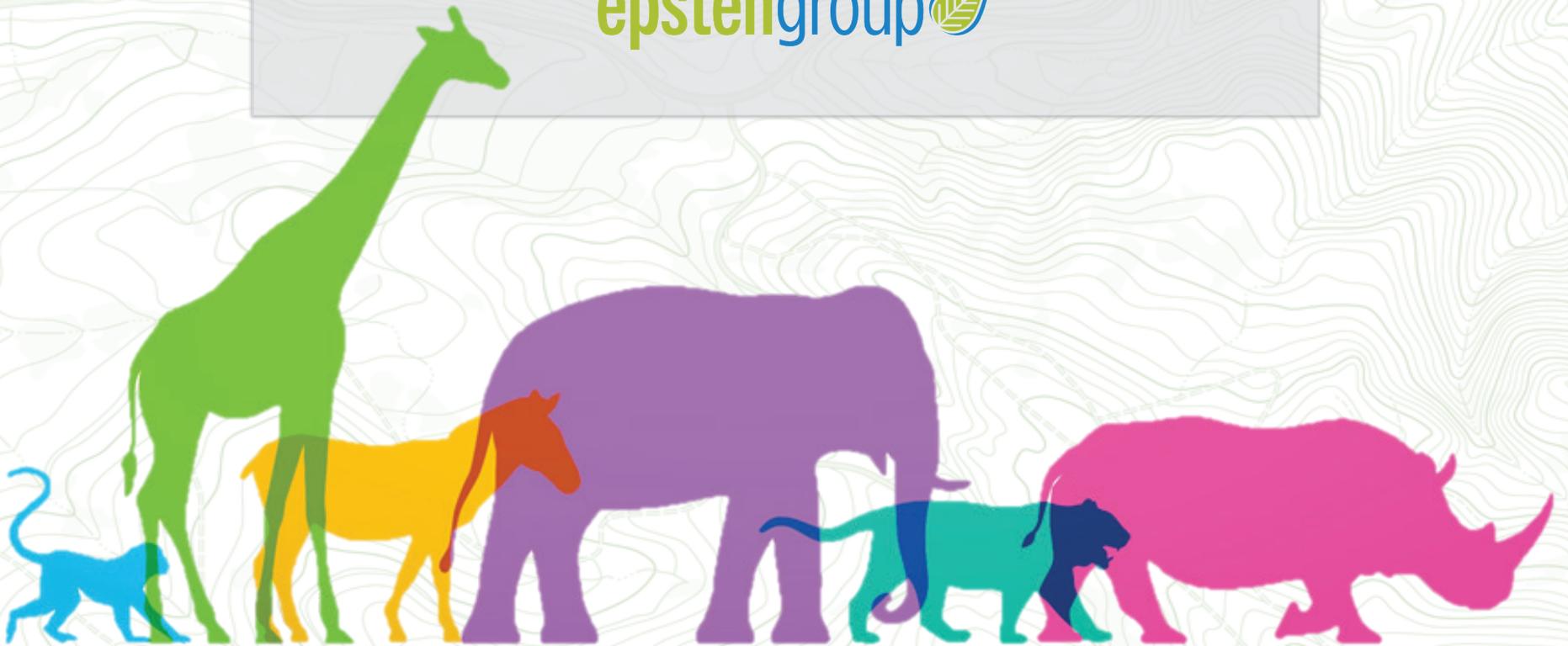


THE WELLNESS-FOCUSED ZOO

epstengroup 



About the Author

Pete specializes in zoological and sustainable design projects with a focus on wellness and resource efficiency. He is the designer for Zoo Atlanta's African Savanna Expansion and Zambezi Elephant Center as well as its soon to be completed Savanna Hall Renovation of the historic Grant Park Cyclorama and the new Entry Plaza and Ticketing Building. At \$52M, Zoo Atlanta's Grand New View projects represent a dramatic re-imagining of the northern third of the zoo. His recent experience also includes a Grizzly Brother's habitat at Riverside Discovery Center in Scottsbluff, Nebraska and several projects for the Oklahoma City Zoo and Botanical Gardens.

Pete is both a WELL Accredited Professional and a LEED Accredited Professional. He has helped provide over 60 educational seminars and classes throughout the Southeast region on topics including energy efficiency, environmental life-cycle assessment, and improving the performance of existing buildings.



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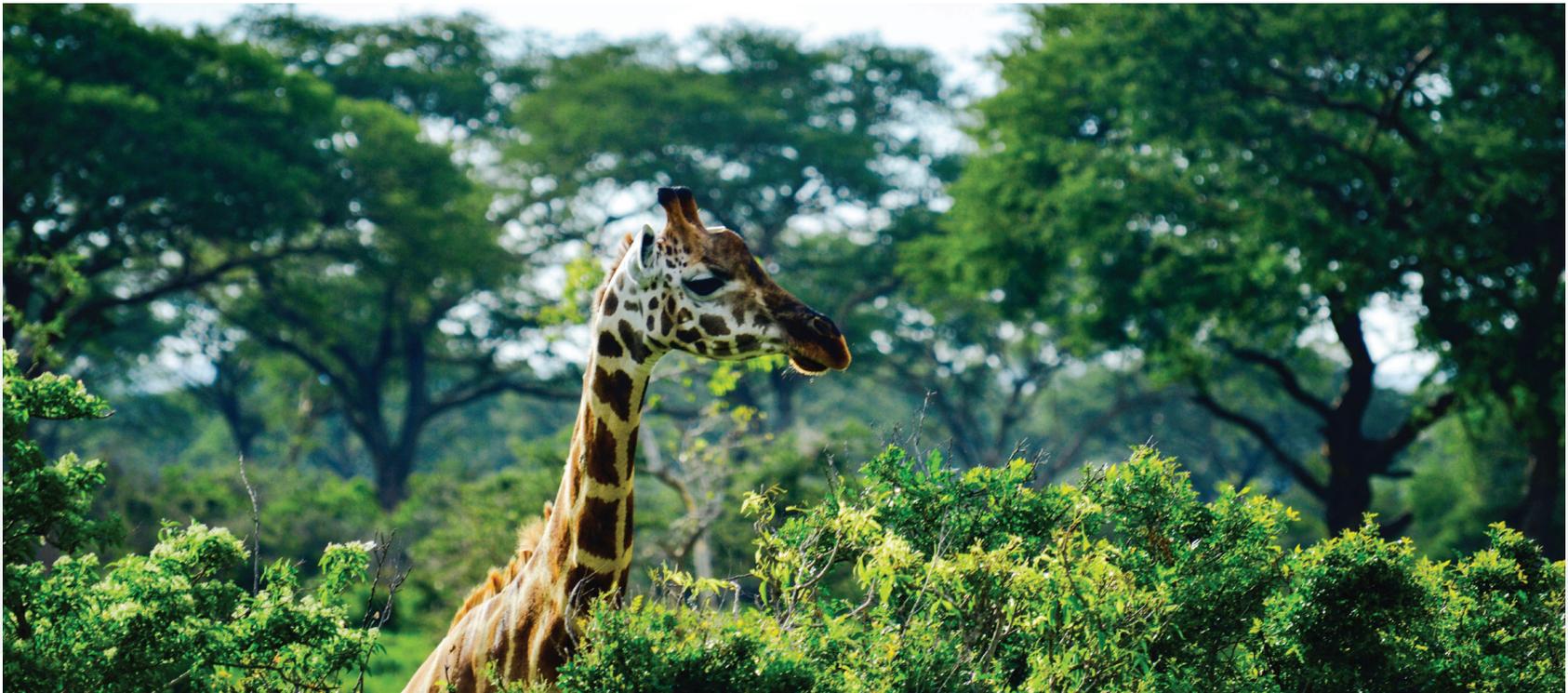
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Executive Summary

In December of 2018, Epstein Group was invited by Dr. Terry Maple at Jacksonville Zoo and Gardens to participate in a wellness roundtable to discuss the concept as it applies to zoological design and animal management practices. The two days of discussion kicked off an eight-month exploration of wellness as an organizing principle for the next generation of zoological parks and gardens. An overview of my key findings and observations are outlined on the pages to follow.

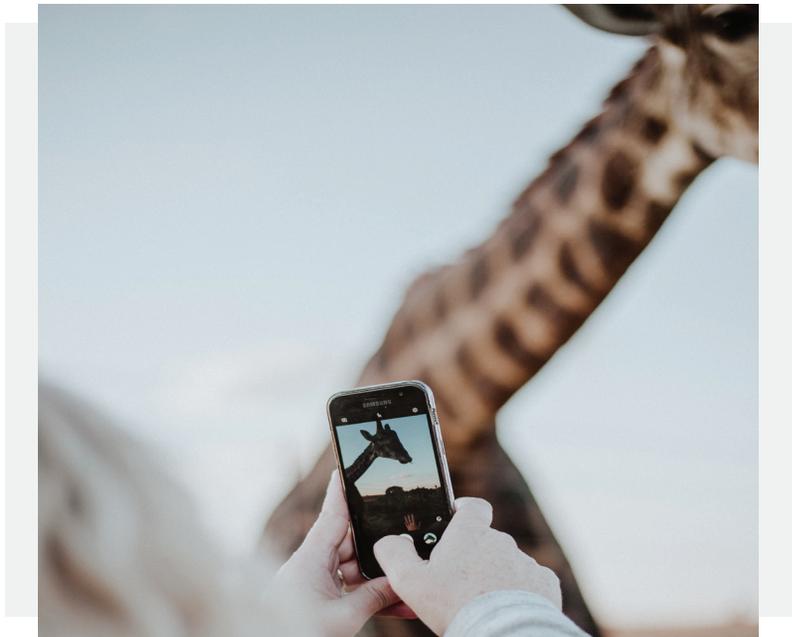
“ *Animals should live at the zoo much in the same way they would live in the wild.*

*- Dr. Terry Maple, Resident Professor
Jacksonville Zoo & Gardens*



The Challenge Facing Today's Zoological Gardens

Zoological institutions are beginning to come to grips with the realities of our digital age. The prevalence of digital media has created a public that is far more informed than in the past, which has forced a new era of transparency on all institutions. Zoos can no longer fully control their institutional messages and the worst crisis moments of some zoos in recent years have created skeptics, particularly within the millennial generation, that wonder if zoos should continue to exist at all. This creates a long-term structural issue that zoological institutions must address head on.



In a perfect world we believe zoos wouldn't exist. Mankind and animals would be able to exist peacefully side-by-side on a sustainable planet, thereby making zoos unnecessary. However, the reality is we live in an imperfect world where animals in the wild are imperiled by a host of challenges ranging from climate change to illegal trapping and poaching. Whole wilderness habitats are at best coping and at worst suffering under the strain of mankind's rapacious and thoughtless treatment of the land.

Simply walking away from the conservation and research missions of our zoological institutions would likely mean extinction for a great number of species large and small.

If the thoughtless dominion of the land by human industry has created a world in a perpetual state of suffering and pain, we believe we have an ethical obligation to apply the best of our science and medicine through thoughtful and responsible stewardship to try to heal the damage and bring the world back into balance.

The Zoo's Place in a Sustainable Future

If you accept the concept that the world's ecosystems are in pain and that humankind is duty-bound to deploy our best scientists and physicians to fix the damage that's been done, the next step is then to consider how to implement the necessary changes to achieve such a lofty goal. In considering the conceptual shape of such an implementation plan, I'd ask you to consider how we deal with epidemic illnesses in our human communities.

Whether dealing with an acute disease like some new and virulent strain of virus, or chronic issues like diabetes or heart disease, to curb acute outbreaks and spread the gospel about the benefits of preventative medicine and healthy lifestyle choices a whole array of scientists and physicians working for government agencies and NGO's provide urgently needed clinical research and educational outreach. They develop life-saving drugs and pain-reducing therapy regimens. They issue standards and guidelines for nutrition and physical activity for our children in our public schools.

With our natural world in pain and our wild communities facing an epidemic of ecological challenges, I would ask you to consider that our zoological institutions are evolving to take

a role that is analogous to those institutions. Think of each zoo as a branch office of the Centers for Disease Control (CDC) for our wild lands. Think of AZA as the National Institutes of Health (NIH) for the planet.



Zoological gardens provide a critical setting for conducting minimally-invasive research of animal species who are threatened or endangered in the natural world.



Through the compassionate stewardship of zoo practitioners, we can scientifically ascertain the best evidence-based practices to improve health and well-being in our ecological communities, preserve imperiled strains of biological diversity, and devise the most effective ways to eventually return species to their optimal state in the wild once mankind finds the wisdom and political will to forge a more perfect world.

Cast in this frame, we can also begin to see how zoos form a critical resource within the human communities they inhabit. In a post-industrial, knowledge-driven world, the research laboratory is the new factory, and the brawn that once was used to make raw materials yield to human will is now replaced in importance by scientific research and the brains needed to find ways to stretch and re-use those same raw materials so human civilization can live in harmony with nature on an ever-shrinking blue planet in perpetuity.

Research-driven, empirically minded zoological institutions and the boundless research opportunities they afford our young professionals are critical pieces of a thriving intellectual community's economic green infrastructure.

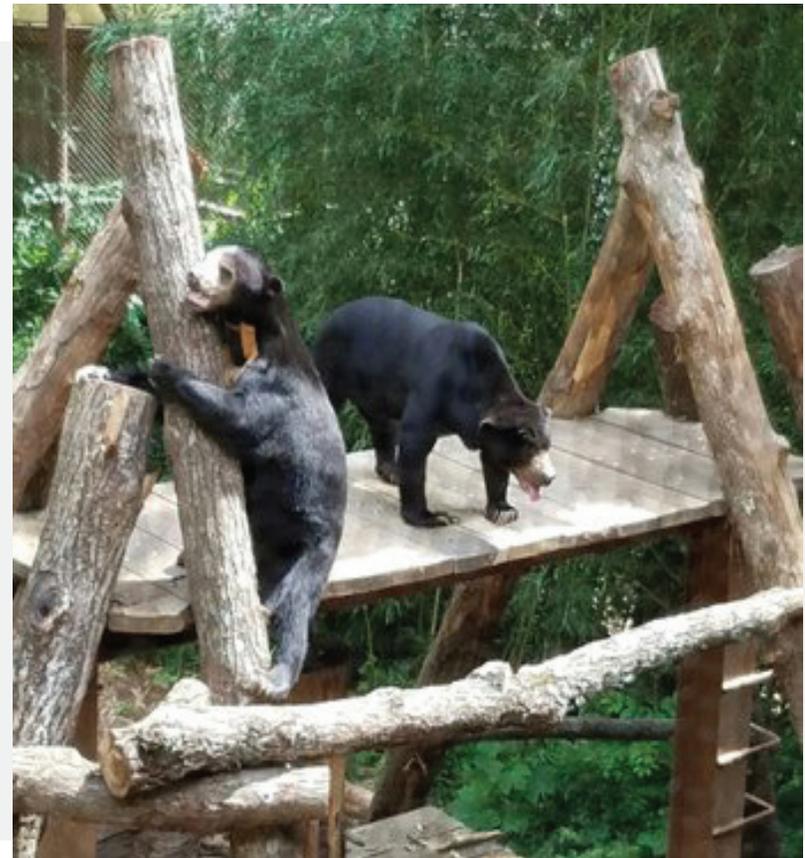
The Ethical Imperative of Wellness-Focused Zoos

To understand how to balance the positive role that zoos can play in research and conservation and the ethical entanglements of keeping animals under human care, it is necessary to look at the history of zoos in context. In Dr. Maple's Book, *Professor in the Zoo*¹, he posits three distinct eras for our zoological institutions. In the first wave of zoo design, animals suffered under human dominion in menageries made of steel and concrete. Hard architecture, the restriction of small spaces, and the denial of choice created physical discomfort and psychological pathologies for zoo animals that were nothing less than appalling by today's ethical standards.

This first wave, the era of zoos of suffering, lasted hundreds of years until the enlightened intervention of zoo biologists. In the second wave of zoo design, zoos and zoo designers began to experiment with naturalistic designs that eliminated hard architecture and created exhibits where zoo animals could better cope with their captivity.

This second wave in zoo design was a renaissance compared to the unrelenting cruelty of the way zoos used to be. Creating

zoo habitats where animals are merely coping in captivity isn't good enough for today's skeptical public, though. Nor should it be. And so, we require a third wave in zoo design.



TRADER'S ALLEY, MALAYAN SUN BEAR HABITAT, ZOO ATLANTA

¹Professor in the Zoo: Designing the Future for Wildlife in Human Care, by Dr. Terry Maple, published by Red Leaf Press in 2016

Ethically speaking, we're compelled to design, build, and manage zoological institutions that transcend merely coping and provide environments where everyone thrives: animals, visitors, and even zoo administrators and animal care practitioners, alike. No institutional model based upon the exploitation of any of its stakeholders is ever sustainable in the long run.



In his soon to be released book, *Beyond Animal Welfare*², Dr. Maple squarely proclaims that wellness is the central concept to this third wave of zoos: zoos where animals no longer suffer or are merely coping with their daily plights. Wellness-focused zoos shall be places where animals thrive physically and psychologically while in human care. In a world where

information is readily available and, therefore, transparency is no longer an option and zoological institutions have no choice but to be open about their design and management strategies because an engaged and informed public expects that its community's zoos shall holistically provide the highest level of care to its animals possible.

If zoos want to win back a skeptical millennial generation a fully and openly detailed commitment to wellness and ongoing refinement of animal habitats and animal management practices in every dimension will become the prerequisite for staying in the game.



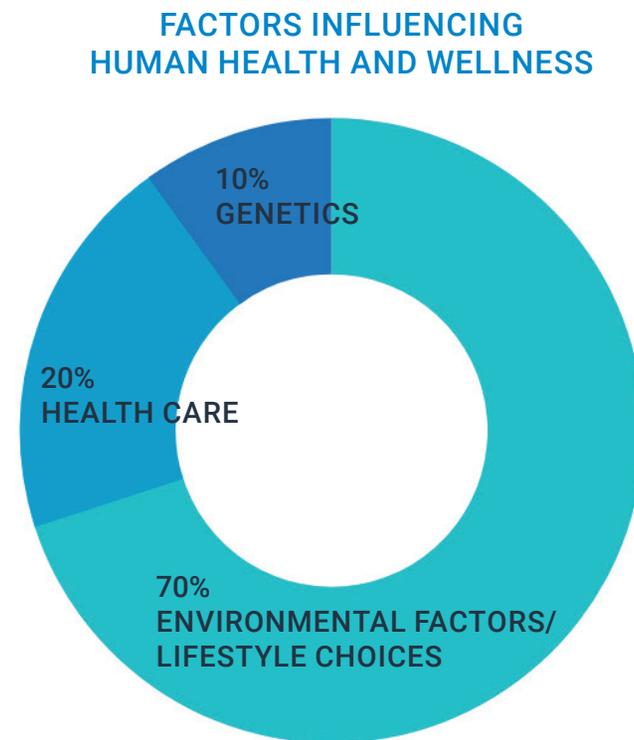
² Publishing Information TBD

The Pivot: Taking Wellness from Abstract Concept to Zoological Practice

If we accept the conceit that the public expects, ethically, that the highest level of holistic wellness is provided for in zoological institutions for all the animals under human care, the next question is, of course, what defines a baseline level of wellness we must achieve as a prerequisite and what are the metrics by which success and continual improvement judged? In this respect, we recommend looking at the development of the IWBI's WELL Building Standard as a template for the application of the concept in zoos.

The macroeconomic argument for WELL buildings is easy to grasp. If we consider all the factors that influence human health and wellness, approximately 10% is the product of our genetics. Roughly 20% is tied to health care. In 2018, the United States spent over \$3.5 trillion dollars on health care, which was closing in on 20% of the nation's GDP. The main drivers of escalating health care costs include the high rate of preventable chronic illnesses in the United States like diabetes and heart disease. WELL asks us to consider leveraging attention and investments against the other 70% of the pie, environmental factors and lifestyle choices, as

a way of preventing chronic illness and bending down the curve of escalating health care spending. The prima facie argument for redeploying attention toward the largest piece of the health and wellness pie is compelling.³



³ The percentages in this paragraph are rough approximations presented at an IWBI educational presentation at the 2016 Greenbuild Conference in Los Angeles, California. There are other studies that suggest the influence of environmental factors and lifestyle choices may make up as much as 80% of human health and wellness.

When the development of WELL began long before its introduction in 2014, the green building world already knew about a constellation of scientific research on how built environment interventions affected human health, wellness, and productivity. These studies were taken into account in the development of standards like LEED, but LEED was primarily focused on reducing the ecological footprint of a building. A standard focused solely on human health and wellness still didn't exist, and that's the vacuum that the WELL standard moved in to fill.

My experience with one foot in both the zoological and sustainable building world suggests to me that the zoological world is in a very similar place as the sustainable building world was when the WELL standard was just a gleam in its creators' eyes.

There is, undoubtedly, a bevy of existing research and scholarship about built environment interventions and animal management best practices as well as anecdotal institutional knowledge held by our zoos' keeper and curator staffs that speak to how we can improve the health and wellness of animals in zoos under human care. Nobody to this point, though, has begun the arduous task of compiling all that research, scholarship, and institutional knowledge

and synthesizing it into a single, cohesive, comprehensive wellness standard.⁴



PETE AT ZOO ATLANTA'S AFRICAN SAVANNA

⁴ For more information about the WELL standard, check out the IWBI's website at wellcertified.com or contact our sustainability experts: in@epstengroup.com

The Wellness-Focused Design Process

Unfortunately, we don't have the luxury to sit on our hands the next decade while the zoo world completes its first draft of wellness standards and practices. Important species like the majestic African Elephant are in urgent need of larger and better habitats today to meet the ethical minimums of a wellness-focused zoo. The lack of well-defined standards is both a blessing and a curse. The absence of a defined threshold for what constitutes the floor of wellness-focused design and guardrails to guide the technical requirements of a wellness-focused habitat can be intimidating. But, it allows us to think in blue sky terms about the topic of wellness, which invites innovation from all stakeholders involved in the process.

The first step in developing wellness standards is to develop an overall framework methodology for collecting, sorting, and synthesizing existing zoological wellness research and institutional anecdotal knowledge.

Perhaps the feature categories from the WELL standard might be a good starting point. Loosely arranged from physical to psychological needs like Maslow's Hierarchy of Needs, the WELL categories are outlined below with the inclusion of an eighth category governing standards for Reproductive wellness.

WELL Categories:



Air



Water



Nourishment



Light



Fitness



Comfort



Mind



+ Reproductive Wellness

Another option may be to adopt the framework of Georgia State University's David A. Washburn PHD from his article "The Four C's of Psychological Wellbeing." Either way, by creating definable categories for the standardization process, appropriately sized and focused working groups could be developed to collect the research in each category and begin to translate that research into technical requirements for built environment interventions and animal management best practices.

In the wellness-focused zoo, designers can then work collaboratively with the staff's zoo biologists to develop a comprehensive slate of built environment interventions and

facilities within each category and sub-category that support wellness-focused animal management best practices. This process also must include a discussion about metrics for tracking the outcome of each intervention and best practice to ascertain thresholds that define initial success and create frameworks for ongoing refinement and improvement.



ZOO ATLANTA, ZAMBEZI ELEPHANT CENTER



ZOO ATLANTA, AFRICAN SAVANNA

Over time, and with data obtained from the adoption of similar built environment interventions and best practices in habitats at other zoos, we can begin to create published, evidence-based, scientifically supported standards that will put all but the irrational skeptics' minds at ease about a zoo's core commitment to animal wellness.

Zoological Facilities That Support the Wellness Mission

Implicit in the wellness model for zoological gardens is a recognition of the enlarged role that zookeepers and curator staff continue to take in the modern zoo. Zoo staff are no longer merely operations and maintenance staff who “scoop the poop” and wash down holding buildings. In today’s zoo, they are often on the front line of biological research, the focal points of visitor education programs, and their close relationship with the animals under their care makes them uniquely attuned to their health and wellness.

The new wellness paradigm requires a recognition that all zoo staff now have elevated roles as wellness practitioners and need the facilities and support necessary to successfully carry out an ongoing mission of continuous improvement and innovation. Just as new wellness-focused habitats must be designed to let animals be the best version of themselves and thrive under human care, our facilities for zoo wellness practitioners must be designed to let staff thrive and be the best versions of themselves as professionals.

There are certain bare minimums in the quality of facilities for zoo staff that are essential to supporting them and all that

they do. Too many of the wonderful keepers and curators I’ve had the opportunity to work with over the years have been coping with substandard support spaces out of a sense of self-sacrifice for the good of the animals in their care.

In a wellness-focused zoo, no one suffers or just gets by coping. Everyone thrives.



The Next Generation of Zoological Parks and Gardens

In considering the next generation of zoos, we ask the public not to think of a zoo that is a walled fortress in a hostile urban realm. Think of a zoo that breaks down both the physical and institutional boundaries of the zoos of the past that is fully integrated within the urban landscape in every dimension. Think of how it can be intertwined with the economy of a post-industrial, knowledge-driven metropolis as the greatest living laboratory short of the wilderness itself.

Think of how it can seamlessly function as a vital piece of physical infrastructure helping to keep the hydrological balance of the land, treat our wastewater, and serve as a conduit for human-powered transportation in a less car-dependent society. Think of how it can embody the heart of a community, providing cultural and educational opportunities for all while fulfilling our biophilic need to gravitate to nature and natural processes. Think of how it can embody the soul of a civilization, by ethically heeding the call to provide the highest levels of health and wellness to the animals in its care and embracing the challenge of creating a place where all stakeholders: animals, zoo wellness practitioners, and the public alike, can thrive.



Interested in how we incorporate animal wellness into our zoo design projects?

Contact our experts: in@epstengroup.com

