



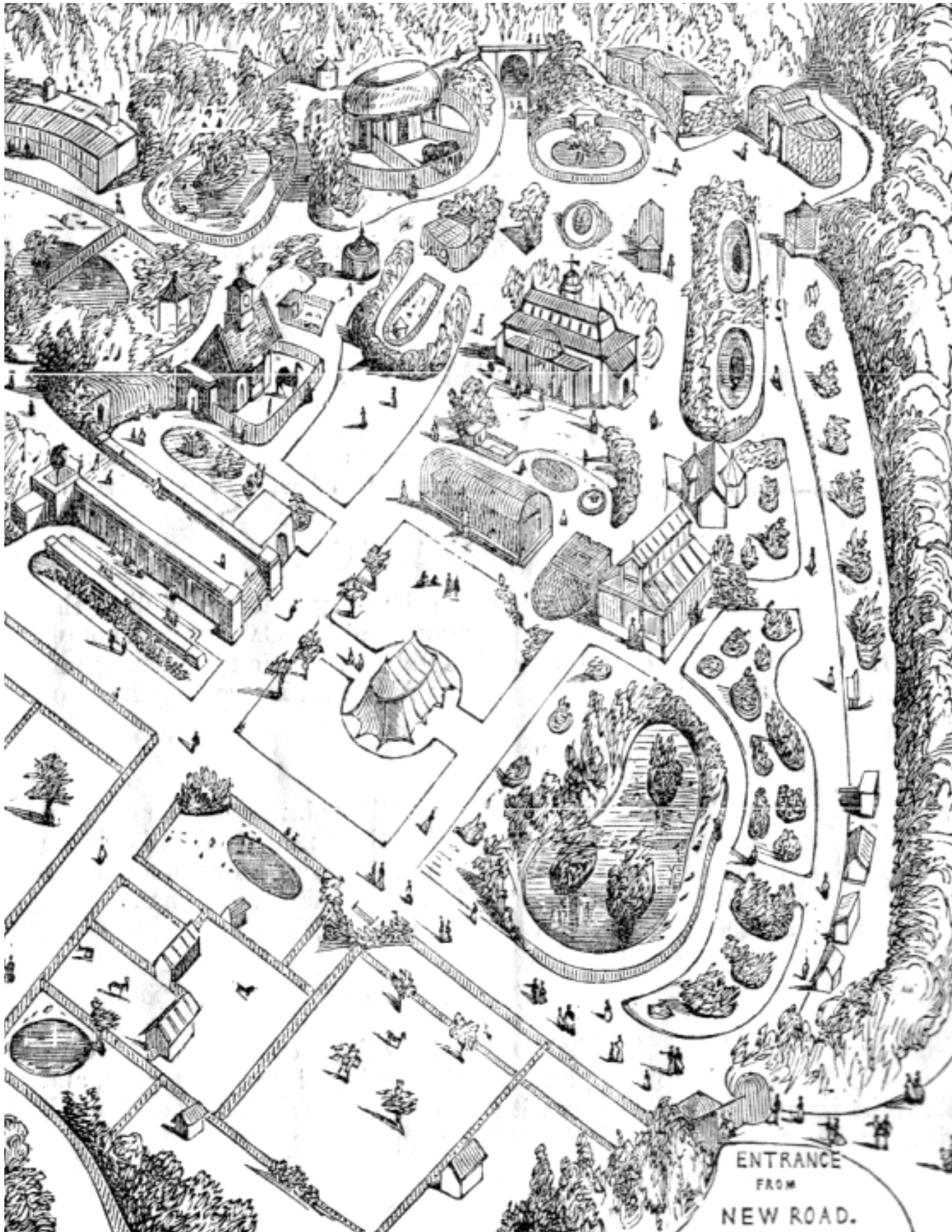
Animal Showcase

An architectural history of early zoological gardens.

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Journal Series
2015

Rachel Couper

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Rachel Couper was awarded the Byera Hadley Travelling Scholarship in 2014

Cover image: A detail from an early map entitled *A Bird's Eye View of the Zoological Gardens Regent's Park, London* from 1858.

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Animal Showcase: An architectural history of early zoological gardens.

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Animal Showcase is an international study of the architectural history of early zoological gardens, amalgamating primary resources with historical documentation in order to create a comprehensive summary of the development of the architectural typology of zoological gardens.

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Introduction

Animal Showcase is an international study of the architectural history of early zoological gardens. It has been formulated to act as a reference point and resource for further avenues of architectural study, such as the relationship between architecture and science, culture and animals, nature and the built environment. Much has been written on the history of zoological gardens, but there has been little focus on the development of the architectural typology of the zoo.

The scope of the research spans the inception of the first zoological garden through to the early 1900s, as this was the period in which the foundations of the architectural typology of zoological gardens were established. Researching this area of study involved the identification of six key developments in the architectural typology of the zoo. These developments occurred in The Jardin des Plantes in Paris, The London Zoo, The Berlin Zoo, Hagenbeck's Tierpark in Hamburg, The Smithsonian National Zoological Park in Washington DC and the New York Zoological Park (as the Bronx Zoo was originally known). Each of these zoos made an influential contribution to the evolution of architectural typology, shaping the cultural expectations of current zoological gardens.

The chronological nature of the study allows the evolution of zoological typology to be traced in a systematic and logical manner. Much of the historical documentation and correspondence relating to the architectural history of zoos in general has not been widely published. Therefore, each of the zoological gardens listed above was visited during the study and, where possible, access was obtained to the archives in search of primary

documentation and resources. This study looks at the historical background, key players and cultural context in which each of the zoological gardens was established. It then traces the development of the key architectural attributes of each, such as site, circulation, landscaping and views, built form, territory and scale. This report amalgamates primary resources that were sourced during the research trip with historical documentation that has been previously been published in order to create a concise but comprehensive summary of the development of architectural typology in zoological gardens. 'Animal Showcase' provides a broader understanding of the role architectural design played in the formation of the zoo as a cultural institution and highlights the complex relationship that exists between zoological architecture and cultural understandings of animals and nature.

Background

The zoological garden functions as a cultural showcase of animals, and to a lesser extent the natural world. The design of the zoological garden is a consequence of human interpretations of the way in which animals and the natural world should be perceived and presented. Zoological architecture therefore has the capacity to function as the physical embodiment of various cultural understandings, whether they be perceptions of animals and the natural world, scientific knowledge or the relationship between architecture and the built environment. The zoological garden has been the subject of many investigations into complex issues such as the ethics of animal captivity, animal care and welfare, and the relationships between people and animals. Very little analytical

research, however, has focused specifically on the architecture of the zoo. 'Animal Showcase' traces the changing treatment of architectural mechanisms such as pedestrian routes, views, landscaping, figure ground relationships, site plans, materials, built form, territory and scale in early zoological gardens. A clear understanding of the history of these architectural mechanisms may provide an avenue for an alternate thinking of zoological gardens.

An alternate thinking is desirable as the zoological garden is a problematic topic and there is much conflicted debate about how they should best to proceed into the future. The zoo is a cultural construct, a built environment designed to showcase animals and the natural world in a culturally acceptable architectural language. As such, there are many avenues for an architectural contribution to be made to the debate surrounding the future direction of zoological gardens. 'Animal Showcase' endeavours to provide the historical groundwork from which those contributions can be made.

The study was undertaken by researching the history of early zoological gardens in order to identify six key developments in the evolution of the architectural typology of zoological gardens. These developments occurred in The Jardin des Plantes in Paris, The London Zoo, The Berlin Zoo, Hagenbeck's Tierpark in Hamburg, The Smithsonian National Zoological Park in Washington DC and the New York Zoological Park. An investigation was then undertaken of each of these zoological gardens in person and, where possible, arrangements made to access the archival records

of each. The chapters of 'Animal Showcase' follow the evolution of zoo typology in chronological order. Each chapter includes a historical summary of the establishment of the zoo, the identification of the main contributors and a breakdown of the key architectural developments of each. The result provides a thorough documentation of the establishment of the architectural typology of the zoo, from which further architectural studies can evolve.

Methodology and Scope

The methodology of this study combines the research of primary architectural documentation of zoological gardens, where available, with publications documenting their overall history in order to provide a concise summary of the development of the architectural typology of zoological gardens. A research trip was undertaken to each of the case studies, in which the current zoological garden was investigated and, where possible, the archives visited. Each of the case studies proved dramatically different in their archival arrangements but it was possible to obtain previously unavailable architectural information from each.

Animal Showcase is restricted to the analysis of Western zoological gardens in part for expedience and in part because the case studies listed defined a typology that in turn influenced the majority of international zoological gardens. The scope of the research spans the inception of the first zoological garden through to the early 1900s as this was the period in which the foundations of the architectural typology of the zoo were established.



Figure 1: A hand painted lithograph of the London Zoological Gardens completed by George Scharf in 1835, showing members of the well-dressed elite feeding an elephant. The rustic pavilion built for the elephant's shelter can be seen in the background.

Definitions

For the purposes of this study it is necessary to make a distinction between the menagerie and the zoological garden. Humans have been collecting animals since antiquity and there are many opinions about what constitutes a zoological garden and, therefore, some disagreement about which zoo can officially be named as the first. For the purposes of clarity, this study takes the position that the birth of the zoological garden occurred in London, when the term “zoological garden” was first coined during the establishment of ‘The Garden’s of the Zoological Society of London in Regent’s Park’. Though the Zoological Society of London often still referred to the site as the ‘gardens and menagerie’ for many years, the London Zoo was created specifically for the purpose of scientific research, this also forming the reasoning behind the accumulation and maintenance of the animal collection.

As this study will show, the London Zoo was formed as a direct consequence of the establishment of the menagerie in the Jardin des Plantes in Paris, which was itself formed during the upheaval of the late 18th Century when ‘the public’ requisitioned the Versailles menagerie during the French Revolution. This period was the culmination of the Scientific Revolution and the Age of Enlightenment, heralding a period of significant confusion as to exactly what ‘nature’ and ‘science’ were, especially in relation to concepts of religion and evolution.¹ It is necessary, therefore, to provide a summary of the Royal Menagerie in Versailles and the role it played in the establishment of the menagerie in the Jardin des Plantes in Paris.

Historical Background: The Royal Menagerie of Versailles

In its prime, Louis XIV’s Royal Menagerie of Versailles was the pinnacle in the exhibition of exotic animals, an opulent symbol of his wealth and power to which others could only aspire. The utilization of architectural mechanisms such as context, scale, the controlling of views and approach, landscaping and ornamentation influenced menagerie design across Europe and, importantly, altered the way in which exotic animal collections were typically exhibited by assembling them all in the one place. This functioned as an important precursor for the design for the menagerie at the Jardin des Plantes and, subsequently, set the stage for the architectural design of the London Zoo.

Designed by architect Louis Le Vau, the construction of the menagerie was part of a larger project in 1660 to reinvigorate the precinct around an existing hunting lodge, according to zoo historians Eric Baratay and Elisabeth Hardouin-Fugier in their publication *Zoo: A History of Zoological Gardens in the West*.² Situated in the southwest area of the Versailles grounds, the project was principally concerned with enlivening the gardens, which functioned as a symbolic incarnation of the authority of the King.

Le Vau installed staggered terraces, axial perspectives, grottoes, rockeries, statues and water features to animate the area. His arrangement of the menagerie in a radial park centering on an octagonal pleasure house constituted a significant development in the exhibition of animal collections because it displayed all the animals in the one

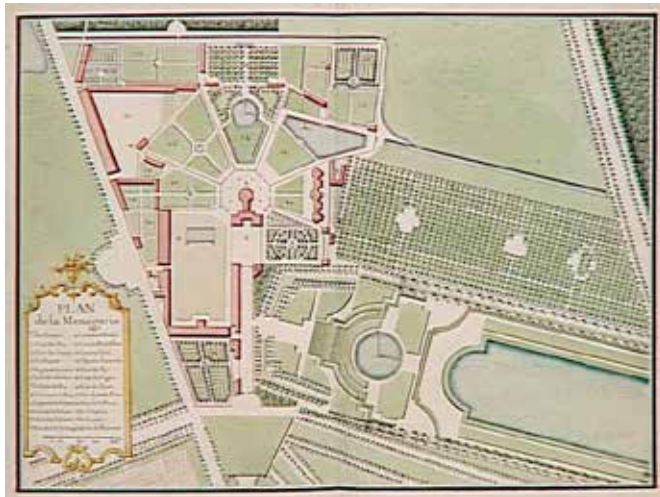


Figure 2: A 1747 plan of the menagerie grounds showing the radial footprint of the enclosures, centered around the rotunda.

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place, rather than distributing them around various royal estates, as had been the custom.³

The circular layout of the menagerie grounds was segmented into seven animal enclosures each with solid walls on three sides and ornately designed bars facing the direction of the pleasure house.⁴ This allowed the King and his guests to observe the entire menagerie from the upper level of the salon, as if each enclosure were a theatrical stage. The Baroque style of the salon included ornate decoration and elaborate paintings detailing the capture of the animal collection. It was the King's wish that guests approach the menagerie via a course he had set himself, with specific pauses dictated to ensure the visitors admire particular views he deemed important.⁵ Each moment was designed to take full advantage of the vast scale of the gardens in order to convey a potent message of regal might and authority and placed the menagerie squarely within this context.

The success of the layout influenced menagerie architecture across Europe because it powerfully embodied the King's strength by presenting the natural world as a spectacle which had been conquered. Baratay and Hardouin-Fugier explain that placing the collection within the context of the gardens, where it could be surveyed within a single glance, enhanced the sense that the King 'so dominated all he surveyed that all of creation paid him homage, offering itself to him.'⁶

In light of this, it is not surprising the revolutionary authors of the *Encyclopedie* declared that 'menageries must be destroyed for it is shameful to feed beasts at great expense when men die of hunger all around' and the Versailles collection became

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a focal point of venomous public rage during the French Revolution.⁷ It mattered little that, by this stage, the descendants of Louis XIV had lost interest in the menagerie and it was now under the direction of the *Academie des Sciences*, who, poorly funded, could do little more than watch it fall into disrepair. As the siege of the palace reached its peak, many of the menagerie buildings were destroyed and a vast number of animals massacred, the mob attacking them as vivid symbols of grotesque royal excess.⁸

The architectural design of the Royal Menagerie of Versailles successfully employed mechanisms of context and scale by placing the menagerie within the vast expanse of the gardens in order to exalt the glory of the King. The decorative adornment of the architecture, coupled with exotic nature of the collection gave the semblance of the menagerie as one of the jewels in the King's crown. Le Vau's design was an important precedent for the architectural typology of the zoo because it amassed an exotic animal collection in one place, within a garden context, and exhibited them in ornate enclosures resembling a theatrical stage.

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Jardin des Plantes

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The Jardin des Plantes emerged from the restructuring and expansion of the pre-existing Jardin du Roi in the aftermath of the French Revolution. The site had originally been established by Louis XIII in 1635 as a Royal Medicinal Plant Garden, but when the young Louis XV removed the medicinal function in 1718 and renamed it the Jardin du Roi it freed the establishment to focus on broader aspects of natural history, such as taxonomy and botany.

With the esteemed naturalist Buffon at the helm from 1739 to 1788 the establishment prospered into one of significant prestige and international renown. By the turn of the 19th Century the Jardin des Plantes was a preeminent scientific institution, revolutionizing scientific practice by incorporating a wide breadth of scientific endeavours in the one location. As historian Carla Yanni explains in her analysis of Natural History Museum's entitled *Nature's Museums: Victorian Science and the Architecture of Display*, 'All naturalists in Britain, whether natural theologians or radical evolutionists, would have agreed that the social status of science in France was appropriately high because the Jardin des Plantes served as a centralized, active, state-funded research institute.'⁹ Open to the public, it had long been considered by the people to be something of a national treasure, which many historians have argued played a role in saving it from destruction during the revolution.¹⁰

Accounts of the transfer of the remaining Versailles menagerie animals to the Jardin des Plantes widely differ. Legend has it that 'the people' requisitioned the collection as their own but several zoo historians such as Eric Baratay and Elisabeth *Byera Hadley Travelling Scholarships Journal Series*

Hardouin-Fugier in their publication *Zoo: A History of Zoological Gardens in the West*, suggest that while a Jacobin mob did indeed converge on the menagerie late in the Revolution in 1792, their purpose was not to expropriate the remaining animals but to slaughter them for food and replace them with more agriculturally useful beasts.¹¹ The exchange between the group and menagerie steward, Laimant, has become folklore. Legend has it that when the intruders demanded he release the animals in order for them to be eaten, Laimant calmly stated he would rather hand over the keys and let them release the animals themselves because the first thing the liberated beasts would likely do is eat them instead. Seeing sense, the mob reassessed their plans and took only the less ferocious animals to the slaughterhouse and left the others to the steward.¹² While they weren't quite the saviours of the animal collection that the popular version suggests, the Jacobin mob converging on the last of the menagerie did provide the impetus for Laimant to commence correspondence with intendant of the Jardin des Plantes, Bernadin de Saint-Pierre to discuss the possibility of the animals being transferred to the Jardin where they could be stuffed for the purposes of scientific study. It was not unusual during this period for stuffed specimens to be more highly valued as scientific objects than live specimens, which were usually only kept for short periods in order for taxidermists to reference the correct postures for their specimens.¹³

However, Saint-Pierre tweaked Laimant's proposal when he presented it to the Convention Nationale, suggesting instead that the animals could serve as valuable live specimens to accompany the natural history research.¹⁴ This suggestion, a



Figure 5: A view of the Jardin des Plantes from 1860 in which the informal nature of the menagerie grounds can be seen to the left of the frame, contrasting the symmetrical layout of the original gardens.

reintroduction of one proposed by Buffon several years earlier, prompted much debate, with one side advocating the opportunity for the Jardin to research the acclimatization and domestication of exotic species and the other insisting animals did not belong in the garden, declaring that they would bring dirt and disease and trample the garden beds.¹⁵ For many, there was also a lingering distaste of menageries as symbols of indulgent, tyrannical excess, leading to the insistence that if a collection was to be incorporated in the Jardin, it had to be entirely dedicated to research purposes and not frivolous entertainment.

After several months of negotiations, the fate of the remaining Versailles menagerie was sealed in June 1793, when the Jardin du Roi was renamed the Jardin des Plantes by the Decree of the Convention Nationale and endorsement was finally given for the incorporation of a menagerie. Both were to become subsidiary parts of a larger institution, the French National Museum of Natural History. It was a significant moment in the history of animal collections and served as a defining feature in the subsequent evolution of the zoological garden. A collection of live animals was to add legitimacy to scientific research by being placed in the care of the natural history museum, housed within the grounds of an expansive botanic garden. In a cultural exchange that both shaped and confirmed understandings of scientific practice, the collection was being recognized as belonging to science, via its placement. The public became enamoured with the motley collection of animals and prided themselves on the version of events in which ‘the people’ are credited as requisitioning the menagerie for their own.¹⁶ Royalty had long been declaring they had

conquered the animal kingdom by presenting exotic specimens as a trophy collection. In many ways, by taking ownership of the Versailles menagerie the people of Paris were making a symbolic declaration that they had conquered the King. The menagerie, along with the museum and garden became a symbol of the newly liberated nation and the notion had been born that the zoological garden was a civic right, established for the good of the people.¹⁷

Key Developments

Context

The birth of the public menagerie occurred in the same period as the consolidation of the French Natural History Museum at the Jardin des Plantes. Both are considered to be officially founded in 1793, though some of the natural history collection of the museum had in fact been in existence since the mid 1600s. During the revolution, however, the museum was re-envisioned by Enlightenment thinkers as a site for the dissemination of public knowledge and instruction.¹⁸ No doubt, the popularity of natural history at the time also played a part in the survival and reinvention of the museum. In a historical analysis of the Jardin, EC Spary tells us that one of the reasons natural history became so popular in 1730s France was because it was a representational science, suggesting ‘the visible manifestations of scientific practice displayed in cabinets and gardens could confer status, both moral and economic, upon the owner.’¹⁹ Michel Baridon, a historian of landscape design suggests that during the two decades prior to the revolution, ‘the French garden went through a period of active creation and intense theorization’ inciting dozens

of publications reflecting on their merit and form, with many influenced by the works of Rousseau in particular.²⁰ Many of these theories focused on specific landscape interventions as having the capacity to produce particular outcomes, as will be further discussed in the section on landscaping. It is interesting to note that Rousseau was an acquaintance of Andre Thouin, whose life and career were closely linked to the Jardin des Plantes. Spary tells us that Rousseau regularly corresponded with Thouin and visited him at the Jardin several times.²¹ Andre Thouin's father Jean-Andre Thouin had been head gardener at the Jardin des Plantes from 1745 and the family resided there until his death in 1764. Buffon took the orphaned children under his wing, particularly the patronage of the eldest, Andre. Buffon financed Thouin's education and upon graduation appointed him head gardener of the Jardin in 1768, where he began working closely with Buffon on the extension of the gardens. Spary tells us that 'particularly from 1778 onwards, Thouin became the intendant's indispensable second-in-command in the negotiations over the Jardin's enlargement.'²² From this it can be safely assumed that Thouin played an influential role in the overall design and layout of the Jardin. Historian Michel Conan suggests this may explain why Andre's work is often confused with that of his brother Gabriel Thouin, a landscape designer of whom there are only scant details known.²³

Gabriel was one of the few siblings who did not remain living at the Jardin after their father's death, which Conan suggests might be the reason for the lack of documentation on his work. There is some speculation, however, that he worked alongside his brother in the gardens for a time, before joining

the National Guard for several years, completing commissions for garden designs in his spare time. It is most likely he then took a position in public office as an inspector for the gardens of the archbishop.²⁴ Conan tells us this 'seems to suggest that his activity at the Ministry of the Interior was linked to his skill as a landscape architect.'²⁵ During this time it appears he kept in touch with Andre, who mentioned his brother in a letter to Buffon stating 'he has made several projects for the embellishment of the mount and in order to link this ancient part of the garden with the new ones, during the leisure hours that the inspection of the terraces leaves him.'²⁶ In light of this, it is safe to assume both Andre and Gabriel influenced the layout of the Jardin at this time and they appeared to have shared similar ideas in relation to the style of picturesque gardens.

Landscaping

In a distinct architectural departure from the symmetrical order of the King's original gardens, the expanded area of the Jardin des Plantes embraced fluid lines in a labyrinth of curved pathways and uneven terrain. The most recognizable depiction of the expanded gardens is Gabriel Thouin's from 1828 (though this is somewhat problematic, as discussed in the following section relating the site plans of the Jardin.) Thouin's site plan was part of an illustrated book he published in 1819, named *Les Plans Raisonnees de toutes les especes de jardins*. The publication drew on his experience as an inspector of the gardens of the archbishop and functioned as something of a source book and classification tool of pleasure garden design. Conan explains that the publication was well received at

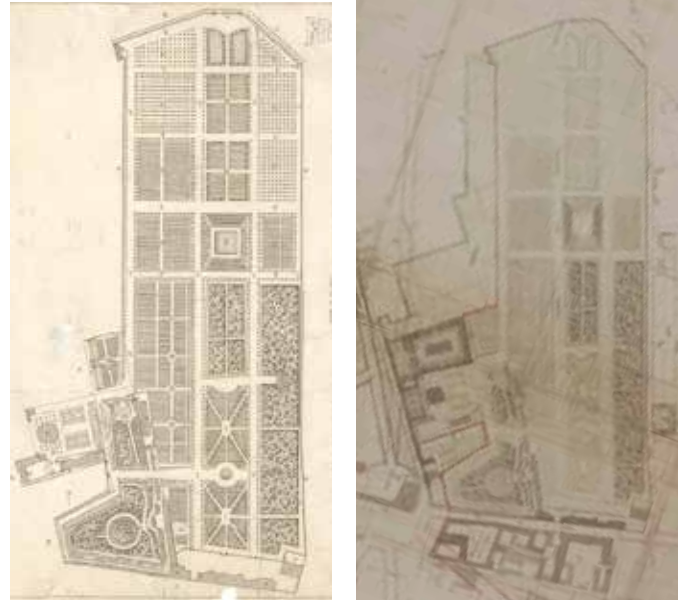


Figure 6 (left): A site plan of the Jardin des Plantes from 1788. Figure 7 (right): A detail of a plan completed by Edme Verniquet between 1791 and 1803, showing the change in boundary.

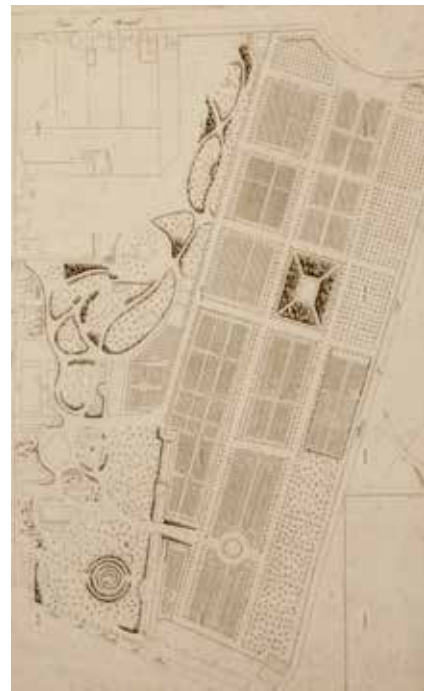
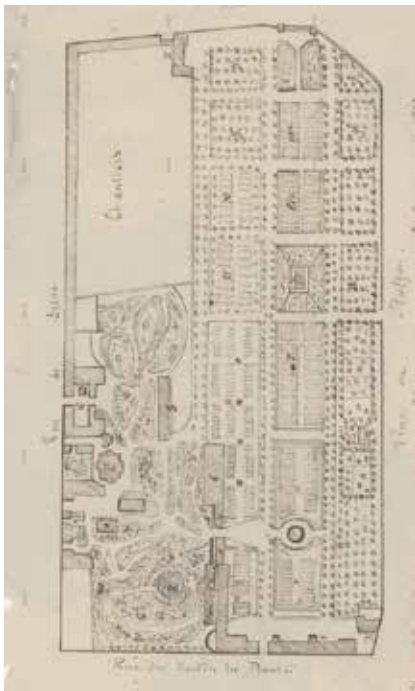
the time, with one prominent critic, Louis Bouchard, going so far as to claim it 'the most beautiful work that has ever been published in France on pleasure gardens; almost all the plans that the author presents have been executed on site under his direction.'²⁷

Bouchard goes on to explain that the 'characteristics of Gabriel Thouin's work are a choice of elegant curves for the alleys, a skillful choice of points of view in order to achieve picturesque effects.'²⁸ These features were in fact common to many of the pleasure gardens in France at the time, a popular sub-genre of which was a rustic-style of landscape garden, in which many of the features of the rural countryside such as sheep pens and orchards were retained. The style is in the tradition of *ferme ornee*, which cultivated a garden that was an idealized vision of a pastoral, bucolic landscape. According to Conan, the major contribution that Thouin's *Plans Raisonnees* made to landscape architecture was the provision of 'an already well received aesthetic doctrine with typical forms that captured many ideals of rural retirement at the time of its publication.'²⁹ The extent to which these ideals were pursued is evident in the popularity of Paulin Desormeaux's 1826 survey in which he investigated the pleasurable practices undertaken in rural estates and published the results.³⁰ Conan details the similarities between Desormeaux's accounts and Thouin's designs, including features such as rivers or lakes for boating or swimming, which Desormeaux suggests increases virility in young men. Other features include secluded benches and shady paths for strolling which 'may be more conducive to sentimental experiences than others open to view at a distance.'³¹ Conan suggests that Thouin also went to great trouble to ensure that the visitor could not see the destination in either direction of a split

path in order to allow for discoveries to be made on each different route. Thouin used many of the *ferme ornee* techniques in his landscape design for the expansion of Jardin des Plantes and the home of the newly acquired menagerie. The cultural tendency to idealize a bucolic version of agricultural life goes some way to explaining the reasoning behind the housing of the menagerie in a landscape styled as a pleasure garden, despite the contradiction this highlights with the naturalists adamant declaration that the animals be for useful scientific purpose, not trivial entertainment.

Site Plan

During the mid to late 1700s the Jardin des Plantes were expanded, primarily under the guidance of Buffon and the hard gardener Andre Thouin. When the menagerie was incorporated into the Jardin in the period around 1794, the collection was situated in the newly landscaped area, which was defined by the winding pathways and landscaping reminiscent of French pleasure gardens, as mentioned previously. There is little straightforward documentation of the evolution of the grounds but the expansion can be traced through the analysis of subsequent site plans. A site plan from 1788 (see Figure 6) shows the grounds as they were just before permission had been granted for the inclusion of a menagerie into the grounds. It depicts the asymmetrical addition of the labyrinth to the gardens, which sits in contrast with the ordered Baroque layout of the medicinal gardens. Figure 7 a detail from a larger plan of Paris completed by Edme Verniquet between 1791-1803, onto which he overlaid developments in the Parisian master-plan, including the new boundaries of Museum. Also from 1803 is unsigned sketch plan of



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Figure 8 (top left): A sketch plan from 1803 showing the increased boundary. Figure 9 (top middle): A more accurate site plan from 1808. Figure 10 (top right): Filleux's site plan from 1817 depicting the developing landscape. Figure 11 (bottom left): Thouin's 1828 proposal for the development of the grounds. Figure 12 (bottom right): Collin's plan from the corresponding year.



Figure 13 (left): A rotated detail of Rohault's 1836 site plan of the Jardin des Plantes, showing the expansion of the site to include the top left corner of the block. Figure 14 (right): Roissy's plan from 1838 depicting the layout of the menagerie grounds as they stood for many years.

the Jardin des Plantes (see Figure 8), indicating that the first stages of the expansion of the menagerie grounds had commenced. The boundaries of the sketch plan are inaccurate but it is interesting to note the significant remodelling of the grounds housing the menagerie is in a similar fashion to that of the labyrinth. A site plan from 1808 (see Figure 9) depicts more accurate boundary lines and building footprints. It appears J Creton coloured the plan at a later date to indicate the years in which various areas of the grounds were annexed. Handwritten notes added to the plan suggest the red section was established in 1633, the orange section between 1772 to 1778, the yellow in 1802 and the green in 1834. This site plan is particularly important because illustrations of the various stages of expansion of the Jardin are extremely rare. The timeframe suggested by Creton coloured additions also correspond with other plans of this period, such as one completed by Adam H Filleux in 1817 (see Figure 10), which clearly describes the developing figure ground relationship of the menagerie area of the grounds. Filleux's plan indicates the layout of the menagerie has been well established by this stage and the landscaping and circulation elements are working to integrate the menagerie site as a whole.

Possibly the most recognizable site plan of the Jardin des Plantes was completed in 1828 by Gabriel Thouin (see Figure 11) and it is often used to illustrate the layout of the gardens and the menagerie. Part of the popularity stems from the fact that Gabriel Thouin was a well respected landscape architect at the time, as well as being the brother of the head gardener of the Jardin des Plantes, Andre Thouin. There is some suggestion, however, that this plan was actually of proposed works and not of the gardens as built.³²

When compared to a plan also completed in 1828 by E Collin (see Figure 12) there are some areas that don't correspond, such as the footprint of some of the menagerie buildings down the left hand side. The footprints of the buildings in later plans also match Collin's plan more accurately than Thouin's, suggesting Thouin's proposed expansions were never built. Thouin's plan, however, is a vital resource because of the detailed and accurate depictions of the smaller pavilions and enclosures dispersed throughout the menagerie, most of which had been designed by Jacques Molinos at the turn of the century.

An 1836 site plan by architect Charles Rohault de Fleury (see Figure 13), shows that by this stage the expansion of the Jardin des Plantes had incorporated the whole block (highlighted in green on the plan) and Roissy's plan from a few years later in 1838 (see Figure 12) shows the area well consolidated into the larger landscaping of the Jardin and the building footprints as they stood for many years to come. Each of these site plans highlight the transition in which animal collections went from being showcased by royalty in an ornate structure detached from the surrounding garden to being exhibited for the purposes of science in structures distributed within and integrated into the landscaping of the site. This design decision, which amalgamated the menagerie and the garden into one, blurred the lines between the menagerie and the place in which it was housed. The exhibition of the animals was unified by the garden context. By deeming the Jardin des Plantes, which functioned as both a Natural History Museum and Botanic Garden, as the most fitting place to rehouse the Versailles menagerie, a typology of 'scientific' animal garden was established.



Figure 15: An undated image of an area of the menagerie referred to as the Swiss Valley, showing the 'shed' built for the goats and buffalo, complete with a rustic replica of a ruined archway.

Circulation

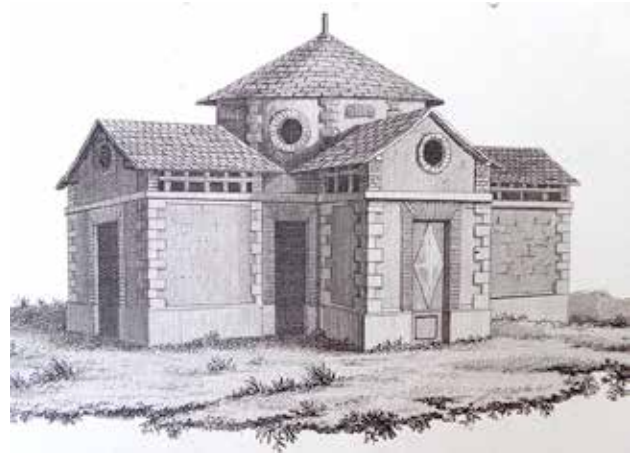
Historian Richard Clearly suggests that the rapid development of promenades in the late 17th and 18th centuries owed much to several factors, such as a 'sustained fashion for social walking and carriage drives among the aristocracy and bourgeoisie, the aesthetic and political desire of administrators to bring order to both the appearance of the city and the behaviour of its residents, and belief in the creation of public green spaces as a matter of public health.'³³ Gabriel Thouin's contributions to the design of Jardin des Plantes, in collaboration with his brother Andre, paid great attention to promenading and the treatment of the pathways throughout the menagerie section of the garden. In almost all of Thouin's landscape designs, carefully crafted patterns of elegant curves were to encourage different routes be taken through the same garden, ensuring the experience was as varied for the visitor as possible.³⁴

Canon suggests that, in line with the traditions of many of the French pleasure gardens of the time, Thouin also went to great trouble to ensure that the visitor could not see the destination in either direction of a split path. As mentioned previously, this allowed for discoveries to be made on each different route.³⁵ In almost all of his designs, Thouin designed the pathways so they sometimes allowed the visitor a brief view across an area of the grounds to add a sense of depth to the landscape and other times they were more shaded and secluded. This also allowed Thouin to design particular routes with specific users in mind, such as more open routes with wider paths for larger groups, and more protected routes with smaller paths for courting

couples (which inevitably included a secluded garden seat upon which private conversations could be conducted). These romantic aspects of Thouin's garden design did, however, create some confusion with the public. As EC Spary explains 'gardens in France during the late 1700s were often portrayed as settings for erotic pleasure' and the Jardin des Plantes became a popular site for lovers to rendezvous for illicit trysts.³⁶ Spary recounts a situation in which a cuckolded husband started fighting with a man whom he had discovered in a tryst with his wife, leading to them both being arrested by the Jardin guards. Appalled, Andre Thouin then issued regulations which stipulated that management 'forbid, as much for the decency due to this establishment as for good morals, the garcon-jardiniers and other employees from allowing suspect women into the Jardin, from walking with them, from introducing them into their rooms.'³⁷ This indicates that from the outset animal gardens struggled with the clash between the public's understanding of the site as one of heady pleasure and the scientists one of serious, moral endeavour. Thouin's treatment of circulation through the menagerie and expanded area of the Jardin des Plantes is very much in keeping with the traditions and practices of French pleasure gardens, with a strong emphasis on picturesque beauty and rambling navigation.

Built Form

After initially being poorly housed in the professors workrooms and overcrowded temporary sheds after they first arrived in 1794, the growing menagerie (the precarious numbers of which were bolstered by confiscated circus acts and travelling shows) was eventually integrated into the expanded grounds of



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The images above, from the archives of the National Museum of Natural History in Paris, are depictions of Molinos's building designs for the menagerie. Figure 16 (top left): Baraque pour les buffles et les bouquetins. Figure 17 (top right): Baraque pour les cerfs et pigeonnier. Figure 18 (middle left): Baraque pour moutons d'Espagne et kangourous. Figure 19 (middle right): Baraque pour les vaches de la Romagne. Figure 20 (bottom left): Cabane et enclos des Cerfs d'Europe. Figure 21 (bottom right): Cabane au Jardin des Plantes.



the Jardin des Plantes.³⁸ As mentioned previously, the design for the extended area of the grounds departed significantly from the symmetrical order of the existing gardens. The additional area was excavated and remodelled to create undulating terrain and the planting and pathways were laid out with the creation of very specific views in mind. The buildings in which the menagerie were to be housed were an integral part of those views and their design was tailored accordingly. The garden and the built form were envisaged as one entity; a bucolic, picturesque scene in the tradition of *ferme ornee*.

Conan explains that *ferme ornee* designs tend to retain not only features of the rustic countryside but elements of pastoral economy as well, such as sheep pens, fences and provincial sheds.³⁹ It appears the architect of the menagerie buildings, Jacques Molinos, designed the eclectic collection of cottages, cabins, huts and rotundas along this tradition. Very little is known of Molinos, however, so it is difficult to confirm his exact architectural intentions and how much direction he had been given by the landscape designers. The majority of Molinos's buildings appear to have been constructed in the early decades of the 1800s and they include rustic features such as thatched roofs, timber columns and recreations of stone ruins. The scale of the buildings is also significant, with each kept intentionally small, and therefore more akin to the simplicity of farming life. Zoo historians Baratay and Hardouin-Fugier suggest that the adoption of the *ferme ornee* style in the menagerie 'was without doubt eased by the political interpretation it invited.'⁴⁰ The irregular, picturesque garden was considered a reaction away from the absolutist

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power of symmetrical design and therefore became symbolic of enlightenment ideals and capable of influencing political sensibilities.

Territory

The Jardin des Plantes embodied a territory of centralized scientific endeavour. Indeed, the museum and the garden in which it was located were not considered to be separate items. Spary tells us that the text of the decree in April 1794 in which funds were allocated for the refurbishment of the botanical gardens expressed the view that the 'Museum is, so to speak, a common reservoir, which will furnish the other gardens and receive exchanges from them; these gardens will spread enlightenment in their vicinity, by the example of an enlightened culture.'⁴¹ This quote demonstrates a conception of the museum and garden as one entity. It also illustrates the emergence of the idea that a garden, if formatted in a particularly botanic manner, could function as a scientific landscape, intrinsically linked to a specific kind of knowledge (as in Republican thinking), as well as a desirable form of culture and moral code of behaviour.

There was a strong belief that those exposed to Republican ways of thinking, particularly those from the provinces, would return home and disseminate that thinking among their peers. It was also understood that this 'exposure' could occur by being introduced to the territory of the Jardin. Spary quotes a draft commentary on the garden, most likely written by Jean Thouin, brother to Andre Thouin, which states 'the Gardens destined for the instruction of young pupils of the Nation must be simple, agreeable and instructive...It is in



Figure 22: De Vink's caricature of the Royal family as animals, entitled '*Rare Animals. Or the transfer of the Royal Menagerie to the Temple*' captures the significance of the change in territory of the menagerie, whilst also illustrating the sense of victory over royalty by the people.

placing the productions of nature before the eyes of young citizens early on, [and in] inspiring them with love for [those productions] that one succeeds in making them known to them and that one manages resources of several kinds against false tastes and against boredom and idleness source of all troubles.⁴² This comprehension of the garden as a territory of moral and instructive guidance was not uncommon at the time, particularly if it had been designed as a showcase of enlightenment ideas of nature. Historian John Dixon Hunt refers to the garden as the 'prime site of intervention in the landscape' and it is into this environment that the menagerie of the Jardin des Plantes was housed.⁴³ As Spary suggests the 'eventual transfer of the royal animals to the Museum in 1794 symbolized, as the museum's naturalists and other supporters continued to emphasize, their conversion from monuments of despotic luxury to representations of republican virtue.'⁴⁴ The change in the physical territory in which the menagerie was housed was significant, as was the change in symbolic territory and what the idea of the animal collection came to embody.

Conclusion

Despite its popularity and influence, the menagerie at the Jardin des Plantes did not prosper. During the restructuring of the National Museum of Natural History, the newly created Chair of Mammals and Birds had been awarded to Etienne Geoffroy Saint-Hilaire, making him the director of the menagerie. Hancocks believes Saint-Hilaire had a somewhat haphazard approach to increasing the animal collection, in which he took less and less interest as he 'devoted himself to travel, writing

and philosophical studies.'⁴⁵ Other historians also credit Saint-Hilaire's rejection of the Linnaean Classification System and the clashes this caused Georges Cuvier as another reason for his frustration with the museum and subsequent neglect of the menagerie.⁴⁶ Later, the menagerie fared much better under the directorship of Etienne's son, Isidore Geoffroy Saint-Hilaire. However, regardless of condition of the menagerie, the relocation of the Versailles menagerie to the Jardin des Plantes set the stage for the transition of the menagerie into the zoological garden.

For the first time in history, an animal collection was recognized as belonging to the realm of science, via its placement, which in turn gave credibility to the scientific pursuit of zoology. The animal collection in the Jardin des Plantes established the core understanding that access to a collection of exotic animals was a civic right and a source of cultural pride. The layout of Jardin des Plantes, being a series of rustic cottages and structures scattered around picturesque grounds, in close proximity to the natural history museum and botanic garden, influenced zoological design for many generations. The use of winding pedestrian routes is a key element of zoological typology that is still seen today. The Jardin des Plantes established a lasting architectural treatment of landscaping, site, circulation in zoological gardens and founded the understanding that animal collections can belong to both the scientific realm and the public. The scientific success of the Jardin des Plantes endowed it with a cultural importance that helped to establish the site as an important civic institution. The Jardin became emblematic of national identity and the envy of rival countries, such as England.

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3

The Gardens of the Zoological Society of London at Regent's Park

The notion of exhibiting animals specifically for scientific purposes was primarily championed by Sir Stamford Raffles, a colonial administrator who returned to England in 1824 after devoting years overseas to the expansion of the British Empire. Like many powerful men of his time, he was an avid naturalist and whilst in the East Indies Raffles had accumulated a sizable personal animal collection that included tigers, bears and orangutans.

Upon his return to England, Raffles keenly felt the lack of an elite scientific institution befitting an empire as rich and powerful as that of Britain. Zoo historian Harriet Ritvo has suggested that he was particularly vexed that England, whom he considered superior to all, had nothing to rival the preeminent institutions of neighbouring countries, such as the Jardin des Plantes.⁴⁷ During his campaign for the establishment of a zoological garden, he famously stated in the prospectus that 'it has long been a matter of deep regret to the cultivators of Natural History that we possess no great scientific establishments either for teaching or elucidating zoology; and no public menageries or collections of living animals where their nature, properties and habits may be studied... It would well become Britain to offer to the population of her metropolis...animals brought from every part of the globe to be applied either to some useful purpose, or as objects of scientific research.'⁴⁸

Raffles and his colleagues dismissed London's existing menageries, such as the long-standing Exeter Exchange, as catering for the vulgar admiration of animals by the lower classes. According to Ritvo, Raffles envisaged an 'institution that would serve only the elite participants (whether direct or

indirect) in the enterprise of imperial acquisition and domination.'⁴⁹ Therefore when the Gardens of the London Zoological Society in London were finally completed in 1828 it was only open to members of the Society, all of whom were required to pay an introductory fee of three pounds and an annual fee of two pounds. This prompted complaints from the public, including one letter to the *Tatler* which accused the Society of taking every care 'to prevent the contamination of the Zoological Garden by the admission of the poorer classes.'⁵⁰ Raffles and his fellow members of the Zoological Society of London (who took over the cause after Raffles' untimely death) had underestimated the degree to which the public shared their patriotic motivation and also appreciated evidence of the impressive scale of the colonial empire.⁵¹ By restricting membership to the upper classes via the cost, the foundation of the London Zoo embodied the British hierarchy of power, not only in relation to distant colonial territories but also in relation to the class structure of society. Ritvo suggests the zoological collection 'offered an especially vivid rhetorical means of re-enacting and extending the work of the empire.'⁵²

Somewhat ironically, the early exclusion of the public demonstrated the very power the populous wished to relish and positioned London Zoo as a symbol of empire. This was particularly emphasized when the Council of the Zoological Society rejected an offer to incorporate animals from the Exeter Exchange because they didn't want to be associated with the menagerie, but accepted a similar offer from the King to transfer his animal collections from Windsor Park into the care of the Zoological Society. The second offer effectively gave them

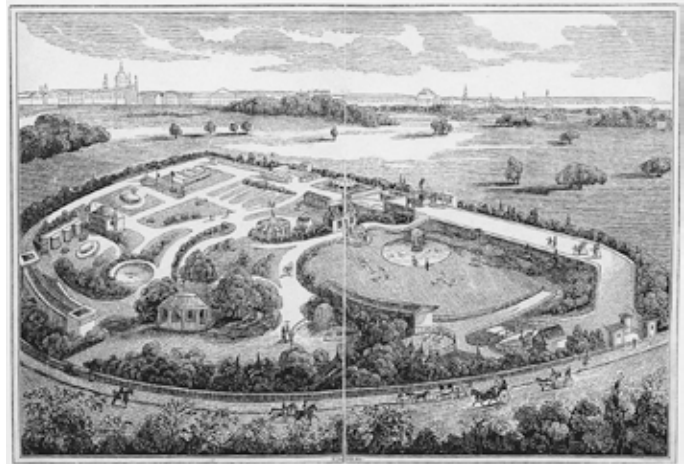


Figure 23: An early depiction of the Gardens of the Zoological Society of London in Regent's Park, 1830. The image clearly shows the layout of the grounds, including the elevated entrance pathway leading past the central pond to the bear pit.

royal endorsement and the public perception that they were now a national cultural authority. When the Council of the Zoological Society responded to financial pressure by eventually opening access to anyone willing to pay the entrance fee, the underlying 'rhetoric of conquest', as Ritvo refers to it, simply evolved to incorporate the newcomers as subjects of refinement.⁵³ She states 'serious interest in the Regents Park Zoo among the vulgar was both an agent and an index of their improvement, and hence another symbol of English progress and enlightenment.'⁵⁴ This focus was indicative of the times. The first half of the 19th Century had brought challenging shifts to English society as the nation grappled with the social consequences of rapid urbanization and the social malaise of the working classes.

Peter Bailey, author of *Leisure and Class in Victorian England*, refers to the 1830s and 40's as the 'dark-age' of working class culture when 'an older, pre-industrial culture broke up, leaving amid its wreckage many of the peoples traditional recreations.'⁵⁵ There was much anxiety over what was perceived to be the moral decay of urban society and the focus was on how best to create social improvement and control. One of the consequences was the Public Parks Movement, which advocated the reforming attributes of parks in a physical sense (by suggesting they function as the 'lungs of the city' and 'ventilators for the slums') and in a moral sense (where the more unfortunate members of society could witness the respectable promenade of the bourgeoisie and feel inspired to better themselves).⁵⁶ Zoo historian, David Hancocks suggests that 'promenading in the park was laden with far more symbolism that we might

today imagine.'⁵⁷ In 1833 a Select Committee on Public Walks reported that 'public walks (properly regulated and open to the middle and humbler classes) give improvement in the cleanliness, neatness and personal appearance of those who frequent them. A man out walking with his family among his neighbours of different ranks will naturally be desirous to be properly clothed.'⁵⁸ This demonstrates that there was a belief in Victorian England that promenading and public parks could play a role in promoting a more respectable society and they were conducive to creating social order and control. There existed a belief that public parks had the capacity to be agents of social conditioning and this influenced the cultural understanding of the zoological garden as being a healthy, morally sound undertaking that was good for the people of the city.

In light of this, it is no surprise that the Zoological Society requested Decimus Burton draw up the initial plans for their premises at Regent's Park. Burton was well renowned not just for his architectural designs but also, more importantly, for his garden designs, including work on Hyde Park and the Royal Botanic Gardens, Kew. In his original site plan for London Zoo, Burton drew on the precedent set by the Jardin des Plantes and cemented the expectation that a zoological collection should be exhibited across an expansive park with naturalistic landscaping, reminiscent of the traditions of the Botanic Garden. In a departure from the Jardin des Plantes, however, the Zoological Society endeavoured to exhibit the animals across the grounds in a manner that referenced a sequence of scientific order, suggesting that a whole set of animals could be collected.⁵⁹ This

functioned as an embodiment of the Linnaean Classification system (which was still somewhat controversial at the time) and produced a vision of order out of the perceived chaos of nature. This vision of control, in turn, reinforced the perception of the London Zoological Society as a legitimate, scientific authority and confirmed the Society's status as the custodians of ordered, rational, scientific knowledge and reinforced the notion that they were a commanding force in the generation of new knowledge. Established from the start as an educational, scientific endeavour, the Gardens of the London Zoological Society at Regent's Park were the first of its kind, capturing and projecting a vision of the zoological park as a healthy, respectable place of cultural authority. The layout, purpose and context of the London Zoo established the cultural framework through which future zoological gardens were established and reinforced.

Key Developments

Context

The first zoological garden emerged during the industrial revolution, in an atmosphere of optimism that a reformed society could lead to a utopian ideal. Hancock tells us that 'the spirit of improvement that fueled the technological innovations of this age created a middle class addicted to self improvement through the acquisition of enlightening information.'⁶⁰ Idleness and intemperance in the lower classes were frowned upon as morally corrupt, as were entertainments such as the theatre, alehouses and fairgrounds. There was a strong emphasis

on the benefits of nature, rational recreation and avenues of self-advancement. The beginning of the nineteenth century saw an unprecedented obsession with the study of natural history in the middle classes and books on the subject quickly became best sellers. Many middle class families collated vast collections of specimens, devoting hours to organizing them into classified groupings. Hancock believes this was culturally accepted as a morally sound pastime because it was thought that natural history studies 'also served to reveal God's handiwork and, thus, a path to understanding divine wisdom.'⁶¹ The creation of London zoo during the late 1820s was something of a product of this fascination and moral pursuit. An article in the 1832 edition of the *Mirror* penned by a member of the Society states 'a visit to the Gardens is one of the most delightful of the rational recreations of the metropolis.'⁶² The key phrase in this comment is 'rational recreation', illustrating the manner in which a visit to the zoo was understood as edifying, in that it offered moral improvement or guidance. This underpinned the very purpose of the Zoological Society's animal collection in Regent's Park and led to a cultural understanding of a visit to the zoo as a healthy recreation for all the family.

An earlier article from 1829 about the popularity and success of the zoo went to great pains to make a specific clarification on this matter, stating 'It should, however, be noticed that the object of the Zoological Society is not the mere exhibition of animals. In the original prospectus it is observed that Animals brought from every part of the globe to be applied to some useful purpose as objects of scientific research not vulgar admiration: and



Figure 24: A plan of Regent's Park from 1827 showing the menagerie area allocated to the Zoological Society of London at the top of the image.

upon such an institution, a philosophy of zoology founded, pointing out the comparative anatomy, the habits of life, the improvement and the methods of multiplying those races of animals which are most useful to man, and thus fixing a most beautiful and important branch of knowledge on the permanent basis of direct utility.⁶³ This summation highlights the intended purpose the London Zoological Society had for their collection at Regent's Park. Hancocks tells us the exact nature of this purpose had been a source of much debate within the Society for many years.⁶⁴ Even during the years devoted to getting the zoo off the ground there had been much internal, factional conflict about exactly what the collection should contain. One group, mostly consisting of landowners, were pushing for an emphasis on species that might be suitable for acclimatization to the English environment and therefore suitable for domestic breeding. The other faction, mostly consisting of naturalists, were keen to focus on 'exotic animals of taxonomic interest without regard to their attractiveness, edibility or other usefulness.'⁶⁵

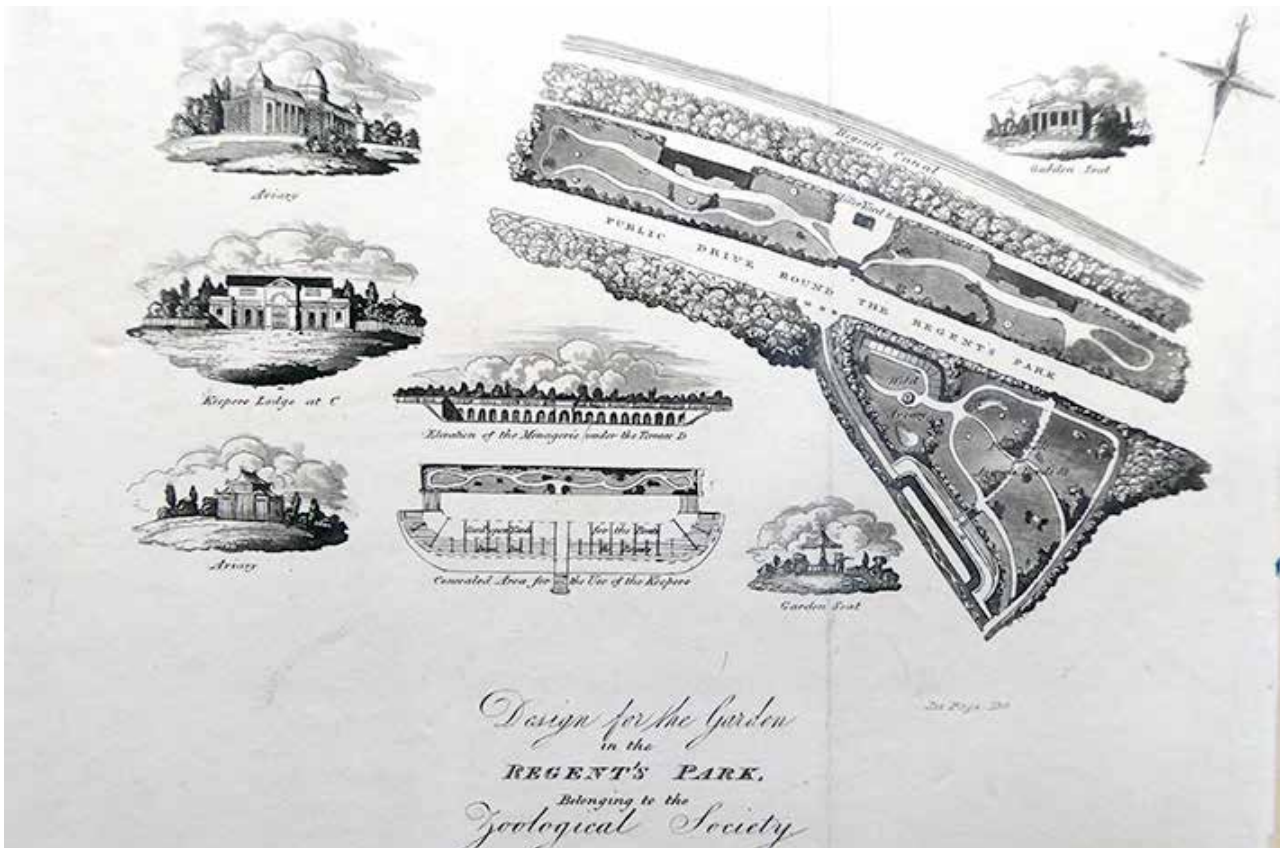
Harriet Ritvo believes, however, that both factions ultimately fell within the larger, more abstract intent to control the natural world. 'The animal creation was to be not only represented but given its proper designation and put into its proper order. The naturalists who arranged the displays were echoing the work of Adam, if not that of God; the zoo represented the triumph of reason over the profusion and disorder of nature.'⁶⁶ The capacity to present the natural world in such an ordered fashion was a showcase of power and helped to legitimize the London Zoological Society as custodians of scientific knowledge.

Site Plan

The site chosen to house the animal collection of the Zoological Society of London was a portion of Regent's Park, itself located in what was at the time the outskirts of north-west London. Though there was some initial trepidation that the location was too remote, the site proved immediately popular and the walk out was referred to in a newspaper article as 'pleasant enough... cottages, park-like grounds and flourishing wood, where the eye may enjoy a few picturesque groupings.'⁶⁷

In keeping with the precedent set by the Jardin des Plantes, Decimus Burton's site plan for the Gardens of the London Zoological Society at Regent's Park organized the site into a series of small buildings, cages and follies distributed along a series of winding pathways. Where the layout for the Regent's Park premises differed from the Jardin des Plantes, however, was in a growing emphasis on the sequential placement of each grouping of animals to reflect a sense of the Linnaean taxonomic classification system.⁶⁸

The animals within each enclosure were also exhibited in a series of cages reflecting their place in the taxonomic order. Ritvo tells us that it was via this composition that the layout of the London Zoo came to emphasize an overall vision of nature as an interlocking, logical series, in which each animal belonged in a particular, zoological place.⁶⁹ This construction of order not only showcased to the public an inflated sense of imperial strength but also served to highlight an elitist sense of educated authority. By embracing the scientific classification system proposed by Carl Von Linne, the Zoological



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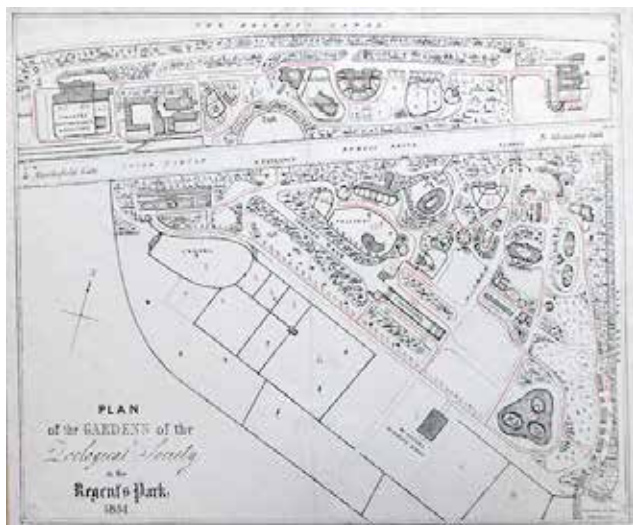
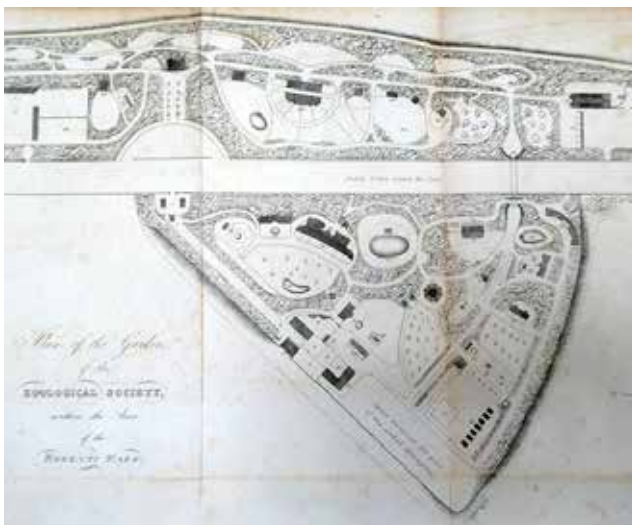
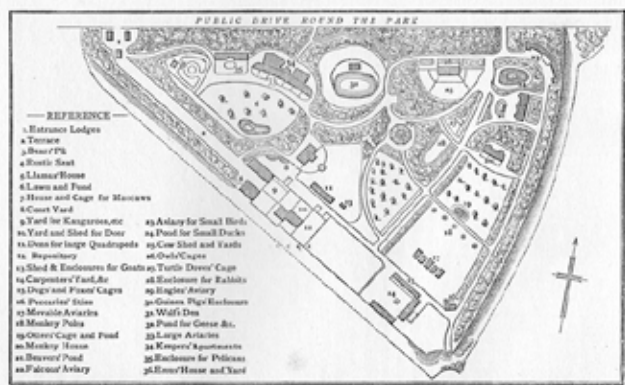
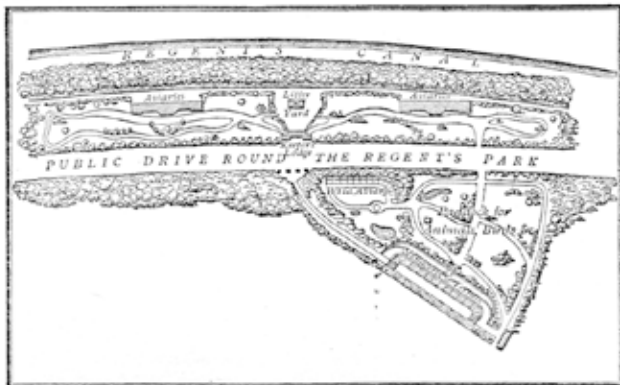


Figure 25 (top): The top image is most likely Burton's plan from 1827 as the layout closely resembles the version of his plan published by the Zoological Society of London in 1905, as seen in Figure 26 (middle left). Figure 27 (middle right): The Society's plan of the gardens as originally built in 1829. Figure 28 (bottom left): A plan of the expanded site from 1830. Figure 29 (bottom right): A site plan from 1851 with directional arrows.

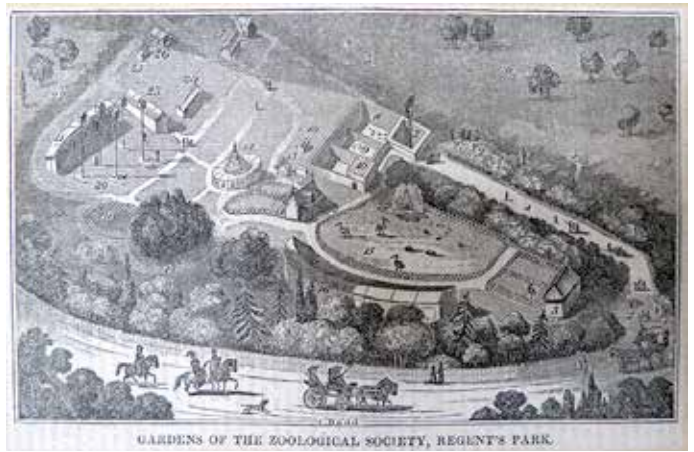


Figure 30: An image from *A Picturesque Guide to the Gardens* published in the *Mirror* in 1828. The numbered image was accompanied by a description of each area of the zoo, providing a valuable insight to the early architectural layout of the grounds.

Society were placing themselves at the vanguard of scientific thought. Though published many decades earlier, Von Linne's publication of *Systema Naturae* had polarized opinion by cataloging all living creatures into a classification by order, genus and species based on their anatomy rather than their external appearance.

As Thomas Veltre states in the publication *New Worlds, New Animals*, 'embedded in the concept of the Linnaean system of classification is an important redefinition of the process of acquiring knowledge.'⁷⁰ Von Linne had based his system on empirical knowledge, gained through research, analysis and study, which led him to the realization that outward appearance doesn't always represent the entire picture, contrary to customary thinking. Thus, by exhibiting their collections in the order of the Linnaean system, the London Zoological Society confirmed their superiority over less scientific, undisciplined menageries, such as the Exeter Exchange.

The site was meticulously landscaped and included a small constructed lake-like water feature and several cultivated vistas across the grounds. An article in *The Penny Magazine* in 1837 demonstrated the cultural importance of the refinement of the gardens, when it boasted that 'the zoological gardens at Regent's Park, for picturesque beauty, far surpass the Jardin des Plantes of Paris.'⁷¹ The statement encapsulates the cultural positioning of the zoological garden as a vivid demonstration of Britain's might over their rival France. In this way the popular understanding and expectations of the site of the zoological collection continued to function as a form of cultural trophy.

Landscaping and Views

Burton's plan for the Garden's of the Zoological Society of London in Regent's Park drew on his experience at the Royal Botanic Gardens, Kew. The site was laid out in a network of picturesque pathways, each bordered with lush compositions of flowering and exotic plants, very much in keeping with the horticultural style of botanic and medicinal gardens. An 1829 newspaper article on the zoological garden demonstrated the importance of the landscaping in the public's appreciation of the site, by stating that 'the gardens, independent of their zoological attractions, are a delightful promenade, being laid out with great taste, and the parterres boasting a beautiful display of flowers. The animals to are seen to much greater advantage then when shut up in a menagerie, and having the luxury of fresh air, instead of unwholesome respiration in a room.'⁷² Interestingly, the article is as much focused on the treatment of the site as on the animal collection itself. The article then proceeds to walk the reader along the pathways across the site to each of the exhibitions, numbered as per the accompanying birds-eye sketch.

Further descriptions of the landscaping of the site are offered by an article in an 1832 edition of *The Mirror* which was penned by a member of the Society who refers to the 'Gardens of the Society as one of the prettiest in the vicinity of the metropolis', going on to state that it 'is a charming sight to behold myriads of tiny flowers fringing our very paths, and little groves of shrubs and young trees around us...'⁷³ This overly descriptive language was in keeping with other reviews of the time, capturing the extent to which the public were enamoured



Figure 31: An image of *The Monkey House* by George Scharf from 1835, depicting the social atmosphere of the gardens. The image also illustrates the contrast between the decorative ironwork of the monkey cage and the solid stonework of the pedestrian archway to the north garden, which can be seen in the background.

with the zoological garden. Upon entering the zoo, to reach the exhibitions, visitors travelled along a raised terrace from which they could look down on others in the rest of the Regent's Park. A particularly florid article in *Quarterly Review* refers to the terrace as 'commanding one of the finest suburban views to be anywhere seen, let us pause for a moment while the sweet south is wafted over the flowery bank musical with bees, whose hum is mingled with the distant roar of the city. Look at the richness and beauty of the scene.'⁷⁴

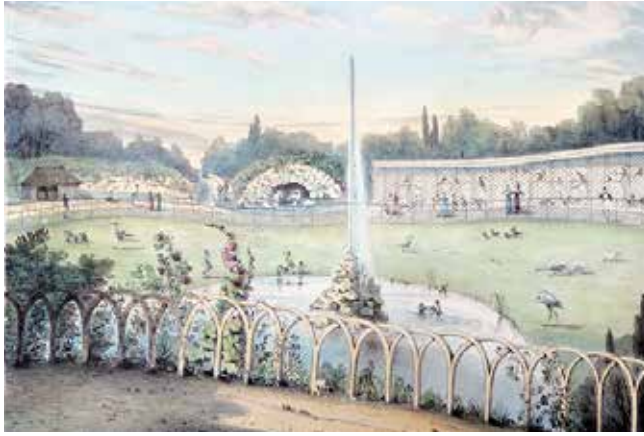
Interestingly, it goes on to suggest that the beauty of the picturesque view would have 'atoned for a multitude of sins' clearly making a link that exposure to 'nature' is cleansing and wholesome. There was very little acknowledgment in these articles of the fact that the 'natural wonder' of the site was artificially cultivated and manicured, presenting a very stylized vision of the natural world. Hancock suggests that this contradiction was an extension of one established by the 18th Century understanding of the botanical garden as a 'scientific landscape' which offered instruction in natural history within a picturesque setting.⁷⁵

The typology established by the Gardens of the Zoological Society in Regent's Park embodied a zoological version of this 'scientific landscape' in a manner that firmly established future cultural expectations of the landscaping of zoological gardens. It fostered the idea that a good zoo includes lush, expansive landscaping that sets it apart from its immediate surrounds and gives the sense of transporting the visitor to another world.

Circulation

The treatment of circulation throughout the London Zoo was a particularly influential development in zoological typology. As previously mentioned, Burton's initial design for the layout of the zoo at Regent's Park was reminiscent of the layout of *Jardin des Plantes* in that it included winding pathways that naturally lent themselves to promenading, a pastime enthusiastically embraced by the London public. As previously explained, the process of promenading through gardens and parks was considered to be a wholesome, healthy recreation that was enthusiastically embraced as being good for society. An article from the 1829 publication of the *Mirror* refers to the popularity of promenading, explaining that 'the grounds are daily filled with fashionable company, notwithstanding the great migrations which usually take place at this season of the year, and almost depopulate the western hemisphere of fashion.'⁷⁶ The popularity of promenading in the zoological garden was also reflected by the lyrics of a music hall song of the time, entitled *Walking in the Zoo on Sunday*, which declared 'walking in the zoo is an okay thing to do', (which is also where the shortened name 'zoo' came from).⁷⁷

Promenading through the picturesque grounds of the zoo was considered to be a particularly healthy recreation, not only because it was believed that the lower classes would aspire to imitate their social superiors in both manners and dress, and, thus, create a more healthy and respectable society, but because they were receiving an education at the same time. In terms of the architectural typology of the circulation of zoo, this is particularly interesting.



23



The above images are from a collection of works completed in 1831 by James Hakewill, entitled *A Series of Ten Views in the Southern Portion of the Gardens of the London Zoological Society in Regent's Park*. Seen together, using the pond and the bear pit as landmarks, the illustrations provide something of an overall vision of the layout of the gardens as they would have been in 1831. Figure 32 (top left): *View from the Bears Pit towards the Emu House*. Figure 33 (top right): *View from the Emu House*. Figure 34 (middle) *Entrance Terrace looking towards the Bear Pit*. Figure 35 (bottom left): *The Llama House and Mawcaw Cage*. Figure 36 (bottom right): *The Archway to the North Garden*.



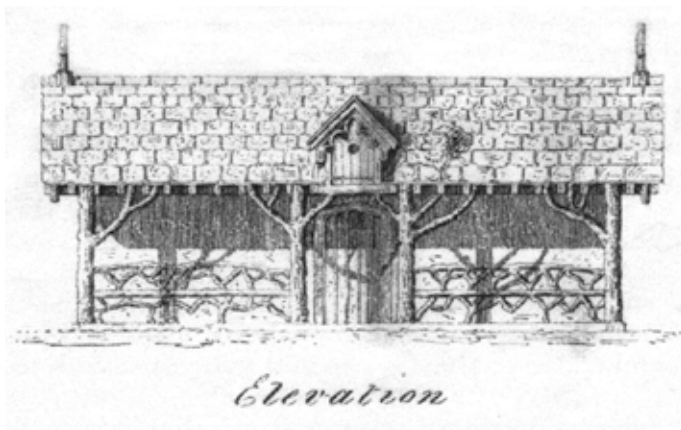


Figure 37: Burton's 'Plan for gothic house for the llamas' included an elevation that utilizes many features of the cottage orne style, such as ornate gables, a shingle roof and a verandah framed with columns and detailing made from rough hewn tree trunks. The building was popular with the visitors to the garden, who made good use of the two long seats Burton positioned along the walls of the verandah.

It suggests that the layout of the pathways, and the views from those pathways across to other ones, would not only be educational but offer moral guidance as well. In many ways this makes them mechanisms of attempted social control and initiates the cultural tradition of exhibiting a collection of animals for purposes of edification.

However, despite the pathways being laid out so as to enhance an atmosphere of a rambling countryside, visitors were explicitly encouraged to follow a particular linear route. Over the early course of the development of the London Zoo, the plans and maps of the zoo started to include directional arrows, indicating exactly which path visitors should take. It is difficult to ascertain exactly when the directional arrow was added to the site plans, as many of the maps and guide books from the 1840s are missing from the archives of the London Zoo. It is probably safe to assume, however, that the arrow suggesting a particular linear route was added to the plans around 1846 when the public were permitted entry to the zoological park without reference from a member of the Society. By determining the circulation of the visitors past an exhibition of the animals in a show of scientific order, the exhibitions of the London Zoo encouraged a cultural understanding of the natural world as capable of being ordered and controlled by scientific endeavour. This functioned to reinforce the suggestion that the authority of science could unravel the apparent chaos of natural world. As Hancocks explains, there was a sense that 'once nature was understood and all its secrets revealed, a rational world could emerge in which society would also arrange itself harmoniously. Science, intelligence, truth and

progress were viewed as inseparable. Botanic gardens and zoological collections were an essential component in the public dissemination of these new understandings.⁷⁸ Determining the circulation so as to structure the experience of the zoological garden in a sequence of scientific order reinforced these 'new understandings' whilst simultaneously projecting a cultural vision of the British Empire as vast, sophisticated and superior.

Built Form

The architectural language of the enclosures in the Gardens of the Zoological Society expanded on the precedent set by the Jardin des Plantes, in which small, rustic enclosures were distributed across the site, adding elements of cottage orne to the overall style. Popular in the late 18th and early 19th Centuries, cottage orne was a deliberately rustic style of architecture, specifically designed to enhance the surrounding picturesque landscape. Built as decorative additions to large estates, the structures were sometimes used as residences for groundskeepers, workers and gardeners of large estates.⁷⁹ Born out of a fascination among the fashionable with Rousseau's concepts of the natural man, the style was embraced as a potential avenue for the improvement of the lower social classes. The trend inspired several pattern books, one of which was J.B Pabworth's popular 'Rural Residences consisting of a Series of Designs for Cottages, Decorated Cottages, Small Villas and Other Ornamental Buildings'. The publication contained illustrations and plans for various types of cottage orne designs, as well as rationale for the inclusion of particular features. One such example is his explanation of the importance of including a small

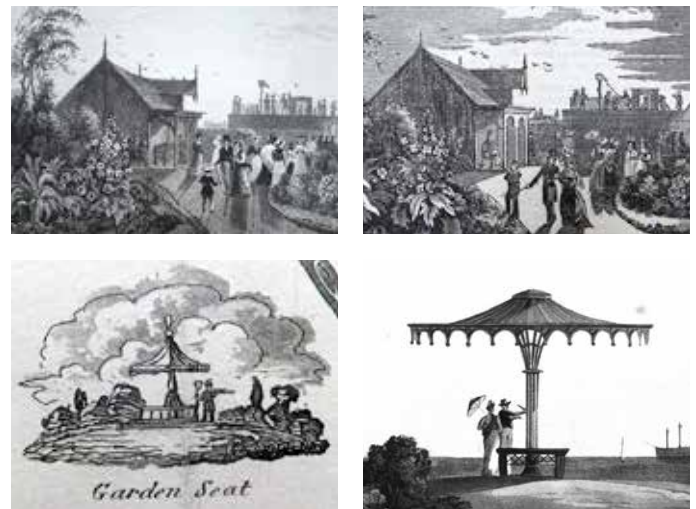


Figure 38 (top left): An image of the Llama House (before the clock tower was added) is almost identical in content and layout to one from a different publication, as seen in Figure 39 (top right). Figure 40: (bottom left) The proposed Garden Seat from an early plan for the zoo is also very similar to one from Pabworth's pattern book, as seen in Figure 41 (bottom right).

garden in the design, stating 'there are moments of leisure and remains of strength and spirits, even after a hard days toil, that the uncultivated mind of the husbandman cannot afford to loose in idleness, and he has but little refuge from the temptations of the village alehouse, if the culture of such a piece of ground is denied him...'⁸⁰ Pabworth goes on to explain that, through the inclusion of a small garden in the design 'The morals of the man are preserved, the example of a sober and industrious father is before his children, the wife is happy in the presence of her husband, and society rejoices that another of its members is an honour to his humble state.'⁸¹ This demonstrates the extent of the belief that exposure to the architectural style of cottage orne a picturesque surround could produce industrious, wholesome behaviour in the lower classes. Typically incorporating small, single story buildings, the decorative language of cottage orne followed a set of stylistic guidelines, usually including a thatched roof or shingles, gables adorned with ornate bargeboards, small verandas with columns made from untreated timber tree trunks and timber window frames decorated with a diagonal pattern of lattice.⁸²

Many of the early buildings in the London zoo contained these features and were more often than not referred to in their titles as houses or huts. One of the earliest structures to be built in the cottage orne style at the zoo was the Llama House, which an 1829 newspaper article referred to as 'one of the most picturesque objects in the grounds.'⁸³ Incorporating many of the elements of the cottage orne style, the house had a small footprint, a veranda with columns made of tree trunks, ornate gables and roofing of timber shingles. The addition

of the clock tower occurred in 1831 at the behest of the Society when the Llama house was remodelled in a more Gothic architectural style. It is interesting to note that depictions of the structure invariably include a garden-like context of lush planting and flowering shrubs. Images of the structure were often used to accompany articles about the zoo, as if it encapsulated and represented the overall style of the zoo (as seen in the images above, which are from different publications but are almost identical in content and layout). It is also interesting to note that one of the original site plans for the layout of the zoo, which was most likely Burton's, includes a sketch of a garden seat that bears a striking resemblance to an illustration of garden seat design in Pabworth's 1832 Rural Residences pattern book for cottage orne designs.⁸⁴ Though it is unclear whether Burton's design for the garden seat was ever realized at the zoo, the similarity of the two designs shows a clear link between the intention for the overall architectural style of the zoo and features associated with the cottage orne style.

Burton was the official architect of the London Zoological Society from 1826 to 1841 and many of the original buildings were designed by him. Hancocks suggests that many of the designs were less ornamental than could reasonably have been expected given the garden styles of the day, but the utilitarian architectural style of many of them may have been more due to cost saving measures than stylistic decisions.⁸⁵ A Fellow of the Zoological Society, Anthony Salvin, succeeded Burton as the official architect for the zoo. Unfortunately, history does not reflect on his tenure well. Hancocks refers to his designs as 'clumsy attempts of the suburban-cottage orne style' and cites another historian



Figure 42: An image from 1865 of the crowds flocking to the London Zoo, illustrating the unprecedented popularity of the zoo at the time. The image shows the crowding that occurred in front of the Lion's Cages, which were situated under the terrace, as well as those looking down from the terrace and surrounding the Bear Pit above.

Simon Schama as likening the elephant house to 'a sort of rustic alms-house for pachyderms.'⁸⁶ Many historians also lament the fact Salvin's designs for the eastern aviary, the lion house, the antelope house and the monkey house progressively restructured Burton's original layout of the zoo. Regardless of their architectural merit, however, the buildings continued to emphasize a sense of semi-pastoral setting and cultivated the territory of a scientific landscape.

Scale and Territory

It is difficult to comprehend the extent of the popularity of the London Zoo with the enamoured public. As previously quoted, many newspaper articles dramatically refer to its capacity to almost depopulate the city and occurrences at the zoo were often a topic of headlines. Hancocks even goes so far as to suggest that 'after the Royal family, it was probably the most publicized institution in nineteenth century Britain.'⁸⁷ Every new arrival was met with rampant enthusiasm and articles often included accounts of their daily routines. The attention prompted the Zoological Society to work constantly to ensure the scale and zoological content of their collection matched public expectations. As Ritvo explains, 'many foreign and exotic animals behind bars presented a more striking spectacle of dominion than did one or two.'⁸⁸ Articles often critiqued the extent of the collection, such as the one from 1829 which stated 'of course the collection is yet incomplete, there being neither lion, tiger, hyena, elephant nor rhinoceros; but when it is considered that the society has been established little more than two years, in which time a Museum has been formed, 1,100 subscribers

obtained, besides the arrangement of the Gardens - it will be acknowledged that much has been done in a short time, and judging from the excellent organization of the Society and their past success, we anticipate the utmost realization of their plan.'⁸⁹ It is clear from this that public expectations also played a role in shaping the content of the zoological collection and formed an integral part in the cultural exchange between the Zoological Society and the visitors. The overall aim to exhibit 'every possible link in the grand procession of organized life', reflected the sentiment of the prospectus which outlined that animals would 'be brought from every part of the globe to be applied either to some useful purpose.'⁹⁰ Ritvo suggests that the Zoological Society believed they were fulfilling a patriotic obligation, exalting the glory of the empire by showcasing to the public the ability to source exotic animals from distant colonies.⁹¹

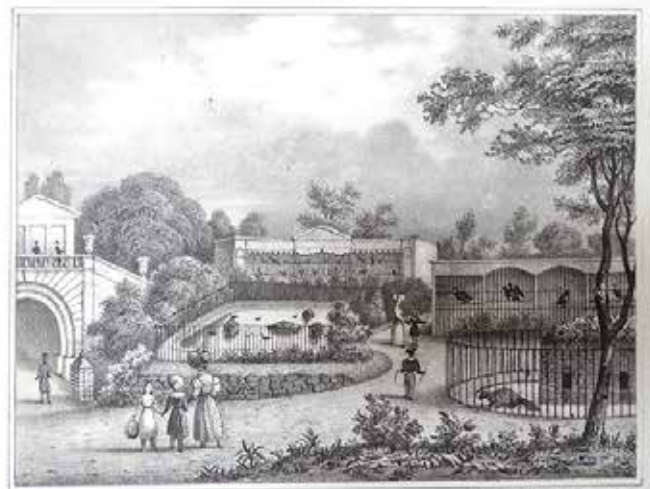
Conclusion

From the outset, the Gardens of the London Zoological Society at Regent's Park attempted to belong to the realm of scientific endeavour. The Society declared in publications that they would 'acquire animals of specially scientific value, in which the casual observer would take little interest.'⁹² They were at pains to distance themselves from the 'vulgar' traditions of animal entertainments. The zoological collection was made available to members of the Society who wanted to conduct specific research and dismembered carcasses were often shared between different scientific institutions for study.⁹³ Every effort was made to declare the scientific focus of the zoological garden in order to clearly differentiate the core purpose of



ZOOLOGICAL GARDENS THE ELEPHANT HUT

London, Dated & Engraved by J. & M. H. St. John, 35, Strand, Street



ZOOLOGICAL GARDENS BEAVER HOUSE AVIARY & C

London, Dated & Engraved by J. & M. H. St. John, 35, Strand, Street



ZOOLOGICAL GARDENS THE POLAR BEAR HUT

London, Dated & Engraved by J. & M. H. St. John, 35, Strand, Street

the collection from that of a menagerie. The overall design for the Gardens of the London Zoological Society at Regent's Park were influenced by broader cultural attitudes to parklands, recreation and social reform. Promenading was a particularly important Victorian pastime and walking through the picturesque landscape of the zoo was considered a healthy recreation. It was believed that the lower classes visiting the zoo would aspire to imitate their social superiors in both manners and dress, and, thus, create a more healthy and respectable society.⁹⁴ Not only would a visit to the zoo instruct them on the wonders of nature but it would offer moral guidance as well. Though the unprecedented popularity of the zoo created something of a contradiction between the public amusement value of the zoological garden and its scientific value, the London Zoo, as the first zoological garden, established the criteria that scientific endeavour formed the core purpose of a zoological garden. The Gardens of the London Zoological Society at Regent's Park embodied the evolutionary culmination of the menagerie into the zoological garden.

The London Zoo also established core elements of zoological typology, including the expectation that a visit to the zoo included walking extensive pedestrian routes through well landscaped gardens, in order to visit a progression of separate buildings, each exhibiting scientific specimens of a wild animals. The London Zoo also set the cultural expectation that a visit to the zoo would be healthy and educational. By using the architectural language of cottage orne, the London Zoo gave shape to the idea that the zoo was representative of the countryside and a wholesome environment.

The images above, from the archives of the Zoological Society of London, illustrate several of the early animal enclosures. The images are undated and unsigned but they were most likely completed by Bouvier between 1830 - 1840. Figure 43 (top): *The Elephant Hut*. Figure 44 (middle): *Beaver House & Aviary*. Figure 45 (bottom): *The Polar Bear*.

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4

Berlin Zoo

The popularity and success of the Gardens of the London Zoological Society at Regent's Park prompted many cities across Europe to follow suit, lead by Amsterdam in 1838 and Antwerp in 1843. Zoo historian Harro Strehlow suggests a key factor in both these cities being quick to follow the example of London was their global position, stating that 'at the time, the Netherlands were an important colonial power, and trade coming into Europe from many colonies and foreign countries came through Dutch and Belgian harbors.'⁹⁵ Much of the cargo that had been arriving in their ports for decades had included exotic animals, an increase in which providing an opportunity for 'wealthy citizens and interested scientists' as Strehlow refers to them, to establish zoological societies that aspired to match the influence of the one in London.⁹⁶

In their early years, both the zoos in Amsterdam and Antwerp mainly followed the precedent set by the London Zoo. Functioning as something of an elite pleasure ground for members only, they followed the typology of a series of small cages and enclosures staggered along pathways winding through a landscaped garden. It was only in 1856 that Antwerp Zoo significantly broke with tradition, when the society collaborated with architect Charles Servais to create an Egyptian temple for elephants, giraffes and zebras in the 'exotic style'.⁹⁷ The introduction of the exotic style to zoological typology came to have a significant impact on the Berlin Zoo, which had opened with mixed success in 1844. Strehlow points out that the design for the Egyptian structure in Antwerp had little to do with its suitability for the animals and more to do with the popularity of Egypt in Europe at the time, something he refers to as 'Egyptomania'.⁹⁸

Byera Hadley Travelling Scholarships Journal Series

In fact, most of the animals originally housed in the structure were not specifically Egyptian, but were of a much broader African origin. Strehlow suggests this may have been influenced by the fact that most African imports came through Egypt at the time, and many people 'thought of Egypt as representing Africa.'⁹⁹ Servais went to great lengths to ensure the structure was as accurate as possible, a true replica of an Egyptian temple. Originally it had been undecorated, but in 1860 Servais collaborated with orientalist, Lodewijk Deleger to cover the structure in an elaborate series of paintings and hieroglyphics. A high standard of accuracy was applied to the details of the designs, adding a sense of authenticity to the structure. Though more attention had been paid to Egyptology and historical veracity than the needs of the animals, the structure became the envy of other zoological gardens and many were inspired to follow suit, none more so than Berlin.

Key Developments

Context

Berlin Zoo was established in 1844 by Professor Martin Lichtenstien with the approval of King Freidrich Wilhelm IV. It was unusual because it was not the product of a zoological society, but a planning committee, formed after Lichtenstien had visited the London Zoo and become inspired to create a similar zoo in Berlin.¹⁰⁰ Lichtenstien had been the Director of Berlin's Museum of Natural History at the time and he hired architect well-respected landscape architect Peter Lenne to work on the layout of the zoo and Heinrich Strack to design the buildings.¹⁰¹ The Berlin Zoo was also



Figure 46: An undated image of the Berlin Zoo showing the exotic style of the Elephant Pagoda in the top righthand corner.

unusual because it was open to the public right from the beginning, a result of being run by a stockholding company rather than an elite society. Though the zoo was popular and attendance was good, the stocks did not sell well, which led to severe funding issues for the first 25 years.

Strehlow believes the situation was so dire that the zoo would not have been able to continue without the continued gifts of financial aid by King Wilhelm.¹⁰² Hancocks suggests that another factor that put pressure on the Berlin Zoo was the stiff competition it faced from other German zoos built during that time, such as Frankfurt, Cologne, Dresden and Stuttgart, most of which had large and impressive buildings surrounded by lush floral, landscaping. 'Berlin's Zoo by comparison began to look inadequate, even shoddy, and officials began developing plans for a complete change.'¹⁰³

In 1869, the company issued a new series of shares, which in contrast to the first time, sold in quickly and easily. Strehlow believes this was because industrialization had finally taken hold in Germany by the 1850s and 1860s, and while wealth had grown substantially, it was accompanied by 'a hunger for knowledge and education.'¹⁰⁴ Scientific societies and zoological gardens across Germany began to reap the benefit. The Berlin Zoo also hired a new director in 1869, Heinrich Bodinus, who had formerly been the director of the successful Cologne Zoo. Bodinus immediately set about transforming the zoo from a 'random exhibition of animals' into a systematic zoo, organized in an exhibition of taxonomic order.¹⁰⁵ He expanded the animal collection, more than doubling the number of species on show. Bodinus also introduced the

'exotic style' to the architecture of the zoo, a move that proved highly popular and successful. Strehlow believes that within three years of the appointment of Bodinus the 'Berlin Zoo had developed into the most important zoo in Germany.'¹⁰⁶ This success lay in part with Bodinus's ability to tap into the public fascination with the 'exotic', at a time when German colonial interests were flourishing. Bodinus, in collaboration with animal trader Carl Hagenbeck, introduced exhibitions of 'exotic' people to the zoo with enormous success. One example given by zoo historian Colin Rawlins suggests an exhibition of 'Nubians' from Sudan brought a staggering 62,000 people to the Berlin Zoo in one single day, the 6th October 1878.¹⁰⁷

Wisely, the two directors who followed Bodinus, Maximilian Schmidt and Ludwig Heck, both followed his lead and worked hard to continue increasing the animal collection and maintain the 'exotic style' in all new constructions. Heck was director of the Berlin Zoo for over 40 years and under his direction the zoo maintained strong and healthy growth and consolidation. After recovering from the losses and difficulties faced by the zoo during the First World War, Heck retired in 1931, when he was succeeded by his son, Lutz Heck.

By the time of the Second World War, Berlin Zoo boasted 'the largest and most important animal collection in the world, with about 4000 mammals and birds of almost 1500 species and 8300 reptiles, amphibians and fish of more than 750 species', according to Hancocks.¹⁰⁸ Unfortunately, very few buildings and only 91 animals survived the bombing and raids of the war.



Figure 47: A plan of the Berlin Zoo from 1845, clearly showing the scale of undeveloped woodland that dominated the site and the large distances that existed between enclosures.

Site

The establishment of the Berlin Zoo did not emerge as a legitimizing process for a zoological society, as had been the case for many of the zoos across Europe, but through the joint endeavours of Dr Martin Lichtenstein, Chair of Zoology at the Friedrich Wilhelm University in Berlin, and the esteemed scientist, naturalist and explorer Alexander von Humboldt. Little detail is known of his direct contribution to the formation of the zoo, but his close relationship with King Friedrich Wilhelm IV no doubt played a role in obtaining the latter's approval and assistance.

Rawlins tells us King Friedrich Wilhelm IV had in fact inherited a Royal Menagerie from his father King Friedrich Wilhelm III, most of which had been kept on Peacock Island in the royal country estate in Potsdam since 1797.¹⁰⁹ Unusually, the public had been able to visit the collection, on the provision they did not feed them. Strehlow tells us that the younger Wilhelm had little interest in maintaining the collection and readily supported the plan to contribute the animals to a broader scientific collection.¹¹⁰ In September 1841, he donated a section of the Tiergarten in Berlin, a park-like area in which wild animals had been maintained since the sixteenth century for the purpose of hunting. The area he gifted for the grounds of the Berlin Zoo had originally been the site of the royal pheasantry and constituted about 60 acres.¹¹¹ According to Rawlins, the site was given as a hereditary tenure, along with several buildings and most of the menagerie collection.¹¹² The first donation of forty-seven animals included bears, monkeys, kangaroos, ostriches and cassowaries which were chosen by

the king himself, and according to Zuckerman, he ordered 'another two hundred and fifty animals should be transferred as and when needed at the Zoological Garden.'¹¹³ This support and endorsement from the King was crucial in adding legitimacy to the zoo and without his financial assistance in the form of interest free loans, the project would have been impossible.¹¹⁴ The site was located just under two miles west of Berlin, and it was laid out by the landscape architect Peter Lenne, who worked so closely with Lichtenstein that Rawlins suggests that for 'many years, he was to be by Lichtenstein's partner in the development and management of the zoo.'¹¹⁵ Hancock states that Lenne, who had designed the layout of the royal gardens in Potsdam, was of a mind 'to keep the place principally as a park with very few buildings or enclosures.'¹¹⁶

The treatment of the site therefore ensured it remained like a forest and structures were to meld harmoniously with the environment. The grounds were relatively large compared to the number of animals in the collection at that stage, so the overall effect was to make the zoo seem somewhat sparse. Rawlins lists that number of species in 1844 at around 100, which is relatively small, and though the animals themselves would have been impressive, the decision to spread them throughout a large park may have dampened their effect.¹¹⁷ The site was given a significant overhaul after the appointment of Heinrich Bodinus in 1869. The forest like treatment of the grounds was replaced with a stronger emphasis on buildings and a more connected network of exhibitions. Several large ponds were constructed and the animals were rearranged into a systematic order.



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Figure 48: A series of site plans from a publication on the history of the Berlin Zoo by Heinz-Goerg and Ursula Klos show the progressive development of the grounds over the mid to late 1800s. The top plan, from 1844-1869, shows the vast space between each of the enclosures. The middle plan, from 1869-1894 shows the extensive construction that occurred during this period and the manner in which this altered the figure ground relationship of the layout of the zoo. The bottom plan, from 1896 to 1919, captures the scale and density of the zoo in its prime before the destruction of the World Wars.



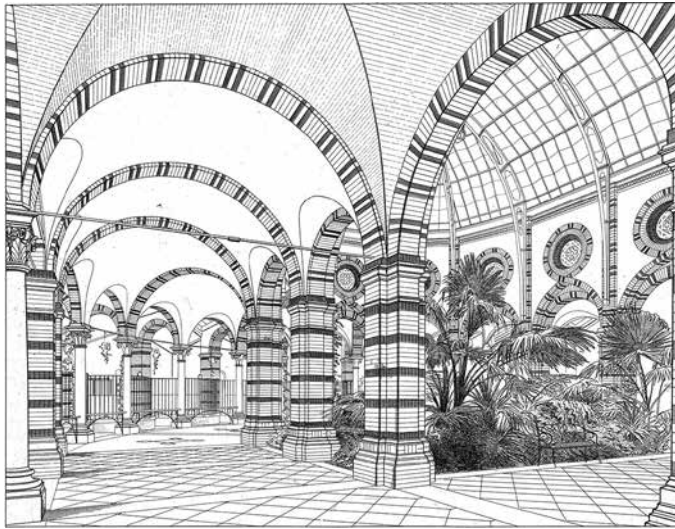


Figure 49: A perspective drawing of the interior of the Antelope House, showing the effect of the vaulted arches, decorative brickwork and internal planting. The drawing also conveys the height of the interior, circular windows and a section of the glass ceiling.

Built form

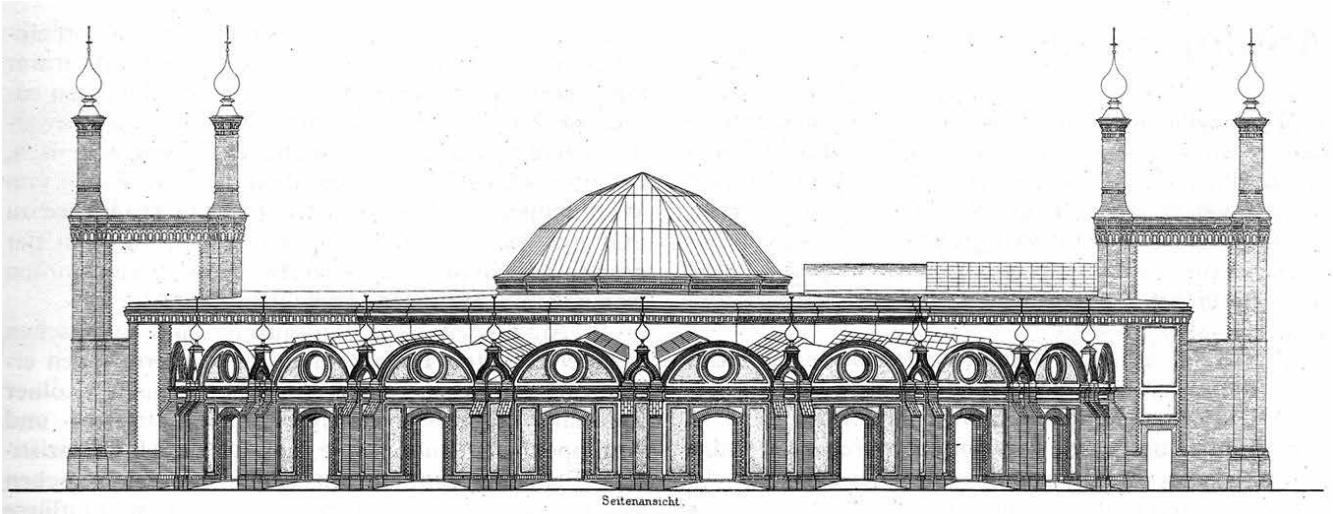
Heinrich Bodinus initiated the most significant contribution made by the Berlin Zoo to the history of zoological architecture by introducing the 'exotic style' to the zoo. Early in his career Heinrich Bodinus had travelled to many European zoos and Strehlow suggests he had been 'most impressed by the Egyptian Temple at the Antwerp Zoo and with other exotic buildings.'¹¹⁸ He studied the buildings and animal collections and returned with a sketchbook full of drawings.¹¹⁹ As director of the Cologne Zoo he had overseen the construction of several buildings in the exotic style and he brought his knowledge and enthusiasm for this style with him to Berlin. Hancocks suggests that 'architecturally, his most spectacular decision was to build the new exhibits in fantastic and exotic styles.'¹²⁰

Bodinus wasted no time after his appointment and, armed with the injection of funds from the new issue of shares, he began enthusiastically renovating the zoological garden almost immediately. Not only did he oversee the installment of crucial infrastructure, such as a much better water supply and drainage system, but more importantly he oversaw the construction of a medley of structures in the exotic style. The first of these was the Antelope House in 1869, designed by architects Ende and Bockmann. Built in the style of a mosque, it was complete with minarets, mosaic tiling and vaulted arches in the interior. The footprint was laid out as a series of ornate cages circling an internal courtyard with a lush, central garden. Rawlins explains that the antelope house was particularly popular with the public, who often described it as an 'animal palace', especially after it was used to host a luncheon

for the Meeting of the Three Emperors (Austrian, German and Russian) on 8 September 1872.¹²¹ Occasions such as this endowed the zoo with a certain cultural legitimacy and added an air of regal endorsement. Ventilation was a problem, however, and the fumes of excrement were so overpowering, even the internal planting struggled to survive.

Only four years later, in 1873, an impressive elephant house was completed in the style of an Indian temple. Also designed by Ende and Bockmann, the style of the structure was somewhat ambiguous, which has led to it often being mistakenly referred to as either a Burmese or Siamese temple. This is also partly due to the confusing title it had been given of the 'Elephant Pagoda', even though a pagoda is traditionally a structure with a tiered roofing system. The intention, however, was to use an Indian style of architecture because, at that stage, most elephants were imported from India. Elephants were still very rare in Germany in the mid to late 1800s and Berlin Zoo was lucky to have not one but two.¹²²

The plan indicates the two elephant pens acted as two pivotal points in the layout, linked by smaller cages holding other exotic beasts such as rhinoceros and tapir. The towers of the structure rose above the areas of the cages, with the two above the elephants reaching 20 meters in height. Each of the towers was decorated in a mosaic pattern of motifs drawn from Indian carpets and topped with golden ornaments of the shining sun.¹²³ The extravagance of the structure astonished visitors and set a very high standard in the exotic architecture of zoological gardens. The exotic style continued under the guidance of Bodinus's successor Ludwig Heck, who



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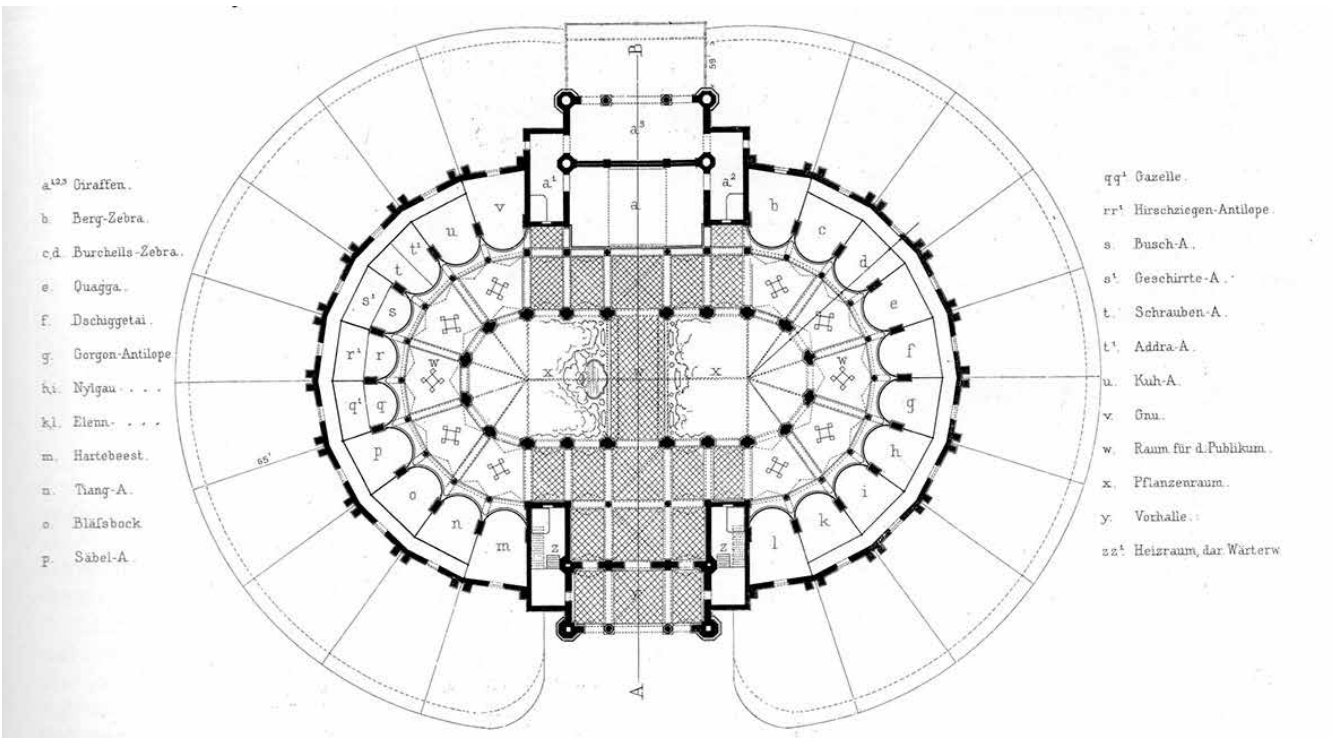


Figure 50 (top): A detailed elevation of the Antelope House. Figure 51 (middle left): A photograph showing the scale of the entrance. Figure 52 (middle right): An artistic impression of *The Three Emperors Meeting in the Antelope House*. Figure 53 (bottom): A plan of the Antelope House, depicting the radial layout of the enclosures and the central courtyard of exotic plants.



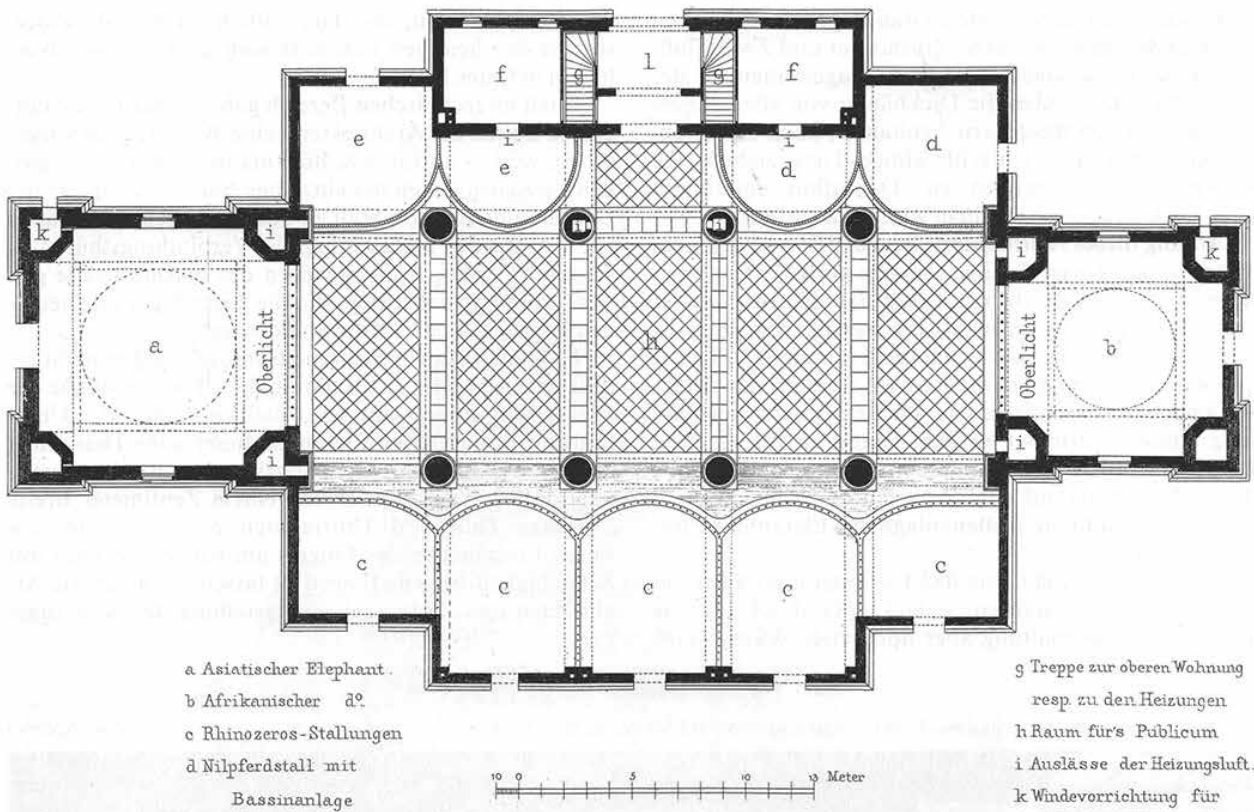
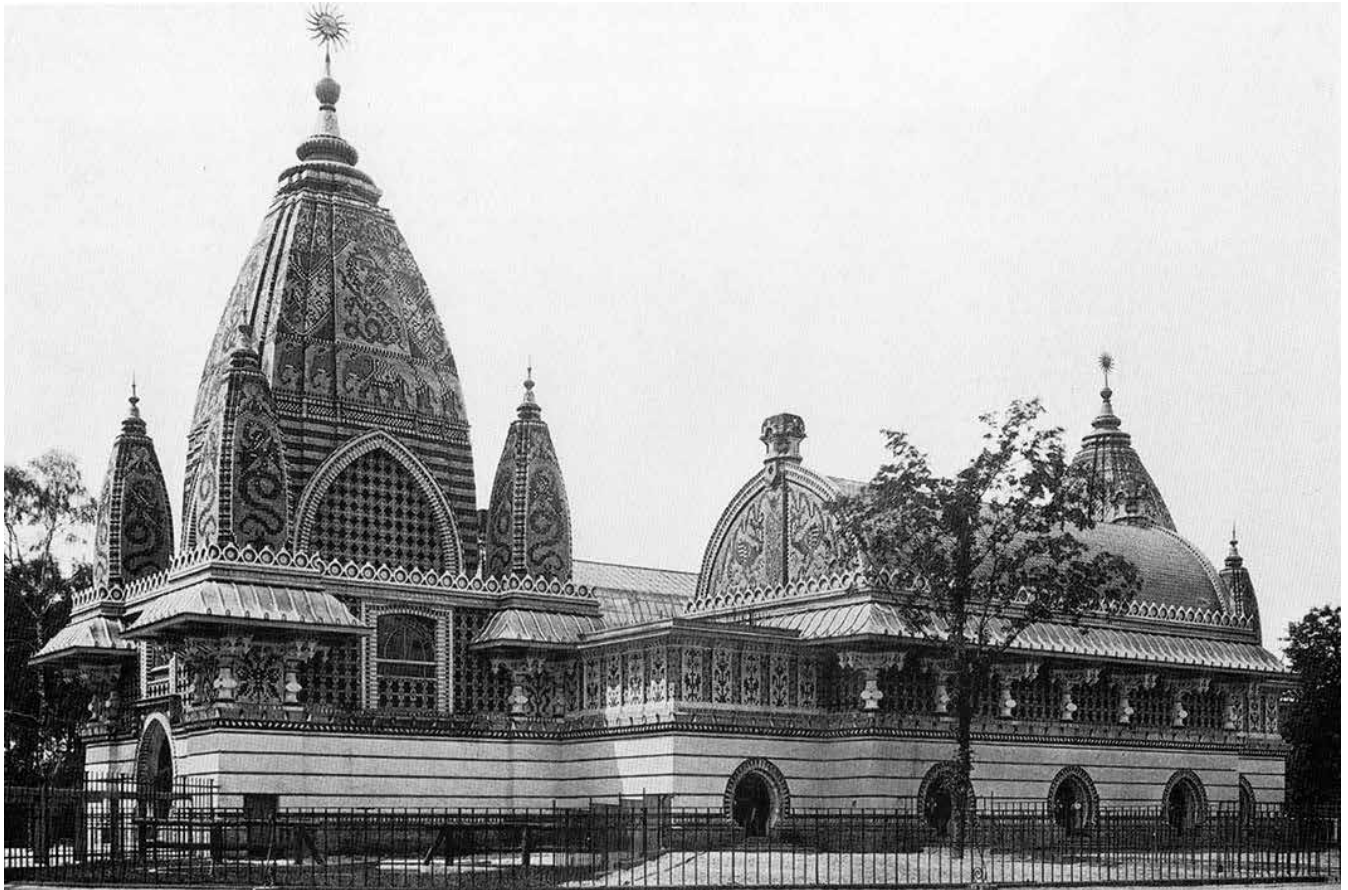


Figure 54 (top): A photograph of the Elephant Pagoda capturing the intricacy of the patterned exterior decoration and the scale of the towers, which corresponded to the areas in which the elephants were exhibited below. Figure 55 (bottom): The plan shows the manner in which the elephant enclosures anchored the layout of the design, whilst also conveying the treatment of the tiling to the interior.

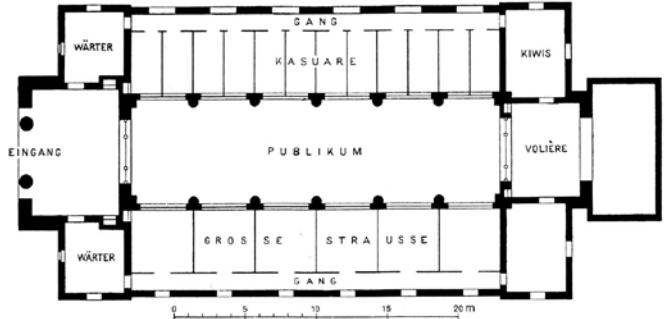
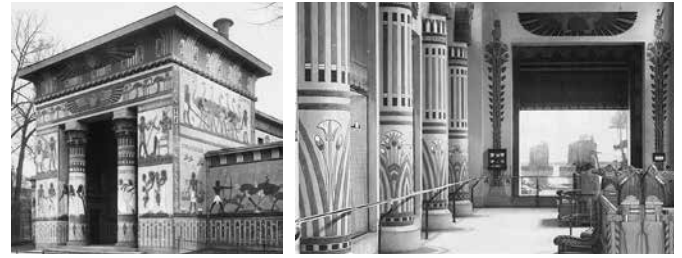


Figure 56: The Egyptian Temple at Berlin Zoo was very similar to one originally constructed in Antwerp. Both designs paid more attention to architectural decoration than the animal's needs.

employed architects Heinrich Kayser and Karl von Grossheim to design a Japanese style structure for wading birds in 1897 and in 1901 an Egyptian Temple for ostriches, which was strongly influenced by the original Egyptian Temple built in Antwerp in 1856.¹²⁴ Interestingly, despite the fact that Berlin version of the Egyptian Temple was built almost 50 years later than the original, there was still little attention paid to the layout of the interior of the structure in relation to the welfare of the animals. The footprint is still essentially a series of cages in an elaborately decorated shell.

The exotic style continued to dominate the architecture of the Berlin Zoo right up until the First World War, and for many decades the Berlin Zoo was considered the pinnacle of this fanciful style. Other zoos were quick to follow suit, with a rash of castles, cottages, temples, and chalets in a vast array of exotic styles emerging across Europe, most of them continuing the tradition of paying little attention to the needs of the animals they were housing.

As Hancocks explains, 'Ignorant of what the animals truly needed, these nineteenth century designers built hundreds of fantastic new zoo buildings for animals taken from deserts and forests, savannahs and tundra, but with no attempt to replicate the natural homes of the occupants, many of which were in spaces no larger or better than those in the old menageries, with social species typically enduring solitary and brief lives.'¹²⁵ A collection of large-scale 'exotic style' buildings had become as much a feature of the zoological landscape as the animals, functioning as an extravagant measure of success.

Scale and Territory.

The introduction of the 'exotic style' to the Berlin Zoo occurred during a period of unprecedented colonial expansion by Germany. After years of wars and disruption, the creation of the German Empire in 1871 prompted a wave of nationalist sentiment and there was much debate surrounding national identity and the country's global position. A renewed popularity grew for the works of authors such as Johann Fichte, who had written at length about the essence of the German spirit in comparison to the foreign Other.¹²⁶

Historian Felicity Rash explains that where the obvious motivation of colonialism invariably entailed the exploitation of foreign lands and resources, the less obvious objective was 'to highlight the self-image of the colonizer as belonging to the civilized centre and power-hub of the world.'¹²⁷ Enacted on foreign soil, colonization was a means through which a vision of self as strong and unified could be reflected back to the German nation, thus serving the dual purpose of both forming and strengthening a sense of national identity.

The sudden push for colonization was also tied up with a drive to assert the new nation's position on the global stage, particularly in relation to their European counterparts. Rash suggests the Imperial Chancellor Bernhard von Bulow expressed the essence of German colonialist sentiment when he declared in parliament: 'We do not wish to put anyone in the shade but we too demand our place in the sun.'¹²⁸ The statement conveys a strong sense of national entitlement, as well as an underlying understanding that without a colonial empire,



Figure 57: The remains of The Elephant Pagoda, which was completely destroyed in the bombing of the Second World War. The zoo, like much of Berlin, suffered extensive damage and losses during the war.

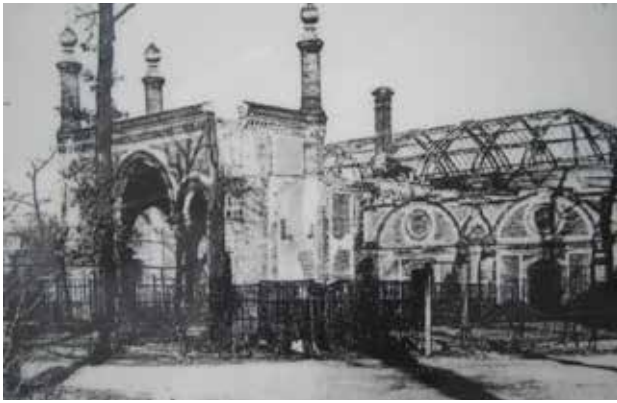
Germany would never be able to match the power and prestige of other European nations. The 'exotic style' embraced by Berlin Zoo during the late 1800s and early 1900s therefore functioned as a cultural embodiment of the public fascination with colonial ventures and position of Germany on the global stage. By the time of the First World War, Berlin Zoo had become one of the largest zoos in Europe, and via the scale of the collection and the exotic architectural style, the zoo exhibited the foreign world as a vast living museum, capable of being examined as a curiosity or novelty, the spoils of empire. The zoo became a symbolic emblem of the country's international prestige, reflecting and embodying an overwhelming message of dominance and strength.

Conclusion

The late 1800s heralded a period of colonial expansion in Africa so rapid it is often referred to as the Scramble for Africa. By participating in this tussle, the newly formed German nation asserted itself a key player on the international stage for the first time. The public fascination with colonial conquests and 'exotic' cultures was reflected in German zoological architecture, particularly in the Berlin Zoo. The impressive scale and number of the structures completed in the exotic style became a distinctive feature of the Berlin Zoo, as much a draw card as the vast collection of animals themselves. The two combined to reflect a vision of unified, German strength and international reach. The zoological garden as the territory of the scientific and moral, so carefully cultivated by the London Zoo, had transformed into a territory symbolic of national identity and colonial conquest.

Unfortunately the zoo was not immune to the complexities of the Second World War. Several photographs capture Zoo Director Ludwig Heck displaying his Nazi Party Badge and Hitler Youth were also photographed enjoying the zoo. Other photographs reportedly show Hitler visiting the Berlin Zoo. This complex period of the Berlin Zoo's history is relevant because it confirms the status of the Berlin Zoo as an important cultural institution, demonstrating that the zoological garden was capable of being made symbolic of very particular ideas of national identity, whatever they may be. It demonstrates that the zoological garden had evolved into a powerful national symbol that both reflected and confirmed shifting cultural understandings of identity.

Unfortunately, the Berlin Zoo suffered catastrophic devastation during the Second World War. A Flak Tower was built in an open area so close to the grounds of the Berlin Zoo that it was referred to as the 'Zoo Flak Tower'. The tower was targeted in bombing raids by the allied forces, resulting in almost all of the surrounding area and buildings being destroyed. Before the war, the Berlin Zoo had amassed an impressive zoological collection of over 4000 animals, of which only 91 survived. Buildings such as the Elephant Pagoda were completely destroyed. A handful of others, such as the Elephant Gate and the Antelope House, suffered extensive damage but were eventually able to be reconstructed. Ironically, the Zoo Flak Tower withstood the attempts to destroy it during the war and aerial photographs show the tower surrounded by the devastated landscape of the zoological garden.



The above photographs show the devastation caused by bombing during the Second World War. Figure 58 (top right): The Antelope House was one of the few buildings able to be restored. Figure 59 (top left): The Elephant Pagoda was damaged beyond repair. Figure 60 (middle left): The Egyptian Temple was also completely destroyed. Figure 61 (middle right): An aerial photograph of the remaining 'Zoo Flak Tower' amid the surrounding destruction. Figure 62 (bottom): An aerial photograph showing the location of the Flak Tower in relation to the Antelope House, the radial footprint of which can be seen to left of the image.



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5

Hagenbeck's Tierpark

Whilst the zoological garden maintained a high level of popularity in Europe in the late stages of the 19th C, the original format and scientific ethos established by the London Zoo was becoming somewhat outdated. The cultural framework of the zoo as an exposition of scientific knowledge had been transforming into something more akin to an amusement park.¹²⁹ As the 20th C approached the typical European zoological garden offered entertainments such as elephant rides, tea parties, animal shows and musical fanfare and had, according to historian Nigel Rothfels 'become a well established and highly acceptable venue of outdoor public entertainment.'¹³⁰

The transformation was influenced by a larger scale revolution in public entertainment, particularly by the unparalleled popularity of the travelling circus. The late 1800s and early 1900s saw the golden age of the circus, a period when it constituted the largest entertainment industry the world had ever known.¹³¹ American powerhouses such as PT Barnum and Adam Forpaugh became household names on a global scale and several circus troupes travelled internationally with menagerie collections so expansive, their scale and size are difficult to comprehend.

When Barnum and Bailey's 'Greatest Show on Earth' set sail from America for a European tour in the late 1800s, the baggage included five hundred tons of wardrobe and paraphernalia, as well as an entourage of 800 people, 500 horses, 20 elephants, 32 camels, a selection of exotic animals such as rhinoceroses, hippopotami and chimpanzees, 25 chariots and musical cars, as well as Jumbo's hide and skeleton.¹³² Eventually

Barnum and Bailey renamed their menagerie 'The Zoological Exposition' and one of their pamphlets from an early 1900s European tour states that 'it is believed that there is no other collection of wild animals so complete as this one, and it will be observed that only the rarest specimens of any kind are exhibited.'¹³³ The show was exceedingly popular, even patronized by the Queen of England, and whilst the circus industry is renowned for gross exaggeration and false advertising, the scale and audaciousness of their animal collections certainly played a role in shifting cultural expectations of similar animal enterprises, such as the zoo.

Not only did circus menageries often have the same 'exotic content' as the zoo, (of which elephants, tigers, monkeys and lions were the core) but they were often in greater numbers and showcased covered in ornate decorations within the same context as thrilling circus performances. Zoological gardens, with their smaller collections routinely exhibited behind bars, found themselves having to compete. The sheer novelty of seeing exotic animals in captivity had waned and quiet rumblings of public dissatisfaction about caged animals began to emerge, with citizens complaining about seeing 'droopy and sickly animals' behind bars, as one concerned citizen referred to them (the solution to which, they went on to suggest, was for the zoo in question to simply acquire a more healthy specimen, as it would be less distressing to the public).¹³⁴ Competition in the German entertainment industry also came from dramatic touring shows such as Buffalo Bill's Wild West Show. William F. Cody (aka Buffalo Bill) had been a scout for the US Army during the Indian Wars, as well as rider for the Pony Express, and he created a show that



Figure 63: The impressive gate to Hagenbeck's Tierpark signalled to visitors they were entering a territory unlike any other. The design included native people in the same context and style as exotic animals.

blended authenticity with melodrama. Cody added legitimacy to the show by touring with well-known identities such as Sitting Bull, Black Elk and Wild Bill Hickok. Historian Eric Ames tells us the three hour show was a pageantry of cowboys and Indian processions on horseback, historical reenactments of events such as 'Custer's Last Stand', depictions of frontier life, theatrical attacks on stage coaches, horsemanship displays, Native American dances and simulated buffalo hunts. The show, and several others like it, proved to be very popular and drew crowds of enormous proportions. The popularity of these shows demonstrates the level of comfort within the public for verisimilitude, where something only has the appearance of truth.¹³⁵

The volume of animals required for these circuses and shows, as well as the growing number of zoological gardens across Europe, created a boom in the international trade of wild animals, at the forefront of which was German entrepreneur Carl Hagenbeck. Where PT Barnum's name was synonymous with the circus, Hagenbeck's was synonymous with the exotic animal trade. The Hagenbecks supplied animals to almost every key circus, menagerie or zoo across the globe. By Carl's own estimate the number animals they sold in the first twenty years of the business is staggering; a small portion of the list includes three hundred elephants, one thousand lions, four hundred tigers, seven hundred leopards, a thousand bears, eight hundred hyenas and six hundred snakes (of which only 374 arrived alive).¹³⁶ The Hagenbeck's dominance in the trade of wild animals meant Carl and his brothers were also heavily involved in the colonial industry of animal catching, the circus business of animal training and exhibitions, as well

as the creation of 'zoological' panoramas and tours of Volkershau (people shows). The first Volkershau occurred in 1875 after a Norwegian agent of Hagenbeck's, Heinrich Leutemann, suggested the thirty reindeer Hagenbeck had ordered 'be accompanied by a family of Laplanders, who naturally would also bring their tents, weapons, sleds and complete households along.'¹³⁷ The "Lapland" exhibition was an unprecedented success, requiring security guards to manage the crowds despite the fact that all the visitors did was set up their tents and go about their lives as normal; milking the deer, breastfeeding the baby, preparing dinner.

The success of the show prompted Hagenbeck to organize more, including a group of Sudanese who, in 1878, attracted sixty-two thousand to the Berlin show in a single day.¹³⁸ What is particularly significant about the Volkershau was Hagenbeck's belief that they were exhibiting the authentic customs and traditions of a foreign culture via its people, rather than exhibiting a group of foreign 'savages' simply for public entertainment. Nigel Rothfels, author of *Savages and Beasts: The Birth of the Modern Zoo*, an analysis of the Hagenbeck enterprise, finds this attitude is problematic, suggesting that 'claiming to offer real experiences with exotic people while generally reinforcing stereotypes of those same people, the shows were often, therefore, more about the nature of European civilization than they were about the exhibited peoples of the world.'¹³⁹ Despite the overtones of colonial conquest, Hagenbeck referred to the shows as a 'true copy of life in nature' and this is a concept that remained when he eventually came to the business of exhibiting animals.¹⁴⁰



Figure 64 (left): A drawing used by Hagenbeck to patent his design for a staggered panorama. Figure 65 (right): A poster of the 'Zoological Paradise Panorama' Hagenbeck installed at the Berlin Zoo, complete with live animals .

Key developments

Context

By the late 1800s, the expanding Hagenbeck business required a much larger premises to house their animal stocks and after a short search a large area of land in Stellingen was purchased. Over time several adjoining tracts of land were also purchased, cleverly linking the site all the way to Hamburg, allowing them to eventually construct a train line that ran directly from Hamburg to their site.

Hagenbeck stated, in relation to his aim for the new park, 'that the leading thought was to present the animals in the most freedom and thereby demonstrate at the same time what acclimatization was able to accomplish. I wanted to show animal lovers with a large, practical and lasting example, that it is absolutely unnecessary to construct luxurious and costly buildings with large heating systems in order to keep animals alive and healthy. On the contrary, having animals reside in the outside air and become used to the climate presents a far better method for protecting their lives.'¹⁴¹ This intention manifested in a way that not only demonstrated how foreign animals might be kept (though admittedly not always with great success), but, more importantly, how they might be displayed.

Hagenbeck had been cultivating this new approach for the exhibition of animals for some time. One of the many enterprises he had been involved in was travelling panoramas, in which whole animal scenes were staged, like a theatrical set. Panoramas were a very fashionable form popular entertainment at

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the time and Hagenbeck thrilled the audiences by including live animals within his 'Arctic Panorama' which also included a replica of the shipwrecked Fram to add authenticity. Hagenbeck patented the idea and refined it over several iterations, culminating in the "Zoological Paradise" panorama temporarily installed in Berlin Zoo. Complete with live animals, separated by ditches, the panorama functioned as a prototype for the more permanent installations Hagenbeck was planning for the Tierpark at Stellingen.

The designs for the panoramas at Stellingen were also informed by the extensive research the Hagenbecks had been conducting in relation to animal training. Hagenbeck reputedly found the circus industry full of 'rabble' but he nevertheless set up an animal show with his brother, advertising a less brutal method of training.¹⁴² This not only helped Hagenbeck research and perfect the distances required for the ditches, but also went some way to establishing an image of Hagenbeck as an animal lover, despite his involvement in what was essentially a merciless industry of animal capture and trade. Rothfels suggests that this perception of Hagenbeck, 'which fully exploited ideas of the humane trainer walking with confidence among his pupils - animals that respect, admire, but more than anything love their keeper - came to its eventual apotheosis in Hagenbeck's groundbreaking Animal Park.'¹⁴³

Site

The Tierpark at Stellingen only covered a small area but it packed an impressively theatrical punch. In collaboration with Swiss sculptor and architect Urs



Figure 66: A site plan of Hagenbeck's Tierpark from 1907, courtesy of the Hagenbeck archives, showing the footprint of the premises before it expanded across the road.

Eggenshwyl, and landscape architect H.Hinsch, Hagenbeck extensively remodelled the flat potato fields into a dramatic landscape of artificial mountains, and staged panoramas that could be seen for miles. The site and the animal exhibitions were no longer separate entities; Hagenbeck amalgamated them as one, creating what was essentially a zoological theme park.

Hagenbeck controversially discarded the zoological rule of organizing animals in taxonomic order and instead exhibited them in geographic, regional groupings. The site was laid out in a more 'geo-zoographical' sense than in scientific groupings (though by some accounts accuracy of geographical heritage was not always religiously adhered to, particularly in interchangeable animals such as penguins). There were two main panoramas: Africa and the Arctic and the manner in which the animals were exhibited created the illusion that predators and prey were side by side.

Though the main aim of the Hagenbeck empire was not to further scientific research, Hagenbeck was careful not to lose all scientific validation altogether, particularly via close association with anthropological societies. Regardless of the appropriateness of this, the connection added legitimacy the impression that the Hagenbeck shows had substance.¹⁴⁴ Hagenbeck was careful to make the distinction that unlike circus shows, his exhibitions (whether they be people or animals) were, in his view, authentic.

Hagenbeck was essentially a business man and Hagenbeck's Tierpark was in effect a staging of the zoo. Over time, the site was expanded to

include large-scale performances and themed 'villages' in which the foreign performers would enact a semblance of their lives and sell goods. Visitors could explore the zoo, watch a large scale performance, such as the 'Bedouin Show' in 1912, and then visit a village constructed in the same cultural theme, where they could mingle with the performers, drink exotic teas and purchase handmade goods. The Tierpark at Stellingen was the culmination of Hagenbeck's experience with training and handling exotic animals, exhibiting panoramas and touring the Volkershau, combining all three to create a completely new vision animal exhibition. Hagenbeck's Tierpark wasn't just an exhibition of exotic animals but a cultural theme park. By remodeling the whole site, Hagenbeck created an immersive experience, adding an impression of authenticity by carefully crafting a realistic looking environment.¹⁴⁵

Landscaping/Views

Hagenbeck's collaboration with Eggenshwyl and Hinsch in the landscaping and construction of the remodelled site was detailed, well researched and by all accounts very well rendered. Each element was minutely crafted and designed to facilitate very specific views, and, despite Hagenbeck's claim that the design was for the good of the animals, a significant motivation must have been the sensation the panoramas caused for the spectators.

By using hidden moats to eliminate prison-like bars and staggering the scene to appear as if predator and prey were in the same vicinity, Hagenbeck had created illusionistic compositions which thrilled the general public. The invisible constraints created

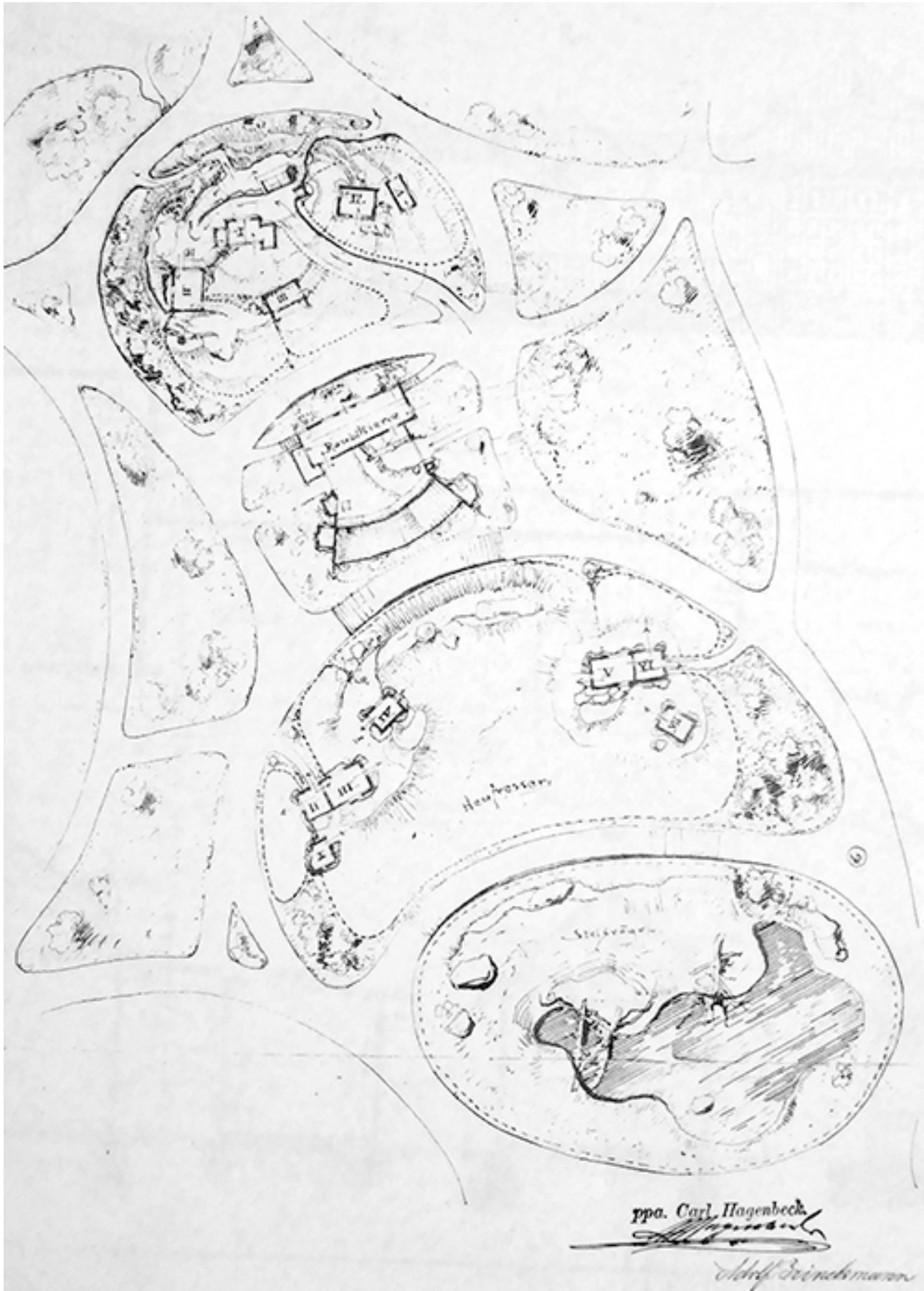


Figure 67: A plan of the mountain panorama, courtesy of the Hagenbeck archives, showing the staggered layout of the various enclosures and the manner in which the circluation was threaded through them. It is also possible to see the concealed areas used to confine and manage the animals behind the scenes.

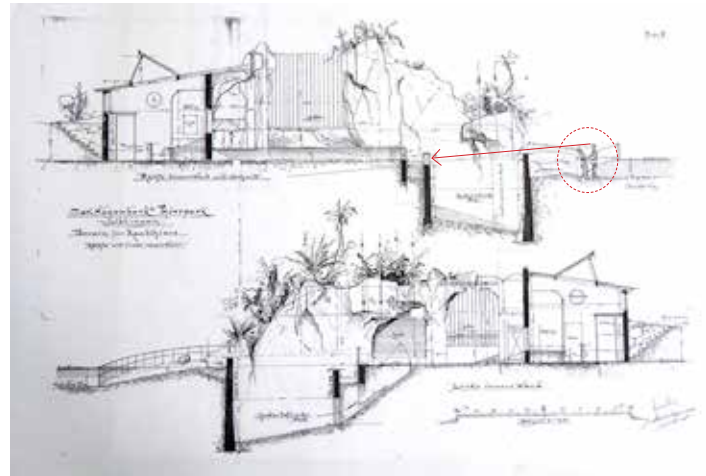


Figure 68: A sectional drawing of the 'Beasts of Prey' enclosure in which the revolutionary moat system is clearly represented. The drawings pay specific attention to the sightlines of the visitors, as highlighted in red on the top image.

the sensation that there was no barrier between the animals, or between the humans and animals. Baratay believes this vision tapped into the romantic belief that 'humans beings can rediscover a life of freedom through contact with the wild. From being a passive captive behind bars, the animal on Stellingen's fake rocks came to play the part of the wild creature it no longer really was...'¹⁴⁶ Even the planting was designed to 'create a variegated, wild-looking landscape suggesting a variety of foreign regions' according to Ames.¹⁴⁷

Much attention was paid to the landscaping and the planting because they played a vital role in naturalizing the artificial nature of the terrain. Plant choices were also important, with a mix of tropical species specifically chosen to 'create an exotic mood and convincing expression of foreign space.'¹⁴⁸ Ames explains that some of the techniques used in the Tierpark were common to most garden designs, such as planting flowers to frame specific views, and other techniques were more unique to the Tierpark, such as planting to act as screens to obscure views of the circulation routes and spectators. Once fully grown the gardens became an attraction on their own. The treatment of the landscaping and views were so integral to the design of Hagenbeck's Tierpark, and so influential, that they have since become a fundamental part of the zoo themselves.

Circulation

Much like the consideration of landscaping and views, the treatment of circulation through Hagenbeck's Tierpark was a key element in the success of the overall design. Previously, the typical

approach to circulation design in zoological gardens had been a balancing act between guiding visitors through an ordered progression of taxonomic exhibitions, and allowing visitors to observe others (and to be observed in return) promenading through the grounds. The treatment of circulation in Hagenbeck's Tierpark abandoned both of these aims for an entirely different outcome.

The layout of the circulation in the Tierpark was designed to thread the visitors through and within terrain of park, as if they were entering the panorama itself, and to position them at particular vantage points along the way, at which the appreciation of the panoramas could be maximized. This was thrilling for the public because it rendered the Tierpark a version of a panorama that they could enter and, to some extent, explore. By staggering the pathways throughout the panoramas, the spectators were given the impression they were inside the 'barless' vision they had initially been presented with, immersing them within the zoological environment. Importantly, the pathways traversing the panoramas were hidden from view by a series of hedges and careful planting, ensuring the main panoramic views were not interrupted by views of the crowds who had already entered the panorama.

The circulation was also designed to include a variation of tunnels and passageways, larger gathering points and elevated viewing points, allowing spectators to find a variety of different perspectives. Several of the mountainous installations included internal passageways that allowed visitors to climb to the top and look out over the park and back down over the panoramas.

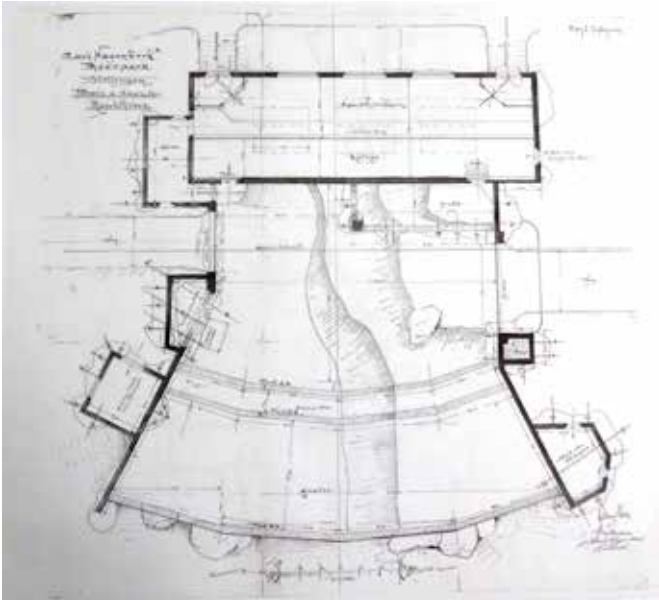


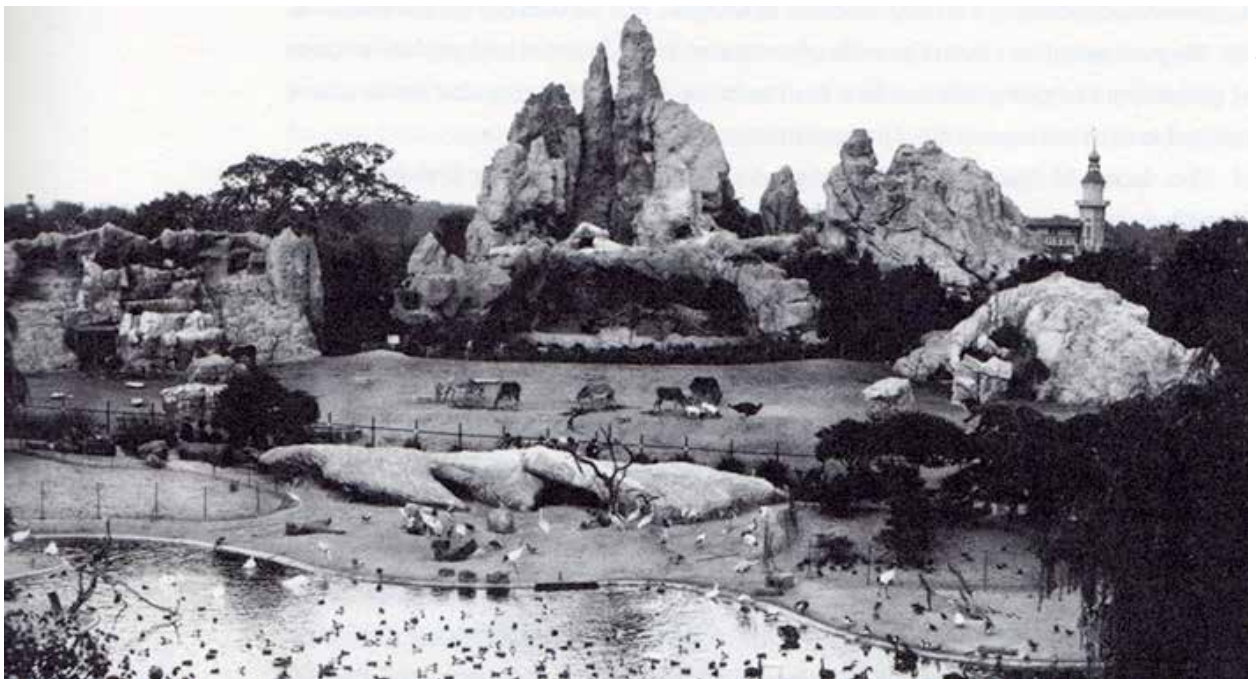
Figure 69: A plan of the 'Beasts of Prey' enclosure, illustrating the different treatment of the back of house areas and the theatrical animal stage.

Despite the nature of the circulation encouraging a sense of freedom to explore the Tierpark at will, Ames explains that the guidebook from the opening year of 1907 continued the tradition of including a map with a recommended main route and itinerary, illustrated with directional arrows and exhibition numbers. He suggests this may have been more to assist the spectators in understanding and navigating the unconventional site (and to control overcrowding and congestion) than to control the way they were introduced to various exhibitions.¹⁴⁹ The focus of the guidebook was entirely new, however, concentrating on explaining the unconventional nature of the architectural features and grounds much more than the zoological facts about the animal collection. Ames suggests that the layout of the circulation should also be considered in light of the fact that each of the animals in the Tierpark was for sale. Hagenbeck was still very much a businessman in the trade of wild animals and the circulation brought visitors past a spectacular display of his merchandise. Ames states 'the aim here was to continue meeting the demands of particular buyers while at the same time representing animals in a way that would be alluring to mass spectators.'¹⁵⁰ It is in this way that Hagenbeck's Tierpark was in many ways a theatrical staging of a zoological garden, more of a zoological theme park than cultural institution. Where many of the zoological gardens across Europe were very focused the animals and proudly published (and named) new additions of particular species to their collections, the animals in the Hagenbeck Tierpark were constantly changing due to sales and trade.¹⁵¹ This is particularly reflected in the layout of the Tierpark as a series of panoramic views instead of a series of zoological specimens.

Built Form

Zoo historian Herman Reichenbach believes that 'what is now taken for granted by almost every visitor to a zoo - moated exhibits in a landscape simulating nature; gregarious animals of mixed species kept in herds in large enclosures; and animal performance based on conditioning and sensitivity, not brute force and intimidation - all started at Hagenbeck's Tierpark.'¹⁵² What seems commonplace to zoo visitors now was revolutionary at the time and Hagenbeck's Tierpark rewrote cultural expectations of zoological design.

The site was so unusual, the guidebook from the opening year of 1907 did not offer the usual zoological information about the animal but focused instead on providing an explanation of the panoramic scene unfolding before the visitors. It encouraged viewers to stand at a particular point and stepped them through the view; in front of them was the pond of aquatic birds, behind which was a terraced clearing for the 'Hay Eaters', followed by the Lion's Ravine. Rising behind that were the steep cliffs of the High-Mountain Ridge on which ibex and wild sheep climbed.¹⁵³ Spectators were then encouraged to make their way to the left to the northern landscape of the Arctic Sea Panorama, which Ames suggests Hagenbeck endorsed, stating; 'from a certain point in the garden, one should see the animals of all zones, each in an environment appropriate to its homeland, moving about freely in big terraces.'¹⁵⁴ The artificial terrain created at Hagenbeck's Tierpark succeeded in convincing the public to accept it as a semblance of authenticity because it was assembled in a composite of imported elements and constructed.



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Figure 70 (top): The framing construction technique used for building the 'mountains'. Figure 71 (middle): The various enclosures of the Mountain Panorama. Figure 72 (bottom left): The crowds from 1909 demonstrating the popularity of the Tierpark. Figure 73 (bottom right): The opening on May 7th 1907 featuring Hagenbeck with members of the German aristocracy.





Figure 74: Native American Indians performing a 'Sioux Show' at the Tierpark on the Easter Weekend of 1910. The wildly popular show included a narrative in which stagecoaches were ambushed, horses were stolen and cowboys clashed with Indians on horseback, all interspersed with dances and horse races between the cowboys and the Indians.

Several of the panoramas incorporated large granite boulders and rocks salvaged from old sea walls in Hamburg's port, which were most likely painted white to resemble large chunks of pack ice in the Arctic Panorama.¹⁵⁵ True to Hagenbeck's showmanship many of these giant boulders were transported to and installed on site by elephants and their Sri Lankan handlers, who were also professional members of the *volkerschau*.¹⁵⁶ Even the construction of the Tierpark was something of a show, with one journalist reporting on the 'chaotic confusion' of industry on the site, with manual laborers, masons, carpenters, joiners and mechanics all busily working to transform the site.¹⁵⁷

The artificial sections of the landscaping and mountains were composed of cement render over an internal frame of timber scaffolding. Ames explains they were designed in careful reference to actual rock-work and constructed in the same manner as a plaster model; the timber frame was installed, covered in wire mesh and then rendered in cement, weatherproofing and paint. The internal area was deliberately designed to conceal back of house elements such as holding pens, plumbing, heating, service entrances etc.¹⁵⁸ The exterior elevations were designed to incorporate staggered platforms separated by the hidden moats, which were in fact adaptations of the *haha*. The design and construction techniques were so innovative for housing of wild animals that it was difficult to get building approval and local authorities consulted everyone from the local fire chief to the district veterinarian before accepting recommendations from several other zoo directors that the building permit should be issued.

The artificial landscape of Hagenbeck's Tierpark created such a pivotal moment in the language of architectural zoological gardens, that it easy to overlook the fact that the site also included more conventional buildings and structures, many of which unwittingly captured the colonial undertones of the time. The front gate in particular, designed by theatrical set designer Lehmann, included exotic peoples and animals in the same staged tableau, as if both should be considered in a similar manner. The ornate composition of the gate, more in keeping with style of theme parks, suggested a site more devoted to entertainment and thrills than scientific pursuits. The 'native' village, which Ames suggests functioned as a 'living habitat' into which spectators were encouraged to immerse themselves, included many huts and replicas of the architectural style of whichever culture was the theme at the time, whether Bedouin, Indian etc. The architecture of the village often included such good renditions of the original architecture that it was often used as a set for particular scenes films, including scenes from the 'Arabic Quarter' the 1918 film *Peer Gynt*. It is worth noting that many people involved in the creation of the village at Hagenbeck's Tierpark also worked in cinematic set design.

Territory and Scale

It is almost impossible to discuss the zoological garden and the trade of wild animals at the end of the nineteenth century without encountering colonial attitudes towards the exotic and foreign territories. As Rothfels explains zoological gardens often act out 'quite explicitly the political, imperial, or educational claims of the current elites - they

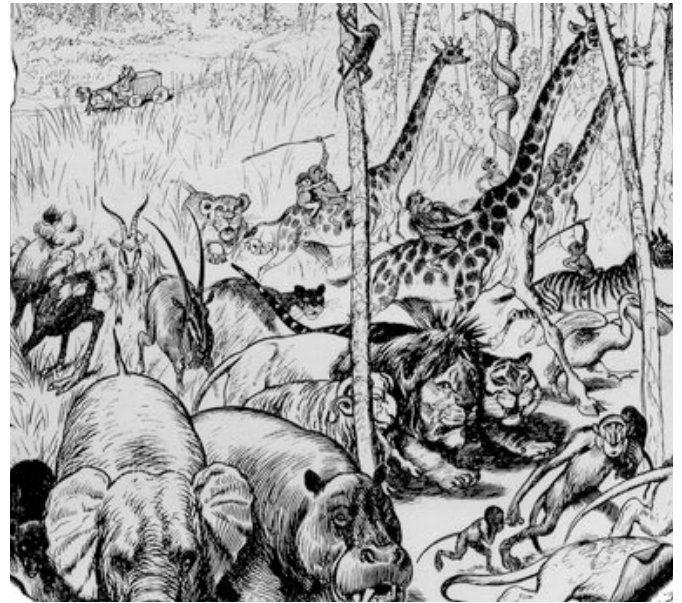


Figure 75: A cartoon entitled 'Hagenbeck is Coming!' depicting animals fleeing the hunters in terror.

are the grounds, for example, in which we attempt to teach appropriate judgments about the exotic world.¹⁵⁹ Initially, the animal trade relied heavily on indigenous hunters bringing their bounty to trading stations where it could be purchased by European traders and transported back to Europe. Demand quickly outgrew this potluck approach, however, and soon the Europeans became the hunters themselves, though usually with the assistance of natives under forced-labour conditions where they were, by most accounts, poorly treated and exploited.¹⁶⁰ Rothfels suggests 'the animal-catching business was taken over by colonialists and professionalized in much the same way that other colonial industries had been.'¹⁶¹ Tales of the hunters exploits were incredibly popular in Europe and many became household names by publishing articles and books describing their hunting adventures in gory detail.

The Hagenbeck company dominated the animal trade, to the point where a cartoon in 1893 entitled 'Hagenbeck is coming!' showed animals of the jungle running in fear. The Hagenbeck empire was inextricably linked to exoticism and colonial endeavours, an association which created a complex duality in their public image; on the one hand they were experts in the plunder of exotic lands, on the other animal lovers and ambassadors for animals in captivity. Their shows and exhibitions were never critical of colonial activities, often working to the opposite effect, with Rothfels suggesting they '...contributed to the idea that the efforts of the colonial societies were advantageous both to the indigenous peoples whose lands were being occupied and to the Europeans who were occupying them.'¹⁶² The shows often reinforced

existing, comforting cultural narratives; Eskimos paddled kayaks, Bedouins rode camels, American Indians rode horses.¹⁶³

The manner in which Hagenbeck presented these foreign cultures did nothing to challenge these stereotypes or confront the complexities of colonial occupation. None were ever presented as being intellectually or culturally superior to Europeans and Rothfels believes that for Hagenbeck, 'the indigenous people were only valuable in so far as they remained 'native', and after the shows, they were returned to their homes with little fanfare.'¹⁶⁴ The shows certainly weren't organized for their benefit and the income they received was insignificant compared to profit generated by the shows. This speaks volumes about the cultural understanding of foreign communities at the time. As Rothfels explains, 'claiming to offer real experiences with exotic people while generally reinforcing stereotypes of these same people, the shows were often, therefore, more about the nature of European civilization than they were about the exhibited peoples of the world.'¹⁶⁵

Conclusion

Hagenbeck's Tierpark was a site of powerful contradictions and illusions. Rothfels suggests that despite the fact that the animal park was fundamentally a blend of theatre and commerce, in which commercial viability was a driving force, the Hagenbeck empire also held a mythical grip on popular imagination because it was 'about telling stories, partly true, partly fictional.'¹⁶⁶ The Hagenbeck's Tierpark created powerfully heterotopic representations of the real and a



Figure 76: A guide to Hagenbeck's Tierpark from 1907, clearly showing the artificial landscape of the site rising out of the surrounding flat plains. The image also provides a good sense of the layout of the site and the manner in which it was landscaped.

simulation of the real, presenting animals and foreign people as, in Carl Hagenbeck's own words, a 'true copy of life in nature'.¹⁶⁷ Even this expression is problematic. Rather than refer to them as a 'true example of life in nature', he has instead used the term 'copy', a term most commonly interpreted as meaning an imitation, or reproduction of an original. When coupled with the word true, the expression becomes slippery and, in many ways, as contradictory as the Tierpark itself.

Hagenbeck had cultivated a reputation as an animal lover who had created an 'Animal Paradise' in Stellingen, despite the fact that the animals on show only had a 'theatrical illusion of freedom' and many were only there for a short while before being sold to other collections.¹⁶⁸ This contradiction did little to dampen the idea that life at Hagenbeck's Tierpark wasn't so bad for the animals at the zoo. Rothfels suggests that Hagenbeck's creation of the vision of the zoo as a place of safety, freedom and happiness for animals is his biggest legacy, giving credence to the notion that animals might actually be better off in the well fed and safe environment of the zoo.¹⁶⁹ It also added weight to his argument that the design of the Tierpark was a better version of a zoological garden, despite the fact that this cannot solely have been Hagenbeck's ambition in constructing the park. Other motivations came from the success of the *Volkerschau* as an exhibition of exotic authenticity, the popularity of the zoological panorama staging a vision of peace among beasts and the possibility of combining a holding pen that showcased his merchandise beautifully with a vivid demonstration of zoological construction techniques that were inexpensive compared to the traditional methods

(which would in turn lead to more zoo construction and therefore more animal purchases). There was also a strong argument, particularly from other zoo directors such as the director Frankfurt's Zoo, Kurt Priemal, that Hagenbeck's Tierpark was not actually a zoological garden at all. Others, such as William Hornaday, director of the Bronx Zoo, who was initially impressed by the zoo, but Baratay and Hardouin-Fugier believe he eventually concluded that it represented 'an affront to the scientific and educational role of zoos which require clear visibility and careful classification'.¹⁷⁰ Without any scientific purpose, the Tierpark could be seen as one 'colossal open air panorama'.¹⁷¹

While it may be true that Hagenbeck's Tierpark was more of a cultural theme park than a zoo, the influence it had on zoological typology cannot go unremarked. Hagenbeck's Tierpark redefined the parameters of what was considered to be an acceptable vision of animals in captivity. This accounts for the proliferation of 'copies' that occurred afterwards, but unfortunately, not all of the replicas paid the same attention to detail. Hancock in particular laments the rash of clunky artificial landscapes and poorly rendered cement mountains and grottoes that became commonplace in zoos all over the world.¹⁷² Regardless of whether the original format of Hagenbeck's Tierpark constituted a zoological garden, Rothfels tells us 'a closer look at the roots and legacy of the park makes clear its creation represents a pivotal moment in a modern reorientation in thinking about the lives of animals in captivity'.¹⁷³ Hagenbeck's dramatic reinvention of the exhibition of wild animals altered public perception of the zoological garden significantly.

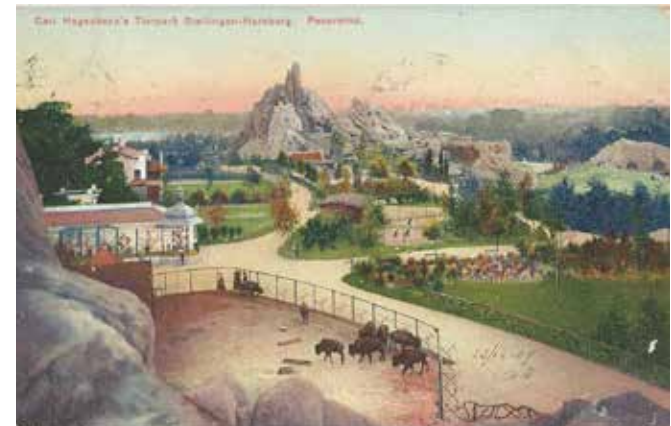
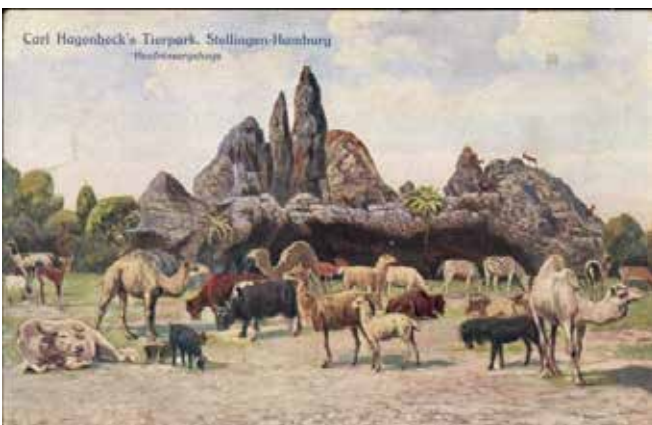
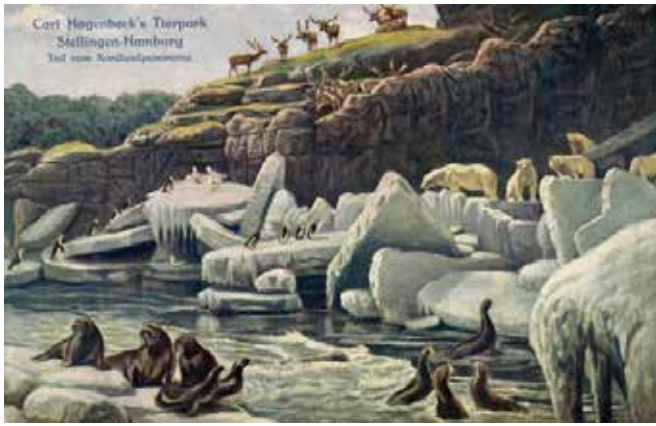


Figure 77: A series of postcards of Hagenbeck's Tierpark, the majority of which were most likely completed in the early 1900s. The cards illustrate the various panoramas and enclosures of the Tierpark.



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The Smithsonian National Zoological Park

Public interest in the creation of zoological gardens was somewhat slower to take hold in America than in Europe. This was partly due to the severe conditions and battle for survival endured by the early pioneers of the American frontiers, the majority of whom saw the immense wilderness as a wasteland yet to be conquered and cultivated.¹⁷⁴ Zoo historian Vernon N. Kisling Jr. explains that this early colonial period ‘was characterized by hard work, frugality, simple pleasures, and the need to establish a new American Society in what was an overwhelming and threatening wilderness.’¹⁷⁵ Over the years disruptions caused by a skittish boom and bust economy, the battle for independence and the Civil War also hindered any progress made by scientific societies and public focus usually fell on matters of nationhood.

While the demand for the showcasing of wild animal collections had been somewhat sated in rural America by the popularity of travelling menageries, things changed dramatically when entertainment entrepreneurs such as PT Barnum and Adam Forepaugh merged travelling menageries with acrobatic circuses and began transporting them across America via the newly connected railways. It prompted a golden age of circus entertainment in America. For the price of a single ticket patrons could visit both the menagerie tent, containing astounding numbers of exotic animals, as well as the show under the Big Top, which invariably included animals from the menagerie into the performance.¹⁷⁶ Small, tightly funded zoological societies found themselves having to compete.

In regards to the creation of zoological gardens, Kisling suggests that for many years, the ‘prime

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ingredients for development of this kind of cultural institution did not yet exist, namely, the urbanization of a large portion of the population, the reduction of a significant amount of the wilderness, knowledge of and appreciation for nature and animals, the development of a wealthy class, the availability of leisure time among the populace and an acceptance of the animal exhibit as a suitable form of popular entertainment and education.¹⁷⁷ It wasn’t until the Civil War had ended and the economy had stabilized that these conditions eventuated and the first American zoological gardens began to appear in places such as Philadelphia and Cincinnati, most of them as close a replica of their European counterparts as their means would allow.¹⁷⁸

The emergence of zoological gardens in America also coincided with a period in which the newly industrialized nation saw an unprecedented shift to urbanization. This prompted a growing societal concern over what was perceived to be the moral and social decay of industrialized cities. Writers such as Emerson and Thoreau championed the idea that contact with nature was necessary to counterbalance the adverse effects of the city on both morality and health. Nature tourism boomed. Vacations typically included sightseeing and visits to natural wonders like Niagara Falls and Lake George and strong campaigns saw the formation of the first National Park at Yellowstone in 1872.¹⁷⁹

During this period there was also a strong push for the creation of a network of public parks in urban areas. Landscape designers such as Frederick Law Olmsted became famous for their contributions to university campuses, schools, hospitals and museums. Olmsted’s designs accented picturesque

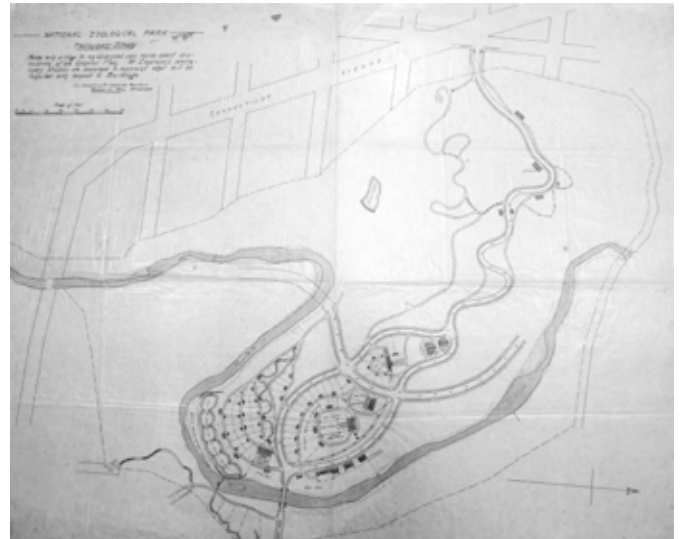


Figure 78: A preliminary site plan for National Zoological Park at Rock Creek by Frederick Law Olmsted in 1890. A carriageway winds through the relatively untouched site past several exhibits to a cluster of buildings grouped together on the plateau.

views and winding pathways (with all traces of human handiwork disguised), representing a common vision of nature as a therapeutic balm for the fractured souls of fatigued city workers. Kisling tells us that the zoological garden was associated with this push for public parks, explaining that an 1884 report on public parks stated 'no park system could be regarded as complete without suitable tracts for botanical and zoological gardens... a park system that failed to include a zoological garden would be wanting in one of the most essential requisites.'¹⁸⁰ The idea had begun to emerge in American society that a zoological garden belonged within a system of public parks as a culturally beneficial contribution to a city and the public. Hancocks believes many of the leaders of the newly formed nation were also envious of the influence and standing of European culture, generating 'a nationalistic desire not only to equal but to surpass.'¹⁸¹ Kisling agrees, suggesting this created an ambition in civic leaders and citizens to be able to point to American zoological gardens with pride, as 'symbols of America's greatness.'¹⁸² As part of the Smithsonian Institute, the National Zoo was seen to have the potential to embody this.

The Smithsonian Institute was created in 1846 as a result of an unexpected bequest from James Smithson, an Englishman who had never set foot in America. The generous bequest called for the creation of 'an establishment for the increase and diffusion of knowledge among men.'¹⁸³ The wording of the bequest generated much debate about what form the institute should take, partly because it created something of a dual purpose. By representing research and public exhibition in equal measure, the bequest gave the Smithsonian

Institute a cultural responsibility. Interestingly, the original development did not include the creation of a zoo, with many suggesting it was not an appropriate function for such an institution.¹⁸⁴ The introduction of live animals to the Smithsonian Institute came via employee William T. Hornaday. Hornaday was a chief taxidermist for the Natural History Department, at a time when all of the functions of the Institute were still housed in the Smithsonian Castle on the National Mall.

Key Developments

Context

Hornaday had earned a reputation for creating impressive, expansive, naturalistic dioramas for the Natural History section of the Institute.¹⁸⁵ A prolific hunter, specimen collector and adventurer, Hornaday had achieved significant fame by publishing accounts of his collecting escapades, such as *Two Years in the Jungle: The Experiences of a Hunter and Naturalist in India, Ceylon, the Malay Peninsula and Borneo* (which became one of the best selling adventure-travel books of the 19th Century).¹⁸⁶

Hornaday's outlook on hunting and the collection of animals dramatically shifted after he undertook several unsuccessful expeditions to Montana and the Rocky Mountains to find specimens of the American Bison for a museum diorama. He discovered the vast herds of the American Bison that had once swept across the nation just a decade before were all but extinct. The shock of this discovery, a result of rampant hunting and unchecked policy, constituted a significant



Figure 79: An early site visit to Rock Creek Park to discuss potential plans for the site. The party included Smithsonian Secretary Samuel Langley, William Temple Hornaday and landscape architect Frederick Law Olmsted.

turning point in Hornaday's life. Upon his return he embarked on a crusade to save the last of the bison, writing and publishing the influential piece 'The Extermination of the American Bison' and founding the American Bison Society. In response to Hornaday's discovery, the Smithsonian established a Department of Living Animals in 1887, of which he was made Director. Interestingly, the focus of the collection was animals native to America, such as bison and a golden eagle, gifted to the collection by President Cleveland.¹⁸⁷

During this period, Hornaday developed the idea that America needed a new form of zoo, a sprawling refuge with natural enclosures where 'breeding pairs of bison and other vanishing species could make a final stand against extinction.'¹⁸⁸ His vision was a combination of the majestic landscapes of his dioramas and the live specimens of the zoological garden. Only a small portion would be open to the public, the rest functioning as a wildlife preserve where species could breed with minimal interference and scientific research could be conducted unimpeded by the public. His vision was a revolutionary overhaul of the purpose of the zoological garden.

Hornaday invested much time and energy into campaigning for a National Zoological Park to be developed as a branch of the Smithsonian Institute. He was heavily involved in locating a site, planning and lobbying Congress. The proposal was controversial and it was only after several years of rigorous debate and severe cuts to the proposed budget that approval was finally given in 1890. It was at this point that the then Secretary of the Smithsonian, Samuel Langley, overlooked Hornaday

and appointed Frank Baker as the future Zoo Director. Hornaday, offered the lower provisional position of Zoo Superintendent, resigned from the Smithsonian immediately. Langley had championed Hornaday's vision of the zoo as an animal conservation park, but felt he did not have the required executive experience for the position of Director.¹⁸⁹ Hornaday's memoirs, however, also suggest there was quite a personality clash between the two. Hornaday describes Langley as having an infuriatingly autocratic style of hands-on management, and stated he had a 'domineering temper and the congeniality of an iceberg...his no was like the snap of a steel trap.'¹⁹⁰

Langley's role as the Secretary of the Smithsonian ensured he had complete authority and control of every aspect of the style, design and location of the National Zoo. His vision and aesthetic therefore marked the architectural character of the zoo indelibly. In an early letter to the Assistant Secretary, Mr Brown Goode, Langley stated that the aesthetic treatment of the park was very important to him, and he therefore stipulated, '1. The Park shall be left, in its general aspect, as nearly as possible in its natural condition. 2. No tree shall be felled, or paths laid out, or bridge or building erected, without my personal knowledge and sanction.'¹⁹¹

Historian Heather Ewing believes Langley's personal preference for the picturesque gardens of eighteenth century England, in which a sense of natural, untouched irregularity was fostered, permeated his vision for the National Zoo, and therefore strongly influenced the subsequent treatment of the site.¹⁹²



Figure 80: A photograph from the 1890s of elk standing in their enclosure, in which they are portrayed within the sylvan setting of an American arcadia.

Site

Before his resignation, Hornaday was actively involved in researching a possible site for the zoo and he conducted a thorough analysis of all of the properties that had potential, listing their estimated costs, ownership details and geographical features that may aid or hinder the establishment of a zoo. Eventually the chosen site was in the Rock Creek area, relatively close to the city and encompassing a large area of 166 acres with a variety of terrains. Langley was particularly enamoured with the scenic beauty of the site and often described it in idyllic terms, stating ‘the wild goat, the mountain sheep and their congeners would find the rocky cliffs which are their natural home; beavers, brooks in which to build their dams; the buffalo, places of seclusion in which to breed and replenish their dying race; [and] aquatic birds and beasts their natural home.’¹⁹³ It is apparent in his letters that he considered it his role to ensure the natural beauty of the site was maintained.

In order to achieve his picturesque vision, Langley sought the advice of renowned landscape architect Frederick Law Olmsted. As previously mentioned, Olmsted was considered to be a master of American picturesque landscape architecture in at the time, and though he was at the end of his career and budget constraints meant Langley was unable to employ him fully, he agreed to consult on the project in the early stages. Notes from a site meeting conducted with Olmsted indicate the origins of Langley’s approach to the treatment of the site in which any traces of human interference were to be disguised and existing, natural features were to be respected.¹⁹⁴ Via his letters to Baker,

Langley offered direction on everything from fences (rustic in character with no straight lines), trees (birch and poplar to be used as shields), to rocks (preserved wherever possible).¹⁹⁵ He went to great pains to ensure any interventions to the site should be done ‘without destroying its present “accidental” character.’¹⁹⁶

Landscaping and Views

Langley’s original vision for the National Zoo was unusual in that the site was to be divided. One section was to be reserved from the public for the breeding of American animals (such as bison and elk) and scientific research, and the other section was to be open to the public, exhibiting the more traditional zoological collections of exotic animals. Within this vision the specifics of what the public were able to view was to be tightly controlled: they would only be able to see the herds of American mammals from particular vantage points. It was Langley’s intention that profits gained from the sale of the results of the breeding programmes would be used to fund the purchase of more exotic animals for the zoological exhibitions. It was to be an innovative rethinking of the typology of the zoo. Horowitz believes Langley’s dual purpose of the zoo matched the dual purpose of the Smithsonian bequest: ‘through its study series and facilities it was to serve science; through its exhibition series it was to offer culture to the public.’¹⁹⁷ However, the Senate of 1891 did not see it this way and their decision to half the funding and restrict the nature of the zoo reflected the idea that a zoo was essentially a public pleasure ground and not a scientific facility (and therefore not appropriate to the Smithsonian bequest).¹⁹⁸

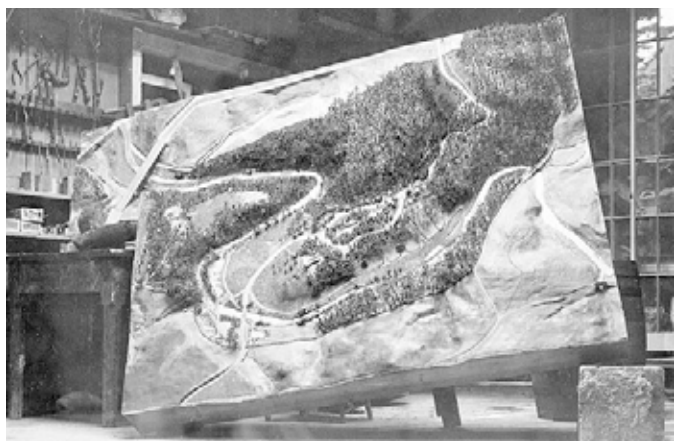


Figure 81: A model of the proposal for the Smithsonian National Zoological Park from 1888. The model demonstrates the steep nature of the site and the long winding circulation paths that were originally proposed for navigating the site.

One inadvertent result of the funding constraints, however, was the lack of construction funds, which resulted in most of the zoo buildings being clustered close together in the centre of the park, thus allowing much of the site to go untouched. Ewing believes 'what was unique about the National Zoological Park was its sylvan setting, and the vast and unruly beauty of it all Langley sought to showcase the public.'¹⁹⁹ This suggests that regardless of the funding restrictions, (and possibly as a result of them) the National Zoo presented a picturesque vision of the American wilderness to the public via the treatment and framing of the landscape and views. Langley articulated this himself in a later letter to Baker, stating he felt 'the animals were the accessory to the landscape, and not the landscape an accessory to the animals'.²⁰⁰ In many ways, the animals were of less importance than the vision of an American Arcadia.

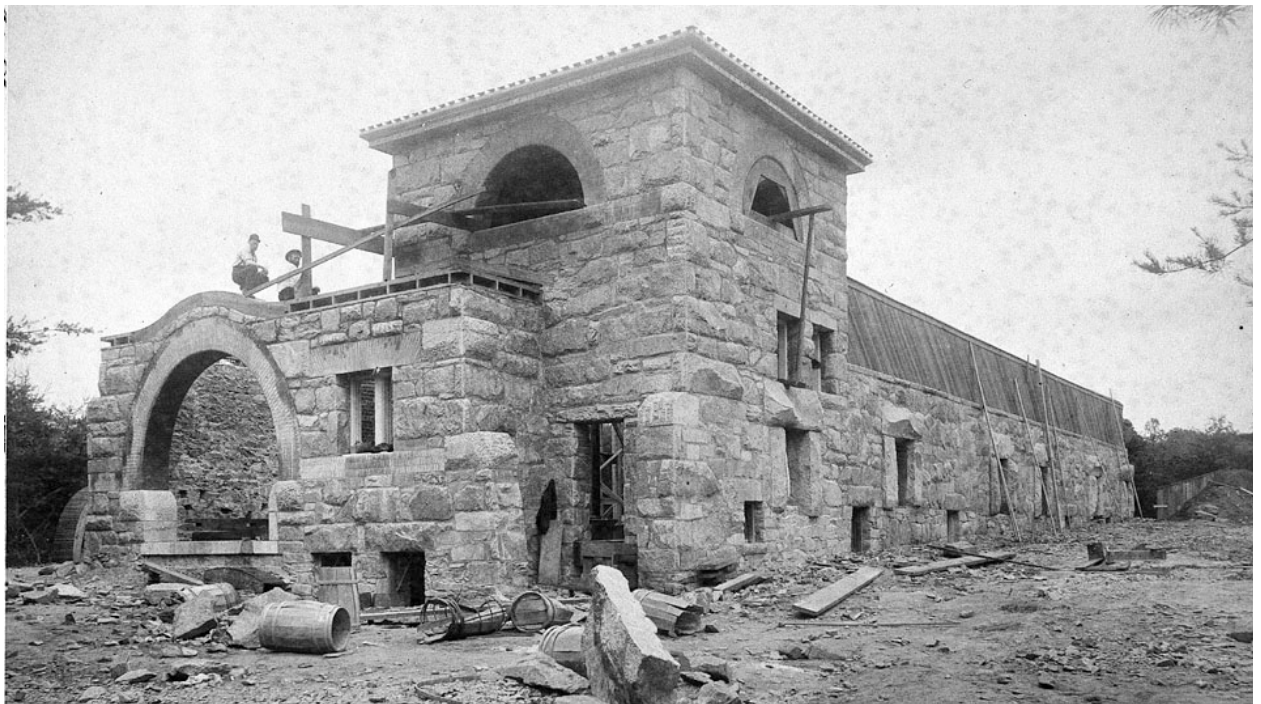
Circulation

Circulation throughout the site was largely dictated by Olmsted's original master plan of 1890, which had to accommodate several potential entrance points and restrictions shaped by sections of steep terrain. In a study on the Evolution of the National Zoo, Suzanne Fauber states that Olmsted endeavoured to 'provide a system of circulation by which both vehicular (carriage) traffic and foot passengers could move throughout the park with little conflict'.²⁰¹ The master plan connected a major thoroughfare route between Quarry Road and Connecticut Avenue and provided a junction to the potential Rock Creek National Park. The challenging nature of the site meant that several sections of Olmsted's proposed road were too narrow, steep and winding

for practical use, and had to be modified or altered for construction.²⁰² Fauber believes the objective of Olmsted's plan was similar to many of his other landscape interventions in that it used the main drive as an organizational feature of the layout. This allowed the public to traverse the zoo in their horse and carriages, which they could stop whenever they pleased to view the exhibits more closely. Several smaller roads and paths then branched off the main route, either looping back around to join it again or connecting to smaller side entrances, such as one at Adams Mill Road. Several of the paths catered to pedestrian movement rather than carriages, but originally the overall circulation of the National Zoo was less focused on the exploration of the zoo on foot than its predecessors.

The natural features of the landscape, rather than any chronological embodiment of taxonomic order or regional groupings also played a role dictating the layout of the zoo. The bears, for instance, were originally accommodated in an old quarry on the site, because it could easily be adapted into 'caves' and, according to Olmsted 'the result has been a place admirably adapted for the health and general welfare of the animals, as well as a most picturesque and striking feature'.²⁰³

Fauber believes it is most likely Olmsted was responsible for the placement of the majority of exhibits, 'for he had definite ideas as to how the exhibits should relate to each other and to the park as a whole'.²⁰⁴ This is a significant departure from the traditions of zoological typology in which scientific values dictated the layout of the zoo, rather than aesthetic values.



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Photographs from the Smithsonian Institution Archives of the early buildings of the zoo. Figure 82 (top): Emerson's Buffalo House in 1895. Figure 83 (middle): The construction of the Carnivora House in 1891. Figure 84 (bottom left): The Carnivora House completed. Figure 85 (bottom right): The temporary thatched roof shed for llamas was built during the same period.



Built form

Olmsted also played an influential role in the architectural language of the early buildings of the National Zoo by suggesting during a site visit in 1890 that they 'don't take up the matter of permanent arrangement of the animals just now. Make temporary arrangements for them at first, and then as final quarters are completed, transfer them.'²⁰⁵ This was most likely a practical response to the severe budget restrictions the project was facing. Olmsted also suggested 'the temporary arrangements should be obviously so, as the public will criticize any erections, unless they are unmistakably temporary as if they were intended to be permanent. Put up a house which would be useful afterwards, but would for the present, be the intermediate stage of operations.'²⁰⁶

The director of the Philadelphia Zoo, Arthur Brown, also took up this sentiment after he was consulted for his opinion and conducted a site visit with Langley, Goode and Baker in 1890. This period coincided with the construction of many of 'exotic style' buildings in the Berlin Zoo, as discussed previously, and Brown made the suggestion that the National Zoo could employ an architectural language of association as well. Meeting notes from his visit indicate that Brown 'thought that for distinctively North American animals, a distinctively North American building should be provided in the log cabin, which is at once strong, durable and cheap. Such houses might be put to use for buffalo, elk, etc.' The fact that Baker and Langley actively sought such advice demonstrates their lack of experience in the design of zoological parks and explains how the architectural language

of the National Zoo began to reference the trends of more typical zoological parks. The point of difference however, was in the fact that the buildings were fairly self-referential, reflecting the focus on American animals and nationalistic pursuits, rather than exotic, distant locations. The architectural language of the buildings was also shaped by the picturesque aesthetic of Olmsted and Langley, which also led Langley to seek the input of the prominent American architect William Ralph Emerson. Ewing suggests that Langley revered Emerson, who was well respected for his asymmetrical, open plan 'stick and shingle' style designs set in wooded, halcyon settings. Emerson combined relatively local materials such as timber shingles and rusticated stone to complement the atmosphere of the site and make the buildings seem almost part of the landscape.²⁰⁷ He had also captured the essence of the era's fascination with self-hood and nature in a series of lectures, published in 1889 with freehand, 'toothpick' sketches, the style of which Langley coveted for the buildings of the zoological park.²⁰⁸ Emerson's design for the Buffalo House was a large timber framed structure clad with bark covered logs, a 'kind of double-apsed basilica, complete with double transepts and clerestory windows'.²⁰⁹ The large-scale arches over the doorways added some grandeur to a design that was a hybrid between a log cabin and a barn, despite Langley's correspondence to Baker asserting that 'this building is rather a house than a shelter barn...'²¹⁰ This was no doubt because he considered houses to be more picturesque than rural buildings, demonstrated by his instruction to thin out particular trees to accent the view of the building from the road.²¹¹ The first permanent structure to be built in the National Zoo was the



Figure 86: Emerson's Buffalo Barn soon after its completion in 1891. The architectural intention of the rough-hewn log style was to associate the structure with the cabins of the American West, emphasising the fact that the inhabitants, buffalo and elk, were essentially North American animals.

Carnivora House, also designed by Emerson. It was to accommodate all of the animals until further structures could be erected. According to Ewing it was 'constructed out of massive irregular rough-hewn stone and featured a grand rounded-arch brick entrance.'²¹² The stone was locally sourced from the Rock Creek, the materials therefore helping to associate the solid mass of the structure as belonging to the site.

According to a Guide to Smithsonian Architecture, Emerson's 'picturesque buildings, made of rustic, local stone and wood, capitalized on the natural features Rock Creek Park and were meant to evoke ideas of the American wilderness.'²¹³ This demonstrates that the exterior of the building, and the associations it cultivated with ideas of nature and the American landscape, were more important features than the animal exhibitions housed in the interior. Each of cages in the interior of building were set out in a grid for an interchangeable series of animals with very little consideration given to the specific needs of each. The architectural focus of the early buildings of the National Zoo concentrated on the creation of a picturesque scene rather than the complexities of exhibiting wild animals in captivity.

While there were several other temporary shed-like structures built on the site, such as the Llama Shed and the Deer Shed, the funding restrictions put enormous pressure on the zoo and it was many years before more permanent buildings were able to be constructed.

Scale and Territory

The nature of the Smithsonian bequest and the subsequent funding arrangements with the District meant the Smithsonian National Zoo

was intrinsically beholden to Senate approval. These complex circumstances shaped the zoo as something of a contested site. The zoo directors were answerable to a broad spectrum of politicians and many differing opinions (whether well informed or not) that needed to be either accommodated or resisted. As discussed previously, this shaped the very purpose and character of the zoo, changing the intended format from a scientific, breeding sanctuary for American animals to a pleasure ground with a more typical exhibition of exotic animals. Though this change was at the direction of the Senate, their frugal funding arrangements made even this difficult, with most of the animal collection being amassed through an eclectic series of gifts rather than an organized plan of acquisition. Langley campaigned tirelessly however for the park to be considered more than just a traditional zoological garden and the strength of his vision of the zoo as an advocate of American wilderness preservation shaped the architectural typology of many of the buildings. Langley had doggedly pursued Emerson for designs for the zoo, despite the fact that he had proved somewhat unreliable and only produced sketches that had to be fleshed out by local architects, Hornblower and Marshall.

By the early 1900s Hornblower and Marshall had become involved in several Smithsonian projects and were thus commissioned to design a Small Mammal House for the zoo. It was to be the second permanent structure for the site, to be situated near the Carnivora House. According to Ewing their first proposal involved a scheme that dramatically abandoned the rustic vision of the early years of the park.²¹⁴ The decorative design featured a selection of different bricks laid in a series of



Figure 87: Alligators in the interior of Carnivora House, the first permanent building at the National Zoological Park. Completed in 1892, it was used to house the majority of zoo animals until funds could be obtained to support further building construction.

kaleidoscopic patterns, glazed green tiles for the roof and animal finials on top of the gables. The plans were forwarded to Olmsted who responded with criticism, stating, 'it is not desirable to make the buildings of the Zoological Park striking or bizarre. Picturesqueness is perhaps to be desired, but it should be picturesqueness of the unobtrusive and modest kind...I do not think it is necessary to go in for exotic forms and materials when very quiet, charming, picturesque effects can be made by a skillful use of the materials and forms which are well acclimated in Washington and fit comfortably into its landscapes.'²¹⁵ Hornblower and Marshall were required to revise their design, change the materials to the same stone as the Carnivora House and modify the features to be more rustic and picturesque in aesthetic than 'bizarre'. This architectural design process demonstrates the influence of Olmsted's arcadian vision of the park, and the overriding assertion that a particular picturesque language of American wilderness was to be desired. This endowed the territory of the National Zoo with a nationalistic character and placed it firmly into a cultural framework of national identity.

Conclusion

The architectural typology and language of the Smithsonian National Zoo was strongly influenced by several key players including the Secretary Samuel Langley, landscape architect Frederick Law Olmsted and to some extent architect William Ralph Emerson. Each had a particularly strong aesthetic leaning towards a picturesque vision of American wilderness. Langley's vision for the zoo had also been shaped by William T. Hornaday, who had

campaigning for an alternate format and purpose for the keeping of animals in captivity. He had envisaged a site which catered for the dual purposes of research and exhibition, with a strong focus on the preservation of American animals, particularly those becoming endangered. Despite Hornaday's eventual departure, Langley championed this vision and the fact that the National Zoo was forced into a more traditional format of zoological garden demonstrates that cultural understandings of the zoological garden as a public pleasure ground were ingrained and hard to reinvent. In spite of this, Langley navigated the demands of the Senate and funding restrictions to create a zoological typology previously unseen, in which a patriotic vision of the landscape and environment native to the zoo were celebrated and showcased as a symbol of cultural identity. The National Zoo was more focused on the manner in which the landscaping was exhibited than the animals. In fact, Langley and the first zoo director, Frank Baker, knew so little about the maintenance of wild animals in captivity that they were compelled to hire William H. Blackburne, who had twelve years experience as an animal handler with the Barnum and Bailey Circus. As one of the branches of the Smithsonian Institution, the National Zoo could not help but be associated with its cultural pursuits, many of which were designed to 'celebrate the nation's emerging economic and industrial strength.'²¹⁶ Despite being thwarted in regard to their scientific ambitions by funding constraints and limited thinking, the key players in the development of the National Zoo still managed to produce a zoological typology that conveyed a strong sense of place and an American ideal. They gave shape to the idea that a zoo was a national pursuit, symbolic of a country's cultural identity.

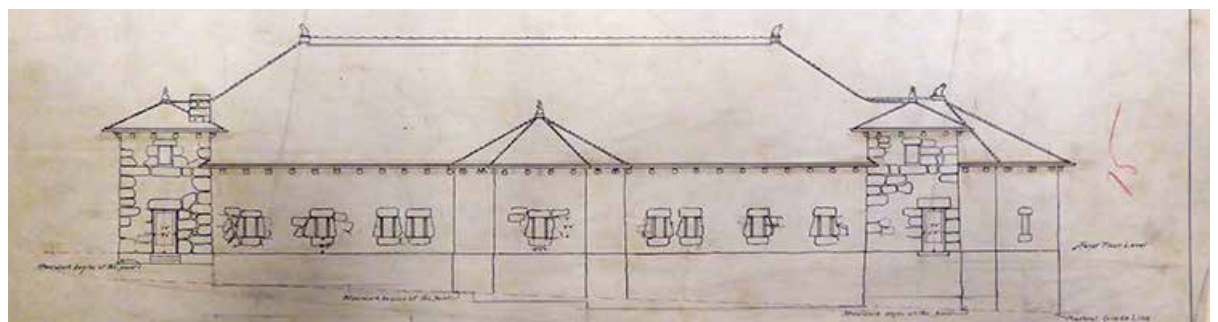
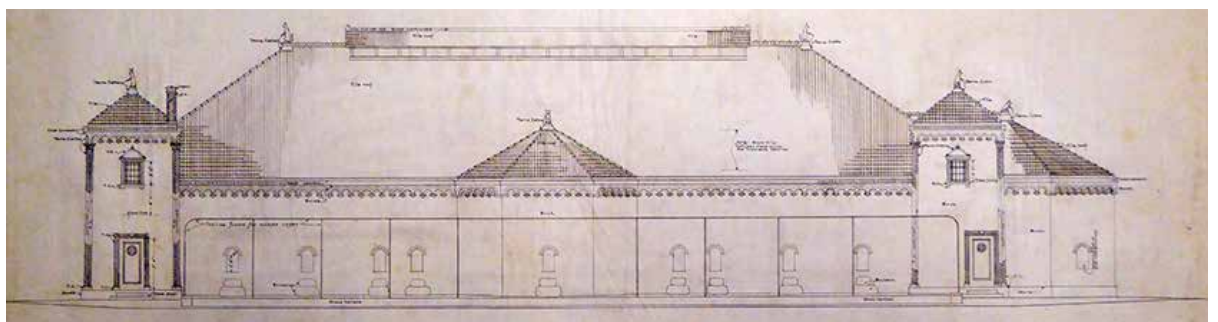
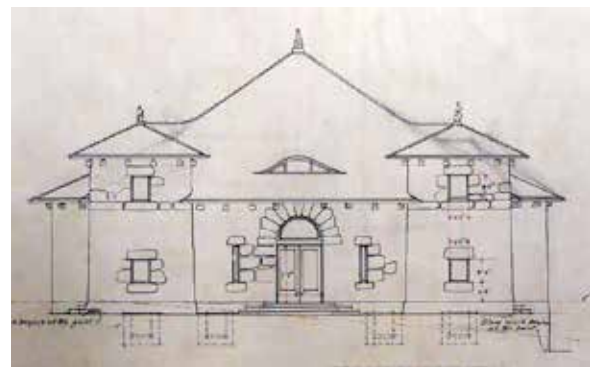
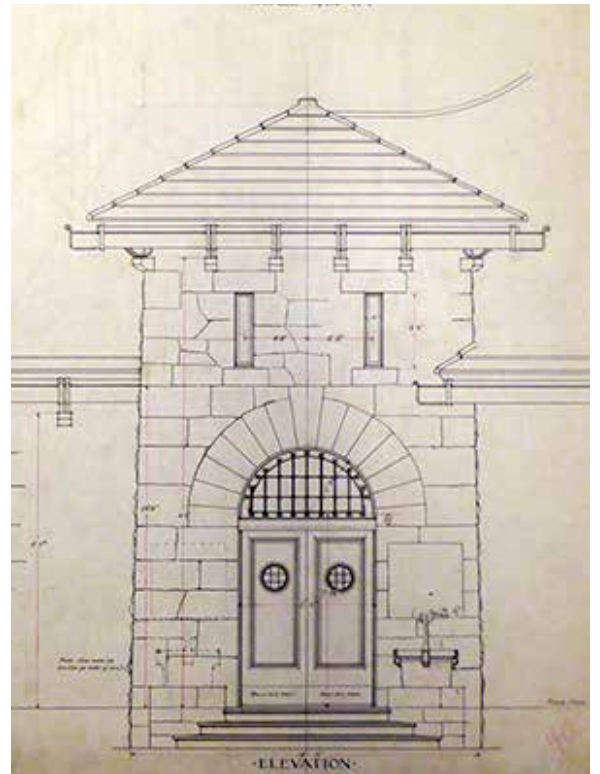
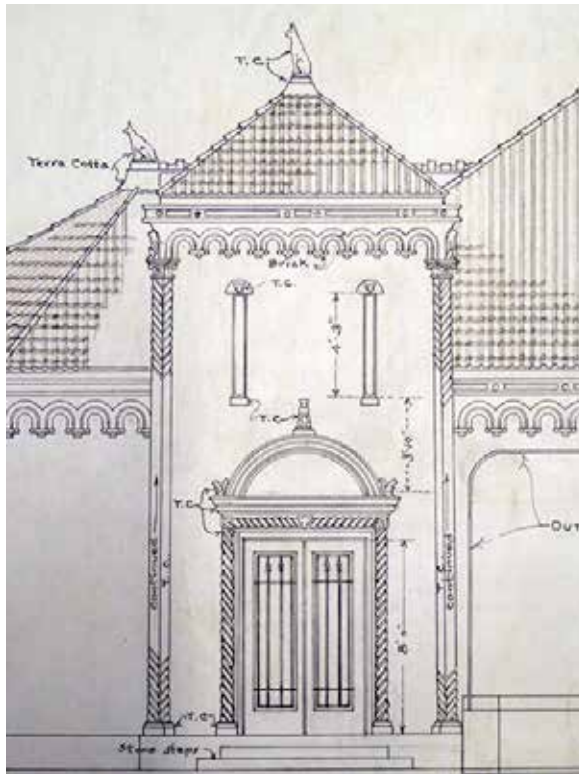


Figure 88: Hornblower and Marshall's two designs for the Small Mammal House from 1903 and 1904. The first design, shown on the left, was considered too bizarre and they were required to resubmit the design, shown on the right and in the bottom elevation, with more unobtrusive and picturesque features.



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The New York Zoological Park

Despite his departure from the National Zoo in 1890, William T. Hornaday proceeded to become a pivotal figure in reshaping the purpose of the zoological garden to include animal conservation as a key objective. Up to this point, the purpose of most zoological gardens had straddled the conflicting aims of research and public entertainment. While Hornaday's early involvement in the development of the National Zoo had played a key role in influencing the intentions of Langley and the Smithsonian endeavour, it was during his directorship of the New York Zoological Park in which these aims came to fruition. This period wasn't without conflict and there was much resistance to the changing perception of the zoo, but Hornaday's reign over the New York Zoological Park saw the evolution of the purpose of the zoological park transform into that which we understand today; a combination of education, research and animal conservation.

As discussed previously, Hornaday pioneered the idea of zoological conservation via the rescue of the American bison, which had been hunted almost to extinction. Prior to that, he had been a very successful international hunter, instrumental in procuring hundreds of specimens for the Natural History Department of the Smithsonian Institute. His expeditions were so prodigious, in fact, that the numbers of animals he killed became fodder for his opponents during his later years running the zoo, as they seemed so contradictory to his animal conservation pursuits. The fame he garnered from books he published detailing his hunting exploits, however, as well as the publicity gained via his campaigns to save American Bison led to him being recruited by the New York Zoological

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Society in 1896, after he had worked for a relatively dissatisfying number of years in real estate after leaving the National Zoo. The New York Zoological Society was campaigning to create a zoo within the surrounds of New York City and offered him the position of Director.

According to historian, Stephen Betchel, the project had been instigated by Theodore Roosevelt, who formed the Boone and Crockett Club in 1895, along with brothers Madison and DeForest Grant, in order 'to look into creating a New York Zoological Society and a splendid New York zoo.'²¹⁷ Hancocks suggests the Society 'wanted to create an entirely new concept and a bigger and better zoo than had ever been attempted before.'²¹⁸ They installed the esteemed paleontologist (and Roosevelt's childhood friend) Henry Fairfield Osborn as Chairman and set about recruiting the expertise and experience of Hornaday.

Key Developments

Context

Upon his acceptance of the position, the first tasks allocated to Hornaday included researching potential sites for the zoo and undertaking an overseas trip with his wife to inspect fifteen different European zoos. According to Hancocks he was advised to investigate the European 'methods of management...means of support, details and plans of buildings...special methods of caging and exhibition...photographs, plans, maps, architects details etc.'²¹⁹ This catalogue of zoological techniques and architectural styles was, somewhat unfortunately, then to become



Figure 89: A postcard of red deer exhibited in the 'natural setting' of their enclosure at the New York Zoological Park in the early 1900s.

something of a blueprint from which the layout and character of the New York Zoological Garden could be drawn, rendering the assertion that the New York Zoological Garden was to be a new type of zoo somewhat contradictory.

However, as a result of the field trip, Hornaday compiled a summary of, as he put it, 'the features that the European public absolutely requires in a zoological garden.' He entitled it *Absolute Requirements in an Ideal Zoological Garden* and listed the features in order of importance, which included:

1. A location as near as possible to the centre of population,
2. Ground that can be walked over without great exertion,
3. The right quantity and quality of shade, both for the visitors and for the animals,
4. A fine series of collections of quadrupeds, birds and reptiles, in a good state of health,
5. Buildings, enclosures and ponds that are thoroughly commodious and comfortable for the animals, and pleasing to the eye of the visitor,
6. Absolute cleanliness of collections and grounds,
7. A full and correct system of labeling,
8. An ample system of walks and provisions for public comfort,
9. A complete system of protection for the animals, and for the visitors.²²⁰

This list not only provides a guideline for the design of the New York Zoological Park but summarizes the character and architectural typology of the

majority of zoological gardens at the turn of the century. Many of these features are still present in cultural judgments about what constitutes a good zoo today. In their campaign for the establishment of the zoo, the Society also compiled a summary of *Reasons Why The Zoological Society's Offer Should Be Accepted* in order to assist with what Betchel refers to as the 'political wrangling and backstabbing' that was required to get the zoo proposal approved. The reasons ranged from the excellent standard of the carefully considered plan to the fact that offer was 'made by men of the highest character and standing.'²²¹ This reflects the aristocratic overtones of the Society, with one magazine exclaiming 'Not to be in the New York Zoological Society is not to be in society.'²²²

Site

Aiming for an ambitious 300 acres, the New York Zoological Society hoped to encompass a site far larger than any of their predecessors; the National Zoo stood at 166 acres and the Berlin Zoo at 63 acres, despite it having the largest animal collection. It was the intention of the Society to exhibit both native and foreign animals in 'free-range enclosures' in which the animals had space to roam and the natural features of the landscape were retained.²²³

The particular conditions of several potential sites that Hornaday assessed around New York City included accessibility, shade, surface contour, natural water supply, seclusion, natural building sites, evenness of temperature, possibilities for sewerage, absence of swamp influences and contiguity to freight railway.²²⁴ It was apparently on an afternoon ramble that he discovered the site



Figure 90 (left): Hornaday's Preliminary Plan for the New York Zoological Park completed in 1896, showing minimal consideration for circulation at this stage. Figure 91 (right): A site plan entitled a ' Map of New York Zoological Park As Far Completed', without the entrance from Pelham Avenue yet included.

in South Bronx Park. Betchel conveys Hornaday's profound reaction to the discovery, quoting him as saying the park 'was an unbroken wilderness, to the eye almost as wild and unkempt as the heart of the Adirondacks...[it induced a sense of] almost paralyzing astonishment and profound gratitude. It seemed incredible that such a virgin forest ...had been spared in the City of New York in 1890.'²²⁵ Historian Elizabeth Hansen, in her publication *Animals Attractions: Nature on Display in American Zoos*, suggests that Hornaday's placement of value in the site because one only needed to adapt the work of nature to make it ideal 'harkens back to the literary mode of the garden as a place of untouched splendor, bounteous, and full of potential that could be realized with the appropriate human intervention.'²²⁶

In his site analysis of the South Bronx Park Hornaday listed the area as covering 261 acres and described it as 'rolling uplands, divided by the Bronx River, and characterized by open meadows, open woods, and moderately dense woods, both of the finest character... For the purposes of a Zoological Park, I consider the forestry conditions of the South Bronx Park to be very nearly perfect.'²²⁷

In something of a tangent, Hornaday then offers within the site analysis an opinion on the figure ground relationships of zoological parks, stating, in his view 'we do not wish a Zoological Park in which all its large buildings will loom up conspicuously, like the buildings of an exposition, with a park as a mere adjunct; but it would seem as if every reasonable effort should be made to screen and conceal the buildings from distant view, and in every possible way preserve the aspect of natural wildness which

is conceded to be the highest attainment possible in the development of a park.'²²⁸ This highlights a shift in which the natural landscape of the site takes precedence over the architecture of the buildings; the more unbuilt the site appears to be, the more successful the architectural layout. This thinking is in keeping with the cultural fascination in America at the time with writers such as Thoreau, who portrayed the natural world as pure and unsullied by man, a necessary balm for the soul.

The committee of the New York Zoological Society agreed with Hornaday's assessment of the site and after overcoming objections from the public that they were attempting to sequester public land for the private use of the leisured classes, the city eventually allocated them 264 acres of the South Bronx Park for the creation of a zoological garden. Hornaday immediately set about drawing up a preliminary plan organizing the layout of the zoo.

It was around this stage that the Committee of the Society hired the architectural firm Heins and LaFarge. LaFarge had been a member of the Society's Board of Managers since its inception but, much to his regret, had to resign upon his appointment as Consulting Architect. There was some resistance from Hornaday as to the scope of planning work afforded to LaFarge, as will later be discussed, though LaFarge graciously omits to mention this in his later recollections of the development of the site, stating 'Mr Hornaday was, of course, invaluable in helping the architects to work out the details of the housing.'²²⁹ LaFarge's recollections convey the daunting nature of architectural project both in term of scale and ambition and he concedes that 'even with the large area at our disposal some of

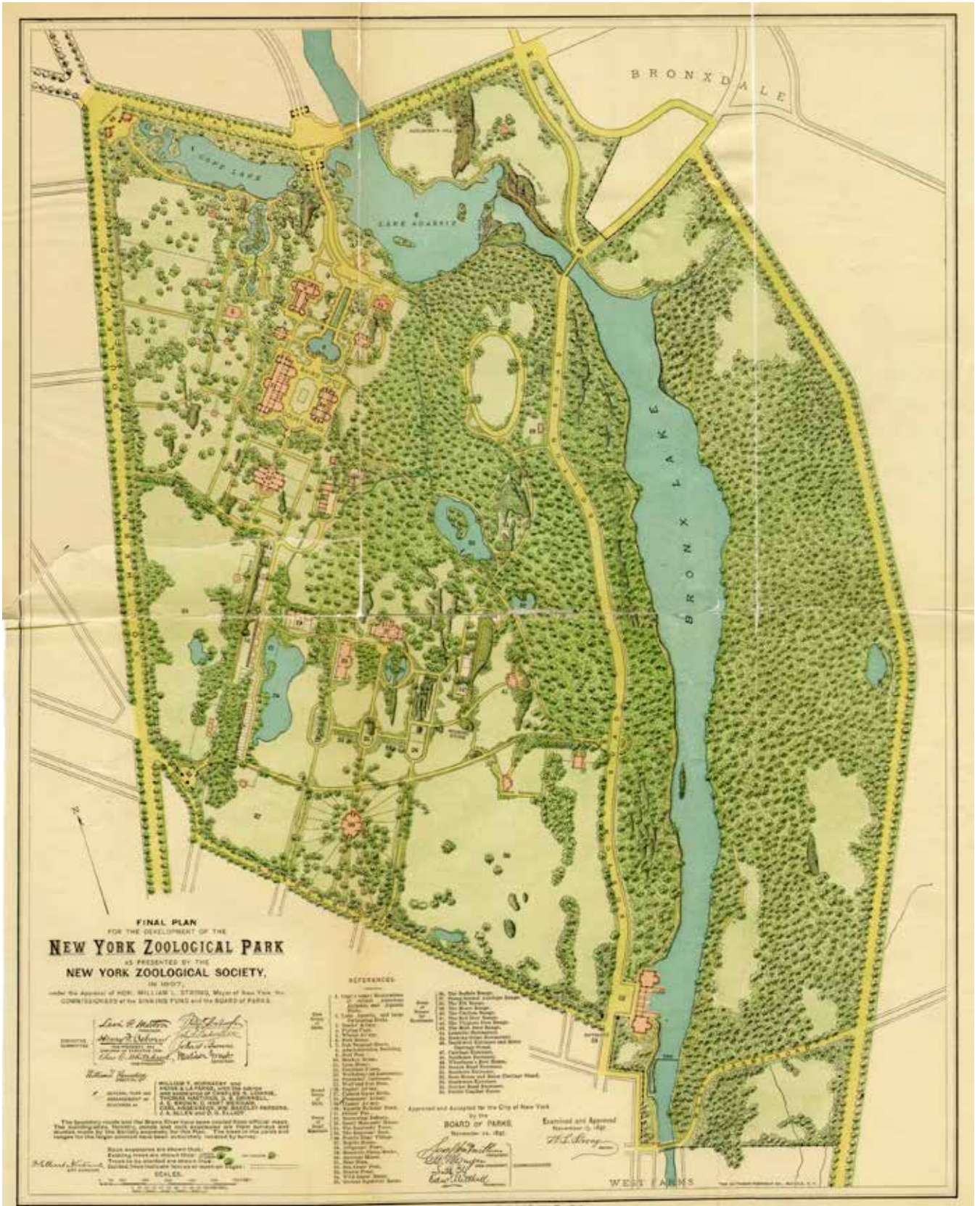


Figure 92: The final plan of the New York Zoological Park from 1897 completed by Heins and La Farge, showing the formal treatment of the entrance area to Baird Court from Pelham Avenue.



our original views about the exhibit of animals in a state approaching the state of nature had to be modified.²³⁰ This embodies the challenge faced by all zoological architecture, which has to balance the demands of animal exhibition, in which factors of space limitations and visibility are at play, and the creation of a culturally acceptable vision of animals in captivity in which they are shown in a 'state of nature.' LaFarge indicates that the modifications to the Society's exhibition intentions were required after they realized just how many buildings they would need and their scale.

This also created the challenge of designing the best figure-ground layout for the zoo. LaFarge indicates there were two schools of thought, stating that 'one saw what might be called a shy informal arrangement with the buildings placed with no particular relation to each other and isolated in different parts of the grounds. The other contemplated a formal arrangement of some of the buildings, various others being placed outside the formal group in whatever positions might be advantageous.'²³¹ The architectural firm was in favour of the latter, believing 'the entire project would be gain in dignity, impressiveness, and convenience by this formal treatment.'²³² The result of this thinking was the creation of Baird Court, a key organizational feature of the layout of the site.

Landscaping and Views

When Heins and LaFarge were hired, Hornaday sent several letters of objection to Osborn, pointing out that he had taken the position on the understanding he would prepare the plan for the development of the zoo. In relation to LaFarge, Hornaday claimed

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he 'could never endorse what are really some of his cardinal principles of development.'²³³ Whether Hornaday was objecting directly to LaFarge's formal arrangement for the zoo is unclear, though in light of the difference between Hornaday's preliminary 1896 plan and Heins and LaFarge's 1897 plan this seems most likely. The real point of contention in Hornaday's objections, however, was the scope Heins and LaFarge had been given in relation to the landscaping design. In correspondence with Osborn, Hornaday stated he 'disagreed with the Consulting Architect in his contention that in order for him to properly design the buildings, the landscape features of the whole park must be turned over to him.'²³⁴ It is apparent from this comment that LaFarge believed that the design of the landscaping was an intrinsic component of the architectural design of the zoo. From Hornaday's letters it can also be safely assumed that the phrase 'landscape features' refers to the layout of the site as a whole, encompassing matters of building placement, circulation, entrance points and the overall figure ground relationship of the zoo. It is little wonder Hornaday was reluctant to hand over the control of these elements and that he made the assertion to Osborn that his 'interest in the development of the "landscape features" of the zoological garden is fully as great as my interest in the development of its zoological features. To my mind, the two are absolutely inseparable from each other.'²³⁵

One of the reasons Hornaday had such a passionate response to the issue of landscaping came from his desire to exhibit the animals within a 'natural setting'. This also matched the early aims of the Society, who wished to 'place both native and foreign animals of

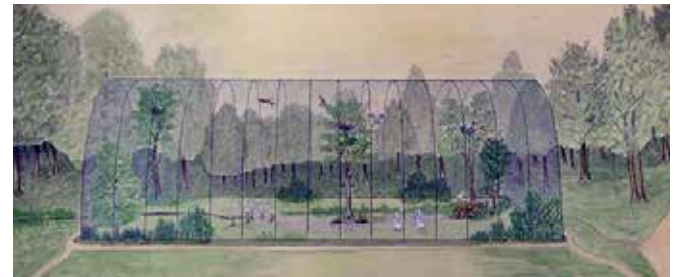


Figure 93 (top): Sketches most likely to be William Hornaday's, of suggested designs for various enclosures. Figure 94 (bottom): Hornaday's sketch for an aviary.

the tropical, temperate and colder regions as far as possible in natural surroundings. Thus the larger wild animals of North America...should be shown not in paddocks but in free-range enclosures, in which forests, rocks, and natural features of the landscape will give the people an impression of the life, habits and native surroundings of these different types.²³⁶

This vision of the animal within a majestic, natural scene came from the lineage of the diorama, as utilized by Natural History Museums, in which specimens were exhibited within a framed view of the American wilderness. It should be noted, however, that these were only sometimes true to the natural habitat of the animals.

Hansen believes it is important to clarify that the creation of a 'natural setting' was not an attempt to show the visitors the native habitats of particular animals, but, 'rather, a natural setting was one that approximated an aesthetic ideal, and that evoked a set of emotional responses that middle class Americans - through tourism, and popular painting and nature writing - could associate with encounters with nature...Natural settings in zoos were intended to confirm visitor expectations of a transcendent experience in the presence of natural wonders, to enhance local pride and to correct popular misconceptions about animals.'²³⁷ In many ways, Hornaday was championing 'natural settings' because he believed it would constitute a more pleasant experience for both the animal and the spectator, as well as reflecting an appropriate way to apprehend animals.

Built Form

LaFarge's recollections indicate that the Society soon realized that the provision of liberty in 'free range enclosures' for the larger and more ferocious animals of the collection was unmanageable and they would require more traditional structures in which they could be safely housed and exhibited. This brought up questions of appropriate design and style, and LaFarge explains that 'pretty much all the existing buildings in other zoos seemed to us to fall short in the matter of quality. They were either theatrical, or extremely dull. We wanted to get some look of dignity and yet avoid being too serious. In other words, we wanted style but at the same time some appearance of playfulness.'²³⁸ These conflicting requirements embody the contradictory purpose of zoological gardens; on one hand they were to function as cultural institutions worthy of international respect and, on the other, as sites of entertainment and recreation for the public.

LaFarge explains that their solution to this problem was to adopt a 'classic' architectural language but to treat it in a somewhat lighthearted manner. He states that in 'the exaggeration of certain architectural members, notably cornices, we found opportunity for what seemed to us appropriate and striking relief ornament of the particular zoological character typical of each building.'²³⁹ In other words, they designed buildings in the classic architectural language of cultural institutions such as libraries and museums, but decorated them with animal features in order to place them within the zoological context. LaFarge states that he believes 'they look like Zoological buildings', which may also be due to the fact that they strongly drew on



Figure 95: A series of postcards of the New York Zoological Park illustrate the formal style of the architecture and treatment of the landscaping. This was no doubt influenced by conventions set by overseas in zoological gardens and the emergence of a strong cultural expectation of zoological, architectural typology.

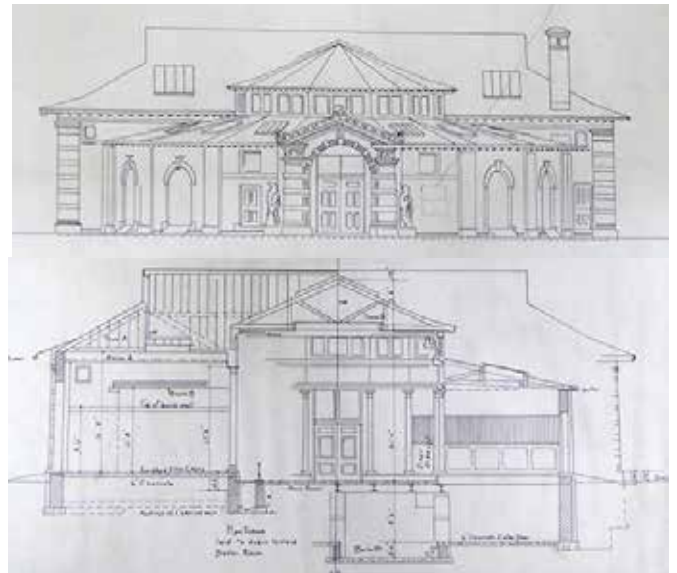


Figure 96: The design of the Antelope House in 1899 was very much in keeping with international conventions that had been set in regard to zoological architectural style by this stage.

international precedents. Hancocks suggests they 'made the usual error of copying other zoos...the architects modeled the lion and reptile houses after London's, the elephant house after Antwerp's and the antelope house after Frankfurt's.'²⁴⁰ The fact that the Lion House, Bird House, Monkey House and Elephant House were deemed too important to be 'secluded' and were eventually laid out in a symmetrical fashion to frame Baird Court demonstrates that the influence of the existing language of the typology of zoological gardens prevailed. This approach proved uncontroversial and culturally satisfactory to the public, and, though the layout of the zoo would have been significantly less formal under his direction, it is unlikely Hornaday's contribution to the architectural language of the zoo would have been particularly different. The archives of the Bronx Zoo, as it is now known, hold several early illustrations he made of suggested animal enclosures and unfortunately they do not indicate a particularly radical departure from existing models of zoological architecture.

Scale and Territory

Despite the somewhat staid architectural language of the original buildings of the New York Zoological Park, the overall layout and intention of the zoo marked a significant transition in the focus of zoological gardens, particularly with Hornaday at the helm for over thirty years. It embodied the transition from a war on wildlife to a war for wildlife. In their campaign for animal conservation, particularly in relation to native American animals, Hornaday and his colleagues introduced an educational aspect to the zoological garden that still continues today. Hornaday's understanding of

this transition is best demonstrated in his resistance to the popular nickname for the site of the "Bronx Zoo". In a letter to the City Editor of the Press, Hornaday requests the paper use the proper name of the zoo in any press, stating 'the Zoological Society is striving to build up an institution of national importance, and to accomplish this purpose its title should describe its character and rank. A "Zoo" is a zoological garden, of small area, where animals are kept in small pens, instead of in wide ranges full of trees, rocks and green grass.'²⁴¹ Hornaday found the word "zoo" unseemly, more applicable to that of a menagerie or circus, and it misrepresented his ambitions for the New York Zoological Park. He further stated in his letter that 'to a zoological park which represents high-water mark in the development of scientific vivaria, the nickname "Zoo" is necessarily odious...' Hornaday's efforts proved futile, however, and the popularity of the zoo and its nickname prevailed.

Hornaday's tireless campaigns to preserve the public image of the zoo as a dignified public institution also led him to resist what Hancocks refers to as the 'Hagenbeckization' of zoological exhibitions. Historians offer conflicting accounts of the nature of Hornaday's relationship with Carl Hagenbeck, though documentation in the archives of both the Bronx Zoo and the Smithsonian Institute indicates the two were friends who corresponded regularly. Zoo Historian Herman Richenbach even quotes Hornaday as stating in the Bulletin of the New York Zoological Society that 'the zoological garden directors of all Germany were industriously engaged in boycotting Mr Hagenbeck...because [he] had had the temerity to build at Hamburg a private zoological garden so spectacular and attractive that



Figure 97: Like the National Zoo, the New York Zoological Society placed a strong emphasis on exhibiting American animals within a natural setting, reminiscent of a rural American ideal. The above postcard depicts a herd of Buffalo, saved from extinction, within a picturesque scene.

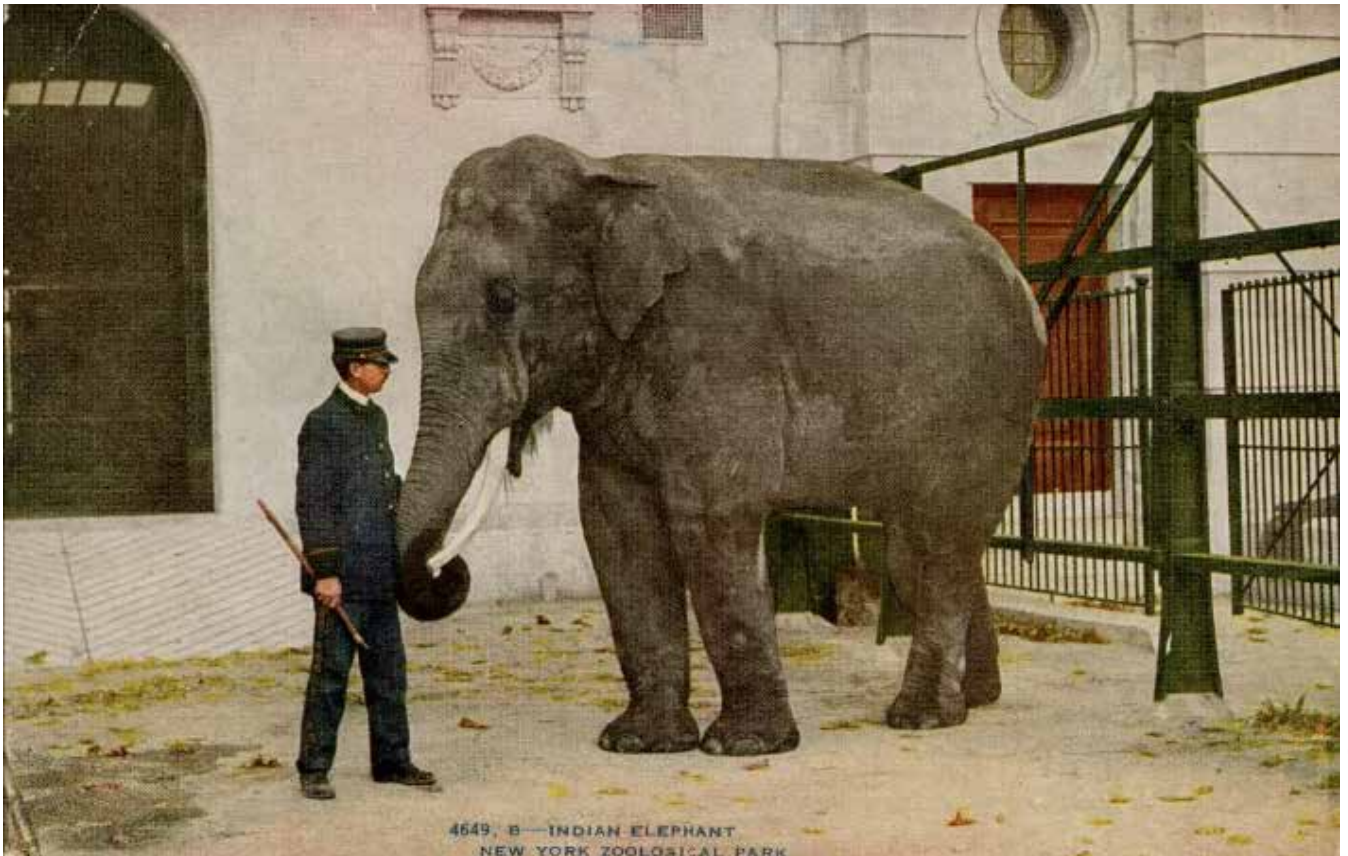
it made the old Hamburg Zoo look obsolete and uninteresting.²⁴² Yet, over time (and, importantly, after Hagenbeck's death and an increase in anti-German sentiment during the war) Hornaday began to campaign against Hagenbeck's style of bar-less enclosures, suggesting they distanced the viewers too far from the animals, hindering the study of the animals and the scientific development of the zoo as an educational institution.²⁴³

Conclusion

The development of the New York Zoological Park signaled a shift in the fundamental premise of animal exhibition, evolving to include wildlife conservation as one of the primary scientific purposes of the zoo. The overarching message of human dominance and control began to be replaced with a message of civilized stewardship and care. In light of this, however, it is important to note the distinction between animal conservation and animal welfare. While Hornaday's endeavours and the precedents set by the New York Zoological Park marked a cultural change in attitudes towards the exhibition of animals in captivity, it was not until the cause was championed many years later by Zoo Director Heini Hediger in his 1950 publication *Wild Animals in Captivity: An Outline of the Biology of Zoological Gardens*, that animal welfare objectives started to be considered. These concepts were still in their embryonic stages during the establishment of the New York Zoological Park, starting with the attempt to create natural settings in which to exhibit the animals. The concept of natural settings evolved from the exhibition techniques used in the dioramas of Natural History Museums, such as the Smithsonian Institute, in which the scene on

display was more likely to be a representation of a cultivated ideal than an accurate representation of the animal's ecological habitat. The nature on display usually embodied a genteel aesthetic of the American wilderness and, thus, often included animals native to the American landscape. As a result, the larger, more exotic beasts of the New York Zoological Park, such as elephants and lions continued to be exhibited in much more traditional cages and structures, as seen in figures 98 and 99.

The introduction of natural settings provided the distinction Hornaday desired for the New York Zoological Park from that of crude menageries or the cramped cells of 'zoos'. Though he was somewhat thwarted in his control over the overall design of the New York Zoological Park, Hornaday stayed director for the next thirty years and worked tirelessly to campaign for animal conservation and preservation, publishing influential works such as 'Our Vanishing Wildlife'. His influence on the development of the New York Zoological Park, along with that of his colleagues and the Society, heralded the introduction of animal conservation concerns and a focus on public education to zoological gardens, therefore altering the basic understanding of their purpose. This, in turn, ushered in a new era of scientific research, advancing the focus from that of zoology and taxonomy, to that of animal preservation and protection. This period cultivated the understanding that the natural world was not limitless and that man had a moral obligation and duty of care to the natural world, an understanding that still exists in the framework of zoological gardens today.



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Figure 98 (top): Many of the animal enclosures in the zoo, such as the two represented in the postcards above, still relied heavily on cages and artificial settings. Figure 99 (bottom): The bare walls of the Lion Enclosure at the New York Zoological Park in 1905 are typical of the design of interior spaces around this time, despite the advances being made in the quality of animal exhibition spaces.



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Conclusion

This study encompasses the architectural history of early zoological gardens, starting from the precedent set by the Royal Menagerie at Versailles, when the animal collection was showcased within the gardens of Versailles, amassed in the one place, rather than scattered about various royal estates.

The subsequent development of the Jardin des Plantes after the French revolution set the stage for the transition of the menagerie into the zoological garden. The picturesque manner in which the surviving animals were incorporated into the grounds of the scientific establishment, as well as the perceived purpose the collection, set the precedent from which the London Zoo was shaped. The collection of animals was seen as having civic value, belonging to both the people and the realm of science. The pursuit of zoology gained significant credibility via the placement of the animal collection within the context of a botanic garden and Natural History Museum. The Jardin des Plantes set the precedent for an architectural typology that included circulation along winding paths, upon which visitors were guided past a series of small structures constructed in a picturesque manner, all set within a landscaped garden constructed to create very specific views.

The animal collection at the Jardin des Plantes served as an influential catalyst in the subsequent creation of the first zoological garden in London. The manner in which animals of the Versailles collection were placed in the Jardin, both in terms of location and purpose, laid the foundations upon which future zoos were developed and gave shape to the cultural understanding that access to a live animal collection was a civic right.

The ensuing establishment of the Gardens of the London Zoological Society at Regent's Park in 1828 marks the creation of the first zoological garden. Though other menageries have been in existence since before the advent of the London Zoo, they were not established specifically with a scientific purpose in mind, nor did they introduce terminology or practices specifically relating to zoological studies until well after London Zoo had been established.

The architectural devices employed in Regent's Park embodied the evolutionary culmination of the menagerie into the zoological garden and accentuated a sense of jurisdiction over the natural world by the Society. The London Zoo was perceived to be a national, cultural institution after a sense of royal endorsement was given via the donation of the royal Tower Menagerie to the gardens in 1832.

The London Zoo consolidated the use of architectural features found in the Jardin des Plantes and, in doing so, established the basic architectural framework that became expected of zoological gardens. These include a sizable garden or landscaped site, in close proximity to the city that houses series of animal exhibitions located along an extensive pedestrian route or promenade. The implementation of the architectural language of cottage orne also gave the London Zoo an association with cultural understandings of the countryside as wholesome and edifying. The London Zoo therefore set the basic cultural perception of the zoological garden as a healthy, valuable recreation, morally sound enough to be suitable for all of the family.

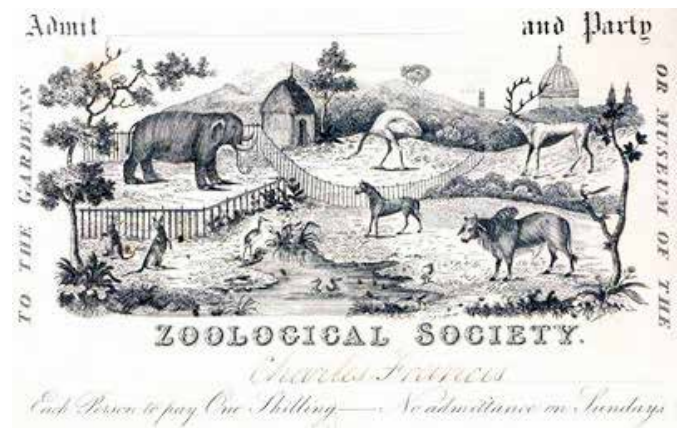


Figure 100: An early ticket to the Zoological Society of London's Gardens at Regent's Park.

The construction of architectural buildings in the exotic style at the Berlin Zoo during the mid to late 1800s marked the next significant progression in the development of the architectural language of zoological gardens. Though other zoological gardens, such as Antwerp, had previously constructed animal enclosures in the exotic style, the scale of introduction of the exotic style to the Berlin Zoo proved to have a profoundly more influential effect than its counterparts. The number and proportion of buildings constructed in the exotic style at the Berlin Zoo reflected the public's growing fascination with colonial expansion, particularly in Africa. The public acceptance and enjoyment of the exotic architecture also reflected the public understanding of the zoological garden as a national institution. The scope of exotic architecture, when combined with the scale of the collection, reflected a vision of Germany as unified, cultured and powerful with an impressive international reach. During the architectural evolution of the Berlin Zoo, the zoological garden became a cultural site possible of reflecting and solidifying national identity.

The creation of Hagenbeck's Tierpark was, in effect, the staging of the zoo. In its heyday, when the grounds were expanded to include exotic villages and theme shows, it essentially functioned as a cultural theme park that included zoological attractions. While this makes the definition of Hagenbeck's Tierpark as a zoological garden somewhat problematic, the impact that the architectural design of the enclosures had on the typology of zoological gardens cannot go unremarked. Born out of the traditions of the panorama, the enclosures of Hagenbeck's Tierpark functioned as a series of elaborate theatrical stages. The designs heralded the introduction of bar-less

platforms, upon which semi-geographical groupings of animals were displayed in the one scene. As a result, the architectural tradition of exhibiting animals in an arrangement of cages in taxonomic order became outdated. The treatment of the landscaping and views in Hagenbeck's Tierpark integrated the site with the animal collection in a manner previously unseen.

Hagenbeck's declaration that he formulated the design in order to 'present the animals in the most freedom' and to demonstrate, with a lasting example, 'that having animals reside in the outside air and become used to the climate presents a far better method for protecting their lives' embodied the public perception of the bar-less enclosures as being better for the animals. It gave a sense of credence to the argument that animals were better off in the zoo and their standard of living was improved, despite their imprisonment and loss of freedom. An architectural language that created an illusion of liberty, framed with the semblance of a natural scene, became a more culturally acceptable vision of animals in captivity.

Zoological gardens appeared later in America than they did in Europe due to the challenges faced by rural, pioneer settlements, uncertainty caused by a boom and bust economy and disruptions from a series of skirmishes and wars. Public desire to view collections of wild animals was sated by the existence of a colossal circus industry, which toured with vast numbers of exotic animals, which they not only paraded through the streets but also incorporated into the acrobatic shows. After a period of urbanization and industrialization, several zoos appeared in the larger cities of America, one

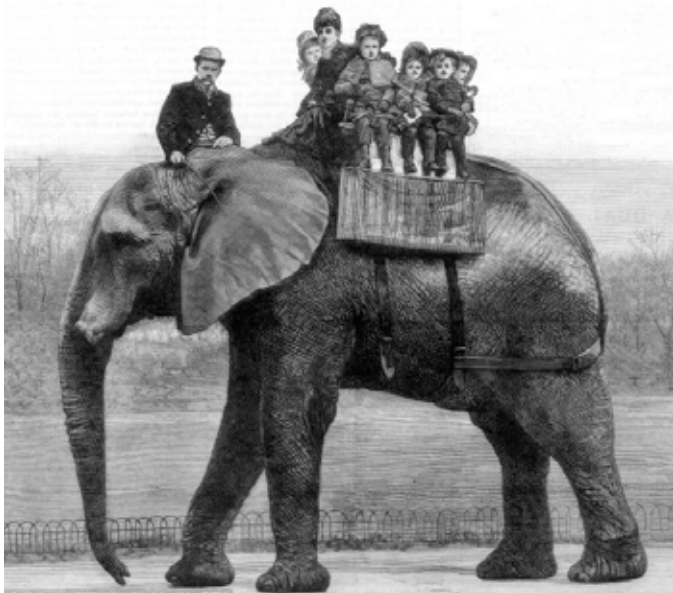


Figure 101: An image of people riding Jumbo at the London Zoological Park before he was controversially sold to circus entrepreneur PT Barnum.

of which was the Smithsonian National Zoological Park. Developed under the broader instruction of the bequest that Smithsonian endeavors should support the 'creation of an establishment for the increase and diffusion of knowledge', the National Zoo played a significant role in introducing animal conservation to the purpose of the zoological garden. This, in turn, altered the very reasons for keeping animals in captivity.

The challenges faced during the development of the National Zoo also highlight the features that had become ingrained in the cultural expectations of the zoo, namely, that the majority of the site and collection should be open to the public, that the collection should include a large quantity of exotic animals and that the zoological garden had a civic obligation to provide a certain level of public entertainment. The funding restrictions imposed on the development of the zoo reinforced the understanding that these requirements had to be satisfied before any additional ambitions relating to animal conservation could be addressed. Despite these obstacles the National Zoo introduced the idea that the wildlife and landscape native to the origin of the zoo should be celebrated, protected and preserved. The National Zoo showcased the American wilderness as a sylvan ideal, symbolic of a national ethos and character. The Smithsonian National Zoo as a patriotic endeavor was reflected in the architectural style of many of the early structures, such as the Buffalo House, which was reminiscent of a North American log cabin. The National Zoo furthered the precedent set by the Berlin Zoo, giving shape to the idea that a zoological garden was a nationalistic pursuit, symbolic of a country's national identity.

The ambitions of the National Zoo to create a haven of animal conservation, particularly in relation to American animals, were somewhat advanced during the creation of the New York Zoological Park (now more commonly known as the Bronx Zoo) via the involvement of William T. Hornaday. Hornaday, along with his colleagues in the New York Zoological Society, introduced the concept of 'natural settings' to the architectural language of the New York Zoo and actively engaged with shifting the purpose of the zoological garden to include public education, particularly in relation to animal preservation issues. Though the zoological garden had nominally attempted to shape the moral behavior of the public since the inception of the London Zoo, overt attempts at instructing the public on how to perceive the animal world were not introduced until Hornaday's reign at the New York Zoological Park.

By tracing the architectural development of the six key zoological gardens listed above and analyzing the treatment of features such as site, pedestrian routes, views, landscaping, territory, scale, materials and built form, this study identifies the architectural lineage of zoological typology and demonstrates the ways in which it has shaped the cultural expectations that exist in relation to the zoo today. These cultural expectations include the understanding that a zoo will be a large, well-landscaped area, with extensive pedestrian movement that traverses a site filled with a range of healthy exotic animals, all showcased in a theatrical construction of the natural environment. There is also an unspoken perception that the best animal enclosures provide the illusion of liberty and reference the geographical heritage and



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habitat of the animal in some way. The architectural typology has evolved in a way that reinforces the cultural understanding that the zoological garden will provide healthy, family recreation that is both entertaining and educational. The architecture of the zoological garden is designed to provide a culturally acceptable vision of animals in captivity to the public. An analysis of this architectural custom is desirable as the zoological garden is a contested site, at the forefront of important issues such as animal welfare and animal conservation. There are many avenues for an architectural contribution to be made to the debate surrounding the future direction of zoological gardens and it is the intention of this study to provide the historical groundwork from which those contributions can be made.



Figure 102: In the early 1900s popular postcards from the New York Zoological Park often depicted people interacting with the animals in ways no longer deemed appropriate or respectful, such as riding the animals, dressing chimpanzees in human outfits or staging chimpanzees having 'civilised' tea parties.



9

References: Endnotes

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1 See Carla Yanni, *Nature's Museums, Victorian Science and the Architecture of Display*, (New York, Princeton Architectural Press, 2005),

2 Eric Baratay and Elisabeth Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, (London, reaction Books, 2002), 48.

3 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 48.

4 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 48.

5 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 51.

6 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 48.

7 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 48.

8 Ross Honeywill, *Lamarck's Evolution: Two Centuries of Genius and Jealousy*, (Sydney, Murdoch Books, 2008), 23.

9 Yanni, *Nature's Museums*, 34.

10 See EC Spary's *Utopia's Garden: French Natural History from Old Regime to Revolution*, (Chicago, University of Chicago Press, 2000).

11 Historians differ in the year this exchange occurred, with several citing the year as 1789. However, the most detailed account of the period, from French historians Baratay and Hardouin-Fugier, states it happened in 1792, thus providing impetus for the menagerie to be relocated to the Jardin des Plantes. See Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 74.

12 Bob Mullan and Garry Marvin, *Zoo Culture* (Chicago, University of Illinois Press, 1987), 47.

13 It should be noted that prior to this some live animals had been studied at the Jardin, particularly for agricultural purposes, but they had typically been kept on Buffon's personal estate at Montbard. See Michael A. Osborne, "Zoos in the Family" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 35.

14 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 74.

15 Vicki Croke, *The Modern Ark: The Story of Zoos*, (New York, Scribner, 1997), 139.

16 Emily Hahn, *Animals Gardens or Zoos around the World*, (New York, Begos and Rosenberg, 1967), 57.

17 Harro Strehlow, "Zoological Gardens of Western Europe" in *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*, Vernon N. Kisling Jr ed. (New York, CRC Press, 2000), 89.

18 Spary, *Utopia's Garden*, 221.

19 Spary, *Utopia's Garden*, 22.

20 Michel Baridon, "The Garden of the Perfectibilists" in *Tradition and Innovation in French Garden Art: Chapters*

of a New History, eds Hunt, John Dixon and Conan, Michel, (Philadelphia, University of Pennsylvania Press, 2002), 121.

21 Spary, *Utopia's Garden*, 49.

22 Spary, *Utopia's Garden*, 50.

23 Michel Conan, "The Coming of Age of the Bourgeois Garden" in *Tradition and Innovation in French Garden Art: Chapters of a New History*, eds Hunt, John Dixon and Conan, Michel, (Philadelphia, University of Pennsylvania Press, 2002), 166.

24 Conan, *Tradition and Innovation in French Garden Art*, 168.

25 Conan, *Tradition and Innovation in French Garden Art*, 168.

26 Conan, *Tradition and Innovation in French Garden Art*, 166.

27 Conan, *Tradition and Innovation in French Garden Art*, 163.

28 Conan, *Tradition and Innovation in French Garden Art*, 163.

29 Conan, *Tradition and Innovation in French Garden Art*, 168.

30 Conan, *Tradition and Innovation in French Garden Art*, 171.

31 Conan, *Tradition and Innovation in French Garden Art*, 173.

32 Spary, *Utopia's Garden*, 246.

33 Richard Cleary, "Making Breathing Room: Public Gardens and City Planning in Eighteenth Century France" in *Tradition and Innovation in French Garden Art: Chapters of a New History*, eds Hunt, John Dixon and Conan, Michel, (Philadelphia, University of Pennsylvania Press, 2002), 69.

34 Conan, *Tradition and Innovation in French Garden Art*, 176.

35 Conan, *Tradition and Innovation in French Garden Art*, 176.

36 Spary, *Utopia's Garden*, 53.

37 Spary, *Utopia's Garden*, 54.

38 Hahn, *Animals Gardens*, 56.

39 Conan, *Tradition and Innovation in French Garden Art*, 161.

40 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 78.

41 Spary, *Utopia's Garden*, 229.

42 Spary, *Utopia's Garden*, 229.

43 John Dixon Hunt, Introduction to *Tradition and Innovation in French Garden Art: Chapters of a New History*, eds Hunt, John Dixon and Conan, Michel, (Philadelphia, University of Pennsylvania Press, 2002)

44 Spary, *Utopia's Garden*, 230.

45 David Hancocks, *A Different Nature: The Paradoxical World of Zoos and Their Uncertain Future*, (Berkeley: University of California Press, 2001), 35.

46 Michael A. Osborne, "Zoos in the Family: The Geoffroy Saint-Hilaire Clan and the Three Zoos of Paris" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 36.

47 Harriet Ritvo, "The Order of Nature: Constructing the Collections of Victorian Zoos" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 43.

48 Hancocks, *A Different Nature*, 42.

49 Harriet Ritvo, *The Animal Estate: The English and Other*

- Creatures in the Victorian Age* (Cambridge, Harvard University Press, 1987), 210.
- 50 Ritvo, *The Animal Estate*, 212.
- 51 Ritvo, *The Animal Estate*, 209.
- 52 Ritvo, *The Animal Estate*, 209.
- 53 Ritvo, *The Animal Estate*, 206.
- 54 Ritvo, *The Animal Estate*, 214.
- 55 Peter Bailey, *Leisure and Recreation in Victorian England: Rational Recreation and the Contest for Control 1830 - 1885*, (London: Methuen & Co, 1987), 2.
- 56 H.L. Malchow, "Public Gardens and Social Action in Late Victorian London", *Victorian Studies*, Vol. 29, No. 1, (Autumn, 1985), 99.
- 57 Hancocks, *A Different Nature*, 47.
- 58 Hancocks, *A Different Nature*, 47.
- 59 Ritvo, *New Worlds, New Animals*, 46.
- 60 Hancocks, *A Different Nature*, 38.
- 61 Hancocks, *A Different Nature*, 39.
- 62 "Zoological Gardens, Regent's Park", *The Mirror of Literature, Amusement and Instruction*, February 25, 1832, Library and Archives of the Zoological Society of London.
- 63 "A Picturesque Guide to the Regent's Park", *The Mirror of Literature, Amusement and Instruction*, September 6, 1828, Library and Archives of the Zoological Society of London.
- 64 Hancocks, *A Different Nature*, 43.
- 65 Ritvo, *New Worlds, New Animals*, 45.
- 66 Ritvo, *New Worlds, New Animals*, 46.
- 67 "Zoological Gardens, Regent's Park", *The Mirror of Literature, Amusement and Instruction*, February 25, 1832, Library and Archives of the Zoological Society of London.
- 68 Hancocks, *A Different Nature*, 45.
- 69 Ritvo, *New Worlds, New Animals*, 46.
- 70 Thomas Veltre, "Menageries, Metaphors, and Meanings" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 26
- 71 "A Looking Glass for London - No. XXVIII - Amusements and Exhibitions", *The Penny Magazine*, December 16, 1837, Library and Archives of the Zoological Society of London.
- 72 "A Picturesque Guide to the Regent's Park", *The Mirror of Literature, Amusement and Instruction*, September 6, 1828, Library and Archives of the Zoological Society of London.
- 73 "Zoological Gardens, Regent's Park", *The Mirror of Literature, Amusement and Instruction*, February 25, 1832, Library and Archives of the Zoological Society of London.
- 74 *The Quarterly Review* as cited in "A Looking Glass for London - No. XXVIII - Amusements and Exhibitions", *The Penny Magazine*, December 16, 1837, Library and Archives of the Zoological Society of London.
- 75 Hancocks, *A Different Nature*, 44.
- 76 "A Picturesque Guide to the Regent's Park", *The Mirror of Literature, Amusement and Instruction*, September 6, 1828, Library and Archives of the Zoological Society of London.
- 77 Hancocks, *A Different Nature*, 43.
- 78 Hancocks, *A Different Nature*, 44.
- 79 "Cottage Orne: Philosophy", The Regency Redingote: Historical Snippets of Regency England website, <https://regencyredingote.wordpress.com/category/architecture/>. Accessed April 22, 2015.
- 80 J.B Pabworth, *Rural Residences consisting of a Series of Designs for Cottages, Decorated Cottages, Small Villas and Other Ornamental Buildings*, (London, R. Ackerman, 1832), 12.
- 81 Pabworth, *Rural Residences*, 12.
- 82 "Cottage Orne: Philosophy", The Regency Redingote: Historical Snippets of Regency England website, <https://regencyredingote.wordpress.com/category/architecture/>. Accessed April 22, 2015.
- 83 "A Picturesque Guide to the Regent's Park", *The Mirror of Literature, Amusement and Instruction*, September 6, 1828, Library and Archives of the Zoological Society of London.
- 84 See Plate 25 in Pabworth, *Rural Residences*, 100.
- 85 Hancocks, *A Different Nature*, 50.
- 86 Hancocks, *A Different Nature*, 50.
- 87 Hancocks, *A Different Nature*, 48.
- 88 Ritvo, *The Animal Estate*, 207.
- 89 "A Picturesque Guide to the Regent's Park", *The Mirror of Literature, Amusement and Instruction*, September 6, 1828, Library and Archives of the Zoological Society of London.
- 90 Ritvo, *New Worlds, New Animals*, 46.
- 91 Ritvo, *New Worlds, New Animals*, 50.
- 92 Ritvo, *The Animal Estate*, 212.
- 93 Ritvo, *The Animal Estate*, 211.
- 94 Hancocks, *A Different Nature*, 47.
- 95 Harro Strehlow, "Zoological Gardens of Western Europe" in *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*, Vernon N. Kislung Jr ed., (New York, CRC Press, 2000), 91.
- 96 Strehlow, *Zoo and Aquarium History*, 91.
- 97 Strehlow, *Zoo and Aquarium History*, 93.
- 98 Strehlow, *Zoo and Aquarium History*, 93.
- 99 Strehlow, *Zoo and Aquarium History*, 93.
- 100 Colin Rawlins, "West Berlin" in *Great Zoos of the World; Their Origins and Significance*, (London, Weidenfeld & Nicolson, 1980), Lord Zuckerman ed., 52.
- 101 Strehlow, *Zoo and Aquarium History*, 94.
- 102 Strehlow, *Zoo and Aquarium History*, 94.
- 103 Hancocks, *A Different Nature*, 58.
- 104 Strehlow, *Zoo and Aquarium History*, 94.
- 105 Strehlow, *Zoo and Aquarium History*, 95.
- 106 Strehlow, *Zoo and Aquarium History*, 95.
- 107 Rawlins, *Great Zoos of the World*, 55.
- 108 Hancocks, *A Different Nature*, 58.
- 109 Rawlins, *Great Zoos of the World*, 52.
- 110 Strehlow, *Zoo and Aquarium History*, 94.
- 111 Rawlins, *Great Zoos of the World*, 53.
- 112 Rawlins, *Great Zoos of the World*, 53.
- 113 Rawlins, *Great Zoos of the World*, 53.
- 114 Rawlins, *Great Zoos of the World*, 53.
- 115 Rawlins, *Great Zoos of the World*, 53.
- 116 Hancocks, *A Different Nature*, 57.
- 117 Strehlow, *Zoo and Aquarium History*, 94.
- 118 Strehlow, *Zoo and Aquarium History*, 95.
- 119 Heinz Georg and Ursula Klos, *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*, (Berlin, Zoologischer Garten Berlin, 1990), 57.
- 120 Hancocks, *A Different Nature*, 58.
- 121 Rawlins, *Great Zoos of the World*, 54.
- 122 Georg and Klos, *Der Berliner Zoo*, 57.
- 123 Georg and Klos, *Der Berliner Zoo*, 57.
- 124 Hancocks, *A Different Nature*, 58.
- 125 Hancocks, *A Different Nature*, 59.
- 126 Felicity Rash, *German Images of the Self and the Other: Nationalist, Colonialist and Anti-Semitic Discourse 1871-1918*, (Hampshire, Palgrave MacMillan, 2012), 38.
- 127 Rash, *German Images of the Self and the Other*, 130.
- 128 Rash, *German Images of the Self and the Other*, 135.
- 129 Nigel Rothfels, *Savages and Beasts: The Birth of the Modern Zoo*, (Baltimore, Johns Hopkins University Press, 2002), 32.
- 130 Rothfels, *Savages and Beasts*, 32.
- 131 Linda Granfield, "Something Wicked This Way Comes", *The Circus: 1870s-1950s*, Noel Daniel, ed., (Koln: Taschen, 2010), 25.
- 132 Ernest Albrecht, *From Barnum & Bailey to Feld: The Creative Evolution of The Greatest Show on Earth*, (Jefferson, McFarland & Company Inc, 2014), 26.
- 133 Albrecht, *From Barnum & Bailey to Feld*, 51.
- 134 Rothfels, *Savages and Beasts*, 35.
- 135 Rothfels, *Savages and Beasts*, 201.
- 136 Rothfels, *Savages and Beasts*, 58.
- 137 Rothfels, *Savages and Beasts*, 82.
- 138 Rothfels, *Savages and Beasts*, 84.
- 139 Rothfels, *Savages and Beasts*, 130.
- 140 Rothfels, *Savages and Beasts*, 88.
- 141 Rothfels, *Savages and Beasts*, 162.
- 142 Rothfels, *Savages and Beasts*, 148.
- 143 Rothfels, *Savages and Beasts*, 161.
- 144 Rothfels, *Savages and Beasts*, 136.
- 145 Eric Ames, *Carl Hagenbeck's Empire of Entertainments*, (Seattle, University of Washington Press, 2008), 162.
- 146 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 237.
- 147 Ames, *Carl Hagenbeck's Empire of Entertainments*, 163.
- 148 Ames, *Carl Hagenbeck's Empire of Entertainments*, 164.
- 149 Ames, *Carl Hagenbeck's Empire of Entertainments*, 191.
- 150 Ames, *Carl Hagenbeck's Empire of Entertainments*, 192.
- 151 Ames, *Carl Hagenbeck's Empire of Entertainments*, 192.
- 152 Herman Reichenbach, "A Tale of Two Zoos" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 61.
- 153 Ames, *Carl Hagenbeck's Empire of Entertainments*, 169.
- 154 Ames, *Carl Hagenbeck's Empire of Entertainments*, 276.
- 155 Ames, *Carl Hagenbeck's Empire of Entertainments*, 165.
- 156 Ames, *Carl Hagenbeck's Empire of Entertainments*, 165.
- 157 Ames, *Carl Hagenbeck's Empire of Entertainments*, 165.
- 158 Ames, *Carl Hagenbeck's Empire of Entertainments*, 165.
- 159 Rothfels, *Savages and Beasts*, 39.
- 160 Rothfels, *Savages and Beasts*, 68.
- 161 Rothfels, *Savages and Beasts*, 53.

- 162 Rothfels, *Savages and Beasts*, 137.
 163 Rothfels, *Savages and Beasts*, 126.
 164 Rothfels, *Savages and Beasts*, 140.
 165 Rothfels, *Savages and Beasts*, 131.
 166 Rothfels, *Savages and Beasts*, 42.
 167 Rothfels, *Savages and Beasts*, 88.
 168 Rothfels, *Savages and Beasts*, 42.
 169 Rothfels, *Savages and Beasts*, 199.
 170 Baratay and Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*, 242.
 171 Ames, *Carl Hagenbeck's Empire of Entertainments*, 142.
 172 Hancocks, *A Different Nature*, 67.
 173 Rothfels, *Savages and Beasts*, 164.
 174 Vernon N. Kisling Jr., "The Origin and Development of American Zoological Parks to 1899" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 112.
 175 Kisling Jr., *New Worlds, New Animals*, 110.
 176 Richard W. Flint, "American Showmen and European Dealers: Commerce in Wild Animals in Nineteenth Century America" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 98.
 177 Kisling Jr., *New Worlds, New Animals*, 113.
 178 Helen Lefkowitz Horowitz, "The National Zoological Park; 'City of Refuge' or Zoo?" in *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*, eds. Hoage, R.J. and Deiss, William A., (Baltimore: The John Hopkins University Press, 1996), 127.
 179 Kisling Jr., *New Worlds, New Animals*, 119.
 180 Kisling Jr., *New Worlds, New Animals*, 122.
 181 Hancocks, *A Different Nature*, 88.
 182 Kisling Jr., *New Worlds, New Animals*, 120.
 183 Heather Ewing and Amy Ballard, *A Guide to Smithsonian Architecture*, (Washington, Smithsonian Books, 2009), 14.
 184 Kisling Jr., *New Worlds, New Animals*, 115 and 120.
 185 Hancocks, *A Different Nature*, 91.
 186 Bechtel, *Mr. Hornaday's War*, 128.
 187 Sybil Hamlet, "Zoo Chronological record - Major Events", circa 1965, Smithsonian Institution Archives, Record Unit 365, Series 8, Box 34, Folder 7.
 188 Bechtel, *Mr. Hornaday's War*, 131.
 189 Bechtel, *Mr. Hornaday's War*, 146.
 190 Bechtel, *Mr. Hornaday's War*, 137.
 191 Samuel Pierpont Langley to George Brown Goode, May 7, 1890, Smithsonian Institution Archives, Record Unit 34, vol. 5.1, 9-12.
 192 Ewing, *New Worlds, New Animals*, 151.
 193 Samuel Pierpont Langley cited in Hancocks, *A Different Nature*, 93.
 194 Horowitz, *New Worlds, New Animals*, 131.
 195 Samuel Pierpont Langley to Frank Baker, October 31, 1890, Smithsonian Institution Archives, Record Unit 34, vol. 5.1, 144-150, Reel 85.
 196 Samuel Pierpont Langley to Frank Baker, October 31, 1890, Smithsonian Institution Archives, Record Unit 34, vol. 5.1, 144-150, Reel 85.
 197 Horowitz, *New Worlds, New Animals*, 131.
 198 Horowitz, *New Worlds, New Animals*, 132.
 199 Ewing, *New Worlds, New Animals*, 154.
 200 Samuel Langley cited in Ewing, *New Worlds, New Animals*, 154.
 201 Suzanne Fauber, "The Evolution of the National Zoological Park" circa 1974, Smithsonian Institution Archives, Record Unit 365, Series 8, Box 34, Folder 14.
 202 Suzanne Fauber, "The Evolution of the National Zoological Park" circa 1974, Smithsonian Institution Archives, Record Unit 365, Series 8, Box 34, Folder 14.
 203 Olmsted cited in Suzanne Fauber, "The Evolution of the National Zoological Park" circa 1974, Smithsonian Institution Archives, Record Unit 365, Series 8, Box 34, Folder 14.
 204 Suzanne Fauber, "The Evolution of the National Zoological Park" circa 1974, Smithsonian Institution Archives, Record Unit 365, Series 8, Box 34, Folder 14.
 205 Memorandum of Conversation (in attendance Langley, Olmsted, Hornaday, Major Powell, Goode, Baker), May 23, 1890, Smithsonian Institution Archives, Record Unit 74, Box 289.
 206 Memorandum of Conversation (in attendance Langley, Olmsted, Hornaday, Major Powell, Goode, Baker), May 23, 1890, Smithsonian Institution Archives, Record Unit 74, Box 289.
 207 Ewing, *New Worlds, New Animals*, 155.
 208 Ewing, *New Worlds, New Animals*, 155.
 209 Ewing, *New Worlds, New Animals*, 156.
 210 Samuel Pierpont Langley to Frank Baker, October 31, 1890, Smithsonian Institution Archives, Record Unit 34, vol. 5.1, 144-150, Reel 85.
 211 Samuel Pierpont Langley to Frank Baker, October 31, 1890, Smithsonian Institution Archives, Record Unit 34, vol. 5.1, 144-150, Reel 85.
 212 Ewing, *New Worlds, New Animals*, 156.
 213 Ewing and Ballard, *A Guide to Smithsonian Architecture*, 48.
 214 Ewing, *New Worlds, New Animals*, 160.
 215 Frederick Law Olmsted Jr. to Samuel Pierpont Langley, April 9, 1903, Smithsonian Institution Archives, Record Unit 74, Box 126.
 216 Ewing and Ballard, *A Guide to Smithsonian Architecture*, 17.
 217 Bechtel, *Mr. Hornaday's War*, 131.
 218 Hancocks, *A Different Nature*, 97.
 219 Hancocks, *A Different Nature*, 98.
 220 William T. Hornaday to the New York Zoological Society, "Report Upon a Tour of Inspection of the Zoological Gardens of Europe", January 5, 1899, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 221 William T. Hornaday, "Reasons Why the Zoological Society's Offer Should Be Accepted", circa 1899, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 222 Bechtel, *Mr. Hornaday's War*, 152.
 223 Hancocks, *A Different Nature*, 98.
 224 William T. Hornaday to the New York Zoological Society, "Report on Site Available for a Zoological Park", April 29, 1896, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 225 Bechtel, *Mr. Hornaday's War*, 154.
 226 Elizabeth Hanson, *Animal Attractions: Nature on Display in American Zoos*, (New Jersey: Princeton University Press, 2002), 26.
 227 William T. Hornaday to the New York Zoological Society, "Report on Site Available for a Zoological Park", April 29, 1896, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 228 William T. Hornaday to the New York Zoological Society, "Report on Site Available for a Zoological Park", April 29, 1896, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 229 C. Grant LaFarge's notes recalling the establishment of the New York Zoological Park, May 25, 1927, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 230 C. Grant LaFarge's notes recalling the establishment of the New York Zoological Park, May 25, 1927, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 231 C. Grant LaFarge's notes recalling the establishment of the New York Zoological Park, May 25, 1927, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 232 C. Grant LaFarge's notes recalling the establishment of the New York Zoological Park, May 25, 1927, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 233 William T. Hornaday to Professor Osborne, April 26, 1897, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 234 William T. Hornaday to Professor Osborne, April 26, 1897, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 235 William T. Hornaday to Professor Osborne, April 26, 1897, Wildlife Conservation Society Archives, Record Unit 5, Box 6.
 236 New York Zoological Society Member, William Bridges, quoted in Hancocks, *A Different Nature*, 98.
 237 Hansen, *Animal Attractions*, 131.
 238 C. Grant LaFarge's notes recalling the establishment of the New York Zoological Park, May 25, 1927, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 239 C. Grant LaFarge's notes recalling the establishment of the New York Zoological Park, May 25, 1927, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 240 Hancocks, *A Different Nature*, 98.
 241 William T. Hornaday to the City Editor of The Press, January 18, 1900, Wildlife Conservation Society Archives, Record Unit 5, Box 8.
 242 Reichenbach, *New Worlds, New Animals*, 61.
 243 Hancocks, *A Different Nature*, 102.

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References:
Images

- Cover image: *A Bird's Eye View of the Zoological Gardens Regent's Park, London*. 1858. From: John Edwards. *The London Zoo from Old Photographs 1852 - 1914*. London: John Edwards, 1996. Page 292.
- Figure 1: George Scharf, *Zoological Gardens, Regent's Park*. 1835. From: The Brighton Museum, <http://brightonmuseums.org.uk/royalpavilion/whattosee/exhibitions-and-displays/exotic-creatures/> (accessed June 24. 2015).
- Figure 2: *Plan de la ménagerie de Versailles sous Louis XV. 1747*. Available from: Wikicommons, https://commons.wikimedia.org/wiki/File:Plan_de_la_ménagerie_de_Versailles_sous_Louis_XV.jpg (accessed June 24. 2015).
- Figure 3: Nicolas Langlois, *View of the Versailles Menagerie*. (n.d.) 17th-early 18th Century. Available from: ARTstor, <http://artstor.org> (accessed June 24. 2015).
- Figure 4: Delagrive, *Plan de Versailles*. 1746. Available from: ARTstor, <http://artstor.org> (accessed June 24. 2015).
- Figure 5: Jacques Alphonse Testard, *Aspect général du Jardin des Plantes*. 1860. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC2985GF/aspect-general-du-jardin-des-plantes-testard-del-appert-sc-paris-chez-fatout-boulevard-poissonniere- (accessed June 24. 2015).
- Figure 6: E. Collin, *Plan du Jardin du Roi*. 1788. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC25/plan-du-jardin-du-roi-en-1788-grave-par-e-collin (accessed June 24. 2015).
- Figure 7: Edme Verniquet, *Plan de Paris*. 1791 - 1803. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC28GF/plan-de-paris (accessed June 24. 2015).
- Figure 8: Guérin, *Reproduction sommaire du plan de Guérin dans Pujoux* (J.B.).1803. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC30/1803-museum-d-histoire-naturelle-an-xii (accessed June 24. 2015).
- Figure 9: J. Creton, *Plan du Muséum d'histoire naturelle*. 1808. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC51GF/plan-du-museum-d-histoire-naturelle-1808-j-creton (accessed June 24. 2015).
- Figure 10: Filleux, *Plan du Jardin du Roi*. 1817. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/MNHN_IC32GF/plan-du-jardin-du-roi-en-1817-adam-sc-h-filleux (accessed June 24. 2015).
- Figure 11: Gabriel Thouin, *Plan du Jardin des Plantes*. 1828. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/EXPLOITATION/MNHN_IC1354GF/jardin-du-roi-thouin-del-lithog-de-c-motte (accessed June 24. 2015).
- Figure 12: E Collin, *Plan du Jardin du Roi*. 1828. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC5034GF/plan-du-jardin-du-roi-en-1828-grave-par-e-collin-rue-d-ulm-n-8 (accessed June 24. 2015).
- Figure 13: Charles Rohault de Fleury, *Museum d'Histoire Naturelle*. Plan général. 1836. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC41GF/museum-d-histoire-naturelle-plan-general-en-1836-dresse-par-l-architecte-du-museum-ch-rohault-fils (accessed June 24. 2015).
- Figure 14: Roissy, *Plan du Jardin des Plantes*. 1838. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC401/plan-du-jardin-des-plantes-en-1838-acarie-baron-del-et-sculp-lith-roissy (accessed June 24. 2015).
- Figure 15: Francois Aubertin and Nicholas Huët, *La vallée suisse, jardin anglais. Vue du Jardin des Plantes*. (n.d.) From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC2693/la-vallee-suisse-jardin-anglais-vue-du-jardin-des-plantes-n-huet-del-aubertin-scy (accessed June 24. 2015).
- Figure 16: *Baraque pour les buffles et les bouquetins*. 1801. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC137GF/baraque-pour-les-cerfs-et-pigeonnier-a-paris-chez-j-chereau-rue-st-jacques-pres-la-fontaine-st-sever (accessed June 24. 2015).
- Figure 17: *Baraque pour les cerfs et pigeonier*. 1801. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/MNHN_IC139GF/baraque-pour-les-buffles-et-les-bouquetins (accessed June 24. 2015).
- Figure 18: *Baraque pour moutons d'Espagne et canguroos*. 1801. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC138GF/baraque-pour-moutons-d-espagne-et-canguroos-sic (accessed June 24. 2015).
- Figure 19: *Baraque pour les vaches de la Romagne*. 1801. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/MNHN_IC140GF/baraque-pour-les-vaches-de-la-romagne (accessed June 24. 2015).
- Figure 20: Andrew, Best & Leloir, *Cabane et enclos des Cerfs d'Europe*. 1842. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC280/cabane-et-enclos-des-cerfs-d-europe-andrew-best-leloir (accessed June 24. 2015).

- Figure 21: Jean-Pierre Thénot, *Cabane au Jardin des Plantes*. 1850. From: Muséum National d'Histoire Naturelle (Paris), http://bibliotheques.mnhn.fr/medias/doc/EXPLOITATION/IFD/MNHN_IC152GF/cabane-au-jardin-des-plantes-thenot-alphonse-saintin-ed-38-rue-st-jacques-paris-imp-lemercier-paris (accessed June 24, 2015).
- Figure 22: de Vinck, *Les Animaux rares : ou la translation de la ménagerie royale au Temple, le 20 aoust 1792*. From: E. C. Spary, *Utopia's Garden: French Natural History from Old Regime to Revolution*. Chicago: The University of Chicago Press, 2000. Page 231.
- Figure 23: *The Gardens of the Zoological Society Regent's Park. 1830*. From: Eric Baratay and Elisabeth Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*. London: Reaction Books, 2002. Page 285.
- Figure 24: *Plan of The Regent's Park. 1827*. From: The Library of the Zoological Society of London.
- Figure 25: *Design for the Garden in the Regent's Park Belonging to the Zoological Society. 1827*. From: The Library of the Zoological Society of London.
- Figure 26: *Decimus Burton's Plan of the Ground*. From: Henry Scherren, *The Zoological Society of London*. London: Cassell and Company, 1905. Page 28.
- Figure 27: *Plan of the Garden 1829*. From: Henry Scherren, *The Zoological Society of London*. London: Cassell and Company, 1905. Page 38.
- Figure 28: *Plan of the Garden of the Zoological Society within the Regent's Park. 1830*. From: The Library of the Zoological Society of London.
- Figure 29: *Plan of the Garden of the Zoological Society in the Regent's Park 1851*. From: The Library of the Zoological Society of London.
- Figure 30: *A Picturesque Guide to the Gardens. 1828*. From: The Library of the Zoological Society of London.
- Figure 31: George Scharf, *Six Views in the Zoological Garden at Regent's Park, View of the Monkey House. 1835*. From: Eric Baratay and Elisabeth Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*. London: Reaction Books, 2002. Page 137.
- Figure 32: James Hakewill, *A Series of Ten Views in the Southern Portion of the Gardens of the Zoological Society in the Regent's Park. Plate II. View from the Bears Pit towards the Emu House. 1831*. From: The Library of the Zoological Society of London.
- Figure 33: James Hakewill, *A Series of Ten Views in the Southern Portion of the Gardens of the Zoological Society in the Regent's Park. Plate III. View from the Emu House. 1831*. From: The Library of the Zoological Society of London.
- Figure 34: James Hakewill, *A Series of Ten Views in the Southern Portion of the Gardens of the Zoological Society in the Regent's Park. Plate I. Entrance Terrace looking towards the Bear Pit. 1831*. From: The Library of the Zoological Society of London.
- Figure 35: James Hakewill, *A Series of Ten Views in the Southern Portion of the Gardens of the Zoological Society in the Regent's Park. Plate VI. The Llama House and Mawcaw Cage. 1831*. From: The Library of the Zoological Society of London.
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- Figure 46: Heinz Georg and Ursula Klos. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990. Plate 1.
- Figure 47: *Lenne's Plan des Zoologischen Gartens. 1845*. From: Heinz Georg and Ursula Klos. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990. Page 16.
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- Figure 53: *Grundriss des Antilopenhauses. 1875*. From: Heinz Georg and Ursula Klos. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990. Page 59.
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- Figure 57: *Der zoo nach dem Bombenangriff vom 22./23. November 1943*. From: Heinz Georg and Ursula Klos. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990. Page 211.
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- Figure 59: *Ruine des Dickhauthaus. 1943*. From: Heinz Georg and Ursula Klos. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990. Page 211.
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- Figure 62: *Der Zoo aus der Vogelperspektive. 1945*. From: Heinz Georg and Ursula Klos. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990. Page 362.
- Figure 63: *Main Entrance*. Hagenbeck Tierpark, Hamburg-Stellingen. c. 1908. From: Eric Baratay and Elisabeth Hardouin-Fugier, *Zoo: A History of Zoological Gardens in the West*. London: Reaction Books, 2002. Page 242.
- Figure 64: *Hagenbeck's Patent Application for a "Natural-Scientific Panorama"*. 1896. From: Eric Ames, *Carl Hagenbeck's Empire of Entertainments*. Seattle: University of Washington Press, 2008. Page 153.

- Figure 65: *Carl Hagenbeck's Zoological Paradise, The Zoological Garden of the Future*. 1898. From: Nigel Rothfels, *Savages and Beasts: The Birth of the Modern Zoo*. Baltimore: John Hopkins University Press, 2002. Page 166.
- Figure 66: *Lageplan vom Tierpark*. 1907. From: Tierpark Carl Hagenbeck Archives, Hamburg-Stellingen.
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- Figure 70: From: Tierpark Carl Hagenbeck Archives, Hamburg-Stellingen.
- Figure 71: *Paradise*. c.1908. From: Eric Ames, *Carl Hagenbeck's Empire of Entertainments*. Seattle: University of Washington Press, 2008. Page 171.
- Figure 72: *The crowd at Hagenbeck's Tierpark*. c.1909. From: Eric Ames, *Carl Hagenbeck's Empire of Entertainments*. Seattle: University of Washington Press, 2008. Page 193.
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- Figure 74: *Germans and Native Americans at Hagenbeck's Tierpark, Easter Weekend, 1910*. From: Eric Ames, *Carl Hagenbeck's Empire of Entertainments*. Seattle: University of Washington Press, 2008. Page 129.
- Figure 75: Hans Oberlander, *Hagenbeck is Coming!* 1893. From: Nigel Rothfels, *Savages and Beasts: The Birth of the Modern Zoo*. Baltimore: John Hopkins University Press, 2002. Page 74.
- Figure 76: *Plan aus der Vogelschau*. 1907. From: Tierpark Carl Hagenbeck Archives, Hamburg-Stellingen.
- Figure 77: *Carl Hagenbeck's Tierpark, Stellingen-Hamburg, Panorama*. Available from: Wikicommons, https://commons.wikimedia.org/wiki/File:19091213_hamburg_hagenbeck's_tierpark_panorama.jpg (accessed June 24. 2015).
- Figure 78: *Frank Law Olmsted & Co, Preliminary Study, National Zoological Park*. 1890. From: Smithsonian Institution Archives, Washington DC.
- Figure 79: *Site Visit to Rock Creek*. 1888. From: Heather Ewing and Amy Ballard, *A Guide to Smithsonian Architecture*. Washington: Smithsonian Books, 2009. Page 48.
- Figure 80: *Elk at National Zoo*. c.1890. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_7428 (accessed June 24. 2015).
- Figure 81: *Model of Rock Creek Park and National Zoo Grounds*. 1890. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_10637 (accessed June 24. 2015).
- Figure 82: *Elk in the Buffalo Barn, National Zoo*. 1895. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_6038 (accessed June 24. 2015).
- Figure 83: C.M. Bell, *Construction of the Lion House at NZP*. 1891. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_9269 (accessed June 24. 2015).
- Figure 84: *Lion House at the National Zoo*. c.1891. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_10763 (accessed June 24. 2015).
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- Figure 86: C.M. Bell, *Buffalo Barn at the National Zoo*. 1891. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_9268 (accessed June 24. 2015).
- Figure 87: *Alligators, NZP*. 1900. From: Smithsonian Institution Archives, http://siarchives.si.edu/collections/siris_sic_5991 (accessed June 24. 2015).
- Figure 88: Hornblower and Marshall Architects, *Architectural Drawings for House for Animals*. 1903-1904. From: Smithsonian Institution Archives, Washington DC.
- Figure 89: *Red Deer Herd, New York Zoological Park* From: Metropolitan New York Library Council: Digital Collection, <http://dcmny.org/islandora/object/bronxpark%3A3055> (accessed June 24. 2015).
- Figure 90: William T Hornaday, *Preliminary Plan of the Zoological Park for New York City*. 1896. From: Wildlife Conservation Society Library and Archives.
- Figure 91: *Map of the New York Zoological Park as far completed*. 1899. From: Wildlife Conservation Society Library and Archives.
- Figure 92: Final Plan for the development of the New York Zoological Park. 1897. From: Wildlife Conservation Society Library and Archives.
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- Figure 94: William T. Hornaday, c. 1895. From: Wildlife Conservation Society Library and Archives
- Figure 95: *New York Zoological Park Postcards* From: Metropolitan New York Library Council: Digital Collection, <http://dcmny.org/islandora/object/bronxpark%3A2898> (accessed June 24. 2015).
- Figure 96: Heins and Lafarge, *New York Zoological Park Antelope House, Architectural Drawings*. 1899. From: Wildlife Conservation Society Library and Archives
- Figure 97: *Buffalo Herd, New York Zoological Park*. 1907. From: Metropolitan New York Library Council: Digital Collection, <http://dcmny.org/islandora/object/bronxpark%3A3088> (accessed June 24. 2015).
- Figure 98: *Indian elephant New York Zoological Park*. (n.d.) From: Metropolitan New York Library Council: Digital Collection, <http://dcmny.org/islandora/object/bronxpark%3A2912> (accessed June 24. 2015).
- Figure 99: *Barbary lion, "Sultan." New York Zoological Park*. 1905. From: Metropolitan New York Library Council: Digital Collection, <http://dcmny.org/islandora/object/bronxpark%3A2908> (accessed June 24. 2015).
- Figure 100: *Admission Ticket*. From: Gwynne Vevers, *London's Zoo: An Anthology to celebrate 150 years of the Zoological Society of London*. London: Bodley Head, 1976. Page 25.
- Figure 101: Briggs and Son, *Jumbo the Largest Elephant in Captivity*. c.1882. From: John Edwards. *The London Zoo from Old Photographs 1852 - 1914*. London: John Edwards, 1996. Page 93.
- Figure 102: *New York Zoological Park Postcards* From: Metropolitan New York Library Council: Digital Collection, <http://dcmny.org/islandora/object/bronxpark%3A3165> (accessed June 24. 2015).

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Bibliography

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- Albrecht, Ernest. *From Barnum & Bailey to Feld: The Creative Evolution of The Greatest Show on Earth*. Jefferson: McFarland & Company Inc, 2014.
- Ames, Eric. *Carl Hagenbeck's Empire of Entertainments*. Seattle: University of Washington Press, 2008.
- Bailey, Peter. *Leisure and Recreation in Victorian England: Rational Recreation and the Contest for Control 1830 - 1885*. London: Methuen & Co, 1987.
- Baratay, Eric and Hardouin-Fugier, Elisabeth. *Zoo: A History of Zoological Gardens in the West*. London: Reaction Books, 2002.
- Berger, John. *About Looking*. New York: Pantheon Books, 1980.
- Bechtel, Stefan. *Mr. Hornaday's War: How a Peculiar Victorian Zookeeper Waged a Lonely Crusade for Wildlife That Changed the World*. Boston: Beacon Press, 2012.
- Braverman, Irus. *Zooland: The Institution of Captivity*. Stanford: Stanford University Press, 2013.
- Croke, Vicki. *The Modern Ark: The Story of Zoos*. New York: Scribner, 1997.
- Daniel, Noel. ed., *The Circus: 1870s-1950s*. Koln: Taschen, 2010.
- Edwards, John. *The London Zoo from old photographs 1852 - 1914*. London, John Edwards, 1996.
- Ewing, Heather and Ballard, Amy. *A Guide to Smithsonian Architecture*. Washington: Smithsonian Books, 2009.
- Forgan, Sophie. "Context, Image and Function: a Preliminary Enquiry into the Architecture of Scientific Societies", *The British Journal for the History of Science*, Vol. 19, No. 1, 1986.
- Forgan, Sophie. "Building the Museum: Knowledge, Conflict and the Power of Place", *Isis*, Vol. 96, No. 4, 2005.
- Georg, Heinz and Klos, Ursula. *Der Berliner Zoo im Spiegel seiner Bauten 1841-1989*. Berlin: Zoologischer Garten Berlin, 1990.
- Golinski, Jan. *Making Natural Knowledge: Constructivism and the History of Science*. Cambridge: Cambridge University Press, 1998.
- Hahn, Emily. *Animal Gardens*. New York: Begos & Rosenberg Inc., 1967.

- Hancocks, David. *A Different Nature: The Paradoxical World of Zoos and Their Uncertain Future*. Berkeley: University of California Press, 2001.
- Hanson, Elizabeth. *Animal Attractions: Nature on Display in American Zoos*. New Jersey: Princeton University Press, 2002.
- Hoage, R.J. and Deiss, William A., eds. *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century*. Baltimore: The John Hopkins University Press, 1996.
- Honeywill, Ross. *Lamarck's Evolution: Two Centuries of Genius and Jealousy*. Sydney: Murdoch Books, 2008.
- Hunt, John Dixon and Conan, Michel, eds. *Tradition and Innovation in French Garden Art: Chapters of a New History*. Philadelphia: University of Pennsylvania Press, 2002.
- Ito, Takashi. *London Zoo and the Victorians 1828-1859*. London: The Boydell Press, 2014.
- Kisling, Vernon N., ed. *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*. London: CRC Press, 2001.
- Lewis, Robert M. *From Traveling Show to Vaudeville: Theatrical Spectacle in America, 1830-1910*. Baltimore: Johns Hopkins University Press, 2003.
- Livingstone, David. *Putting Science in Its Place: Geographies of Scientific Knowledge*. Chicago: The University of Chicago Press, 2003.
- Malamud, Randy. ed. *A Cultural History of Animals in the Modern Age*. Oxford: Berg, 2007.
- Malchow, H.L. "Public Gardens and Social Action in Late Victorian London", *Victorian Studies*. Vol. 29: No. 1, Autumn, 1985.
- Mullan, Bob and Marvin, Garry. *Zoo Culture*. Chicago: University of Illinois Press, 1987.
- Pabworth, J.B. *Rural Residences consisting of a Series of Designs for Cottages, Decorated Cottages, Small Villas and Other Ornamental Buildings*. London: R. Ackerman, 1832.
- Rash, Felicity. *German Images of the Self and the Other: Nationalist, Colonialist and Anti-Semitic Discourse 1871-1918*. Hampshire: Palgrave MacMillan, 2012.
- Ritvo, Harriet. *The Animal Estate: The English and Other Creatures in the Victorian Age*. Cambridge: Harvard University Press, 1987.
- Rothfels, Nigel. *Savages and Beasts: The Birth of the Modern Zoo*. Baltimore: John Hopkins University Press, 2002.
- Scherren, Henry. *The Zoological Society of London*. London: Cassell and Company, 1905.
- Spary, E. C. *Utopia's Garden: French Natural History from Old Regime to Revolution*. Chicago: The University of Chicago Press, 2000.
- Vevers, Gwynne. *London's Zoo: An Anthology to celebrate 150 years of the Zoological Society of London*. London: Bodley Head, 1976.
- Willis, Susan. "Looking at the Zoo." *The South Atlantic Quarterly* 98, no.4, (1999): 669-87.
- Yanni, Carla. *Nature's Museums; Victorian Science and the Architecture of Display*. New York: Princeton Architectural Press, 2005.
- Yanni, Carla. "History and Sociology of Science; Interrogating the Spaces of Knowledge", *Journal of the Society of Architectural Historians*. Vol. 64, No. 4, 2005.
- Zuckerman, Lord. *Great Zoos of the World; Their Origins and Significance*. London: Weidenfeld & Nicolson, 1980.

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