

# ZOOS: *Changing Their Spots*

Trends behind new zoo designs

BY JANET L. HOPSON

"European zoos," says the head of New York's Bronx zoo, "have enjoyed the great advantage and opportunity of being bombed. Zoos really ought to be bombed every 20 years or so."

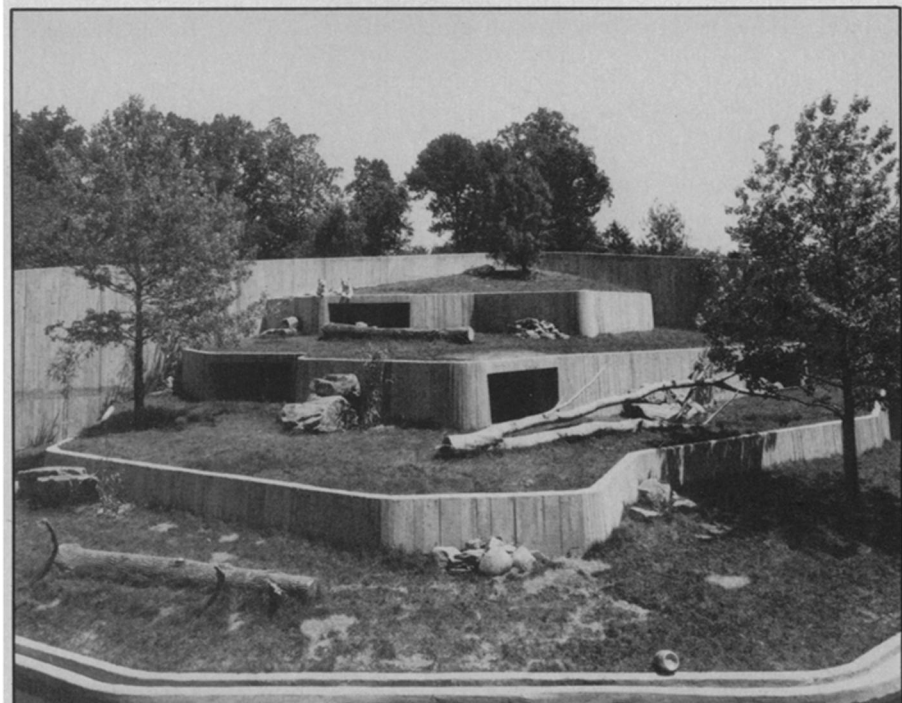
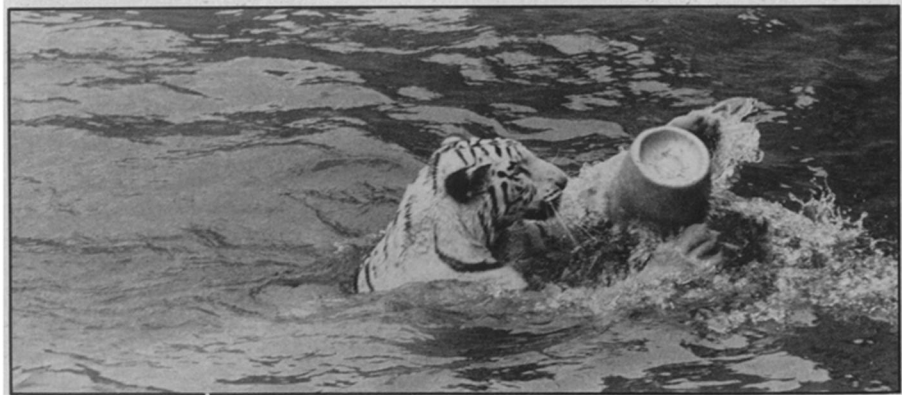
Lions suddenly set free to stalk through the smoke for frantic peacocks. Zebras flying through the air. Boas slithering past bomb craters on slow and relentless paths toward the small mammal house—the idea does have a certain dramatic flair. Such a plan, if announced ahead of time, would doubtless draw a crowd to rival any on a summer Sunday at the Bronx zoo.

But such a radical fix is hardly necessary, because a quiet revolution in zoo design is afoot—a revolution that relies on architects, landscapers and bricklayers instead of explosives, and is achieving, without the smoke and rubble, the same purpose.

That purpose is the face-lifting of a heretofore immutable civic presence—the antiquated zoological park with its blocky, odorous animal houses, its small barred cages and its melancholy inhabitants. Many of those buildings and cages were constructed at the turn of the century or during the depression by the WPA. But they are slowly giving way to natural, attractive habitats—a changeover that reflects an evolving zoo philosophy and an expanding collective wisdom.

Some of the bigger, more renowned zoos—Bronx, San Diego, Philadelphia, National—began to replace antiquated buildings long ago. Many others, large and small, are just starting. William G. Conway, the highly respected director of the Bronx zoo, has long been a leader in the move toward the natural habitat zoo. His bomb comments are facetious, of course, but do point up a public zoo universal: Design changes come exceedingly slowly because many of the buildings are solid and functional nearly a century after construction while public budgets are increasingly frail and beleaguered.

The Bronx zoo is supported in large part by private funds and thus has enjoyed fairly rapid change. The Smithsonian Institution's National Zoological Park in

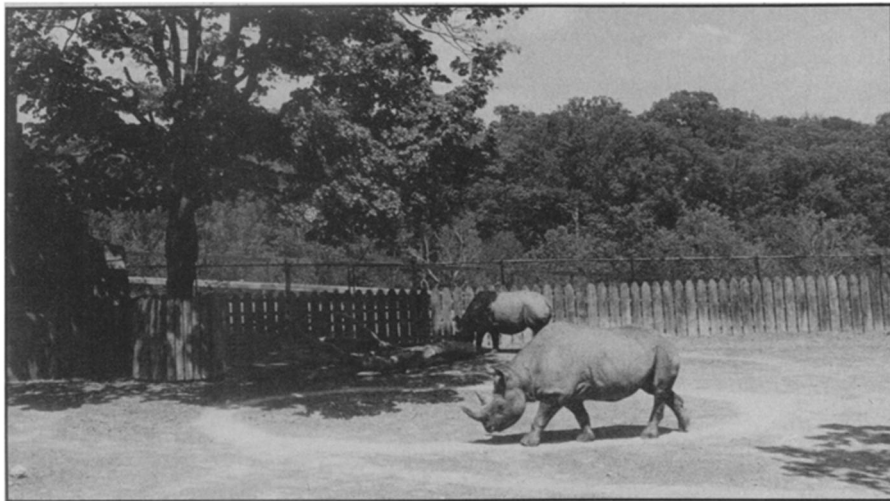


*Mohini endured the lion house for 15 years. She and her offspring now live—and play—in the National zoo's spacious, moated tiger exhibit, open since March.*

National Zoological Park, Washington, D.C.



National zoo monkey house cages rebuilt to give 16 times more space and exercise.



Although moved to a much larger enclosure, rhinoceros paces size of his old cage.

Washington, D.C., on the other hand, has revamped some of its cramped animal houses and exercise yards, but relies on congressional appropriations and has only partially completed a master remodeling plan long in the works.

"We know," says National zoo director Theodore H. Reed, "that some of our old buildings and cages are so sterile they look like the men's room at Grand Central Station." But, he says, they were designed and built this way for a good reason. Reed says he has trouble sometimes, convincing his young zoo employees of this—"about as much trouble, in fact, as I have convincing my son that men actually were beating on the doors of the recruiting stations on Dec. 8, 1941."

Old zoo buildings, Reed says, were built years before penicillin, sulfa drugs and worm medicines. "The only way that animals could be kept alive for very long was strict, everlasting sanitation. Small,

sterile cages were a necessity." When he started veterinary medicine, he says, "we were using antiseptics and aspirins. I don't think we even have a quart of iodine in the place now. But of course, we still have the old buildings—all of them built for the ages under public building codes—until we can revamp or replace them."

The great strides made in wild animal medicine, tranquilization, immobilization, sanitation and feeding techniques have ushered in a new set of problems. Once the animals could survive the threats of filth and disease in captivity, life in the old-style cages went, for some, from brutally short to interminably long. It became clear to zoo keepers and zoo visitors alike that the monotony of captivity was taking its psychological toll.

Cramped, barren cages and separation from natural, intraspecific social relationships are now recognized to induce "stereotyped cage behavior." Many, particu-

larly great apes and monkeys, large cats, bears and hoofed animals, develop disturbing neuroses—repetitive movements, pacing, begging for food, fur plucking, apathy or aggression.

It has been clear for decades, then, that much of the old-style zoo needs updating if for nothing else, the animals' sanity and the public's sensibilities. A growing dedication to public education rather than amusement and the need to breed increasingly rare and expensive animals have become impetuses to renovation, as well. The question becomes how to plan that renovation. If cages aren't the right containment, what do the animals need? And what, moreover, do they want?

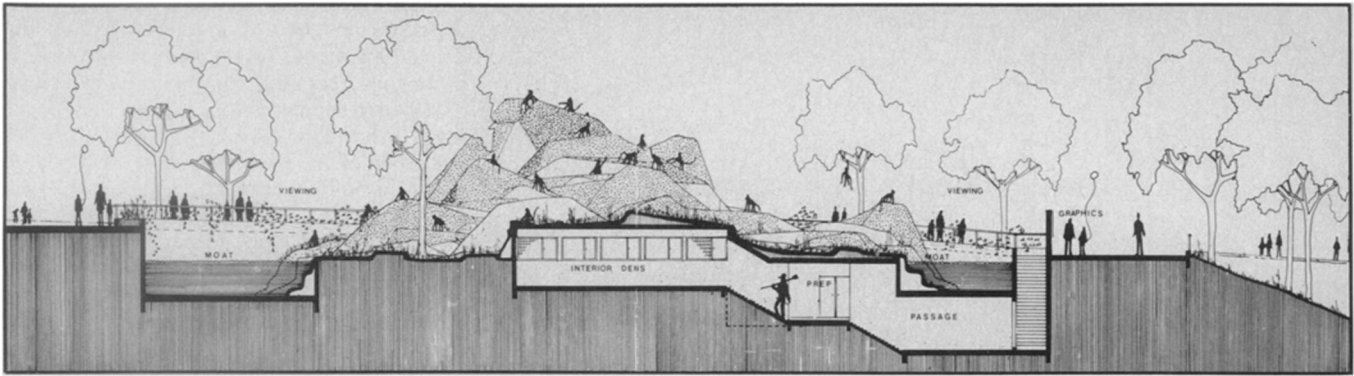
Zoo animals, research shows, share some instinctive behavioral characteristics with their wild counterparts, but diverge on others. They still need to eat, breed and exercise, they still mark and define their territories, and many still need social relationships. But they no longer must spend most of their waking hours foraging, hiding from or fighting off enemies, competing for mates or defending territory. They don't need or seem to want an identical but smaller version of their own natural habitats. And data gathered on natural and captive behavior, combined with years of wild animal husbandry, have enabled zoo researchers to design successful exhibits that are interesting to both the animals and the viewers.

The old systematic displays—animals housed in phylogenetic groups, such as big cats together, primates together, reptiles together—are being replaced with at least three kinds of displays: zoogeographical displays in which animals from distinctive geographical units, such as islands, are displayed together; ecological exhibits in which animals from like habitats (deserts or grasslands, for example) are placed together; and behavioral exhibits in which animals with similar "life styles" (nocturnalism, burrowing, pseudoflight, hibernation) are housed together.

"The old notion of a 'postage stamp collection' is out," says William Conway. "Zoos were created as living museums. We felt constrained to show as many kinds of creatures as possible. But now, we have a better understanding of animal behavior and social systems." Many zoos, the Bronx zoo included, have cut their collections to fewer kinds of animals but greater numbers of each. "In the last decade," Conway says, "we have changed from 1,110 species and 2,600 animals to 600 species and 3,600 animals."

The National zoo in Washington has cut its collection, too, and by the time its master revision plan is completed in the mid-1980s, most of the larger breeding groups will live in spacious, moated exhibits that will show complete behavioral patterns and life styles. A few species will represent each of the major groups. Seals, sea lions and manatees, for example, have





*Breeding troupe of Barbary apes will live on Monkey Island, complete with moats and inside dens, at National zoo.*

been chosen to represent the many species of aquatic mammals.

Landscaping will be the most conspicuous feature in each display—besides the animals, of course. Heated caves and underground structures will house the animals, and visitors will walk down stairs and ramps to see the animals indoors (see diagram). Outdoor space is thus expanded for animals and people. Existing landscape will be incorporated, too; the Gelada Baboons, for example, will live in a moated, sealed natural rock quarry.

Some new designs are already in evidence at the National zoo. In the new tiger exhibit, opened this spring, small groups (one to four) of white tigers will have from one third to one half acre of space each. The giraffes' new moated exercise yard gives them five times more space and visitors a better view. In the remodeled monkey house, many small cages were eliminated so that each cage now has about 16 times more usable space. Wooden jungle-gyms provide infinitely more exercise.

Even though the animals can swim, hide, chase, climb and play, Reed says, there will still be a certain amount of boredom, since they don't have to search for food or protect themselves. But keepers can change feeding and other routines to break the monotony, and some animals can be made to work for snacks. "The keeper can throw a handful of wheat, rice or even crickets into the straw, and monkeys will pick at it happily all day."

In general, though, the animals seem to like their new enclosures, Reed says, and breeding (a sign of an animal's acceptance of its surroundings) has been quite successful. "We are starting to think about controlling breeding in some cases," he says. "Boy, that's really a switch."

Conway echoes this point. "The changes I've seen during my career have been unbelievable. A former zoo director here at the Bronx zoo once wrote that gorillas will never be successfully maintained in zoos. Well, we've just seen the birth of the fourth baby gorilla in four consecutive years." But the changes in zoo designs, he says, reflect even more than breeding, showmanship or better understanding of animal behavior.

"Zoos have become needed. They serve a large audience—180 million last year. That's more than the attendance at all sporting events combined. And the vast majority of visitors will never again see wild animals in nature. They will have to become familiar with them in zoos, or not at all." More people visit the Bronx zoo in July, he says, than visit all the national parks of East Africa all year.

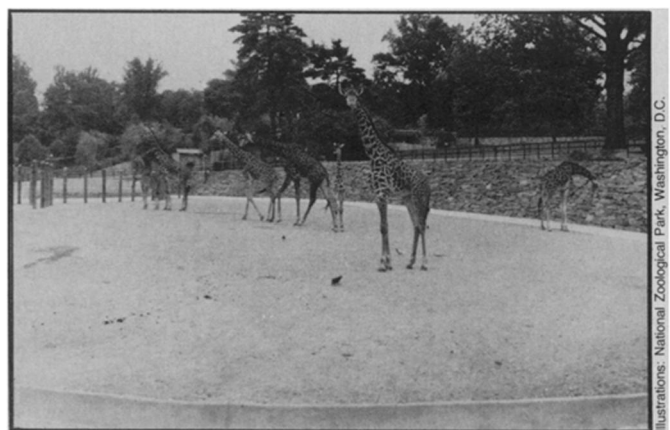
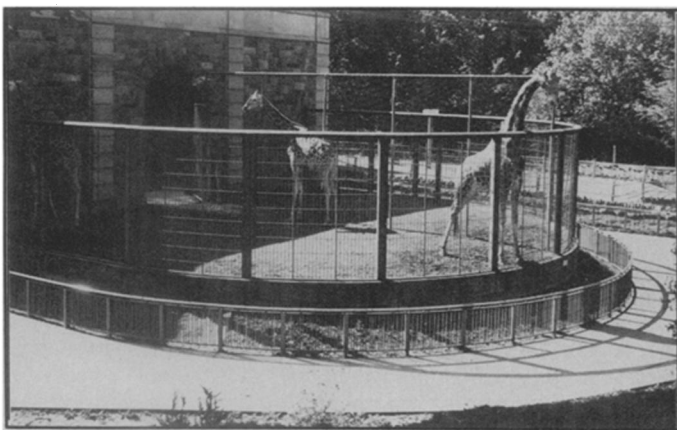
With increasing human populations and the dwindling of undisturbed natural areas, more and more animals are in danger of extinction—by now, more than a quarter million. "Zoos," Conway says, "are the logical centers for wildlife conservation. We consider each animal as an ambassador for its species. We were once surrounded by wild animals. We now

surround them, and they are our charges. And it is the taxicab drivers and mothers and accountants that will determine whether we will have wildlife conservation.

"We now find all kinds of unhappy things occurring," he says, "like the chief game warden of Ethiopia coming to us and saying 'We can't save Swayne's hartebeest. Can you find zoos to breed and maintain them?' The hope is that we can restore breeding herds to the wild later if the habitat is restored. I'm afraid," Conway says, "we will see this happening more and more often." Thus, zoos and zoo-sponsored parks and refuges will be increasingly more important to the survival of natural diversity.

Not all zoos are as well equipped as the Bronx (which is run by the large and well-respected New York Zoological Society) to assume a major role in wildlife conservation. And not all zoos, moreover, have even begun to replace antiquated buildings and cages with new. But this, Reed and Conway agree, is oftentimes more a reflection of an uncooperative city council or an unsupportive public than of the zoo director's expertise or inclinations.

Zoos are clearly in a state of flux right now, but looking at the new zoo trends and designs in a broad context, it seems they are at last approaching an ancient Chinese zoo concept: Emperor Wen Wang, before 1000 B.C., called his zoological garden "Ling-Yu," or Garden of Intelligence. □



*Before: Giraffes share small yard of old elephant house. After: New yard is five times bigger and gives visitors a view.*