Preston Outdoor Education Station

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Kansas State University

YMCA CAMP WOOD

Preston Outdoor Education Station

PROJECT DESCRIPTION

The Preston Outdoor Education Station is part of the YMCA's Camp Wood, located west of Cottonwood Falls, KS, in the heart of the Tallgrass Prairie. The site is close to the Tallgrass Prairie National Preserve, the National Park Service's only park devoted exclusively to this landscape. The Tallgrass Prairie stretches from southern Nebraska to central Oklahoma in a fifty-mile wide vertical band. Due to its specific geology and the presence of abundant surface rocks the land is difficult to develop and farm. It represents 4% of the original Tallgrass Prairie and is considered to be one of the most endangered ecosystems in North America. Camp Wood celebrated its Centennial anniversary in 2016, cementing its legacy of high quality outdoor education for kids of all backgrounds throughout Kansas. The studio was asked to develop an infrastructural backdrop to assist counselors in their work of connecting young people to this beautiful, yet subtle landscape.

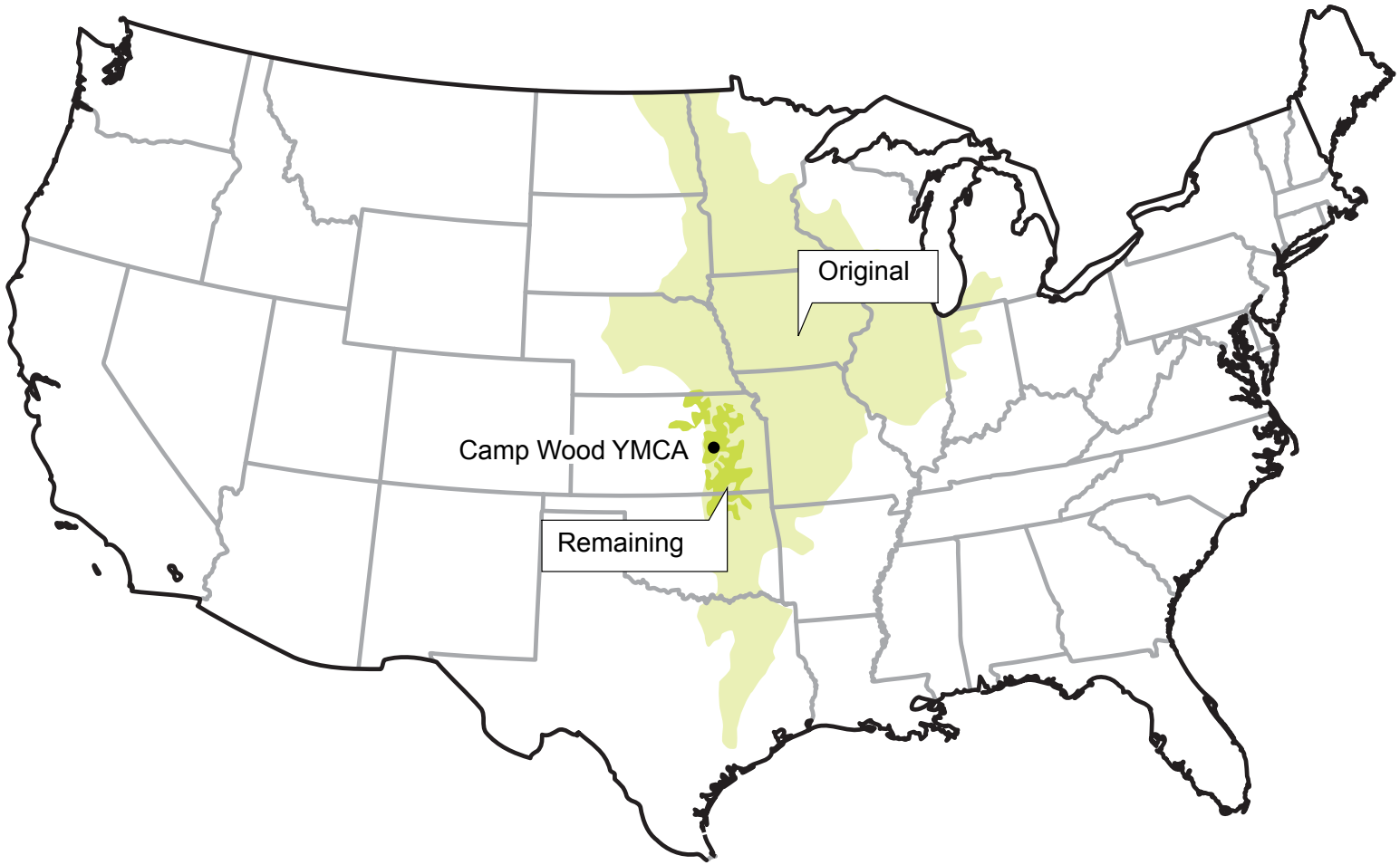
Throughout the fall semester the studio got to know the prairie and the client. Ironically, none of the students were aware of the landscape, though the university is situated within it and they had spent four years there. They also began the slow process of acquiring the skills necessary to execute the project. They learned traditional limestone masonry, welding and carpentry. In the college shop they familiarized themselves with the range of tools available to them – digital fabrication equipment and traditional tools. They forged relationships with a number of skilled and unskilled craftspeople familiar with the Camp. At the end of the Fall Semester two different approaches were presented for consideration to implement. One gathered counselors and campers in a centralized space where teaching could happen in an environment slightly removed from the prairie. The other presented a linear pathway of stations, each focused on a different attribute of the landscape – wind, flora, fauna, geology and atmosphere. Camp Wood director Ken Wold and his staff felt that both approaches were worth pursuing so students spent the winter break consolidating their work into a unified whole.

The Spring Semester focused on field construction, shop work and coordination with a host of subcontractors and suppliers. Although a complete design was required before construction could commence, including input from structural and civil engineers, the students took full advantage of an integrated design-build model to allow refinements to the design in response to field conditions and a never-ending process of rethinking improvements to the design.

The students managed an all-inclusive budget of $150,000, including professional consulting and subcontracted work. The majority of the project was completed by graduation in May 2016, though a few loose ends were completed later in the summer by the students. In the final evaluation the work was successful in meeting Camp Director Ken Wold's two sole requirements for success – 1) that the work disappear into the landscape, and 2) that the work facilitate a deep bond between people and place.

The original size of the North American tallgrass prairie was 170 million acres.

Only 4% remains of that 170 million acres,
within which sits Camp Wood.



YMCA CAMP WOOD

Director Ken Wold


Wind and Grass Stations

STUDENT TEAM

Torrence Campbell
materials/grass station manager

Tamra Collins
schedule director /revit manager

Luke Custer
contractor liaison

AJ Henry
gathering station project manager

Brent Higgins
shop manager/ welding specialist

Daniel Johnson
contractor liaison/ visualization

Phil Macaluso
site manager

Alex Martinez
prototyping/ visualization/ stone mason

Kelsey Middlecamp
budget director

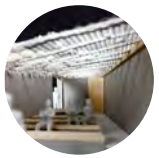
Briana Reece
marketing director

Jake Rose
client liaison/ publication editor

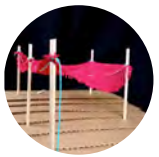
Sevrin Scarcelli
marketing director/ backfill queen

Blake Toews
prototyping/ platform project manager

cut & lift



cut & fill



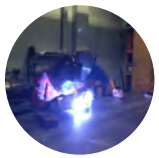
sticks & shadows

walk & learn

stack & dig

reStart bench team

drystack workshop



AWS certified welders

shop team

site team

CONCEPTUAL DESIGN

DESIGN CONSOLIDATION

SKILL ACQUISITION

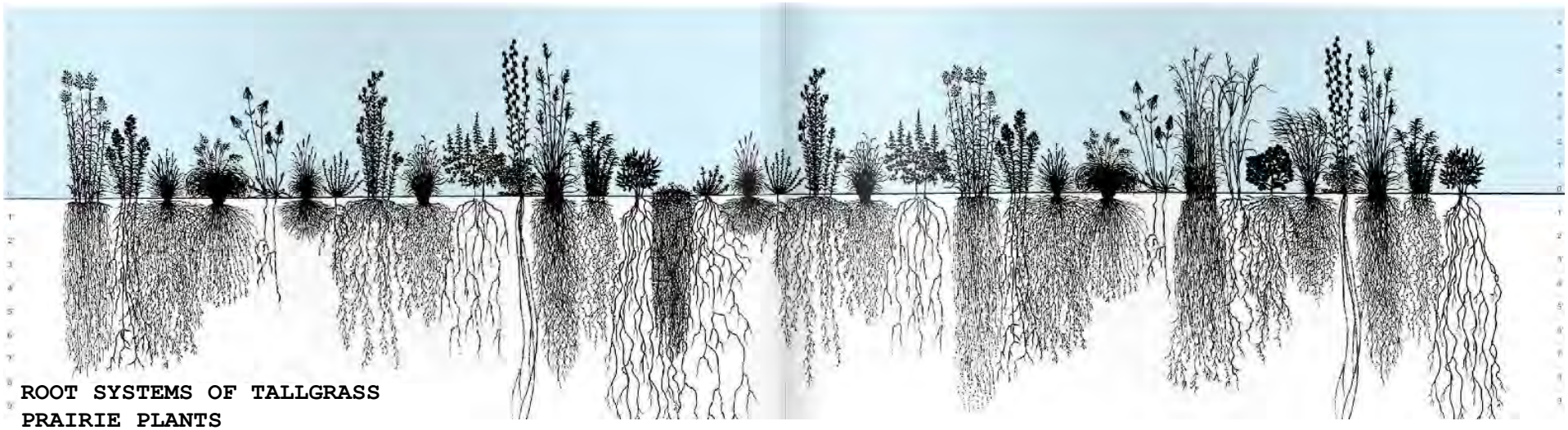
PROJECT FABRICATION

First site visit

Learning from ethnobotanist Kelly Kindscher

Studying the landscape and collecting data

Client meeting at Camp Wood



ROOT SYSTEMS OF TALLGRASS PRAIRIE PLANTS

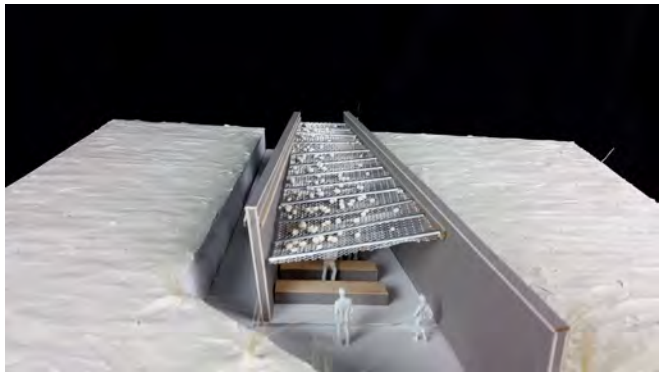




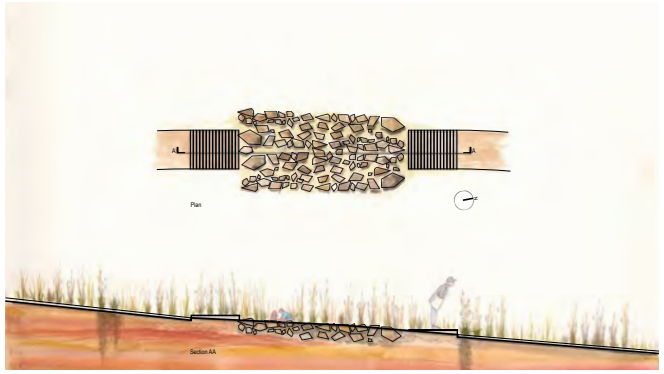



SITE FINDINGS By collecting research about the wildlife within the tallgrass prairie representing an endangered and rapidly shrinking ecosystem, the students were able to create design options that proposed building within the landscape accommodating existing wildlife so as to not further disturb the ecosystem on site.

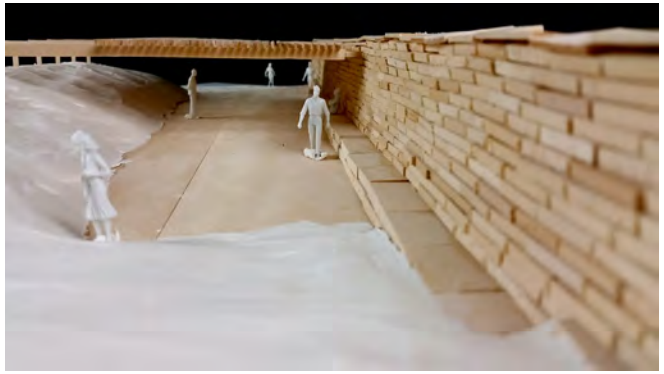
ITERATIVE DESIGN SET 1: JOURNEY



Cut and fill

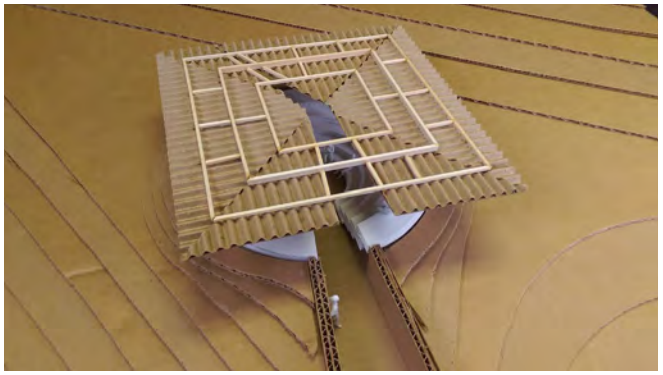


Walk and learn

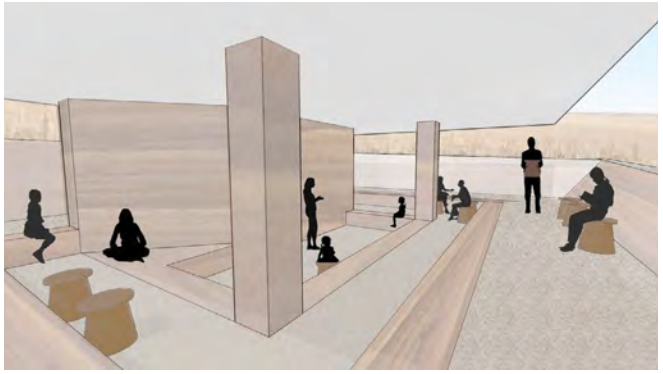


Stack and dig

ITERATIVE DESIGN SET 2: DESTINATION



Cut and lift



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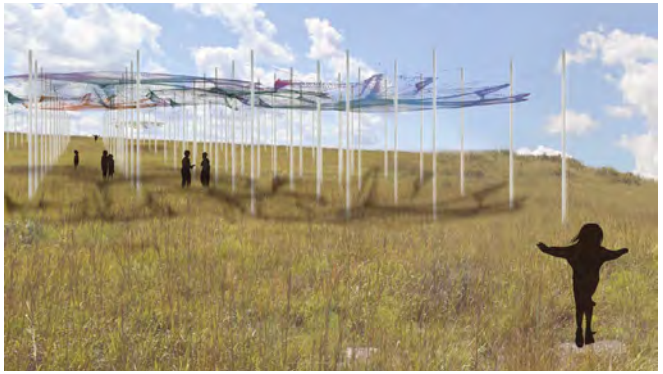
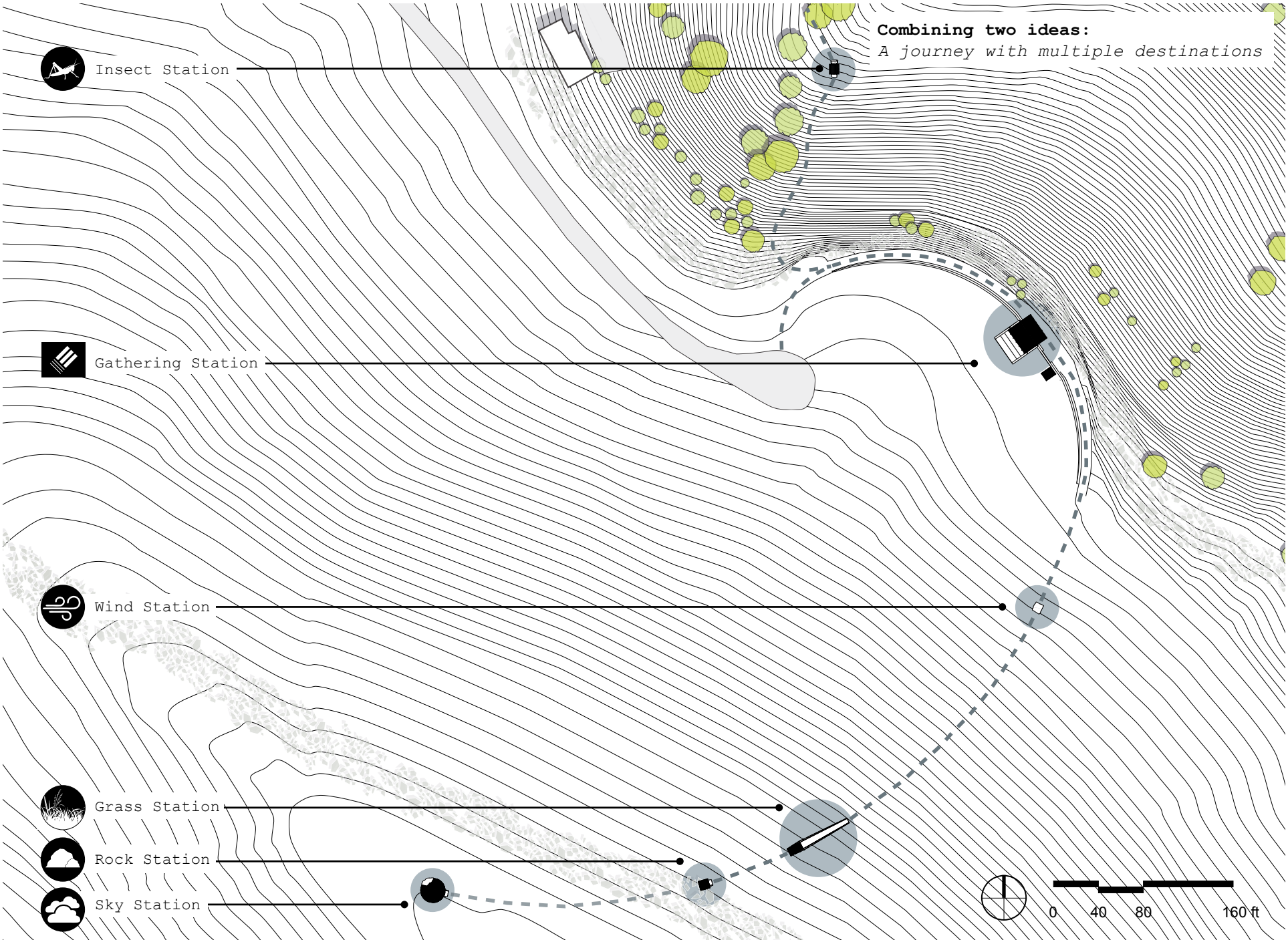
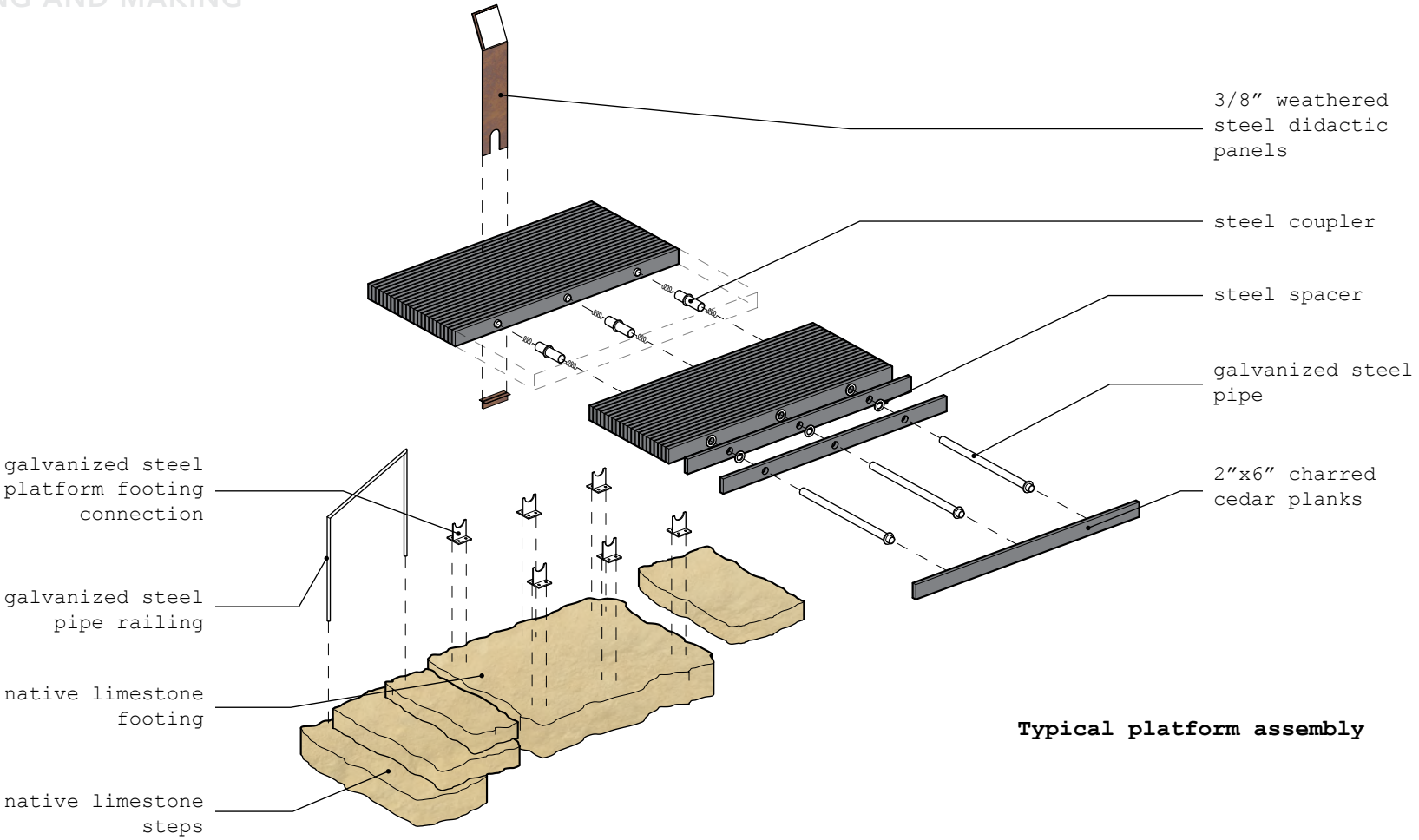


Sticks and shadows


Combining two ideas:
A journey with multiple destinations
Insect Station
Gathering Station
Wind Station
Grass Station
Rock Station
Sky Station
0
40
80
160 ft



Typical platform assembly

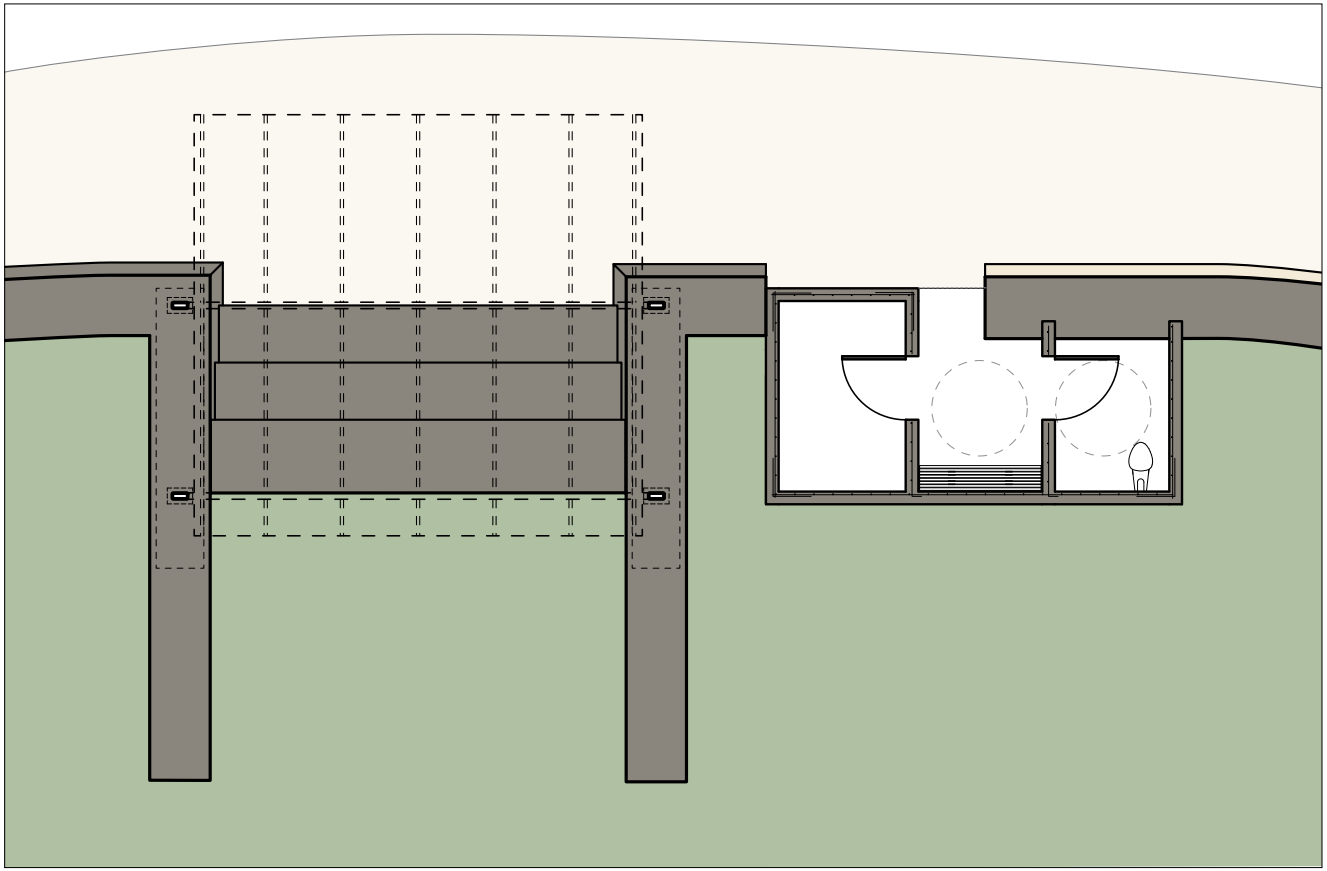
Gathering Station

Sky Station

Grass Station

BUILDING FROM THE LAND The students focused on utilizing materials that were either of the land or elements of nature. Limestone excavated from on site was used for a 300 linear foot dry stack wall; charred wood, using fire to enhance the structure of the wood (referencing the traditional Japanese method, shou sugi ban) and as a poetic gesture considering the ecosystem's reliance on annual prairie burnings; and steel, an alloy of iron, carbon and other natural elements, one of the most recycled and durable materials.


Sky Station
Rock Station
Grass Station
Wind Station
Gathering Station



Restroom and storage at the Gathering Station

0" 2' 4' 8' 16'

Students self-performed a number of scopes of work - masonry, welding, carpentry, site preparation and general labor. They also worked with a number of professionals - heavy equipment operators, concrete sub-contractors. In addition to the larger concepts and station pieces, they also designed and fabricated down to the details including restroom signage and didactic panels.


Gathering Station


Rock Station


Grass Station


Sky Station


Wind Station

RESPONDING TO THE LAND The goal of the site layout was to create a series of spaces that are responsive to the landscape and highlight the various conditions of the prairie, creating a sensory experience for visitors at each. Starting at the bottom of the natural incline, a gathering station, built into a slope with a path lined by a 300 linear foot dry stack limestone wall; a wind station; a grass station; a rock station; and a sky station.

STUDENT LEARNING OUTCOMES & EVALUATION METHODS

With group studio projects it is sometimes difficult to assess both the contribution made by individual students as well as each student's development over the course of two semesters. In the Fall semester students work individually on a series of programming, site analysis, material research and concept design exercises to assess skill levels. Teams of 2-3 students, crafted to create balanced teams, then advance a multitude of design proposals until a single proposal is selected for implementation at the end of the Fall Semester. With this year's project, the client asked that two very different approaches to the site and program be combined over the winter break.

In the Spring semester the ultimate measure of success is the completed work, evaluated and approved by the instructor and client. Each student is assigned administrative roles such as Schedule Director, Budget Director, Client Liaison, Marketing Director, Shop Liaison, Material Research Director, etc.. Weekly tasks are initially assigned for each role. In addition students are asked to expand the efficacy of their role, seeking tools, technologies and other platforms to improve upon the initial description of the role. Each student is evaluated on how successful they were in consistent management of their roles. Peer evaluations and client input assist the instructor in evaluating each student on this front.