

THE VIVARIUM

Adaptive Reuse of Historic Buildings for an Urban Zoological Collection



D'Amor¹³

VI·VAR·I·UM /vī've(ə)rēəm/

an enclosure for keeping or raising and observing
animals especially, for laboratory research

THE UNIVERSITY OF OKLAHOMA GRADUATE COLLEGE

THE VIVARIUM

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THE VIVARIUM

Adaptive Reuse of a Historical Building for an Urban Zoological Collection

A study of zoological design, partnering with the Tulsa Zoo to develop new exhibits and learning how to provide a proper habitat for the animals, while delivering an exciting and educational experience for visitors and meeting the needs of the keepers and other staff involved, in order to design a downtown zoo by repurposing an abandoned building through historic preservation to design a new, innovative type of zoological experience.

THE VIVARIUM

Tulsa's Concrete Jungle



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Goodies back pocket



Preface

This document represents ten months of zoological design, historic preservation, attraction design, and museum programming studies. It provides a theoretical framework for vivaria – urban zoos, housed primarily indoors – that could be employed in any urban space.

This conceptual urban zoo, The Vivarium, was designed in an abandoned downtown Tulsa building as an urban design masters thesis project. It proposes repurposing of unused space by establishing a vivarium and looks at how to establish vivaria in a model that could be replicated in any city.

Particularly focused in attraction/themed design, this project delves beyond historical preservation, traditional museum or zoo elements into entertainment design. Not only does this bring a new facet to a less researched subject matter but also offers new approaches and innovations for museum education strategies, historic building preservation, and care for animals in captivity.

This book has been oriented to address Centering on two conclusions regarding zoo design hierarchy: 1) A zoo's mission is to educate, conserve and entertain and 2) a zoo's priority is foremost the animals, then keepers and finally the visitors to their park.

The vivaria model should change the preconception of zoos as a whole, while providing an educational and cultural space for all communities, whether large or small, privileged or underprivileged, an all publics whether young or old, wealthy or poor.

THE VIVARIUM

Introduction

Acknowledgement

Mrs. Vicki Ford for being so understanding of my inner-library loan demands.





Historic Art Deco in the Neighborhood



PHILCADE BUILDING

511 South Boston Avenue
Built: 1931

Across the street from the Vivarium...

The Philcade Building is significant for its interior art work, its architectural design, and its association with the developing oil industry. The interior ground floor arcades of the building are surprisingly lavish. Pilasters of fluted and polished St. Genevieve marble support an ornamental plaster frieze covered with gold leaf at the mezzanine level. From this plaster frieze, arches form a ceiling that is also covered with gold leaf and hand painted with geometric designs executed in muted tones of red, blue, green, purple, and brown, the favored colors of the Art Deco period. These designs display the Zigzag Art Deco style of this era. An elaborate, bronze-filigreed chandelier is suspended from the center of each design. The ceiling treatment is complemented by the mahogany, glass, and bronze detailed store front units and the tan and black terrazzo floor.

Waite Phillips, the building's first owner, played a very important role in the history of Oklahoma oil. The building also served as headquarters for many developing oil companies and individuals connected with the oil industry. Many of these companies and their descendants are still active in the Oklahoma oil industry today.

Source: Tulsa Preservation Commission

project Description

Located at 5th Street and Cincinnati Avenue, The Tulsa Club Building is both one of downtown Tulsa's most iconic art-deco buildings and, one of downtown's biggest eye sores. Due to its current state of ownership, with an owner who is apathetic towards maintaining or utilizing the structure, the building has become derelict with no sign of recovery. The Tulsa Club Building was recently added to the Preservation Oklahoma 2013 list of Endangered Places due to its historic significance and state of debilitation.

The purpose of this project is to propose the adaptive reuse of the abandoned Tulsa Club Building to aid in the redevelopment and prosperity of downtown Tulsa. Simply stated, this will be an innovative repurposing of the Tulsa Club Building to house an urban zoo designed to inspire the community.

With a prime downtown location, the viability of the Tulsa Club Building's restoration would be invaluable to the owner as well as the city of Tulsa. With a city or privately owned landmark such as a The Vivarium, Tulsa would highlight its unique character, promote quality education for the community and attract new spirit to downtown.



project Goals

- Bring zoos closer to the city center to make it more accessible and usable as a community amenity rather than just a zoo: a place to study, socialize, and let yourself go wild.
- Create a zoo that isn't a 'once a year trip'. Instead, encourage repeat visits at a place people could visit monthly, weekly, or daily.
- Provide an opportunity for experiences by designing a community landmark that would become a stop for morning coffee visits before work, a lunchtime excursion, business meeting destination, after work entertainment and programming, a unique date idea, or an anytime downtown stroll past The Vivarium sidewalk habitats.
- Redefine the downtown core by extending its programming down to street level through its distinctive street displays and open windows allowing the sounds of the animals from nearby and parades fill the street.
- Establish a creative and experimental educational environment, where children and adults of all ages through can learn about biology, ecology, animal sociology and conservation
- Qualify for the national registry of historic places through innovative programming and a novel reuse

THE VIVARIUM

Introduction

research Methodology

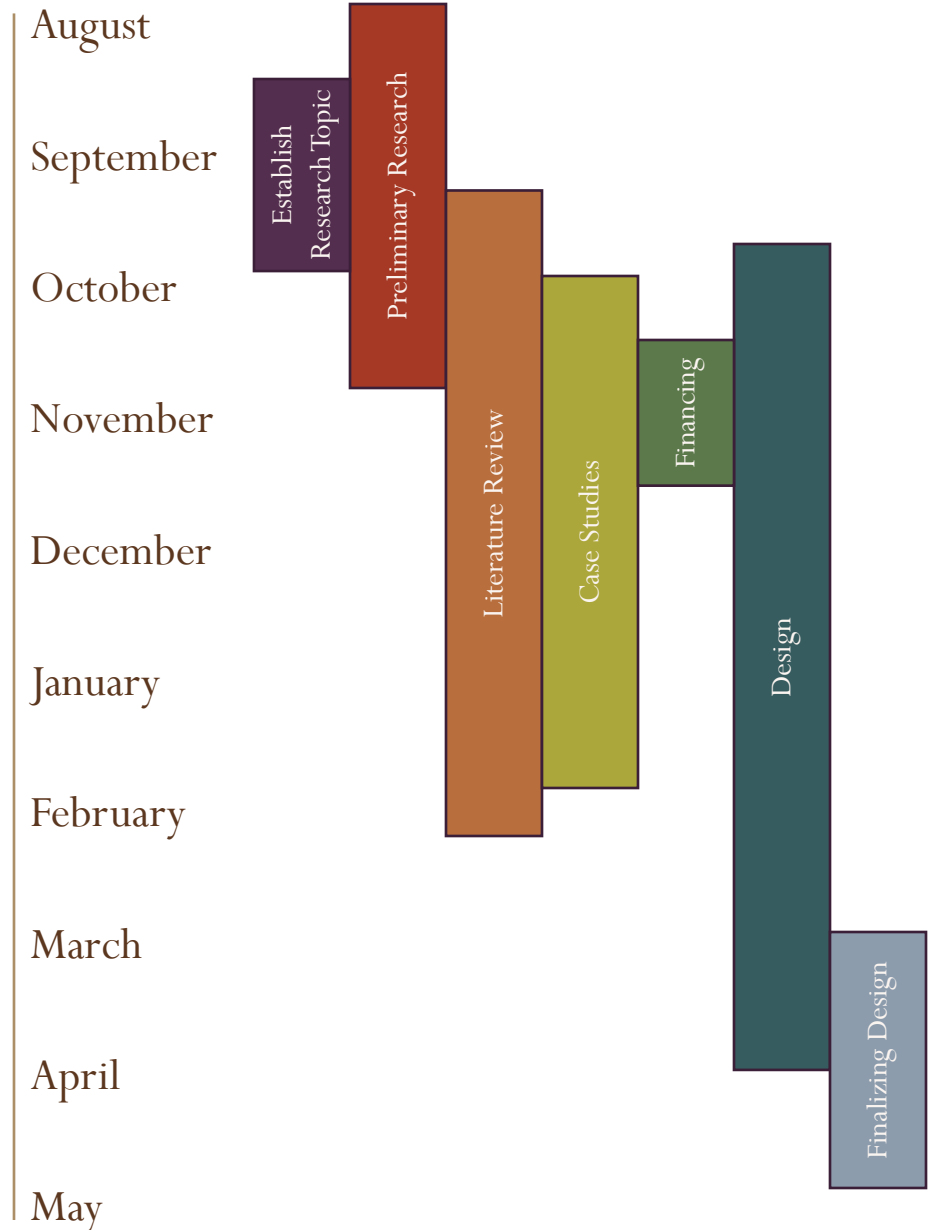
Originally, my research topic was to develop a section of the Tulsa Zoo's new master plan. However, a community partner at the Tulsa Zoo could not be established and the topic was altered slightly. The new established concept was to study zoo habitats in order to develop a conceptual downtown zoo, to repurpose unused buildings and to bring educational opportunities to areas that may not otherwise have them. After touring downtown and conducting basic web searches, as well as studying the interesting past and present state of the property, The Tulsa Club building was chosen as the site of the "Vivarium".

After reviewing the Tulsa Zoo's master plan, I contacted Ms. Jennifer O'Neal who allowed me to spend an afternoon with her, seeing how zoos function and the role she plays in it. I also met with Mr. John Money from the Jenks Aquarium to learn about indoor zoo facilities and aquatic life.

When conducting my literature review, I attempted to approach the concept from various angles: zoos, habitat design, museum design, and theme design. I researched and visited local zoos and zoos across the country to see how they managed to balance education and entertainment.

Throughout the last year, I have been generating designs based on my understanding of how zoos functioned. It was not until Ms. O'Neal setup an internship with the herpetology department that I truly understood the role of keepers and the backstage area. Most of my design had to be revisited again in late spring to reflect a new programming requirement.

project Timeline





Historic Art Deco in the Neighborhood

Two blocks from the Vivarium...

The Public Service of Oklahoma Building was an early Art Deco construction in Tulsa. The selection of this style by a generally conservative utility company established its acceptance and paved the way for the host of Art Deco buildings which were to follow. This building is also significant historically because it reflects the tremendous growth of Tulsa from 1920 to 1930. By 1927, construction costs in downtown Tulsa were averaging one million dollars a month. By 1930, Tulsa had more buildings of ten or more stories than any city of its size in the world.

The building is constructed of reinforced concrete, with a steel structural frame, and steel window frames covered by light grey Bedford limestone. The company was also in the retail business in 1929, and the windows on the ground floor are large enough to accommodate displays of merchandise. The stylized arch design of these windows reflects the Gothic predecessor of Art Deco. One of the most unusual features of the building is its beautiful nighttime illumination by a series of strategically placed lights. The architect, Arthur M. Atkinson, who was also a professional engineer, implemented this feature to showcase the client's product which, of course, was electricity. The torch shaped, light fixtures are decorated with Art Deco motifs of chevrons and stepped-back geometrical patterns. The building continues to be a viable part of downtown Tulsa and provides a visible and tangible link to an important period in its past.



PUBLIC SERVICE OF OKLAHOMA BUILDING

600 South Main Street
Built: 1929

Source: Tulsa Preservation Commission

Over the summer of 2012 the decision was made early in the process to focus on zoo design. The Tulsa Zoo adopted a new master plan at the end of spring semester and the idea was to take a section of the master plan and design the area for the zoo. I contacted Ms. Jennifer O'Neal, the exhibits curator, and we made plans to meet once the fall semester began. While participating in the master plan did not proceed as intended, the project transformed into developing a new, conceptual urban zoo in the abandoned Tulsa Club Building.

Through a community partnership with the Tulsa Zoo and The University of Oklahoma, Ms. O'Neal and I met in person in September 2012. She was a fantastic resource, providing first hand insight into the design process the zoos actually go through when designing. There are a series of keepers, directors and curators who decide what animals will be featured at the zoo. Then she works with the handlers and zoologists to develop the design program for that species. The Tulsa Zoo has a small exhibit support staff who builds most of their own exhibits, outsourcing only specialty items.

The North American Living Museum (NALM) had been going through a long remodel when I met with Ms. O'Neal and she quickly offered to delegate work to me to provide me with first hand design experience. She offered to guide me through the process of designing a hellbender exhibit, a rare type of salamander. Over the following weeks, curators and directors were continuously changing the animal list for the NALM and the hellbenders were cancelled, so Ms. O'Neal suggested we work together on the artic foxes - a larger, more exciting space. In the spring of 2013, Ms. O'Neal set up an opportunity with the herpetologists who needed a new crocodile monitor exhibit in the NALM. She wanted me to design the habitat and also work with the keepers who have the most extreme exhibit responsibilities with heaters, water filtration, humidity controls, and UV requirements which need to be carefully monitored. I worked alongside the keepers in the herpetology department including Barry Downer, curator of herpetology and aquatics, and Celeste Czarniak, senior keeper of herpetology.

For three days I shoveled giant turtle dung, sprayed down habitats, broke cricket legs, and learned how keepers used their space.

Afterwards, Ms. O'Neal mentioned the designs of the new komodo dragon land that were called for in the new master plan were not satisfactory. She proposed that I draw up some concepts and potentially work for the zoo after I graduate to construct a design of the new komodo dragon land.

Over Christmas break, Ms. O'Neal attended a conference at The Dallas World Aquarium, a 4-story downtown, indoor zoological facility. She spoke to their exhibit curators, told them about The Vivarium concept and they offered to let me tour and shadow at their facility over a three day weekend.

There was also talk of an architectural review of the NALM to see where they might consider redesigning while the building was being remodeled.

I was able to use the knowledge gained with my time at the Tulsa Zoo to redesign The Vivarium in a more practical manner. Spending time as a zookeeper made it obvious that my original concepts for the layout of The Vivarium were not well designed. The keeper and the "behind the scene spaces" are much larger than I had anticipated with many animals kept off display and a surprising amount of food prep and cleaning done by keepers. The backstage areas also have tremendous power requirements to run the numerous heaters, lamps, pumps and filters.

In the end, Ms. O'Neal was able to provide a vast amount of real world experience that I would have otherwise never been able to understand.

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Interviews & Field Studies

the Jenks Aquarium

In the late fall 2012, I met with John Money, curator at the Oklahoma Aquarium in Jenks. Mr. Money is a leading expert in aquatic design. He is currently designing several projects outside of the Jenks area including several overseas, such as the aquarium at the Jerusalem Biblical Zoo and the Wonders of Life aquarium in Missouri, both projects expected to open in 2015.

Mr. Money took time to show me around the Jenks aquarium. His tour highlighted how simple modifications can improve the animal and visitor experience. We discussed air purification in depth and he gave up his personal trade secrets that keep the Jenks aquarium from smelling fishy. He has designed and installed his own O3 recyclers that use the ozone created by the aquarium filtration process to purify the air in the visitor space. He has also chosen the stinkiest of animals to be the final habitats before the air is expelled from the building. In this technique, the lizard's air is pumped from the visitor space through their habitat and directly out of the building.

Simpler construction and design techniques were also used, such as all acrylic enclosures or live plants in visitor spaces that naturally filter airborne toxins and odors. Areca, lady and bamboo palms are all very easy to grow indoors and are able to filter the air very well. Though Mr. Money has not had the opportunity to do so yet, he believes incorporating small amounts of fragrant plants may also help with any odors. His design approach is to implement something, see if it works, then analyze it logically to see why something worked or failed.

Mr. Money mentioned the non-animal exhibits have become very popular with visitors. The space between habitats has interactive displays that the guests like to play and learn with. He hypothesized that this changed the guest's experiences at the aquarium and they enjoyed learning through different methods.

Among the most surprising facts I learned from Mr. Money was the Jenks Aquarium financial plan and how involved habitat design can be. For example, visitor opportunities to feed the animals have been strategically placed

throughout the aquarium. For 25¢ you can receive a small handful of puppy kibble to feed to certain fish. This quarter's worth of food fed to the fish by visitors not only feeds the fish for the day, but also paid for the cost of construction of the exhibit and turned a profit in the first month. Similarly, carrots can be hand fed to turtles for \$3. The entire food budget for the Jenks aquarium is \$65k/year. The turtle exhibit makes \$600-700k per year. The stingray exhibit makes an additional \$100k through feeding profits.

Mr. Money mentioned that reducing the gate price to the facility encourages more visitors to attend the aquarium. He said the perceived price of the visit is the gate price and concessions. Even after paying, the added costs for experiences and attractions, like feeding turtles carrots are not figured into the parent's concept of cost.

The Jenks Aquarium no longer stays open to the public past 6pm on Thursdays, Fridays and Saturdays. This is due to the fact that they are able to make substantially more by renting out the facility to private parties and catering event. They have three spaces that they rent out starting at 6:30pm. They have a well-rehearsed crew that is able to turn over the building, set up tables, decorate and completely change the space in 30-45 minutes.

Mr. Money has designed a new exhibit for the aquarium, expected to open in late 2013, which features small hammerhead sharks that visitors can feed through holes in the top of the aquarium and also get their pictures taken next to the shark. The glass where photos will be taken has been designed to make the sharks appear larger. The space is also designed with a large banquet area that can be rented. Mr. Money has a way of innovatively designing to reduce costs, then developing programming for the design to strategically capitalize on the space. By keeping the cost down and allowing the expansion to produce money, he expects that the multi-million dollar expansion will easily turn a profit in under 10 years.



Historic Art Deco in the Neighborhood

Two blocks from the Vivarium...

This variegated Bedford stone depot, designed by R. C. Stephens, was completed in 1931. The exterior of this impressive example of Art Deco Architecture reveals the inspiration of machinery as a theme for geometric designs. The desire for machine-like geometric clarity evident in this building became something of a mania in the 1930s. The Depot serviced as many as thirty-six trains a day in its prime. However, rail travel diminished as the years rolled by and need for the Depot's services decreased. It ceased operation in 1967.

The Depot stood vacant and neglected for years. Then, in 1983, the deteriorating structure, including the caved-in roof, was restored and adapted for contemporary uses. The original interior was skillfully preserved and integrated into office space. The walls, moldings and medallions on the ceiling were restored to their original colors.

The renovation of this building was an important milestone in preservation in Tulsa. It demonstrated how successfully such historic buildings could be rehabilitated and utilized. Building further on this concept of adaptive reuse, the Depot was rehabilitated in 2007 to become the home of the Oklahoma Jazz Hall of Fame, complete with gallery and performance space.



TULSA UNION DEPOT

3 Boston Avenue
Built: 1931

Source: Tulsa Preservation Commission

Humans have exhibited wild animals in one form or another for thousands of years. The ancient cultures of Egypt, Rome and China had collections held by the royalty for their personal entertainment and their guests. These collections began as menageries of taxidermy to showcase the animals they killed. These developed into live collections because the nobleman could show power over the animal he captured and kept in his garden. Polakowski explains in *Zoo Design: The Reality of Wild Illusions* that while the royalty would claim to have captured these on safari, they were often gifts from explorers who brought back unknown species from expeditions and offered them to the royalty in hopes of receiving funding for future voyages. Due to the nature of their excursions the travelers could only capture a bird or small mammal to keep in the royal garden, but they would have killed larger animals to present in the taxidermy form. As this practice developed, royalty would offer more funding in an attempt to catch larger, more magnificent specimens.

These early habitats made no attempt to replicate the animals' natural environments. The cages were barren inside but often embellished on the outside to resemble the architectural style of the palace or mansion. Over time, it became fashionable to replicate architecture from the region the animal was from. The function of keeping animals at this point was to entertain and impress guests. Occasionally, slaves or servants from the native homeland of the animals would have been brought in and dressed in their native attire to heighten the spectacle. Polakowski cites this as the beginning of an anthropological approach to exhibit design that continues to present day.

Though animals have been exhibited for millennia, the greatest changes have taken place over the last century or so. The 1800s brought a change in culture and attitude regarding captive animals' wellbeing due to increased interest in arts and sciences which regarded animals as specimens for study rather than creatures of curiosity. Regents Park, London Zoological Gardens (later becoming The London Zoo), was the first modern zoo. It was opened in the 1820s as a research facility and was opened to the public 20 years later. The

word "zoo", a shortening of the previously used "zoological garden", originates from a popular 1877 British song called *Walking in the Zoo is the OK Thing to Do*. The song refers specifically to the Zoological Gardens at Regents Park.. The song is also the earliest UK use of the term "OK" – previously used exclusively in American political slogans.

In the 1800's, zoology and the professional keeping of animals was in its infancy. Animals were permanently housed indoors because of the belief that animals from more tropical climates would need to be insulated from the fresh air of the northern England.. The Regents Park Zoo was the first to use a systematic or taxonomic concept of animal organization: housing animals one species per cage with several cages of similar animals grouped together in "houses", such as the feline or monkey house. Hanson's *Animal Attractions: Nature on Display in American Zoos* states that the houses were decorated ornately with messages "expressing a philosophical viewpoint or commentary on the social conditions of the times. These messages, however, were usually lost in meaningless forms, decoration, and style."

It was long held practice that animals within the zoo could be freely touched – at the visitor's risk. It was not uncommon for a visitor to pet a lion who had fallen asleep against the bars of its cage - though accidents did happen!

A new generation of zoos was established in 1907 in Hamburg-Stellinger, Germany. The zoo had a dynamic change in appearance, brought forth by the development of reinforced concrete. Polakowski mentions that artificial rock formations created a backdrop for the animal habitats while moats and prop logs replaced the typical bars to permit unobstructed views. Herbivorous animals were housed together in outdoor naturalistic-environments that generally had no real relationship to the actual habitat of the species showcased. At this point, there was no attempt to educate at zoos, as such, the animals were misrepresented and misinterpreted. The Hamburg-Stellinger model required significantly more space for habitats than the previous model.

THE VIVARIUM

Zoo Missions

Accordingly, zoological gardens expanded into larger spaces and continued to experiment with naturalistic vistas, regardless of the animal's natural habitat. New bar-less enclosures were tremendously popular with zoo patrons, most of whom had never seen "safaris" or "mountains" outside of books and paintings. This was among the first forms of attraction theming for entertainment, zoo or otherwise.

Zoos noticed a draw of patrons attending their facilities for their landscapes – Brooklynites could escape Brooklyn to go to their local safari. More attention began to be put on the aesthetics and cleanliness of the landscape than the animals themselves. With the larger habitat spaces, outdoor environments, and care put to the maintaining of the popular vistas, the animals living conditions vastly improved – reducing the amount of disease present at zoos. Not surprisingly, keeping the animals habitats clean so that visitors could better enjoy the site, had the added benefit of reducing disease and extending the animals life span. Indoor exhibits picked up on this trend of hygiene practices extending life expectancy and began to remodel their buildings to the point of appearing like tiled bathrooms.

A more recent change to zoological design and the general operation of zoos came about with the Endangered Species Act of 1973. The act limited the collection of many species and forced zoos to start captive breeding programs. At the same time, a change in American culture brought a rise in animal rights that accused zoos of being inhumane. The Association of Zoos and Aquariums (AZA), which was founded in 1924 to connect zoos in the United States to exchange animals, practices, and research, responded by establishing an accreditation program for zoos. Under the AZA guidelines, zoos were no longer measured on the sheer number of species they had, but instead by the "quality of their facility, its exhibits, educational programing, its propagation results, and its research and conservation activities."

These new principles formally reestablished zoos as centers of learning, a purpose they had lost in the early 19th century. However with the popularizing of zoos in American culture, they became educational centers for the general public rather than just zoological researchers. Visitors attended the zoo for the opportunity to learn simple facts about animals while being entertained. As zoos began to scale back and focus their attention on conservation of species, new animals were brought to the zoo that the public was not as interested: lizards, birds and small mammals. However, zoos developed a "popularity exhibiting arrangement" as coined by Zoo Design, which arranged animals with focal point exhibits meant to draw the visitors to an area to get the most out of the species that people regularly expect to see at the zoo, such as lions, tigers, elephants and giraffes.

Theming has continued to develop over recent decades with landscape immersive exhibits in which the visitor appears to share the same space with the animal by eliminating any perceived barriers. The landscapes are generally reflective of the animal's natural habitat or a generic area fit to the region of the zoo, that keeps the animal's needs in mind, for instance shade, water, sun, places to perch, places to hide, depending on the species exhibited.

Another modern expansion is the development of safari parks or wildlife refuges which contain acres of free roaming areas for the animals while the



President Eisenhower meeting Dzimbo in 1959, a gift from The French Community of African Republics



Visitors to the London zoo, mid 19th century

visitor is limited to a vehicle on a road or a rail line through the habitat. This new type of zoo is not only intended to improve the recreational value experienced by patrons by better simulating the natural behavior of the captive animals, but also is an attempt to display a message of conservation by maintaining a safe area for animals to thrive safe from poachers and popcorn machines and the commercial-oriented nature of modern public zoos. Conservation is a major message at public zoos as well, where simple concepts such as fewer paper towels in restrooms and the absence of plastic lids and straws showcases how everyday actions can create ecological awareness.

Most recently, zoos have developed new programing that allows the visitor to get as close to the animal as possible, engaging the patron's sense of adventure to set their zoo experience apart from others. Underwater viewing areas for crocodiles, polar bears, and sea lions have become mundane over time and zoos are attempting to branch out with even more innovative visitor experiences. The main objective for these new experiences is to bring the visitor as close to the animal as possible.

Hanson's Animal Attractions: Nature on Display in American Zoos, provides case studies of the new and inventive experiences zoos are testing out, some more successful than others.. An Arizona zoo came up with an innovative, original seal exhibit meant to showcase the new technology available to habitat designers. They built a large dome with projectors displaying live webcam feeds on the walls, making up a 360 degree view of Antarctica. The view was accompanied by cold air from air conditioners and a soundtrack of waves and ice. While the exhibit was very popular during the day for its air conditioning in the Arizona summers, the projectors played 24 hours of snow flurries with rare appearances from animals, usually far in the distance. Over time, strong winds knocked over several cameras, which could not be corrected without an excursion back to the continent. The concept for the exhibit was soon abandoned. Conversely, there were many successful case studies which included a Tasmanian devil exhibit in Sydney, Australia which hung road kill

from logs suspended over the exhibit. The case study says how a surprising number of visitors were drawn to see the display, and then suddenly taken back as blood sprayed across the viewing windows when the Tasmanian devils leapt into the air, tearing the flesh from the deceased wallabies. The show was determined to be a success but required the addition of an M-rating disclaimer (moderate), the Australian equivalent of PG-13.

New ways to attract guests are always on the mind of zoo designers, keeping in mind the three elements of present day zoos; educate, conserve and entertain. Education is the primary function of zoos since the establishment of the AZA guidelines. These guidelines determine how zoos are perceived, are able to obtain funding and contribute to the local and zoological communities. Zoos have become one of the few public places where it is socially acceptable to reinforce conservational values without the perception of lecturing patrons. Conservation is another major focus of zoos due to the growing number of endangered habitats and animals, climate change, responsible use of resources, and recycling, to name a few. Finally, the entertainment value of a zoo is judged by the public who chose to spend their time and money at the facility. While this is seen by the patron as their leading reason to visit the zoo, it is not the zoo's main focus in its mission.

With increasing financial limitations, zoos have to ensure that every dollar spent is able to cover all three categories: education, conservation and entertainment. This section covers the Zoo Mission and is divided into aforementioned three sections in the order of importance for zoo design.

The Vivarium is intended to address all of these development goals by combining zoological gardens with elements drawn from other institutions to enhance them: 1)Education programing from museums, libraries, and hand-on learning centers such as Disney's Innovations complex, 2)Conservation methods from universities and botanical gardens, 3)Entertainment strategies from theme parks and the like.

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Zoo Missions

Education at THE VIVARIUM

While generally not perceived by zoo visitors who view zoos primarily as recreational activity, education is the primary focus of the zoo's mission.

In order for a zoo to continue to enjoy and expand its high attendance while simultaneously improving its ability to communicate knowledge... more educational programs must be developed along the lines that they can also be perceived as recreational, stimulating experiences by the general zoo visitor. (Polakowski)

The Vivarium is designed to provide learning opportunities across a broad range of disciplines and methods so that visitors can learn what they are interested in, in a way that suits them. By structuring both the physical and social environment of The Vivarium around opportunities for educational discovery, visitors of any age can uncover what learning style best suits them at their own pace.

Zoos across the country have been configuring their programs, redesigning facilities, and developing best practices to better educate their visitors. No longer is an educational message a post-construction add-on. Now it is at the center of the design process. Museum curators and designers carefully craft the visitor experience to best deliver the message. The Vivarium will implement research from museum and non-zoo exhibits to deliver the message of community, both locally and globally.

Humans are visually oriented; they "read" landscapes, people, and situations with their eyes. However, all senses can be employed to learn. When designing exhibits, McLean's *Planning for People in Museum Exhibitions* suggests that, in general, visitors retain: 10% of what they hear, 30% of what they read, 50% of what they see, and 90% of what they do. She encourages programming efforts to focus on including a number of approaches, promoting visitor engagement within the learning process.



VISUAL

Casually exploring over 100 exhibits, provides a great survey of animals from all over the world.

AUDITORY

The indoor zoo lets you escape the sounds of downtown Tulsa in exchange for the sounds of nature.

VERBAL

With volunteers, docents and keepers present on all floors, learning is never more than a question away.

TACTILE

Hands-on learning has never been more present with opportunities to feel, feed and hold animals.

LOGICAL

Animal rational is different than of humans. The Vivarium offers exhibits that may change your way of thinking.

SOCIAL

The Vivarium is designed to engage the community and bring Tulsa together to learn together.

SOLITARY

The library offers a quiet place to learn at your own pace with an extensive collection.

conveying Community

Zoos and other public facilities depend on many people: the administrators and planners, keepers and curators, donors and politicians who appropriate funding, and perhaps most importantly, the guests who visit the museum. These groups make up the community that determines the zoo's character and quality. The Vivarium is intended to become a community resource. By actively engaging the Tulsa community with programing specific to different community factions, a larger pool of individuals should be drawn into the zoo. These are the people who have interests in the facility and this is further explored in the Zoo Priority section of this document.

While most museums and educational organizations typically provide only research related services, The Vivarium is designed to be an integrated part of the community. The Vivarium will help meet community needs by functioning as an interesting meeting space downtown for community gatherings. Becoming part of the downtown neighborhood, The Vivarium will help convey a feeling of comfort during day and night to encourage visitors to spend time downtown.

The Vivarium will play an active part in educating the Tulsa community. Even after leaving, visitors should be in a state of mind that encourages curiosity. The Vivarium will set an educational foundation providing the opportunity for personal, hands-on experiences that children and teachers can take back to the classroom.

Youth can benefit from activities such as school field trips or children's clubs while their teachers can participate in seminars. Both students and teachers can take information back to their own classrooms, from topics like zoology, botany, history, environmentalism and cultural studies, and continue to enjoy their experiences from The Vivarium.

The Vivarium becomes a gathering place for children on field trips families on afternoon visits, and adults during or after work. The lounge can be used for business meetings, interviews, conferences, lunches, or after work

entertainment programs. Evening programming is designed to allow workers to avoid rush hour and spend some time exploring the exhibits and socializing. The Vivarium would be a great central place for carpools to arrive and depart from because it offers morning breakfast, coffee, and drinks after work.

Aside from the local community, The Vivarium would also take an active role in the global research community through quantitative studies into the socialization of animals and its benefits. This research program focuses on an emerging research topic in ways traditional zoos cannot. Keepers and zoologists can study the effects of human interactions with animals, such as an enrichment programs, which previous studies have shown cause an increase in animal life expectancy. Other zoos could loan animals to The Vivarium, improving animal-human interaction and socialization.



NAKED MOLE RAT

Length: 3-4 inches long

Weight: 1-1.2

Conservation Status: least concern

Social Behavior: clusters of 70-80

Exhibit: C27

Heterocephalus glaber

Contrary to myth, they are not completely blind, though this burrowing rodent native to East Africa does have a highly unusual set of physical traits that enable it to thrive in the harsh underground environment. It is the only mammalian thermo-conformer. It has a lack of pain sensation and is able to move backwards as quickly as forward. Their large, protruding teeth are used to dig, and their lips are sealed just behind the teeth to prevent soil from filling their mouths while digging.

THE VIVARIUM

Educate

OUUDS
The University of Oklahoma Urban Design Studio

KURT EPSON D'AMOUR
THE VIVARIUM

learning Opportunities

An emerging feature of exhibit design is an emphasis on user interface. The visitor should be stimulated cognitively and encouraged to pursue their own interests. The Vivarium is designed to spark the thought process by providing an innovative learning environment, both formal and informal. The Vivarium would be different than traditional zoos which are designed for parents to push strollers and provide display information geared towards second graders. While plaques labeling exhibits will be written simply and clearly, visitors will have the opportunity to explore further and follow a path of learning that suits them, through this range of learning systems.

A successful approach to an education program for a zoo, museum, or any information or learning center, is multifaceted and requires a multitude of interwoven communication techniques. Communicating the zoo's ethics, missions and overall philosophy is critical both internally and externally. This is done by utilizing both financial and personnel resources.

The Jenks Aquarium has installed a number of digital touchscreen displays designed to fill in gaps between exhibits. They have found that the visitors really respond to them. They were worried the equipment would not hold up to public use, but the technology has really progressed over the past decade. The Jenks Aquarium found the interactive devices provide a refreshing way to break up the visitors' experience.

Technology can play an integral role in education. Emerging technologies have allowed the gallery experience to evolve. From games are education disguised as entertainment, and interactive learning centers, featuring hands-on, participatory exhibits immerse the visitor. With a simple QR code on the animal plaque, a visitor could connect from a smart phone to The Vivarium network of animal knowledge. Visitors without phones can use tablets placed around the facility to access the network. Keepers will update this information regularly and community members could access this information online at home.

The Vivarium offers a range of learning activities



READ PLAQUES

Simple text and pictures and interesting antidotes about the animals



SCROLL THROUGH TABLETS

Digital engagement through videos, photo series and interactive games



TALK TO VOLUNTEERS

Regularly trained volunteer docents are knowledgeable and friendly



VISIT LIBRARY

An ever-growing collection of resources on flora, fauna and fun



TALK TO ZOOLOGISTS

Experts available to answer inquiries and talk about the animals

Conservation at THE VIVARIUM

The practice of conservation is interdisciplinary and can be incorporated into virtually any area of study. A form of conservation specific to architecture and urban design is historic preservation.

As Randy Krehbeuk explains in *Sooner Magazine*, Tulsa was a young city experiencing unique growth and prosperity in the Roaring Twenties, just as the Art Deco movement came into vogue. In the 1920s and 1930s, when oil money added some of the country's most stunning art deco buildings to the Tulsa skyline, a largely self-taught architect named Bruce Goff (1904-1982) won acclaim for his design contributions to such structures as the Tulsa Club and Boston Avenue Methodist Church. Goff soon became a rival and friend of the famed Frank Lloyd Wright; later, he served as chairman of architecture at OU despite a lack of credentials, where he influenced a new generation of architects.

Built in 1927, our thirteen-story building was designed by a 23-year-old Bruce Goff. It was built through the joint effort of the Tulsa Chamber of Commerce and the Tulsa Club. The first five floors of the building were occupied by the Chamber and other business organizations while the top six floors and the roof garden were inhabited by the Tulsa Club. Built as a men's club, it offered a place for Tulsa's elite to rub elbows. The Tulsa Club contained dormitory rooms on the sixth floor and a

men's lounge on the eighth floor. The club also had a gymnasium and barber shop. The club's interior had extravagant Art Deco ornamentation including specially designed fireplace tiles and ceilings. Built of Bedford stone, the original 5th Street entrance was designed with abstract detailing above the doorway which was refaced in the early 1980's.

For over half a century, The Tulsa Club Building remained the heart of the Tulsa community. The building stayed open until 1994 with members able to play squash, attend balls and galas, and enjoy the downtown facility where "hand-shake deals over dinner and a fine scotch" were fondly remembered by some.

Since 1994, the building has been under the ownership of CJ Morony and has been seemingly abandoned for two decades. Morony has a significant amount of fines and unpaid Tulsa Stadium Improvement District assessments against him, totaling nearly \$500k. It has acted as a shelter for homeless during the winters. The building has experienced significant vandalism and a number of fires as its tenants burnt the remains of the art-deco moldings and debris for heat.

The Downtown Tulsa Area plan, adopted in 2010, states that,

Historic and architecturally significant buildings should be rehabilitated and leased to new tenants as the highest preference. New uses should be sought for historic buildings that may no longer function in their original design. For example, many office buildings can be converted to mixed use or residential uses to increase downtown living space. Alternately, industrial buildings can find new life as creative office, commercial or mixed use spaces. (Planning Department, The City of Tulsa)

The Tulsa Club Building would reopen as The Vivarium approximately two-three years after purchase, ready to engage a new generation of Tulsans. The weddings that were once held in the grand ballroom would return to the building amid its new atmosphere.



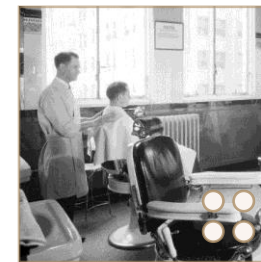
THE VIVARIUM

Conserve



KURT EPSON D'AMOUR
THE VIVARIUM

Golden Age of The Tulsa Club Building - 1929



○ Street View

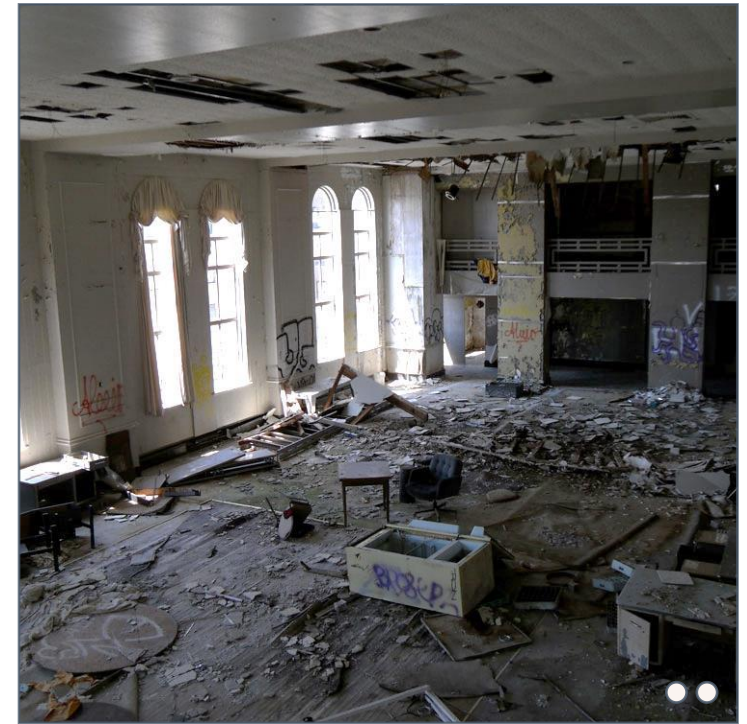
○○ Roof Terrace

○○○ Ball Room

○○○ Barber Shop

○○○ Lounge

Tulsa Club Building - Present Day



○ Street View

○○ Ball Room

○○○ Stairwell

○○○ Elevators Doors
and Graffiti

○○○ Art Deco Railings
and Columns

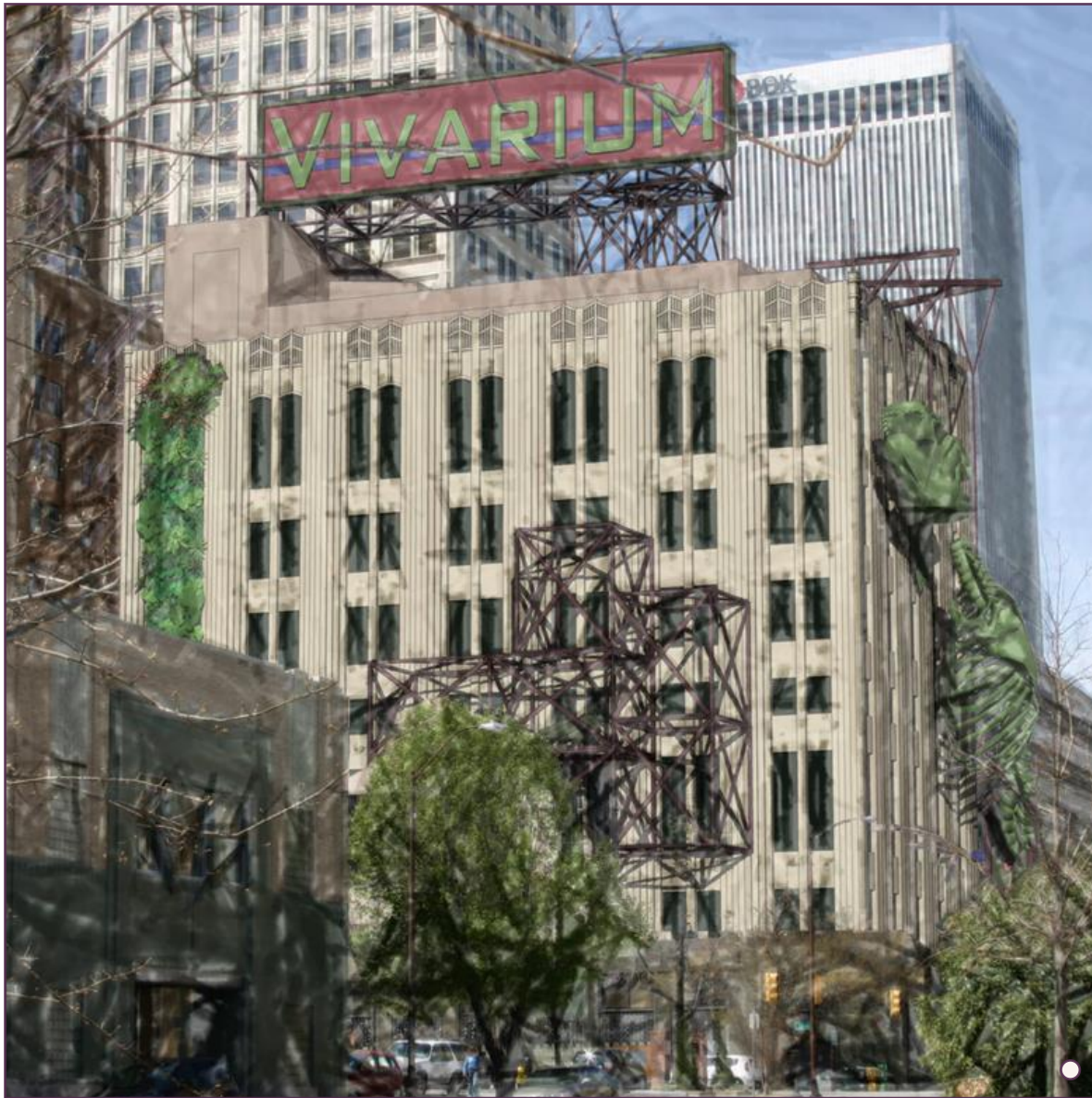
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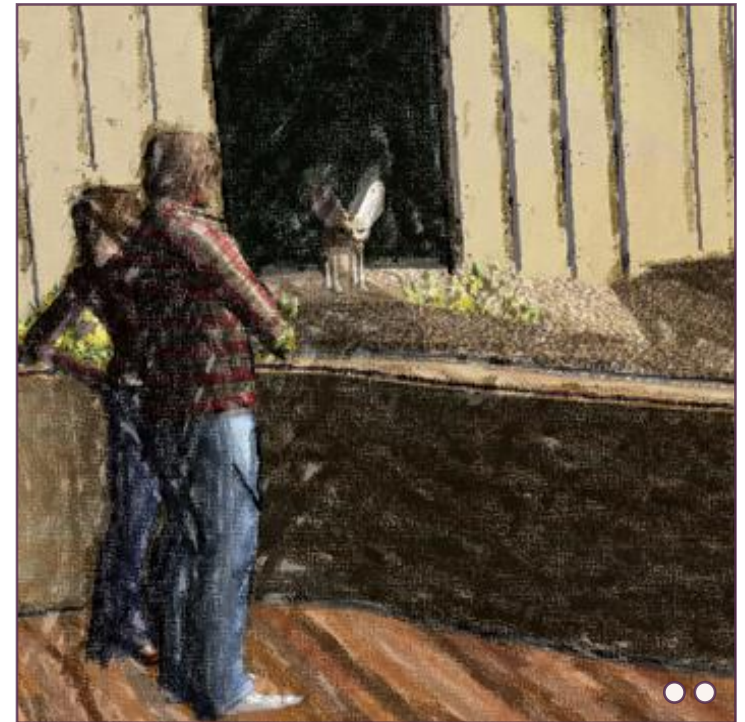
OU UDS
The University of Oklahoma Urban Design Studio

KURT EDISON D'AMOUR
THE VIVARIUM

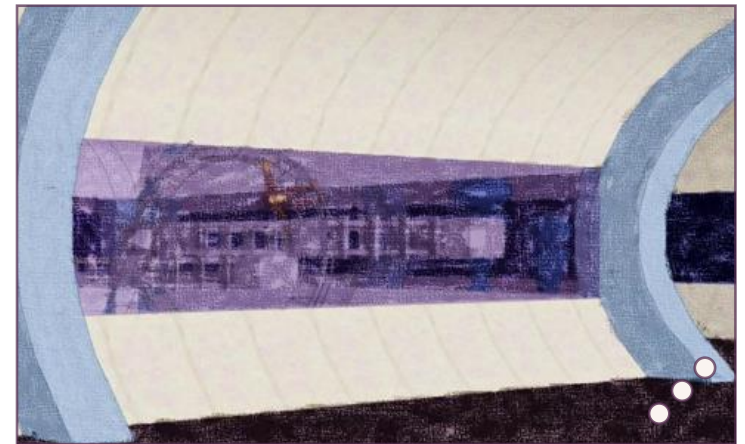
Tulsa Club Building, future home of The Vivarium



○ Perspective Street View



○○ Sechuran Fox Exhibit



○○○ Squirrel Monkeys in Space Exhibit

historic Preservation

Procurement of the Tulsa Club building is the first obstacle to constructing the Vivarium. The Tulsa culture that influenced the construction of The Tulsa Club Building is much different than the Tulsa of today. Bernard Feilden's Conservation of Historic Buildings outlines the principles of historic preservation. Feilden would classify The Tulsa Club Building as a historic building simply because it gives "a sense of wonder and makes us want to know more about the people and culture that produced it." While the National Register of Historic Places has more specific guidelines, the Tulsa Club Building would also qualify. The most basic is the "fifty-year guideline" stating that unless the structure has a very significant historic value, the building must be at least fifty years old. The property must also meet one of the four considerations for addition into the registry:

Criterion A - an "Event" the property must make a contribution to American history.

Criterion B - a "Person" is associated with significance to American past.

Criterion C - the "Design/Construction" has distinctive characteristics by its architecture and construction, including having great artistic value or being the work of a master.

Criterion D – there is "Information Potential" that has yielded or may be likely to regarding prehistory or history.

Criterion C would most likely qualify The Tulsa Club Building for the National Registry of Historic Places. In fact, it is a surprise that it has not already been considered. By being classified as historically significant, The Vivarium would qualify for additional funds and tax credits to aid the restoration process. Though the structure has not been officially used since the 1990's, the building has potential to be restored and used for any purpose. Considering its significance to Tulsa architecture, the Tulsa Club Building should be treated as though it is on the registry.

Conservation must preserve as a minimum function, and if possible, enhance the message and values of a cultural property through the process. Feilden defines conservation simply as the action taken to prevent decay and manage change. Conservation, as it pertains to historic structures, aims to prolong a building's structural life in addition to preserving the cultural significance held within the property. The structure of The Tulsa Club Building is intact and, while many of the art-deco interior details have been lost for various reasons, the building will be plausibly functional after repairs and updates take place.

In addition to minimum intervention, Conservation of Historic Buildings recognizes seven means of intervention for the conservation of historic buildings: prevention of deterioration, preservation, consolidation, restoration, rehabilitation, reproduction, and reconstruction. Feilden states that the best way of preserving buildings is through rehabilitation – ideally for its original purpose – with or without adaptive alterations. Nevertheless, keeping the building active is more important than maintaining the original use.

Feilden asserts that adaptive use of buildings, repurposing them for a different cause than that of their original design, is often the only way that historic and



THE VIVARIUM

Conserve



KURT EPISON D'AMOUR
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aesthetic values can be saved economically while bringing the building to contemporary standards.

This is in line with Tulsa's downtown master plan, adopted in 2010 states "historic and architecturally significant buildings should be rehabilitated and leased to new tenants as the highest preference." They encourage exploring possibilities of new uses for historic buildings that "may no longer function in their original design."

They offered the example, "...many office buildings can be converted to mixed use or residential uses to increase downtown living space. Alternately, industrial buildings can find new life as creative office, commercial or mixed use spaces."



BLUE FAIRY PENGUIN

Height: 13 inches

Weight: 3.3 pounds

Conservation Status: least concern

Social Behavior: colonies of up to 5000

Exhibit: G2

Eudyptula minor

Is the smallest of the penguin species. The can be found in southern Australia and New Zealand. They are known for their unique slate-blue plumage and tiny stature. Like most seabirds, they live a long lifespan in the wild about 6-7 years. In captivity they are able to live up to 25 years. Blue fairy penguins swim all day, from sunrise until dusk, hunting fish, squid and other small sea animals. At age 3 they are fully mature and chose a breeding partner who they remain relatively faithful to for life.

While historic preservation status is not contingent on the exterior of the building remaining original in appearance, it is in the spirit of the process, and additions and alterations are heavily discouraged. Converting the Tulsa Club's classification is a challenge. The design for The Vivarium calls for restoring the original façade of the building, a consideration for historic status. Along with that restoration process, The Vivarium would be adding onto that façade thematic elements, including a dinosaur skull, climbing nets and plant life – features not present on the Tulsa Club Building during its time of significance. Furthermore, some of these components would not have been an option at the time of original construction of the building.

The goal for the project is to qualify for the National Registry of Historic Places. The building should remain eligible although one of the evaluation considerations is integrity. This means the building should appear as it did when it was built or during the period for which it is considered historically significant. To have maintained integrity, the building must meet at least three of seven aspects: 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association. An historic preservation specialist determines which essential physical features must be resented on a property, whether the essential features are visible, and which three or more aspects of integrity are strong enough to meet the criteria.

The building should maintain its historic integrity under the aspects of location, design, setting, and materials. Potentially, feeling and association would also qualify. These categories refer to the conveyance of the historic significance to the observer of the property. Since the setting of the storyline of The Vivarium is based in a present day interpretation of the late 20s or 30s, the art-deco elements, both the interior and exterior of the building will want to be maintained and repaired, with or without historic preservation status.

flora, fauna & Sustainability

A green wall inside of the building will filter air that is being reused in The Vivarium. Dr Wolverton's *How to Grow Fresh Air*, continues the research he did to help design a breathable environment for the NASA lunar habitat. His selected plants filter the chemicals and pollutants which cause sick building syndrome, while being hardy indoors and low light situations. These, along with a host of other techniques will purify the interior air and ensure that the smell of animals is not pungent throughout the facility.

Air exhausted out of The Vivarium will also be treated to ensure all of Tulsa does not smell like the pachyderm house at the zoo. Vents to the outside will be filtered through herbs and odor masking plants to prevent complaints from office buildings nearby.

Green roofing can be utilized on the rooftop garden and aviary where The Vivarium can reach into the world of botanical gardening to showcase flora as well as fauna. Dunnett's *Planting Green Roofs and Living Walls*, talks extensively about

hybrid roofing techniques that beautify the city and combat urban temperatures. Since the Tulsa Club Building is shorter than many of the surrounding buildings, neighbors will be able to look down on the green roof and enjoy the wildlife that call it home, a vast improvement over the present graffiti and debris.

This roof garden would be a space to educate visitors about botany and gardening. A roof vegetable garden downtown could be a demonstration space where The Vivarium teaches the community about sustainability and growing their own food. It would become an outdoor classroom where visitors could receive hands-on gardening lessons and obtain seeds for their coffee cup from The Vivarium parlor.

The National Zoo has an exhibit, "Zoo in Your Backyard" which shows how simple changes to a backyard can become a suburban wildlife refuge. The National Wildlife Federation has a certification process by which an individual can have their backyard become an official, certified wildlife habitat by providing the four basic elements for wildlife to thrive: food, water, cover and places to raise young.



THE VIVARIUM

Conserve



KURT EDISON D'AMOUR
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The Jenks Aquarium recently completed a minor renovation replacing all incandescent, halogen and fluorescent lights with LED fixtures and bulbs. This was done with a partial grant to reduce energy consumption. Admittedly, they had to alter some areas slightly. The lighting works well inside of exhibits and illuminating displays, however, it is awkward for general lighting. They resolved this by directing the light up and reflecting it off the ceiling.

Many animals need specific wavelengths of light to survive. A number of solar tubes were also added in this renovation. They work in both visitor and exhibit areas to bring natural lighting and much needed UV light. Ultraviolet light plays a key role in the production of Vitamin D for most animals, specifically reptiles. Vitamin D is necessary to absorb calcium and metabolize other essential vitamins and minerals. A turtle, for example, can experience reduced shell growth with a Vitamin D deficiency. To solve this problem, solar tubes and specific wavelength bulbs can be installed.

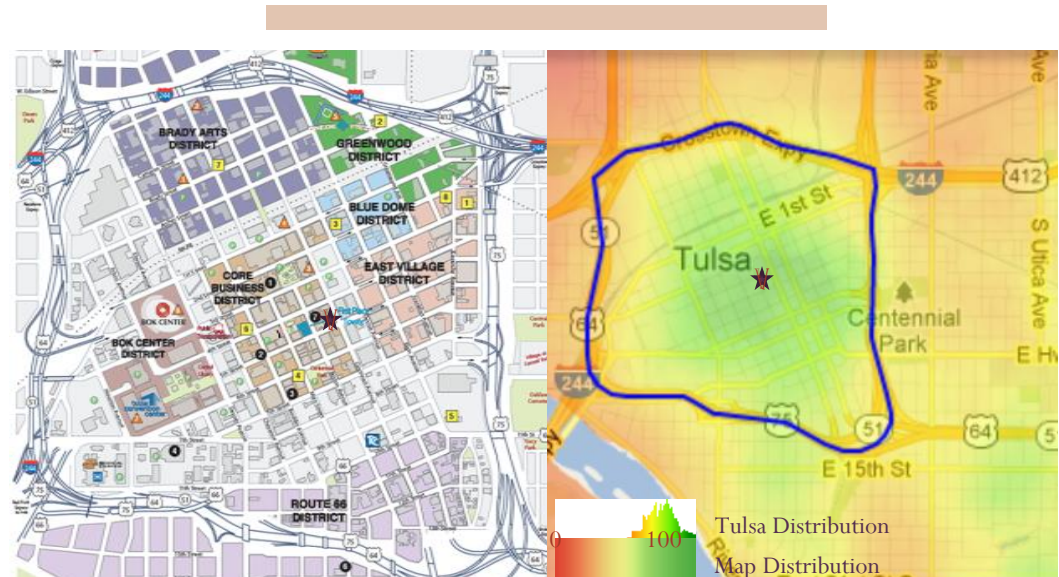
Previously, heat lamps were used to warm the tank and provided a red glow that had to be compensated for in exhibit lighting. In-exhibit heating elements and LED bulbs replace a series of inefficient heat lamps, incandescent/CFL bulbs, and UV bulbs. In the long run, the Jenks Aquarium expects to reduce overall costs in replacement bulbs resulting in a lower energy bill.

Air cycling and filtration strategies at the Jenks Aquarium rely on a multifaceted approach to providing fresh air for the animals and visitors alike. In addition to plant life, ozone from their water filtration process that would usually be lost is recycled into a service room of the facility. Exhausting it into the air supply is debatably risky since the EPA's oversimplification regarding ozone, "good up high – bad nearby," says that any amount of ozone in the air breathed "can be harmful to the respiratory system." The Jenks Aquarium says that this ozone would be in the air inside of the aquarium regardless. They are not making additional O₃ and that directing it into the air supply gets it out of the building quicker while reducing the amount of odor.

As the map below, provided by WalkScore, indicates, the downtown area of Tulsa is particularly more walkable than the surrounding areas. This is due to a denser, mixed-use construction and smaller street blocks, as compared to neighborhoods outside of the downtown area.

Tulsa is the 32nd most walkable city in the United States with 16% of residents having a walkability rating above 70%. The downtown neighborhoods of Tulsa is already a very pedestrian friendly area, scoring a 74% on the WalkScore website. WalkScore's rating suggests that "most errands can be accomplished on foot in downtown.

With a number of hotels, restaurants and landmarks already in the area, The Vivarium will add to the already developing downtown entertainment environment. There are at least 27 restaurants within a three block walk of The Vivarium. An urban zoo could add to this regional destination, further drawing visitors from other states. Visitors staying downtown have 12 hotels to choose from and many walkable entertainment options.



Entertainment at THE VIVARIUM

Recreation is the foremost reported reason for zoo attendance, according to Polakowski. Zoos compete with other non-profit and for-profit recreational and entertainment facilities for visitor dollars. These competitors for visitors' time and money may not have to deliver a message of education and conservation while providing recreation. However, there is no rule against combining these elements. Recreation and entertainment support the focus of the zoo which is education and conservation. A successful recreation oriented program will provide the funding to carry out the zoo's missions and fund research. Planning for an entertainment venue is different than one meant for traditional education. By distracting the brain with a freeing, lively environment the mind can become receptive to learning in new ways.

The master plan for the Washington Park Zoo, in Portland, Oregon, contains a commitment to maintaining a complete structure of support services for the visitor's experience with comfort and convenience. These services play a significant role in establishing the feeling of a high quality recreational experience for visitors.

As a recreation facility, the zoo attracts a wide range of visitors from the local community and beyond. When family and friends visit a local resident, the zoo can be an attractive way to spend the afternoon for a number of reasons. The people view zoos as a place to go to see exotic animals with friends and family, they associate a day at the zoo with health – walking around and being outdoors, and with mental stimulation – a learning atmosphere, non-offensive and family oriented atmosphere. As such, the zoo provides an important service to the community in a safe and casual atmosphere.

Recreation can also provide a model for education. For habitat design and graphic displays at exhibits an element of fun is at the forefront of the design process. The Vivarium is slightly different in this aspect. While zoos have knowledgeable keepers available at certain stations at certain times of the day to address questions from visitors, The Vivarium's model proposes that any question should be able to be answered immediately through the mobile apps, digital signs, and other

resources explored in the education section of this document. These resources, however, need to be designed and function like mobile apps that visitors are accustomed to which involve an element of enjoyment.

To compete with other entertainment facilities, The Vivarium will incorporate attractions that are not in the traditional realm of zoos. While some zoos have recently begun to supplement profits by integrating amusement park elements such as carousals or motion simulators that have minimal educational or conservational value and do not generally support the zoo's mission, aside from providing an additional revenue stream, The Vivarium is able to incorporate these attractions more naturally and with purpose. The urban environment of downtown Tulsa and the 13-story, art deco building allows for an element of fantasy to be built into the structure. A "cat-walk" between the third and fourth floors allows jaguarondi to roam over 5th Street and children and adults to follow en suite. The cats enjoy climbing and exploring as much as the children who visit. This animal exploration ability is an important part of the enrichment program which is described later on in the Animal section.

After reading contrasting view points from The Best Practices for Museums (a book with guidelines for museum gallery design) and The Themed Space (focusing in part on amusement park design), the decision was made to provide a scaled experience design when incorporating attractions. As such, attractions are made with all types of guests in mind. While museum design says that every part of the museum needs to be accessible to every foreseeable and unforeseeable visitor, amusement design says that while you want to accommodate a broad spectrum of visitors, some designs simply cannot do so. Instead of only toning down an attraction to accommodate less mobile visitors, The Vivarium has also amped up the design for those more adventurous guests.

This scaled experience approach would be the same as an individual going to a rock-climbing gym or skiing marked trails at a resort. There is a route that would

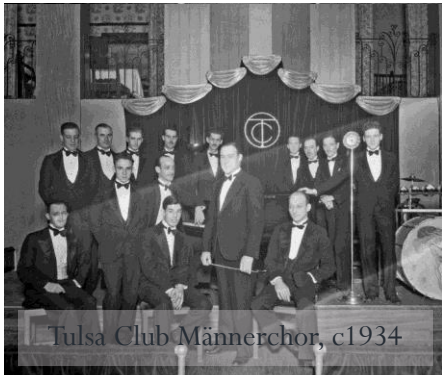
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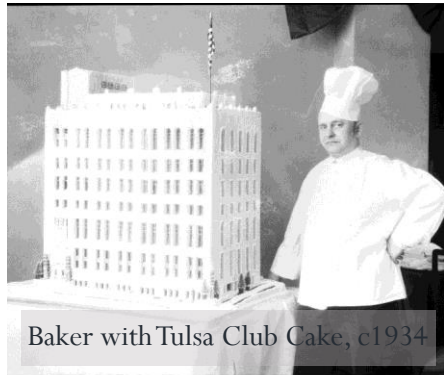
accommodate wheelchairs, for example, but there is also another that an active teen would find challenging, and everything in between. We encourage the visitor to choose their own adventure and safely challenge themselves if they would like.

By creating an atmosphere that allows for visitors to have ‘experiences’, visitors will be able to justify returning more frequently to create new experiences with family and friends. The monkey climb on the south façade of the Tulsa Club building between the seventh and eighth floor lets guests safely interact with proboscis monkeys, scaling the building on nets alongside the primates with their unusually long noses. The concept is to have a monkey climbing area against the face of the building with guests able to climb a second set of nets further away. The animals would be protected from direct contact with visitors by a six-foot gap between the two nets, potentially filled with thematic elements, such as foam balls that could be swung back and forth. This allows an additional direct line of contact that the animal and visitor can both enjoy.

Like domestic pets, many animals enjoy playing, so recreation for the animal is equally as important as entertaining the guests. This topic is elaborated on in the Animal section. The intent, as previously mentioned is to provide an opportunity for different experience each visit. By breaking up the potential for monotony on subsequent visits, The Vivarium would become more attractive than that of traditional zoos and other recreation facilities.



Tulsa Club Männerchor, c1934



Baker with Tulsa Club Cake, c1934

The Vivarium is broken up into seven one or two floor areas that work to tell a story. This story helps outline the structure and the arrangement of The Vivarium, convey information efficiently and clearly, and uses theme park design and immersive environments.

Strategies included simple arrangements of three which prevent the visitor from being overwhelmed or becoming bored. This rule of three holds true on a large and a small scale. On a large scale exhibit layout would end hallways with either three small exhibits – or one large one that would take more time to experience and include a natural turn around. On a small scale, an exhibit would have three display elements; the animal itself, a plaque that talks about the animal and an additional display that refers to the message of the area the exhibit is in.

Theming of a space needs to feel natural and authentic to keep the consumer’s mind in the space and properly convey a message. The message of the area or floor is meant to carry the guest from one exhibit to the next. While the implication of “theming” may be grand and cliché like “Wild West” or “Asian”, it can also be as simple as a commercial space like a boutique salon. If a theme is not complete – if a single element is not incorporated into the story of the space – the guest’s focus can be lost. For example, a wicker trash can would be out of place in an Apple store and draw attention away from their sleek aluminum products.

A museum’s primary focus is education and an amusement park’s is entertainment yet both employ like strategies of guiding visitors attention. The layout of a museum or park can play a large role in the visitor’s comfort and experience. The layout anchors exhibits and attractions draw visitors from one place to the next. A good design shows where the next exhibit space is by inviting the visitor there and making it the next natural decision. If the visitor has to make a decision on where to go next, they have left the story. Blocking off other potential distractions with walls or other natural feeling techniques is common practice. That being said, the guest should also not feel like the decision was made for them either.

Inclusive animal exhibits

Jill Mellen, a research biologist at Disney's Animal Kingdom and contributor to *Second Nature: Environmental Enrichment for Captive Animals*, describes "the future of environmental enrichment," explaining that there is an intangible connection that many keepers have with their animals. It is imperative for the animals to have the ability to socialize with humans and other animals, as well as other species. Environmental enrichment is generally described as cages that contain social companions, further enhanced by a variety of objects to encourage play. Food or treats can be hidden inside of toys to stimulate their exploratory nature. These toys, blocks, tubes, plastic or cardboard boxes need to be rotated frequently to ensure continuing novelty.

Interchangeable habitats that the animals are rotated through also help to maintain novelty in the environment. Engaging in exploratory behavior keeps the animals active, both psychologically and physically.

An animal may be considered to experience a simple level of consciousness if it subjectively thinks about objects and events. Thinking about something in this sense means attending to the animal's internal mental representations... These may represent current situations confronting the animal, memories, or anticipations of future situations. Such thinking often leads to comparison between two or more representations and to choices and decisions about behavior that the animal believes is likely to attain desired results or avoid unpleasant ones. (Mellen)

In nature, the wild environment is dynamic, constantly changing with predators and the hunt for food and safety. In captivity, animals can become sluggish and mentally stagnant. The goal oriented nature exhibited by animals relies on active environmental stimuli provided by keepers and zoo staff. *Second Nature* describes a study where laboratory chickens were withheld enrichment in an enclosure and were reported to have increased aggression and cannibalism.

When a novel object was introduced into the habitat, the objects were "perceived as defensible resources, stimulating aggression."

Exploratory behavior is important throughout the entire life of the animal. If enrichment is withheld from the animal when they are young, they can be affected later in life. Polakowski explains that animals generally live longer in captivity due to the safe environment, even if that environment is mundane. However this life expectancy is increased further in animals has been subject to a stimulating environment. Some animals, such as the narwhal (a small whale) have not been successfully kept in captivity, due to their non-acclimation to their new environment.

Truly naturalistic appearing environments are expensive and difficult to maintain. Plants and ground materials require constant attention and are only there for the visitor to believe the animal is happy. In reality, there is a lot going on behind the scenes that the visitor never knows about. Floors of modern habitats are usually concrete meticulously molded and painted to appear to be a forest floor. If they were made of real earth, some animals would dig to escape or simply out of boredom. Fiberglass structures often incorporate a thin combination of wood chips, sand and dirt are on top of the floor that have to be changed regularly as they get soiled.

Environmental stimuli are intended to encourage the explorative instinct of the animal. The environment does not have to resemble the animal's natural habitat; it just has to include elements that encourage exploration. A feline, for example needs places to jump to, small niches to hide in, and places to perch on. Interchangeable exhibit spaces designed for The Vivarium are meant to allow animals to be rotated between habitats. The habitats are not designed to look like the jungle or desert, but could look more abstract or more human made depending on the theming of the floor since The Vivarium as a whole is themed generally as an art-deco animal research facility, the habitats would reflect a 1920-30s idealistic urban way of life.

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Rotating animals between spaces is an important part of the enrichment program, as well as interspecies animal socialization. A habitat would be able to hold an animal that stays on the ground, animals that climb and birds. These animals would be able to alternate between floors and interact with various species, keeping the animal's experience new and interesting.

The visitor's encounter with the animal is part of their enrichment program too. Human and animal socialization are equally imperative. Placing animals in places where zoos generally do not place them creates a novel experience for the visitor. Mellen discusses the effectiveness of drawing visitors into the animal habitat and selling merchandise through habitat design by placing an additional viewing window into a habitat inside of a gift shop or restaurant. She notes that these should have a layer of separation between the visitor and the animal to prevent feeding or other unwanted interactions. Nevertheless, this has been a proven method of selling an experience where the diner or shopper is able to see the habitat from a different perspective. Theme parks use this method to sell the experience of eating within the ride by placing restaurants in or near the attraction. These restaurants are themed to fit within the ride and allow diners to enjoy the scene throughout a meal instead of the few in ride moments.

The Vivarium has a bistro on the second floor with several encased habitats adjacent to the tables. A lounge and library on the third floor, meant for workers from the surrounding downtown offices to relax and get work done, has comfortable sofas, lounge chairs, tables and bookcases surrounded by habitats. These habitats would be placed behind glass to prevent the unwanted contact that Mellen cautioned against. Street side habitats, similar to window displays at stores, would attract passersby, inviting them to come inside and see more. All of these special habitats would be rotated to frequently to maintain animal and visitor novelty.

Habitats outside of these exceptional areas would feature new and classic techniques of enrichment. Something as simple as a lemon soaked rag placed in

their exhibit brings a newness to the space. The animal's instincts are triggered and their habitat becomes a new space to explore.

Second Nature notes that inanimate environmental enrichment devices do not "invariably improve psychological well-being" for the animal. However, they have a significant impact on the guest's perceived well-being of the animal. If a visitor perceives an animal as bored or mistreated, that can hinder their ability to enjoy the animal and negatively influence their overall views on the facility.

Newer techniques include placing motion detectors and small speakers inside the exhibit so that the animal can activate to "acoustic prey" to chase around the exhibit. Lasers and LED lights can be incorporated into the space as well, with sensors the animal can activate by foraging. The end result of most of these techniques is generally a piece of food.

Visitors can take part in the enrichment too, with interactive attractions at exhibits. The visitor can solve a puzzle that allows them to manipulate the habitat environment. The Vivarium's displays would incorporate a game, potentially an animal related brainteaser. If the visitor solves the riddle, they would have the opportunity to release "acoustic prey", direct lights or magnetic controlled toys that the animals can chase. This results in the prompting of the animal's hunting instinct and subsequently a piece of food for the animal.

**Supplementary*, animal safety is of the utmost importance. This includes planning for the unexpected. Indoor zoo design has factors that the traditional modern zoo model has less concern with. If a fire occurs at The Vivarium, keepers would have to ensure that animals remain safe until the fire is extinguished. Expansive indoor habitats employ specialty sprinkler systems designed to raise humidity to levels that do not support fire. Keepers are asked to remain, if possible, and transfer the animals into their shift space which can be designed to be further fire resistant. Most indoor exhibits will usually include an area of water which animals could also seek further refuge in.



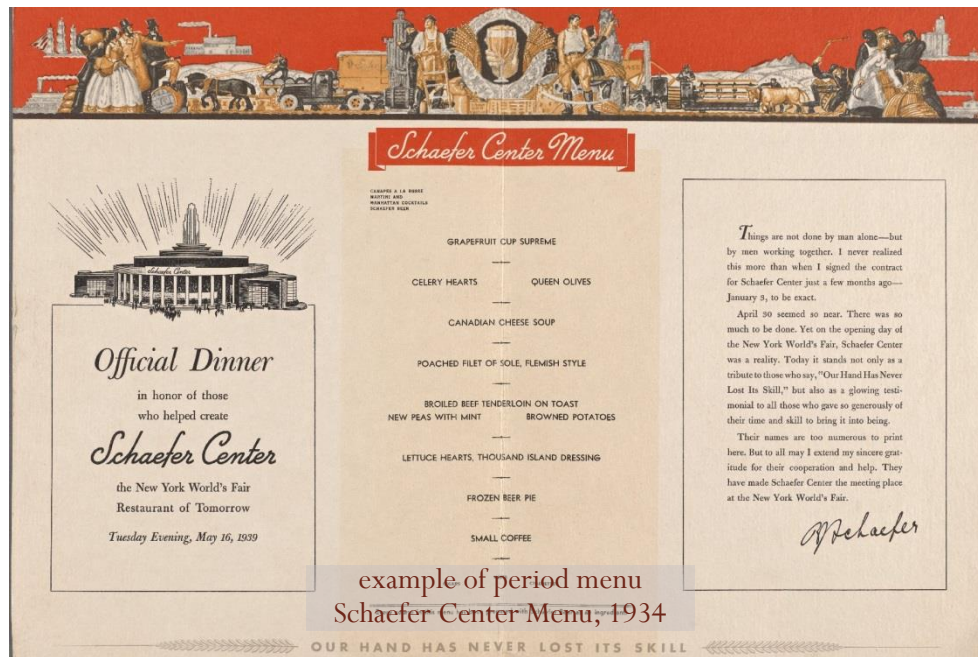
THE VIVARIUM

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Theming of THE VIVARIUM

The development of theme provides an organizational structure for the facility to follow. The Vivarium is themed to provide an easy, idealistic version of the 1920s and 30s. Color schemes, fabric choices, art-deco embellishments and worker costuming are all included. Even food choices could be designed to follow this theme.

The 1920s is an important decade because it marked the birth of the modern restaurant industry. The number of office workers increased, while the length of lunch breaks decreased. Eateries that could serve many lunches quickly became popular, especially since prohibition shifted the industry with the absence of liquor profits. The drive for low priced, quick service food, created a market where cafeterias, luncheonettes, and tearooms thrived. During this decade, the number of restaurants increased 30%, made up by 48% lunch rooms, 26% coffee and sandwich shops, 8% cafeterias, with only 11 % being full-service eateries. Female servers began to replace men when restrictive legislation on



example of period menu
Schaefer Center Menu, 1934

the late 1920s reduced the number of immigrants, thus reducing the number of professional wait staff. *The Restaurant Management Journal*, in 1927 reported that 25-30% of all meals in cities were eaten in restaurants and at that time approximately 60% of restaurant patrons were women. Even through the depression, the number of restaurants in cities increased and the fixed-price meal, which had been replaced by an a la carte service, returned to popularity.

A similar market is present in present day downtown Tulsa where many restaurants, particularly in the Blue Dome District, have a significant lunch rush between noon and 2pm. Workers flock to these restaurants in hopes of getting a table. A quick, cheap, tasty place, in the urban core would be well received. The novelty of The Vivarium should create additional draw.

Theming would apply to programming as well. For example, the Hyena Club in the penthouse on Thursday nights would fall into the category of a speakeasy and comedy club. Since the theme is an easy, idealistic version of the decade, the actual influence would be able to be a lighter version. While you would be in the period, the staff would not need to speak in character and wardrobe would be a present day interpretation of the period.

Wardrobing would consist of comfortable 1920s and 30s safari-wear for keepers and soda-jerk servers in the cafeteria. Gift shop and admissions staff would be dressed in period work clothing, to fit their character; police officers, dog catchers, salesman, teachers or factory workers.

The Tulsa Zoo uses embroidered polo shirts, and khaki pants as their basic uniform. The advantage is that this is a cheaper uniform and it also allows visitors to seek out workers with little hesitation. The Vivarium has been planned with a significantly different design choice. While this would be more expensive, given The Vivarium's downtown location, easier to keep animals, and programming designed for the community, the non-utilitarian decisions should not hinder profit potential. Secondly, with an energetic staff in period costume, visitors would have no difficulty locating a staff member.



THE VIVARIUM

Entertain

OU UDS
The University of Oklahoma Urban Design Studio

KURT EDISON D'AMOUR
THE VIVARIUM

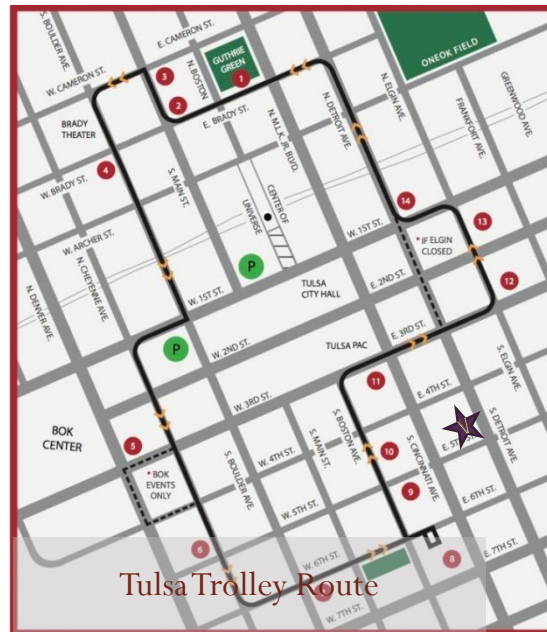
street Life

The parlor opens at 7am for downtown workers to pick up coffee or a pastry and view some animals on their way into work. In harmony with Tulsa's recently adopted downtown plan, The Viarium encourages an active street life. People walking downtown will hear animal sounds as they approach, then see animals in sidewalk exhibits in the window fronts along 5th Street and Cincinnati.

A parade kicks off Saturday mornings in the central business district. Animals from The Vivarium and visiting from other zoos march down the street, along side school bands from across the state. After the parade, 5th Street becomes a carnival midway stretching across to the parking lot where games, rides, music and animals will welcome the public. Community events such as concerts, movies, Easter Egg hunts – just to name a few – would bring the public downtown to this outdoor venue.

The Vivarium sits a block off of the privately owned Tulsa Downtown Trolley that offers a fun, exciting and convenient way to travel and experience Tulsa's downtown entertainment districts and nightlife. The trolley loops through the downtown Tulsa districts of Brady Arts, Tulsa Deco, and The Blue Dome.

The Vivarium would become an icon of evening and weekend entertainment available in downtown Tulsa as a family-friendly environment for those with families and an active nightspot for those who do not.



THE VIVARIUM NOMADICA

To make The Vivarium a community cornerstone, a double decker bus has been converted into a mobile exhibit space. Flexibility of space is key to making The Vivarium nomadica successful. After removing most seats in the lower level, the bottom deck is able to be separated into one to six spaces for display animals. The upper level features a 16-foot trough that would contain hands-on animals that could be fed, pet and played with safely for both the humans and animals. There is seating in the lower level for four docents and a driver who would handle the animals with the public once they arrived at their destination.

This satellite vivarium will transport animals and passive education across the city, at surprise library visits, Saturday soccer games, and community festivals. The bus would also be able to roam around downtown on evenings, with animals onboard, making stops at districts around Tulsa, restaurants and retail locations, providing a roving, spontaneous street fair.





Historic Art Deco in the Neighborhood

Two blocks from the Vivarium...

The Oklahoma Natural Gas Company Building was one of the first Art Deco buildings built in Tulsa. The selection of this style by a generally conservative utility company established its acceptance and paved the way for a host of Art Deco buildings which were to follow. This building is also significant historically because it reflects the tremendous growth of Tulsa from 1920 to 1930. By 1927, construction costs in downtown Tulsa were averaging one million dollars a month. By 1930, Tulsa had more buildings of ten or more stories than any city of its size in the world.

The Oklahoma Natural Gas Company Building is constructed of reinforced concrete, enclosed with buff tapestry brick and trimmed with Indiana limestone and vitreous tile. The height of its ten stories is enhanced by the piers which rise unbroken to the top of the building. The windows are inset between the piers and spandrels that are covered with decorative tile whose motifs include the stepped-in chevron and geometrical shapes of Art Deco design. The richness of materials and designs in the interior of the building are a significant feature of the Zig-Zag Art Deco style and contrast with the austerity of the later Streamline and Public Works Administration periods of Art Deco. The building continues to be a viable part of downtown Tulsa and provides a visible and tangible link to an important period in its past.

Source: Tulsa Preservation Commission



OKLAHOMA NATURAL GAS BUILDING

624 South Boston Avenue
Built: 1928

Zoos are meant for the enjoyment of the public. When the National Zoo opened in 1889, it was highlighted as a zoo for everyone. As a result, an enthusiastic public began donating animals: farmer sent their farm animals, hobbyists sent fancy breeds of birds and lizards, individuals caught specimens of snakes, bats and other rodents from their backyard, military officers from overseas caught warthogs and other exotic creatures and families left unwanted pets, vermin and livestock at the gate of the zoo. The zoo was quickly overwhelmed. A python, which had been donated, received a steady diet of house pets and squirrels, however the snake could not keep up with the donations. The secretary of the Smithsonian Institute wrote a letter to the Philadelphia Zoo for suggestions, saying that they did not want to discourage the public from their zoo by stopping the donations. The Philadelphia Zoo made a donation of its own as a result, two crocodiles with large appetites.

While the zoo as a whole is meant as a public/civic amenity, when designing for a zoo, there is a very specific hierarchy by which decisions are made. The animal's wellbeing is primary. At no point should the animal's comfort, security, health or general wellbeing be at risk. Secondary is the keeper, who interacts with the animals and can never be put in harm's way. Last is the visitor, who is meant to enjoy and learn from the exhibits.

Habitat design has to address the needs of all users to be successful. Since the animal lives in the space, they must feel and be safe and comfortable, have access to resources such as an appropriate climate, shade, proper food and water, a place to hide from the public, and an infinite number of other considerations. The keepers need to safely access this space, to make contact with the animal, or a safe location to avoid contact, depending on the species. Keepers also need to be able to quickly, safely and efficiently clean the exhibit. The visitor needs to be able to see the animal, understand the message that the habitat is meant to establish and be engaged.

Often designers also have to incorporate implicit or explicit messages into their

exhibit designs. This adds an additional layer of design to the process. This communication process may serve many educational purposes. One may be to acquaint the visitor with the habitat. This adds an additional layer of design to the process. This communication process may serve such as the tropical rainforest, then acquaint the visitor with the dangers of ongoing misuse and destruction of the environment. All of this could simply be designed as part of the background environment that the animal resides within.

There are many factors simultaneously at work when designing habitats. When the North American Living Museum (NALM) was designed for The Tulsa Zoo in 1978, it was not intended to be designed as a zoo, in the traditional sense, but rather as a natural history museum with live animals and plants, arranged in a geographic theme. This is not to say that the animals were to be deemphasized, but rather elements of natural history would share equal importance. The concept, as established by Robert LaFortune in 1978, was to “enrich the meaning of living animals and better justify their status as captive creatures...It is meant to tell a complete story about a particular piece of the natural environment and its relationship to people.”

In this way, the NALM is a predecessor to The Vivarium. The indoor habitats are intended to showcase the relationship between animals and people and their environments. While the NALM was designed with an equal emphasis on non-animal displays to convey its message, the designers still followed the hierarchical design specific to zoos. Priority was given to the animals while conveying the message of “the ‘environmental story’ of interrelationships, change and man, told through fauna, flora, soil, climate, native cultures and prehistory.”

The guest must receive the best experience possible, yet the designer has to place the keeper and animal welfare above guest experience. The patron should not recognize that their experience is third and good zoo design is able to satisfy the first two categories without sacrificing the third. This section is separated into the order designers must focus when designing habitats or exhibits.

THE VIVARIUM

Zoo Priority

Animals in THE VIVARIUM

Exhibit design can offer insight into how an animal may live in its natural environment. However, this is done primarily for the benefit of the visitors who do not have to live in the space. The Vivarium's imaginative; education programs and exhibit designs are meant to spark curiosity in visitors and inhabitants alike. The Vivarium's animals have been chosen based on specific criteria.

The first criterion was size. While the National Zoo opened its doors to the public in 1889, the public did not really consider it a "zoo" until 1906 when it was able to curate an elephant. In fact, two retired circus elephants were donated to the National Zoo, chained to a tree in an otherwise open field where visitors could get a few peanuts for a penny and try to feed the elephants. If you held your hand out and the elephants took peanuts, it was considered good luck. Unfortunately, The Vivarium is unable to house an elephant. However, The Tulsa Zoo's elephants will make surprise visits to the parade route and midway.

Due to the generally enclosed space, animals who tend to have less odor were selected. The Vivarium will be employing the methods that the Jenks Aquarium is currently using; however, every little bit helps. If the inside of The Vivarium does not smell pleasant, visitors will be less likely to return as frequently and workers will not find stopping in for lunch appetizing.

The Vivarium encourages animal contact with a feed, pet, play and learn approach. Visitors can interact with animals on nearly every floor at any given time. The animals chosen to display in The Vivarium are able to have regular human contact. Docents will always be with animals while they are out of their habitat because the safety of the animal and patron were both top priorities when making these decisions. Each animal's personality will likely be different, and The Vivarium's animals are specifically chosen to interact with the public. In fact, many are kept as pets in other cultures.

Interaction with animals is part of The Vivarium's enrichment program. Most of the animals were specifically chosen for their relationships with humans across

the world and for their ability to safely engage with humans and other animal species. Because The Vivarium is housing the animals in exhibits that could potentially have various species in the same enclosure, attention to diet, territory defense, and other social behaviors were researched to ensure the animal's wellbeing. This stimulating habitat design with co-occupancy is another key element of the enrichment program, for the animal and patron.

Providing the animal with a feeling of safety and security within the habitat is not only important for the animal's welfare, but it is also a requirement of the AZA. Animals have to be able to hide away from the public if they feel they feel threatened or overstimulated. This works well within the enclosure, but is more difficult to control in tabletop exhibits where the animals are intended to be pet by the public. This requires that animals who are reliably social had to be chosen for these types of spaces.

Madoqua kirkii

A small antelope found in eastern and southwestern Africa, Dik-diks are named for the alarm calls of the females. In addition to the females' alarm call, both the male and female make a shrill, whistling sound. These calls may alert other animals to predators. The females are slightly larger than males. Both males and females grow 3-inch horns. A bare black spot below each eye contains a preorbital gland that produces a dark, sticky secretion. Dik-diks insert grass stems and twigs into the gland to scent-mark their territories.



DIK-DIK DEER

Height: 18 inches long

Weight: 15 pounds

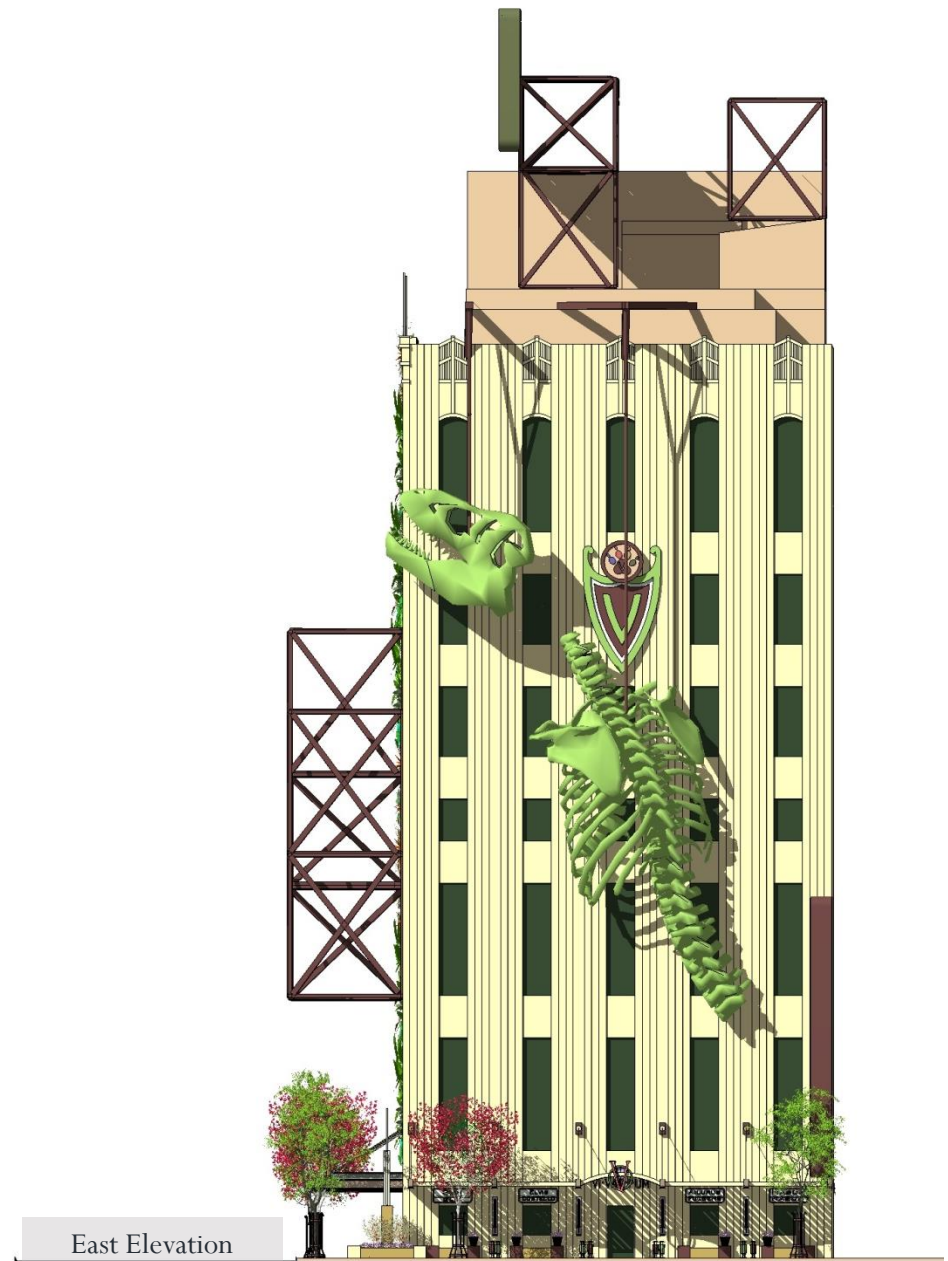
Conservation Status: least concern

Social Behavior: monogamous pairs

Exhibit: C25

Habitats

X 0	Gambian Pouched Rat	Barreleyed Fish	Matsuba Koi
A 1	Fennec Fox		
2	Fat Dormouse	Vivid Niltava bird	
3	Genet		
4	Mata Mata Turtle		
5	Edible Dormouse		
6	Monito del Monte		
7	Fossa		
B 8	Meerkat	Hoopoe bird	
9	Meerkat		
10	Meerkat	Helmeted Hornbill	
11	South American Coati		
12	Wolverine		
13	Tasmanian Devil		
14	Lesser Red Panda	Wombat	
15	Rock Hyrax	Blue-naped Mousebird	
16	Rock Cavy	Ant Eater	Vd Decken's Hornbill
17	Golden Lion Tamarin		
18	Banded Mongoose		
19	Tree pangolin	Stoat	
20	Prehensile-tailed porcupine	Red Ruffed Lemur	
21	Zokor	Spalax	
C 22a	Juguarundi		
22b	Francois' Langur	Agouti	Geoffroy's Marmoset
23a	Tree Hyrax	Capybara	
23b	Indian Grey Mongoose	Ruddy Mongoose	
24a	Connected to C23a		
24b	Bat-eared Otocyon	Sunda Flying Lemur	
25	Dik-Dik Deer	Muntaj Deer	Prevost Squirrel
26	Greyheaded Tayra		
22	Juguarundi		
27	Naked Mole Rat		
E 28	Proboscis Monkey		
30	Sechuran Fox		
32	Prairie Dog		
29	Proboscis Monkey		
33	Squirrel Monkey	Rabbit	
35	Newts	Japanese Tree Frog	
36	Chicken	Quail	Carpenter Bee
F 37	Puma		

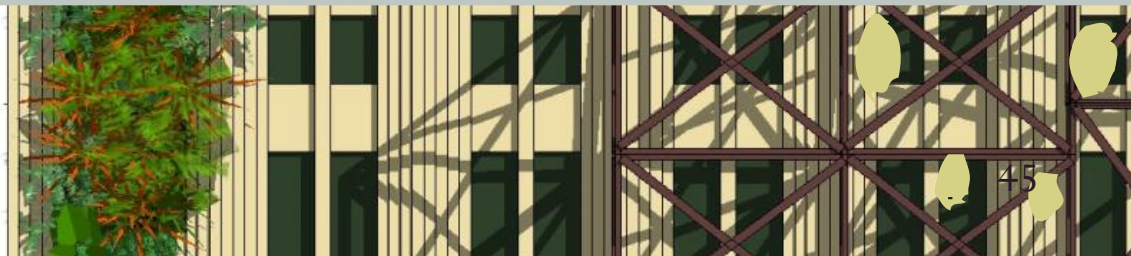


THE VIVARIUM

Interior



South Elevation



Keeper-oriented design

After a relatively exclusive opportunity to work beside herpetologists and exhibit curators at The Tulsa Zoo, it was clear that there was a demand for a new focus on keeper spaces. Keepers frequently have to crawl into through small doors, in habitats 3-4 feet off the ground, carrying live hoses, buckets, squeegees, and other supplies. In other areas, keepers have to duck under beams while climbing uneven stairs, carrying heavy buckets, in the dark. Better design can lead to a more functional work environment for the keepers.

Suggestions from the keepers at The Tulsa Zoo included keyless door locks that would be secured from the public, equipped with a sensor so that a keeper could easily access a door without putting down buckets or fumble with keys. Of

Backstage Guide	Walking areas should allow for 2 buckets to be carried at keeper's side.			
	Doors should have open space next to them to set down buckets			
	Need to get a forklift into buildings			
	All doors need to have landings			
	Doors should open into exhibit			
	Exhibit doors should be as hidden as possible from guest view			
	No door can be smaller than 4'			
	Nothing should be stored above 6'3"			
Dimensions (width x length)	Worker	1'8"	x	1'6"
	Bucket	1'	x	1'
	Worker and 1 bucket	3'3"	x	1'6"
	Worker and 2 buckets	4'2"	x	1'6"
	6 jug crate	1'6"	x	1'1"
	Worker and crate	3'2"	x	2'6"
	Forklift*	4'8"	x	14'
	Bobcat*	3'4"	x	11'6"
*depends on model. Given dimensions are of a common large model.	Golf Cart	4'	x	7'10"

course, this would not be an option on exhibit doors where an animal may be able to push through if a keeper accidentally activated the sensor.

Another basic request was landings at the tops of steps where bumpers could set down supplies before entering through a door at the top of the stairway. Keepers build makeshift stairs, habitat stands, and anything they need. The backstage areas have to remain very flexible and the use of the space can be rather dynamic.

Ms. O'Neal says she always designs backstage areas to accommodate a set of plastic shelves, the simple kits from Lowe's that go in garages. Yet no matter how much is provided, keepers always need more. The mobile shelving units are easy to set up, take down, and move around as the space changes. Hooks are also important. They leave the space open when not in use, but create a location where a bucket, jacket, or broom can easily be hung. Flexibility of space is essential. The keepers are very resourceful and able to make any back stage environment workable. Since the keepers tend to hastily redesign the space as they use it, the conditions are not always the safest. Using shoddily constructed ladders from scrap wood is a dangerous practice, especially when the situation could be easily fixed. Ms. Czarniak, the senior keeper of herpetology was known for being able to open a door to a habitat and then climbing over a desk to get into that habitat. While she was able to get her job done, simply rehanging the door to open the opposite way would make her day much easier.

A final observation that seemed to be troublesome for the herpetologists was the placement of sinks, hoses, drains. Often a filter would have to be disconnected from a pipe to hook a hose up to that pipe which would then have to run across the room so that a keeper could clean out an exhibit. This process may be done by the same keeper several times in one day. By better locating the spigots, the keeper can go through less steps and spend more time concentrating on the animal and guests rather than on the hose. The constant disconnecting of hoses had begun making bigger problems. Frequently, the filter hose was not properly sealed at the end of the day and would leak water all night into the basement of the building.

THE VIVARIUM

Keepers

When designing The Vivarium, extra attention was given to the layout of the keeper spaces. The Vivarium has a space utilization program that works efficiently and would be ready for any animal or keeper's need. This is done through an open and flexible design of the space and over preparation of the habitat needs. Some of the exhibits in the herpetology department required five or more plugs, a requirement that the space was not designed for. To solve this problem, extension cords were run across the area to connect to other circuits. By designing the space from the beginning to meet the foreseeable needs, hassles and expenses can be avoided later as the needs of the space changes.

Zoo keeping also requires a surprising amount of paperwork to keep documentation of when and feeding schedules, weight, grooming habits, and any other imaginable recordable animal behavior. At the end of the day or week,

keepers have to input this information in a computer. Each department has a single computer and a large number of filing cabinets adjacent to it. The AZA required that records be kept as long as the animal is maintained. Since the Tulsa Zoo computers are not connected to a server, the paper documents are filed in the cabinet as well as an Excel document. An updating of the Tulsa Zoo system could resolve some of the redundancies.

The Vivarium could pioneer a system where each keeper is given an iPad and data could be entered into the system in real-time. Barcodes on food and the habitat would provide a simplified entry system for documenting. The records would be instantly recorded and stored safely in an internal network server. This server could be accessed by the public who might be curious about the animals' weight, diet, grooming and so on.



Planning for People in Museum Exhibitions says the first thing a visitor looks for when entering a museum is not a bench to sit on or a restroom – it’s coffee. They assume that benches and restrooms exist within the museum but coffee is an added bonus. Offering a free cup of coffee is a cheap and easy way to welcome visitors into the space. McLean makes a point to mention that museums need a strict and enforced policy on food and drinks. Food policies depend on the type of collection being housed, the atmosphere within the museum and the number of guards or volunteers in the museum. Generally, the visitor is willing to comply with food and drink policies as long as they are clearly stated.

North American zoos attract more visitors than all of the major sporting events put together. Joslin says that zoos attract people across broad social spectrums.

McLean suggests looking at the demographics of the potential museum visitors before decisions regarding the function of the museum are made. Food and drinks, coatrooms and rules on suggested volume levels can easily and significantly change the visitor’s experience.

Below, McLean categorizes the various types of visitors and their interests when attending museums in *Planning for People in Museum Exhibitions*. While this is a bit simplistic, it does show that different age groups are interested in learning about different topics and in different ways. No two groups use the facility in the same way.

Spalax ehrenbergi

Found in Russia and Ukraine, the spalax is a blind, tail-less rodent, a distantly related to the naked mole rat. Their eyes are covered by a membrane of skin and have atrophied lens cells enclosed in a vesicle and a retinal layer. It has prominent incisor teeth, which are used for burrowing. Their fur is velvety soft and can vary in color from shades of red to grey, brown and white. Unlike the naked mole rat, they can live above or below ground.

SPALAX

Length: 8 inches long

Weight: 3 pounds

Conservation Status: least concern

Social Behavior: small groups

Exhibit: B21

Students, grades 4-12	Exhibits, hands-on activities, classes, group tours
Students, college	Exhibits, lectures, social activities, interactive exhibits, research library
Young Adults	Interactive exhibits, social activities, balls and galas
Families with Young Children	Exhibits, hands-on activities
Seniors	Exhibits, lectures, talks, tours
Tourists	Exhibits, group tours, activities, attractions
Animal Enthusiasts	Exhibits, lectures, tours
Special Interest Groups, Artists, Educators, Researchers, Historians	Research libraries, lectures, space to exhibit, talks, balls and galas

THE VIVARIUM

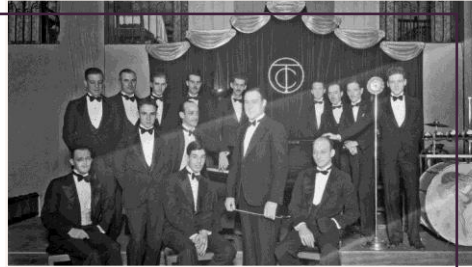
Visitors

BALLROOM

One of the pinnacle spaces for Tulsa's most exclusive galas, the Tulsa Club Ballroom, is now Tulsa's most versatile venue. The Vivarium's grand gallery serves as habitat to larger animals visiting from regional partners, charity fundraisers, petting zoos and community events. The Vivarium will also stream world events into this space along with related animals. Positioned on the 9th and 10th floors with an expansive outdoor balcony over 5th place, the flexibility of the space showcases the core of The Vivarium.



Gala



Tulsa Club Men's Choir



Present day



Open space



Puma Habitat



Petting Zoo

CLASSROOMS

The Vivarium is meant to be a gathering place for the community. The classrooms offer an interesting space downtown to meet, no matter the agenda. Two classrooms are available to the public in The Vivarium. School field trips can utilize this space as a learning venue, and adults would participate in after work programing— like the CougarArt Studio. Parents could rent it out for birthday parties or community groups can use it as a meeting room, and businesses can use it for meetings.

The family-friendly classroom space has its own exclusive habitat where keepers can place the birthday mascot and bring them out to play after the cake is gone. On field trips, educators can bring in animals to observe and study.

Since the space is one floor beneath the ballroom, the two spaces could be reserved in conjunction if a staging area is needed for a wedding, a gala or any variety of large room needs.





THE VIVARIUM

Visitors

The Vivarium Program

The following is a list of spaces within The Vivarium. These spaces can overlap depending on the use of the space and the time of day. Multiple uses for spaces should be an objective due to the confinements of The Tulsa Club Building. Some of these spaces have specific needs that are not accounted for in this list. For instance the “Poo Handling Room” should be in the basement of the building, underneath the “Poo Chute” on the south west corner where there is street access.

Admissions Services

- Coat Room
- Box Office
- Admissions Office
- Gift Shop

Keeper Space

- Keeper Offices
- Animal Food Preparation Kitchen
- Animal Quarantine
- Animal Clinic
- Employee Showers
- Laundry Facility

Exhibit Space

- Aquarium Exhibit
- Open Petting/Feeding Exhibit Space
- Themed Space – Animals in Space
- Themed Space – Jungle
- Aviary
- Garden
- Traditional Museum-style Gallery
- Exhibit Storage Room

Parking Facility

spaces do not have to be provided, just a plan

Administration

- Administration Offices
- Security Office

Dining Facilities

- Ice Cream Parlor
- Bar/Coffee Shop
- Café

Gathering Space

- Class Rooms (x2)
- Community Gathering Room
- Small Theater/Lecture Space
- Library
- Business Lounge
- Stage
- Banquet Space
- Rest/Lounge/Quiet Reflection Space

Utility Space

- Fire Stairs (x2)
- Restrooms (x13)
- Baby Changing Area
- Mother’s Room
- Utility Room (x9)
- Aquarium Exhibit Filtration Room
- Visitor Elevator (x2)
- Freight Elevator
- Maintenance Storage
- Poo Chute
- Poo Handling Room
- Bio-Walls Indoor – Odor Mitigation
- Bio-Wall 5th Street – Exhaust Odor Mitigation
- IT Rooms

street life

The Tulsa Downtown Area Master Plan, “The Plan” establishes design guidelines to encourage a welcoming street environment.

Downtown streets should be a pedestrian and transit friendly environment. Good transit facilities and good pedestrian environments go hand-in-hand. Landscaped sidewalks, which facilitate outdoor cafes with sidewalk seating, retail shops and expansive open spaces, should be provided. Consider the European sidewalk café model where seating is “in lieu of” sidewalk and may also include a space or two of on-street parking. (Planning Department, City of Tulsa)

These new guidelines describe an urban environment that feature an inviting and lively atmosphere. The Vivarium will work its way into this urban landscape with a street front that encourages walkability and entertainment. Downtown pedestrians will be able to pass by The Vivarium to see and hear the animals throughout the week. On the weekends, 5th Street, in front of The Vivarium, would be closed off to make way for a street fair. The small paved lot across from the street would be taken over as well to accommodate larger visiting animals from The Tulsa Zoo, food trucks, sideshow acts, carnival rides or midway games.

This master plan also suggests ideas for encouraging an active downtown street life.

New fountains, green space, pathways and other streetscape elements should be created Downtown. Additional outdoor spaces for band concerts, cafes, arts and crafts exhibits, festivals, and other public gatherings should be provided throughout Downtown. (Planning Department, City of Tulsa)

The Vivarium has been designed to provide these amenities for downtown area. As well as “give priority to a safe pedestrian environment [for] Downtown or

various “themed” downtown districts (e.g., Blue Dome District, Brady Village, Core District).”

Outdoor spaces used for dining are encouraged. In those instances in which such use may occur on public right of-way, appropriate approvals from the City of Tulsa including license agreements are usually required. Innovative railings should be used to define the boundary between public and private areas and create safety barriers for diners and pedestrians, and preserve the necessary pedestrian movement zone on sidewalks (minimum pedestrian movement zone will be established by the City of Tulsa). “Street side dining” (across sidewalks) should be considered. This “European model” may require a redefinition of “premises” for liquor licenses. (Planning Department, City of Tulsa)

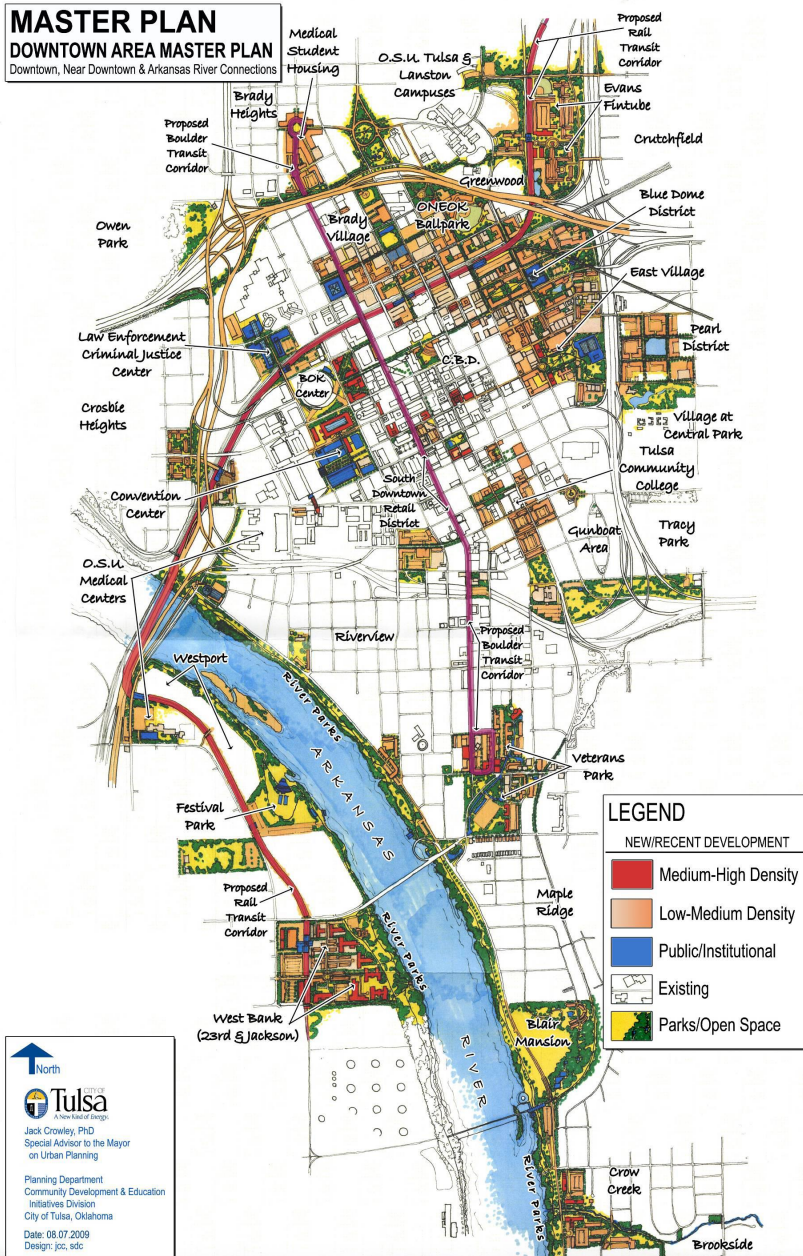
The City of Tulsa is actively encouraging street life with their newly designed downtown area master plan, frequently mentioning a “European”-style. The Vivarium creates street life and draws them downtown with animal displays, street side dining, art and activities.



THE VIVARIUM

Visitors

MASTER PLAN DOWNTOWN AREA MASTER PLAN Downtown, Near Downtown & Arkansas River Connections

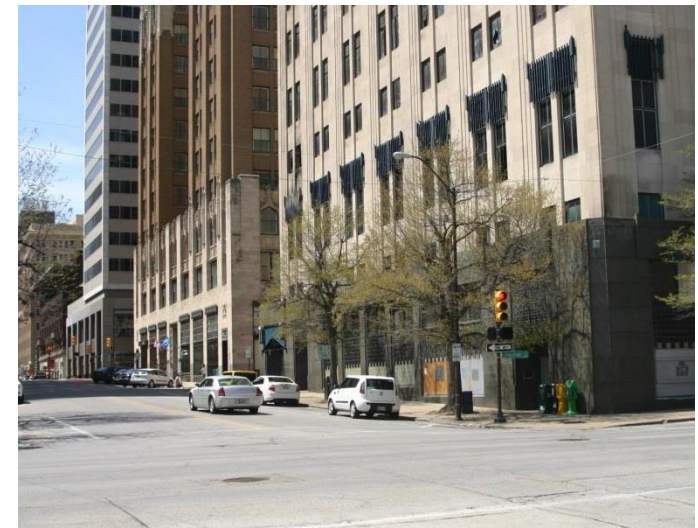
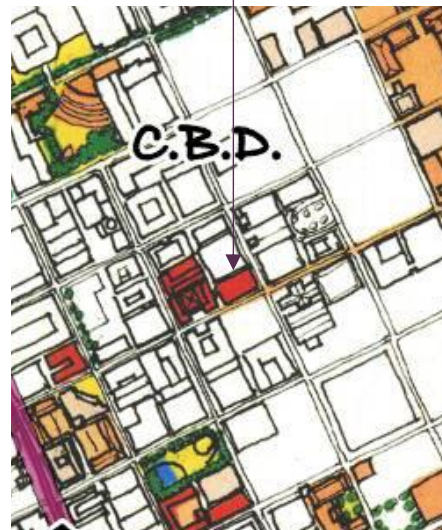


Pedestrians can stop by day or night to see the street-facing habitats along Cincinnati and 5th Street. The ice cream parlor and coffee shop open at 7 o'clock in the morning to allow downtown workers to stop in on their way to work for a pastry and some animal viewing. This will hopefully build personal relationships and create attachments between the animals and fellow Tulsans.

With restaurants and entertainment venues within the adjacent blocks, the central business district would become a high-rise hotspot in Tulsa. The Vivarium could become the catalyst for the "European"-style downtown the master plan seeks. New development would be drawn to the area with this innovative revitalization project, trying to capitalize on the foot traffic brought in by The Vivarium.

As pictured below, the Tulsa Club Building has an open street front with a wide sidewalk complemented by mature trees which creates great potential for a family-friendly, pedestrian atmosphere.

◆ The Vivarium





THE VIVARIUM

Visitors

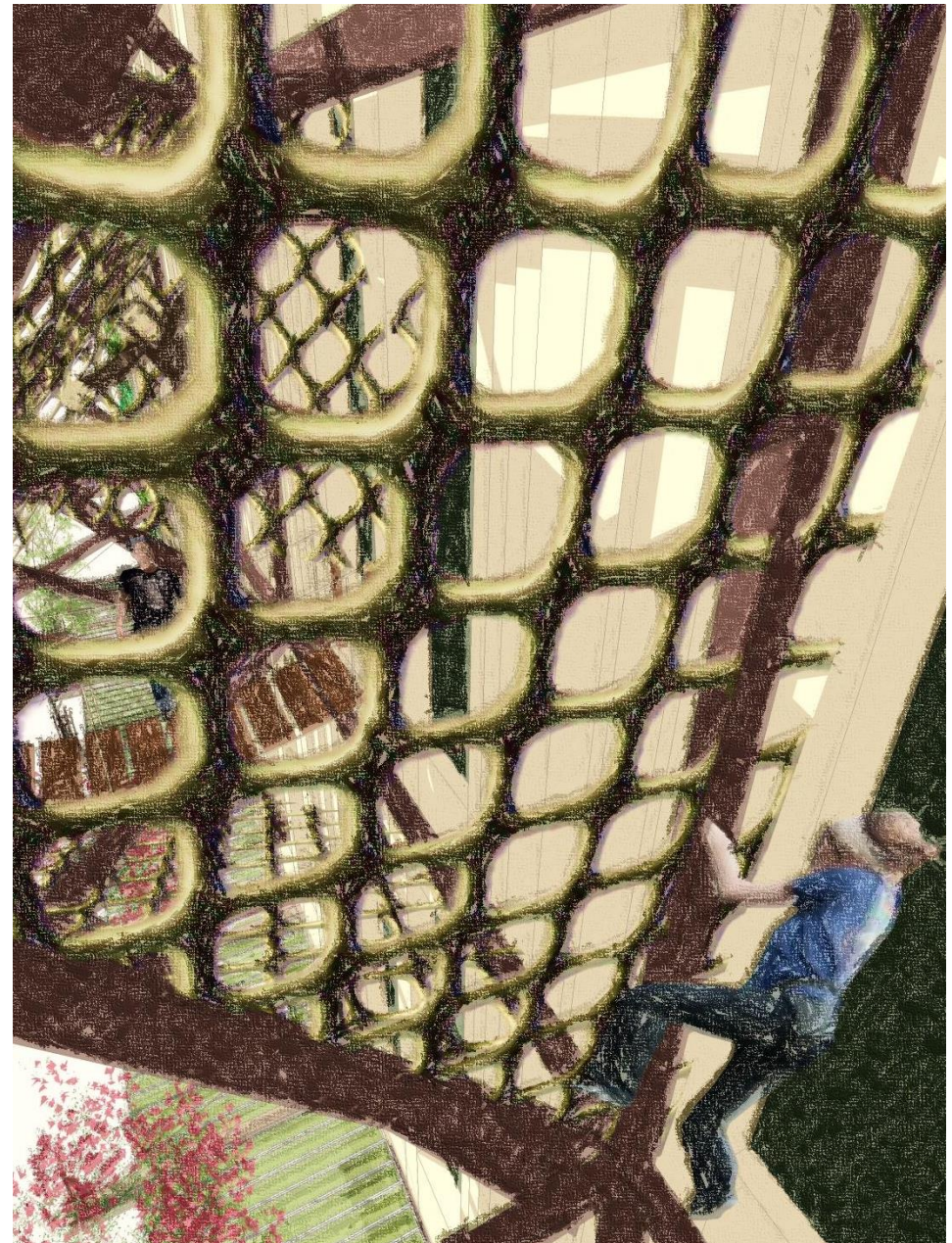
Attractions

Attractions bring the visitor to The Vivarium and draw them through the exhibits. These do not have to be carnival rides or modified playground equipment for the visitor to play on. The National Zoo has fantastic attraction opportunities programming that, while simple, changed the viewer's interaction with the animal and made the visitor think about them in a different way. Inside of the sea-vertebrates house, a large glass wall displayed 6x6 squares of paper with visitor drawn pictures of seahorses. A large round table with a tall cylinder of seahorses in the center was stocked with paper and markers, surrounded by chairs of different heights for visitors to sketch on.

Some drawings were stylized or cartoony and appeared to have been done by talented artists, others were obviously drawn by children and there was a wide range of everything in between. The display of the artwork became a unified piece – its own school of seahorses. The entire work was interesting how it provided a sense of community between the visitors at the zoo. The drawing station also turned what may have held the attention of patron for less than a minute into several minutes of intense study of the animal.

This was a free attraction, as was the entry to the National Zoo. The free entry did not however include a map. The map was a small \$2 donation, but the visitor tends to not think twice before paying the map fee. Like the Jenks Aquarium, The National Zoo relies on a model with free entry, this includes looking at animals and reading plaques, but little more than that.

The Vivarium would use this model for animal feeding opportunities, but attractions like the monkey climbing ropes and catwalk over 5th Street would be included in the ticket price. The climbing ropes would likely be one of the principal lures to The Vivarium. It is an attraction that adults and children could potentially play on all day and bringing them into The Vivarium. As such parents will perceive it as part of the cost of the visit. Because of that, the Jenks model would suggest that it simply be figured into the gate price instead of being charged separate so that patrons do not feel nicked and dimed.





Historic Art Deco in the Neighborhood



MAYO MOTOR INN

416 South Cheyenne Avenue
Built: 1950

Four blocks from the Vivarium...

This garage was designed by Leon B. Senter & Associates. The five-ranked facade of the building, constructed to house burgeoning downtown automobile parking needs, included five-frame, ribbon windows in the second level above each bay. The smooth center bay, devoid of windows, is adorned by a 15-foot high, metal, title sign with curved corners and a crowning band of three bars.

Source: Tulsa Preservation Commission

Execution Summary

Building Cost	Scott Sale	\$1,100,000 total
		\$11.59 per sqft
	Tulsa Judgment	\$358,000 total
		\$3.89 per sqft
	Total Taxable	\$203,000 total
		\$2.12 per sqft
Demolition Budget	Fair Market	\$511,000 total
		\$5.56 per sqft
	Permits	\$3,200
	Insurance	Through Contractor
	40yd Dumpster	\$16,000
	Demolition (\$18k/floor)	\$234,000
Capital Budget Summary	Roof Removal	\$7012
	Utility/Elevator Removal	\$4320
	Building	\$1,100,000
	Construction	\$2,712,898.90
	Facility Sum	\$3,812,898.90
	Curation	\$297,050
	Amenities	\$289,000
	Project Sum	\$4,398,948.90
	Ann Arbor - Tulsa Conversion	\$4,050,517.30
	Date Conversion	\$4,182,430.70

The Tulsa Club Building at East 5th and Cincinnati is currently in a near-dilapidated state. The property has been under the ownership of California businessman CJ Morony and has sat empty since 1994 when the Tulsa Club, separated as a social club. The building became a transient home and since 2007 has been considered a nuisance. The city has long been trying to resell the building to a local or more active owner.

Acquiring the building could potentially be done through the city itself, if The Vivarium was a city owned, non-profit, entity. The Tulsa Zoo is city owned, but managed by a private company. A publicly owned vivarium would be recommended to encourage public use and a sense of community.

This Building Cost chart shows previous costs of the building, should it have sold at various points in history. The Scott sale, in 2011, was a fictional sale set up by Morony to put off a sheriff sale of the property. Throughout 2010-2013, Morony sold and resold the property every 90 days or so to various LLCs setup by himself for \$1 each time. Needless to say, those Shamrock LLC sales were not recorded on the chart.

Though he seems unwilling to sell, the “Fair Market” price is a reliable estimate that could be used if the building were to be purchased from Morony. This figure could likely be reduced, due to the condition of the property.

Alternatively, through a partnership with or ownership by The City of Tulsa, simply paying Morony’s back taxes with the “Tulsa Judgment” amount may be enough since the city is very interested in having the building occupied.

The second chart reflects a demolition estimate as prepared for a real estate planning course at The University of Oklahoma’s Urban Design Studio. This estimate assumes that a majority of the interior will have to be stripped down to the beams, due to the amount of vandalism, fire and water damage.

THE VIVARIUM

Implementation

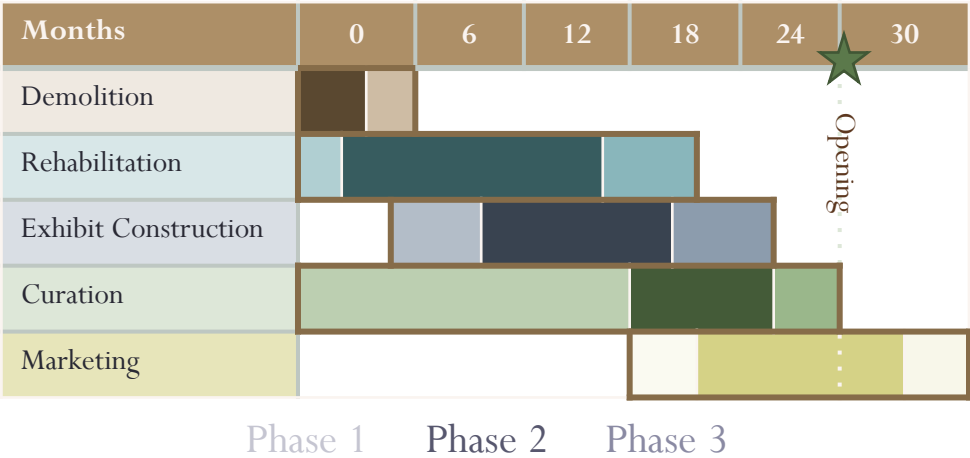
In the third chart, which summarizes the capital cost of The Vivarium, the Scott Sale price was used since it shows approximately what Morony believes the property is worth. This assumes that The Vivarium would be able to convince Morony to part with the building at any price. The construction cost was figured out of a number of charts on proceeding pages.

The Facility Sum is the sum of obtaining the property and all of the construction costs associated with building The Vivarium. Curation and amenities, refer to procurement of the animals, their enrichment programming and that of the visitors. These figures and the facility cost are combined to obtain the project sum.

The means calculator used to obtain these figures was set by The University of Michigan and intended for Ann Arbor in 2003. Tulsa is a slightly cheaper construction market and therefore the project is slightly less expensive after the regional conversion. Both the region and date conversions were calculated using the Marshall & Swift cost estimators for commercial construction.

The final figure of \$4.18M was determined by Kevin Anderson, professor of the Real Estate course to be a fairly practical estimate. Though some of the estimates may be higher or lower, they should each other balance out.

Lastly, a construction timeline shows the five phases to open The Vivarium, once the structure is acquired; 1) Demolition, a 6 month process, 2) Rehabilitation, this phase would take 18-24 months to rehabilitate and restore the Tulsa Club Building, 3) Exhibit Construction, another year and a half segment of laying out and building the animal habitats, 4) Animal Curation, a full two-and-a-half year portion, where phase 1 begins as soon as the building is procured since the animal habitats can not be designed until the designers know what animals will be featured at The Vivarium, 5) Marketing, a campaign prior to, during and after The Vivarium opens.



BLUE NAPED MOUSEBIRD

Height: 13-14 inches Exhibit: B15
 Weight: 15 pounds
 Conservation Status: least concern
 Social Behavior: gregarious, bands of about twenty

Urocolius macrourus

The blue naped mousebird is found in the drier regions of East Africa and is also a common pet bird. It is one of the remaining six species of Mousebirds. The term “mousebird” comes from its ability to move along the ground in a way that resembles the scurrying of a mouse. Mousebird shave widely spaced and large feet for its body size, which they are able to rotate to face forward at will. Their toes are strong and dextrous, allowing the birds to climb and scurry along branches, to hang by a toenail, or to use one foot to hold food.



THE VIVARIUM

Implementation



KURT EDISON D'AMOUR
THE VIVARIUM

Funding

The diversity of the programming at The Vivarium offers a number of avenues by which interested parties could channel their money: zoological, historic preservation, urban agriculture, Tulsa tourism, and education to list a few. With grants as potential funding donors could aid in the establishment of The Vivarium and make the venture more practical. With the range of study areas at The Vivarium, a broader pool of investors may be interested in capital funding as well.

From benches to habitats to whole floors, sponsorship of animals is a great way for Tulsa families or local business to connect with The Vivarium and to let the community know their support. While families can sponsor any exhibit, branch exhibits are reserved for families in the community and would be priced in

accordance. Local businesses are able to sponsor trunk exhibits and full floors. The Vivarium's zoologists and curators will work with sponsoring families to create a habitat that expresses the family and the animals. Sponsorship carries an important \$1.05M in potential annual resources, an important funding source

Sponsorship is a strategy employed by The Cleveland Metroparks Zoo, The Tulsa Zoo, and The Jenks Aquarium as well as an approach recommended by Merritt in the National Standards & Best Practices for US Museums as a way to supplement gate admissions and encourage local business and families to participate in the facility.

Grants	Levy Support	Tulsa Amelioration
		\$1M annual*
	George Kaiser Family Foundation	Education, Community Health, Tulsa Beautification
		\$2M start up donation
	National Science Foundation - Ocean and Climate Change Interpretation	Leveraging attractive appeal of charismatic animals to influence behaviors
		\$1.2M grant (common)
	Disney Worldwide Conservation Fund	Inspire families, connect kids with nature, innovative conservation education
		\$500K – typical average annual donation
	Smithsonian NASA Collection	Floor dedicated to animals in space
		Curation of artifacts

Operating Sponsorship	Smaller Habitat 20	10 years
		\$10k
		\$200,000
	Large Habitat 12	10 years
		\$15k
		\$180,000
	Feature Habitat 6	10 years
		\$20k
		\$120,000
	Floor 10	10 years
		\$50k
		\$500,000
	Banquet Space 3	10 years
		\$15k
		\$45,000

restoration and revenue Estimates

A	Item	Price	Total
Ice Cream Parlor	Cold Storage	\$9,000	
	Display Freezer	\$4,000	
	Accoutrements	\$4,000	
	Counters/Décor/etc	\$7,000	\$24,000
Zoo Deli Café	Cold Storage	\$13,000	
	Ovens/ Grill/Fryers	\$10,000	
	Accoutrements	\$8,000	
	Seating/Décor/etc	\$15,000	\$46,000
Gift Shop	Merchandise Racks	\$8,000	
	Storage Racks	\$2,000	
	Counters/Décor/etc	\$3,000	\$13,000
Hyena Club	PA System	\$18,000	
	Lighting	\$12,000	
	Stage Raisers	\$7,000	
	Seating	\$22,000	
	Accoutrements	\$4,000	\$63,000
Classrooms (x2)	Workspaces	\$7,000	
	Storage	\$1,000	
	Technology	\$6,000	
	Accoutrements	\$2,000	\$32,000
Total			\$178,000

D	Value	per Square Feet
Scott Sale	\$1,100,000	\$11.59
Tulsa Judgment	\$358,000	\$3.89
Total Taxable	\$203,000	\$2.12
Fair Market	\$511,000	\$5.56

B	Cost	Units	Total
Air Handler	\$49,500	5	\$247,500
Computer Monitoring	\$17,800	1	\$17,800
Chiller	\$12,000	5	\$60,000
Heating Plant	\$40,000	1	\$40,000
Ozone Filtration System	\$1,200	12	\$14,400
Live Flora Air Purification	\$3,200	12	\$38,400
Water Mist Suppression System	\$3.66	96,000	\$351,360
Laundry/Keeper Showers	\$2,100	2	\$4,200
Plumbing fixtures/water fountains/restrooms	\$5,000	12	\$60,000
Lighting and Technology	\$2,724	12	\$32,688
8000 - 83.33 Hydraulic Freight	\$170,000	1	\$170,000
5000 - 70 (25) Hydraulic Freight	\$150,000	2	\$300,000
Security	\$3,400	1	\$3,400
Maintenance Vehicles	\$7,100	1	\$7,100
Total			\$1,346,848

E	Cost	Units	Total
Animal Acquisition	\$750	51	\$38,250
Animal Enrichment Budget/ (Toys)	\$1,800	36	\$64,800
Exhibit Space	\$10,000	8	\$80,000
Visitor Furnishings/Benches/ Signage/Non-Digital Displays	\$8,000	12	\$96,000
Animal Kitchen	\$18,000	1	\$18,000
Total			\$297,050

C	Percent	Sqft per floor	Building Total
Habitat	0.28	2338	25718
Visitor	0.34	2839	31229
Keeper	0.21	1754	19289
Office	0.06	501	5511
Utility	0.11	919	10104
Total	1	8352	91852

F	Cost	Units	Total
Removal	\$1.10	6298	\$6,927.80
Reinforced Topping	\$2.64	6298	\$16,626.72
Insulation	\$0.92	6298	\$5,794.16
Pebble	\$0.40	6298	\$2,519.20
Plastic Lumber Frame	\$1.80	6298	\$11,336.40
Plastic Lumber Decking	\$5.45	6298	\$34,324.10
Railings	\$1.65	704	\$1,161.60
Garden	\$8	675	\$5,400
Aviary Net Walls	\$29	352	\$10,208
Aviary Columns	\$148	23	\$3,404
Total			\$97,701.98

G	Unit	#Weekly	# Annual	Total
Gate	\$5	2,500	200,000	\$1M
Attractions	\$4	5,000	500,000	\$2M
Banquet	\$1,500	5	300	\$450k
Gift Shop	\$20	380	20,000	\$400k
Concessions	\$30	200	10,000	\$300k
			Estimated	\$4.15M

THE VIVARIUM

Cost Analysis

H	Basic		Habitat Side		Visitor Side		Linea r foot	Foot -age	Total Cost
Concrete	7" precast, reinforced	\$14	Waterproofing	\$0.47	Detailing	\$12			
			Paint Treatment	\$0.30	Paint Treatment	\$0.70			
		\$14		\$0.77		\$12.70	\$27.47	240	\$6,592.80
Glass	7" precast, reinforced	\$4	Waterproofing	\$0.90	Detailing	\$2.40			
	Vitolite	\$24	Paint Treatment	\$0.06	Paint Treatment	\$0.28			
		\$28		\$0.96		\$2.68	\$31.64	210	\$6,644.40
Wire	7" precast, reinforced	\$4	Waterproofing	\$0.90	Detailing	\$2.40			
	Tension Cable system	\$7	Paint Treatment	\$0.06	Paint Treatment	\$0.28			
		\$11		\$0.96		\$2.68	\$14.64	385	\$5,636.40
Themed	7" precast, reinforced	\$4	Waterproofing	\$0.90	Detailing	\$16			
	Canvas Cloth	\$2	Paint Treatment	\$0.20	Paint Treatment	\$0.40			
	Vitrolite	\$4							
	Copper Veneer	\$7							
		\$17		\$1.10		\$16.40	\$34.50	120	\$4,140
Back Stage	16ga 6x Stud	\$1.80	Gypsum board, 1/2"	\$1.10	Gypsum board, 1/2"	\$1.10			
			Furring, wood	\$0.98	Furring, wood	\$0.98			
			Paint Treatment	\$0.50	Paint Treatment	\$0.50			
		\$1.80		\$2.58		\$2.58	\$6.96	190	\$1,322.40
Class- room	16ga 6x Stud	\$1.80	Gypsum board, 1/2"	\$1.10	Plywood, 5/8"	\$1.90			
			Furring, wood	\$0.98	Acoustic Tile	\$1.20			
			Paint Treatment	\$0.50	Detailing	\$4			
					Paint Treatment	\$0.50			
		\$1.80		\$2.58		\$7.60	\$11.98	90	\$1,078.20
								Total	1235 \$25,414.20

I	Floor		Ceiling		Total
Exhibit	Vapor Barrier	\$0.20	Plywood, 3/4" CD	\$1.15	
	Subfloor, 3/4" Ply CD	\$1.15	Waterproofing	\$0.89	
	Flooring, Hardwood 25/32" A	\$9.68	Paint, 2 coats	\$0.81	
	Finishing, Stain and seal	\$2.40			
Visitor		\$13.43		\$2.85	\$16.28
	Vapor Barrier	\$0.20	Plaster, 3 coats A	\$3.68	
	Subfloor, 3/4" Ply	\$1.15	Paint, 2 coats	\$0.81	
	Flooring, Hardwood 25/32" A	\$9.68			
Keeper	Finishing, Stain and seal	\$0.70			
		\$11.73		\$4.49	\$16.22
	Vapor Barrier	\$0.20	Plywood, 3/4" CD	\$1.15	
	Subfloor, 3/4" Ply	\$1.15	Paint, 2 coats	\$0.81	
Office	Flooring, Hardwood 25/32" C	\$5.81			
	Finishing, Stain and seal	\$0.30			
		\$7.46		\$1.96	\$9.42
	Vapor Barrier	\$0.20	Drywall 1/2"	\$1.56	
Utility	Subfloor, 3/4" Ply	\$1.15	Paint, 2 coats	\$0.81	
	Flooring, Hardwood 25/32" C	\$5.81			
	Finishing, Stain and seal	\$0.30			
		\$7.46		\$2.37	\$9.83
Utility	Vapor Barrier	\$0.20	Open	\$0	
	Subfloor, 3/4" Ply	\$1.15			
	5/8" Ply	\$1.47			
		\$2.82		\$0	\$2.82

table Breakdown

The preceding tables were arranged for the page constraints. They were prepared for a real estate planning course at The University of Oklahoma's Urban Design Studio. These estimates assume that a majority of the interior will have to be stripped down to the beams due to the amount of vandalism, fire and water damage.

Table A is an amenities cost estimate for attractions and services within The Vivarium.

Table B addresses the cost estimates for the HVAC system, utilities, lighting and technology, and other facilities related to maintaining any structure. Some of the elements are specific to The Vivarium or zoos, such as keeper showers. Hydraulic freight elevators were chosen as both service and people moving elevators because they are slower, smoother and have a higher maximum load. They are meant to be slower because voiceovers and videos can be played between floors to extend the experience and transitions between floors.

Table C is space allocation. This is an estimate of how the space within The Vivarium will be distributed. Used with Tables H and I, it is used to calculate the final costs of the project.

Table D is a repeat of the summary page addressing the cost of the acquiring the building. The Scott Sale value was used to calculate the project total, both as a worst case scenario and because that was the figure that CJ Morony suggested he believed the property was worth.

Table E is a curating budget used to obtain the animals for exhibit. Zoos, by policy, do not pay for animals, aside from transportation. The animal acquisition budget allots \$750 per species to transport to The Vivarium. A generous budget is also allotted to their habitat furnishing and the visitor experience.

Table F refers to the roofing cost of The Vivarium. The roof will need to be removed; a deck will be added for additional exhibit, including a blue fairy penguin two-story exhibit with pool, and aviary space with garden elements. The Zoo in Your Backyard exhibit will be housed on the roof showcasing how a backyard can be simply transformed into a local wildlife sanctuary. This exhibit was taken from The National Zoo and would feature a 1930s small art-deco house with an extensive garden, chickens, and a llama to "mow" the grass.

Table G is a revenue estimator. These figures use the Jenks Aquarium visitor counts. An argument could be made that both facilities could not support the same amount of visitors. Because of this, the banquet, gift shop and general concessions have been reduced from the Jenks figures. This concessions amount is not for the Zoo Deli Café, which should support a much larger lunch crowd than 200 patrons per week. This number only accounts for 200 families purchasing lunch at The Vivarium.

Tables H and I hold the major construction and renovation costs. When choosing material estimate costs, an A rating was used. This rating would usually refer to the quality of the materials, on a fanciness level. This rating was not used for fancier products, but rather a sturdier product that would be able to hold up to the animal habitats. The animal floors would be built of hardwood to create a more inviting and relatable atmosphere to the visitors. This would have a heavy coating on top to prevent the animals from destroying the floors. These tables provide a price estimate per square foot, then combined with the percentages derived from Table C to establish the total cost of the that element throughout the building.

THE VIVARIUM

Cost Analysis

Finances

The Cleveland Metroparks Zoo provided their 2011 finances for research purposes. The Metroparks Zoo is an example of a late-20th century zoo. It is owned by the City of Cleveland and the citizens. As such, their main support derives from taxes, at 54.2%. Their gate sales made up 22.5% in 2011. The community compromises over 75% of their budget.

A newer model of zoos and museums relies more heavily on sales within the park to supplement their income. Special exhibits of museums require additional fees, better quality food brings in added concessions and carnival quality rides are becoming more popular at zoos.

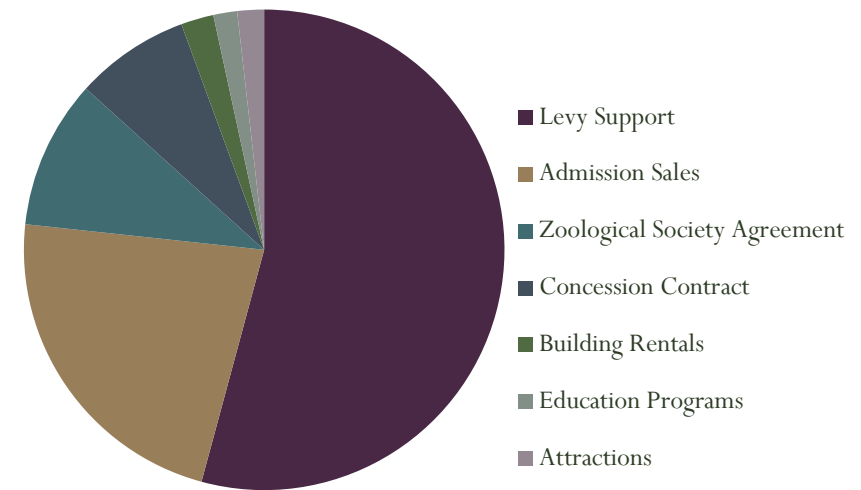
The Jenks Aquarium is a more extreme example, where their guests do not make up the majority of their income due to a lowered gate price. Instead, attractions compromise most of their income, which includes animal feedings and building rentals. The Jenks Aquarium actually closes early on weekends to allow corporate rentals of the space. There is probably an equal amount of corporate and private rentals at The Metro Park Zoo and The Jenks Aquarium, however, with such a smaller space, there are not enough exhibits for The Jenks Aquarium to warrant remaining open with spaces within the facility rented out. Conversely, with over 160 acres, the Metroparks Zoo can close a several buildings to the public without sacrificing the non-rental visitor's experience.

At The Vivarium, the community is supposed to feel at home. Because of this, ideally, levy support should make up an even heavier majority of the funding. If possible, this would allow entry prices to be as low as possible: an annual family pass costing \$30-50. The addition of a restaurant, intended to capture business lunches, should strongly supplement the income with robust concessions revenue.

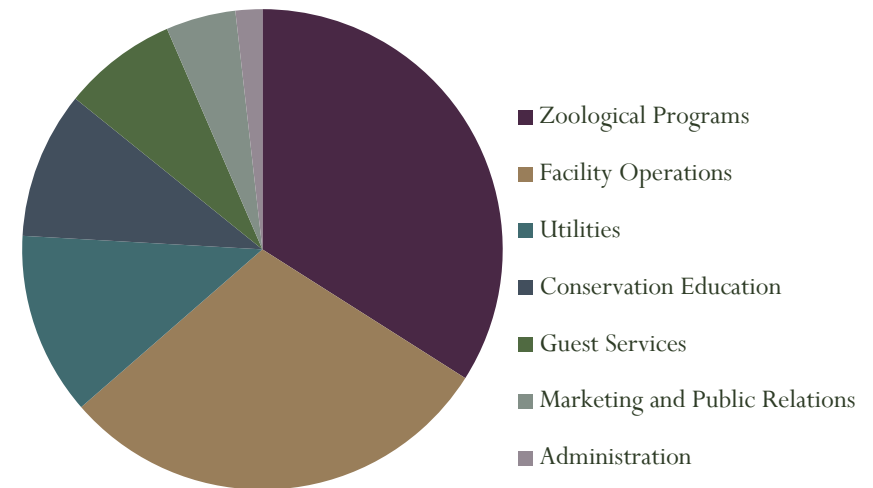
Attractions, such as monkey climbs, catwalks, and pettings, should not be an addition fee over the entry price. Interacting with the animals is the draw to The Vivarium. Feedings however, would likely be an additional cost, modeling the approach of Jenks.

Cleveland Metroparks Zoo finances

Where does the Zoo **RECEIVE** its money?



How does the Zoo **SPEND** its money?



2011 operating expenses = \$19,197,367



Historic Art Deco in the Neighborhood

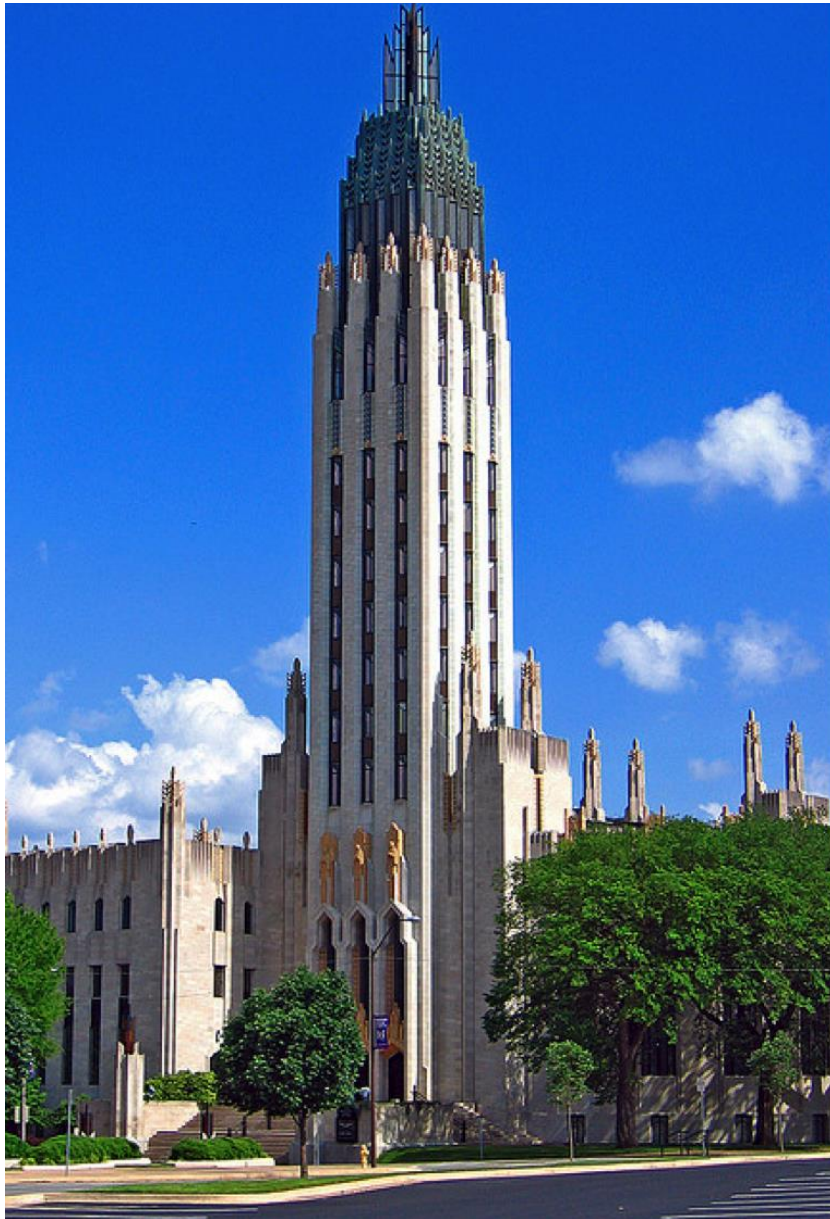
Eight blocks from The Viviarum...

The Boston Avenue Methodist Church was hailed as the country's first church designed in a strictly American style of architecture. Credit for the building's design is still debated in Tulsa. One account credits Tulsa art teacher Adah Robinson, while others credit her former student, Bruce Goff. At best the design was a cooperative effort with iconography and color theory supplied by Robinson. The building's structural plans undoubtedly were the work of Goff, while employed at the Tulsa architectural firm of Rush, Endicott and Rush.

The church was designed to accommodate the spiritual, educational and social needs of a large, 1,943 member church. Its 258-foot tower, on the north and on an axis with Boston Avenue, is the dominant feature. The tower entrance, opening into the 1,800 seat auditorium on the right (west), and the social lobby on the left (east), features a vaulted ceiling that extends the entire north and south depth of the church. Beyond the social lobby is the four-story educational wing.

The site is at a turning point of Boston Avenue and is bounded by streets on three sides. There is really no rear to the church, although the educational area might be considered as such. Strikingly handsome when completed in 1929, it remains a remarkably effective blending of traditional church design and modern "skyscraper" techniques.

Source: Tulsa Preservation Commission



BOSTON AVENUE METHODIST

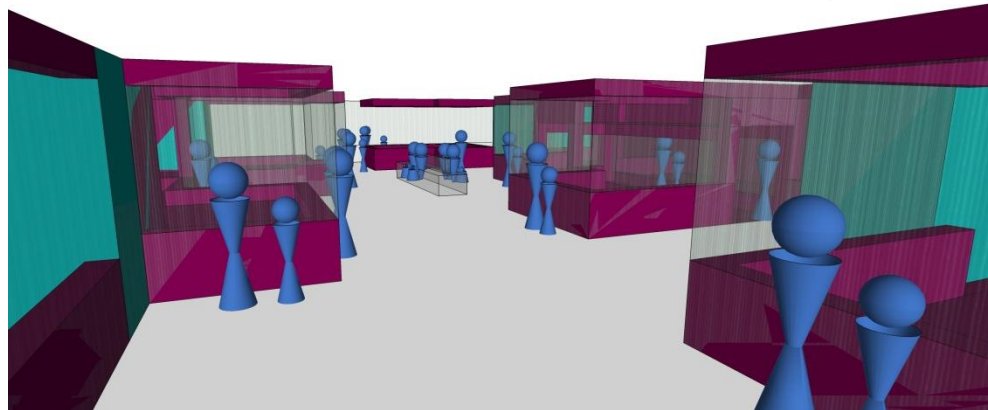
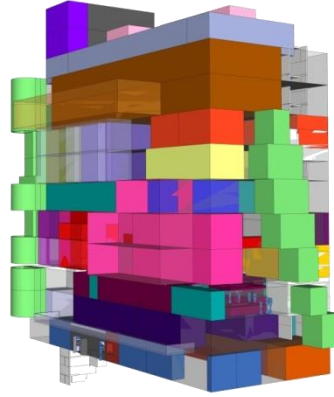
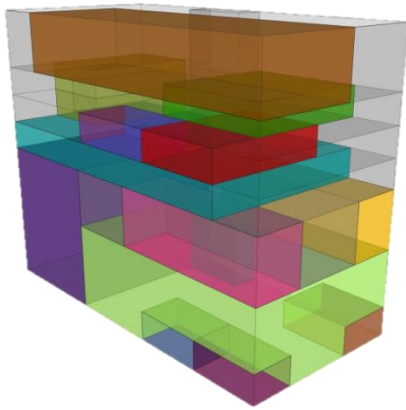
1301 South Boston Avenue
Built: 1929



THE VIVARIUM

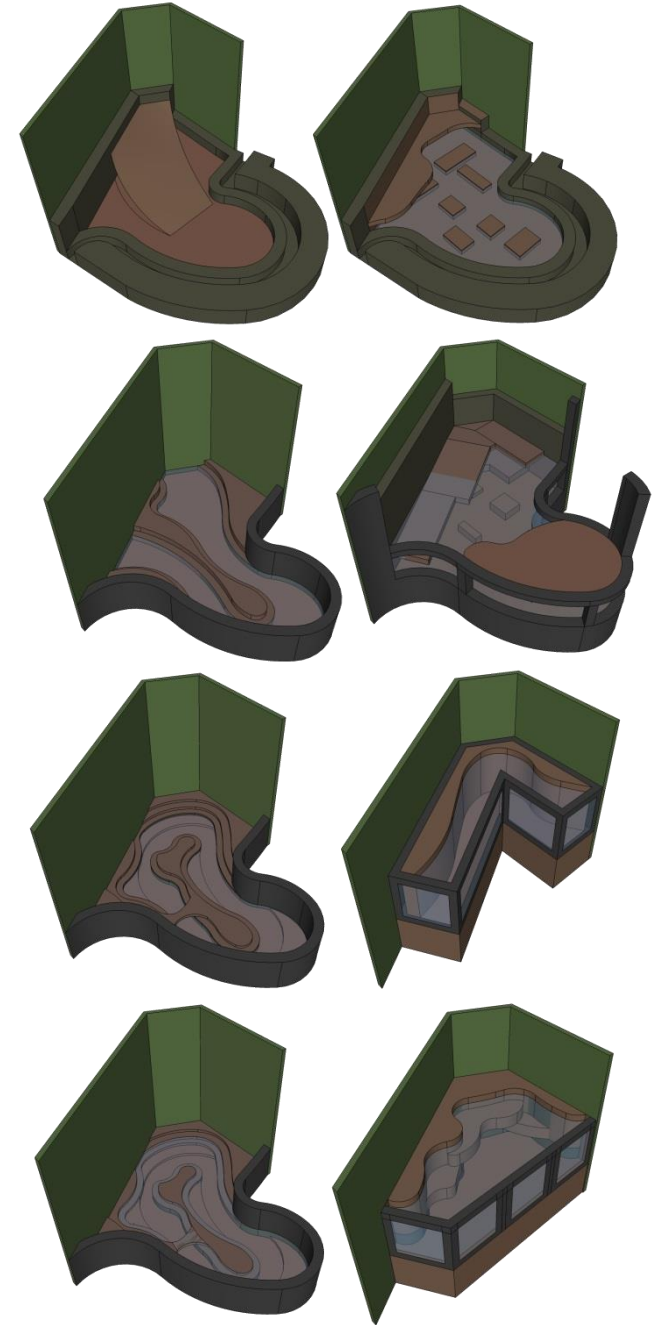
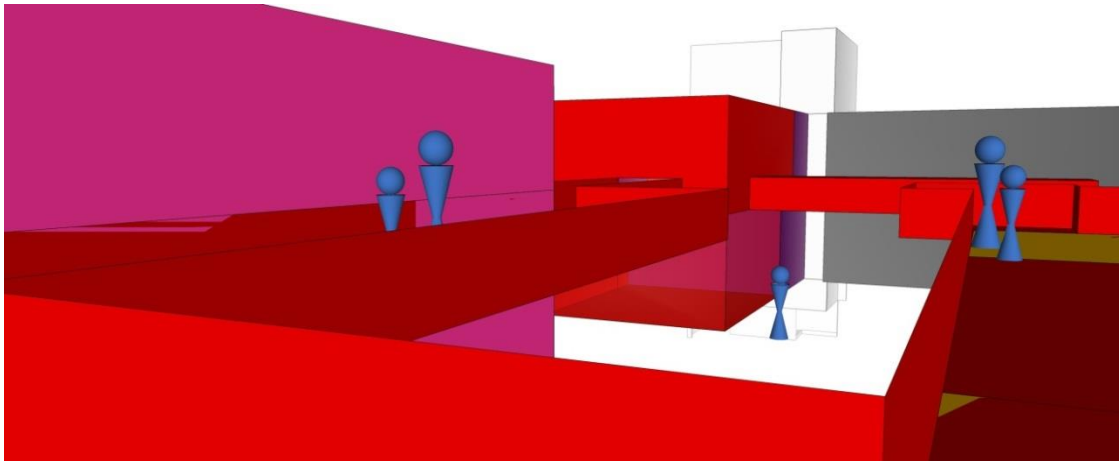
Project Evolution

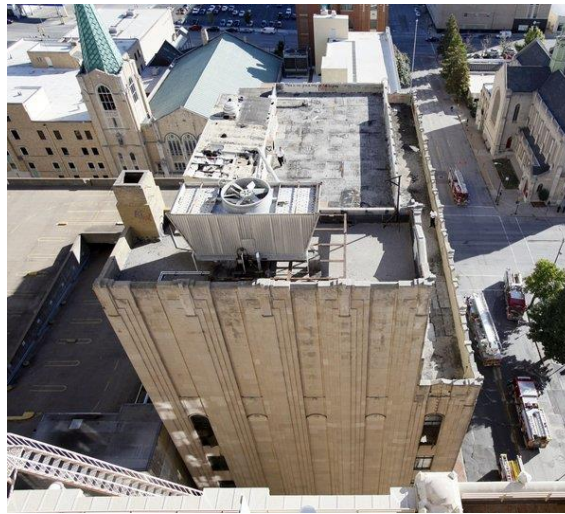




THE VIVARIUM

Project Evolution





THE VIVARIUM

News Articles

Tulsa Club's Year Celebrated

Danna Sue Walker

5 March 1990

Tulsa World

A champagne toast celebration marked a successful year for the Tulsa Club at its annual black-tie Governors' Ball on Friday evening.

Following cocktails and hors d'oeuvres, guests enjoyed a dinner, program, and entertainment by Beauty and the Beats in the club's main dining room.

Club vice president Don Kihle, the master of ceremonies, introduced Mayor Rodger Randle, who spoke of the 65-year history of the landmark downtown club.

Outgoing president Bill Doyle III introduced 1989 board members attending. Included were D.P. and RosieHall,; Henry and VirginiaWill,; and Robin Siegfried and his wife, Cherrie.

Doyle praised the Siegfrieds for their help with the renovation of the dining room and their other efforts for the club.

Each board member received a crystal box from Doyle and his wife, Judy. Earlier on Friday, boutonnieres and orchids were delivered to the board members' compliments of the Doyles.

The Doyles were joined by Gena and Bob Franden, Linda and Ray Goldsmith, Barbara and Tom Naugle, Judy and Glen Wright and Randle and his wife, Judy.

Imel and his wife, Patsy, were seated with Brenda and Bob Davis, the Halls, Jay and Ed Lawson, who was the 1974 club president; and Mr. and Mrs. Paul Mindeman.

Ruth and Clint Cox were joined by Ernestine Howard and Richard Thomas, Ernestine and Paul Henry, the 1985 president; Pat and Clay Woodrum and Ruth and Howard Maher.

The Siegfrieds were with Linda and Bob Bresnahan, the 1978 president; Virginia and Henry Will and club public relations director Rhonda Patterson.

Members of the Tulsa Club Running Club on hand were Janet and Bill Deck, Ellen and Don Atkins, the 1986 president; Bill Doyle Jr. and his wife, Sue; Judy and Don Kihle, Marlene and Dave Morgan and Marian and Foley Wright.

Others enjoying music of the '40s, '50s and '60s were Brad Fuller and Amy Rhodes, Barbara and Jim Houghton, Susan and Porter Shults, Barbara and Bill Horkey, Grace and Jim Eagleton, Marge and Garvin Berry, Karen Adcock and Cameron Smith, Virginia Hocutt and Paul Hollrah.

Service recognition went to club employees Helen Randell, for her 31 years on the staff; Eugene Ferguson and Irene Springer, for 26 years; Jerry Smith and Jessie Harris, 25 years; Mary Roland, 21 years; Barbara Lenard, 12 years, and Jay Caudell, 11 years.

Tulsa Club eyes move, sale of 11-story home

Mark Taylor

1 April 1992

Tulsa World

The Tulsa Club, the city's oldest private club, is considering the sale of its 11-story downtown home and has a "preliminary understanding" with a Tulsa bank to lease the top floor of the First National Tower as a new home.

In a statement issued Tuesday and in a recent letter to club members, club President Donald A. Kihle said the 68-year-old club is negotiating with Liberty Bank and Trust Company, Tulsa, with the goal of subleasing the 41st floor of the First National Tower, 15 E. Fifth St.

The club would use the space as a new home, provided a sale of its current 100,000-square-foot home at 115 E. Fifth St. can be worked out, according to the letter, issued Monday.

Kihle declined to elaborate. In the prepared statement, he emphasized that the club would continue but "probably at a lesser scale of operations."

The club's general manager could not be reached for comment and Liberty Bank, a tenant in the tower, declined comment.

In his statement and letter, Kihle said declining membership was behind the effort to sell the club's building and search for a leased facility.

If completed, the move would result in lower operating costs for the club and "substantially" reduced monthly dues for members, which are \$116 a month, Kihle said.

A key to making the move possible will be negotiations with the club's mortgage lender. The note holder was identified only as a Tulsa bank.

Tulsa Club Co-Founder Mary Tankersley Dies

author unknown

5 March 1993

Tulsa World

The Mary Tankersley, a founding member of the Tulsa Club, died Wednesday. She was 93.

A prayer vigil will begin at 7:30 p.m. Friday at Hahn-Cook/Street and Draper Chapel in Oklahoma City. A Mass is set for 11 a.m. Saturday at Christ the King Catholic Church.

born in Quincy, Ill., and attended Notre Dame Preparatory Academy. Tankersley was preceded in death by her husband, Dan Tankersley, a Tulsa engineer and contractor.

She had been a president of the Bookmark Bookclub and the Petunia Garden Club.

Tankersley is survived by her daughter, Ann Tankersley Richter of Tulsa; granddaughter Amy Leigh Richter of New Orleans; grandson Dan David McClain of Tampa, Fla.

1994

Tulsa Club To Close Building

Jerry Hereden

11 February 1994

Tulsa World

The 70-year-old Tulsa Club will close its 10-story building Friday because of financial woes and a shrinking membership, said Sheldon Detrick, vice president of the board of governors.

The club will continue as a private membership entity while seeing another site, Detrick said.

"We're all just sick, but we can no longer support this facility," he said. "I don't know where we'll go."

Current and former members will attend a "memories party" at 5 p.m. Friday, Detrick said.

The club's membership consists of doctors, lawyers, attorneys and other businessmen.

Detrick attributes the club's declining membership to a bad economy. It had about 900 members in 1980 but now it has about 400, he said.

At least 1,000 members would be needed to stay in the 105,000- square-foot building at 115 E. Fifth St., Detrick said.

"We don't need this much space," he said. "We're not like most tenants ... we pay for insurance and the utilities."

Wedding rehearsal dinners and holiday parties are just a few memories in the building.

"This has been a true family club," he said. "There are many memories for all us."

The Tulsa Club was organized in 1923 and was first housed in the basement of the Kennedy Building at Fourth Street and Boston Avenue.

In 1926, the club and the Tulsa Chamber of Commerce built the present building.

The club occupied the sixth through 11th floors, while the chamber occupied the first five floors. The chamber sold its floors to the club in 1950.

Since 1980, the club has had costly expenses.

It spent about \$1 million installing a new heating and air conditioning system and it spent about \$300,000 to remove asbestos from public areas. It also expanded the athletic facilities and redecorated the dining rooms.

The building has squash courts and employee-operated elevators.

The club recently hired about 20 former Petroleum Club of Tulsa employees after they were left without jobs because of the Petroleum Club fire.

1994

Club Gone, Runners Sprint Last Hurrah

Wesley Brown

12 February 1994

Tulsa World

Tulsa lost a downtown institution Friday when the Tulsa Club closed its doors.

And an unusual ritual that bonded several downtown lawyers and businessmen also died.

Nearly 20 runners, who had set out almost every day at noon from the 10-story building at 115 E. Fifth St., ended what had become known as the Friday Afternoon Running Team.

Sometime in the late 1970s, a team of runners began a long tradition by running up Reservoir Hill, which peaks near Osage Drive and Apache Street.

"This is a special run," said Gray Strickland, a downtown Tulsa lawyer. "When you get to the top of the run on Friday, you can see all of Tulsa."

Over the years, the run up the famed incline has taken on a personality of its own and the runners have given "the hill" many reverent names.

"First it was The Hill, Hill Squared, Hill Classic, Hill to the Max, Reservoir Classique, Hill Plus and Back Bowl . . . depending on the route variation," said Malcolm McCollam, a lawyer who joined the group in 1984.

The Friday runners eventually began to train every day and developed different routes in the downtown area.

The group's regular routes, which are usually 6 or 7 miles, showcase many of Tulsa's oldest areas. The routes run from Archer Street to Reservoir Hill and Denver Avenue, and from Woodward Park to Maple Ridge and Philbrook Museum.

McCollam said the team also originated "appreciation runs," which allow the runners to imbibe their favorite carbo-loading drinks while celebrating many of Tulsa's festivals.

For instance, "during the Oktoberfest . . . we would run down to the river, drink beer and run back downtown," said McCollam, who is race director for the Cherry Street Mile.

"And when the Mayfest is happening, we go out and run 5 or 6 miles, come back to Mayfest and drink beer," he said.

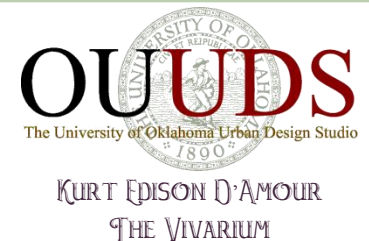
David Newsome, who Strickland said is the guru of the running team, believes that the club was established about 15 years ago.

He said there are from 5 to 15 runners on most days, with Friday being the peak day.

Newsome said he has run with the group on the hottest and coldest days of the year.

THE VIVARIUM

News Articles



"I remember back about three years ago when 'the hill' was covered with ice and cars had to travel in one lane going both directions.

"We had to share the ruts on north Denver with the cars," Newsome said.

There is a tradition among the lawyers in the group to take summer interns up the hill on the hottest day of the year, Newsome said.

"We are basically middle-of-the-pack runners who started running during the fitness boom in the late '70s and early '80s, who would race up the hill every Friday," he said of the mostly 40- and 50-something runners.

"Now, we are basically guys who have mellowed a bit, but we still like to have fun."

After the last run together on Friday, the runners discussed ideas on how they could keep the downtown running tradition alive.

While the runners are unsure when the tradition of running up Reservoir Hill on Fridays started, they said the relationships that have developed are special.

"Nothing seems better than to come over the hill and see that sight," Strickland said of route that gives the runners a panoramic view of Tulsa.

"This is definitely more than a couple of guys just running; it has created a bond."



Mayo Hotel Funding Turns Sour - selection

Dana Simon

10 May 1997

Tulsa World

Preservation Oklahoma Inc. announced its 1997 list of the state's most endangered historic properties, adding three sites to the list that already included two in Tulsa -- the Mayo Hotel and the Tulsa Club Building.

In related news, however, a plan to get \$4 million in sales tax money to develop the Mayo failed Friday at a special board meeting of the Tulsa Development Authority.

According to TDA spokesman Pat Treadway, the board instead decided to begin contract talks with Lincoln Property Co. for a project to provide downtown housing in other locations.

"The TDA scheduled a special meeting and did not choose to begin negotiations with the Mayo group," Treadway said.

The city planner, however, said the owner of the hotel, Tulsa-Mayo 1987 Ltd., has taken alternative redevelopment plans for the gutted building, according to the owner's spokesman.

"It's an absolute shame the landmark is sitting vacant," Treadway said.

The Mayo Hotel, 115 W. Fifth St., was listed on the National Register of Historic Places in 1980. Constructed in 1925 and based on architect George Winkler's design, the 18-story hotel features classical elements in its exterior detailing. An unsuccessful effort to rehabilitate the downtown landmark in the early 1980s left the building gutted.

The Tulsa Club Building, 115 E. Fifth St., is considered to be eligible for the National Register of Historic Places with its art deco facade. The building, designed by Oklahoma architect Bruce Goff, was constructed in 1927. It originally was designed for the Tulsa Chamber of Commerce, and also functioned as an exclusive men's club.

The Tulsa Club Building recently was repossessed by the Bank of Oklahoma after a public auction that disposed of most of its furnishings. It is owned by a corporation named for the building's street address and is managed by Boston Management. The building's interior is in a serious state of decay, open to the outside elements in a number of places, according to the preservation society.

Preservation Oklahoma Inc. is a nonprofit organization that established the current list in 1993 to focus attention on immediate threats to significant historic and cultural resources.

"All of the sites on this list are extremely important to our state and to the communities in which they are located," Erwin said. The Most Endangered List is a joint project with the State Historic Preservation Office of the Oklahoma Historical Society.

City authority eyes Tulsa Club Building acquisition

PJ Lassek

11 February 2009

Tulsa World

The Tulsa Development Authority is researching whether it can acquire the vacant Tulsa Club Building to assist the city in addressing its status as a downtown nuisance.

"We don't know whether we can even do this," authority Chairman Carl Bracy said. "The city's goal is to get the building up to code and back into production."

During a Tuesday work session, the authority was given an update on the 11-story building that has been vacant for more than a decade.

The building at 115 E. Fifth St. not only is in violation of fire, electrical and plumbing codes but has safety and health issues, as well, city officials said.

Assistant City Attorney Bob Edmiston told the authority media that coverage about the building has led to a misunderstanding of what the city actually can do with the property.

"Right now, it's simply wrapped up in litigation," he said.

The city has struggled since 2007 to get the building's owner, Carl J. Morony of California, to address the nuisances voluntarily and bring the property up to building codes.

Two legal actions are pending -- a foreclosure filed by the city on an unpaid \$331,815 default judgment for failure to remediate building-code issues and a motion by Morony to vacate that judgment.

Edmiston said that if Morony pays the \$331,815 judgment or the judge vacates it, that would dissolve the foreclosure action.

The abatement order, however, would remain until Morony took the necessary action to satisfy the code issues.

If a foreclosure is granted, the property would be sold at a sheriff's sale, as required by state statute, he said.

City officials have speculated that the needed improvements likely would cost less than the \$331,815 judgment.

"All the city wants is for Mr. Morony to make the code improvements," Edmiston said.

In November 2007, the property was declared a public nuisance, an order of abatement was

issued, and \$1,000-a-day civil penalties were imposed.

"It just was not envisioned that this sort of situation would happen," Edmiston said.

"The whole point of remedial civil penalties is to remedy the situation," he said. "Surely if we put a \$1,000 a day for each day it's a nuisance, these people would jump in here and take care of it, but that just hasn't happened with Mr. Morony. This is an anomaly."

Kevin Cox, supervisor of neighborhood services for the city, said the city continues to monitor the building on a regular basis to ensure that it is secured.

"We don't want a fire to get started inside and have it become a safety hazard for the surrounding buildings or for firefighters who may have to enter it," he said.



ROCK HYRAX

Length: 20 inches long

Weight: 8-10 pounds

Conservation Status: least concern

Social Behavior: herd of 80-100

Exhibit: B21

Procavia capensis

Superficially resembling a guinea pig with short ears and tail. The closest living relatives to hyraxes are the modern day elephants and sirenians (manatees). Over most of its range, the rock hyrax is not endangered, and in some areas is considered a minor pest. They have been semi-domesticated in some villages where they are encouraged to be raised as pets. Rock hyraxes produce large quantities of hyraceum, used as a South African folk remedy and is now being "rediscovered" by intrepid perfumers.

THE VIVARIUM

News Articles



KURT EPISON D'AMOUR
THE VIVARIUM

Rash of fires spurs city action

Matt Barnard; PJ Lassek

23 April 2010

Tulsa World

A string of fires in the Tulsa Club Building has spurred city officials to search the vacant property for code violations and seal off easy access enjoyed by trespassers. The latest fire, early Thursday is the third in less than two weeks in the decaying building. Fire Department spokesman Bill French said the blaze was intentionally set and investigators questioned several "persons of interest" at the scene. The building has been riddled with code violations for years and was declared a nuisance in 07.

While city officials had hoped the owner, Carl Morony of California, would take steps to remediate the violations, he hasn't. Instead, efforts by the city to get compliance have resulted in a foreclosure filing that remains entangled in slow-moving litigation in Tulsa County District Court. The lack of momentum in the case is not due to the lack of action by the courts, said Assistant City Attorney Bob Edmiston. "It's the unavailability of the property owner," he said. "Mr. Morony is nomadic and very difficult for his lawyers to reach and, according to testimony, he admits that." On Thursday, a handful of fire officials and city inspectors did a floor-by-floor search of the building and found several safety violations, including open elevator shafts and questionable structural work, Fire Marshall Ray Driskell said. Seeing three fires in such a short time frame raises the possibility of a repeat arsonist who may try to set the building ablaze again. "If it was very cold, I could see somebody starting a fire to stay warm, but that wasn't the case last night, so I've got a concern that there's maybe an arson-type thing going on," he said.

The fire broke out about 12:40 a.m. and left black soot covering part of the building's exterior. Flames were leaping from a fourth-floor window when firefighters arrived.

A fire was set Tuesday morning and firefighters had been called to the building four days prior.

Based on a city ordinance that sets a charge for runs outside the city limits, the cost of the fire department's responses to the three blazes totaled \$24,700, fire officials said. Although the fires were apparently set on purpose, Driskell said, they don't seem connected to the ongoing court battles or fines that the city has imposed against Morony. Driskell said the Fire Department is trying to put the litigation aside and work with a real-estate company that is brokering the building's potential sale. "We want to work with them, whatever the resolution may be, but we're not going to continue to let things go to the wayside. We've got to deal with this right now," he said.

A fire escape allowed access to the building with relative ease from the nearby Philtower parking garage. It is an arms-length away from the garage's upper level and allows people to

reach unsecured windows, said Will Wilkins, an associate broker from W3 Real Estate.

"I could show you exactly how to get in there, and it doesn't take any time at all. Walk across a foot and a half, and you're in the building," Wilkins said. A year ago, Wilkins announced that the 11-story building, which catered to Tulsa's elite before closing in the early '90s, was for sale. Since then, it has become a gathering place for homeless people and graffiti artists. The art-deco interior was gutted and sold at auction, Wilkins said.

"It's simply a reinvestment property. Now that downtown is finally starting to revitalize, it's time to sell," Wilkins said. "We have a couple of very interested parties. Of course, the city's actions on this building have kind of hampered efforts to find a reasonable offer."

Morony bought the building when developers had little interest in downtown and is now negotiating a contract with a potential buyer, Wilkins said. He wouldn't discuss details.

Until a permanent solution is in place, contractors will build a fence around the fire escape in hopes of keeping people out, Wilkins said.

Edmiston said Thursday that the city recently has received verification on depositions that concluded in February regarding the \$331,815 in civil penalties against Morony. The city can now file for a summary judgment on Morony's motion to vacate the penalties lodged by the city, he said. The city has struggled for the past three years to get Morony to address the violations and bring the property up to building codes. The case is complicated in that there are two legal actions pending before two different judges. The city first filed a nuisance abatement petition before Tulsa County Judge Shallcross in which she ultimately awarded the city a \$331,815 default judgment for Morony's failure to remediate building-code issues.

The default judgment allowed the city to then file for foreclosure, which is before Tulsa County District Judge Rebecca Nightingale. Morony then filed a motion to vacate Shallcross' award on the default judgment. Edmiston said the issue before Shallcross has to be decided first before Nightingale can rule on the foreclosure request.

Morony argues that he was not properly served with the abatement notices. But Edmiston said the city exhausted efforts to find and serve the papers to Morony. The papers were finally served to Morony's apartment manager in Berkley, Calif.

Edmiston has said that the city's position has always been that even if Morony could show that serving the abatement notices to his apartment manager doesn't satisfy due-process requirements, he must also show a defense for his request for dismissal of the civil penalties.

If a foreclosure is granted, the property would be sold at a sheriff's sale as required by state law, Edmiston said.

Courts side with city over building

The Tulsa Club building's owner could face foreclosure action

Kevin Canfield

22 September 2011

Tulsa World

Two recent judicial rulings have effectively ended the legal battle between the city of Tulsa and the owner of the Tulsa Club building but leave the historic structure's fate up in the air.

The state Supreme Court on Monday dismissed California businessman C.J. Morony's appeal of a lower court's ruling upholding the city's \$331,815 default judgment against him.

The appeal was dismissed as untimely, according to the court order.

In a separate ruling earlier this month, Tulsa County District Judge Rebecca Nightingale entered a final order granting judgment to the city and other lienholders in the case. The ruling opens the door for foreclosure proceedings should Morony fail to pay off the lienholders.

City officials have struggled for years to get Morony to address code violations at the vacant 11-story building at 115 E. Fifth St. The structure was opened in 1927 to provide facilities for the Tulsa Club and the Tulsa Chamber of Commerce.

It has sat empty since 1994, and in the intervening years, it has been the site of repeated vandalism and fires.

Assistant City Attorney Bob Edmiston said Wednesday that he was pleased with the Supreme Court's ruling.

"However, ultimately, it is the goal of the city to see the Tulsa Club structure rehabilitated with all of the violations found in the building eliminated and the building brought back to a useful piece of property for downtown," he said.

Last year, Tulsa County District Judge Deborah Shallcross rejected Morony's bid to have the city's default judgment against him vacated.

Morony then requested a retrial, which also was denied by Shallcross, prompting the appeal to the Supreme Court.

Special District Judge Russell Hass awarded the judgment in October 2008 after Morony failed to respond to the city's nuisance abatement lawsuit in Tulsa County District Court.

Morony contends that the city failed to serve him with proper notice. The city sent its notices to an apartment building owned by Morony in Berkeley, Calif.

In her ruling, Shallcross states that "the city complied with all notice requirements pertinent to the abatement proceedings."

Meanwhile, Jeffrey Scott of Scott Realty Co. in Tulsa said Wednesday that his contract to buy the building has expired and that he does not plan to make another bid on it.

Morony's attorney, David Dryer, did not return a telephone call seeking comment.

Saving history ; Tulsa Club might get new life

World's Editorial Writers

26 September 2011

Tulsa World

With all the progress being made in downtown Tulsa, there remain a handful of problems. One is the Tulsa Club building. Two recent court rulings, however, put that historic building a step closer to becoming a viable part of downtown again.

The Tulsa Club, 115 E. Fifth St., was built in 1927. The 11-story building housed the Tulsa Club and the Chamber of Commerce offices for years. The 1980s, however, saw a downturn in downtown and the building, like many others, fell into disrepair.

It was purchased by California businessman C.J. Morony but was never renovated. It has remained empty since 1994. Through the years it became a haven for the homeless and vandals. Fires were common and vandals have put so much graffiti on the building that it can be seen from the Inner Dispersal Loop.

For years the city has wrangled in vain with Morony to get him to address code violations and repair the building. The city filed a nuisance abatement lawsuit against him in 2008.

Last year a Tulsa County district judge rejected Morony's bid to have that judgment vacated.

Monday, the state Supreme Court dismissed Morony's appeal of the lower court's ruling, upholding the city's \$331,815 default judgment.

All of this doesn't automatically fix the problems facing the Tulsa Club building. It still needs to be repaired and brought up to code. Finding someone to do that will likely fall to the city.

This grand old building has seen its share of good and bad times. Its architecture is beautiful. It sits in the heart of the city. We hope its legal nightmare is over and that the right person will come along to restore it to its former glory.

It's another part of Tulsa's history that needs to be preserved.

THE VIVARIUM

News Articles

Sale of Tulsa Club stymied again

Kevin Canfield

15 January 2013

Tulsa World

Jan. 15-- The sale of the dilapidated Tulsa Club was delayed again Tuesday when the owner of the building filed for personal bankruptcy in Nevada.

The filing by California businessman C.J. Morony has the practical effect of placing a stay on all legal proceedings against him, city officials said Tuesday morning.

The structure was also pulled from a sheriff's auction in August when a newly created company that owned it filed bankruptcy in Carson City, Nev.

Morony transferred the title of the building to the limited liability company before the bankruptcy filing.

The city has been in a legal battle with Morony since 2007, when the building was declared a nuisance after a rash of code violations.

The city took Morony to court in 2008, and last year Tulsa County District Judge Rebecca Nightingale entered a final order granting judgment to the city and other lienholders.

The city then filed to sell the building after multiple code violations went unaddressed and remedial civil penalties, improvement district assessments and interest went unpaid. Morony currently owes the city \$472,000.

Morony also owns the Sinclair Building at 6 E. Fifth St. He owes the city approximately \$150,000 in unpaid Tulsa Stadium Improvement District assessments on that structure.

The city has sued to foreclose on the liens on the delinquent assessments.

New delay postpones sale of Tulsa Club

The owner of the building has filed for personal bankruptcy.

Kevin Canfield

16 January 2013

Tulsa World

The sale of the dilapidated Tulsa Club was delayed again Tuesday when the longtime absentee owner of the building filed for personal bankruptcy in Nevada.

The filing by California businessman C.J. Morony has the practical effect of placing a stay on all civil legal proceedings against him, including Tuesday's planned sheriff's sale of the building, city officials said.

"This individual apparently believes he can continue to avoid responsibility and we will

eventually roll over and quit, and I can assure you that is not going to happen," Mayor Dewey Bartlett said.

He added that the real losers in the legal wrangling "are the adjacent property owners and the citizens of Tulsa who are being consistently forced to deal with an absentee owner that does not appear to want to take responsibility for the deteriorating condition of his property."

The vacant building at 115 E. Fifth St. was first scheduled to be sold in August at a sheriff's sale. That proceeding was stayed when Morony - who for years had been listed as owner of the Tulsa Club building, created a limited liability company in Nevada - transferred the title of the Tulsa Club to the LLC and placed the LLC in bankruptcy.

At the city of Tulsa's request, a Nevada judge subsequently lifted the stay, clearing the way for Tuesday's planned sale.

"Mr. Morony was the owner and is the defendant in this case," said Assistant City Attorney Bob Edmiston, who did not learn of the latest bankruptcy filing until arriving at Tuesday's sheriff's sale. "He is a named defendant, and (for) a named defendant who files bankruptcy, there is a stay even though the property has been transferred to another entity."

Edmiston said the city will go back to court in Nevada to have the stay lifted.

"We anticipate the same success in getting the stay lifted against Mr. Morony personally," as the city had with the LLC bankruptcy, Edmiston said.

David Dryer, Morony's local attorney, said Tuesday that his client has filed for Chapter 11 reorganization.

"We are just following the necessary proceedings to protect the interests of our client," Dryer said.

He rejected any suggestion that Morony is giving the city the runaround.

"These are his properties. He owns them, and he can do with those what he is legally able to do," Dryer said. "I don't think he has any animosity toward the city, but he is protecting his properties."

As for the future, Dryer said, his client will "continue through the legal process until he is able to utilize his properties as he deems fit."

The city has sued to foreclose on the liens on the delinquent assessments. A court hearing on the city's request for a summary judgment in the case is scheduled for early February.

But Edmiston said those proceedings, too, would be stayed as a result of Morony's personal bankruptcy filing.

Historic Tulsa Club sells for \$460,000

Kevin Canfield

17 April 2013

Tulsa World

The Tulsa Club was auctioned off at a sheriff's sale Tuesday to a Tulsa businessman for \$460,000.

Josh Barrett, president of Vesta Properties, said he planned a mixed-use development in the building with a combination of commercial and residential properties.

The vacant, dilapidated building at 115 E. Fifth St. had been appraised for \$450,000.

Barrett, 47, said he hopes to have the project completed within three years.

"I plan to apply for ... the state and federal historical tax credits, so we would restore it according to those guidelines," he said.

The sale will not be finalized for another four to six weeks.

"It's such a satisfactory feeling to see the sale," said Senior Assistant City Attorney Bob Edmiston, who has worked on the city's behalf to salvage the building for several years. "Needless to say, I will be even more satisfied when I see the deed. The sheriff's deed will be a day of celebration."

Once a favorite haunt for Tulsa's elite, the Tulsa Club building opened in 1927 to provide facilities for the Tulsa Club and the Tulsa Chamber of Commerce.

Tuesday was the third time the Sheriff's Office has attempted to sell the Tulsa Club. In the two previous instances - in August 2012 and in January - last-minute legal maneuvering by the owner, C.J. Morony, postponed the sale.

Legal proceedings were stayed in August when Morony - who for years had been listed as owner of the Tulsa Club building and created a limited liability company in Nevada - transferred the title of the Tulsa Club to the LLC and placed the LLC in bankruptcy.

Morony filed personal bankruptcy just prior to the January sheriff's sale, again putting another stay on legal proceedings.

In both instances, the stays were lifted by a Nevada court at the city's request.

The city has been in a legal battle with Morony since 2007, when the building was declared a nuisance after a rash of code violations.

The city took Morony to court in 2008, and last year Tulsa County District Judge Rebecca Nightingale entered a final order granting judgment to the city and other lienholders.

The city then filed to sell the building after multiple code violations went unaddressed and remedial civil penalties, improvement district assessments and interest went unpaid. Morony currently owes the city approximately \$470,000.

Edmiston said the city is likely to see \$350,000 to \$370,000 from Tuesday's sale after other creditors and taxes are paid on the building.

Morony also owns the Sinclair Building at 6 E. Fifth St. He owes the city an additional \$150,000 in unpaid Tulsa Stadium Improvement District assessments on that structure.

The city is pursuing foreclosure of its lien against the Sinclair Building to recoup the outstanding assessment fee. Edmiston said it is likely the city will move to add the unpaid balance owed on the Tulsa Club to its claim against the Sinclair Building.

The Tulsa Club building timeline

1926-27: Built by the Tulsa Club and the Tulsa Chamber of Commerce.

1994: Building closed.

1997: Sold to C.J. Morony, a California real estate investor, for \$125,000.

September 2007: Riddled with code violations, the building is targeted by the city to be restored or razed.

January 2008: Morony is fined \$1,000 a day until the building is brought up to code.

October 2008: Fines reach \$330,000 and judge awards a default judgment to the city for the owner's failure to remediate building- code violations.

December 2008: City files a foreclosure petition.

April 2010: A string of fires spurs city officials to search the vacant property for code violations and seal off access to the building.

September 2011: State Supreme Court dismisses Morony's appeal of a lower court's ruling upholding the city's \$331,815 default judgment against him; Tulsa County District Judge Rebecca Nightingale enters a final order granting judgment to the city and other lienholders in the case, opening the door for foreclosure proceedings.

August 2012 and Jan. 15: Scheduled sheriff's sales of Tulsa Club building is stayed.

Tuesday: Building auctioned at sheriff's sale for \$460,000.

THE VIVARIUM

News Articles

Tulsa Club ; New life set for historic building

World's Editorials Writers

17 April 2013

Tulsa World

The Tulsa Club was auctioned off at a sheriff's sale Tuesday to a Tulsa businessman for \$460,000.

One of Tulsa's more famous and more dilapidated downtown buildings might finally see new life.

The Tulsa Club, built in 1925, had fallen into disrepair over the years. It was owned by California businessman C.J. Morony. Morony all but ignored the building and it became a haven for the homeless and a target of vandals. Entering downtown from the east, the "taggings" and the signs of fire are clearly visible on the building's facade.

After years of court proceedings involving Morony, the city finally received clearance to sell the building. It was auctioned at a sheriff's sale Tuesday to Tulsa businessman Josh Barrett for \$460,000.

Barrett plans a mixed-use development, combining commercial and residential properties. It

would be another of several such building plans for downtown.

The best news is having the ownership of the Tulsa Club in local hands. Improvement to the property, or any property, is much more likely when there is local pride involved and local people to whom to answer.

Barrett, president of Vesta Properties, has his work cut out. The building has been through a lot. Getting it up to code will likely be a big job. Still, Barrett hopes to have the property ready in three years.

The Tulsa Club, 115 E. Fifth St., holds a lot of Tulsa's history within its walls. It was one of the last, if not the last, downtown building to employ an elevator operator. It once housed a swimming pool and other town-club amenities. And it was the place where deals were made between oil barons.

Tulsa is lucky that a local businessman has stepped up to save this historic and beautiful building, a building worth saving.

We look forward to a grand revival and a successful re-opening.



Present state of the Tulsa Club Building ballroom

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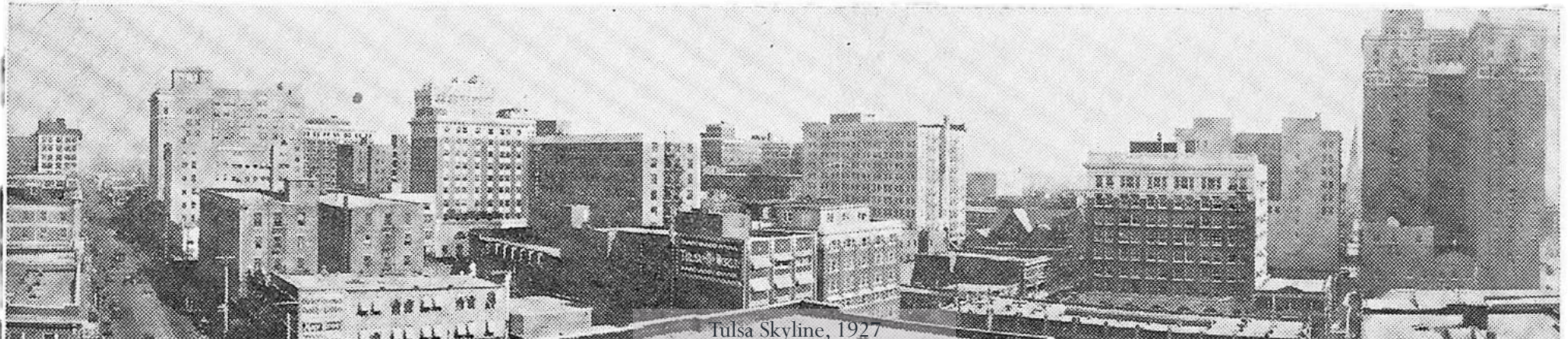
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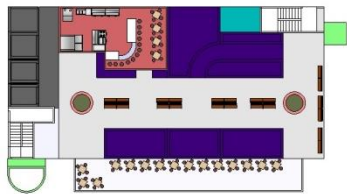
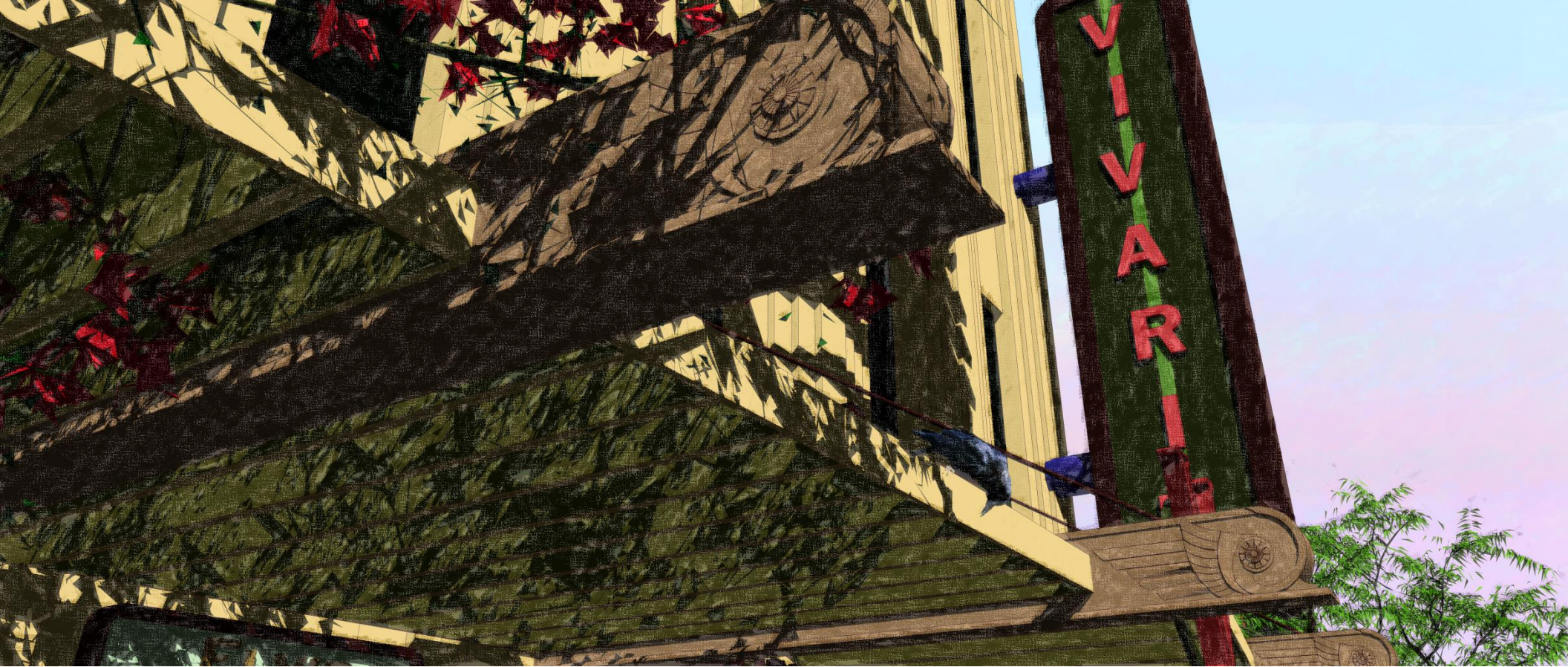
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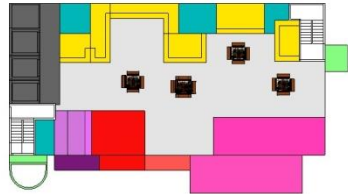
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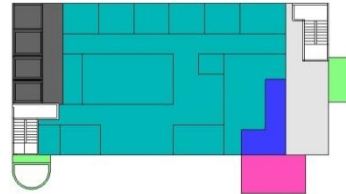




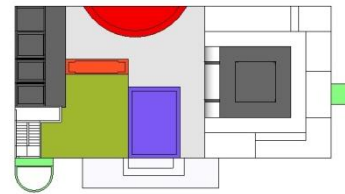
Zoo Delhi,
Woodland Carnivores



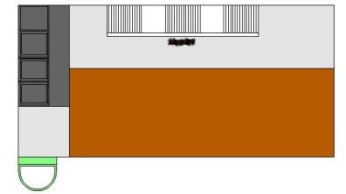
Jungle Floor,
Active Climbers



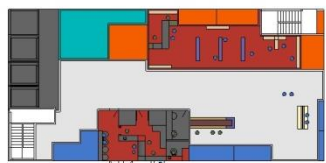
Keepers and Administration
Offices



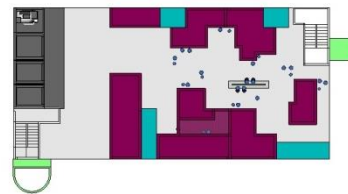
Classroom 2, Monkey Climb,
Animals in Space



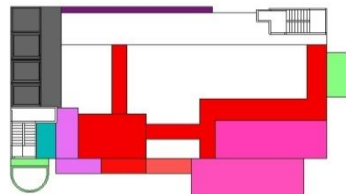
Ballroom Mezzanine



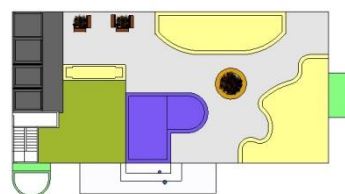
Lobby, Gift Shop, Admissions,
Ice Cream Parlor



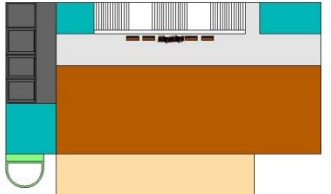
Pets of Other Continents



Jungle Canopy,
Uncommon Forest



Classroom 1, Monkey Climb,
Socialization Floor



Ballroom



A Dusty Morning at
THE VIVARIUM



The animals were rustling and the sun was shining. It was another beautiful day downtown at The Vivarium.

But Dusty, a grumpy, old wombat, was not ready to wake up.

Dusty was ready for his morning carrot, but it was nowhere to be found. His vegetarian roommate, Addison, the grey-headed tayra had taken it.



“You stole my carrot!”

“Go eat a prune you old wombat”

Dusty stalked away annoyed.



“Who eats prunes?”

But then Dusty had an idea.

He began stacking up wooden blocks and climbed out of their habitat.



Addison just watched Dusty and laughed as he greedily finished the carrot.



Dusty climbed over the wall
and into the dik-dik deer
habitat with Piper and
Morgan.

“Good Morning Dusty”



“Just dropping in?”

“Is a morning carrot
too much to ask?”



Dusty mumbled to himself while rummaging through their food, scrounging for a morning carrot.

With no luck, Dusty jumped down to the ground, out of Piper and Morgan's habitat and thumped across the gallery floor.



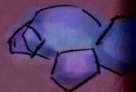
“Where did that blind spalax sleep last night?”



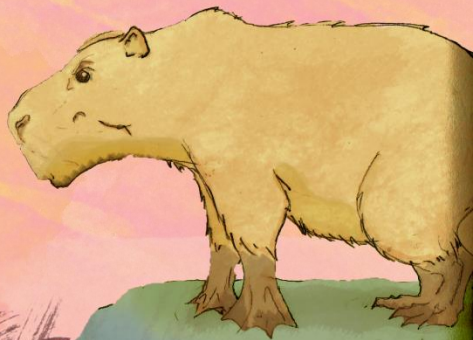
Quietly, Dusty dropped into a habitat with
Lotem, the spalax.



“Is someone there?”



Dusty tried to sneak along the wall unnoticed.
But with his focus on Lotem, he did
not notice MacBeth,
the capybara.



“What are you doing, you
crazy old wombat?”

Dusty was caught. The large rodent towered over him.

A startled Dusty looked up at MacBeth and tried to explain.

“All I wanted was a
morning carrot”



But MacBeth just
rolled his eyes.

Suddenly, a hand appeared in the exhibit, holding a nice, big, plump carrot.



“What are you doing out of your habitat, Dusty? It’s time to go play with the visitors!”

Dusty’s eyes grew large.



With a morning carrot and all of his friends, it was truly a beautiful day downtown at The Vivarium.

Enjoy another Dusty adventure at
The Vivarium with:

A Dusty Bath at The Vivarium
A Dusty Checkup at The Vivarium
A Dusty Mystery at The Vivarium
A Dusty New Friend at The Vivarium
A Dusty Day to Die Hard at The Vivarium
A Dusty Romance at The Vivarium
A Dusty Storm at The Vivarium
A Dusty Pregnancy Scare at The Vivarium
A Dusty Weight Loss Plan at The Vivarium
Un Día Dusty en El Vivarium
A Dusty Sing-along at The Vivarium
A Dusty Leap for Animalkind at The Vivarium



Butterfly Ball

The Vivarium April 20th



all social butterflies welcome



REGISTER AND VOTE **AERONAUTIC**



FOR SOARING PEACE ★ SUET FOR ALL

**VOTE
QUADRUPED**



DIK-DIK NIXON

THE GROUNDED CHOICE



Vivarium nomadica

To make the Vivarium a community staple, a double decker bus has been converted into a mobile exhibit space. Flexibility of space is key. After removing most seats, the lower deck is able to be separated into 1-6 spaces for display animals, while upstairs features a 16' trough that contains hands-on animals that can be fed, pet and played with.

The nomadic zoo will transport animals and passive education across the city, at surprise library visits, Saturday soccer games, and community festivals.

