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Zoological Laboratory: Redux

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ZOOLOGICAL LABORATORY: REDUX

Joyce Hwang

ONCE UPON A TIME, I developed a fictional narrative about the future of zoos, given the blurred boundary between “nature” and “artifice” already evident in fields such as biotechnology. This took shape in my graduate thesis project, titled *Zoological Laboratory: This Is Only a Test*, which explored speculative future “habitats” for animals that are bred—or created—in captivity.¹ These early ruminations have, in part, influenced the development of my current explorations in rethinking the spaces of animals as part of our constructed environment. Although I am not explicitly designing actual zoos in my practice today, many aspects of the *Zoological Laboratory* thesis continue to infiltrate and provoke my current research in co-species habitation, and the frictions that emerge from including alternate subjectivities in the making of our world.

If we consider zoos as a reflection of a society that identifies value in animals in terms of human use, whether it is for the entertainment value in viewing caged animals, or the selective breeding of animals

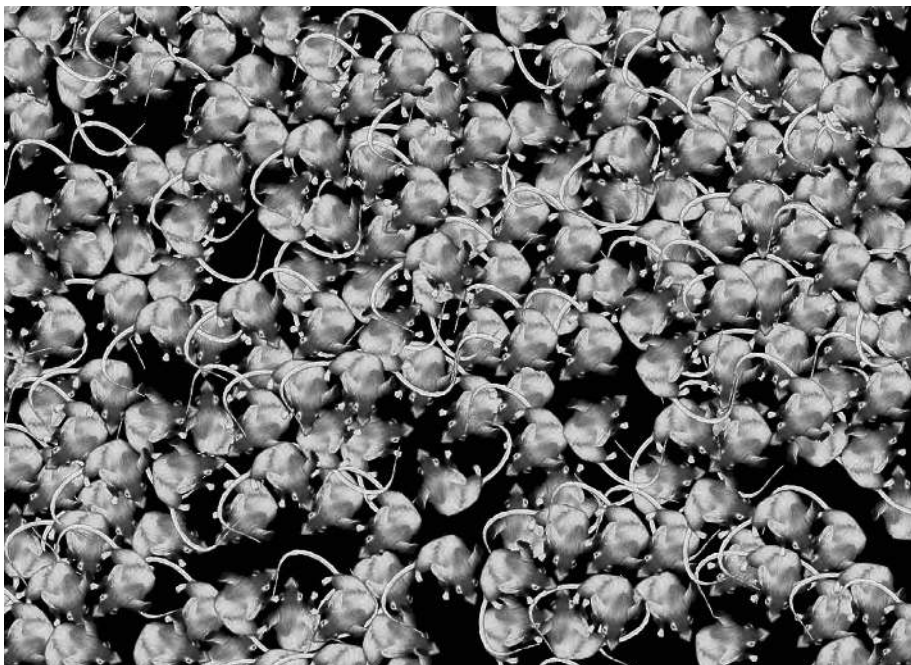
for the demands of science, one could imagine that the trajectory of scientific progress takes us to a time when zoos will house animals that have been “manufactured” in captivity. The lack of distinction between nature and artifice is ever more present in the field of biotechnology. In genetics and genomics labs, “model organisms”—such as rats, mice, and jellyfish—have been mutated, cloned, and in a sense “designed” by scientists. Dolly the Sheep was already cloned in 1996. It is not a long stretch of the imagination to suggest that the zoo’s future inhabitants will be creatures that do not currently exist in “nature.”

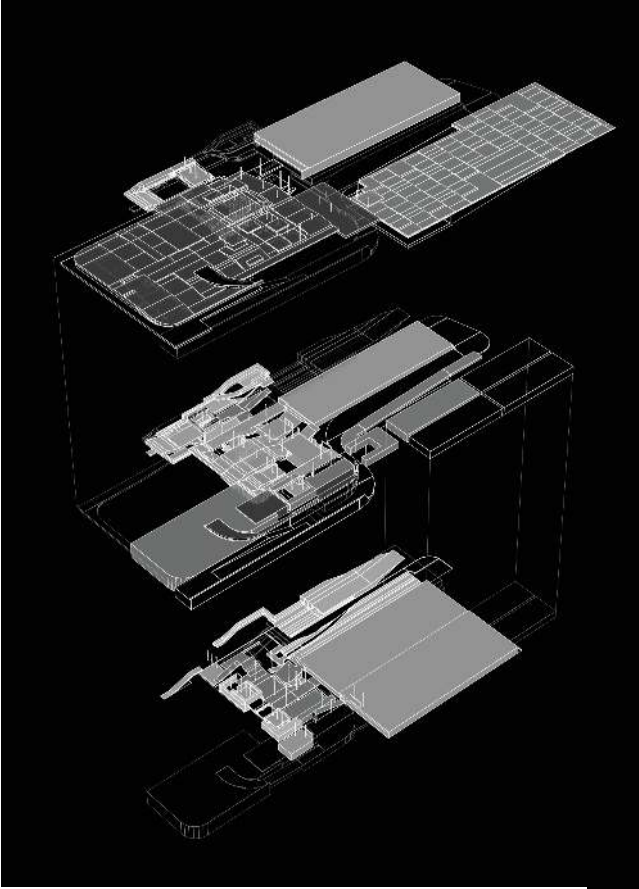
In recent years, it has become clear that this hypothetical scenario presented in *Zoological Laboratory* was not a far reach. The world’s first surviving clone of an endangered animal—a banteng, or a wild Southeast Asian cattle, which was created from the DNA of a banteng who died in 1980—went on display in the San Diego Zoo in 2004, after being born at a genetics farm in Iowa and raised in the San Diego Wild Animal Park (Moss 2004). Today it is

not infrequent to find discussions about the possibilities of cloning rare, endangered, and even extinct animals for parks and zoos (Ro 2018).

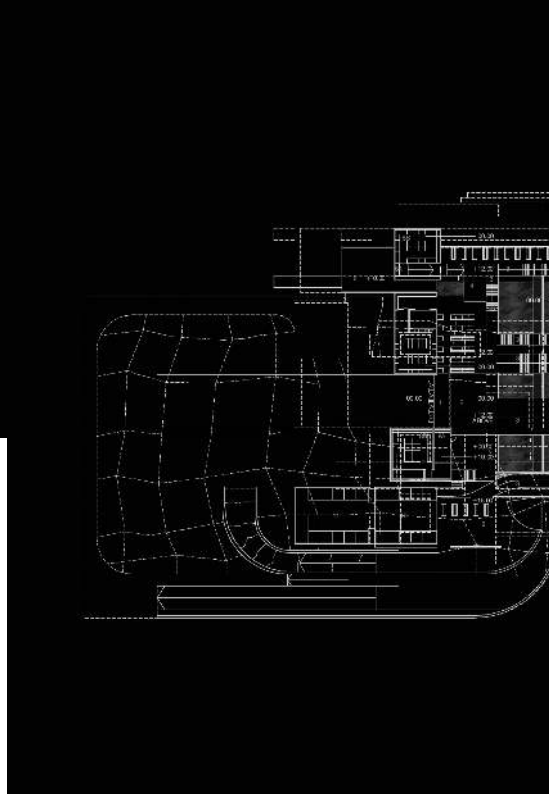
Genetic research, of course, has had—and continues to have—a profound influence beyond the environments of zoos and labs. At macro-scales, we see the impact of the production of transgenic species on larger ecologies. For well over a decade, animals have been bred systematically in the interest of industry, agriculture, and even the military. As one of many examples, in 2002 Nexia Biotechnologies Inc. and the U.S. Department of Defense partnered to make the world's first spider silk fibers, using transgenic goats that were bred with spider DNA (Lazaris et al. 2002; Service 2002; Osborne 2002). Trademarked as

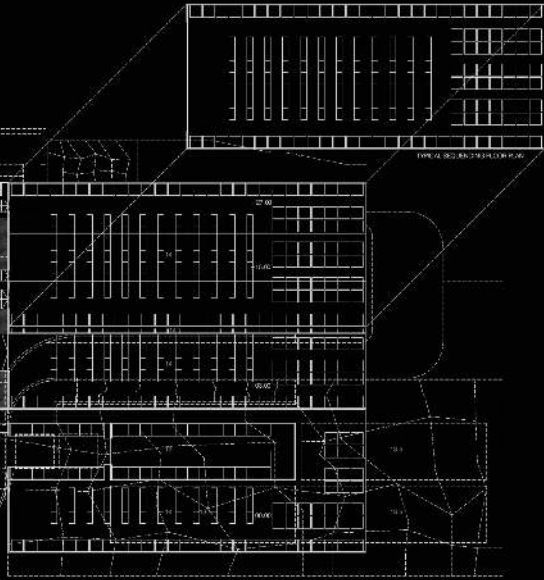
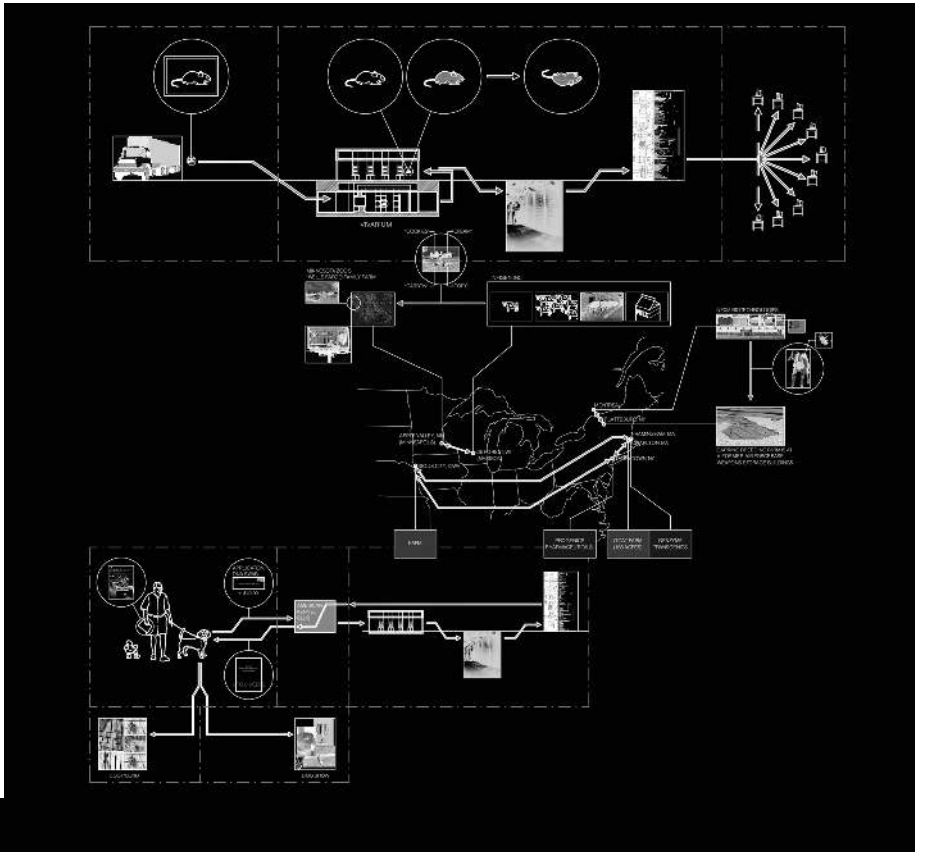
“BioSteel,” this bio-manufactured “silk” is a high-strength fiber-based material that bears similar strength and stretching capacity as spider silk, but at a much larger scale, with the output levels of a goat being much higher than those of a spider (Hirsch 2013). “An inch-thick rope of this material would be able to stop a jet fighter landing on an aircraft carrier” (Kettle 2000), stated Dr. Randy Lewis, whose lab at Utah State University would later acquire the “herd” of transgenic goats (Center for PostNatural History 2014). Today, debates on genetic alterations are hitting a fever pitch in the discussion around the gene-editing technique Crispr, and in particular the outcries due to Chinese researcher He Jiankui's claim to have created the world's first genetically edited human beings (Guardian 2018).





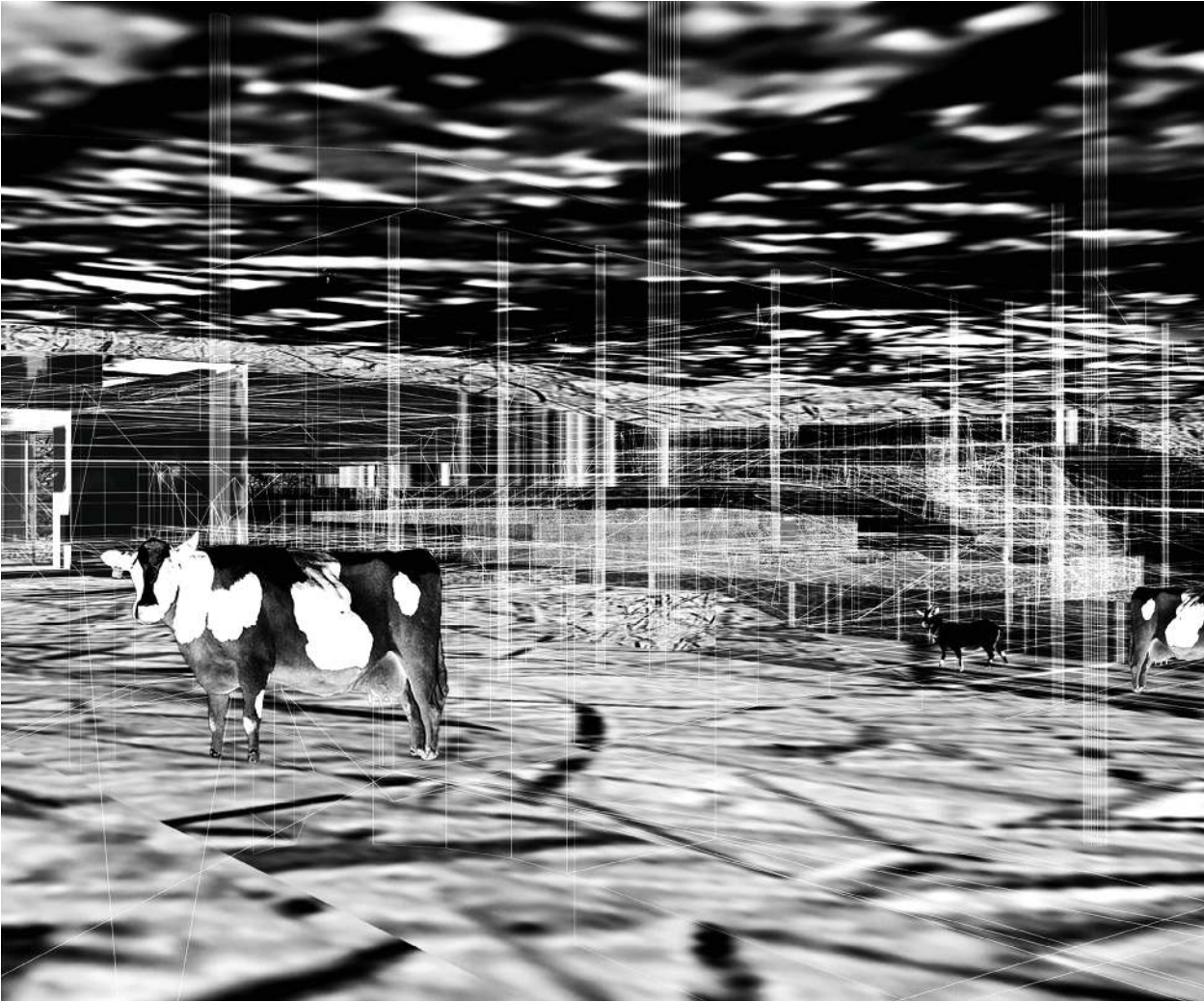
ORGANISM CLASSIFICATION



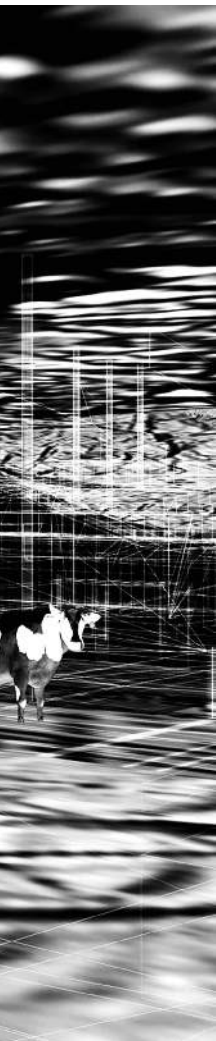


SAMPLE ORGANISM LIFECYCLES

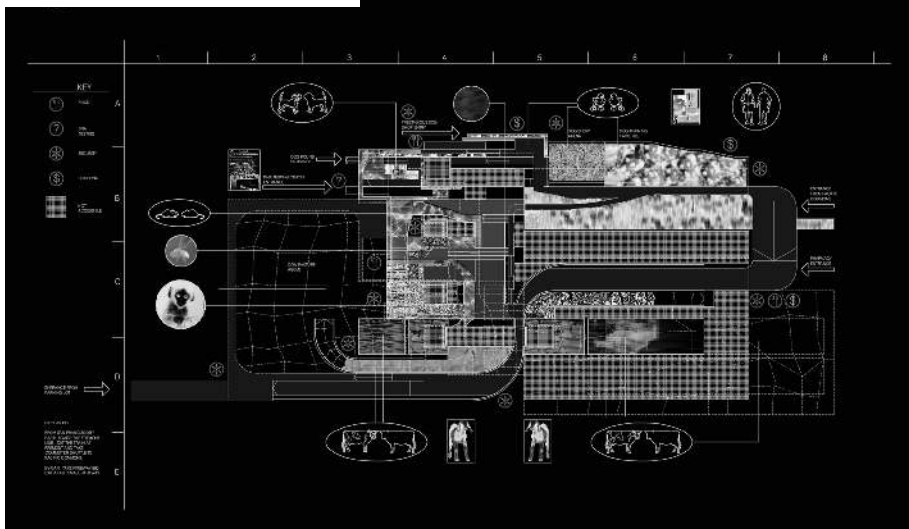
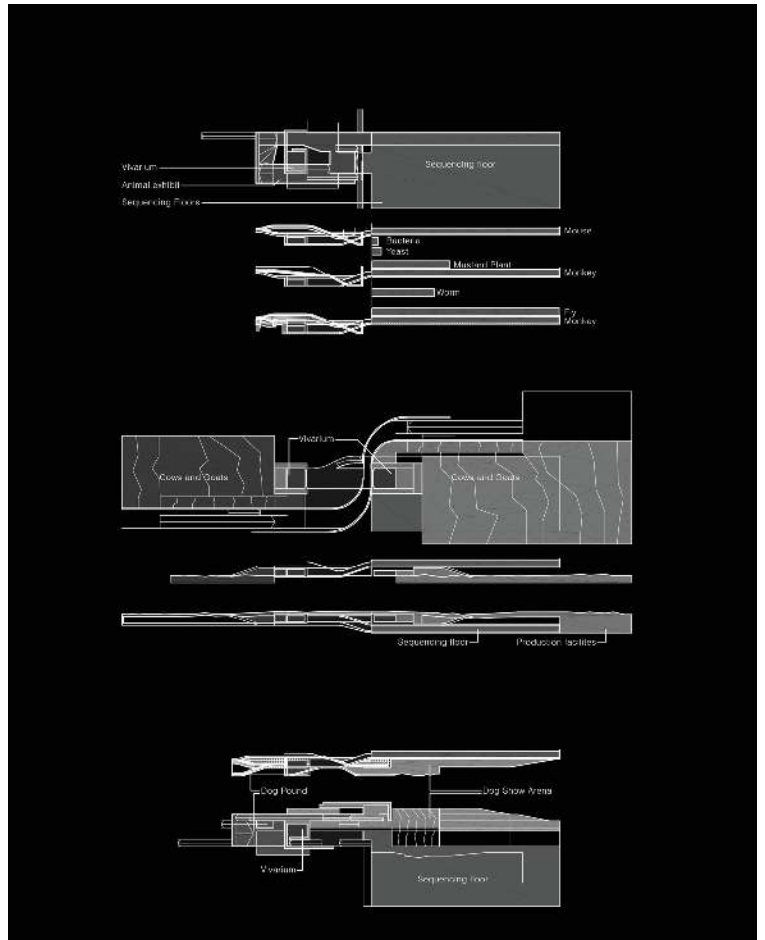
ZOOLOGICAL LABORATORY



BOS TAUROS



MODIFIED SAMPLE ORGANISM LIFECYCLES



ZOO PLAN

Yet, despite the high visibility of genetically “manufactured” species in the media and in public conversation, the actual processes of genomic research are rendered opaque. In science laboratories, these organisms and their by-products are typically hidden from view. The “model” mouse, for example, arrives by truck to the lab’s loading dock and lives its life in the sterilized confines of the Vivarium. After being utilized as a test subject, the mouse is “sacrificed” (Cartwright 2015; Cressey 2013)—in other words, killed—while its “data” continues to sequencing machines for analysis. Of course, there are obvious reasons to isolate these animals due to possible contamination, but isolating lab animals from public view is perhaps also a response to polarizing debates on the ethical questions of animal experimentation.

Zoological Laboratory is a fictional project that asks: what are the potential future trajectories; when will the industry of genetic experimentation move us beyond the science lab and into a more public realm of life? Indeed, we are familiar with examples of artists and other cultural producers who are working to bring visibility to transgenic species. As early as in 2000, artist Eduardo Kac introduced biofluorescent markers into animals such as rabbits,

to create a living creature that could emit a fluorescent “green glow.”² This “glowing” bunny became a sensation—not only in the world of art, but also in popular culture. Given the inherently spectacular nature of transgenic creatures, one of the aims of the *Zoological Laboratory* project was to conflate the products of genetic research with a materialization of visual culture. I would argue that it is the project’s insistence on the visual and sensorial potential of scientific practices that is central to defining its “charisma.” Here I am referring to the definition of “nonhuman charisma” by Geography Professor Jamie Lorimer, who draws from conservation biology’s use of the word “charismatic” to describe “flagship species,” or those that have popular appeal to the public. Charisma, according to Lorimer, is a significant factor in the human perception of organisms, and contributes to the politics of animal conservation (Lorimer 2015). In other words, this is why we see conservation efforts lavished on certain “charismatic” species, such as rhinos and pandas, while less charismatic species such as cockroaches are rarely recognized as desirable.

Zoological Laboratory asks: how can architecture tap into the charismatic effects of transgenic species—or our tendency to be fascinated with them? What if genetic breeding, farming, and

manufacturing were all part of an expanded laboratory setting, one that also doubled as a space for exhibition? How would this intensification of activities produce new adjacencies between humans, animals and machines? How can the notion of public spectatorship introduce the production of visual relationships and effects in a laboratory? How can the creation of model organisms cultivate the development of an aesthetic dimension in the design of animal spaces, which both reveals and normalizes the “strangeness” of the model organism’s life cycle?

By introducing these notions of the spectacle into the laboratory, *Zoological Laboratory* imagines the architectural implications of rendering “life” visible in a context where it becomes increasingly difficult to distinguish the differences between organism and machine, natural and artificial, life and death. The projected experience of these spaces—where the subjectivity of animals starts blending with materials, sensations, and other dispositional attributes of the space itself—points to the potential consequences of our desires to capture and manufacture animals, and what these implications may be in projecting an environment for our (future) selves.

Notes:

1. “Zoological Laboratory: This Is Only a Test” was developed as a Master of Architecture Thesis Project at Princeton University in 2003, with Laura Kurgan as my thesis advisor. Also thanks to Catherine Ingraham for introducing “Architecture and Biology” in her seminar at Princeton in 2001.

2. See “GFP BUNNY” in artist Eduardo Kac’s website for an accounting of “Alba,” the green fluorescent rabbit: <http://www.ekac.org/gfpbunny.html>.

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