NATIONAL ZOOLOGICAL PARK, ELEPHANT HOUSE
3001 Connecticut Avenue NW
Washington
District of Columbia

HABS DC-777-C
DC-777-C

REDUCED COPIES OF MEASURED DRAWINGS

FIELD RECORDS

HISTORIC AMERICAN BUILDINGS SURVEY
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

ADDENDUM TO:
NATIONAL ZOOLOGICAL PARK, ELEPHANT HOUSE
3001 Connecticut Avenue NW
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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
National Park Service
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HISTORIC AMERICAN BUILDINGS SURVEY

NATIONAL ZOOLOGICAL PARK, ELEPHANT HOUSE

HABS No. DC-777-C

Location: National Zoological Park, 3001 Connecticut Avenue, NW, Washington, D.C. Within the National Zoo complex, the Elephant House is to the southwest side of the Olmsted Walk and across the walk from Parking Area "B".

Present Owner: Smithsonian Institution, National Zoological Park.

Present Occupant, and Use: The Elephant House currently is occupied by three Asian elephants, named Ambika (born 1948), Shanti (born ca. 1975), and Kandula (born at the zoo in November of 2001); one male Rothschild's giraffe; one Nile hippopotamus; two pigmy hippopotamuses native to West Africa; and two male capybara, native to Central and South America.[1]

Ambika was captured in the Coorg Forest in India when she was about eight years old and was placed in a logging camp. In 1961 she was presented to the National Zoo as a gift from the children of India. Shanti was rehabilitated at the Pinnewela Elephant Orphanage and was given to the National Zoo in 1976 as a gift from the children of Sri Lanka. Her name, Shanti, means peace or blessing. Kandula is Shanti's second calf and he was named for the most famous elephant in Sri Lanka's history.

Significance: Director of the National Zoological Park William M. Mann penned "A Brief History of the Zoo" in 1946 on the occasion of the centennial anniversary of the Smithsonian. Mann wrote that "in 1935 the Zoo had a great stroke of good luck [when] the Public Works Administration allotted $680,000 and followed this the next year with $191,000, with which were constructed machine shops, a central heating plant and working facilities, a small mammal house, and a pachyderm house; the bird house was completed, thus giving the Zoo four of the best buildings in the world [...]."[2] Of these, the Pachyderm House or as it is popularly known, the Elephant House, was a pivotal design for the exhibition buildings in the Zoo. It was the last to use historicism as a source of its architectural

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[1]Site visit, June 2006. In November, Randle the giraffe moved to Tampa, Florida, joining several other male giraffes at a zoo there. Placements for the Nile hippopotamus and the pygmy hippos have yet to be determined. "Animal News," *Washington Post* (17 November 2006), C12.

[2]William Mann, "A Brief History of the Zoo," *Scientific Monthly* 63, no. 5 Smithsonian Centennial Issue (November 1946): 357.

expression (classicism) and to have expressive ornament. The artistic components portrayed the evolution of the pachyderm. The Elephant House was the first exhibit to have moats defining the outdoor yards and so aligned the Zoo with contemporary or modern practice for animal display, as it was in the first part of the twentieth century. Mann also turned to architect Edwin Hill Clark of Chicago for the building's design. Clark had experience with other zoological parks, namely Lincoln Park and the Chicago Zoological Gardens (Brookfield Zoo), before working on the National Zoo's Pachyderm House.[3]

While a seminal exhibition feature for the Zoo, the Elephant House is also a testament to the Depression-era work relief programs and to the increased emphasis on outdoor spaces for healthful recreation of the 1930s designed to mitigate the straightened circumstances of so many. The Works Projects Administration provided laborers, the federal art project (here, the Treasury Relief Art Project) funded Charles R. Knight's sculptural work, and the Public Works Administration supplied the money for construction in Washington's National Zoological Park.[4] Of the construction, Mann proclaimed in 1937 that the PWA grants enabled "probably the most outstanding [year] in the history of the Zoo."[5] The exhibition buildings erected in the 1930s gave greater comfort to the animals and lent the Zoo a sense of architectural import commiserate with the natural beauty of its setting.

Project Information: The recording project was jointly sponsored by the Smithsonian Institution, National Zoological Park, and by the Historic American Buildings Survey (HABS) branch, Catherine C. Lavoie, Acting Chief, of the National Park Service's Heritage Documentation Programs, Richard O'Connor, Acting Manager. The project planning was guided by Catherine C. Lavoie, Acting Chief, HABS, Mark Schara, HABS Architect, and Timothy Buehner, Architect, for the National Zoological Park during the spring of 2006. Documentation was undertaken by Project Supervisor

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[3]1935 Smithsonian *Annual Report*, 4, 54.

[4]1937 Smithsonian *Annual Report*, 70; RG 69: Records of the Works Projects Administration, Box 421. Also, in the 1935 report, Mann noted workers supplied through the Emergency Works Administration. 1935 Smithsonian *Annual Report*, 4. Knight worked through TRAP, the Treasury Relief Art Program, as well as PWAP, Public Works of Art Project. Alexa Mergen, *From Bison to Biopark: 100 Years of the National Zoo* (Washington, D.C.: Friends of the National Zoo, 1989).

[5]1937 Smithsonian *Annual Report*, 69.

Mark Schara, by the Field Supervisor Paul A. Davidson, HABS Architect, and by architectural technicians Wendy Byerly (Illinois Institute of Technology) and Amy Teeter (Montana State University) between June and August 2006. The field work for the large-format photography was completed by James W. Rosenthal, HABS Photographer, in May of 2006, with additional views of the south elevation scheduled for the fall. The report was written by Virginia B. Price, HABS Historian.

The author would like to thank Tony Barthel and Marie, Curators of the Elephant House, National Zoological Park; Polly Lasker, Librarian, National Zoological Park; Richard H. Hider, National Zoological Park; Cynthia Field and Christopher from the Smithsonian Institution Department of Architectural History and Historic Preservation; Martha and David from the Museum of Natural History Library, who shared their expertise and the animal crackers; Nancy Hadley, AIA Library; and Julia Bachrach, Historian, Chicago Park District.

PART I. HISTORICAL INFORMATION

A. Physical History

1. Date of erection: 1935-37.

In the 1938 *Annual Report*, Dr. William M. Mann director of the National Zoo, almost blase, stated that the "stone large mammal house, which had been completed in the previous fiscal year, was stocked with animals during August and September [of] 1937, and was opened to the public October 13, 1937, at the same time the giraffes, tapirs, African buffaloes, and gaurs that had been obtained on the National Geographic-Smithsonian Expedition were moved into it." In the previous fiscal year, the *Report* noted the contract work was complete in June and the remaining tasks had been assumed by regular Zoo employees with hopes the WPA would provide additional labor. It was also hoped that the building would be ready for occupancy later in the summer. Newspaper accounts of Babe, an elephant, and her worsening condition observed that the structure was almost finished in August of 1937 and that the costs ballooned to over $300,000.[6]

Further details regarding the Elephant House's construction are revealed in correspondence between Mann and Edwin Hill Clark, the architect, in 1936. Clark, who was based in Chicago, was coming to Philadelphia and was willing to tack on a sojourn

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[6]1938 Smithsonian *Annual Report*, 67; 1937 Smithsonian *Annual Report*, 69-70; "Age Floors Old 'Babe' after 9 Years on Feet," *Washington Post* (9August 1937), 1, 16; "Fate May Cheat Old Babe, 99, Out of New Quarters at Zoo," *Washington Post* (10 August 1937), 4.

in Washington if he was needed. Clark was trying to finish a model for a new plan for the Philadelphia Zoological Garden in time for the journey.[7] He mentioned that he had not heard how things were going on the buildings since February. Mann replied with a status report. Most of the floor slab for the building had been poured. The structural steel had been erected. Cage fronts were up, except for the large hippopotamus's enclosure. The small pools were formed and being poured, although the large hippopotamus's tank merely had floor boards and forming for sides as he wrote to Clark. Mann further observed that the rock-work and limestone setting were underway at one end. Some modifications happened along the way, such as needing insets for the motors of the doors to the Elephant House. Mann wished to discuss the walls of the hippo cage, however.[8]

Before Clark left on his summer tour of Europe, he dashed a note to Mann restating the lack of communication from the Procurement Division of the U.S. Treasury, which oversaw the contract and construction as well as controlled the purse strings. Clark presumed the Treasury officials were in contact with the director. Clark reiterated how much he wanted the sculpture and cage work to proceed "without mistake" and how he wished Mann would be consulted for the "cage details, door operating devices and floor drains." He expressed confidence in Treasury workers Bristol and Cohen, but worried that "[the] engineers are uncertain finds."[9] Mann forwarded another status report in reply; as of June 11, 1936, the stone walls were complete at one end and on one side. Near the road, the work was fifty percent done, Mann estimated. The beams and skylights were in-situ for the giraffe end (west) as well as on the elephant and rhinoceros wall (south). He hoped Charles Knight was busy with the sculptural details.[10] Mann also stated in his letter to Clark that Bristol was swamped and so had recruited "a young fellow - DuBarry by name - to help [him]... [DuBarry] has grasped the idea and is doing a splendid job."[11]

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[7]Clark worked with Paul Cret on a study of the gardens and on a landscape plan for the Philadelphia Zoo to follow Hagenbeck's designs. It was to this project Clark's diary entries referred. Cynthia Ott, "Philadelphia Zoological Gardens," Report, 1996, (HABS No. PA-6211), 33; Entries 7 August 1935, 8 August 1935, 30 January 1936, 26 March 1936, 13 May 1936, 16 June 1936, in 1931-35 diary and 1936-40 diary, Edwin H. Clark Collection, Ryerson and Burnham Archives, The Art Institute of Chicago.

[8]Edwin H. Clark, Chicago, to Dr. William M. Mann, Director, National Zoological Park, 30 April 1936; Mann to Clark, 4 May 1936, SI (record unit 74, NZP 1887-1965, box 225).

[9]Clark to Mann, 8 June 1936, SI (record unit 74, NZP 1887-1965, box 225).

[10]Mann to Clark, 11 June 1936, SI (record unit 74, NZP 1887-1965, box 225).

[11]Mann to Clark, 11 June 1936, SI (record unit 74, NZP 1887-1965, box 225).

On Clark's return from Europe, he enthusiastically wrote to Mann about the Whipsnade Zoo and a new one in Paris. He proclaimed he had "lots of ideas regarding the development of your outdoor paddocks"and finagled a summons from the Procurement Division to come to Washington, D.C., to check on the Zoo buildings. While he was in town he wanted to see Mann and to discuss the paddocks among other concerns. This was in October.[12]

2. Architect: Edwin Hill Clark (1878-1967).

In 1939 the Chicago Chapter of the American Institute of Architects put Clark up for fellowship, although the application forwarded on his behalf was not granted. This likely was a result of the nomination, which contained little about his accomplishments beyond a broad compliment noting "achievement in design, science of construction and service to the Institute." Rather than providing a description of Clark's work in design and his contributions to the "advancement of the profession," the Chapter's entry promoted "his outstanding ability and accomplishments as an architectural designer" and reiterated that he held a "distinguished position ... in his profession both locally and nationally." It did not, however, say how he captured such revere. Clark had been a member of the AIA at least since 1928; his file at the AIA included a notice of an early partnership, with Chester H. Walcott, at 8 East Huron Street in Chicago. The notice of partnership was stamped "received" at the AIA in July of 1920. The East Huron Street address was itself recent; Clark requested the AIA update its records only in May. By the time of the Chapter's nomination, Clark's firm was said to be Edwin H. Clark and Herbert Banse Inc. The architectural practice remained at the East Huron Street location. While the Chapter neglected to write about Clark's work, they did submit samples of his work in the form of exhibits. These were received in March of 1939 and returned after the final vote by the Jury of Fellows in May of 1940. Clark asked for two photographs back that same month, most likely prompting the exchange.[13]

Biographical data compiled for the AIA fellowship places Clark in Philips Andover Academy, graduating in 1897, and then moving on to Yale University. He graduated in 1901 and proceeded on to study at the Armour Institute of Technology in Paris from 1902-03. By 1939, Clark was a Park Commissioner in Winnetka, Illinois, and a member

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[12]Clark to Mann, 26 August 1936; Clark to Mann, 21 October 1936, SI (record unit 74, NZP 1887-1965, box 225); 24-26 October 1936, 1936-40 diary, Edwin H. Clark Collection, AIC.

[13]Edwin H. Clark, Biographical file, AIA library and archives; Nancy Hadley to Virginia B. Price, electronic communication 29 November 2006. Also of note, the Chicago Zoological Society maintained administrative offices at 8 East Huron Street until 1928. Since Clark was the Society's architect, it is likely they shared quarters. Andrea Friederici Ross, *Let the Lions Roar!: The Evolution of Brookfield Zoo* (Chicago Zoological Society, 1997), 25.

of the Board of Art Advisors for the state.[14] Chicago's Art Institute also touts Clark's Ivy League education. The Art Institute describes Clark in this way:

> Educated at Yale University, Edwin Hill Clark began practicing architecture in Chicago in 1906 in partnership with William Otis. Although a small firm, it produced a broad variety of projects: large estates in Chicago's northern suburbs, libraries and city halls, animal habitats for the Lincoln Park Zoo, and several buildings for the 1933-1934 Century of Progress exposition in Chicago.

Publications of Clark and Walcott's domestic architecture in 1922 as well as their design for the Aquarium for the Lincoln Park Zoo that same year signaled the firm's arrival. Moreover, Clark's plans as well as photographs of the buildings he was responsible for in Brookfield at the Chicago Zoological Park in the 1934 *Architectural Record* could have brought him to Mann's attention.[15]

Mann contacted Clark about his hoped-for construction projects at the National Zoo shortly thereafter; Mann appeared to be able to solicit his choice of architect, free from the strictures of a design competition. As a follow-up to Mann's telephone call regarding the development of the National Zoo buildings in January of 1935, Clark reminded Mann of his work for Lincoln Park, namely the Administration Building, Primate House, and Aquarium. Clark expressed his interest in the National Zoo project, highlighting both his experience with buildings of the purpose and his, perhaps, useful contacts. He also agreed to the consultation role, assuring Mann it would cost no more than the "charge of a first-class local architect" and inquired about government contracting procedure.[16] In April, Clark asked Mann what the possibility of the commission was, wanting to know if he should plan for spending a considerable amount of time in Washington during the upcoming summer. From the letter it would appear the two men had not been in touch.[17] Mann reassured Clark "action was imminent" and Clark wrote to review the terms of the contract, which included the provision for him being in Chicago from time to time. He

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[14]Edwin H. Clark, Biographical file, AIA.

[15]*Architect* (December 1923): 79-80; *Western Architect* 31 (October 1922): 117, pl. 1-12; and "Chicago Zoological Park," *Architectural Record* 76 (December 1934): 419-28.

[16]Clark to Mann, 17 January 1935, SI (record unit 74, NZP 1887-1965, box 225). Clark's diary records his visit to Washington on 21-22 January 1935, wherein he met with Mann and Louis A. Simon, of the Supervisory Architect's Office of the U.S. Treasury, regarding drawings for the Zoo. 1931-35 diary, Edwin H. Clark Collection, AIC.

[17]Clark to Mann, 12 April 1935, SI (record unit 74, NZP 1887-1965, box 225).

offered to come to Washington to discuss the details with Louis A. Simon, the Supervising Architect, in person if that would facilitate the matter. Although his anxiousness over obtaining the work might be attributable to the Depression-era years, Clark was planning a European trip and declared to Mann that "the pleasure and satisfaction of designing your buildings is much more important than the financial profit, ..."[18]

At the end of May of 1935, the legal section of the Treasury requested Clark come to Washington to talk over the contract; Clark planned to meet Edward R. Witman to hammer out the details. He signed on as the consulting architect on the twenty-eighth. While Clark was in town, Mann wrote to Charles R. Knight in New York that they were "commencing work on the building" and that he reserved money "for art work but at present have no details worked out." Mann hoped to know shortly thereafter what sum was budgeted so that he could notify the artist; he also assured Knight that Clark was "a very fine fellow to work with."[19]

By September, Mann's very fine fellow was glad of a respite from the Washington endeavor, attending to his practice in Chicago after months away.[20] Clark, however, still focused on the Zoo projects and wrote to Mann regarding the metalwork for the cages. Clark sought advice from "material men and ornamental iron contractors" over the proposed use of stainless steel. It proved impractical, costing considerably more than ordinary steel both in terms of materials and labor. It was difficult to drill which raised the labor price. In all, the stainless cage would come in at a price at least nine times higher. Welding the stainless steel presented another dilemma, the possibility of rust at the joints which then would necessitate painting. Instead, Clark determined to bring samples of iron treated with either a "parkerizing or sheradizing" process to keep it free from rust for Mann to judge.

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[18]Clark to Mann, 24 May 1935, SI (record unit 74, NZP 1887-1965, box 225).

[19]Clark to Mann, telegram 27 May 1935, SI; Mann to Charles R. Knight, New York, 31 May 1935 (record unit 74, NZP 1887-1965, box 225). Clark returned to Washington at the end of May, signing the contract at the Treasury on 28 May 1935. He stayed to "organize the Zoo job" through the first of June. 1931-35 diary, Edwin H. Clark Collection, AIC.

[20]Clark returned to Washington on June 16, 1935, and remained in town until the first of September, wherein he and his wife Katherine left for home. Clark wrote in his diary that September 5th was the first breakfast he had eaten at home since the tenth of June. He returned to Washington, by train, on September 16, 1935, and sent "all [the] Zoo drawings for check" on the twenty-third. 1931-35 diary, Edwin H. Clark Collection, AIC.

Clark also expressed his frustration with Treasury procedure - no editing of cabinet sketches was allowed, nor were his choices for structural, heating and ventilation permitted for they were not Treasury practice. The draftsmen at the Treasury rotated in and out. They, unavoidably, were unfamiliar with the work, while the squad leaders, Clark thought, just sought to "grind the thing out." He worried Mann would be disappointed, and in his critiques of the Treasury tried to reassure himself and Mann that the drawings would be better if done by his office instead of through the revolving door of Treasury-based draftsmen, conditions resulting from the work-relief arrangement. The next day Clark had recovered somewhat, mailing Mann drawings for a possible Antelope House and a recent copy of *Architectural Forum* highlighting the Central Park Zoo.[21]

For the National Zoo, Clark designed the Elephant House, the exhibition building for small mammals and apes, a wing to complete the Bird House, and a series of three utilitarian structures (power plant, machine shop, carpenter shop) to replace the unsightly jumble along Rock Creek.[22] The design phase of all but the Bird House, which was out to bid, were essentially complete at the end of September. Mann specifically noted the moats surrounding the elephant yards; the rodent room wherein the occupants would be exhibited "under more or less natural conditions and in full view of the public"; and features of the Bird House interior. The Bird House would have glass-fronted cages and direct lighting from above. A movable skylight would provide fresh air in the warmer months. At either end of the building were special panorama cages, one for tropical birds and the other air-conditioned for cold-weather specimens.[23]

Clark defended his designs in December against apparent efforts to cut costs and whittle down the decorative and structural elements in the building. Clark protested that the valuable collections needed fireproof construction. He argued that the structural and mechanical designs already were as cost-effective as possible to still be in keeping with good practice. Clark explained the special care taken to ensure the buildings would be sanitary and to eliminate materials prone to rusting from the construction. The primary concern, moreover, was for the "health and happiness of the animals and the exhibition value. The cages are of ample size, well lighted, easily cleaned, and mechanically

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[21]Clark to Mann, 10 September 1935; Clark to Mann, 11 September 1935, SI (record unit 74, NZP 1887-1965, box 225).

[22]It is likely this was done under one contract for the design phase, given Clark's diary entries and his time spent in Washington, D.C. The contract itself remained elusive in my archival searches.

[23]Mann to L.C. Everard, Editor, American Association of Museums, 27 September 1935, SI (record unit 74, NZP 1887-1965, box 225).

ventilated..." Architecturally, Clark said he kept the schemes simple in order to reduce expenses.[24]

Clark was on hand for the opening of the bids in early December, and waited for a week or so for word about the PWA funding. He returned to Chicago on December 15, 1935, and received the telegram two days later notifying him that the funds were approved. The project would move forward. Clark zipped back to Washington to meet with the design committee in January.[25]

3. Original and subsequent owners, occupants, uses: The Elephant House has always been owned and used by the National Zoological Park. Over the years, its occupants have varied as the pachyderms (thick-skinned animals) were acquired and as they lived out their lives under the Zoo's care. Two of its initial occupants, Jumbina and Kechil, required cages to get them from the old Elephant House 200 yards away into the new; the third, Babe, a circus elephant was less attached to her surroundings after so much time traveling and performing. Zookeepers intended on walking her over once the building was ready.[26] Babe, however, died before the new structure was complete.[27] The other animals moved in with less fanfare than the elephants. They included various hippopotamuses, rhinoceroses, capybara(s), tapirs, and giraffes.

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[24]Clark, Washington, D.C., to Director of Procurement, Treasury Department, Washington, D.C., 4 December 1935, SI (record unit 74, NZP 1887-1965, box 225).

[25]1931-35 diary and 1936-40 diary, Edwin H. Clark Collection, AIC. Clark met with them on 9 January 1936, and was again in Washington on 19-22 January 1936, and on 24-26 October 1936.

[26]"Zoo's Anti-Nostalgia Crates to Move Elephants 200 Yards," *Washington Post* (13 August 1936), X1.

[27]"Age Floors Old 'Babe' after 9 Years on Feet," *Washington Post* (9 August 1937), 1, 16; "Fate May Cheat Old Babe, 99, Out of New Quarters at Zoo," *Washington Post* (10 August 1937), 4; "Beloved Babe, Oldest Elephant in Captivity, Dies Peacefully at 99 as Zoo Keepers Mourn," *Washington Post* (12 August 1937), 1; "Old Babe's Marker Delayed Pending Dr. Mann's Return," *Washington Post* (13 August 1937), 26. She was buried behind the zebra house. In the last article, the reporter mentioned a marker to "Dunk" in the brick elephant house, the building this one ultimately replaced. Talk evidently included the idea of a marker to Babe be placed in the new house, under construction at that time.

The Zoo has been home to at least fifteen Asian Elephants over the years, beginning with Dunk in 1891.[28] Dunk's successors [29] were Gold Dust (b. 1880, at Zoo 1891-98); Hitam (b. 1916, at Zoo 1918-25); Kechil (b. 1915, at Zoo 1918-47)[30]; Babe (b. 1877, at Zoo 1934-37)[31]; Jenny (b. 1944, at Zoo 1949); Ashok (b. 1947, at Zoo 1950-59)[32]; Shanti (b. 1947, at Zoo 1950-76)[33]; Dixie (at Zoo 1956); Ambika (b. 1948, at Zoo 1961)[34]; Ollie (b. 1971, at Zoo, 1973); Shanthi (b. 1976, at Zoo 1976-present); Toni (b. 1965, at Zoo 1989-2006)[35]; Kumari, Shanthi's first calf (b. 1993 and died 1995); and Kandula, Shanthi's second born in 2001. Another elephant, from Sri Lanka, was presented to President Reagan in 1984; unfortunately Jayathu died two months later.[36] There have only been

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[28]1911 Smithsonian *Annual Report*, 55; 1912 Smithsonian *Annual Report*, 72; 1917 Smithsonian *Annual Report*, 75.

[29]"Elephant List,"compiled by Richard H. Hider, NZP.

[30]Regarding arrival of two new elephants, 1919 Smithsonian *Annual Report*, 64-65; "Baby Elephants Reach the Zoo," *Washington Post* (23 March 1919), 15. Between the 1924 and 1925 annual reports, one of the Sumatran elephants died. This was Hitam. 1923 Smithsonian *Annual Report*, 96; 1924 Smithsonian *Annual Report*, 96; 1925 Smithsonian *Annual Report*, 93. Similarly, Kechil's death was not singled out. The 1947 annual report included two elephants, the 1948 just one. 1947 Smithsonian *Annual Report*, 103; 1948 Smithsonian *Annual Report*, 106.

[31]1934 Smithsonian *Annual Report*, 42; 1938 Smithsonian *Annual Report*, 75. The *Washington Daily News* and the *Evening Star* also ran photographs of Babe, Babe and Kechil, and Babe and Peaches (?) in the mid-1930s. *Washington Daily News* (19 May 1934), *Evening Star* (11 January 1935), and *Evening Star* (12 April 1935), clippings, Martin Luther King Public Library, Washington, D.C.

[32]1958 Smithsonian *Annual Report*, 140, 166.

[33]1950 Smithsonian *Annual Report*, 83, 100; 1977 Smithsonian *Annual Report*, 60. Regarding Jennie, Ashok and Shanti, see "Zoo to Get 2 Baby Elephants as Nehru's Gift to U.S. Children," *Washington Post* (26 February 1950), M1, 10; "Kid Elephants Due to Arrive in New York Today," *Washington Post* (14 April 1950), B1; "Ashok and Shanti to Make Bow at Presentation Today," *Washington Post* (16 April 1950), M1, 11; "Ashok and Shanti Officially 'at Home' Now After Presentation by Mme. Pandit at Zoo," *Washington Post* (17 April 1950), B1.

[34]1961 Smithsonian *Annual Report*, 133; 1962 Smithsonian *Annual Report*, 136.

[35]Toni suffered from arthritis and died in January. "Zoo Elephants to Get Wider Birth," *Washington Post* (21 June 2006), B1.

[36]1984 Smithsonian *Annual Report*, 106; "Baby Elephant from Sri Lanka Dies at Zoo," *Washington Post* (31 August 1984), C3.

four African elephants to date. They were Jumbo II (at Zoo 1913-16)[37]; Jumbina (at Zoo 1913-52)[38]; Nancy (at Zoo 1956)[39]; and Dzimbo.[40] The most visible difference in African elephants from their Asian counterparts is the size of their ears. The African elephants have much larger ears, and they grow to a "greater bulk."[41]

Dunk and Gold Dust were the first residents of the National Zoo, arriving in 1891 and sadly before any quarters were erected for them. They were walked up to the Zoo from Adam Forepaugh's circus downtown. Initially they were tied to a tree to keep them from wandering away, although Gold Dust quickly was linked to a more secure, granite post.[42] An octagonal-shaped, wood barn was hastily thrown up to provide the elephants' shelter. This sufficed as the elephant house until 1903 when the Hornblower and Marshall-designed elephant house (35' x 65') was complete. Dunk claimed quarters 35' square, plus an outside yard 79' x 96' with a 6' deep bathing pool. By 1923, the two Indian elephants Kechil and Hitam lived in the octagonal shelter, while Jumbina the African elephant occupied the masonry house.[43]

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[37]1916 Smithsonian *Annual Report*, 85.

[38]Regarding gift of a pair of young African elephants, 1913 Smithsonian *Annual Report*, 76; "Jumbina, 42, Zoo Elephant, Won't Come In Out of the Rain," *Washington Post* (26 April 1952), B1; "Jumbina Is the Queen of Zoo Elephant House," *Washington Post* (2 December 1923), 80.

[39]An elephant training program was initiated to provide Nancy, Ambika and Shanti with exercise, and to help control Dzimbo the young male African elephant. 1962 Smithsonian *Annual Report*, 140. Nancy and Dzimbo had an altercation in 1973, wherein she injured one of his tusks and bit his tail. The tusk was operated on, and six inches of his tail was amputated. 1973 Smithsonian *Annual Report*, 90.

[40]1960 Smithsonian *Annual Report*, 131. pl.8/picture 2 shows Dzimbo and President Eisenhower; 1977 Smithsonian *Annual Report*, 60; "Elephant for Zoo Due Here on Friday," *Washington Post* (8 October 1959), D1.

[41]"Popular Guide to the National Zoological Park," 1923, 5-7. Included are photographs of Hitam and Kechil as well as Jumbina. See also, J. Morewood-Dowsett, "Supplement: The Elephant Past and Present," *Journal of the Royal African Society* 38, no. 152 (July 1939): 3-40.

[42]Sybil C. Hamlet, "The National Zoological Park: from Its Beginnings to 1973," Report, December 1985, 34-35. NZP. Dunk was "fastened by chains" to two pine trees while Gold Dust was tethered to a stone post.

[43]1891 Smithsonian *Annual Report*, 50; "Popular Guide to the National Zoological Park," 1923, 6-7; Hamlet, 75; Gavin Farrell, "Smithsonian Institution National Zoological Park: A Historic Resource Analysis," 36-37, 55-56.

4. Builder, contractor, suppliers: Work at the National Zoo during the 1930s involved a host of federal programs under the auspices of President Franklin Delano Roosevelt's New Deal initiative to bring the country out of the Great Depression. Laborers for Zoo projects were funded through the District of Columbia's Emergency Works Administration and through the Works Projects Administration.[44] Money for construction came by way of the Public Works Administration; actual work was directed by the Office of the Supervising Architect at the U.S. Treasury and was subject to approval by the Commission of Fine Arts. The director, William M. Mann, was adept at managing the system as demonstrated through the appropriations awarded to the Zoo and through his use of Edwin H. Clark as a consulting architect to the Office of the Supervising Architect. Clark came to Washington, D.C., several times. He settled in during the summer of 1935, preparing the plans and specifications in accordance with Treasury regulations for at least temporary residency for architects assigned to federal building projects.[45]

In the 1930s, the federal public buildings program administered by the Supervising Architect's Office in the Treasury Department slipped into the worker-relief effort of the New Deal. The commitment to employing tradesmen for construction jobs reignited a rivalry between the Office of the Supervising Architect and the American Institute of Architects because the latter interpreted the Treasury's policy as an obstacle to architects themselves finding work. The Secretary of the Treasury Henry Morgenthau, Jr., initiated a campaign in June of 1934 to place all Treasury construction under the Supervising Architect's Office. Morgenthau also indicated he anticipated the costs of these projects to be $60,000 or less, meaning for the buildings to be erected efficiently and inexpensively, that is, within the budget, standard design characteristics would have to be used. Larger buildings could be designed by consultants, providing they relocated for the duration. Although the Supervising Architect's Office gained greater authority with Morgenthau's mandate, it already had been subsumed in the Public Works Branch during the 1933 reorganization that created the Procurement Division. Now under the umbrella of the Public Works, and that under Procurement, the reorganization was something of a step down in bureaucratic stature for the Supervising Architect's Office. Yet by the end of the

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[44]The CWA and Emergency Relief operations ceased and the EWA picked up the programs' mission in 1934.

[45]1935 Smithsonian *Annual Report*, 4, 54; 1937 Smithsonian *Annual Report*, 70; 1938 Smithsonian *Annual Report*, 67; Antoinette J. Lee, *Architects to the Nation: The Rise and Decline of the Supervising Architect's Office* (NY: Oxford University Press, 2000), 256; var. dates, 1931-35 diary, Edwin H. Clark Collection, AIC.

decade the Procurement Division branched out from the post offices and federal office buildings milieu to include provisions for hospitals and laboratories, and zoo buildings.[46]

Construction bids for work at the National Zoo were opened by the Procurement Division of the U.S. Treasury in 1935. The bids included those for the elephant house, a house for great apes and small mammals, and an addition to the Bird House. The low bid for the mammal house came in at $257,000, by George Hyman Construction Co.; whereas the low bid for the bird house addition was offered by Charles H. Tompkins Co. ($14,200). The Zoo's plans for a great Pachyderm House to shelter its three elephants and the hippopotami received proposals, the lowest submitted by Harwood-Nebel Construction Co. for $280,600. These three projects, plus the garage and machine shop, were designed by Clark and were to be built with PWA funds.[47] In January, Mann wrote to Clark that "all contracts have been let and they are ready to shoot now with the bird house and the pachyderm house..." Mann anticipated the other buildings would only be delayed a week or so.[48]

Photographs taken to document the construction process were stamped on reverse, Public Works project number 477, and their authenticity was certified by the construction engineer's signature. His name was William A. Miller. In two of these images, dating to 1936, excavation work was in progress and the company's name shown on the earth-moving equipment. The firm was Huffman and Brown.[49] In correspondence relating to the Treasury Relief Art Project (TRAP) and to the contract with the New York based artist Charles R. Knight, it is revealed that the Manhattan Terrazzo Brass Strip Company executed the floor roundels, a young man named Turner worked on the models (prior to casting) of the aluminum figures, and Lombard and Ludwig, Inc., architectural sculptors of Washington, D.C., worked on the models for the stone carvings.[50] Ernest Springweiler

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[46]Lee, 256-69.

[47]"Bids Are Opened for Zoo Buildings," *Washington Post* (4 December 1935), 10; 2 December 1935, 1931-35 diary, Edwin H. Collection, AIC.

[48]Mann to Clark, 3 January 1936, SI (record unit 74, NZP 1887-1965, box 225); 5-9 January 1936, 1936-40 diary, Edwin H. Clark Collection, AIC.

[49]Photographs, 31 January 1936, NZP. Views looking to south and to west.

[50]Charles R. Knight to Mr. Bruce, 9 June 1937; Henry La Farge, Special Assistant, Treasury Relief Art Project, to Knight, 8 March 1937; Knight to Mr. Hopper, n.d.; in "Washington National Zoological Park," RG 121, Records of the Public Buildings Service, NARA. The NZP has a photograph of the carving, with Lombard and Ludwig's card affixed to the bottom left (proper right) corner and a note of approval by Arthur Blakeslee at the lower right (proper left of the image). Blakeslee's approval dated to 18 November 1936; the photograph label to December of 1936.

was the stone carver.[51] R.W. Bristol oversaw the construction in some capacity for both William Mann and Edwin Clark inquired of him the status of the building's progress in April and May of 1936.[52]

5. Original plans and construction: While the concept and design for the Elephant House are attributable to Dr. William M. Mann and Edwin H. Clark, the plans were submitted by the Supervising Architect, Louis A. Simon, to the Commission of Fine Arts for approval at the October of 1935 meeting.[53] Mann, Clark, and R.W. Bristol of the Supervising Architect's Office presented working drawings. Mr. Coolidge, of the Commission, disliked the plans commenting "that buildings of this kind are entirely out of date compared with modern buildings for animals in other zoological parks. What is used in England ... is an out-of-door treatment for animals..." Neither Coolidge or his fellow Commissioners elaborated on his interpretation of modernity in the context of zoological parks. Mann responded, however, by defending the designs. He argued that the location and appearance of the buildings were considered and that an underlying goal of the proposed plans was to unify the built environment of the Zoo. This then raised the question of relocating the Zoo altogether, to Anacostia Park, a proposal Mann quickly decried. Mann emphasized that the London Zoo had thirty-two buildings whereas his Zoo would have only seven occupying a mere 20 acres, and that only if the structures under discussion were included in the count. Even so, the Zoo would still have "156 acres for outdoor development." He further addressed the topic of outdoor facilities noting that the small mammal house would have to be roofed, but the plans allowed for skylights for direct sunshine and there were indoor and outdoor cages. The present reptile and bird houses were Romanesque in style, and plans under consideration by the Commission included only the completion of the Bird House. Mr. Swartwout, another member of the Commission, grumbled at the late date of the review interpreting it as forcing the Commission's hand because the President had ordered all Public Works contracts be obligated by October 22, 1935. If the Commission postponed the project, the Zoo would lose its allotted money.[54]

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[51]Mergen, *From Bison to Biopark.*

[52]Clark to Mann, 30 April 1936; Mann to Clark, 4 May 1936, SI (record unit 74, NZP 1887-1965, box 225).

[53]Clark's diary notes a conference with Simon on the morning of the nineteenth and, on the twenty-first, that he "quits" the Zoo job until bids are offered. 1931-35 diary, Edwin H. Clark Collection, AIC.

[54]Minutes of the Meeting of the Commission of Fine Arts, New York, 4 October 1935, 1-4.

The house for pachyderms was described to the Commission as having dimensions of 227' long by 114' wide by 35' high. It was to house the elephants and would include "large open yards adjacent with suitable areas so that visitors can see..." The structure was to be made of local Bethesda stone, a warm grey color with iron rust spots, and was to be "all seam faced." There would also be arches of limestone.[55] Mann elaborated on the plans to the American Association of Museums in September of 1935, coincidentally the same month as the drawings were sent up to the Commission for review. Mann said the Zoo's planned Pachyderm House was indeed a modern building. It would become home to elephants, rhinoceroses, hippopotami and tapirs with a large cage at one end for the giraffe. Moats would be used for the outdoor enclosures instead of bars.[56]

Word evidently was out. The *Evening Star* noted that the Elephant House would have an outdoor enclosure, one created to make it look as if the animals roamed free. There would be no bars. Instead, the outdoor yards would have stone encrusted moats. The newspaper also mentioned the special care paid to the ventilation and air conditioning systems, and how the cages were to be lit by skylights. The public spaces, on the other hand, were left comparatively dark. The hippopotami would have pools.[57]

The *Evening Star* followed the progression of the Elephant House and published a sketch of the ground floor in July of 1936. The *Star* emphasized the "new type of construction" that would enable animals and people to look at one another without "peering through bars." A 10' moat would separate them and the sidewalk was to follow the contours of the moat. The *Star*'s sketch highlighted the sections of the moat then being built.[58]

6. Alterations and additions: In 1936 Mann proudly stated in the Smithsonian *Annual Report* that the completion of the four projects - the Pachyderm House, small mammals and apes house, addition to the Bird House, and the utilitarian structures - gave the Zoo four modern buildings with new features for the exhibition of the animals. Mann proclaimed it was the "greatest improvement in the history of the Zoo."[59] The occupants

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[55]Minutes, CFA, 4 October 1935, 4; Zoos - National Zoological Park, clipping file 1929-41, MLK.

[56]W.M. Mann, Director, to Mr. L.C. Everard, Editor, American Association of Museums, 27 September 1935, SI (record unit 74, NZP 1887-1965, box 225).

[57]"Four New Houses to Start at Zoo," *Evening Star* (20 September 1935); "Best Show in Town," Greater National Capital Commission of the Washington Board of Trade, and "Zoo to Have Fenceless Elephant Yard," n.d., clipping file, MLK.

[58]Zoos - National Zoological Park, clipping file 1929-41, MLK.

[59]1936 Smithsonian *Annual Report*, 53.

of the Pachyderm House moved in during August and September of 1937 and the building welcomed the public on October 13, 1937. The octagonal elephant barn, the first structure constructed at the Zoo, and the brick elephant house designed by Hornblower and Marshall were demolished by the WPA workers once the new Elephant House opened.[60] The WPA program closed in August of 1940 and the Zoo was limited to basic maintenance funding during the second World War.[61] A giraffe was born at the Zoo shortly thereafter and two baby elephants were given to the Zoo.[62]

Alterations to the fabric of the Elephant House, as opposed to its resident population, began in the 1950s. In July of 1950, part of the arched ceiling fell and the building closed to the public while a study was conducted. The Public Buildings Administration examined the damage and handled the repair contract. The work was completed by December of 1951. The Smithsonian *Annual Report* stated a $63,000 deficiency appropriation was granted to finance the repairs, while the *Washington Post* rounded the figure up to $70K. The *Post* elaborated on the collapse, explaining it was a suspended ceiling made of acoustical tile that fell. The section over the animal cages was intact, but the animals were moved outside while it was warm as a precautionary measure. The failure occurred due to moisture inside the building, most likely humidity and water associated with the pools.[63] The tile was replaced with 1' square cork tiles.[64] In 1953, the exuberance of the young Indian (Asian) elephants led Zoo officials to predict the construction of an elephant-proof perimeter fence would be needed on their outside yard.[65] It was not until a tragedy at the hands of a lion that resulted in the death of a little girl, however, that fencing was seriously addressed and funded. The Elephant House was the first of the buildings slated to reopen to the public once the new security measures

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[60]1938 Smithsonian *Annual Report*, 67.

[61]1941 Smithsonian *Annual Report*, 78-102; 1944 Smithsonian *Annual Report*, 67.

[62]1945 Smithsonian *Annual Report*, 79; 1950 Smithsonian *Annual Report*, 83.

[63]1951 Smithsonian *Annual Report*, 115; 1952 Smithsonian *Annual Report*, 106; "DC Allots $70,000 to Fix Zoo House," *Washington Post* (23 July 1950), M10.

[64]Farrell, 158.

[65]1953 Smithsonian *Annual Report*, 117.

were in place.[66] Around the elephant pools, for example, there was a visitor safety fence some 46" high and angled at the top.[67]

Also in these years, the utilities demanded attention. For instance in the underground steam conduit connecting the central heating plant to the large mammal house workers installed a waterproof cable with lamps. It was also recommended that the steam conduit be extended from the large mammal house to the Bird House. The cost estimate for this improvement rang in at $35,000, but it was hoped it would the reduce the heating bill and "obviate boiler repairs and replacements that may be necessary ... [since] two of the boilers [were] twenty-five years old."[68] Moreover, the parking lot by the Elephant House was finished by the decade's close.[69]

Beginning in 1956, the Zoo strategically lobbied for funding by warning that upgrades to the facilities were imminent. Ironically as the breeding programs for the giraffes and pygmy hippos flourished, the building around them decayed. Some of the old animal houses received new skylights, but mostly the Zoo reported it was "impossible to keep pace with the deterioration ... Extensive repairs were necessary [in] some of the stone buildings constructed during the WPA days about twenty years ago ..." Years of deferred maintenance and constant use meant that the structures erected during the Depression-era required "a constantly increasing amount of repairs." These comments applied to the Elephant House, though it was not the sole target. Inside the Elephant House, the gaur's cage was remodeled as housing for the okapis.[70]

Complaints about the conditions of the Elephant House continued into the 1960s. It was one of the buildings specifically described as obsolete. Rehabilitation was thought to be possible, but its deficiencies included poor ventilation, inadequate lighting, and too-small cages. The heating was not well-controlled either. By the 1960s, trends in outdoor exhibits, animal well-being, and public safety were increasingly divergent from those that governed the buildings' construction.[71] As the Zoo sought to enhance its environment, the

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[66]"Zoo Mending Its Fences to Save Beasts from Us," *Washington Post* (30 September 1958), B1; 1958 Smithsonian *Annual Report*, 178.

[67]1959 Smithsonian *Annual Report*, 187.

[68]1951 Smithsonian *Annual Report*, 116; 1952 Smithsonian *Annual Report*, 109.

[69]1959 Smithsonian *Annual Report*, 188.

[70]1956 Smithsonian *Annual Report*, 118, 129, 135-39; 1957 Smithsonian *Annual Report*, 152-53.

[71]"Reconstruction of Zoo Over Ten-Year Period Urged by Smithsonian," *Washington Post* (11 August 1961), C1.

Commission of Fine Arts weighed in on their proposals, urging more coherence in building form and material expression. The Commission encouraged integrating the displays with the natural setting, subordinating architectural style to the landscape, and placing the animals' requirements above all. In 1962, the Commission approved in principle the Zoo's planned improvements, especially the exclusion of automobiles from the center of the Zoo and the elimination of iron-bar cages. The Zoo hired the architectural firm of Daniel, Mann, Johnson and Mendenhall for the over-arching redevelopment concept. In the meantime, the Elephant House roof was repaired. Ambika arrived, as did Masai giraffes. The giraffes came home to a refurbished cage. The ironwork was redone; wood was eliminated from all partitions. The cage was repainted and thoroughly sterilized. Even the dirt was removed and replaced, at least the top 6", in the outside yard and in adjacent spaces.[72]

In 1969, Roland Lindemann donated dispensing machines for animal food. These were placed around the Zoo, including two in proximity to the Elephant House. Money earned through the machines was used by the Friends of the National Zoo (FONZ) for educational purposes. To that end, FONZ sponsored two lecture series. Both were held at night in the Elephant House.[73] Also in that year, Jenkins and O'Hear Architects provided drawings for alterations to the walk around the Elephant House; another firm, Richards Wilcox Manufacturing Co., also supplied drawings. Two years later, drawings were done for the Elephant Station Entrance Area. It is unclear whether these drawings passed beyond the discussion of design-stage, but that year (1971) marked the beginning of Faulkner, Fryer and Vanderpool's association with the Zoo. It was not until August of 1974, however, that the Commission of Fine Arts finally approved the preliminary plans for remodeling the Elephant House.[74]

Plans proceeded apace for renovations to the environs of the Elephant House. This was partly the manifestation of the Zoo's philosophical shift from a consumer of animals to a conservator and protector of animals. It was hoped to exchange the cages of display for open arenas in which awareness of the animals' habitats and relationships of living creatures to one another could be heightened. The Zoo began to turn itself into a resource

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[72]1961 Smithsonian *Annual Report*, 133, 175-77; 1962 Smithsonian *Annual Report*, 136, 177; Minutes, CFA, 21 March 1962; Minutes, CFA, 22 & 23 January 1963; Minutes, CFA, 17 & 18 March 1964; William Walton, Chairman, to S. Dillon Ripley, Secretary, Smithsonian Institution, 6 April 1964, attachment, Minutes, CFA, 18 March 1964; Minutes, CFA,19 May 1964, 3; Minutes, CFA, 21 October 1964, 5-6.

[73]1969 Smithsonian *Annual Report*, 263, 267.

[74]Minutes, CFA, August 1974; 1971 Smithsonian *Annual Report*, 57. Lester Collins, a landscape architect, was retained along with Faulkner, Fryer and Vanderpool.

of animal knowledge for dissemination around the globe.[75] The outside yards were expanded to three times their original size, and the giraffes regained access to their now more-spacious paddock five months ahead of schedule. The elephants, rhinoceros, and Nile hippopotamus areas were completed during the fall of 1975 and renovations on the interior began in earnest.[76]

The Faulkner, Fryer and Vanderpool drawings indicate the outside yards were enlarged to their current size at this time. The yards were re-graded as well. Inside, radiators were relocated along the south wall and two (non-public) doorways filled. Drawings by Wagner Associates in 1975 also address the interior remodeling effort, which provided new guard rail supports, raised platforms at the east end of the building, changes in duct work and exhaust fans, and a new hot water heater. Plaster on the ceiling soffits also received attention.[77] In anticipation or in response to plumbing needs, drawings were done by La Thorpe Inc., in 1977. Komatsu and Brown Architects submitted drawings in 1981 for skylight and roof work, such as the provision for splash blocks, copper flashing, and roof drains.

It was not until 1982 that a contract was awarded for renovations, however.[78] The work was done in November of 1983, adding facilities for animal management and for the viewing of the animals by the public.[79] Superior Iron Works supplied drawings for a drinking basin. Bernard Johnson Inc. provided a site plan as well as plans for a new elephant cage. Richard H. Hider recorded the landscape, locating the perennials in plan. Miscellaneous details were drawn by James Pearson. Changes to the building consisted of covering electrical conduit, strengthening partition walls by replacing metal with poured-in-place concrete on the southwest side, and adding concrete doors to the southwest. Drawings on file include elevations of the elephant Nancy's cage.[80]

The interior of the Elephant House was dramatically altered in 1988, bringing it in line with the present appearance. Coastal Design Ltd. prepared drawings in January, though other materials are on-file at the Zoo. Names associated with the Coastal Design Ltd. project are J. Weiss (renovations), R. Turner (design), D. Griffin (delineator), Brandest

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[75]1974 Smithsonian *Annual Report*, 95-96, 106.

[76]1975 Smithsonian *Annual Report*, 119; 1976 Smithsonian *Annual Report*, 121.

[77]Farrell, 158; drawings, NZP.

[78]1982 Smithsonian *Annual Report*, 111.

[79]Farrell, 167; 1984 Smithsonian *Annual Report*, 116.

[80]Farrell, 158.

and Cassaganol Engineers (structural consultants), Donovan, Feola, Balderson and Associates (landscape), James Eliopolo and Associates (electrical), and Trowbridge Steel Co. (west viewing platform). Changes to the interior included the expansion of the viewing platform idea, enlarging the east end platform and creating an elaborate platform to the west. The deck of this platform consists of a 4" concrete slab on metal; it is three steps up to the platform. The canopy and railing are made of cedar. The netting is 1" x 1". In all, the west platform harkens back to the associationism of early zoo architecture wherein exotic structures were erected with the purpose of evoking the built environment of the places from which the wild animals came. Two of the roundels designed by Charles Knight due to be covered by the platforms were lifted out of the terrazzo floor and reinstalled in the platform decks so that they would remain in public view. Overhead, two new skylights were cut into the ceiling to bring natural light to the platform areas. Light sconces were added to the frieze, placed between the metal medallions. The tile ceiling was screened by a metal mesh. A squeeze cage was installed, enabling the trainers to restrain the animals during medical treatments. Planters were added to the pygmy hippo enclosures.[81]

In 2003, McMullan and Associates (structural), Schnabel Engineers North LLC (geo-technical engineering) and Guiscardus LLC (hydraulic gate consultant) worked to create drawings and plans for an upgrade to the male elephant yard, most likely in response to the birth of Kandula. A steel cable fence was put up around the southern paddock. QuinnEvans provided drawings for a proposed exterior renovation of the Elephant House.

At various times master plans were created for the Zoo, including those dating to 1961, 1965, 1973, and 1981, as well as a landscape study completed by the University of Virginia in 1975. A survey report from 1958 called for greater security measures, especially regarding the pygmy hippos' and elephants' pools and the proximity of the guard rail to the Nile hippopotamus area. As a temporary corrective measure, wire barriers were erected by the hippopotamus runs. The (1961) Daniel, Mann, Johnson and Mendenhall master plan proposed rehabilitating the Elephant House altogether, expanding indoor and outdoor facilities. Major changes would be implemented with the use of screens and a shift in the flow through the building. Paddocks would replace the parking lot; visitors were restricted to one entrance.[82] In September of 1965, however, another proposal for the Zoo went to the Commission of Fine Arts, prepared by Umberto Inocenti-Richard K. Weber, landscape architects. This comprehensive plan strived to retain the natural character of the Zoo, to separate pedestrian and vehicular traffic, and to

[81]Farrell, 159.

[82]Master Plans on file, NZP library.

add needed facilities. The ideas were still under discussion as late as 1970.[83] Most of these master plans or studies stalled due to Commission objections. The Zoo also suffered from a lack of funding, particularly acute during the war-time restrictions on federal projects between 1967-71.[84]

7. Asia Trail: In June of 2006 the HABS team began documentation for the measured drawings and the photographic record of the Elephant House just as the planned "Elephant Trails" exhibit was announced in the *Washington Post*. The building will be reworked to allow for more space for the elephants and to allow for around the clock interaction as opposed to the separate enclosures the three elephants are kept in during nighttime hours. Elephants are very social, and the new arrangement would encourage those tendencies. The Zoo, furthermore, hopes the herd will grow to eight to ten elephants, plus off-spring. The planned expansion will mitigate the (relatively) small quarters the elephants have now, about an acre, and the hard floors of their indoor enclosures. A softer natural and rubberized floor will be installed and the yards increased to about four acres, with swimming, mud wallowing, and grazing areas.[85]

The Zoo's plan for the development of an elephant herd is motivated by its role in protecting the animals from extinction. Its mission encompasses research and education about the animals, both their care in captivity and care for their natural habitats in the wild. Faced with the increased loss of the latter, the Zoo's role becomes more vital. Critics, however, object to the Zoo because they say the animals do little to conserve the species since they do not return to the wild to live. Alternatives to the Zoo's program are preserves or sanctuaries for elephants, but these are difficult to protect from poaching.[86]

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[83]Minutes, CFA, 14 September 1965, 3-4; Minutes, CFA, 15 September 1965, 3-4; Minutes, CFA, 19 April 1966, 2, 7; Minutes, CFA, 25 February 1970, 2-4.

[84]For more on the 1960-70 period, see Farrell, 85-91.

[85]"Zoo Elephants to Get Wider Birth," *Washington Post* (21 June 2006), B1. In 2004 the Commission of Fine Arts approved, in concept, the idea for an expanded elephant facility. The elephants would be in a completely new, and green, building on a three-acre site north of the Olmsted Walk. Chatelain Architects presented the design concept. Later, the Smithsonian decided to renovate old building, under study here by HABS, and scrapped the Chatelain plans. A new design concept was brought forward by EwingCole architects in February of 2006. Again the emphasis was on animal management and animal health, but the architects were pleased to be able to maintain the original purpose of the Pachyderm House and to bring it up to modern, scientific standards governing animal husbandry. Minutes, CFA, 21 October 2004; Minutes, CFA, 16 February 2006.

[86]"Zoo Elephants to Get Wider Birth,"*Washington Post* (21 June 2006), B1.

In November the *Post* reported the expansion will begin next year. The giraffe had moved to Florida to make way for the enlargement.[87]

Also in the fall, the Asia Trail formerly opened to the public. This represented the first phase of the Zoo's redevelopment and improvement of the facilities in the vicinity of the Elephant House. The new exhibits were for sloth bears, clouded leopards, fishing cats, red pandas, and the great pandas. The second phase consists of the expansion of the elephants' house and yard. Also, between the Bird House and the sloth bears' habitat, there are plans for new shelters for rhinoceroses and Asian otters, among others. Plants and animals indigenous to Asia are to grow up together, along the trail, effectively reproducing the natural habitats of the animals. It also essentially returned the Zoo to the design principles of Olmsted and Langley . The duo wanted to reflect the picturesque setting of Rock Creek Park, emphasizing the natural over the architectural, as they laid out the Zoo's plan in 1890. The plants, like the bamboo for example, would also act as visual screens and physical barriers for the animal yards. Unlike during the Olmsted-Langley era, however, much more is known about animal health. More is sought from the Zoo than entertainment. Cages no longer line the walkways. Rather, the trail and the yards are defined by natural materials - rocks, water, plants - and intended to balance both Rock Creek and Asiatic features and to create a reciprocal experience for the animals and their visitors.[88]

During the discussions of the phased development of the Asia Trail project with the Commission of Fine Arts, representatives of the Zoo and the architectural firms referenced the refurbishing of the Olmsted Walk, Panda Plaza, and Connecticut Avenue entrance in 1984, and a revision of the master plan in 1986. The ensuing dialogue revealed that modern zoo practice then entailed replacing or upgrading animal facilities every twenty-five years or so. This meant the National Zoo was somewhat out of sync with its collection of historic buildings and small outdoor pens. Even the 1970s-era improvements wherein the buildings retreated, bringing the animal displays closer to the public, were dated. Current zoo philosophies emphasize the study of animals, and so defined the goals for the master plan(s) and planning initiatives launched since the mid-1980s. In 2000, a renewal of the Zoo was undertaken with vigor. The Asia Trail began to take shape in the northwest corner of the grounds between the Olmsted Walk and Connecticut Avenue.[89]

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[87]"An Elephant Never Forgets ... his Birthday," *Washington Post* (17 November 2006), C12.

[88]Minutes, CFA, 15 January 2004; Minutes, CFA, 20 March 2003; Minutes, CFA, 20 February 2003.

[89]Minutes, CFA, 20 February 2003; Minutes, CFA, 15 January 2004; 1982 Smithsonian *Annual Report*, 111; 1984 Smithsonian *Annual Report*, 117.

The Asia Trail, phase one and two, showcases the Zoo's commitment to animal care, visitor education, scientific research, and sustainable building and environmental practices. The Elephant House expansion embraces this broadened mission, one that has evolved since the 1930s. At that time, the building embodied current zoo standards accommodating similar species in animal barns with adjacent yards. Beginning in the 1970s the Zoo started cluster habitats in an effort to encourage the animals to engage in more activities. The plans for the new yards would utilize the topography and provide different kinds of landscapes suited to elephants' fondness for swimming, wallowing, dust bathing, and rubbing. Animal care would still occur close to the building, however. Visitors would be restricted to the north side of the building, and although the circulation pattern is reduced from the present, they would still enter through the arched loggias. Protection for the elephants outside include canopies, offering shade, and heaters for the winter.

The design concept was under discussion in the February and March meetings with the Commission, who approved generally but asked for bolder designs for the additions. The adaptation of the WPA-era elephant house marked a shift in Zoo plans, originally calling for a new structure in a slightly different location. The plans, as presented in the spring, included a glass wall on the south side, allowing for more light and an unobstructed view of the elephants in nature even if looking from inside; skylights, adding natural light from above and in keeping with the original design; reuse of the existing attic or penthouse brick wall to control lighting; and textured concrete to imitate the original building fabric.[90] This concept corresponds to that noted in the *Post* in the ensuing summer months. A dashed line on the Elephant House floor marks where the new boundaries of the elephants' interior space will be, alerting visitors of the pending change.[91]

B. Historical Context

In the end, we will conserve only what we love.
We will love only what we understand.
We will understand only what we are taught. - Baba Dioum, Senagal.[92]

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[90]Minutes, CFA, 16 February 2006; Minutes, CFA, 16 March 2006.

[91]Site visit, November and December 2006.

[92]*Zoo Book* (Smithsonian Institution, 1976). This book, found at both the Natural History Museum library and the National Zoo's library, is predominantly a picture book but it opened with the quotation that I repeat here because (I think) it speaks so nicely to the Zoo's effort to educate, and to foster conservation of the animals we, the general public, so love to see.

The Acting Manager of the newly-established National Zoological Park Frank Baker reported in 1891 that "the interest of the public is found to be great, much more in fact than had been anticipated. There can be no doubt that ... in a few years the park will become one of the chief attractions of a city already famous for its sites, offering as it does a combination entirely unique, exquisitely beautiful scenery with the charming aspects of varied animal life."[93] Still, the Zoo was a work-in-progress, short of funds and infrastructure. The Zoo was hampered by limited resources, though Baker hoped to transform it into a popular culture venue like the circus and the traveling menagerie.[94] Like the circus and menagerie displays, the traditional zoo was a pleasure outing for spectators seeking the unusual. The traditional zoo was also heir to the zoological gardens founded centuries prior, a genre that by the late nineteenth century had melded public parks (or formal gardens once patronized by royalty) with animal displays for entertainment. Precedents included the (1828) London Zoo and the Parisian *Jarden des Plantes*. A secondary purpose to these zoological garden-cum-animal displays was educational edification. This more intellectually-minded mandate arose with the Enlightenment, encouraging empirical observation, classification of species, and diffusion of knowledge.[95] The proponents of the National Zoo, it could be argued, began following a scientific approach indebted to the Enlightenment with studies of the (dead) animals and the practice of taxidermy for the national museum, and ended up lobbying for the conservation of a fast-disappearing species in the late 1880s.

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[93]1891 Smithsonian *Annual Report*, 51.

[94]The menagerie generally meant an animal collection kept for spectacle and entertainment, rather than the scientific study conducted by zoos. Menageries and zoos both enclosed animals in small, cramped cages. The boundaries between menageries (and later circuses) and zoos blurred in the late nineteenth and early twentieth centuries before education and awareness of animal health matured in modern zoo practice. Exhibit techniques were similar; trades of specimens were conducted. The London Zoo sold Jumbo the elephant (the largest then on record) to P.T. Barnum, who then after the elephant died held the prospect of exhibiting the skeleton out to several museums, including the Smithsonian. See, for example, Ott, 2-4.

Hyson states that the Central Park menagerie drew more than three million visitors annually by 1876. He goes onto the argue for the zoos' adoption of show business-type marketing and public entertainment goals by the early 1940s, even for the elite-est stalwarts in Philadelphia and the Bronx. These last resisted, for example, barless enclosures popularized by Hagenbeck and proliferated by Edwin Clark in American zoos during the 1920s and 1930s. The openness of the animal exhibits, the increasingly rare or exotic animals shown, the additional attractions of eateries, concerts, animal rides and petting zoos, public relations, and various zoo directors all contributed to this shift in mission. Jeffrey N. Hyson, "Urban Jungles: Zoos and American Society," PhD diss, Cornell University, 1999, chap. 4. It is notable, too, that when the Philadelphia Zoo finally succumbed to an open-air enclosure with the opening of its Pachyderm House in 1941, admissions rose nearly forty percent. Hyson, 228.

[95]James Fisher, *Zoos of the World: The Story of Animals in Captivity* (Garden City, NY: Natural History Press, 1967); Ott, 2-3.

In 1889 Congress established the Zoo as a last place of refuge for the continent's vanishing species. William Temple Hornaday, the chief taxidermist for the Smithsonian at the time, became invested in the survival - as living creatures - of the bison that he went out west to study. Hornaday convinced the Secretary of the Smithsonian, Samuel Pierpont Langley, of the merits of conservation. He was allowed to operate a department of live animals for the national museum. The animals were brought to the mall and make-shift quarters were made for them there. Once Congress established the Zoo, land was surveyed in Rock Creek Park and the animals moved. The services of Frederick Law Olmsted's firm were retained, and a natural setting for the preserve emerged fairly intact in the 1890 master plan. The majority of the acreage was left as it was, intended only for the animals to roam and not for public romping.[96]

Together with Langley and Baker, Frederick Law Olmsted (and his sons in their continuation of the landscape architecture firm with Charles Eliot) charted the Zoo's layout and development. Olmsted and Eliot provided the 1890 master plan, accommodating the animals and visitors as well as Langley's understanding of the picturesque movement as naturalness. The Zoo maintained a largely undisturbed setting in Rock Creek by clustering the buildings and paddocks in the southeastern portion of the land around a looped road. Topography dictated this choice, as it did a straightening of the curvilinear paths of Olmsted's conception. The two main thoroughfares and entrances to the Zoo were along the Connecticut Avenue to Quarry Road (now Harvard Street) or from Klingle to Cathedral.[97]

The exhibition buildings and paddocks put the animals on display, a concession to funding sources expectant of a recreational program associated with zoological gardens more so than a preserve.[98] These initial shelters were somewhat rustic in keeping with the surrounding woodlands and were made of natural materials. The exhibits took on an exotic flair, intending to evoke the animals' places of origin, except for the first Elephant House. The Elephant House was an octagonal barn thrown up quickly for Dunk and Gold Dust. Generally, the cages were what has become known as a "menagerie" style due to their small size. The cramped quarters were unhealthy for the animals, but little was understood about animal care at the time.[99]

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[96]Helen L. Horowitz, "The National Zoological Park: 'City of Refuge' or Zoo?" *Records of the Columbia Historical Society of Washington* (1973-74): 405-29; Farrell, 33-34; 1891 Smithsonian *Annual Report*, 48-51.

[97]Farrell, 5, 33-35; Mann, "A Brief History of the Zoo," 351. Eliot died in 1897, and Olmsted's sons renamed the firm, Olmsted Brothers.

[98]1891 Smithsonian *Annual Report*, 22, 24; Farrell, 34.

[99]1891 Smithsonian *Annual Report*, 24; Farrell, 35-37; Mann, "A Brief History of the Zoo," 353.

Placed under the care of the Regents of the Smithsonian, and guided by naturalists, the Zoo became part of the continuum of the natural history museum as it evolved during the mid to late nineteenth century. The Smithsonian itself began primarily collecting specimens for use as research materials. These included skeltons and carcasses of animals, of course. In the 1860s and 1870s, the Smithsonian accepted collections on deposit, even if they had been studied, and around 1876 began to exhibit such collections based on the perceived educational value in each. The Smithsonian, as did other natural history museums, shifted from passive acceptance to active acquisition policies.[100] Spencer Baird, a notable naturalist, was Secretary of the Smithsonian until his death in 1887, when Langley succeeded him. Baird's protegee, and from 1885 onward the museum director, George Brown Goode arranged the zoological exhibits at the Centennial Exposition in Philadelphia and successfully lobbied Congress for money for a new Smithsonian building shortly thereafter (1878). As the Smithsonian expanded, so too did the sponsorship of scientific research and public educational activities. Goode believed in the power of government support and centralization of authority to advance science; others, however, made natural history popular.[101]

Phineas Taylor Barnum, architect of the "greatest show on earth," fanned public curiosity much like Charles Wilson Peale had done with his collection in the early nineteenth century in Philadelphia. Peale ran a museum featuring caged animals as well as their taxidermied kin, plus geological and cultural artifacts. It was one of the first natural history museums in America. Peale operated his natural history enterprise under the slogan, "birds and beasts will teach thee," profiting from menagerie-type spectacle and providing instruction. When Peale's collection was sold in 1846, Barnum purchased a portion along with Moses Kimball. Barnum, notably, kept a mastadon skeleton. Kimball ran a museum of natural history wonders and oddities in Boston. It was Barnum, more so than the others, who pulled natural history into the theater of popular culture. He ran the "American Museum" of pictures, articles, and curiosities until 1856 when he faced insolvency; bouncing back just as the Civil War erupted, he repossessed the museum and took over an aquarium, adding a hippopotamus. He also opened a California menagerie stocked with bears and western animals and had "authentic" Aztec children perform there. A fire consumed the initial museum, and with it, Barnum's geological and natural history specimens. The loss was noted by natural history institutions with more reputable legacies such as the Smithsonian and Harvard's museum established by Louis Agassiz.

Beginning in 1870, Barnum operated a "great museum, menagerie, circus, and traveling world's fair," that enchanted the young, pleased the masses, and gave both a lesson in natural history and science. The circus and its accouterments toured the country, crowding natural

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[100]Oliver Cummings Farrington, "The Rise of Natural History Museums," *Science* new series 42, no. 1076 (13 August 1915):203-04.

[101]Sally Gregory Kohlstedt, "History in a Natural History Museum: George Brown Goode and the Smithsonian Institution," *Public Historian* 10, no. 2 (Spring 1988): 7-16, 18-19.

history into an evening's spectacle." Circuses, like Barnum's and his rival Adam Forepaugh's, complemented the natural history museum in these years, especially as the museums needed circus animals for their zoological displays or carcasses for taxidermy. Forepaugh, for example, gave Dunk and Gold Dust to the National Zoo, and other elephants to the Philadelphia Zoo, the University of Pennsylvania Museum, and the Central Park collection in New York. Barnum long promised Jumbo's skeleton to the Smithsonian, though he ultimately reneged. Barnum encouraged the establishment of the National Zoo, in part to atone to Hornaday and the Smithsonian for his support of the museum at Tufts which represented further competition for valuable specimens.[102] In 1899, the National Zoo was still dependent on donations to augment its collection. Congress made no appropriations for purchases, although the Zoo was "intended to form ... a representative national collection ... [to be] to America what the zoological gardens at London, Paris, and Berlin are to their respective countries."[103] The Zoo needed the likes of Barnum.

The element of showmanship that propelled Barnum to the forefront of the curiosity museum, and later the circus and natural history display, infiltrated the zoological garden beginning around the turn of the century with Carl Hagenbeck's barless enclosures at Tierpark in Stellingen in 1907. The National Zoo's second director, Frank Baker, wanted a public park and so turned the Zoo in that direction, away from Hornaday's vision of a refuge and breeding ground for bison and buffalo. The idea of a public park and of entertainment or show business that guided the Zoo's development continued up until the second World War, around the time Hagenbeck's exhibits became mainstream zoo architecture, in essence the industry standard.[104]

Hagenbeck, a German animal dealer and circus man, first created a panorama for the 1896 Berlin Industrial Exposition. He repeated the feat in America at the celebration of the Louisiana Purchase in 1904 with the St. Louis World Exposition's arctic show. Hagenbeck then fashioned an entire zoological park around the concept of barless displays showing animals in a series of outdoor vistas, in landscapes with rocks and plants vaguely reminiscent of the animals' native habitat. Zoo-goers saw the animals un-obscured - or secured - by bars or cages, and animals predators and prey apparently coexisting. His zoo, Tierpark, was a series of spectacles, making the display as much a part of the attraction as the exotic, rare animals themselves, not unlike what Barnum had done with his circus and natural history show. The larger, open areas

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[102]John Rickards Betts, "P.T. Barnum and the Popularization of Natural History," *Journal of the History of Ideas* 20, no. 3 (June/September 1959): 353-68; Ott, 4-5; *Inventing Times Square: Commerce and Culture at the Crossroads of the World*, edited by William R. Taylor (NY: Russell Sage Foundation, 1991).

[103]"The National Zoological Park," *Science* new series 10, no. 240 (4 August 1899): 156; Hyson, 232.

[104]Horowitz, 405-29; Ewing, 2-3, Hyson, chap 4.

for the animals also promoted health, quality of life, and breeding habits. Hagenbeck, credited as the author of the first modern zoo, relied on scientific design or engineering to make his aesthetics work. Hagenbeck's contemporary, Gustav Loisel, combined Beaux Arts architecture with moated enclosures. Loisel published a series of designs in 1908 and a book on menageries in 1912, further popularizing Hagenbeck's concept. The moat engineered by Hagenbeck could also be said to a descendent of the landscape feature, the "ha-ha" wherein a dramatic change in grade kept cows off the lawn but was not discernable from a distance. The landscape appeared uninterrupted, much like the illusion produced by the moats that nothing prevented the animals and zoo visitors from mingling.[105]

America's oldest zoo, in Philadelphia, attempted to create a naturalistic habitat in small reptile garden in 1930; buildings constructed according to Hagenbeck's methodology, however, would not come until the 1940s when Paul Cret designed the Pachyderm House. Zoos to the west, namely in Denver, San Diego, and even St. Louis, tried open-air designs. In Chicago, the zoological society embraced the concept of the barless exhibit and planned for a large facility - more spacious than was possible at the Lincoln Park Zoo - in the suburbs. In the early 1920s, the Chicago Zoological Society solicited the advice of Lorenz and Heinrich Hagenbeck for their zoo, desiring enclosures surrounded by moats and with extensive landscaping. The Hagenbecks' plan was altered by a local architect and zoological society supporter, Edwin Hill Clark, who came under contract for the Brookfield Zoo in 1926. Clark's modifications included the use of promenades to shape the overall plan, creating malls and vistas as well as naturalistic exhibits. The Hagenbecks' open, barless elements were incorporated; the dimensions required for the moats, rock formations, and other landscape features provided by the Hagenbecks were invaluable for the artistic effects of the panoramas and for protection against the escape of the animals exhibited therein.[106]

Clark's plan for the Brookfield Zoo called upon the formal design principles of the Beaux-Arts with axial points and geometric lines connecting the structures together in a cohesive landscape. Wide broadways swept through the park; a large fountain marked the cross axis. The ideals of Beaux Arts architectural design were expressed in the 1893 fair's White City and gathered momentum as part of the City Beautiful movement. Proponents of the City Beautiful reshaped many of America's cities, including Washington, D.C., returning the mall and other parks and radial streets to that demarcated on Pierre Charles l'Enfant's plan for example.[107] The

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[105]R. Jeffrey Stott, "The American Idea of a Zoological Park: An Intellectual History," Ph.D. diss, University of California - Santa Barbara, 1981,76-81.

[106]Ross, 18-23.

[107]*The Mall in Washington, 1791-1991*, edited by Richard Longstreth (1991; 2nd edition, Washington, D.C.: National Gallery of Art, distributed by Yale University Press, 2002); Sue A. Kohler, *The Commission of Fine Arts: A Brief History, 1910-95* (Washington, D.C.: The Commission, 1996).

buildings of the Brookfield Zoo also called upon classical precedent, although in this instance that of the Italian countryside. The buildings generally were made of brick masonry (white and yellow), had red tile roofs, and stone columns. Construction on these components began in 1927. The interior of these structures became all the more important as the severity of the Chicago climate precluded outdoor habitats for all the animals. Clark provided for the illusion of natural habitats through skylights, plants, and landscape murals.[108]

An exception to the classical aesthetic of the Brookfield Zoo was the Pachyderm House Clark designed in 1932. It was proclaimed as an engineering marvel. The building measured around 110' by 259' and was the biggest structure on the grounds. The exterior was covered in (artificial) rock work so as to appear as a large hill or mesa while the interior was crafted almost entirely of metal and concrete. The monolithic walls were cast, as were the ceiling, arches, and floors. Separating the pachyderms from the public were a small fence and a moat some 6' deep and 8' across. Beyond the moats were animal apartments with solid walls, including six for elephants. The openness enabled animal and visitor to gaze on one another directly, as if the encounter happened in the wild. There was no architectural detailing to mask the construction joints, but there were rough carvings on the rocks including some of prehistoric animals. The cost was estimated at around $250,000 by the newspaper; exterior construction, it was reported, would be complete by February of 1932.

The Pachyderm House was to become home to elephants, tapirs, hippopotami, and rhinoceroses. The more notorious of its occupants included Ziggy the elephant. Other elephants were Babe, Nancy, and Judy, who later walked to Lincoln Park to live in the zoo there. Nancy was thrown a baby shower in 1940 when it was thought she was pregnant. The paddocks, or animal enclosures, were to resemble native lairs. Water features were incorporated into the plans along with beaches, shrubs, and dry moats. The animals were to have things to play with, such as balls, to prevent them from getting bored. The park itself opened in July of 1934.[109]

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[108]Ross, 20-23.

[109]Due to the timing of Brookfield's opening, and its innovative Pachyderm display, it is likely this structure was something of a prototype for the National Zoological Park's Elephant House. Ross, 27-34, 59, 62-63, 144-45, 168-69; "Exhibit Model of Pachyderms' Home in New Zoo," *Chicago Daily Tribune* (17 April 1931), 19; "All Comforts of Jungle for Pachyderms," *Chicago Daily Tribune* (15 November 1931), 20; "Baby Shower to be Given Nancy Elephant," *Chicago Daily Tribune* (3 August 1940), 11; "Animals Leave Stage as Winter Waits in Wings," *Chicago Daily Tribune* (10 November 1946), N12.

When Judy the elephant moved from Brookfield to the Lincoln Park Zoo, drinking 66 gallons of water en route, she entered smaller quarters at the zoological garden.[110] It was, however, located in a landscaped setting of trees, shrubs, flowers and statuary on Lake Michigan. Lincoln Park promoted itself as a family destination. The park offered free parking, beaches, and picnic facilities in addition to the zoo. Lincoln Park also turned to Edwin Clark for architectural embellishment. Clark designed the Primate House in 1927, as well as the 1992-23 Aquarium. The Aquarium was short-lived, closing in 1932, despite its state-of-the-art mechanical systems and became the reptile exhibit in 1936. In 1996, the building was reborn as a restaurant center. As were the buildings in Brookfield, save the Pachyderm House, the Clark buildings in Lincoln Park were made of brick masonry (red), as was his Small Mammal House (1937) for the National Zoo. Lincoln Park's were augmented with sculptural details relating to the buildings' various occupants, similar to that seen in Albert Harris's work for the National Zoo for the 1931 Reptile House.[111]

The chairman of the Chicago Planning Commission Charles Wacker, addressed the crowd in October of 1922 for the ground-breaking ceremony for the Brookfield Zoo. He expressed the hope that the zoological garden would "draw city dwellers from time to time into the health giving out-of-doors, and thus refresh their outlook and renew their strength.[...] after all, what finer thing can we do than to add to the interest and joy of life for our people? That is a service which will long outlast our lives, the most enduring memorial we could build."[112] Wacker's reference to urbanites and the potential benefits of a park is akin to the understanding of landscaped parks and zoological gardens espoused by proponents of the City Beautiful movement. Improving upon nature, embellishing it, parks offered carefully constructed scenes not found elsewhere in the city. Aesthetics were particularly important for parks and zoos, and Hagenbeck capitalized on this sort of appeal in his innovative, barless exhibits. Hagenbeck provided a more natural, life-like backdrop to the wild animals than the accustomed cages of menageries, drawing visitors' attention away from a freak-show of rarities toward a crafted naturalism, an open setting, and a wilderness in the city where one could find lions, and tigers, and bears in their native habitats.[113]

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[110]Ross, 59.

[111]Gavin Farrell describes this kind of zoo architecture as emblematic of a shift from a passive reflection of nature to something more active with the use of ornament as a communicative device. Sculpted animal forms on the buildings of the National Zoo revealed which animals were where. They also could tell the story of a species's evolution. See Farrell, 5.

[112]Pamphlet, AIC

[113]Stott, 76-77; Ott, 10-14.

William M. Mann echoed the sentiments of Wacker and valued Hagenbeck's revamping of the aesthetics and engineering of zoo displays.[114] Mann sought to engage the public, to entertain and amaze them, vicariously drawing them into the Zoo's enclosures with the elimination of bars between the animals and the people as Hagenbeck had done in Tierpark. Mann pushed to expand the Zoo's collection of animals and update its infrastructure. He wanted the National Zoo to be in-step with other, public zoological parks. He ignored critics of the barless display and called upon Edwin Clark to design new buildings and exhibits in the 1930s. The moats around the Elephant House provided one such outdoor venue, allowing visitors to see the elephants without cage bars and in a setting that simulated a natural environment with water and dirt and space in which to move. Sidewalks lead into the building, running alongside the moats in some instances allowing for direct, close-up views of the animals.

Mann's building projects left the Zoo with a distinctive array of architecture that helped transform the Zoo from an animal refuge into a suburban park with its manipulated and manicured plantings, sculptural program, walkways and paths, and structures. The Zoo's architecture also dispelled any lingering ambitions for the Zoo to harmonize, to blend seamlessly with Nature leaving Rock Creek undisturbed and the bison virtually unseen. Yet the encouragement of habitats over cages, an increased understanding of animal health, and continued curiosity created opportunities for education - that of visitors and scientists alike - throughout the twentieth century. The Zoo's architecture embodied these trends. Consideration of the animals' needs, beginning with Clark's work in Chicago and seen in his efforts for the National Zoo in the 1930s, moved the Zoo back toward its initial conservationist mandate. As it was in 1889, it is now hoped the lush environments (or in turn-of-century parlance, embellished nature) will encourage breeding and prolong the survival of endangered species. It is also thought that the animals' presence in the Zoo will enable scientific study and care. This is especially true regarding the Zoo's plans for an elephant herd. With the elephants, the National Zoo balances the conservation and wildlife protection goals of Hornaday and Langley with the recreational and visitor services mission of Mann's time. Opportunities for research and education round out the modern National Zoological Park's purpose.[115] The Asia trail represents this confluence of ideals. The trail provides a protected wildlife refuge where animals can roam freely over a semi-wild area, and reflects the Zoo's effort to preserve endangered species. In

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[114]Ott attributes both Hagenbeck and the City Beautiful as influencing Clark's and Cret's plan for the Philadelphia Zoo, featuring naturalistic animal pens with straight walkways. Ott, 33. Mann also embraced Hagenbeck's engineering and Beaux Arts ideals. He likely sought Clark's expertise because the architect had already successfully combined the two in Brookfield.

[115]William G. Conway, "Zoos: Their Changing Roles," *Science* new series 163, no. 3862 (3 January 1969): 48-52'The Zoo Story," also by Conway

2006, though, it is the elephant rather than the bison that zookeepers hope to save. The Elephant House is vital to those plans.[116]

PART II. ARCHITECTURAL INFORMATION

A. General Statement

1. Architectural character: The rubble-stone Elephant House exudes the strength of its occupants. It is anchored visually to the ground by a strong cornice, which lends a horizontal line to the monumentally-sized structure. The weight of the building, moreover, creates an impression of scale and significance mirrored by the large animals within.

The classical architectural details of the Elephant House reflect the refinement associated with intellectual capacity and thought, qualities of man and pachyderm, noting particularly the elephant's fabled long memory. Robust quoins contrast with graceful scroll work and arched openings. Quarry-faced stones of the exterior walls and animal portals counter the polished stones and *Art Moderne* aluminum and glass used in the visitors' entrances, perhaps referencing the hierarchy between beasts and man. In keeping with the occupants, there are animal forms carved into the stone tympanums over the entries, crafted of aluminum, and represented in terrazzo medallions in the floor. Some of these depict the elephant, others his pre-historic ancestors.

The evolution of the pachyderm depicted in the artwork plays into zoo-goers' fascination with the rare, the unusual and excitement at seeing a wild, and very large, animal up close. The iconography also draws upon the intellectual currents of the time, notably Darwin's theory of evolution as well as the advancing studies of natural history. These studies coexisted with a sense of adventure, coming as they did out of explorations to far-away lands or to remotely-settled parts of the country. An adventure in the name of science, not unlike the child's outing to the Zoo wherein education about wildlife follows curiosity and the thrill of seeing the animals.

The aesthetic choice for the massive structure must in some part be attributed to the architect, Edwin Clark, despite Mann's active involvement in the process. Clark, a Chicago native, worked with classical expression in other projects as seen in the houses, offices, and Lincoln Park buildings he fashioned. Chicago, after all, was host to the Columbian Exposition in 1893 that helped spark the subsequent revival of Italian

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[116]Farrell, 33. Farrell also states that Mann measured the Zoo comparatively, judging its success in relation to the conditions and collections found in other zoos. Mann wanted the Zoo to be more than second-rate, to do more than accept donations of species, and to nurture the animals and their visitors for the enjoyment of both. Farrell, 73.

Renaissance principles in design in late nineteenth-century America. The only building from the 1893 fair to survive was Charles Atwood's Palace of the Arts; it was adaptively reused as a natural history museum until around 1920 and reopened as part of the Century of Progress Exposition in 1933. Growing up in Chicago and practicing architecture there, Clark could not help but notice what was going on around him and how the classical, architectural language lent itself to a variety of building types. Critics of this American Renaissance claimed the facades' serenity was insincere, masking what happened within. For Mann and Clark, however, the renaissance-revival house for elephants exuded the quiet strength and dignity of the animals inside. It was truthful. Classical design made the entrances obvious, directing the visitor to the great hall, and use of this rather flexible vocabulary and planning considerations it was argued, at the time, would lend a cohesion to the Zoo's built environment.[117]

Like the Chicago Zoological Garden's pachyderm house did in Brookfield, this building differed from the others Clark designed for the Zoo, particularly in the choice of exterior materials. Stone was used for the Elephant House, but brick in the others. The siting of the Elephant House at the Zoo and that in Brookfield did adhere to the approved landscape plans and so their location and vistas were in keeping with the rest of the Zoos' exhibits. Whereas Brookfield appears more unified in architectural style, this is due to its construction and planning en mass in the 1920s. The architecture of National Zoo, on the other hand, grew by accretion and the classical language of architecture combined to create very different expressions along the Olmsted Walk. Clark's designs did accommodate groups of similar species, like the pachyderms, under one roof and did provide indoor and outdoor exhibit areas. It could be that Mann and the Commission wanted the same thing - appropriate buildings for the animals and a semblance of order to the Zoo's form - but understood it differently. Perhaps Mann was thinking about unifying

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[117]Mann argued they (Clark and he) had studied the new buildings' location in relation to the existing ones and had tried to "unify the group." Some members of the Commission expressed a desire for the monumental buildings proposed to have a formal relationship to one another in the landscape and thought, perhaps, the hilly topography of the Zoo forbade this. Monumental scale and formality were mutually exclusive, and in their comments, the Commissioners revealed their reliance on Beaux-Arts planning ideals. Minutes, CFA, 4 October 1935, 2-3.

Parks, and the zoological garden within that category, were an integral part of Beaux Arts ideals and of the City Beautiful movement providing open space and civic improvements. They also allowed urban dwellers to experience nature (albeit a groomed one). The zoos generally fit into city plans on sites not yet developed, as in Washington's Rock Creek and New York's Bronx Park. They enhanced the areas by "banishing the bad and ugly" from the landscape. It was not a spontaneous venture, but a carefully constructed one. Zoos, like the National Zoological Park, also benefitted from the City Beautiful movement's reliance on historical precedent in architecture, calling upon classical elements in building and building on grounds associated with historic structures. The National Zoo grew up around the early nineteenth-century, Holt House for instance. Philadelphia's zoo, another example, was in Fairmount Park. Stott, 60-68.

the method of display and building-to-yard requirements, while the Commission was tied to more formal interpretations of Beaux Arts planning for architecture and parks.

2. Condition of fabric: The building is in good condition. The planned renovations are intended to improve the animals' habitats and to increase the space available to them rather than as mitigation against structural weaknesses.

B. Description of Exterior

1. Overall dimensions: The footprint of the Elephant House is rectangular and measures 227'6 ½ " x 114'4". Of that, the east end enclosure (21' 0-½" x 58' 4 3/4") accommodates the Nile hippopotamus and the west end enclosure, the giraffe. The east and west ends are about the same size. It is approximately 22' to the parapet from the ground level. Moreover, the peak of the (tallest) skylight reaches to around 35' up.[118] These (2006) dimensions hold close to those put forth in 1937, wherein the structure measured 227' x 90' and contained thirteen inside cages ranging in size from 12' x 19' to 22' x 58'. Several of indoor cages had pools, as they do now, and each cage connected to an outdoor yard which had dry moats rather than fences for containing the animals.[119]

There are three outdoor pools, two dry pools for elephants to the southwest and east ends of the yard. The other pool is for the Nile hippopotamus. Connecting the southwest elephant yard to the giraffe yard is a concrete bridge paved with rounded wood logs. It bridges the moat, once a pedestrian sidewalk leading to the door that provided access to the basement locker, or bath, rooms. The men's room was to the south; the women's to the north.

2. Foundations: Like the structural system, the foundations are concrete with steel stiffening or strengthening the cement, producing what is known as reinforced concrete. Photographs taken by the construction engineer, William A. Miller, in 1936 show the steel frame and concrete pads, columns, and so on. Similarly, the construction drawings indicate the foundations were to be sheathed in granite to at least 4" below grade.[120]

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[118]"Section," "East Elevation," and "West Elevation," 2006, Historic American Buildings Survey, Library of Congress.

[119]Hamlet, 184.

[120]William A. Miller, Construction Engineer, various photographs, March and April 1936, NZP; "National Zoological Park, An Exhibition Building for Pachyderms," drawing no. 100, 1935.

3. Walls: The exterior of the building is clad in limestone, predominantly rough-faced;[121] parapet walls rise upward to mask the brick laid in 5:1 common bond for the upper walls or penthouse, the skylights over the cages, and roofing structure. The walls are defined by a light-buff color limestone cornice and quoins, visually containing or holding the undressed stones in place. Decorative scrolls soften the transition between the varying wall heights. The ashlar limestone is set into twelve courses in the north elevation for the two entrance loggias otherwise, it is applied as random rubble built in courses. The walls could also be described as rubble ashlar, meaning the stones are still carefully laid but as random-work in fairly level beds. The ashlar masonry for the loggias has also been identified as rusticated given its seemingly large proportions relative to the approximately 26' wide entrance and because the faces of the stones project beyond the lines of the joints. Perhaps the scale was intended to reflect that of the occupants, some of the largest land mammals known.

4. Structural system, framing: The structural system is a combination of concrete and steel frame for the spans and load-bearing masonry walls at the perimeter. Pairs of reinforced concrete columns march down the interior hall. The cage walls consist of poured-in-place concrete and extend from the floor to the ceiling.

5. Porches, stoops, balconies, porticoes, bulkheads: Leading up to each of the five portals in the center section of the north elevation are a series of ramps broken by six steps. These connect the yards to the capybara and pigmy hippo enclosures. Also on the north side are the two public entrance loggias, each measuring 26' 1" across, and characterized by one large archway. The walls are made of limestone; the floors flagstone with a granite border and baseboard. The arch dominates each of the walls, although only the north wall contains a true arch. The east and west sides are blind, with a green marble panel filling the would-be tympanum (if the arch were open), and on the south is a doorway leading into the foyer or vestibule. The loggia ceiling evokes a cross-vault in form and, along with the spandrels, is painted a soft yellow color.

The foyers or vestibules are transitional spaces and are accessed by double, or folding, doors from the north (loggia/outside) and from the south (inside). There is a decorative aluminum grille inset into the east and west vestibule walls; the walls are clad in a green marble rising up to the height of the door surround, with white plaster above. The floors are made of terrazzo set in a diagonal pattern and the terrazzo is placed within a green (3") and a black band running around the vestibule floor's perimeter. The foyers are lit by way of a (replacement) light mounted in the center of a ventilation grille in the center of

[121]Clark specified the rubble stone be similar to Bethesda granite with a full color range. The rubble stone consists of 75% seam, 25% rock faced. "National Zoological Park, An Exhibition Building for Pachyderms," drawing no. 100, 1935.

the ceiling. The surface of the ceiling appears to recess slightly as the crown molding wraps around and gradually tapers off in a succession of smaller squares.

6. Chimneys: There are no chimney stacks.

7. Openings:

a. Doorways and doors: For the visiting public there are two doors opening into the entrance loggias of the north elevation. These are both double doors, glazed, and hung within aluminum frames and capped with a transom glazed with one single light. Historically there were six lights in the transom.

For zookeepers, there are a myriad of single doors made of metal, suspended from metal frames, and decidedly more utilitarian in nature than the entrance doors. Visible from afar on the exterior is one door located to the north end of the east elevation (hippopotamus). Two others are evident in the west end (giraffe). To the north end of the west elevation is another of the openings; it is sealed now. Slightly below-grade to the south end is the last of these doors. It is glazed and at one time led down into the basement where there were restrooms for men and for women.[122] All three doors have limestone lintels in keeping with the small, rectangular portals for the animals. There are four of these animal doorways in the south elevation, two in the east, and five to the north. These are closed by sliding steel doors. Larger, arched openings, also with sliding metal doors, punctuate the south and west elevations. There is one in the center of the west end, opening into the giraffe yard and there are two for the elephants' use in the south.

b. Windows and shutters: There are four window openings shown in the 1935 plans. The north elevation window is 1'6" below-grade and consists of three lights measuring in total 3' 6" long by 2' 0" high. It is situated at the west end, below the giraffe cage. Another, identical window was placed in a corresponding location on the south side of the giraffe enclosure. The other two windows, positioned near the southeast corner of the Elephant

[122]The door on the north side of the giraffe enclosure was closed during the renovations in 1975. Like the door to the south, it too led into the basement. The sidewalk plan of August of 1936 illustrates the public's access to the bowels of the Elephant House. The giraffe enclosure was also much smaller then, limited to the central section. "National Zoological Park, An Exhibition Building for Pachyderms," drawing no. 101 (west and south elevations), 1935, NZP; "National Zoological Park, An Exhibition Building for Pachyderms," drawing no. 1-B, 1936, NZP; Richard Hider to Virginia B. Price, electronic communication, 4 December 2006; Exterior perspective view looking northeast across elephant yard to southwest corner, photograph, n.d., NZP. This image shows the elephant, visitors standing on the sidewalk between the elephant and the giraffe yards, and the door. The door has a transom.

House, were initially steel sash glazed with six lights. They have limestone lintels and measure about 4' 6" in height.[123]

Two of these appear in the 2006 HABS drawings. The sash windows located to the southeast end of the building both open into what is now the office space. The south elevation window is sealed; the other hosts an air conditioning unit. No evidence remains of the basement-level window on the north side of the giraffe enclosure; the window opposite has been filled with a box-like projection. No evidence of either is visible on the interior.

8. Roof:

a. Shape, covering: The roof is flat, a concrete slab poured over steel, I-sections, and is punctuated by skylights supported by steel trusses. Pebbles line the roof surface, presumably to help with drainage. It is accessible by way of metal ladders.

b. Cornice, eaves: The cornice consists of an unadorned frieze of limestone topped by a rounded edge, a profile mimicked in the limestone coping running along the top of the brick masonry wall of the penthouse rising over the interior core of the building. Metal flashing lines the skylights. Rather than gutters and down spouts, water is carried away from the roof surface by way of fourteen drains.[124]

c. Dormers, cupolas, towers: There are none present, however, there are various antennae projecting upward from the roof or penthouse surfaces.

C. Description of Interior

1. Floor plans: The first floor of the Elephant House contains a large, open, rectangular public space encapsulated by a barrel vaulted ceiling and surrounded by animal enclosures on all four sides. The hippo enclosure and interior pool are to the east; opposite is that for the giraffe. Along the north side of the exhibit hall are five enclosures and three pools for the capybara and pygmy hippos. To the south are four elephant enclosures, plus two larger enclosures (about 31' across) set back from the barriers. These are aligned with the entrances on the north. From the outside, these larger enclosures are clearly evident as they jut out into the yard and are punctuated by arched doorways. Inside, the viewing platforms are positioned near the hippo and giraffe pens. The

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[123]A construction-era photograph shows both of these windows. Exterior view looking from east to west along the south rear of the building from just beyond the (southeast) elephant pool, photograph, ca. 1936, NZP.

[124]"Roof Plan," 2006, Historic American Buildings Survey, Library of Congress.

platforms also afford glimpses into the elephant enclosures, especially the larger ones at the east and west ends of the run.

The basement echoes the main floor in structure, with the animal spaces defined along the perimeter. Rather than a spacious viewing area for the public, however, the core of the building is consumed by the mechanical systems. Locker rooms are located immediately beneath the giraffe stall. Also reminiscent of spatial divisions above, there is a north-south corridor extending from one staircase to the other; this follows the north-south walkway between the giraffe and the public space for use by the zookeepers. Between the men's and women's locker room are a laundry room, office, and storage.[125] Behind the mechanical room (boilers) is a large crawl space. The door to the electrical room opens off the stairwell.

2. Stairways: There are two dog-leg staircases connecting the first floor to the basement. They are located in the southwest and northwest corners of the building at opposite ends of the north-south thoroughfare between the giraffe cage and the public space. A typical dimension for the treads is 10", and for the risers, 7". There is a simple, round handrail affixed to the walls. The handrail is painted black.

There are also two viewing platforms installed one at each end of the building. The platform to the east provides an elevated view of the hippopotamus pool, while that to the west end offers glimpses of the giraffe and elephant cages. The west end also has information and educational videos discussing the elephants. The platforms are reached by a ramp and by four steps (11" treads, 5 ½" risers). They are made of wood and intended, at least for the west end, to look primitive or safari-exotic with simple forms, ropes, and plant material. The west platform is covered by a hip roof; the edges are defined by post and beam railings with netting strung between the vertical members.

In the basement, there is a small (single) run of five wood steps leading back into the crawl space behind the boiler room.

3. Flooring: The materials for the floor of the Elephant House vary, ranging from highly finished terrazzo roundels (art) and more traditional squares (23") poured within metal frames and limestone in the loggia to concrete and dirt in the utilitarian spaces and in the animal cages.[126] The combination of dirt, water, and concrete also holds true for the

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[125]On the 1935 basement plan, the entire space between the bathrooms was labeled "storage."

[126]The terrazzo tiles are set within aluminum while the five roundels are defined by brass. Thinner strips are used in the figures themselves, a differential discussed in Knight's correspondence. Charles R. Knight to Mr. Hopper, handwritten letter, n.d., attached to Henry La Farge, Special Assistant, TRAP, to Knight, 8 March 1937. RG 121, NARA.

yards. There are five terrazzo roundels portraying various pachyderms inset into the floor. From west to east, the subject matter of the roundels is as follows: Indian Elephant, Hippopotamus, Indian Rhinoceros, Brazilian Tapir, and African Elephant. Three remain in-situ; the "Indian Elephant" was reinstalled in the west viewing platform and the "African Elephant" in the east.

In the basement, the flooring consists of concrete, terrazzo (men's locker room), and wall-to-wall carpeting (office).

4. Wall and ceiling finish: The walls are primarily a cement plaster that have been painted; the suspended ceiling was initially made of a cork tile. A metal mesh covers the surface today. The giraffe and hippopotamus cages have murals painted on them. The wall space above the cages is painted a light blue and affixed to it are a dozen bas-relief art panels rendered according to designs by Charles R. Knight. Ornamenting the fences along the perimeter of the public space are sixty-four mosaics donated by an art class at Walt Whitman High School of Bethesda, Maryland, in 1987. Brushed aluminum "exit" signs are found over the double doors to the east and west vestibules. The basement is characterized by painted (green) cinder block walls and a dropped acoustical tile ceiling.

5. Openings:

a. Doorways and doors: The doorways of the main floor interior are limited to the double doors opening into the east and west vestibules, gates to the barriers and to the animal pens, and a smattering of utilitarian metal, single doors. These last open into closets or storage and to the stairwells at the west end of the building, for example. On the east end, there is a sliding door to an exterior storage area (possibly for manure) that is fenced off from the public. All of the doors have metal casing and no architraves to speak of beyond the metal frame.

The door to the office space resembles that of a storm door. In the north wall of the giraffe pen is a sealed door; in historic photographs looking into the giraffe area, this door is ajar and appears to be glazed. It swung into the cage.[127]

In the basement, a similar array of metal doors secures the various spaces.

b. Windows and shutters: Three of the four windows are sealed or hidden from view on the inside of the building; the fourth, opening to the east, was unaccessible.

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[127]Interior view looking west, photograph, n.d., NZP.

6. Decorative features and trim: In addition to the sixty-four art mosaics ranging in size from 20" x 24" to 20" x 60" that were donated by the art students at Walt Whitman, there are eleven sculptural reliefs and five floor medallions designed by Charles R. Knight of New York in the building. Knight also provided the architectural reliefs over the east and west entries. To the east are pictured the American Mastodon, Woolly Mammoth, and Four Tusked Mastadon. The pre-historic animals shown over the west entrance are the Uintatherium, Titanotherium, and Woolly Rhinoceros. The sculptural reliefs, done in aluminum, are of "ancient animals": Dinotherium, Woolly Mammoth, Four Tusked Mastadon, Woolly Rhinoceros, Elasmotherium, Uintatherium, Colldonta, Tapir, Arsinoetherium, Toxodon, and Baluchitherium. There was a twelfth, but it is no longer in-situ and is now kept in curatorial storage.[128]

Records of Knight's contract for the work done at the Zoo are on file at the National Archives. Knight was selected at the Director Mann's insistence, rather than as a result of an open competition. Mann desired Knight for the commission because of the artist's experience and reputation. Knight, for example, restored various models for New York's Natural History Museum and had established himself as an authority on prehistoric animals. Knight for his part was pleased with the assignment and hoped to garner more work with the Smithsonian.[129] Mann, however, left little to his chosen artist's imagination, dictating the subject matter of the decorative work to be done.[130]

While Mann may have determined the artist and the subject matter, the requested designs for the two carved stone lunettes, each semi-circular and about 6' wide, for twelve metal silhouettes of prehistoric animals measuring about 2' x 4' each, and for five animals for the floor required approval of the Commission of Fine Arts as well as the Treasury Department's Office of Procurement. Funding of the Treasury Art Relief Project (TRAP) was temporarily suspended, delaying Knight's participation in December of 1935 and into January of 1936. Soon enough, however, money was restored and blueprints of the

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[128]Regarding the twelfth, Richard H. Hider to Virginia B. Price, June 2006.

[129]Inslee A. Hopper, Assistant Superintendent, Section of Painting and Sculpture, Treasury Department, to Charles R. Knight, 5 May 1936; Knight to Hopper, 3 May 1936; T.C. Coleman, Asst. Supt., AE Section, Memorandum for the Supervising Architect, attention: Mr. Noll, 3 April 1936; Knight to Hopper, Telegram 7 May 1936; Hopper to Knight, Telegram 7 May 1936; Hopper to Knight, 21 April 1936; Hopper to Knight, 18 June 1936; Hopper to Knight 22 June 1936; Hopper to Knight, 30 June 1936; Ed Rowan, Superintendent, Section of Painting and Sculpture, to Mr. Dows, Memo 6 October 1936. RG 121, NARA. "Prehistoric Monsters for New Zoo House," *Evening Star* (27 November 1937); "Best Show in Town," Greater National Capital Commission of the Washington Board of Trade, MLK.

[130]Hopper to Knight, 21 April 1936; Knight to Bruce, 9 June 1937. RG 121, NARA.

spaces were supplied to Knight for his edification.[131] It was recommended that Knight create small-scale pencil sketches for preliminary approval; photographs of Knight's designs for the Elephant House were taken and rushed to the Commission for its consideration at the July of 1936 meeting.

Lee Lawrie, the sculptural authority for the Commission, complimented the lunettes but cautioned there would be "some difficulty in arranging the relief of animals in profile next to the central animal in direct front view perspective." Lawrie also praised the five roundels, saying the "terrazzo floor cartoons are excellent." Knight confessed that "the lunettes were the most difficult to compose owing to the peculiar proportions of the animals involved ... [and that he] tried to get the exact character in all cases, of the various forms, some of which are very strange." Notice of the Commission's approval was received in August and work proceeded onward. The aluminum cut-outs were done in Washington, D.C.; during the late summer, Knight noted a "young man" named Turner contacted him. Turner was doing some of the aluminum models in the frieze and Knight was to check on the work before it was cast.[132]

Knight was notified that the drawings were needed in July, so that the models could be prepared and the carvings could be then completed and ready for installation in September. It was September, however, when the models were prepared for inspection. The architectural sculptors for the casting were Lombard and Ludwig, Inc., of Washington, D.C. Inslee Hopper from the Painting and Sculpture Department at the Treasury and Arthur Blakeslee, the Chief Architect, inspected the clay models for the lunettes; the casting was scheduled for early October.[133] Knight did visit Washington in October, checking in with those at the Treasury as well as with the modeler and stone

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[131]Hopper to Knight, 23 January 1936; Memo, 3 December 1935/2 January 1936; Hopper to Knight, 13 November 1935; Hopper to Knight, 21 April 1936; Hopper to Knight, 22 June 1936; Edward B. Rowan, Superintendent, Section of Painting and Sculpture, to Knight, 4 August 1936; Arthur Blakeslee, Chief Architect, to Rowan, Memo 13 March 1936. RG 121, NARA.

[132]Hopper to Knight, 5 May 1936; Hopper to Knight, 22 June 1936; Memo 4 August 1936; Rowan to Charles Moore, Chairman, Commission of Fine Arts, c/o John Russell Pope, 16 July 1936; Moore to Rowan, 31 July 1936; Knight to Rowan, n.d., letter attached Rowan's 14 August correspondence; Knight to Hopper, n.d. RG 121, NARA.

[133]Hopper to Lombard & Ludwig, Inc., Washington, D.C., 25 September 1936; Hopper to Knight, 25 September 1936; Hopper to Knight, Telegram 29 September 1936; Hopper to Knight, Telegram 1 October 1936. RG 121, NARA.

cutters.[134] Ernest Springweiler carved the stone reliefs per Knight's design.[135] In February and March, the terrazzo floor work was executed by the Manhattan Terrazzo Brass Company, under Knight's supervision in New York. Knight asked for color samples from which to work and noted the workers were "totally ignorant of the animals involved ... but [that they] were determined to do this work as nicely as possible." Ultimately it was decided to use two sizes of brass strips to carry out the drawings, varying 1/8" to 1/16" for the inside lines.[136]

Of the completed work, Knight observed the aluminum figures were well executed but too small and too few in number to be truly effective. He concurred with Lee Lawrie of the Commission of Fine Arts in that the terrazzo was well-done; he thought the Terrazzo Brass Strip Company did a "splendid" job "copying the outlines beautifully." Knight was the least satisfied with the stone work over the entries, "owing to the small size and poor lighting." He recommended adding some color, and regretted the panels were not painted instead. Hopper's reply in June of 1937 indicates Knight proposed adding six more figures to the interior frieze, an idea Hopper liked but without funding through TRAP one that could not be implemented.[137] In October Knight was contacted again regarding his work on the Elephant House, this time the Treasury desired "a lucid word account of the subject matter" for use in a booklet about the murals and sculpture planned for the public's benefit. Also, there was a reference to a landscape mural, the prospect of which appealed to Knight but nothing further recorded in the file.[138] Historical accounts of the Zoo attribute the landscape murals in the Nile hippopotamus and giraffe cages to Domenico Mortellito.[139] Historic photographs show the hippo, mostly submerged, four

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[134]Rowan, Memo 6 October 1936. RG 121, NARA.

[135]Mergen, *From Bison to Biopark.*

[136]W.G. Noll, Supervising Architect, Treasury Department, to Knight, Telegram 20 February 1937; Knight to Hopper, letter attachment to telegram 29 September 1936; Rowan to Knight, 14 August 1936; Rowan to Blakeslee, 14 August 1936; Knight to Rowan, n.d., 1936; Knight to Blakeslee, 28 February 1937; Hopper to Knight, 1 March 1937; Henry La Farge, Special Assistant, Treasury Relief Art Project, to Knight, 8 March 1937; Knight to Hopper, n.d., attachment to La Farge letter 8 March 1937.

[137]Knight to Bruce, 9 June 1937; Hopper to Knight, 10 June 1937. RG 121, NARA.

[138]Forbes Watson, Advisor, Section of Painting and Sculpture, to Knight, 14 October 1937; Knight to Hopper, n.d., attachment to La Farge to Knight, 8 March 1937. RG 121, NARA.

[139]Ewing, 63, who cites Mann to A. Wetmore, 30 January 1937, SIA, RU 46, Box 144, f3; Hamlet, 184. Mergen, however, cites both Knight and Mortellito as working on the murals at the back of enclosures in the Bird, Reptile, and Pachyderm House. The murals were to suggest the animals' natural habitat. Mergen, *From Bison to Biopark.* The Wetmore to whom Mann wrote is most probably James A.

giraffes, and one African elephant with his/her ears raised in their respective enclosures. The murals are evident in the background.[140]

7. Hardware: Most of the hardware in the Elephant House is modern, such as the butt hinges securing the doors to metal frames, the Schlange locks and various padlocks, or is related to the cage bars and to the barriers separating the animals from the general public.

8. Mechanical equipment

a. HVAC: The building was noted for its ventilation systems upon construction, and the two vents seen on the rooftop in spite of the parapet walls are original. Other equipment is on the roof. Inside, the ornamental grilles in the vestibules screen radiators. There are three vents in the ceiling and twenty-four in the walls over the cages. A Trane-manufactured heat pump system is located in the basement, as are two extraordinarily large boilers. An air conditioning unit was inserted into the east window of the office space on the main floor. Fire alarms are also present.

b. Lighting: The building is lit primarily by the twelve skylights, although supplemental lighting in the public spaces is evident on the west end viewing platform. Illuminated "exit" signs are attached over the relevant doors. Outside, there are various spotlights as well as a lamp or lantern suspended from the ceiling of each loggia. In the basement, fluorescent overhead lighting was installed likely at the same time as the dropped ceiling (acoustical tile).

c. Plumbing: The Elephant House was plumbed with hot and cold water. Drawings on file suggest there was a new hot water heater in 1975.[141]

9. Original furnishings: Although the plans specified eight benches made of terrazzo to be placed in pairs between the five floor medallions, today the seating furniture consists of only of one large wood bench. There are assorted dedication plaques on the bench dating to 1964, 1969, and 1973.

Wetmore, the Acting Supervising Architect between 1915 and 1934. Louis A. Simon followed him in office. Lee, 257-58.

[140]Also evident are the bars of the elephant cage and the screen-like bar enclosure for the giraffes. The copies of the historic images that were provided to me were undated. Interior view looking south into elephant cage, photograph, n.d., NZP; interior view looking west, photograph, n.d., NZP. Interior perspective view looking to hippo pool, photograph, ca. 1937, NZP (1937 Smithsonian *Annual Report*).

[141]Wagner Associates, drawing, 1975, NZP.

D. Site

1. Historic landscape design: The initial impetus for the establishment of the National Zoo was the preservation of mammals native to North America that were on the verge of extinction, such as the bison and buffalo herds. The site desired had to accommodate this ideal of a nature preserve, and once the 1889 bill for the Zoo passed Congress,[142] a committee selected the Washington, D.C., location "in the picturesque valley of Rock Creek, in the portion nearest the city." The committee members were but three: the Secretary of the Interior, the President of the Board of Commissioners of the District of Columbia, and the Secretary of the Smithsonian Institution, Samuel Pierpont Langley. One of the Zoo's earliest proponents was William Temple Hornaday, who created and curated the National Museum's department of living animals. Hornaday soon left for the Bronx Zoo in New York, and in 1891 Frank Baker succeeded him as the Director of the National Zoo. The Zoo had opened in 1890, and Baker held the position of director until 1917.[143]

In 1922, just as the Chicago Zoological Garden project in Brookfield was launched, landscape architect Horace Peaslee critiqued the state of zoo design. Peaslee lamented that most zoological gardens had grown by accretion rather than being implemented as a part of a comprehensive plan as the Brookfield project was to be. The effect was to render it difficult for the visitor to find the exhibits in most zoos or alternatively to negotiate the overlapping walkways with any sense of direction. Peaslee advocated planning for a main line of circulation, plus well-placed entries feeding into that pathway, to guide visitors through the zoo. The combination of a "fine approach" with a "harmonious relation of buildings" would make a "splendid first impression."[144] The National Zoo was working toward those goals, improving the road surfaces to the Park and honoring the spirit of the Olmsted plan with its building placements and landscaping efforts.

With the influx of PWA money in the mid-1930s, the Zoo was ready to build new exhibits and looked to the designer of the Brookfield Zoo for assistance. At the meeting of the Commission of Fine Arts, the members echoed Peaslee with their request for a cohesive landscape. The Commission advocated a plan that would create a sense of order and enable the monumental-scale buildings to relate to one another visually, in spite of the hilly topography. Mann, without elaborating on how precisely, purported to the

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[142]Approved 30 April 1890.

[143]Mann, "A Brief History of the Zoo," 350; Farrell, 33.

[144]Horace W. Peaslee, "Park Architecture: Zoological Gardens," *Architectural Record* 51 (April 1922): 361-62.

Commission that the new structures would begin to pull the built environment of the Zoo together. He also expressed a willingness to take out the winding road so heavily used by automobile traffic, requested fencing along Rock Creek, and asked for a cross-road linking Rock Creek and Potomac Parkway.[145] Mann eventually won approval for the projects.

The landscaping for the Elephant House got underway in 1938, largely due to WPA laborers and materials reaching to $245,000 in contributions for the effort. The goal of the landscaping was to eradicate the barren eyesores of the "wide open spaces" around the newly constructed buildings. The early work entailed grading the hill below the Elephant House. The retaining wall to the north of the Elephant House was extended. This project picked up where the last WPA project had stopped, and was intended to create "suitable settings" for the "fine buildings."[146] The environs of the Elephant House changed over the course of the twentieth century. The expansion of the yards directly impacted the animals' and visitors' spaces and the establishment of the Asia Trail indirectly changed view sheds into the Elephant House enclosures.

2. Outbuildings: There are no outbuildings supporting the Elephant House.

PART III. SOURCES OF INFORMATION

A. Architectural drawings

The Facilities Maintenance department of the National Zoo has copies of the 1930s-era drawings for the Elephant House, as well as copies of the plans for the various alterations to the structure and surrounding yard on file. The National Archives has maps for the zoo grounds (RG 66) as well as blueprint copies of a sampling of the 1935 drawings by Edwin Clark and approved by the Treasury Department's Procurement Division for the Elephant House as well as the Small Mammals and Great Apes building. Presumably the National Park Service's Olmsted Center in Brookline, Massachusetts, has copies of the Frederick Law Olmsted's landscape designs for the Zoo in the 1890s but this needs to be confirmed. The whereabouts of Clark's papers and other drawings for the National Zoo remain unknown; the Chicago Park District files and the archival records relating to Lincoln Park would be elucidating, however.

B. Early views

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[145]Minutes, CFA, 4 October 1935, 2, 4.

[146]"WPA Crew Starts Landscaping 'Barrens' around Zoo Buildings," *Washington Post* (13 August 1938), 3; "But Zoo Welcomes WPA Assistance," clipping file, MLK.

The Architectural History and Historic Preservation division of the Smithsonian Institution has some early views of the Elephant House and the grounds of the Zoo on file, as well as copies of some of the materials housed at the Olmsted Center. The Facilities Maintenance department of the National Zoo has a series of construction photographs that document the erection of the building in the mid-1930s. The Washingtoniana Collection at MLK library has some views of the Zoo, more particularly the animals, in the historic photograph files. Chicago's Art Institute holds copies of photographs of Clark's buildings in the Lincoln Park Zoo and there are just over ninety views of zoos, including the National Zoological Park, Lincoln Park, and Brookfield, available through the American Memory website at the Library of Congress.

C. Bibliography

a. Repositories

American Institute of Architects, Washington, DC

The library and archives maintains files of the Institute's fellows as well as books and periodicals befitting an architectural research collection.

Art Institute, Chicago, IL

The library of the Art Institute maintains the Edwin Hill Clark collection consisting of his diaries, journals, and miscellaneous photographs. Most of the materials, including designs, relate to the Institute's Throne Miniature Rooms (those drawings are housed in the architecture department, however). The library also has various secondary sources relating to the Lincoln Park Zoo and to the Brookfield Zoo.

Chicago History Museum, Chicago, IL

The research center has several of Clark's drawings. Six relate to the Power House, and the other three to an addition to the Boiler Room at the Chicago Zoological Gardens (now Brookfield Zoo). It is likely the collections of the History Museum would yield contextual information for the establishment of the zoos in Brookfield and Lincoln Park.

Commission of Fine Arts, Washington, DC

Records relating to the Commission are kept in that office as well as in the National Archives (RG 66). Annual Reports of the Commission's meetings wherein they discussed and reviewed design plans and monitored the design-build process were especially useful regarding proposals relating to the zoo.

Lincoln Park, Chicago, IL

The archives has materials relating to the Park's operations, including reports of the Commissioners, scrapbooks, annual reports, and photographs. Clark designed several buildings for Lincoln Park, including the Primate House, Reptile House (originally the aquarium), administration buildings, Waveland Clock Tower and adjoining restaurant building.

Martin Luther King Library, Washington, DC

MLK maintains clipping files on Washington-area subjects in the Washingtoniana Collection; here too are photograph files and copies (indexed) of the *Evening Star* newspaper.

National Archives and Records Administration, College Park, MD

The branch in College Park keeps cartographic and architectural drawings; here, there are blueprints relating to the initial construction of the Elephant House and to other structures in the zoo. Records of Public Buildings, Works Progress Administration, Public Works Administration, etc., also are found here. Specific to the Elephant House were some textual files regarding the federal art project which funded Charles Knight's sculptural design work for the building.

Smithsonian Institute Libraries and Archives, Washington, DC

The Smithsonian libraries are concentrated within the various museums (and within those, departments) so to provide the curators and researchers with on-site reference materials directly relating to the subject and area of study. Each library maintains special collections, secondary sources, pertinent journals, reports, and images or other archival material as appropriate. The libraries generally are open by appointment, but the staff is most helpful and accommodating to the tightest of schedules.

b. Suggested Sources

Adams, Jack. *Wild Elephants in Captivity*. Carson, CA: Center for the Study of Elephants, ca. 1981.

Benedict, Francis G. *The Physiology of the Elephant*. Washington: Carnegie Institution of Washington, 1936.

Betts, John Rickards. "P.T. Barnum and the Popularization of Natural History." *Journal of the History of Ideas* 20, no. 3 (1959): 353-68.

Blunt, David Enderby. *Elephant*. London: Neville Spearman, 1971.

Brambell, Michael. "The Evolution of the Modern Zoo." *International Zoo News* 40, no. 7 (1993): 27-34.

Carrington, Richard. *Elephants: A Short History of their Natural History Evolution and Influence on Mankind*. NY: Basic Books, 1959.

Chadwick, Douglas H. *The Fate of the Elephant*. San Francisco: Sierra Club Books, 1992.

Conway, William G. "Zoos: Their Changing Roles." *Science* New Series 163, no. 3862 (3 January 1969): 8-52.

Croke, Vickie. *The Modern Ark: The Story of Zoos Past, Present, and Future*. NY: Scribner, 1997.

De Courcy, Catherine. "The Origin and Growth of Zoos." *Endangered Species* 1, no. 1 (Summer 1999): 16-19.

"The Evolution of the National Zoological Park." Report, 1975, University of Virginia Landscape Architecture Department.

Farrell, Gavin. "Smithsonian Institution National Zoological Park: A Historic Resource Analysis." Report, 10 September 2004, Smithsonian Office of Architectural History and Historic Preservation, Washington, D.C.

Farrington, Oliver Cummings. "The Rise of Natural History Museums." *Science* New Series 42, no. 1076 (13 August 1915): 197-208.

Great Zoos of the World: Their Origins and Significance. Edited by Lord Zuckerman. Boulder, CO: Westview Press, 1980.

Gwathmey, Emily Margolin. *An Enchantment of Elephants*. NY: C. Potter, 1993.

Hamlet, Sybil E. *History of National Zoological Park Construction*. Washington, D.C.: Smithsonian Institution, 1968.

Hamlet, Sybil E. "The National Zoological Park: from Its Beginnings to 1973." December 1985. (NZP)

Hollister, Ned. "The National Zoological Park: A Popular Account of its Collections." (NZP).

Horowitz, Helen L. "The National Zoological Park: 'City of Refuge or Zoo?'" *Records of the Columbia Historical Society of Washington, D.C.* (1973-74): 405-29.

Hyson, Jeffrey N. "Urban Jungles: Zoos and American Society." Ph.D. diss, Cornell University, 1999.

Iadarola, Lynne Susan. "Architectural Design in the Zoo." Master of Architecture thesis, University of Maryland, 1985.

Lee, Antoinette J. *Architects to the Nation: The Rise and Decline of the Supervising Architect's Office*. NY: Oxford University Press, 2000.

Mann, William. "A Brief History of the Zoo." *Scientific Monthly* 63, no. 5 Smithsonian Centennial Issue (November 1946): 350-58.

Mann, William M. *Wild Animals In and Out of the Zoo*. NY: Smithsonian Institution series, ca. 1934.

"Master Development Plan for the National Zoological Park of the Smithsonian Institution Washington, D.C." Report, September 1961.

Mergen, Alexa. *From Bison to Biopark: 100 Years of the National Zoo*. Washington, DC: Friends of the National Zoo, 1989.

Morewood-Dowsett, J. "Elephant Past and Present." *Journal of the Royal African Society* 38, no. 152 (July 1939): 3-40.

"National Zoological Park." *Science* New Series 10, no. 240 (4 August 1899): 156-57.

New Worlds, New Animals: from Menagerie to Zoological Park in the Nineteenth Century. Edited by R.J. Hoage and William A. Deiss. Baltimore: Johns Hopkins University Press, 1996.

Ott, Cynthia. "Philadelphia Zoological Gardens." Report, 1996, Historic American Buildings Survey, Library of Congress. (HABS No. PA-6211)

Polinger-Foster, Karen. "The Earliest Zoos and Gardens." *Scientific American* 281, no. 1 (July 1999): 48-55.

Reichenbach, Herman. "Lost Menageries: Why and How Zoos Disappear." *International Zoo News* 49, no. 3 (April/May 2002): 151-63.

Schomberg, Geoffrey. *General Principles of Zoo Design*. London: Lutra Consultants, 1972.

Stott, R. Jeffrey. "The American Idea of a Zoological Park: An Intellectual History." Ph.D. diss, University of California - Santa Barbara, 1981.

"Survey Report, National Zoological Park, Washington, D.C." August 1958.

Tasev, Atanas. *Washington Zoo*. Washington, D.C.: Smithsonian Institution, 1976.

Woodroffe, Gordon. *Wildlife Conservation and the Modern Zoo*. Hindhead, England: Saiga, 1981.

Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens. Edited by Vernon N. Kisling, Jr. Boca Raton: CRC Press, 2001.

Zoological Park and Aquarium Fundamentals. Edited by Karen Sausman. Wheeling, WV: American Association of Zoological Parks and Aquariums, 1982.

E. Likely sources not yet investigated

As a number of repositories are undergoing moves or re-organizations in 2006, including the Commission of Fine Arts, the Smithsonian Institution's Architectural History and Historic Preservation Division, and the Chicago History Museum, some primary source material relating the Zoo was unaccessible. The Olmsted Center did not respond to my inquiries. Similarly, the file for the multiple property, National Register of History Places listing for Lincoln Park was unavailable for review. The Illinois state office scanned many of their NRHP files, but the on-line version provided GPS points and no data (text).

ADDENDUM TO:
NATIONAL ZOOLOGICAL PARK, ELEPHANT HOUSE
3001 Connecticut Avenue NW
Washington
District of Columbia

HABS DC-777-C
DC-777-C

PHOTOGRAPHS

HISTORIC AMERICAN BUILDINGS SURVEY
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001