

NATIONAL GALLERY OF ART

NEWS RELEASE

SIXTH STREET AT CONSTITUTION AVENUE NW WASHINGTON DC 20565 • 737-4215 extension 224

ADVANCE FACT SHEET

EAST BUILDING PROJECT NATIONAL GALLERY OF ART

Size: 604,000 square feet

Site: 8.88 acres (boundaries: Pennsylvania Avenue, Third Street,
Madison Drive and the east end of the West Building)

Architect: I.M. Pei & Partners, New York

Opening date, exhibition areas: June 1, 1978

Cost: \$94.4 million

History and Description of the Project:

With the post-war movement of major museums from the periphery to the center of cultural life and their consequent expansion, the National Gallery of Art within a generation has outgrown the West Building, the 1941 neoclassical structure designed by John Russell Pope and built with funds from former Secretary of the Treasury and Ambassador to The Court of St. James's, Andrew W. Mellon. The Gallery's new East Building project includes, among other facilities, exhibition galleries, a Center for Advanced Study in the Visual Arts, a Connecting Link and modifications to the east lobby of the West Building, providing space for the Gallery's expanding collections, increased services for the public, growing numbers of special exhibitions, and major new resources for the scholarly community. The East Building is the gift of Paul Mellon, the late Ailsa Mellon Bruce and The Andrew W. Mellon Foundation.

When the National Gallery of Art was founded in 1937, Congress set aside for the Gallery's future use a trapezoidal plot separated from the West Building by Fourth Street and bounded by Pennsylvania Avenue, Third Street and the Mall. The plot, which derives from the original eighteenth-century L'Enfant plan for Washington, is the terminal point for all the buildings along the south side of Pennsylvania Avenue and the monumental buildings along the north side of the Mall.

The Site. The location and shape of the site posed several challenges. It was the last major undeveloped site on Pennsylvania Avenue, the

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inaugural route between the Capitol and The White House. This meant at the beginning that any building constructed there would have to be of significant monumental scale. Any building on the plot also had to abide by set-back lines established by the National Capital Planning Commission, as well as to observe the established heights of the cornice lines of both the Avenue and the Mall buildings, which are at substantially different levels, and at the same time relate in scale, materials and placement to the Gallery's West Building. Finally, the structure had to be appropriate to its setting and simultaneously maintain a human scale so necessary for the enjoyment of works of art.

The design solutions unfolded with a simple diagonal subdivision of the available trapezoidal space into two triangles--a larger isosceles triangle, its base facing the West Building and its exposed side bounded by Pennsylvania Avenue, and a right triangle, the base of which faces the Capitol and the exposed side of which is bounded by the Mall. A third triangle, a faceted glass roof, ties these primary elements together. The proportion of base to side in all isosceles triangles in the building, from the main skylight to the marble paving tiles, is one to one and a half.

Although the center of the site lies to the south of the powerful central east-west axis of the West Building, the towers of the East Building are designed to continue that axis and conform to the symmetry of the West Building's Fourth Street façade.

The Exhibition Areas (opening June 1, 1978). The isosceles triangle, the larger of the East Building's two major areas, provides the space for exhibition galleries and for public services. It is composed of three towers of galleries--one tower at each of the triangle's points--connected by bridges of galleries. The four main levels of this part of the building contain space for the Gallery's growing permanent collection and for temporary exhibitions, two auditoriums, a central orientation courtyard and public-service areas. The mass of this triangle is carved out and penetrated by natural light, not only from overhead--similar to the daylight courts in the West Building--but also from the side, both symbolically and visually opening up the building to the public. The height of the towers retains and anchors the cornice line of the buildings on the south side of Pennsylvania Avenue.

The Center for Advanced Study in the Visual Arts (opening at a later date). Unlike the larger, isosceles triangle with its dramatic open spaces for works of art and flow of visitors, this right-triangle structure is subdivided into eight levels of offices for the Gallery's curatorial staff, administrative personnel, and Center for Advanced Study in the Visual Arts. A six-story library with an open reading room serves as a functional, symbolic and visual focal point for the Center.

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The Connecting Link (completed and opened June 1976). The Connecting Link joins the East Building and the West Building in an all-weather underground route. The Concourse or public area of the Connecting Link houses a 700-seat Café/Buffer and a publication sales area. The focal point in these public areas is a waterfall from the fountain on the Plaza. On the Plaza above the Connecting Link, seven glass tetrahedrons serve as skylights for the Café below. Offices, storage and work areas fill two levels of space adjacent to and below the public areas. The roof of this two-story, 154,000-square-foot facility serves as the granite-paved National Gallery Plaza, visually as well as functionally linking the East and West Buildings.

Construction Features:

The East Building.

- o Foundation - 37 feet below grade; heavy foundation mat (6 feet thick), tie-down anchors and special waterproofing to resist the high water-table pressure. Several years of pumping ground water during construction.
- o Superstructure - heavy-loading, long-span design permits heavy sculpture in any gallery and provides spatial flexibility and ease of circulation. Total weight of three major steel trusses: 540 tons, the largest of which is 180 feet long, weighing 242 tons (Pennsylvania Avenue side).
- o Marble - the same Tennessee pink marble used in the West Building; exterior blocks 3 inches thick, cut approximately 2 feet by 5 feet. Marble blocks hung on stainless steel supports from concrete and brick core wall averaging 12 inches thick. "Solid" corner pieces. Neoprene strips between blocks allow for expansion and contraction while eliminating expansion joints as well as caulking and pointing maintenance.
- o Concrete - architectural concrete composed of white cement, a coarse pink aggregate, a fine white aggregate, and marble dust from the Tennessee quarries. Extensive post-tensioning. The two largest poured-concrete beams, each extending approximately 200 feet, form soffits on the north and south sides of the building. Coffered ceilings were made in forms of clear-grained fir crafted by cabinetmakers and joined and reinforced to ensure strength and precise surfaces. Low maintenance.
- o Space Frame/Main Skylight - 225 feet long on two sides, 150 feet long on the other, spanning 16,000 square feet--more than a third of an acre--80 feet above Concourse level; constructed of a 500-ton welded steel frame, aluminum and double-pane insulating glass, including laminated safety glass and special ultra-violet filters for art preservation. Aluminum sunscreen filters direct sunlight. Each

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tetrahedron in the main skylight is 30 feet by 45 feet. Space frame has built-in overhead electrical outlets for lighting works of art. Neoprene gutter system carries water run-off into regular plumbing system. Electrical heating system melts snow.

- o Windows - double-pane insulating glass 1 1/4 inches thick with 1/2 inch of internal air space; individual panes up to 14 feet high and 105 square feet in area.
- o Gallery Skylights - in three top tower galleries, spanning a total of 8,600 square feet; double-pane insulating safety glass with ultra-violet filters; artificial and natural light combined; "laylight" ceilings below the skylights, with electrical grids.
- o Ceiling Heights - a wide range for all foreseeable installation requirements; ceilings for initial installation vary from 10 feet to 35 feet in height.
- o Air Outlets - modular integrated air outlets in gallery ceilings, to minimize costs of exhibition alterations and provide flexibility of gallery subdivision.
- o Lighting Tracks - modular grid above gallery ceilings, to minimize costs of exhibition alterations and provide flexibility of gallery subdivision.
- o Gallery Walls - special plywood backing, faced with wallboard, to allow maximum installation flexibility.
- o Gallery Floors - modular grid of electrical outlets for installation flexibility.
- o Elevators - 8. The largest is a special 18,000-pound capacity passenger/service elevator serving all main levels; can carry objects up to 18 feet long; 10-foot ceiling.
- o Emergency Electrical Power - in addition to regular power, an 800kw emergency stand-by generator; automatic starting in event of power failure; provides lighting for egress from all areas, including stair and exit lights; power to operate one elevator at a time to ground-level landing and to continue operation of all alarm, security and communications systems.
- o Security and Fire Protection - computerized security systems for both buildings united, with one control room, including intrusion alarms, watch patrol stations, emergency communication stations, closed-circuit TV systems.

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- o Air Conditioning Systems - systems for East Building and art-storage areas in Connecting Link consist of air filters, preheat coils, high-efficiency air washers (water spray), and reheat coils. (Other areas have cooling coils in lieu of air washers.) Systems have pre-filters and high-efficiency main filters.
- o Temperature and Humidity Controls - automatic; temperature and humidity sensors dispersed throughout each system and controlled from a local control panel for each unit. Remote indicating panel in Central Engineer's office, with recording instruments; alarm systems to signal all variations from optimum conditions and malfunctions; temperature control accuracy to be within plus or minus 2°F and relative humidity within plus or minus 2% from optimum conditions.
- o Reading Room - in Study Center Library, 72 feet high.
- o Offices - 10-foot ceilings, 8 levels, in Study Center.
- o Book Stacks - 9 levels, with capacity to house 350,000 volumes, allowing for expansion of the Library. Future additional book-storage capacity underground.
- o Study Center Interior - integrated modular double-floor construction; air-circulation and electrical grid permitting rearrangement of partitions.

The Connecting Link and Plaza.

- o Foundation - heavy foundation (concrete mat 5 feet thick) 28 feet below grade, with tie-down anchors, special waterproofing and heavy walls to resist high water-table pressure.
- o Construction - carried out in two stages to continue traffic on Fourth Street; required rerouting, maintaining and reconstructing major utilities, including sewer, water, telephone and high-voltage electric conduits, and building, maintaining and removing a full detour road for Fourth Street. Several years of pumping ground water during construction.
- o Truck Dock - long-span underground structure for trailer-truck maneuvering.
- o Kitchen - major facility constructed for the 700-seat Café/Bufferet, which has already served more than a million visitors since June 1976. Kitchen exhausts deodorized by carbon filters.
- o Moving Walkway - constructed in the underground passage between the East Building and the Concourse to assist visitors as they move between the two buildings; 172 feet long.

- o Elevators - 3, one of which is connected by underground passage to truck dock and West Building freight elevator.
- o Roof - a waterproofed surface with "Belgian block" granite cobble-paving and dense landscaping; also required a heavy superstructure capable of bearing full bus and truck loads along Fourth Street and throughout the Plaza area.
- o Fountain - 52 feet long; 24 water jets with height determinable by automated wind sensor.
- o Waterfall - from base of fountain to Connecting Link level; 37 1/2 feet long; 13 feet, 2 inches, top to bottom.
- o Plaza Sculpture/Skylights - 7 tetrahedrons on Plaza, serving as skylights for Café; heights range from 11 feet, 3 inches to 6 feet, 3 inches. Reflective safety glass.

Alterations and Interconnection with West Building.

- o New Lobby - required excavation under West Building's foundations and involved extensive structural demolition and reconstruction underneath and inside the building, including major stone remodelling in the Fourth Street lobby. New balcony on West Building's main floor and new glass wall and door in Fourth Street entrance completes visual axis of the buildings. Lobby also has new escalators, elevators and stairs to Connecting Link level.
- o Moat Walls - existing marble moat walls around the West Building's northeast and southeast corners maintained intact during construction of new ramp and truck dock facility, which required underpinning and reconstruction of support for moat walls.
- o Temporary Truck Dock - built at southeast end of West Building for uninterrupted Gallery operation.
- o New Refrigeration Plant - inside the west basement of the West Building, with construction of a floating steel floor support system. Excavation and reconstruction approximately 750 feet along the Gallery's Constitution Avenue frontage to install underground chilled water and steam lines connecting the plant to the East Building. Two new electrically driven, 1250-ton capacity centrifugal chillers installed in West Building basement, cross-connected with four existing machines, for operating efficiency and flexibility. Deliver chilled water at 42°F; pumps, cross-connecting with existing pumps, send chilled water to East Building and Connecting Link, to each air-handling system.

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After use in new systems, collected in major sump pits and pumped back to plant.

Condenser water cooling the refrigeration machines comes from Federally maintained gravity pipeline from Potomac River tidal basin (shared with other Federal buildings along Constitution Avenue), and returns to the river via storm sewer systems.

Energy Conservation and Economy:

Heating and Cooling Systems - automated, computerized heating and air-conditioning control systems interconnecting the East and West Buildings. When outdoor air temperature is suitable, heating or cooling can be done by switching to 100% use of outside air (needing only filtering and humidity treatment). Kitchen area supplied with make-up air from Café/ Buffet; garage supply ventilation is air transferred from other spaces. Heating supplied by Federal steam supply.

Windows - double-pane insulating glass minimizing the cost of heating and cooling operations while maintaining the necessary interior climate for the works of art.

Sunscreen - metal tubular grid filters out a minimum of 60% of direct sunlight; developed in full-scale mock-up tests in Florida and on the roof of the building.

Exterior Wall Construction - insulated exterior wall construction minimizing heating and cooling operations and maintaining the special interior climate.

Provisions for the Handicapped:

Access - to every level, via elevators and ramps, including marble ramp at main entrance; levelator at entrance to Concourse exhibition area.

Telephone Booths and Drinking Fountains - special construction in certain locations.

Restroom Facilities - special construction of certain facilities.

Gallery Planning Consultant: Dr. David W. Scott

Gallery Construction Manager: Hurley Offenbacher

Gallery Construction Consultant: Morse/Diesel, Inc., New York

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Builder: Chas. H. Tompkins Co., Washington, D.C.

Consultants:

Foundation: Mueser, Rutledge, Wentworth & Johnston, New York

Structural: Weiskopf & Pickworth, New York

Mechanical and Electrical: Syska & Hennessy, New York

Lighting: Claude R. Engle, Washington, D.C.

Food Service: Cini-Grissom Associates, Rockville, Md.

Landscaping: Kiley, Tyndall, Walker, Charlotte, Vt.

Acoustical: Cerami and Associates, Inc., Long Island City, N.Y.

Audio-Visual: Will Szabo Associates Ltd., New Rochelle, N.Y.

Graphics: Herman and Lees Associates, Cambridge, Mass.

Marble: Malcolm Rice, Concord, Tenn.

Skylight/Window Wall: Antoine-Heitmann & Associates, Inc., Kirkwood, Mo.

Traffic: Travers Associates, Clifton, N.J.

EDITOR'S NOTE: An advance exhibitions schedule will be sent during January.

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January 10, 1978