

ABSTRACT

PROJECT NAME: Minnesota Zoo Treetop Trail

LOCATION: Apple Valley, MN

ENTRY CATEGORY: General Design

PROJECT DESCRIPTION (100 words):

The recently-completed Treetop Trail allows visitors to experience the Minnesota Zoological Gardens through a renewed elevated perspective. The Minnesota Zoo Treetop Trail embodies a profound commitment to environmental stewardship, guided by the overarching mission of “connecting people with nature.” Along 1.25 miles and four touchdowns (access points), the Trail guides visitors through many stories, site histories, animal exhibits, and existing and restored ecosystems, all atop remnants of the abandoned monorail infrastructure. The Trail promotes physical and mental well-being and uses a scaffolding approach to help visitors develop a personal relationship with nature and accelerate their dedication to activism.

NARRATIVE (750 words or less)

The Minnesota Zoo opened in 1978 as one of the first zoos to organize exhibits by their habitat rather than their species. Originally named the “Minnesota Zoological Garden,” this progressive zoo was designed to view animals in a naturalistic, outdoor, garden-like setting that aligned with their correct ecological and geographic environment. This design included a 1.25-mile-long monorail ride that looped throughout the expansive 485-acre grounds. The monorail was decommissioned in 2013, with the steel and concrete infrastructure remaining unused on the site. The Treetop Trail project was born out of the desire to reuse this existing infrastructure in a manner that strengthened the overall mission of the Minnesota Zoo. By transforming the monorail infrastructure into a walking trail, visitors are given the opportunity to immerse themselves in nature, much like the monorail aimed to do, but also the freedom to curate their own adventure with multiple access points, rest areas, and overlooks into surrounding landscape.

The Trail utilizes and re-purposes the existing abandoned monorail infrastructure to create a new type of experience by engaging with the Zoo’s landscape from above. While carrying out the Minnesota Zoo’s mission to “connect people, animals, and the natural world to save wildlife,” the Treetop Trail invites visitors to meaningfully connect with nature and animals, raise questions, and to spark an interest in conservation. The elevated Trail provides multiple access points, rest areas, overlooks, and interpretative elements that frame powerful views of the surrounding landscape— both the existing animal habitats, and the less-developed, natural environment of the northern section of the trail.

The design team worked diligently on analyzing and determining the appropriate scale, weight, and materiality of the trail in order to maximize the structural performance of the existing infrastructure and cause the least amount of disturbance to the Zoo grounds. This included designing a modular construction process, which required collaboration between the architect, engineers, landscape architect, and contractor. The devised construction method was to construct the trail in 20-foot sections off-site, crane them onto the existing monorail, and then push them on the rail to their final location. This prevented disruptive construction from occurring along the majority of the trail, minimized impact on the existing landscape of the Zoo, and sped up the construction timeline significantly.

Along 1.25 miles and five touchdowns (access points), via the Interpretive Signage and Wayfinding system designed by the landscape architect, the Treetop Trail guides visitors through many stories and site histories, including animal exhibits and existing ecosystems with diverse flora and fauna, all atop remnants of the old monorail infrastructure. The immersive experience is crafted around five interpretive themes to guide the visitor experience along the trail: inspiration, wellness, recreation, resource, science and several sub-themes. Interpretive elements create moments along the trail where people can pause, contemplate, interact, and engage with stories and the landscape in new ways. The Treetop Trail supports programmed and self-guided education along the Trail and its access points with the goal of allowing visitors to immerse in nature, focus on senses, and take in the restorative benefits of nature. Spending time in nature is transformative for cognitive health. The Trail has a didactic underlay focusing on human, animal, and habitat interconnections. The Trail also engages visitors to create a sense of wonder, and teaches how all things in the natural world are connected. The Trail passes through six different ecological zones that situate eight varied animal habitats and a multitude of experiences. Richard Louv’s book, *Last Child in the Woods*, catalyzed a call to action for

NARRATIVE *continued*

the Minnesota Zoo and inspired the vision for this project. The episodic nature of the Trail and interactive features connect people more deeply with nature and animals with the aim of improving physical and mental health of children and adults. The project ambition, as it re-centers and connects visitors, is to inspire them to take action in their own communities.

The Minnesota Zoo Treetop Trail aligns with the overall intent of SITES to protect, improve, and regenerate the benefits and services provided by a healthy landscape, and will have a long-lasting impact on those that visit the Minnesota Zoo. The Minnesota Zoo Treetop Trail considered SITES goals in its design, working to minimize soil disturbance and maximize native planting and ecological restoration. The nature of the project allowed for a minimum amount of disturbance to occur for a project of such a large scale, and the public nature of the Zoo created a meaningful opportunity for interpretive features that highlight sustainable practices and tell the story of Minnesota's ecosystems.



MINNESOTA ZOO TREETOP TRAIL

Along 1.25 miles and four touchdowns (access points), the Treetop Trail guides visitors through many stories, site histories, animal exhibits, and existing and restored ecosystems, all atop remnants of the abandoned monorail infrastructure.



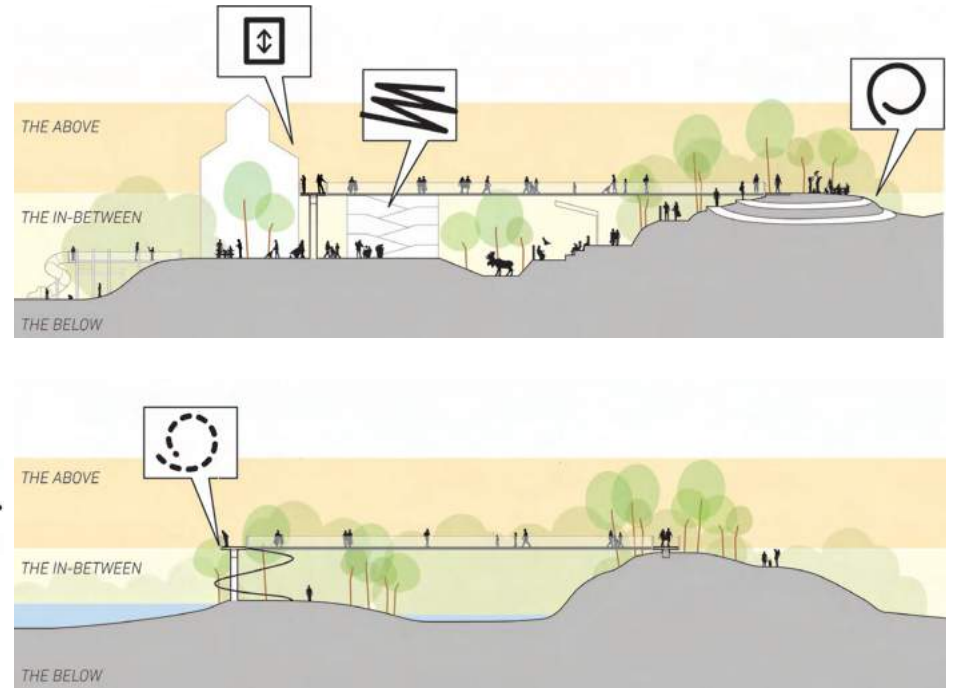
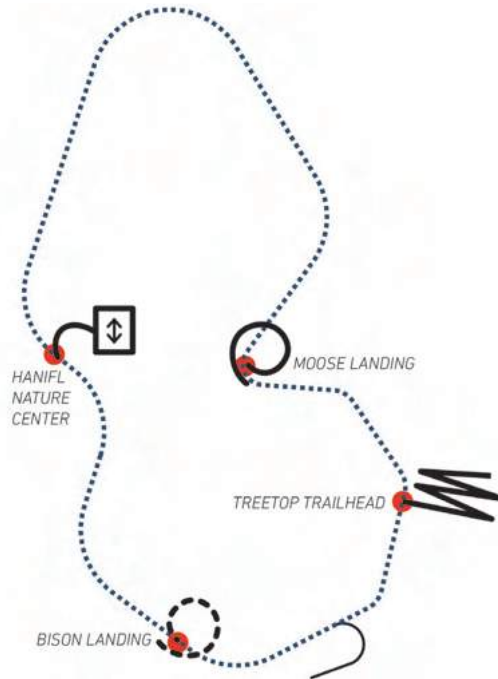
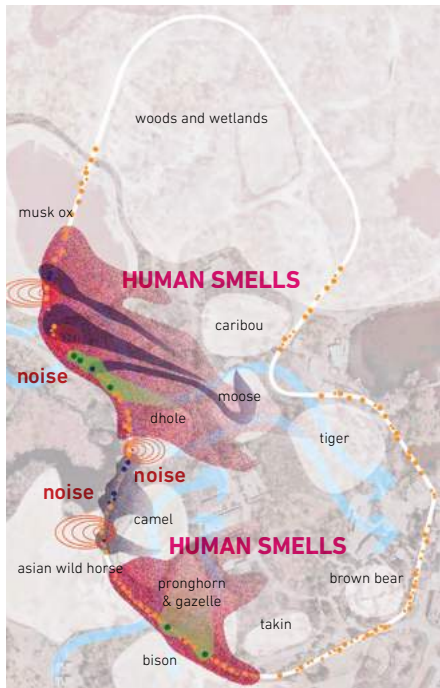
EVOLUTION OF THE MN ZOO

The Minnesota Zoo opened in 1978, this progressive Zoo was designed to view animals in a naturalistic, outdoor, garden-like setting that aligned with their correct ecological and geographic environment. This design included a 1.25-mile-long monorail ride that looped throughout the expansive 485-acre grounds.



“CONNECT PEOPLE, ANIMALS, AND THE NATURAL WORLD TO SAVE WILDLIFE.”

The Treetop Trail project was born out of the desire to reuse existing infrastructure in a manner that strengthened the overall mission of the Minnesota Zoo. By transforming the monorail infrastructure into a walking trail, visitors are given the opportunity to immerse themselves in nature, much like the monorail did.



SITE ANALYSIS DIAGRAMS INVESTIGATE THE ZOO GROUNDS SENSORY EXPERIENCES AND ACCESS OPPORTUNITIES



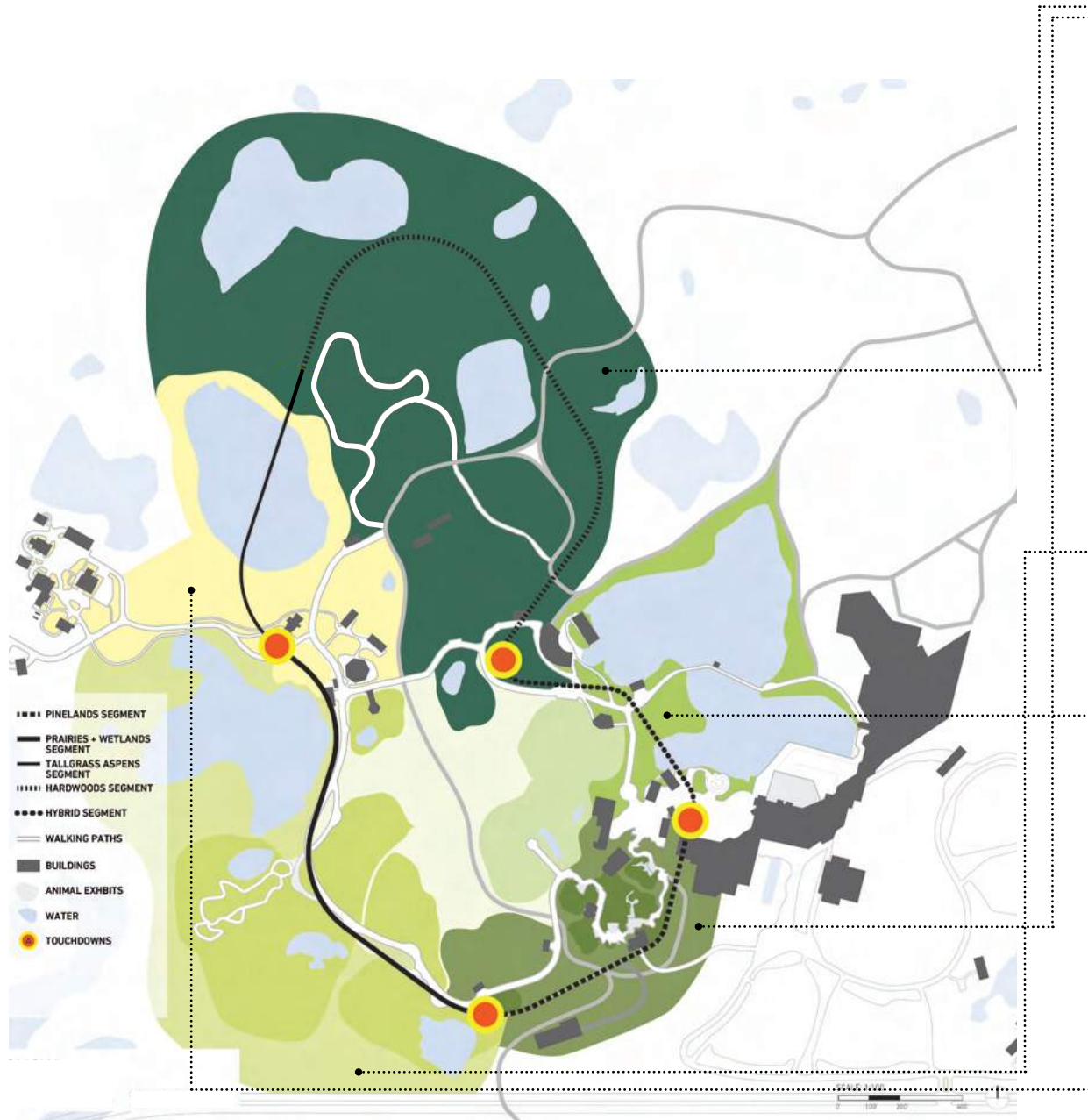
SITE INVESTIGATIONS AND EXPLORATIONS

Early site investigations and explorations involved a careful documentation of the Minnesota Zoo grounds and the monorail infrastructure from an experiential and sensory perspective. Through a critical process of inventorying, recording, and cataloging, maps and diagrams were produced to capture the character, feel, and sensory experience of the existing Trail.



COLLABORATIVE CONSTRUCTION METHODS

To reduce disturbance on the Zoo grounds, the design team devised a construction method to construct the trail in 20-foot sections off-site and then craned onto the track and pushed along the rail to their final location. Similar strategies were deployed for large tree species to enhance existing tree canopy.



PINELANDS



HARDWOODS



TALLGRASS ASPENS



PRAIRIE + WETLANDS

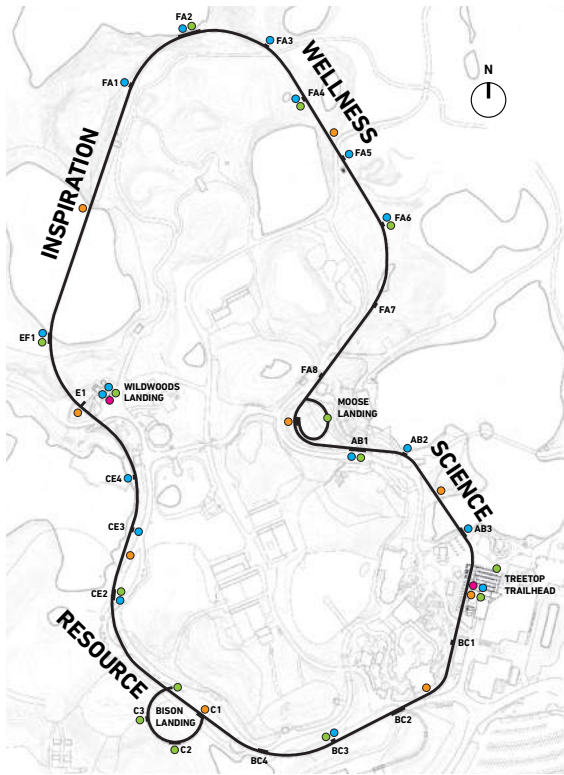


HYBRID LANDSCAPE



HIGHLIGHT MINNESOTA BIOMES

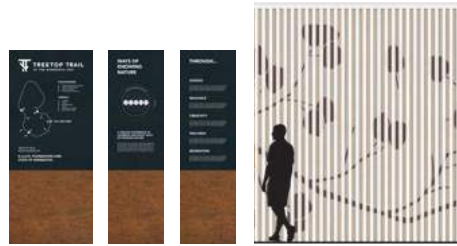
The planting approach features native Minnesota biomes, species, stories and experiences. The key goal for planting strategy was to highlight these identities and connect Zoo guests to the local and regional landscape. Throughout the Trail and access points, planting was used to amplify the experience of these biomes.



FEATURE KEY

Feature Type	Quantity
● Interpretive Feature	13**
● Flag Wayfinding	4
● Trail Band Wayfinding	5
● Primary Donor Walls	2
● Secondary Donor Feature	16
● TTT Logo Sign	2

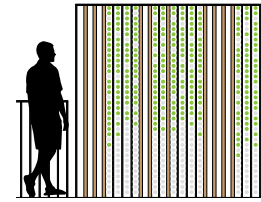
**Interpretive feature quantity above notes the number of locations. See detail sheets for number of elements that make up each feature.



Treetop Trailhead



Bison Landing



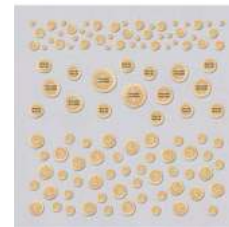
Wildwoods Landing



Moose Landing



Donor Wall 1



Donor Wall 2



Donor Picket



Bird Blind Donor Feature



Trail Band Wayfinding



Flag Wayfinding



Column Wayfinding

NAVIGATE AND LEARN WITH EASE

The immersive experience is crafted around five interpretive themes to guide the visitor experience along the trail: **inspiration, wellness, recreation, resource, and science**. The landscape architect designed Interpretive features and signage along the trail where people can pause, contemplate, and engage with stories and the landscape in new ways.



EXPERIENCE ABOVE AND BELOW

The elevated Trail provides multiple access points, rest areas, overlooks, and interpretative elements that frame powerful views of the surrounding landscape— both the existing and animal habitats. The Trail engages visitors to create a sense of wonder, and teaches how all things in the natural world are connected.



ENHANCE ACCESS

The Minnesota Zoo Treetop Trail provides ample opportunity for Zoo visitors to enhance or extend the experience of the existing ground trails. The location of the four access points were carefully calibrated in relation to existing circulation, Zoo amenities, and local accessibility codes to accommodate the needs of every visitor.



IMMERSED IN NATURE

This connected loop encourages visitors to be active and engage with nature in new ways. The Trail creates a network of movement providing new vantage points of the grounds. This ramp at the Bison touchdown allows users to interact with the prairie, animals, and each other.



INTERCONNECT

Spending time in nature is transformative for cognitive health, the Trail has a didactic underlay focusing on human, animal, and habitat interconnections. The Trail engages visitors to create a sense of wonder, and teaches how all things in the natural world are connected.



FRAME AND AMPLIFY

Of the many interpretive exhibits integrated within the Trail, the Bird Blind is among the most signature experiences. The landscape architect designed the structure for transparency, varied aperture heights, play of light, and enclosure as part of the experience. A variety of native migratory birds are interpreted in this exhibit.



BUILD EMPATHY

The Treetop Trail invites visitors to meaningfully connect with nature and animals, raise questions, and to spark an interest in conservation. The Trail uses a scaffolding approach to help visitors develop a personal relationship with nature and accelerate their dedication to activism.



YEAR-ROUND EXPERIENCES

The design process of the Trail considered the different ways people might interact with nature year-round, from active or passive engagement, to fully immersive or absorptive experiences. Interpretive elements create moments along the trail where people can pause, contemplate, and engage with stories and the landscape in new ways.



CALL TO ACTION

The episodic nature of the Trail and interactive features connect people more deeply with nature and animals with the aim of improving physical and mental health of children and adults. The project ambition, as it re-centers and connects visitors, is to inspire them to take action in their own communities.