

XtremeLA 2022: Bison Bridge

The Rebirth of a Landscape

By Ed Ball



The creative repurposing of existing infrastructure presents a powerful opportunity for communities and ecosystems. Finding sustainable new life in what is deemed old and underutilized is the resource-conscious way to enhance communities' health and wellbeing, create equitable access to nature, restore ecological services, and spur economic development.

These are the driving motivations behind the Bison Bridge project, the proposed repurposing of the Fred Schwengel Memorial Bridge that carries Interstate 80 traffic across the Mississippi River between LeClaire, Iowa and Rapids City, Illinois. Headed by the Illinois Department of Transportation, a study is currently underway exploring replacement options for the bridge. The Bison Bridge Foundation, however, proposes an innovative alternative—keep the bridge, serve the place.

The Bison Bridge vision entails transforming the bridge into a multi-purpose ecological attraction and landscape rehabilitation project that celebrates the Mississippi River, the prairie, the native wildlife, and the region's rich history. Engaging national, state, and local partners, the ambitious vision seeks to reimagine the bridge as a vital connection between humans and natural landscape, offering opportunities for recreation, education and importantly, the celebration and rehabilitation of the iconic American bison. Over a decade in the making, the idea initially proposed by Chad Pregracke, Founder and President of the Bison Bridge Foundation and Living Lands & Waters, seeks to revitalize the existing infrastructure as both a recreational pedestrian crossing and ecological education destination in concert with the world's longest manmade wildlife crossing to connect restored bison grazing habitat. In this unique confluence of communities, landscapes, wildlife, and United States history, Bison Bridge ultimately seeks national park status to further attract locals and visitors alike for the chance to experience all the river and the region have to offer.

Key to the success of the Bison Bridge Project, however, is the landscape design and programming of the bridge itself, as well as the site's acreage on either side of the Mississippi River and the way in which these landscapes integrate and enhance the project's human and wildlife goals. This was the challenge at hand for participants of Xtreme LA: Bison Bridge.

On October 11 - 13, 2022, Landscape Forms, North America's leading designer and manufacturer of premium site furniture, structure, and LED lighting, sponsored its 11th Xtreme Landscape Architecture (Xtreme LA) challenge, a design charrette, at The Figge Art Museum exhibition and education facility in Davenport, Iowa. Xtreme LA 2022 was presented in partnership between Landscape Forms and the Landscape Architecture Foundation and co-hosted by Kirt Martin, Chief Innovation Officer at Landscape Forms; Lance McOlgan, Principal at Lamar Johnson Collaborative; Matt Maranzana, Principal at Lamar Johnson Collaborative; and Barbara Deutsch, Chief Executive Officer of the Landscape Architecture Foundation.

The 36-hour event, designed to foster creative thinking, team building and facility of expression, worked to bring fresh thinking to an innovative project with meaningful potential for a region's community and ecosystems, as well as to inspire continued discussion about a more sustainable and more equitable future for infrastructure policy overall. Nine young design professionals identified by their firms as potential leaders and twelve exceptional students from the University of Illinois Urbana-Champaign and Iowa State University landscape architecture programs worked in two teams under the mentorship of two distinguished landscape architects: Chad Brintnall, Principal at SmithGroup, and Khyati Saraf, Senior Associate at Michael Van Valkenburgh Associates.

THE CHALLENGE

The focus of the fast-paced charrette was to design compelling landscape solutions that creatively celebrate what makes each of the neighboring LeClaire, Iowa and Rapids City, Illinois communities unique, while also fostering a sense of unity and connection across the Mississippi River. Overarching goals for the challenge were to rehabilitate habitat, celebrate an iconic species, provide new value for the local area and nearby communities, attract visitors regionally and beyond to the site, promote local economies, educate visitors about native ecosystems, and connect communities on either side of the bridge to one another. Using data, maps, surveys, current planning studies, regulatory guidelines, direct inspection of land areas, and

information provided by local officials, participants of Xtreme LA: Bison Bridge were presented with this challenge:

For each state's site area and the repurposed interstate bridge that joins them together, use the language of the landscape to design an exciting and memorable visitor experience that speaks to the Bison Bridge project's four central development strategies: Community connectivity and the way the Bison Bridge project can connect Illinois to Iowa, people to nature, and people to the river; the restoration of native habitat and making built space natural again; the repurposing of the existing infrastructure and the maximizing of the unique opportunity it provides; and the opportunity to create a new national park on the Mississippi River.



GETTING A LAY OF THE LAND (AND WATER)

Upon arrival on day one, participants convened at the site to get a feel for the landscape, familiarizing themselves with the unique topography, habitats, wildlife, natural and built features each side of the existing bridge had to offer. The group then boarded the Channel Cat Water Taxi and got out on the water to explore the bridge up close and

personal, see wetland habitats, and experience the power of the Mississippi River. Aboard the boat, Chad Pregracke explained the Bison Bridge Foundation's goals and vision while participants took notes, shared observations, made rough sketches, and snapped photos that would spark the inspiration for the following day of intense, fast-paced collaboration.



While on the site tour, Team One leader, Chad Brintnall, drafts notes and sketches to prepare for the charrette.



Chad Pregracke, Founder and President of the Bison Bridge Foundation and Living Lands & Waters, outlines the vision of the Bison Bridge Foundation during a boat tour on the Mississippi River.

READY, SET, COLLABORATE!

Beginning bright and early on day two, the students and young professionals divided into two teams—Team One led by Chad Brintnall and Team Two led by Khyati Saraf—before immediately setting to work in their respective meeting rooms. With just one day to finish researching, brainstorming, drafting and refining their plans, and

assembling them into presentations, the meeting rooms were ablaze with creativity and enthusiastic collaboration. The teams worked long, hard and late into the night of day two. And with little time to spare, the morning of the third day both teams offered their concepts, sketches and solutions as narrated presentations to a full audience of local officials, interested citizens, peers and colleagues at The Figge Art Museum's John Deere Auditorium.



Principals at Lamar Johnson Collaborative and Xtreme LA co-hosts, Matt Maranzana (right) and Lance McOlgan (below), brief participants on the background of the Bison Bridge project site.



Participants work together in teams to brainstorm, gather information, write, post, sketch, draw, propose, revise and finalize concepts and solutions.

Team Two leader, Khyati Saraf, shares her team's proposal.



On the final day of Xtreme LA, teams presented their solutions to dozens of stakeholders at The Figge Art Museum's John Deere Auditorium.

THE CREATIVE RESPONSE

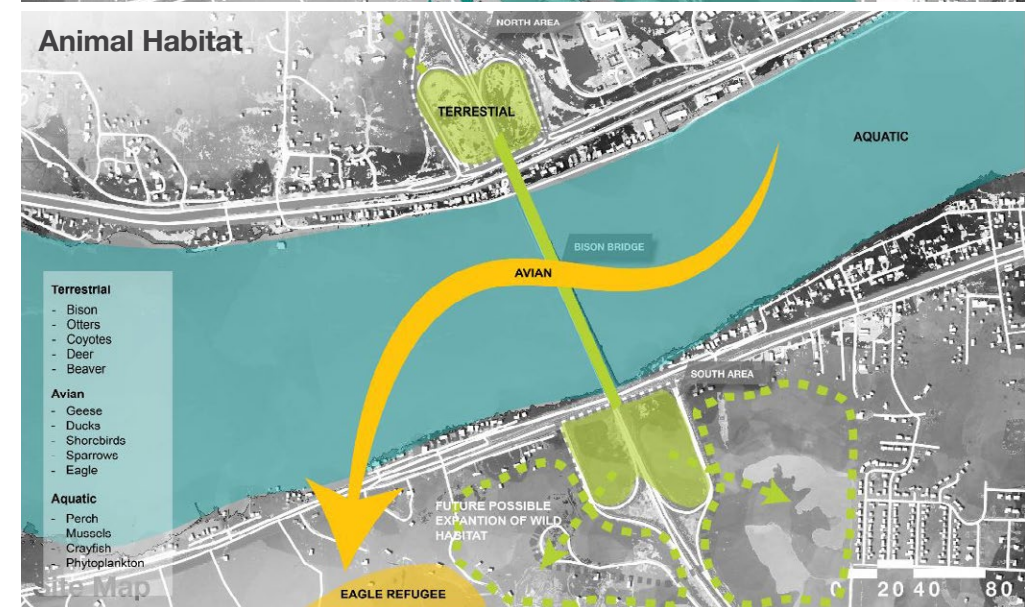
TEAM ONE: AN EXPLORATION OF A LANDSCAPE'S LAYERS

Throughout the concept development work, Team One rallied around four central tenets for the design of their solution:

- 1) Bison should take the priority in the design of the bridge.
- 2) The bridge should be a multi-purpose destination with unique spaces for humans, animal life and plant life.
- 3) The site should create memorable year-round experiences for local residents and visitors alike.

- 4) The park should be a self-sustaining and beloved community asset.

The common thread that emerged throughout these guiding principles was the concept of layers—both horizontal and vertical. And by identifying the unique opportunities and characteristics of each of the site's layers, the team could arrive at a design solution that would enhance the experience of people and vitality of wildlife within each of those layers, crafting memorable connections while also ensuring that neither constituent would interfere with the other.



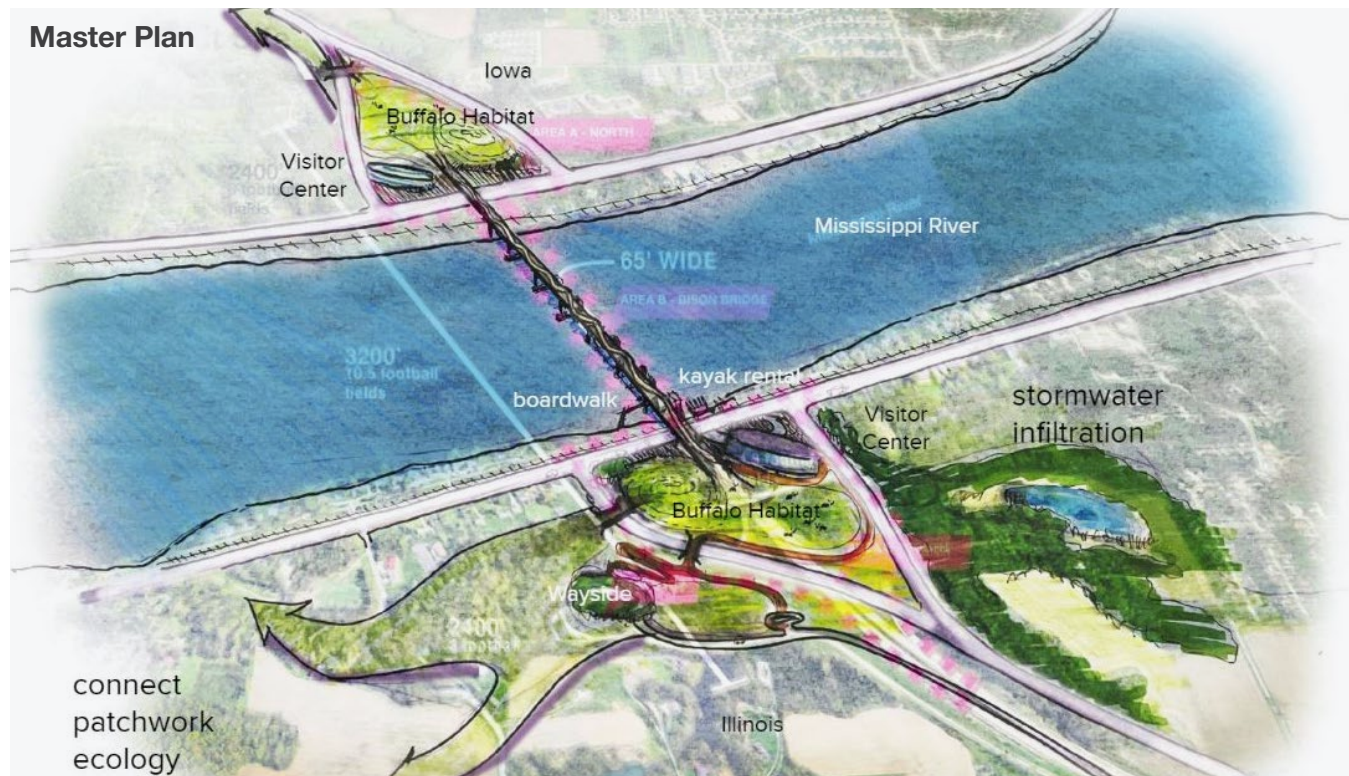
LAYERED NATURE

Team One envisioned the Bison Bridge site as a confluence of habitats on both the horizontal and vertical planes. The two sides of the bridge are marked by two distinct habitats—prairie habitat on the Iowa side and eastern temperate forest on the Illinois side. The team saw the bridge itself as an opportunity to create a seamless horizontal transition between these two distinct biomes. The team also approached the site from the vertical perspective, seeing how the landscape and its built and natural features can

bring together the three layers of terrestrial, avian and aquatic wildlife. Merging these planes, the team outlined a system of connected patchwork ecology on both sides of the bridge, employing smaller land bridges to pass over roads and the adjacent railway to enhance the grazing range for bison, to ensure their access to water, and to restore connections between the wetland, prairie and forest biomes.

LAYERED HUMAN EXPERIENCES

For the visitor experience of Bison Bridge, Team One saw an opportunity to showcase and enhance the landscape in three dimensions. Visitor centers on either side of the bridge would highlight each state and unique biome respectively, offering educational opportunities about the site's diverse ecology and indigenous history. Embracing the third dimension, the team wanted to ensure that the experience of the bridge was not only out and back, but also up and down. To achieve this holistic visitor exploration of the landscape, Team One presented a plan to significantly expand the site's network of bikeways, trails and pedestrian paths to create contiguous connections across the site's verticality—from down in the wetland biome and up through the prairie and forest biomes. Finally, layers also guided the team's sustainability and stewardship plan, employing below-grade parking to maximize the bison's habitat, solar panels atop the bridge to sustainably support electric vehicle charging, and water reclamation and filtration systems below the bridge.



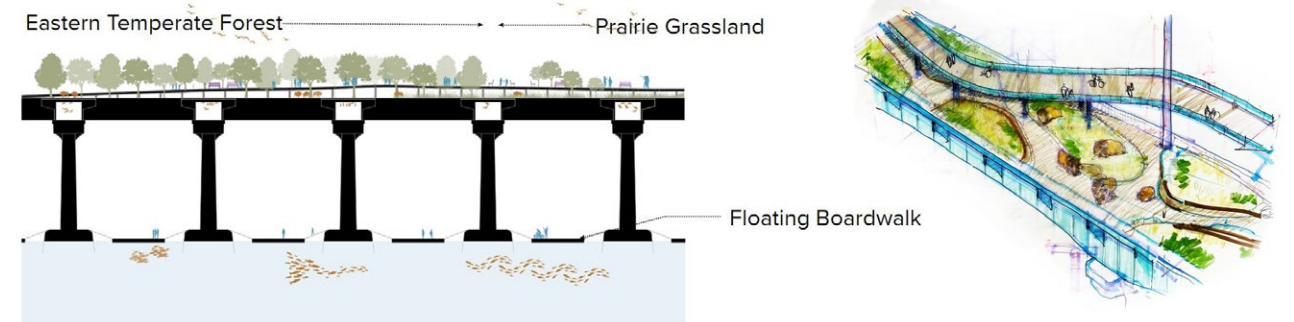
LAYERS TO BRING HUMANS AND NATURE TOGETHER

For the site's heart and defining feature, Team One adeptly utilized verticality on the bridge itself to enhance connections between pedestrians and wildlife while also keeping the two safely separated. Their plan for a winding pedestrian walkway gently transitioned from eye level, with the bison crossing to up above in the tree canopy, to offer diverse experiences of the different landscapes' various layers.

- At the eye-level portion of the walkway, a 12-foot-wide pedestrian walkway passes next to a 53-foot-wide bison crossing portion separated by a barrier to ensure safety

while also providing an intimate and memorable wildlife viewing experience for visitors.

- At the mid-level portion, visitors observe the bison from five feet above. Adding this elevation not only provides a new perspective for visitors, but it also enables a soil volume on the bridge sufficient for native trees to flourish and provide requisite summer shade for the crossing bison.
- And at the canopy level, the pedestrian walkway swings out over the edge of the bridge, opening up its full 65-foot width for bison to occupy while also providing visitors an enhanced perspective of the river.



Pedestrian & Bison Interaction
 Eye Level Mid-Level High Level - Overhang

■ Wildlife ■ People ■ Vegetation ■ Program Elements ■ Solar Panel

TEAM TWO: AN ICON IN THREE ITERATIONS

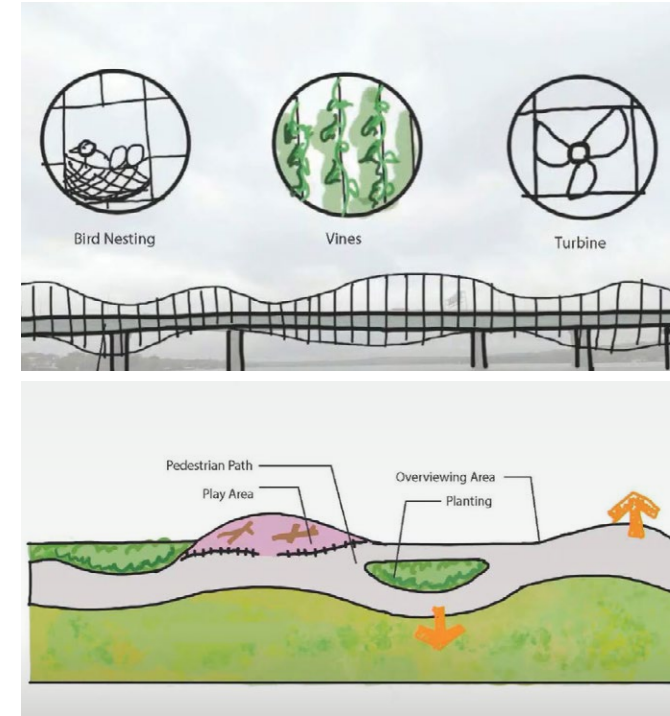
Team Two embraced the idea of using the Bison Bridge project to create an icon and new source of shared pride for LeClaire, Rapids City and the larger Quad Cities area. In embarking on the design process, the team homed in on four key development strategies:

- “Establish: A national park.*
- Create: An icon for the region.*
- Expand: The native habitat.*
- Engage: A connected community.”*

Team Two recognized that in order for the site to become a celebrated icon, it needed to resonate deeply both regions’ cultural proclivities and its ecological realities. The team dove deep into the area’s distinct human and environmental

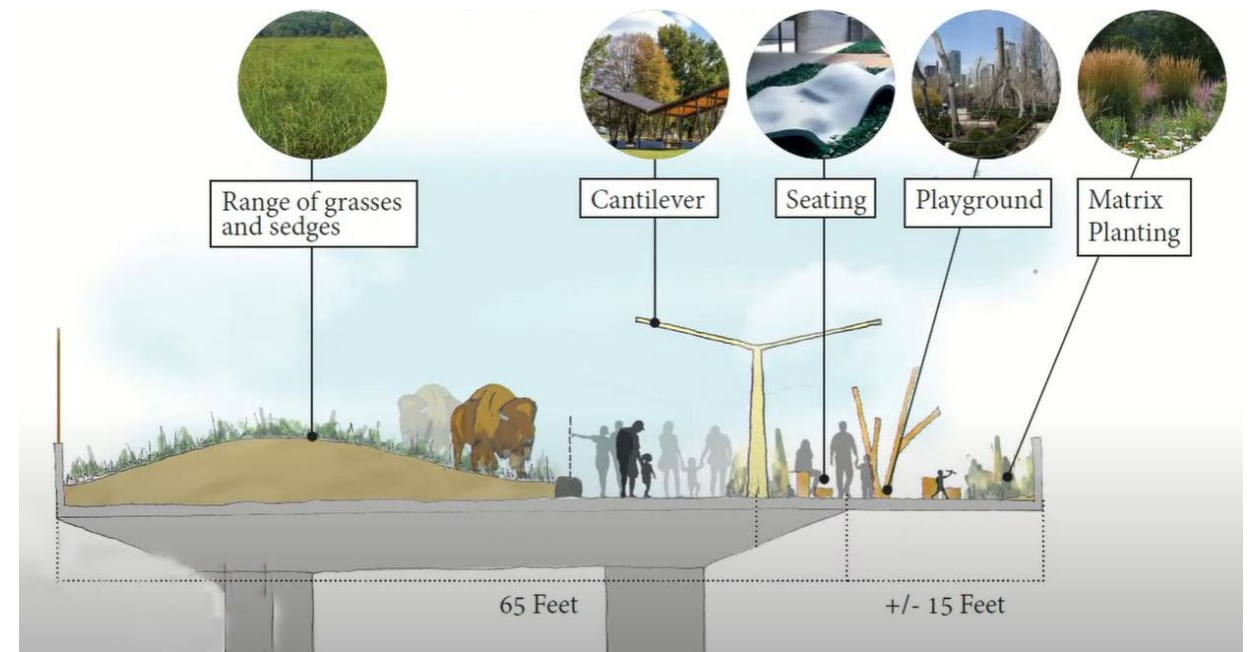
features, coming across the relevant insight that would drive their design. Looking into the region’s preferred seasonal activities, tourism patterns, and local love for river recreation, incorporating outdoor recreational activities along the Mississippi became a must.

Identifying the Iowa side of the bridge to be less topographically dynamic, the team seized this opportunity to incorporate a public boat launch and riverside prairie campground into their plan, as well as utilizing this flatter area to house the Bison Bridge welcome center. Conversely, they identified the topography on the Illinois side to be quite dynamic, which they also used to their advantage. They drafted a plan for a nature vista overlook tower at the site’s highest point to create a memorable and impactful viewing experience.



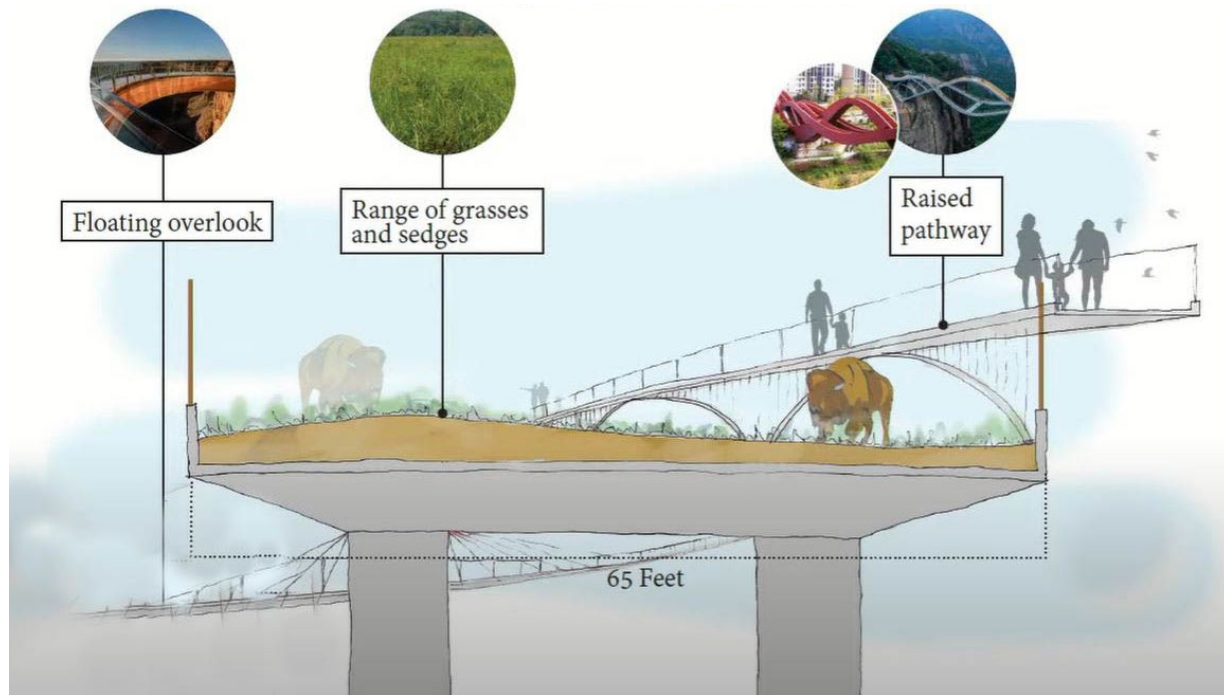
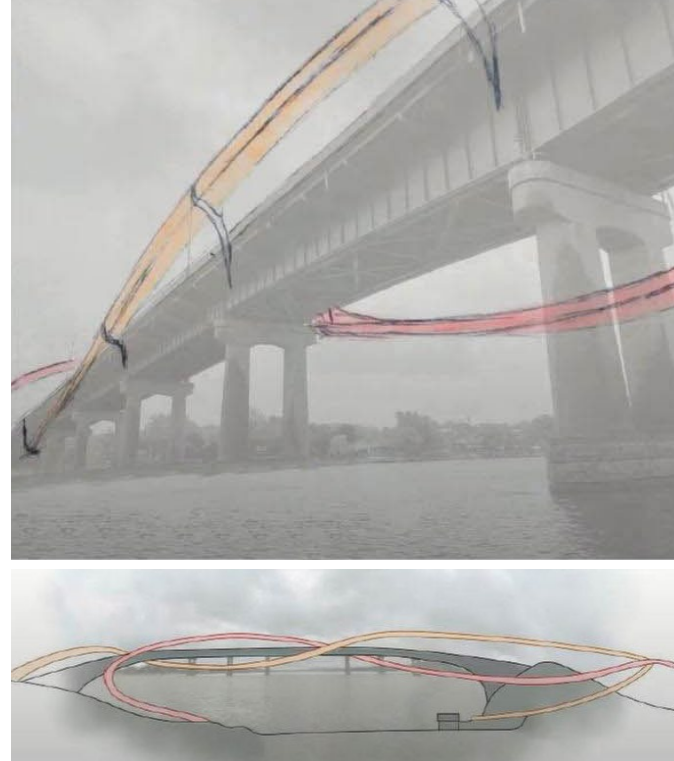
ICONIC CONCEPT 1: THE MEANDERING EXPERIENCE

Recognizing the potential for 100-year flooding on the Illinois side, the team adapted to this challenge by intentionally creating a controlled lagoon area to serve as a floodwater buffer while also offering interactions between visitors and landscape at the water’s edge. And understanding the substantial grazing needs of the American bison—noting that roughly five acres are required to sustainably support each individual—Team Two’s landscape plan extended prairie sedge and herbaceous grasses all the way across the bridge to both sides of the site. With these important considerations ironed out, the team shifted their attention to their plan’s centerpiece: An iconic, repurposed bridge that celebrates connected communities and their shared commitment to environmental stewardship. Overflowing with inspiration, the team drafted not one, but three distinct concepts.



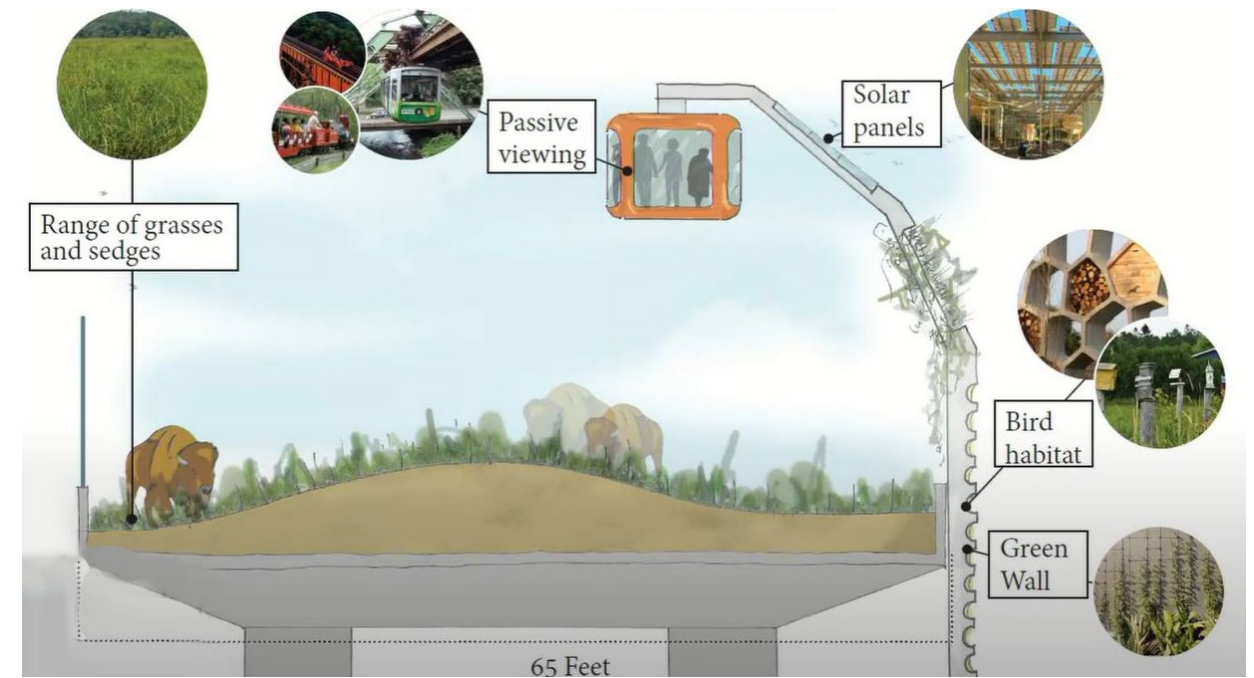
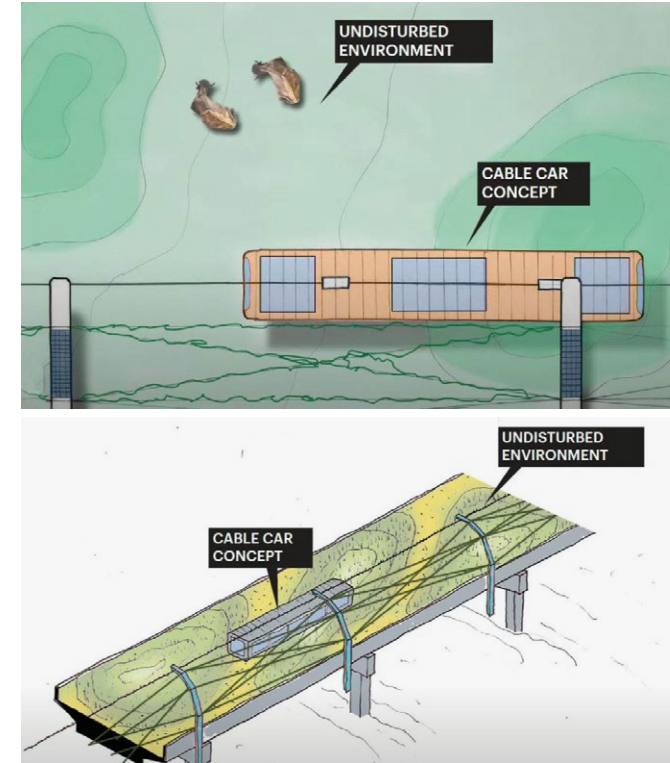
ICONIC CONCEPT 2: THE MONUMENTAL BRIDGE

The Monumental Bridge concept features weaving pathways that pass above and below the bridge to create an immersive viewing experience from all angles. Resembling two sides of a massive double helix, the two paths in this concept serve two specific functions: One path is preserved for pedestrians while the other links up a network of bike paths to create an interstate cycling network between Iowa and Illinois. Unique to this concept, in passing both above and below the Bison Bridge, pedestrians can fully appreciate not only the bison, but all the wildlife that exists in all planes throughout the site.



ICONIC CONCEPT 3: THE JURASSIC WORLD

Like its name suggests, the Jurassic World concept is all about creating an iconic, one-of-a-kind structure and visitor experience. In this vision, a raised cantilevered cable car parallels the Bison Bridge, offering visitors a striking wildlife viewing perspective. A unique benefit of the cable car concept, it allows the totality of the Bison Bridge to be dedicated to the wildlife crossing, offering the opportunity to create more interesting landforms and sustain a more robust habitat. Incorporating native plantings and bird habitats, the arched cable car supports also serve to soften the shape of the bridge, adding organic forms and colors that enable what is an otherwise stark, straight line to mesh better with the surrounding natural environment.



CLOSING

In closing, Kirt Martin congratulated and thanked the participants, and also offered insight into why Xtreme LA is such a meaningful event for the company. “At Landscape Forms, we understand that while there are many activities that recognize people who are well into their careers, there are very few that recognize emerging and young professionals, so that’s why Xtreme LA is so special to us. Our role is to bring together promising young professionals and students, connect them with some of the country’s greatest firms, and challenge them to create something that they can give back to their community. And

this Xtreme LA was no exception—participants thrived in seizing this extraordinary opportunity,” he says.

For his closing remarks, Lance McOlgan added, “It was inspiring to see the ideas and design thinking that arose from the students and design team leaders over the course of just one intense day of collaboration. It’s important to remember that this was all unsolicited design work, and all who participated were volunteers who took time out of their busy work and school schedules to take part. I think it says a lot about our participants and a lot about the Bison Bridge concept that people from all over the county are this passionate and interested in seeing it become a reality.”



XTREME LA: BISON BRIDGE PARTICIPANTS

HOSTS:

Kirt Martin, Landscape Forms

Lance McOlgan, Lamar Johnson Collaborative

Matt Maranzana, Lamar Johnson Collaborative

Barbara Deutsch, Landscape Architecture Foundation

TEAM LEADERS:

Chad Brintnall, SmithGroup

Khyati Saraf, Michael Van Valkenburgh Associates

PARTNERS:

Chad Pregracke, Living Lands & Waters

Kim Guy, Living Lands & Waters

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Jake Coryell, Confluence

Andrew Montgomery, Damon Farber Landscape Architects

Yimeng Wang, Omni Workshop

Chad Easter, RDG Planning & Design

Jacob Deason, MKSK

Maddie Quincke, Lamar Johnson Collaborative

Stuti Ganatra, Civitas, Inc.

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Caleb Borrett, Student

Peter Graham, Student

David Kasbeer, Student

Allison True, Student

Jaelyn Waddle, Student

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

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Wenxin Dai, Student

Gabe Harper-Hagen, Student

Kevin Miller, Student

Momoko Omori, Student

Anne Tong, Student

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