Smithsonian Institution, Arts and Industries Building
900 Jefferson Drive, S. W.
Washington
District of Columbia

HABS No. DC-298

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Department of the Interior
Washington, D.C. 20240

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HISTORIC AMERICAN BUILDINGS SURVEY

SMITHSONIAN INSTITUTION, ARTS AND INDUSTRIES BUILDING
(Museum Building) HABS No. DC-298

Location: 900 Jefferson Drive, S.W., Washington, District of Columbia. 50' S.E. of Smithsonian Institution Building, DC-141.

Present Owner: Smithsonian Institute.

Significance: One of the best remaining examples of nineteenth century "exposition" architecture in the United States, the Arts and Industries Building was built to house international exhibits donated to the United States after the Philadelphia Centennial Exhibition of 1876.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1879-1881.

2. Architect: Based on plans submitted in 1877 by Montgomery Meigs. Final plans drawn by the firm of Cluss and Schulze.

3. Original plans and construction: Many of the original drawings have been preserved in the collection of the Smithsonian Archives.

4. Alterations and additions:

1890's	Replacement of all wooden floors.
1901-1903	Building wired for electric lights.
late 1960's-1970	Northwest pavilion restored to 1881 appearance.
1984	Exterior cleaned and repaired.

B. Historical Context:

The Arts and Industries Building of the Smithsonian Institution (known as the "Museum Building" from 1879 to about 1910) was erected between 1879 and 1881 on the Mall on the East side of the original Smithsonian Institution Building. It was erected because of overcrowding of space in the original Smithsonian Institution Building due to an increasingly large number of new exhibits and the arrival of a large collection of museum objects donated to the U.S. Government by foreign governments which had exhibits at the Philadelphia Centennial Exhibition of 1876. After the Philadelphia Centennial exhibition

closed in 1876, a Permanent Exhibition Company was formed to keep open the main building covering 18 acres of exhibits in 1877. The company was forced to close and most of the foreign exhibits were sent to the Smithsonian Institution. They were immediately stored in the D.C. Armory Building, at the corner of Independence Ave. and 7th St., S.W. Thirty-three of the forty nations which had exhibits at Philadelphia gave their entire exhibits to the U.S. government. They expected the United States to place their gifts on permanent display in Washington. The collections of the Smithsonian were suddenly increased in size by 400% by these gifts, worth one million dollars, when the Philadelphia Exhibition closed.

The Board of Regents of the Smithsonian requested funds from Congress in January, 1877 to erect a new museum building to house this collection. Accompanying the original bill were architectural plans for the new building designed by Gen. Montgomery Meigs, similar in style to those of the Philadelphia Exhibition buildings. The building was to be fireproof - with concrete floors, and a steel skeleton. The bill authorizing the building was passed by Congress in early 1879. The final plans based on the 1877 plans submitted by Meigs were drawn by the Washington architectural firm of Cluss and Schulze. Gen. Meigs was appointed consulting engineer for the building. A careful study was made in 1879 by George Brown Goode of the Smithsonian Institution of the most advanced exhibit cases in other museums, especially the Dresden Museum and the British Museum.

Ground was broken for the building on April 17, 1879. The roof was finished in April, 1880, the plaster work was finished in July, 1880, wooden floors were laid in 1880 in the ranges of the building, and marble tile floors were laid in the rotunda in 1881 (Congress granted an additional $26,000 in the summer of 1881 for marble tile floors for the four courts, four naves, and the rotunda).

The final report of the Building Committee of the National Museum Building, (the Secretary of the Smithsonian, Spencer F. Baird, M.C. Meigs, Wm. T. Sherman, and Peter Parker) in January, 1882, gave the total cost of the building as $315,400. The cost of construction was less than three dollars per square foot - the cheapest building ever erected by the U.S. government of a permanent nature. Erection of the building proper cost $250,000.

The architects of the building, Cluss and Schulze, described the design in 1879 as follows:

> "A modernized Romanesque style of architecture was adopted for the new building in order to keep up a relationship with the Smithsonian building, which is designed in Norman, a variety of this style. To modernize this style was found necessary on

account of the different building material, and to do justice to the purposes of the building with its modern demands of perfect safety and elegance of construction, of greatest possible available floor space, of easy communications, efficient drainage, a well-calculated and pleasing admission of light, free circulation of air, and all other hygienic dicta.

The external architecture is based upon the general arrangement of the interior, and shows plainly the prominence of the four naves and the careful management of the light for the central portion of the building. The main entrances are in the centers of each facade between two lofty towers, and receding from the doorways, there are large arched windows set with ornamented glass, and above those the gables of the naves are formed; they contain inscription plates, and are crowned by allegorical groups of statuary. The group over the northern gable, designed by C. Buberl, of New York, already in position, introduces Columbia as the protectress of science and industry.

On the whole, the one-story plan which has prevailed among experts ever since the Paris exhibition of 1867 has been adopted. But by introduction of upper stories on those outlying sections reserved for offices, ample office room has been secured without encroaching materially upon the floor space with the square of 300 feet to which the building was primarily limited."

(Annual Report of the Smithsonian Institution for 1879, pp. 130, 131.)

PART II. ARCHITECTURAL INFORMATION

A. Description of Exterior:

The Arts and Industries Building is almost perfectly square, one story, with brick walls and roofs of steel framework and slate covering. It consists of four large naves centered around a large rotunda in the shape of a Greek cross, with ranges and covered courts filling in the remaining space. The building was originally rather well lighted since the ranges have large windows and the naves and courts both have skylights and clerestory windows. The addition of galleries to the building (balconies) some fifteen years after it was erected, reduced the amount of lighting to the ground floors.

In the center of each facade, at the sides of the entrances, are two tall towers. At the corners large pavilions, project about thriteen feet from the principal walls, making the extreme linear dimensions

of the building about 325 feet. The amount of space covered is 97,786 square feet or 2 1/4 acres.

The four facades of the building are basically symetrical. The north or main facade has a central entrance, bordered by a tall arched framework of Ohio sandstone. Above this main entrance is the 55 foot high gable end of the north nave, with a stone plate with the inscription "National Museum, 1879" and surmounted by an allegorical group of statuary representing "Columbia" protecting "Science" and "Industry." The central female figure stands with her arms outstretched; below her are two seated females. The seated female on the left represents "Arts and Sciences" - reading a book while a large owl sits at her feet. The seated female on the right is "Science" holding a hammer and surveying instrument.

The pavilions on the four corners of the building are three stories plus a basement, about 40 feet square and 36 1/2 feet high. The roofs of the pavilions are rather flat while the tower roofs (center of each outer wall) are very steep. The first two floors are each lighted by four large arched windows; the third floor has three small windows grouped in the center of each side. A large lantern skylight crowns the roof of each pavilion.

The top of the building consists of a maze of angles and slopes formed by the various roofs. The highest roof is that of the dome of the rotunda. Next in height are the roofs of the courts and great halls or naves. The roofs of the courts are mounted with large square lanterns while the nave roofs have plain hip roofs the same height as the courts - with elongated lantern skylights in the middle. The lowest pitched roofs are those covering the ranges.

The roofs of the ranges were covered with tin; the rest of the surface with slate. The slates were nailed to small pieces of wood and fitten into L shaped pieces of iron and laid directly on the framework. The interior of the roofs were then plastered directly. The entire interior framework of the roof was left uncovered to economize. The roofs were supported by iron trusses which resulted in many leaks due to contraction and expansion of the iron beams. By 1900 the weak iron trusses had to be reinforced with steel rods.

Decorative Victorian brickwork enlivens the exterior walls: red brick is laid in black mortar, and numerous courses of black brick and a quantity of cream colored bricks are laid in courses and designs. The base of the exterior walls consists of a course of granite. The window sills, copings and other details are of gray Ohio sandstone.

B. Description of Interior:

The interior of the building consists of six major features: rotunda, naves, ranges, courts, pavilions, and balconies (added later). Four naves or great exhibit halls radiate from the central rotunda toward the towers on the outer walls of each facade to form a Greek cross. A series of eight ranges, two on each side of the building, follow the outer walls and extend from the naves to the pavilions (which are located on each corner of the building). Four courts, enclosed by the naves and ranges, are roofed over and form parts of the actual building. There are thus a total of 17 various halls in the building for exhibit purposes: 1 rotunda, 4 naves, 8 ranges, and 4 courts (formed by the naves and ranges). The halls are separated by heavy brick walls with many broad arched openings reaching nearly to the ceiling. Most of these arched openings were filled in with exhibit cases but the great halls or naves connecting to the rotunda were always kept open.

The central rotunda has the greatest height. The walls of the rotunda are octagonal, with a maximum diameter of 65 feet, surmounted by a 16 sided polygon, 67 feet in diameter, which contains a tier of large windows, and covered with a slate roof rising to a central lantern. The rotunda walls are 77 feet high. The distance from the floor to the top of the lantern finial is 108 feet. The measurements of the four naves are: length - 117 feet, width - 65 feet, height to the top of the side walls - 42 feet, and the height to the ridge of the roof - 56 feet. Courts measure: 63 feet square and the same wall height as the naves. Ranges measure: width - 50 feet, length - 89 feet (on north and south sides) and 63 feet (on east and west sides). The east and west ranges are smaller due to extensions from the adjoining pavilions, eight - 26 1/2 feet at the outer walls and 31 feet at the inner walls (they are covered with lean-to roofs).

The erection of balconies in the building, 1896-1902, provided an additonal 25,828 square feet of floor space. The balconies were of simple construction, with plain iron pillars and girders, brick archways and cement floors. The width of the balconies varies from 10 to 14 feet. Their height is 16 feet above the floor. These galleries were erected after Congress refused to provide a new building for the Smithsonian Institution in 1896.

The walls of the building were originally painted gray. In 1883 the first 12 feet of the interior were painted maroon as it was felt that color would best harmonize with the mahogany exhibit cases. In 1902 the first 15 feet of the interior walls were painted a light red, the upper walls were painted a deep ivory and the ceilings a light ivory. The only original painted decorations were figures stenciled on the walls of the rotunda and over the archways at the inner ends of the main halls.

In the center of the rotunda is an octagon shaped granite fountain base, 20 feet in diameter. In December 1890, the original plaster cast of Crawford's "Freedoom" statue was placed in the center of the basin on a low pedestal.

Due to insufficient funding, a basement under the main building was not built. Small cellars were constructed under three of the pavilions in the southwest pavilion for heating equipment, and the northwest and northeast pavilions for storage. In 1901 an underground tunnel was constructed connecting the building with the Smithsonian Institution Building. This passageway is still used today by the staff.

The lighting of the building was probably its most advanced feature. The need to have numerous windows to light exhibits resulted in the maze of towers and projections on the roof. The ranges adjacent to the outer walls are lined with tall windows. The higher inner courts and naves have both skylights and clerestory windows. The naves also receive light from the large windows between the central towers. The towers and pavilions are also well lighted. All of the windows originally consisted of glazed double panes of glass - to retain heat in the winter. In the summer, ventilation was provided by pivoting sash windows and roof ventilators. Electric lights were installed in the lecture hall (N.W. Range) in 1881 for evening meetings. The building was not completely wired for electric lights until 1901-1903.

PART III. SOURCES OF INFORMATION

Minutes and Correspondence (unpublished) of the Building Committee for the National Museum, 1879-1881. Smithsonian Archives, Smithsonian Institution Building, Washington, D.C.

Richard Rathbun, "The United States National Museum: An Account of the Buildings Occupied by the National Collections," Report of the U.S. National Museum Under the Direction of the Smithsonian Institution, for the Year Ending June 30, 1903. (Washington, D.C.: Government Printing Office, 1905), pp. 177-310. Copies are located in all of the Smithsonian Institution Libraries.

Folder on the history of the Arts and Industries Building, notes and memos, in the Smithsonian Archives.

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February 1971

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