveal techniques of *miegakure* are employed so as not to allow for an open view of the *roji* in its entirety. This is true both within the *roji* and outside, where the hedge enclosing the garden screens most views. Even with this screening, the teahouse at the center of the *roji* is still a major focal point for the larger garden. The original 1959 teahouse donated by the City of Tokyo burned in a 1973 arson fire. Following the plans for the original structure, the current teahouse was completed in 1981 with major funding provided by Urasenke Foundation of Kyoto to serve as a classroom for the study of Chado at the University of Washington. Shoseian is maintained by the Seattle Branch for University of Washington Chado classes, community classes, seasonal tea gatherings, special events and tea presentations.

While paths surround the *roji* on all sides, there are only two entrances, one on the rear west side and one on the east side facing the pond. The rear service entrance is meant to be used by those performing the tea ceremony to give them access to the back entrance of the teahouse while the front main entrance is meant to be used by the guests who will be participating in the tea ceremony. For each entrance, a *shiorido* or wood and bamboo lattice gate held shut by a strand of woven rope stands within a break in the hedge. The service entrance is level with the adjacent path, but the main entrance is reached by a flight of irregular stone steps. These gates provide access to the outer (*soto*) *roji*, the brighter northern half of the tea garden where guests wait to be called to the tea ceremony on the covered bench in the *machiai*. A wood and bamboo lattice fence separates this area from the inner (*uchi*) *roji*, the shadier, darker southern half where guests pause to purify hands and mouth in a ritual at a *tsukubai* or stone basin before entering the teahouse.

Upon entering the *mon* or main gate, guests follow a meandering path of irregular stepping stones (*tobiishi*) to reach the *machiai* just beyond the gate to the northwest. Although there is a paved path from the service entrance to the rear of the teahouse, irregular stepping stones are used for all paths within the *roji*. The meandering nature of the natural stone paths is designed to slow the guest down and reveal the landscape gradually, thus increasing the sense of space and passage. The smaller stepping stones are intended to make one look down and pay careful attention to one's steps while the larger stones allow one to pause and look

up, all in preparation for the tea ceremony as part of the transition from the mundane world to the realm of tea. The stones also protect the delicate mosses that cover the ground of the *roji* in imitation of a forest glen.

The *machiai* is a wood frame structure comprised of an open seating area with a rectangular plan facing east and an enclosed area that wraps the north and west elevations. Traditionally, this enclosed area would have contained lavatories and changing rooms for the convenience of guests. Access to the enclosed area is provided by *shoji* screen doors located on the east and south ends. A shed roof covers the enclosed area on the rear west elevation and continues as a gable roof over the east half of the north end of the structure. A low-pitch gable roof covers the open seating area but extends only a few feet beyond the ridge over the enclosed area at the rear. Wood shingles cover both roofs, which also feature carved caps at the ends of the ridges. Around the exterior, the structure's vertical peeled cedar posts are exposed between panels plastered with stucco in the upper half and vertical wood paneling in the lower. Stucco covers all of the panels within the open seating area set with a low wood bench along the west and north sides. There is no floor within this area covered with small rocks and set with a continuation of the irregular stepping stones that lead from the gate. The largest stone below the southern end of the bench is meant to indicate the position of the most important guest. A small window screened with bamboo in the southern end of the building allows the guest in this position to view the gate leading to the inner *roji*.

Once guests are summoned, they follow a second path of stepping stones to the *chumon* or middle gate within the fence that extends from the rear east elevation of the teahouse. Once inside the inner *roji*, the guests proceed to the southeast corner where the *tsukubai* is located, enabling them to rinse their hands and mouth before the tea ceremony. Adjacent to the *tsukubai* is a stone *oribe* lantern, both of which were donated by the City of Tokyo in 1959 along with the original teahouse. The original teahouse was built by craftsman in Tokyo and then disassembled and shipped to Seattle where it appeared on display at a Washington State trade fair before being reassembled on this site prior to the creation of the Japanese Garden. Post and lintel construction with Japanese joinery, which requires little or no use of nails, screws or other fasteners, enabled this assembling and disassembling to occur relatively easily. As near as possible, the same construction techniques and the original plans were used when the current teahouse was rebuilt of cryptomeria and western red cedar, creating a near duplicate of the original destroyed by arson fire.

Known as a six-mat teahouse, this size refers to the fact that six *tatami* mats cover the floor of the *chaseki* or tearoom, with each *tatami* mat measuring 90cm by 180cm or roughly 3 feet by 6 feet. The functions of the teahouse dictate its form with its interior arrangement of rooms expressed on the exterior of the building. The *chaseki* is the main room within the teahouse and features a *tokonoma* or alcove along a portion of the rear north wall. The two rooms of equal size immediately adjacent to the *chaseki* are an entry foyer at the northwest corner and a *kyujima* or service and preparation room at the southwest corner. A *mizuya* or small kitchen or pantry with storage shelves and a sink area extends off the service room, enclosing the western side of the *doma* or covered terrace at the front of the teahouse. A shallow storage closet extends along the west side of the *mizuya* and *kyujima*. This storage space was not part of the original teahouse's design but added when the teahouse was rebuilt.

A low square, wooden platform or stool occupies the center of the *doma* in front of the main entrance to the *chaseki* screened with sliding *shoji* doors and accessed by a large rectangular stone known as a shoe stone. This platform can be used for outdoor tea ceremonies. Two low wooden benches provide seating within the *doma* along the south and east sides.

A low pitch gable on hip roof clad with copper sheeting covers the teahouse and extends over the *doma* where it is supported on peeled log posts. The wood frame structure of the teahouse is exposed between panels plastered with stucco in the upper half and vertical wood paneling in the lower half, similar to that of the *machiai*. Sliding wood screens line the east elevation of the *chaseki* and adjacent *tokonoma*. Two sliding wood *shoji* doors are set within the north wall of the entry room at the rear of the teahouse. Windows screened with bamboo grills line the upper west wall of this room. The only other window is on the south wall of the *mizuya*. A narrow door within the east wall of the *mizuya* allows direct access to the *doma*. A concrete pad serves as the foundation for the entire structure, including the *doma*. A narrow channel of gravel lines the outer edge of the concrete pad and serves to catch the rain falling from the gutterless eaves of the roof. Another path of stepping stones leads from the south end of the *doma* and around the west side of the building to a gate within a fence that extends from the northwest corner of the teahouse. This fence also serves the function of separating the inner and outer *roji*. The path continues to the paved path off the rear service gate.

Original Design

An examination of the original drawings for the Japanese Garden shows that much of the original design was executed as intended when the garden was created in 1960 or shortly thereafter. However, a major departure was the omission of a large club house or pavilion that occupied a terrace above the fishing village at the northern end of the garden. The drawings also show a spacious "front yard" north of this structure. It appears that this would have pushed the boundary of the garden further to the north. The drawings also show that the *azumaya* or viewing arbor was not constructed in the plan's original location within the center of the cherry orchard and but at its northwestern edge. One major landscape element, a *zoukirin* or mixed forest, was not realized as planned within the northwest area of the garden between the cherry orchard and club house. A camellia glen on the east side of the pond was also omitted. Due to security concerns, the plan to enclose the garden with a 4½-foot evergreen hedge was abandoned in favor of a chain link fence topped with barbed wire.

Subsequent Alterations

With the exception of the replacement of the original teahouse due to arson fire, the greatest change since the creation of the Japanese Garden has been the growth of the plant material over the years. Early photographs show more open views before the garden matured to its present state. Major and minor maintenance and rehabilitation projects, including several focusing on the pond and its circulation system, have been carried out over the years, but all have been executed with the intent of maintaining the original design. Other projects have served to improve the ADA accessibility of the garden's paths and bridges. While the design has remained intact, the majority of alterations have occurred around the perimeter with changes in fencing and in the entrances. As funds have allowed, the inappropriate chain link

fencing on the more public south and east sides has been replaced with cedar fencing. Shortly after the garden was completed, the main gate on the east side was supplemented by the construction of a second gate at the south end. This was initiated primarily because little parking was available near the main gate while a large parking area was already located south of the garden. Eventually, the main gate was closed only for special occasions, leaving the south gate as the primary entrance into the garden. The current entry plaza was completed in a 1987 project that added the ticket booth, relocated from the Seattle Center, and the rolling security gates. At the same time, rolling gates were installed at the original gate for security purposes. Portable toilets have also been installed in the service area so as to provide restrooms within the garden, the nearest permanent facilities being those located at the Washington Park Playfield or the Arboretum's Graham Visitors Center.

STATEMENT OF SIGNIFICANCE

Washington Park Arboretum Historical Context

The long, narrow valley now encompassing the 230 acres of the Washington Park Arboretum extends north from East Madison Street to the southern shore of Lake Washington's Union Bay. Historic maps show a stream meandering north through this valley before discharging into the southwest corner of Union Bay to the west of Foster Island. Until the 1916 opening of the Montlake Cut dropped the level of Lake Washington by almost nine feet, Union Bay and its low-lying marshes covered a significantly larger area, and Foster Island was isolated and much smaller in size. The steep eastern slopes of Capitol Hill define the southern half of the valley's western edge while a relatively low-lying area of land now occupied by the Montlake neighborhood lies along the northern half. Originally, this area was part of a larger hourglass-shaped strip of land that connected north and south Seattle and separated the waters of Lake Union's Portage Bay to the west and Union Bay to the east. A small brook flowed west across this narrow isthmus roughly following the route of today's SR520 and emptied into the southern end of Portage Bay, forming a shallow natural portage between the two bodies of water. Along the southwestern margin of the Montlake area, the high bluffs of Capitol Hill's northern end terminate in a deep wooded ravine, now preserved as Interlaken Park. Beyond the valley's eastern edge, the terrain rises to a high point within the gated Broadmoor community before gently sloping down to the shores of Lake Washington in the Madison Park neighborhood. Although land in the vicinity easily accessible by water was platted as early as the 1860s, these natural features restricted overland access from adjoining areas, delaying significant residential development until the first decades of the 20th century.

From the earliest days of Euro-American settlement in Seattle, the narrow neck of land between Lake Union and Lake Washington was seen as a logical location for a canal uniting these two major inland bodies of water. Previously, Duwamish Indians, an Original Peoples of the area, had used the brook across the isthmus as a canoe portage in order to travel between seasonal campsites and villages established in the area and points beyond, including several along the shores of Union Bay. As envisioned by settlers, the construction of additional canals to the west would link the two lakes with Puget Sound, facilitating the development of industry and commerce. In anticipation of this, pioneer settler Thomas Mercer proposed the "Lake Union" and "Union Bay" names to those gathered for

Independence Day celebrations on July 4, 1854. In the late 1860s, it also inspired Harvey L. Pike to name his newly platted town on the low neck of land "Union City," an area comprising sixteen blocks located to the north and south of a strip of land designated as the "Canal Reserve." Pike had turned his sights towards real estate development after an unsuccessful attempt to excavate a canal across the lower portion of the isthmus, using only a pickaxe, shovel and wheelbarrow. At the time Pike recorded his first plat in the summer of 1869, this area was considered far from the center of town in Pioneer Square and located just outside the Seattle city limits incorporated in December of that year with a northern boundary at Galer Street. Unlike other outlying areas where larger parcels were platted to serve as farms, Union City's small lots anticipated denser residential development that would not commence for almost forty years.

Over the next two years, Pike filed two additional plats to the north and south of "Union City" and then sold the rights to develop the canal in 1871 to the Lake Washington Canal Company, of which he was one of the incorporators. Pike probably anticipated that he would benefit from both the construction of the canal and real estate development in his town site. After failing to obtain federal support for the project, the firm built a narrow gauge railway to transfer coal extracted from east side mines between Lake Washington barges and Lake Union barges. Within a few years, this railway was abandoned when a rail outlet via Renton became available, and the tracks were removed in 1878. Five years later, a second attempt was made to excavate a canal across the isthmus. However, this effort proved more successful as the Lake Washington Improvement Company managed to construct a canal deep enough to float logs and small boats between the two lakes. Organized in 1883 by Judge Thomas Burke and pioneer entrepreneur David Denny among others, the company hired Chinese labor to complete the project by the mid-1880s. Dams and sluice gates regulated water flow through a narrow channel bordered by steep banks. Later, this channel was deepened and widened. Logs transported through what came to be called "The Portage" were stored in the millpond at the southern end of Portage Bay before being transferred to the sawmills at the south end of Lake Union, including one owned by David Denny. Shortly after the completion of the canal, Judge Burke joined with entrepreneur Daniel J. Gilman and others to organize the Seattle Lake Shore & Eastern Railway line, which reached Union Bay in 1887. Now the route of the Burke-Gilman Trail, this railroad skirted the northern shoreline of Lake Union and looped around Union Bay before heading north to continue along the western shore of Lake Washington.

The successful canal venture and improved access provided by the new railway line failed to spur the real estate development envisioned by Harvey Pike when he platted "Union City" and its subsequent additions. Limited access to the Montlake area remained a primary obstacle to its development. Although a wagon road connected the area to Capitol Hill and the new University of Washington campus by the mid-1890s, no streetcar or cable car lines served the neighborhood until 1909, well after the city's first lines were developed in the late 1880s and early 1890s. As is apparent on maps of the era, growth progressed in a linear fashion along the routes of these public transportation lines, accelerating the trend for residential and commercial development outside the city's original downtown core. This was the case with the Madison Street Cable Railway constructed in the late 1880s. With the financial backing of other individuals, Judge John J. McGilvra developed the line from

downtown Seattle in order to provide access to the large tract of land he owned at the eastern end of Madison Street. A native of New York, Judge McGilvra came to Olympia in 1861 after President Abraham Lincoln appointed him United States Attorney for the Washington Territory. When his term ended three years later, Judge McGilvra moved to Seattle where he acquired several hundred acres of land on the shores of Lake Washington and built a home for his family, which he called Laurel Shade. By the later 1860s, Judge McGilvra had cut a wagon road straight through the wilderness to Pioneer Square at his own expense.

For many years, the McGilvras remained the only permanent residents of today's Madison Park neighborhood even after Judge McGilvra platted two large tracts of his property south of Madison Street in the mid-1870s. In 1889, Judge McGilvra platted a third addition in the Madison Park area, mostly to the immediate south of Madison Street. At the same time, Judge McGilvra retained ownership of a large tract of land north of Madison Street and divided it into individual lots as well. However, with these lots, Judge McGilvra stipulated that only cottages could be built and solely on a leasehold basis. After constructing their dwellings, owners would be required to make annual payments for the use of the lots. Despite these limitations, many chose to build cottages on the small lots, which remained in the ownership of the McGilvra Estate until the land was eventually platted as the Loch-Gilvra Addition in 1919 and made available for sale.

As a spur to development, Judge McGilvra constructed the Madison Street Cable Railway and set aside more than twenty acres of land to create Madison Park, a private amusement park at the Lake Washington terminus. At that time, streetcar and cable car lines often terminated at a popular attraction so as to encourage real estate development along the length of the line and to increase ridership outside of regular commuting hours, especially on weekends. Bisected by Madison Street, Madison Park featured a large pavilion, a boathouse, piers, a promenade, and two floating bandstands with shoreline seating. Nearby, a crude baseball diamond was built on the north side of Madison Street, which hosted the first professional baseball game in Seattle on May 24, 1890. With cable cars running from Pioneer Square as often as every two minutes on Sundays, the park soon became the most popular beach in the city. Steamships plied the lake from the park's piers, carrying passengers for transportation as well as pleasure excursions and cruises. Despite these enticements, residential and commercial development progressed slowly, radiating east from downtown and, to a minor extent, west from Madison Park. Annexation of the area by the city of Seattle also did little to encourage residential or commercial growth. The North Seattle Annexation in May of 1891 encompassed the northern ends of Capitol and Queen Anne Hills as well as Magnolia, Fremont, Wallingford, Green Lake, Latona, and Brooklyn, which later became known as the University District. The annexed area included Union Bay and its marshlands west of 35th Avenue NE and south of NE 55th Street and the Montlake and Madison Park neighborhoods. This lack of growth is evident in the 1894 *McKee's correct road map of Seattle and vicinity*, which shows a large swath of undeveloped land north and south of Madison Street between Capitol Hill and Madison Park.

The Puget Mill Company, a division of the San Francisco firm of Pope and Talbot, owned a large portion of the undeveloped land mostly to the north of Madison Street, some 300 acres that is now the site of the Washington Park Arboretum and the Broadmoor community. Pope

and Talbot had established the Puget Mill Company in the early 1850s at Port Gamble to capitalize on Puget Sound's vast timber resources. At that time, early lumber companies acquired only their mill and town sites and concentrated on the manufacture of lumber, contracting with independent loggers to provide the raw materials for their operations. It was not deemed necessary to acquire their own forest lands when loggers could freely but illegally harvest timber on the federally owned land that surrounded them. The lack of laws governing the sale of timber from federal forest lands coupled with the absence of federal authority meant that this practice continued throughout much of the 19th century. However, the Puget Mill Company realized early on that a permanent supply of timber would be needed to support their operations at some point in the future and took advantage of every opportunity available to purchase property. The first chance arose in 1861 when a special commission headed by the Reverend Daniel Bagley sold land reserved by the federal government to provide funding for the construction and operation of the newly established Territorial University of Washington in Seattle. The Puget Mill Company's substantial purchase included the 300+ acres of land fronting on the shores of Union Bay. Over the next several decades, the Puget Mill Company eventually became the largest holder of timberlands in Washington, owning 186,000 acres in 1892 when it stopped buying land. Despite these vast holdings, the company continued to purchase logs on the open market into the first decade of the 20th century.

In 1890, the Puget Mill Company logged the 300+ acres with the intention of developing it, a decision likely influenced by the improved access provided by the new Madison Street Cable Railway. However, the financial crisis brought on by the Panic of 1893 delayed these plans for a decade. It was not until May of 1900 that the Puget Mill Company recorded the "First Subdivision of Washington Park Addition to the City of Seattle." This nine-block plat was located south of Madison Street between 33rd and 37th Avenues East and bordered John J. McGilvra's First and Second Additions to the south and east. In conjunction with the subdivision's development, the Puget Mill Company struck a deal with the city to provide some $35,000 worth of water main extensions. In exchange for these infrastructure improvements, the company donated a nearby strip of land along the extreme western edge of their property that contained 62 acres. This parcel extended from the shore of Union Bay south to East Prospect Street and lined the eastern side of the valley. Through Ordinance No. 5740 introduced in November 1899 and passed in January 1900, the City of Seattle accepted the property for the purposes of a public park, beginning the process of acquiring the land that would become the Washington Park Arboretum.

Washington Park

This initial acquisition occurred shortly after the Seattle City Council appropriated $100,000 for the purchase of Woodland Park, including a portion of Green Lake, from the widow of Guy Phinney, a wealthy lumber mill owner and real estate developer. After acquiring his property in the late 1880s, Phinney had created an elegant English-style estate, complete with formal gardens, and opened it to the public to promote development in his adjacent real estate holdings. His untimely death in 1893 at the age of 41 eventually forced his wife to sell the private park to the City in November 1899. Acquisition of Woodland Park had been proposed in the 1892 Annual Report of the Park Commissioners, which first highlighted the need for a comprehensive system of parks and boulevards in Seattle. At that time, the City's

three public parks, Denny, Volunteer (then City) and Kinnear Parks, were outnumbered by the five privately owned destination parks built by real estate developers, Madison, Madrona, Leschi, Woodland and Ravenna Parks. Parks Superintendent Edward Otto Schwagerl, a prominent landscape architect and engineer, completed designs for a comprehensive park and boulevards plan for Seattle in the mid-1890s, but a lack of funding prevented its implementation. No major action towards the development of a park system occurred until the 1899 purchase of Woodland Park and the subsequent donation of the Puget Mill Company's 62-acre parcel.

By 1902, the new park property on Union Bay was identified as Washington Park after the nearby Lake Washington. The same year, the City began the process of purchasing adjoining parcels, eventually acquiring the 230 acres that now comprise the Washington Park Arboretum. The first major purchase was the nearly 20 acres extending south to East Madison Street that covered the southern portion of the valley. A high wood trestle bridge that carried the cable railway over the valley's stream marked the southern boundary of the property. In December of 1903, George and Angie Kinnear sold the City their 37½ acre parcel that encompassed the western side of the valley between East Galer and East Lynn Streets. Smaller parcels along the western margin were acquired the following year through both purchase and condemnation. Later in the decade, the City had the opportunity to acquire the marshlands beyond the northern end of the park property after the State of Washington authorized the sale of shore lands in 1907 to fund the Alaska-Yukon-Pacific Exposition planned for 1909. The City followed this acquisition with the 1910 purchase of two privately owned parcels located nearby to the west within Pike's Second Addition to Union City. The City largely completed its acquisition of land for Washington Park with the 1917 purchase of Foster Island and the 1920-21 purchase of all but one lot of the Bard-Foster Washington Park Addition. Platted in 1910, this addition contained five irregular shaped blocks located roughly between East Highland and East Prospect Streets and 26th and 28th Avenues East. Most of the Seattle Japanese Garden lies within the two eastern blocks of the addition.

Although this process of land acquisition spanned some two decades, plans for improvements to Washington Park began almost immediately. The new park property was already included along the route of the immensely popular Lake Washington Path, a ten-mile cinder bicycle path that linked downtown Seattle with Lake Washington. Completed in the summer of 1897 by the Queen City Good Roads Club, the path roughly followed the route of today's Lakeview and Interlaken Boulevards and eventually became part of a larger 25-mile system of bicycle paths. Assistant City Engineer George F. Cotterill developed this system with the assistance of volunteers by walking about and surveying the city and published a guide map in 1900. In 1903, the Olmsted Brothers landscape firm of Brookline, Massachusetts utilized some of Cotterill's existing bicycle routes, including the portion now comprising Interlaken Boulevard, as part of their plans for a comprehensive park and boulevard system for Seattle. The City had hired the illustrious firm that same year to prepare a report detailing their plans for such a system as well as suggestions for improvements to existing parks. This move was largely brought on by the public interest generated for the planned Alaska-Yukon-Pacific Exposition and the need for improvements to the recently acquired Woodland and Washington Parks, two large tracts of mostly undeveloped land. In anticipation of the

Alaska-Yukon-Pacific Exposition, the plan placed emphasis on the development of Washington Park as a boulevard entry to the Exposition to be held on the grounds of the University of Washington. However, there were no plans for the general improvement of the park at that time.

Improvements for the boulevard began in 1903 with slashing and clearing for the proposed roadway undertaken before the completion of detailed plans. The improvements proceeded the following year with continued clearing and grading of the roadway following designs prepared by the Olmsted Brothers firm. The first phase of Lake Washington Boulevard, 2,150 feet of macadam roadway extending north from Madison Street, was completed by August 1905. Within a year, a graded and graveled roadway continued to Union Bay. Although the Olmsted Brothers also produced planting plans for the boulevard in 1906, it is not known to what extent these were implemented. However, it is certain that the preliminary plans produced by the Olmsted Brothers for other portions of Washington Park were not executed at that time nor was the firm given the approval to prepare an overall park plan. In the absence of such a plan, subsequent improvements to Washington Park over the next three decades progressed somewhat haphazardly. In 1908, a portion of the park property was privately developed as a public course for harness races along what is now known as Azalea Way. A barn was also constructed at the southern end of the track to serve the speedway. Although interest in racing soon waned, horseback riding remained a popular activity within the park. By 1909, a massive sanitary fill by the city garbage department had created enough area for an athletic field, complete with bleachers, at the southern end of the ravine north of Madison Street. The same year, the Parks Department constructed a maintenance facility at Washington Park in the meadow below East Helen Street, featuring a stable for eight horses and storage space for tools, steamrollers and other equipment.

A more permanent but nonetheless attractive feature on the landscape was the North Trunk Sewer Viaduct constructed between 1910 and 1912 from designs by W.R.B. Willcox & W.J. Sayward. Now known as the Willcox Footbridge or Arboretum Aqueduct, the concrete and brick veneer structure supports and conceals the sewer line that was extended to serve the Puget Mill Company's adjoining property, subsequently developed as the Broadmoor community. Further improvements were made to the athletic field in 1930 with the completion of a shelter house at the northern end of the field near the children's play area. Designed in a simplified Tudor Revival style, this shelter house was one of eight similar shelter houses constructed in Seattle parks in the late 1920s and early 1930s, following a policy to build only structures that would be pleasing in design and permanent in nature. These buildings housed large rooms for organized recreation activities in addition to public restroom facilities. Office space for recreation instructors was also provided. Other brief but active uses of Washington Park included an archery range located east of the boulevard to the north of Boyer Avenue East and a trap shooting area on Foster Island. Even with these improvements and uses, Washington Park remained largely undeveloped three decades after the initial property acquisition in 1900.

University of Washington Arboretum

In the mid-1920s, this lack of development led Dr. Henry Suzzallo, President of the University of Washington, to propose that Washington Park would be the ideal location for

an arboretum jointly developed by the University and the City of Seattle. Since the University had established its present campus in the 1890s, there had been plans to develop an arboretum on the extensive grounds. However, these plans never progressed beyond the initial plantings of native and exotic trees, many of which were removed as part of the preparations for the Alaska-Yukon-Pacific Exposition. By the 1920s, it was obvious to Dean Hugo Winkenwerder of the College of Forestry that campus building growth would prevent the realization of the planned arboretum unless another location could be identified. Dean Winkenwerder met with Dr. Suzzallo to explore other site possibilities, settling on Washington Park as the preferred alternative. Dr. Suzzallo worked to enlist the support of business and professional groups before formally presenting his proposal in a letter to the Board of Park Commissioners dated February 7, 1924. In response, the Board passed a resolution setting aside the entire area of Washington Park as a botanical garden and arboretum and granting the University the privilege of using certain buildings and greenhouses. However, a lack of funding prevented the plan from moving forward, and no work occurred with the exception of some limited clearing and the establishment of a Parks Department nursery in 1927. This situation did not improve with the onset of the economic depression in the 1930s as dwindling financial resources prevented expenditures for capital improvements.

In addition to a lack of funds, there was also no formal agreement between the City and the University over how the proposed arboretum would be developed and administered and no mechanism to seek financing for the undertaking. All parties involved realized the need to resolve these issues at the same time that funding sources were sought. However, initial efforts to establish an arboretum and botanical society that could address these issues were abandoned soon after forming in 1930 due to the financial challenges of the times. By 1933, arboretum supporters had decided to pursue state and federal relief funds targeted toward unemployment relief as the best means to realize their dreams. In order to be eligible for such funding, the project needed an official organization to act as sponsor and a development plan. Arboretum supporters also recognized the need to create a legal entity with the University acting as the operating agency and worked to development a formal lease agreement between the University's Board of Regents and the City's Board of Park Commissioners. Despite some opposition over relinquishing control to the University, the Parks Board approved an agreement in December of 1934 that donated the entire Washington Park acreage, including the athletic field, as a site for an arboretum to be constructed and operated by the University. Later that month, the Seattle City Council passed an ordinance (#65130), authorizing the agreement with the University to establish and maintain an arboretum and botanical garden in Washington Park that would become known as the University of Washington Arboretum.

The following year, a provision in the agreement to form an advisory council was fulfilled with the establishment of the Arboretum and Botanical Garden Committee, consisting of at least seven members, three to be appointed by the Mayor of Seattle, three by the President of the University of Washington, and the seventh member to be appointed by the Governor of the State of Washington. The Arboretum Advisory Council, as it became known, acted immediately to form the Arboretum Foundation in June of 1935. This non-profit organization would act as sponsor for the project and raise revenue to help establish the

Arboretum. Over the same period of time, others were working to create a development plan that could be used to establish the Arboretum with federal relief funds. In the early 1930s, Frederick W. Leissler, Jr., the Parks Department's staff landscape architect, and others produced plans and surveys of Washington Park in anticipation of the work to come. Leissler also adapted his own plan for a botanical garden to the Washington Park site. These plans proved to be very helpful when the Olmsted Brothers landscape firm was once again hired in 1935, this time to prepare a preliminary general plan for the development of an arboretum. Under the leadership of Mrs. Sophie Krauss, the Seattle Garden Club raised the $3,000 needed to pay for services of the Olmsted Brothers and donated that sum to the University. James Frederick Dawson, the firm's partner in charge of the design, used Frederick Leissler's design as the basis for his plan and worked closely with Leissler, who had been hired by Dean Winkenwerder to oversee development of the Arboretum. However, even before the completion of the *General Plan for the University of Washington Arboretum* in March of 1936, it was necessary to begin work on the site so as to be able to take advantage of the work relief funds and labor already available.

Works Progress Administration

Over the course of 1935, work relief crews totaling some 300 men focused their efforts on clearing and contouring the landscape and preparing the topographic map and tree survey used to develop the preliminary general plan. Initially, this work was completed under the auspices of the Washington Emergency Relief Administration (WERA), a relief agency operated by the Washington State government from 1933 to 1937. In addition to creating work for the unemployed, WERA also provided other public welfare assistance, including aid to the aged, the homeless, and the impoverished. After May of 1935, the Works Progress Administration (WPA) provided the laborers for the project. Created in May of 1935, the WPA consolidated and superseded several earlier programs and became the best known of all the federal relief programs before ending in 1941. One of early projects completed by WPA workers was the construction of a storage barn, now known as the Maintenance Headquarters, from designs prepared by Frederick Leissler. Before the completion of the Olmsted Brothers' plan, WPA workers prepared additional surveys, cleared brush and stumps, subsoiled acreage, installed portions of the water and drainage systems, constructed rustic fencing, excavated the greenhouse site, and made improvements at the north and south entrances.

Once the general development plan was ready and approved for implementation, the Arboretum's entire area was divided into six sections (A through F starting at the southern end and proceeding north), each with projects averaging a total anticipated cost of $100,000. Plans for each section detailed the work to be completed underground (water systems, drainage and conduits), on the surface (roads, trails and plantings), and above ground (buildings, lighting systems, and green houses). After funding was approved for the first three sections A, B, and C, work began in October 1936 and continued until July 1941 when the WPA program ceased operations. During this five year period, WPA workers completed much of basic infrastructure that is present today. Most of the work followed the Olmsted Brothers design although there were departures as locations of certain features were changed to better suit the site conditions. Completed features included a new road, the Upper Road (later renamed Arboretum Drive), which roughly followed the route of the early bicycle path

through the park, dredged lagoons at Foster Island with plantings of bamboo and Japanese iris, and a system of walks. WPA workers also constructed greenhouses, propagation houses, lath houses, potting sheds and cold frames, creating an extensive service area, and installed fences along the Broadmoor property line.

More substantial and public structures came in the form of a stone gatehouse located near the south entrance at Madison Street, an overlook or gazebo on a hillside at the southern end of the Arboretum, and a stone kiosk at the Interlaken Boulevard intersection with Lake Washington Boulevard. Designed by architects Arthur Loveless & Lester P. Fey, these structures reflect the rustic style of park architecture that was prevalent during this era while the intricate stonework is representative of the craftsmanship that was a hallmark of WPA construction. It is likely that Loveless and Fey also designed the stone pylons at the gatehouse and kiosk as well as the entry pylons at the northern and southern entrances. Similar craftsmanship was employed in the construction of two stone bridges over Arboretum Creek, which meandered along the Arboretum's western margin. The south bridge was constructed at the southern end of a pond developed immediately southwest of the intersection of the two boulevards in an area designated as the Maple Section. Although the Olmsted Brothers plan had identified several areas for ponding of the creek, this was the only one completed. The combination of the existing water feature and the surrounding maple trees later made it the ideal choice for the location of the Seattle Japanese Garden.

Several major landscape elements were also completed by WPA workers, often under the supervision of local landscape architects and designers. This included the Rhododendron Glen, which followed a planting plan prepared by Otto Holmdahl, using collections from the late Dr. Cecil Tenny and the estate of Charles O. Dexter. Holmdahl also completed the plan for the Maple Collection around the pond in the southwest corner of the Arboretum and supervised construction of the Rock Garden/Rockery in a location chosen by Frederick Leissler near the intersection of Lake Washington Boulevard and Arboretum Drive. WPA workers constructed the pools of the Woodland Garden but did not implement the planting plan designed by Swiss-German landscape architect E.A. Fabi, who died in 1939 just as work got underway. Although the Olmsted Brothers firm completed the *General Plan* with the idea that they would be hired for additional design work for specific elements, they only executed a detailed planting plan for Azalea Way. With donations from the Seattle Garden Club, WPA workers transformed the former speedway into a three-quarter mile long stroll through banks of flowering azaleas, Japanese cherries, and eastern dogwoods. The *General Plan* also provided a sequential arrangement of the plant collection based on a taxonomic classification system laid down by the botanists, Engler and Prantl, with the family Coniferae, the collection commonly known as the Pinetum, situated at the beginning of the sequence in the northwest portion of the Arboretum. Although this first section was completed under the auspices of the WPA, most plant collections were initiated following the end of the Second World War.

In addition, several major elements of the Olmsted Brothers plan were never executed, including the Lakeside Boulevard, the Rose Garden and the Administration Building/Herbarium/Library. An attempt was made to develop an elaborate rose garden on the site of the athletic field at the southern end of the Arboretum, but this plan engendered a

storm of opposition. Although the plan was abandoned, the controversy eventually led to a modification of the 1934 agreement in order to exclude the playfield as well as a proposed new service yard for the Parks Department from the Arboretum's jurisdiction. In December 1948, the Seattle City Council passed an ordinance approving the modification that returned a portion of Washington Park to the City for playground and recreational purposes. A similar modification occurred in 1981 when the University of Washington transferred management of the Seattle Japanese Garden back to the City.

Japanese Garden Proposal

In the late 1930s as work on the University of Washington Arboretum progressed, the Arboretum Foundation invited the Japanese Society for International Cultural Relations, or Kokusai Bunka Shinkōkai, to beautify five acres of Foster Island by creating a formal Japanese garden. Founded in April 1934, the Society aimed to develop mutual understanding with other nations of the world through cultural exchange. In July of 1937, the Society brought an exhibit of a 13th-century *tokonoma* or alcove from a Japanese nobleman's house of the Kamakura period (1185-1333) to what is now the Burke Museum on the University of Washington campus. Earlier that summer, the Arboretum Foundation extended the invitation to sponsor the garden to the Japanese Consul-General in Seattle, Issaku Okamoto, who then sent a letter of recommendation to the Society in Tokyo. Apparently, the proposal was well received by the Society as a September 1937 newspaper article reported that they had agreed to spend $50,000 for flowers, shrubs, trees, bridges and a decorative archway. The Society also promised to send an engineer to supervise the work of landscaping in the fall of 1937 in preparation for plantings to be made the following year. A member of the Society's Board, Count Michimasa Soyeshima, traveled through Seattle during this period and assured Consul-General Okamoto of the Society's interest in creating an exact replica of one of Japan's noted formal gardens. Despite this enthusiasm on both sides, the plan was apparently abandoned when it faced a growing anti-Japanese sentiment at the time, no doubt influenced by the Japanese invasion of China in 1937. As a result, the plan for a Japanese garden in the Arboretum remained on hold for another two decades before being revived once again by members of the Arboretum Foundation.

History of Japanese Gardens

Although most Americans conceived of a Japanese garden as simply an attractive collection of certain elements, garden design developed in Japan over more than 1000 years of history in response to social, political, religious, and cultural changes. In the middle of the 6th century, Chinese culture began to permeate all aspects of Japanese life, including ideas of gardening. Over the next several centuries, these ideas were developed and refined until the Heian period (794-1185), the first great era of Japanese garden history. This era began when the capital of Japan was moved in 794 to Heian-kyō, Capital of Peace and Tranquility (present-day Kyoto), where it remained until 1868. Attributed to Tachibana no Toshitsuna (1028-1094), an aristocrat accomplished in landscape garden design, the 11th-century *Sakuteiki* (Notes on Garden Making) is the earliest known written document on Japanese garden design. *Sakuteiki* outlines the three overall principles that form the prototype for all garden making: observance of the natural landscape, study of the work of past masters, and remembrance of famous places of scenic beauty. Together, these principles should inform the design of a garden comprised of six basic compositional elements: artificial hills, the

pond, the island, the white sand south garden, the garden stream and the waterfall. The primary focus of the work is stone setting, which forms the structure of the garden while trees and plants serve only as decorative accents. The placement of stones was the basis for garden design in the Heian period and for centuries afterward. The gardens did not exist as independent entities but were designed to correlate to the function and style of architecture from the large palaces of the emperor to the homes of the nobility. Buildings opened onto private gardens featuring large ponds with islands linked by bridges in a carefully composed collection of natural features, all for the sole enjoyment of the owner.

During the Kamakura period (1185-1333), the introduction of Zen Buddhism created an emphasis on a new garden type, *kare-sansui* (literally "withered mountain-water"). This refers to the small dry landscape gardens of rocks and raked sand or stone that were not designed as a pleasure garden but an object to be contemplated from several vantage points. The intent of the garden's abstract composition was to suggest the inner essence of nature not to reproduce its outward forms in a naturalistic landscape. Contemplation of such a garden does not lead to enlightenment rather it shows the product of an enlightened mind who seeks to express that experience in the garden's design. The pond and island garden of the Heian period continued to be popular and was often designed to be enjoyed on foot, but the *kare-sansui* gained prominence to the point that it was no longer included as an element in a larger garden but on its own. Overall, the size of the gardens became smaller and more attention was paid to plant material. These concepts were further refined during the Muromachi period (1333-1568) as landscaping continued to develop the use of small space to form a picture garden.

The Momoyama period (1568-1603) is probably best known for its development of a new garden type, the *roji* (literally "dewy ground"), an enclosed garden with a path leading to a small rustic hut where the tea ceremony is performed. Primary features include the stepping stones that lead visitors to the teahouse and prepare them for the tea ceremony, stone lanterns that light the way, and simple stone basins that enable visitors to cleanse themselves physically and spiritually. At the same time this simpler garden type developed, the pond gardens of the period became more complex in their overall design with larger and more impressive rock formations, jutting peninsulas, and craggy inlets. In addition, gardens were no longer designed mainly for strolling in but were increasingly constructed with a view from the surrounding buildings in mind. The growing unity and power of the ruling class was demonstrated in the construction of many large and heavily ornamental gardens.

During the Edo period (1603-1868), the Tokugawa shoguns brought peace, stability and isolationism by imposing a rigid social structure on Japanese society and closing their doors to outside influences from China and the West. Many of the gardens of this era were imitations of the prototypes of earlier times with an added emphasis on the use of *shakkei* or "borrowed scenery," a compositional technique that incorporates distant views into the overall design of a garden. A new prototype, the large strolling garden, did emerge, however, and made use of numerous popular features such as hills, ponds, islands, winding streams, waterfalls and rocks in a completely new way. The intent was to include a greater number and variety of all elements to enhance the visitor's experience of the changing vistas and set views. With the opening of Japan to the West and world trade during the Meiji

period (1868-1912), outside influences crept into garden design often resulting in a strange juxtaposition of styles. While a large number of older gardens of earlier periods were opened to the public and restored after falling into disrepair, many traditional architecture features, such as stone lanterns and rocks, were sold, and many traditional design concepts were abandoned.

Japanese Gardens in the United States

Just as traditional Japanese gardens were losing popularity in their own country, they were being embraced with great enthusiasm in the United States. Americans got their first glimpse of a Japanese garden at the 1876 Centennial International Exhibition held in Philadelphia to celebrate the 100th anniversary of the signing of the Declaration of Independence. The Japanese government had accepted an invitation to participate in the first official world's fair in the United States and sent displays as well as the materials to construct the buildings to house them. These included a Japanese Dwelling and Japanese Bazaar, a low structure that served as a bazaar and teahouse. The trapezoidal plot in front of the Bazaar was fenced in and landscaped in a vaguely Japanese style, complete with a large stone lantern. The Japanese government also had displays in the Main Exhibition Building and the Agricultural Hall. Although many were repeat visitors, some 10 million people attended the fair, a number representing some 20% of country's population at the time. The exhibits at the Philadelphia Exhibition were relatively small in comparison to those that followed as Japan soon took full advantage of the opportunity the fairs provided to influence world opinion. With the 1893 World's Columbian Exposition in Chicago, Japan began the construction of major pavilions and gardens as well as massive displays in various exhibition halls, becoming the largest and often the most popular foreign exhibitor at fairs. The Japanese government constructed its national pavilion, the Hōōden, amid garden paths that wound through thousands of plants brought from Japan. Another garden flanked the Nippon Tea House and featured stone lanterns and bronze cranes. Although the Japanese government was unable to participate in the 1894 California Midwinter International Exposition in San Francisco's Golden Gate Park, local entrepreneur G.T. Marsh acquired the concession to create "The Japanese Village." Marsh himself designed the hill and water garden that surrounded the village's five buildings. At the close of the fair, this site became the popular Japanese Tea Garden, the oldest extant Japanese-style garden open to the public outside Japan.

Ten years later at the 1904 Louisiana Purchase Exposition in St. Louis, the Japanese government created the sensation of the fair with its 175,000 square foot compound known as the Imperial Japanese Garden. The six traditional structures included the Formosa Tea Pavilion, the Bellevue Tea House, the Bazaar, the Main Pavilion, the Commissioner's Residence, and a replica of the Kinkaku, a famous 14th century Golden Pavilion in Kyoto. These temple-style wooden buildings were arranged within a large stroll garden of meandering paths, picturesque plantings, and a small body of water at the center. The close proximity of a large Ferris wheel enabled visitors to have a panoramic view of the Imperial Japanese Garden. Smaller regional fairs, such as the 1915 Panama-Pacific International Exposition in San Francisco, also attracted equally large exhibits and proved to be wildly popular with fairgoers. These late 19th and early 20th century fairs and expositions introduced millions of Americans to Japanese-style gardens and inspired the creation of hundreds of

public and private gardens across the country. Many of the great estates of the gilded age installed Japanese gardens of varying degrees of size and authenticity. This was duplicated on a smaller scale among those of more modest means, especially in California where Japanese-style gardens were seen as eminently compatible with Craftsman-style bungalows. Commercial tea gardens modeled on those found at the fairs were also very popular in the early decades of the 20th century. By the 1930s, this ardor for Japanese-style gardens had cooled as American relations with the Japanese government became increasingly strained. Despite the anti-Japanese fervor of the Second World War, Japanese-style gardens experienced a renaissance in America less than a decade after the war's end that continues to the present day.

Japanese Gardens in Seattle

The history of Japanese gardens in Seattle largely mirrors that of the rest of country. At the same time that he proposed a comprehensive park and boulevard system in the early 1890s, Parks Superintendent Edward Otto Schwagerl thought that Seattle should have a Japanese garden and a botanical garden and identified Sand Point as a possible location. While nothing came of Schwagerl's proposal, there continued to be interest and popularity in Japanese-style gardens. An undated postcard from the early 20th century shows a "Japanese Tea Garden" in Madison Park where a rustic gazebo overlooks a small pond lined with stones and surrounded by grass. This is likely not the teahouse purchased by Emma Watts and placed in Madison Park after the conclusion of the 1909 Alaska-Yukon-Pacific Exposition. Historic photos show this elaborate structure within the Japanese Village located at the lower end of the Pay Streak, a concourse of concessions and popular entertainments. At the entrance to the Village, a sign reading "Street of Tokio" hung from a torii gate situated between the Tokio Café and the Japanese Theatre. The Japan Tea House fronted onto a Japanese-style garden, complete with a small pond, a bridge, stepping stones and lanterns. The official Japanese Government Building stood to the west of Rainier Vista with minimal plantings around its exterior. Like the other fairs before it, the Alaska-Yukon-Pacific Exposition presented a popular but not entirely accurate vision of Japan and its culture and likely stimulated interest in a Japanese garden for Seattle.

Shortly after the fair, a group of Seattle businessmen visited Japan, a result of which was a gift of an admired lantern that was placed in Mt. Baker Park in 1911. The Parks Board proposed to build a Japanese garden around the lantern, but the cost estimate was in excess of $8,000. In June of 1919, Architect A.H. Albertson sent a letter to the Parks Board requesting a permit to erect a Japanese Tea Garden in Volunteer Park for the "purposes of popularizing the drinking of Japanese Tea." The proposal included relocating an existing teahouse from the southwest corner of Fifth Avenue and University Street and designing a new Japanese garden around it. The teahouse would be operated as a concession sponsored by the Japan Central Tea Association, a semi-official government entity. Albertson promoted the plan as being of "public interest and educational value" and a "courtesy to the Japanese Government." Although nothing seems to have come of this request, interest remained in the creation of some sort of Japanese garden as evidenced by a September 1929 letter from the Seattle Chamber of Commerce to the Parks Board. The letter notified the Parks Board that the Chamber's Board of Trustees had adopted a recommendation proposing that a portion of "some suitable park" be set aside for "Oriental landscaping, exhibition and display of

Oriental shrubs, flowers, architecture, etc." The Chamber offered to assist the Parks Board in enlisting support for the project among the Japanese and Chinese organizations and residents of the City. It is likely that financial difficulties brought on by the economic depression of the 1930s prevented consideration of such a plan. However, the idea of soliciting funding from a Japanese organization almost succeeded in realizing the 1937 plan to develop a Japanese garden at the University of Washington Arboretum. This time, it was anti-Japanese sentiment and not a lack of funds that caused the plan to be abandoned.

Japanese Americans in Seattle

While many in Seattle and the rest of the country were fascinated by Japanese art and culture in the late 19th and early 20th centuries, there was also an underlying racism and discrimination towards Americans of Japanese descent. In addition to restrictions on immigration, local, state and federal laws prevented Japanese from owning land, living in certain areas or becoming naturalized U.S. citizens. Paradoxically, it was these Japanese and first generation (Issei) Japanese immigrants who designed, constructed and maintained most of the public and private Japanese-style gardens that were celebrated and admired in the period before the Second World War. Although they took great pride in their work and built prosperous businesses, many turned to landscaping and gardening because it was one of the few occupations open to them. It is estimated that roughly 30% of the Japanese American labor force was employed in the gardening or nursery trades in the pre-war period. This situation did not improve for their children. Even though they were born in this country, many Nisei or second generation Japanese could not find professional employment after graduating from college, forcing them to settle for jobs as bellhops, grocery clerks, gardeners, dishwashers and truck drivers. It was not until the third generation (Sansei) that many of these barriers were removed.

In Seattle, a large and lively ghetto in the south end of downtown developed at the turn of the 20th century as a result of the restrictive real estate covenants and employment discrimination. Nihonmachi or Japantown was the center of community life until the forced incarcerations of the 1940s emptied it of residents and workers. Historic photographs serve as a record of the community that vanished and show the continued influence of Japanese art and culture in people's daily lives. In a ca. 1930 photograph, a Mr. Hatate stands in the Japanese-style garden of the Maneki Café, a restaurant which continues to operate today a block south of the original location more than 100 years after its founding. When Japanese Americans were imprisoned in western concentration camps during the 1940s, many attempted to bring this culture with them, beautifying the barren landscape with small-scale Japanese-style gardens. Often, this work was completed by men who had worked as landscapers, gardeners and nurserymen. Upon their release, many of these men resumed their former occupations, contributing to the post-war renaissance in the popularity of Japanese-style gardens.

For many of the first generation of Japanese gardeners, Seattle's temperate climate reminded them of Japan, making it easier for them to them to adapt their gardening techniques and design ideas when they began their landscaping businesses. They also found that they could earn a good living for themselves and their families. As a measure of their success, a group of 25 gardeners established the Seattle Japanese Gardeners Association in 1927 to provide

mutual support and serve the community. After the war's end, the association re-formed and later formed a loose federation with gardeners in California and Vancouver, BC in the early 1960s. While many Nisei joined their fathers in their work, few of their own children had an interest in continuing in the family business with all the professional opportunities available to them. Although the association remained active into the 1980s, it eventually disbanded in 2004.

Of the many who practiced this profession in the Seattle area, none are better known than Fuijtaro Kubota (1880-1973). Born and raised in Japan's Kochi Prefecture, Kubota came to the United States around 1906 and eventually settled in Seattle. After working first at a sawmill, then on a farm and later in a hotel, Kubota established the Kubota Gardening Company in 1923. Over the next decade, his business prospered, enabling him to buy some 20 acres in Seattle's Rainier Beach neighborhood by 1929. Along with his sons Tom and Tak, Kubota created an authentic Japanese garden inspired by Ritsurin Park in Takamatsu after researching landscapes in Japan. Kubota opened his garden for community celebrations and picnics before all such activities ended with the family's incarceration at Minidoka in Idaho. Upon his return to Seattle, Kubota rebuilt his successful landscaping business and refurbished his abandoned property, converting it to a drive-through nursery where clients could choose plants and get design ideas for their own gardens. Over his career, Kubota generally adapted Japanese design principles to American culture rather than maintain pure Japanese styles. The gardens on the Seattle University campus and the Japanese Garden at the Bloedel Reserve on Bainbridge Island are public examples of his work. In recognition of his achievements in the pioneering of Japanese-style gardening in the Northwest, the Japanese government awarded him the Fifth Class Order of the Sacred Treasure in 1972, a year before his death. His property was later designated a City of Seattle landmark in 1981 and acquired as a public park in 1987.

Seattle Japanese Garden

It was Fuijtaro Kubota who provided the initial cost estimate of $60,000 for the Seattle Japanese Garden when Mrs. Neil (Emily H.) Haig, Chair of the Arboretum Foundation's Special Projects Committee consulted him. Mrs. Haig had been asked by Carl Ballard, Board President of Arboretum Foundation, to Chair the committee and resurrect the idea of building a Japanese garden in the Arboretum. On June 5, 1957, Mrs. Haig held the first meeting of this committee and created a work plan that covered issues such as location, cost, landscape architect, funding sources, and parking. In her efforts to gather preliminary information, Mrs. Haig contacted the Japanese Tea Garden at Golden Gate Park in San Francisco in the belief that it could serve as a useful model. She also wrote to and spoke with Fuijtaro Kubota, who offered to look at the proposed location and provide a rough idea of the estimated project cost. Realizing that the project would benefit from the assistance of the Japanese government, Mrs. Haig contacted the Japanese Consul-General in Seattle, Yoshiharu Takeno. She also called Ewen C. Dingwall, the project director for the Seattle World's Fair Century 21 Exposition, to talk about the proposed Japanese garden and its relation to the Fair. Mr. Dingwall attended the next meeting of the committee held on September 10, 1957 to discuss the plans for the Fair. It was at this meeting that Mrs. Haig presented Fuijtaro Kubota's cost estimate, which gave the group a better sense of how much money needed to be raised. Early fundraising efforts focused on holding garden tours,

something that would have been very familiar to members of the Arboretum Foundation. Mrs. Haig also reported that the Japanese Vice Consul, Mr. Yamada, had expressed interest in the plan and requested more information.

As plans proceeded, Mrs. Haig contacted the newly formed Kobe-Seattle Sister City Affiliation Committee, an organization founded to foster greater friendship and understanding after Seattle formally established ties with Kobe, Japan in October of 1957. The previous year, Seattle Mayor Gordon S. Clinton had appointed a study committee, which included former Seattle Mayor William F. Devin, in response to President Dwight D. Eisenhower's efforts to promote people-to-people programs between America and the rest of the world. Mr. Devin had already established friendly ties with Dr. Chujiro Haraguchi, the mayor of Kobe, and knew the Japanese city to be a great seaport with a distinguished university. With the two cities' similar backgrounds in education, shipping, and the arts, the committee members decided that Kobe was the logical choice for Seattle's first sister city relationship. Mrs. Haig asked the organization if they would be interested in assisting in the efforts to establish a Japanese garden and secured the support of Kenneth Sorrells, Chair of the Garden Committee. On February 17, 1958, Mr. Sorrells accompanied Mrs. Haig and Edward B. Dunn, the new president of the Arboretum Foundation, on a visit to Consul-General Takeno to present the idea for a Japanese garden. At Consul-General Takeno's suggestion, Mrs. Haig prepared a letter of introduction and compiled a prospectus on the project with plans and photographs that could be sent to the Japanese government to secure support. Consul-General Takeno also thought that different cities in Japan would be willing to make donations to the garden. Arboretum Director Brian O. Mulligan joined Mrs. Haig and Mr. Sorrells on a site visit with Consul-General Takeno, who was impressed by the possibilities

In July of 1958, Mr. Tatsuo Moriwaki, a landscape architect and Superintendent of the Tokyo Park Department, visited Seattle and was taken on a site visit to the Arboretum. Subsequently, Mr. Moriwaki offered to provide the landscape architectural work for the garden and indicated that the City of Tokyo would provide a teahouse as an ornamental feature. Letters were sent to the Governor of the Tokyo Metropolis, The Honorable Seiichiro Yasui, to express appreciation for Mr. Moriwaki's offer. Later that year, the City of Kobe made a donation of two stone lanterns, a large *Kasuga*-style lantern, which became known as the Kobe Friendship Lantern, and a smaller *okazaki* style lantern with a turtle carved at the base. At this point, momentum on the project was building rapidly. Arboretum staff produced the survey maps and photographs that would be used by the Japanese designers in developing the garden plan. The Seattle Japanese Gardeners Association offered to donate their services and plant material, and Genji Mihara of Seattle's Japanese American community expressed the community's desire to assist in every way possible. Most importantly, lumber magnate Prentice Bloedel made the first of several substantial donations that would fund much of the construction of the garden.

In January 1959, Mrs. Haig received a letter from the Governor of Tokyo formally presenting the teahouse for the Arboretum as a goodwill gift. The 480 square foot structure would be shipped on March 1, 1959 on the Mitsui Line's Akagisan Maru at the expense of the Tokyo government. Upon its arrival, it would be first assembled for display at a Trade Fair before

being erected at the Arboretum. At the Special Project Committee's meeting on January 27, there was some discussion as to who would cover the estimated $2,000 cost of assembling and reassembling the structure at the two locations. Ultimately, the committee decided that they would bear no more than half the cost if necessary. It was also reported at the meeting that they were still waiting for plans to be sent from Tokyo. The following week at a February 3 meeting of the Arboretum Foundation Board, a working committee was appointed to handle publicity and arrangements for the installation of the teahouse and the construction of the garden. Immediate responsibilities of the committee included making arrangements for the arrival and transportation of the teahouse, groundbreaking, and landscaping and securing the building site. One of the most important obligations of the committee was to select the landscape architect who would supervise construction of the garden and execute the plans prepared in Tokyo. After much investigation, Juki Iida (1889-1977) of the Iida Landscape Engineering Co. of Tokyo was selected to perform the work. Mr. Iida was the creator of more than a thousand Japanese gardens at home and abroad and was honored by the Emperor of Japan for his gardens. He also owned his own stone quarry, employing craftsman in the construction of stone lanterns, and operated a number of retail plant nurseries.

On March 21, 1959, the teahouse packed in fourteen crates arrived in Seattle at Pier 20 where Consul-General Takeno formally presented it to Mayor Clinton. The Port of Seattle stored the crates until it was time to move them to the National Guard Armory (now the Seattle Center House) for assembly under the supervision of Tomosaburo Kato, chief engineer of the Shimizu Construction Co. of Tokyo. The Trade Fair paid $1,000 of the estimated $5,000 construction costs while the City of Seattle covered the remaining expenditures. From April 24 to May 3, the teahouse was on display at the Eighth Annual Washington State International Trade Fair where it was promoted as a gift from the City of Tokyo to the people of Seattle. A few weeks later, a groundbreaking ceremony held was held on May 19 with Mayor Clinton and Consul-General Takeno once again in attendance. Sad Ishimitsu of K. Ishmitsu & Sons constructed the teahouse under the supervision Tomosaburo Kato and a representative of the Tokyo Metropolitan Government. A chain link fence was erected around the perimeter of the teahouse for security purposes, giving it a somewhat forlorn appearance that was out of context with its surroundings. Initially, the teahouse was not open to the public but used for special occasions, the first of which was a tea ceremony held on July 4, 1959. It was performed by Grand Master Soshitsu Sen XV of the Urasenke Foundation in Kyoto, Japan, who was traveling through Seattle on his way home from Europe.

In late November of 1959, Juki Iida and his assistant Nobumasa Kitamura traveled to Seattle for a two-week trip to present the design, survey the garden and make preliminary plans. With James Fukuda of the Japanese Consul-General's office acting as interpreter, Mr. Iida unfolded the more than thirty sheets of drawings that outlined the basic design. Prepared by Kiyoshi Inoshita and then modified by Ryuo Moriwaki, Nobumasa Kitamura, Iwao Ishikawa, Naotomo Ueno, Riki Ito and Iida himself, the plans presented a design primarily with loose perspective sketches and details that incorporated the existing pond and the stone bridge over the creek and retained existing vegetation at the periphery. Mr. Fukuda also acted as interpreter for Mr. Iida when he interviewed the local workers that would construct the

garden and toured examples of their work. A three-man crew of second-generation Japanese Americans was chosen, William S. Yorozu as contractor, Richard Yamasaki for stone work and Sad Ishimitsu for wood construction. While Juki Iida and the Japanese designers retain prominence for their work in designing the garden, the significant role of the Japanese Americans who constructed and later maintained the garden has not always been acknowledged as it should. Mr. Iida also visited local nurseries to select plant materials and traveled to the Bandera area near Snoqualmie Pass to locate suitable granite stones. Some 600 tons of Bandera Mountain stone was used in the garden. Following a trip to Washington, DC to work on designs for a garden for the Japanese Embassy, Mr. Iida made a brief stop in Seattle to select and plan the placement of stones and the construction of the pond and grassy knoll before returning to Japan for the winter. In his absence, the work crews cleared brush, bulldozed the site, burned material and hauled rocks. Upon his return in early March of 1960 with Mr. Kitamura, Mr. Iida found that much of the large-scale site work had been completed. The two men divided oversight duties with Mr. Kitamura in charge of the pond and Mr. Iida in charge of the waterfall and stream, each directing the placement of every stone, rock, tree and shrub.

As work progressed over the Spring of 1960, the actual costs soon exceeded the original estimates, causing concern among the members of the Arboretum Foundation's working committee. However, the project benefited from the donation of plant material and labor, including 100 flowering trees from the Japanese Community Service of Seattle and the services of 32 members of the Seattle Japanese Gardeners Association. The City of Seattle provided the funding for fencing the garden and sidewalk paving, and Seattle City Light donated the lighting equipment. All of this work culminated in the dedication of the not fully completed Japanese Garden on Sunday, June 5, 1960. Avery F. Peterson, Deputy Assistant Secretary for Far Eastern Economic Affairs in the U.S. Department of State was the principal speaker on a program that also featured Mayor Clinton, Consul-General Takeno, Dr. Charles E. Odegaard, President of the University of Washington, Griffith Way, Chairman of the Japan-America Centennial Committee, Gordon Marckworth, President of the University of Washington Arboretum, and Juki Iida. Edward B. Dunn, President of the Arboretum Foundation, presided. Unfortunately, the festivities were somewhat marred by the senseless damage done to the teahouse by vandals who broke into the garden in late May. Nonetheless, it should be considered quite an achievement that only three years elapsed between the first meeting of the Special Projects Committee and the dedication of the Japanese Garden. According to author Kendall H. Brown, the Seattle Japanese Garden "represents the earliest postwar public construction of a Japanese-style garden on the Pacific Coast and, as such, had a great impact on other gardens, serving as the template in design and function for most of the large civic pond-and-teahouse gardens built over the next forty years."

Since the June 1960 dedication, the Seattle Japanese Garden has been a work in progress. In May of 1961, turnstile counters with a ten cent admission fee were installed to generate revenue for the maintenance of the garden. That same year, the south gate was constructed to provide safe and convenient access to the nearest parking area. The section of the garden south of the stone bridge was not a part of the original plan and was designed and built by Richard Yamasaki. The *azumaya* or viewing arbor was constructed in 1967, and the *machiai*

or waiting arbor within the tea garden was completed in 1970, both of them the work of Sad Ishimitsu. Supporting this work financially was the Arboretum Foundation's Prentice Bloedel Unit #86, formed in 1966 for the specific purpose of completing and perpetuating the Japanese Garden. The greatest change that occurred was the tragic loss of the teahouse, which was destroyed by arson fire on April 9, 1973. Over the next eight years, the Arboretum Foundation raised the necessary funds to rebuild the structure with major financial support provided by the Urasenke Foundation of Kyoto. Grand Master Soshitsu Sen XV traveled to Seattle in 1981 to bestow upon the new teahouse the name Shoseian, "Arbor of the Murmuring Pines," and to once again perform the first tea ceremony. Fred Sugita, a Japanese-born craftsman from Seattle, largely followed the original plans in completing the reconstruction of the teahouse with the assistance of Seichi Kawasaki, a carpenter-artisan from Hiroshima, Japan. The dedication on May 16, 1981 was truly a celebration of the restoration of the teahouse. That same year, the University of Washington transferred the management of the Japanese Garden to Seattle Parks and Recreation, which has undertaken several major projects in recent years. ADA revisions were planned and built in 1997, and shoreline restoration was completed in 2002. Major and regular pine pruning has been ongoing since 1998. Today, the Seattle Japanese Garden is ranked within the top ten of North America's more than 300 public Japanese gardens.

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The features of the Landmark to be preserved include: the entire site as described in the Japanese Garden Boundary Description (above), including structures, site elements and plant material located within the site boundaries, excluding the existing south entry gate and ticket booth, the service area structures, the pump house, the existing electric light standards, and the chain link fencing.

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