

FREEDOM RIVER MOBILE HISTORY MUSEUM

PRINCEVILLE, NORTH CAROLINA

NC State University School of Architecture

2019 Summer Design + Build Program

in collaboration with the Town of Princeville, NC



A PLACE FOR STORYTELLING

Freedom River is a mobile museum designed and constructed by students from the NC State University School of Architecture in collaboration with the Town of Princeville, NC. The design celebrates the rich heritage and tenacity of Princeville, NC, the oldest town chartered by Black people in the United States. Located on the Tar River, the majority of historic Princeville lies within the 100-year floodplain. The design concept of resiliency was derived from the town's vulnerability to flooding and its unwavering strength to remain on hallowed ground. The mobile structure was built on a chassis to be transported to in the event of flooding.

Originally established as Freedom Hill in 1865, the town was incorporated as Princeville in 1885. The town has persisted through economic difficulty, racism throughout the Reconstruction and Jim Crow eras, as well as numerous devastating flooding events over the past 135 years.

Students participated in design charrettes with town stakeholders, developed a full set of construction documents, purchased materials, fabricated mock-ups, and constructed the mobile museum within 11 weeks in the summer. The design process began with touring Princeville's cultural landscape with town elders, walking through neighborhoods, and visiting the buildings--many still damaged by floods--and historical landmarks.



The town's history museum, located in a 1920s-era schoolhouse, has been closed for almost four years due to flooding damage from Hurricane Matthew in 2016. Undoubtedly, Princeville's legacy of perseverance and hope is largely an untold story. Freedom River Mobile History Museum is a direct response to this problem. **The design is an agent for storytelling that embodies Princeville's legacy of resilience and enduring hope for the future.**



State DOT Historic Marker



Original Princeville Museum.

Photo Source: <https://tclf.org/sites/default/files/microsites/landslide2018/princeville.html>

A HISTORY OF FLOODING, A LEGACY OF RESILIENCE



Hurricane Floyd Flooding: Princeville History Museum
source: https://www.youtube.com/watch?v=EP2_quAz59M



Princeville History Museum after flooding.



Aerial view of Princeville Flooding.

Photo Source: <https://editions.lib.umn.edu/openrivers/article/princeville-and-the-environmental-landscape-of-race/>

The town desired a flood-resilient space to share their significant story: a new mobile museum that would stand in for the water-damaged 1920s museum. As a result, the design was built on a chassis so that it could be moved in the event of flooding as well as travel across the state of North Carolina for pop-up exhibitions. The biggest technical constraint was designing to the maximum tow width and height allowed by the NC Dept. of Transportation without needing an oversize/overweight permit to travel on roads. The chassis is 8' 6" wide x 32' long and the overall height of the structure is 13' 6" (including the chassis height). In light of the museum's mobility, the exterior cladding serves as an opportunity for identifying Princeville, on the road and off.

The exterior cladding consists of a custom-cut pattern of weathered steel panels celebrating 1885, the year the town was incorporated. The panels also allude to the town's complex relationship with the Tar River. The gradient of plasma cut holes into the weathered steel reveals the museum's bright aluminum core. The weathering steel is a rich metaphor for the resiliency of the Princeville community. As the weathering steel is exposed to air and rain, a layer of rust develops on the surface, forming a protective shell that prevents the further oxidation of the steel below. As weathering steel strengthens over time to protect itself. Similarly the people of Princeville continue to show strength amidst the environmental and political adversity they face.

The program is split into two major components: a porch and a gallery. The porch acts as a point of reflection before entering or exiting the gallery as well as a gathering space for community events. The two large 8' x 8' doors, welded to the frame by a continuous steel hinge, open up to create an intimate stage for performances and storytelling. The removable stairs span the entire width of the door opening and can be assembled by one individual in three simple steps. To facilitate the ease of closing the museum, the doors can be locked so that only the stairs have to be broken down for transport.

Visitors are greeted by the interior porch wall that is CNC milled with the signatures from the senate bill officially incorporating the town of Princeville, NC (sourced from General Assembly Records 1884-1885). The conditioned gallery is a versatile programming space for rotating exhibitions with a display system integrated within the white-washed maple plywood to eliminate the need for patching walls after each exhibition. Shelves in the gallery provide a surface for individuals to record oral histories. The frosted clerestory windows provide ample natural light to flow into the gallery without creating glare on any of the displayed materials.

11-WEEK DESIGN + BUILD TIMELINE



COMMUNITY DESIGN MEETINGS

collaborative design process



DESIGN DEVELOPMENT

Tactile modeling and mockups



BUILD



RIBBON CUTTING CEREMONY

WEEK 1

WEEK 2

WEEK 3

WEEK 4

WEEKS 5-6

WEEKS 6-10

WEEK 11

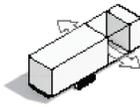
LESSONS LEARNED

Studying previous design/build projects to inform current project

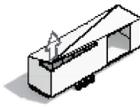


SCHEMATIC DESIGN

Concept development



slice | porch

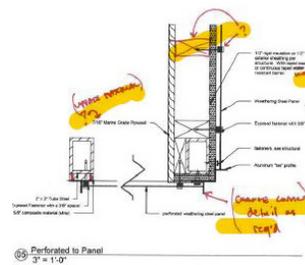


lift | clerestory



CONSTRUCTION DOCUMENTATION

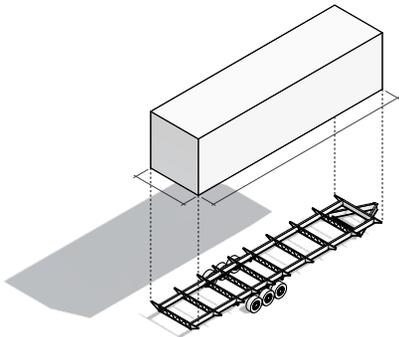
Construction documents and redlines



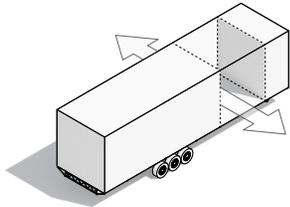
DELIVERY



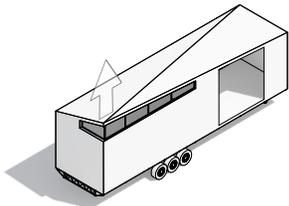
ELEMENTS



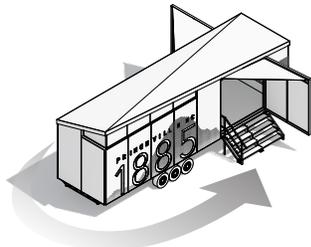
CHASSIS



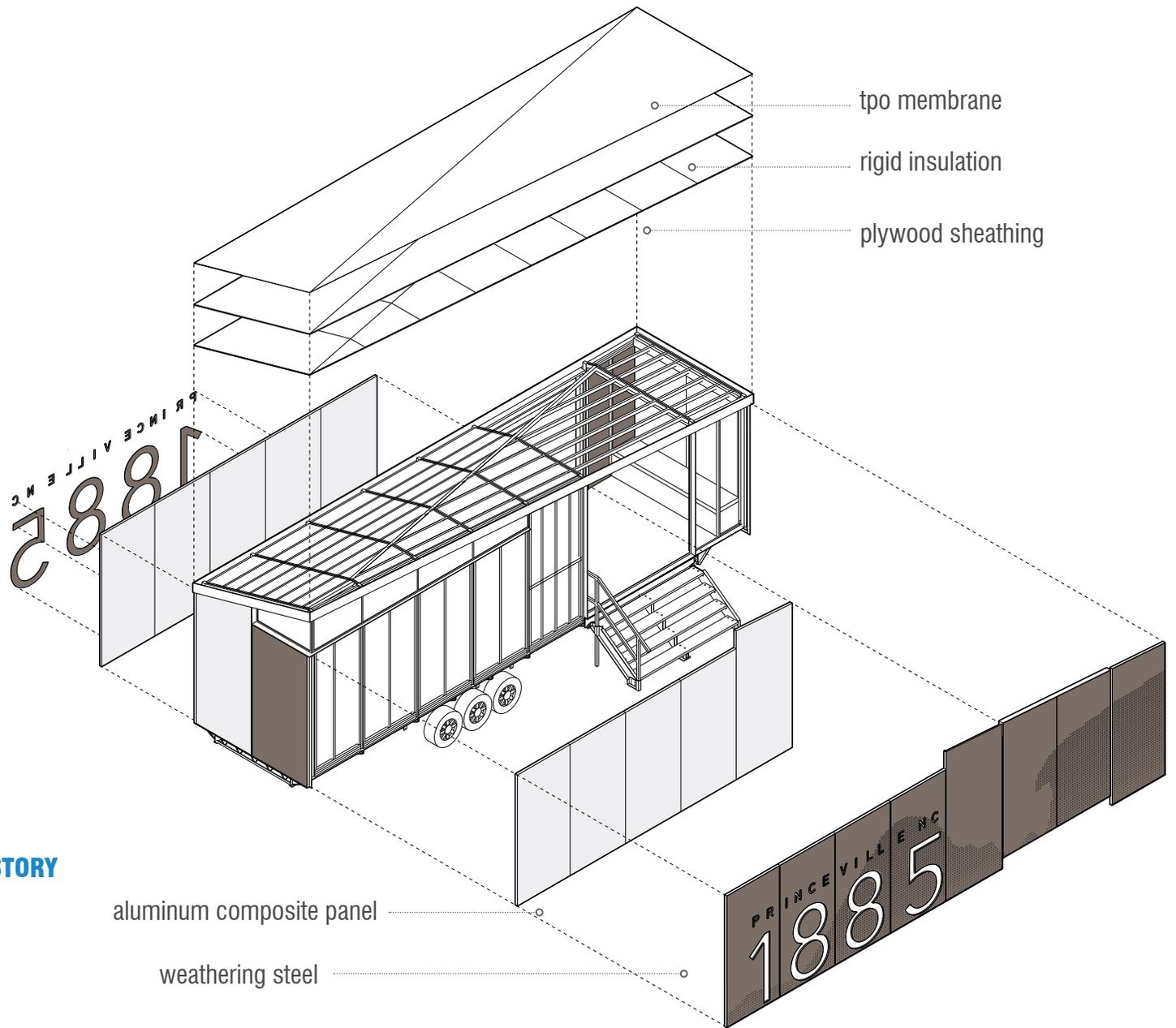
PORCH



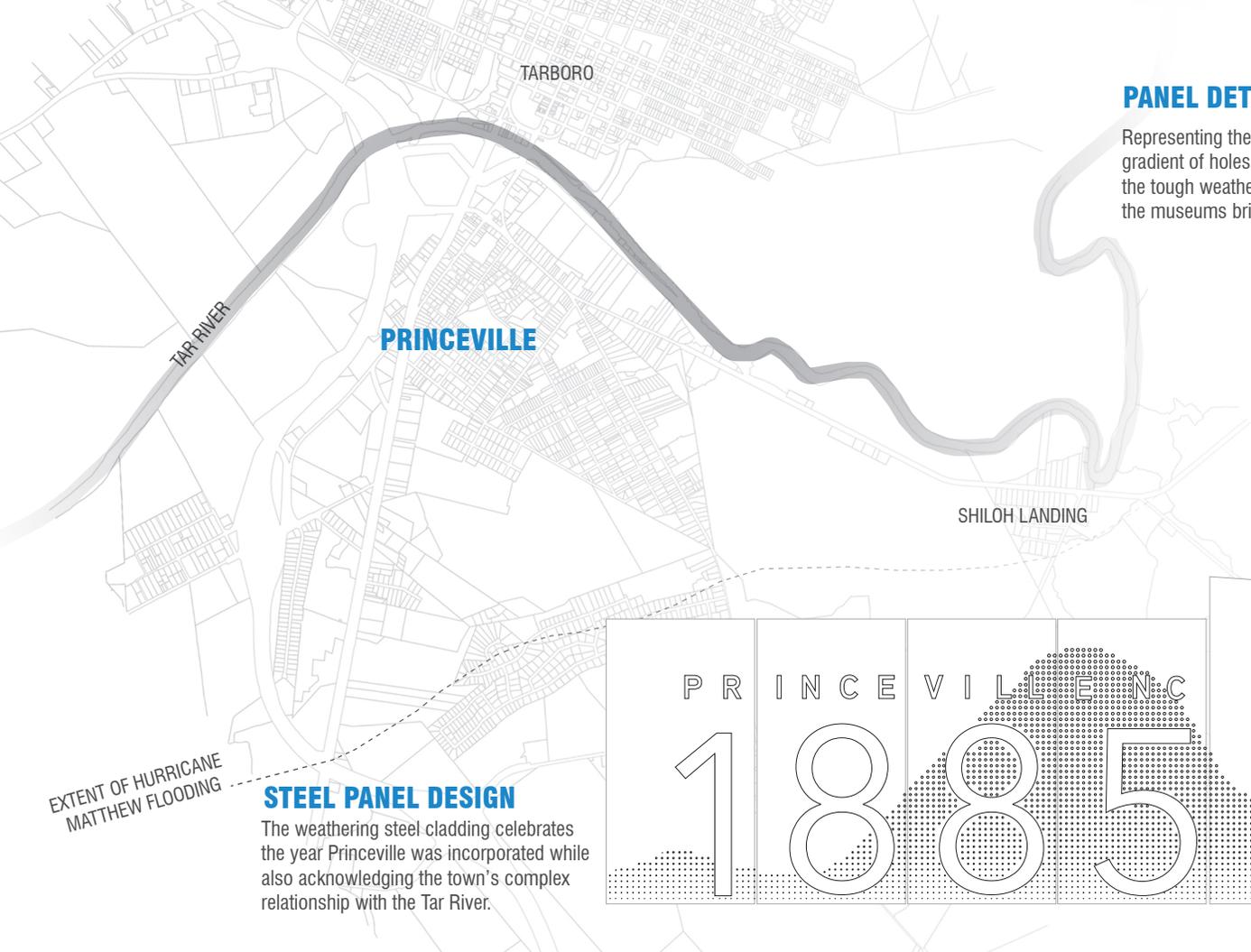
FOLDED ROOF + CLERESTORY



EXPANDED ENTRY



MATERIALS + ASSEMBLIES



TARBORO

PRINCEVILLE

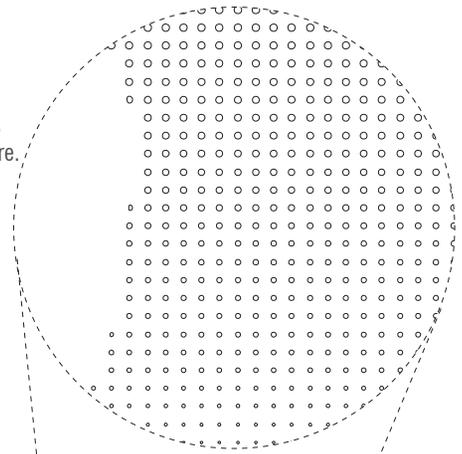
SHILOH LANDING

TAR RIVER

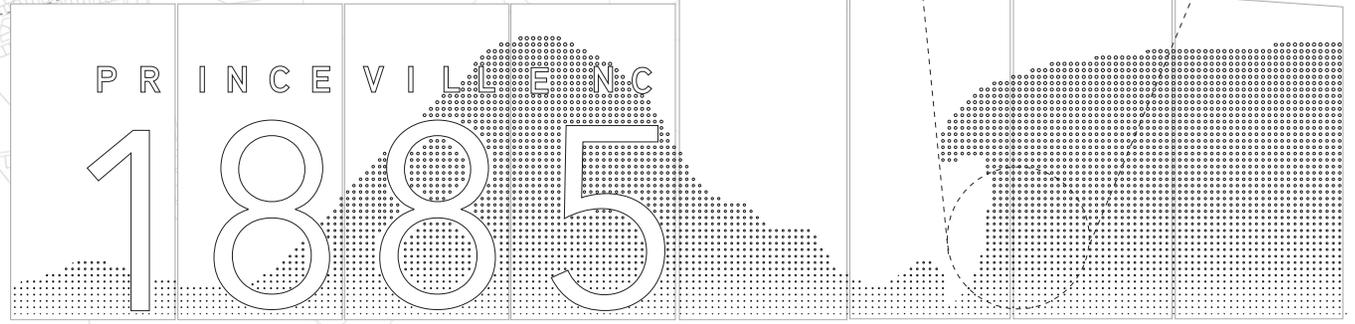
EXTENT OF HURRICANE
MATTHEW FLOODING

PANEL DETAIL

Representing the Tar River, a gradient of holes, plasma cut into the tough weathered steel, reveals the museum's bright aluminum core.



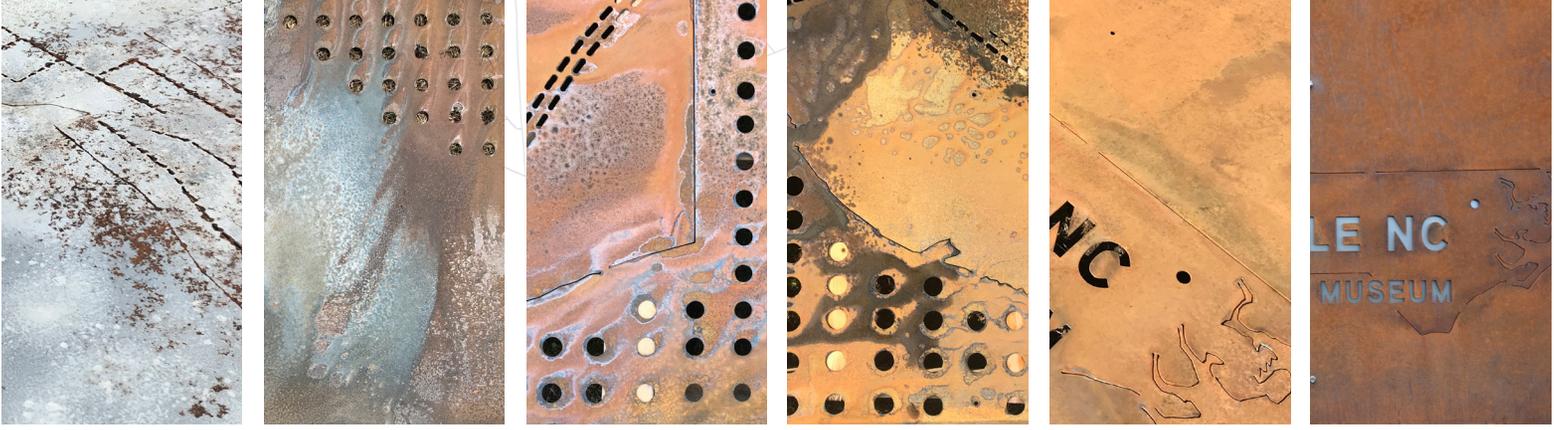
PANEL GRAPHIC



STEEL PANEL DESIGN

The weathering steel cladding celebrates the year Princeville was incorporated while also acknowledging the town's complex relationship with the Tar River.

CORTEN TEST PANELS



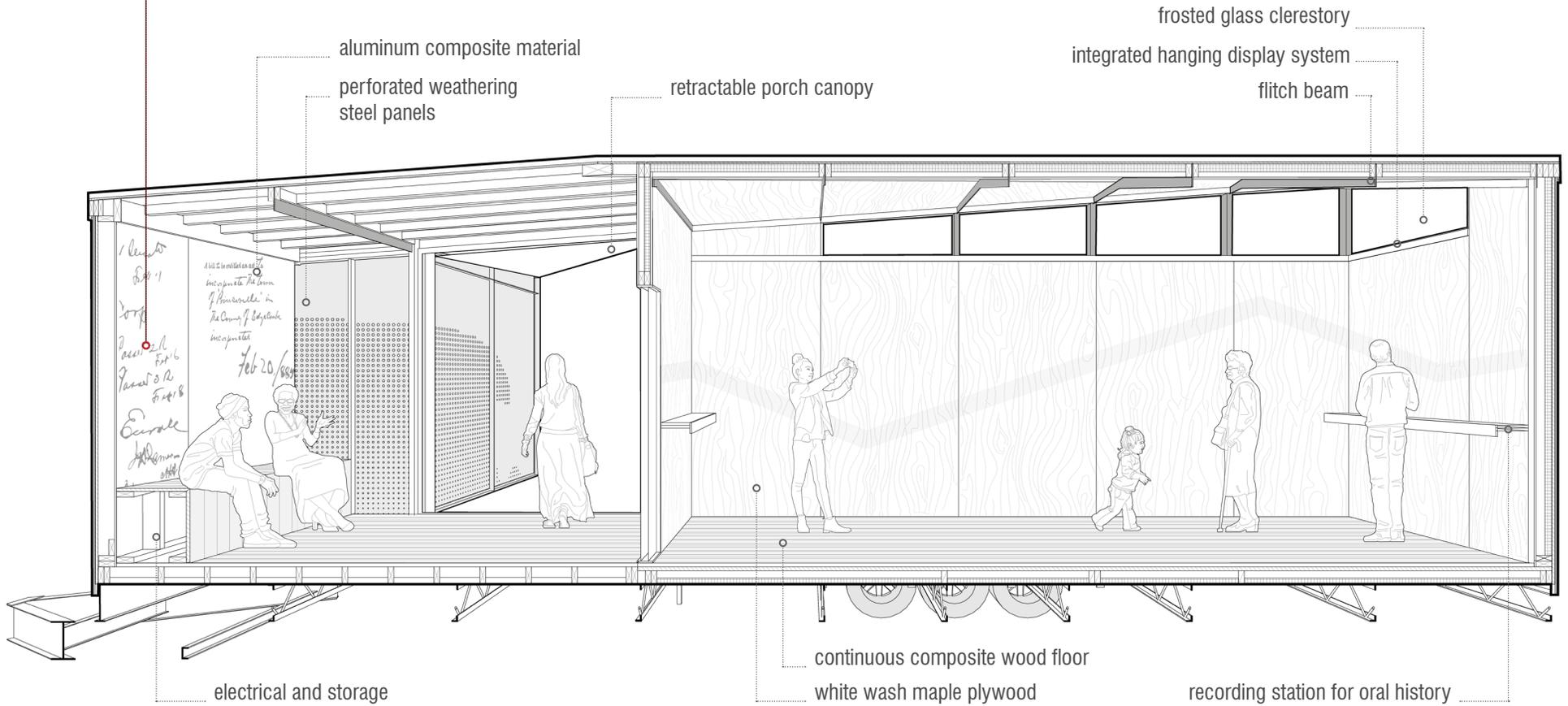
WEATHERING

When weathering steel is exposed to air and rain, a layer of rust develops on the surface, forming a protective shell that prevents further oxidation of the steel below.

The idea that weathering steel strengthens over time to protect itself is a metaphor for the people of Princeville, who continue to show strength amidst environmental and political adversity.

SECTION + PROGRAM

1885 TOWN CHARTER CNC MILLED INTO METAL PANELS



COMMUNITY PORCH

GALLERY



museum exterior clerestory detail



museum exterior corten detail



museum exterior weathering steel detail

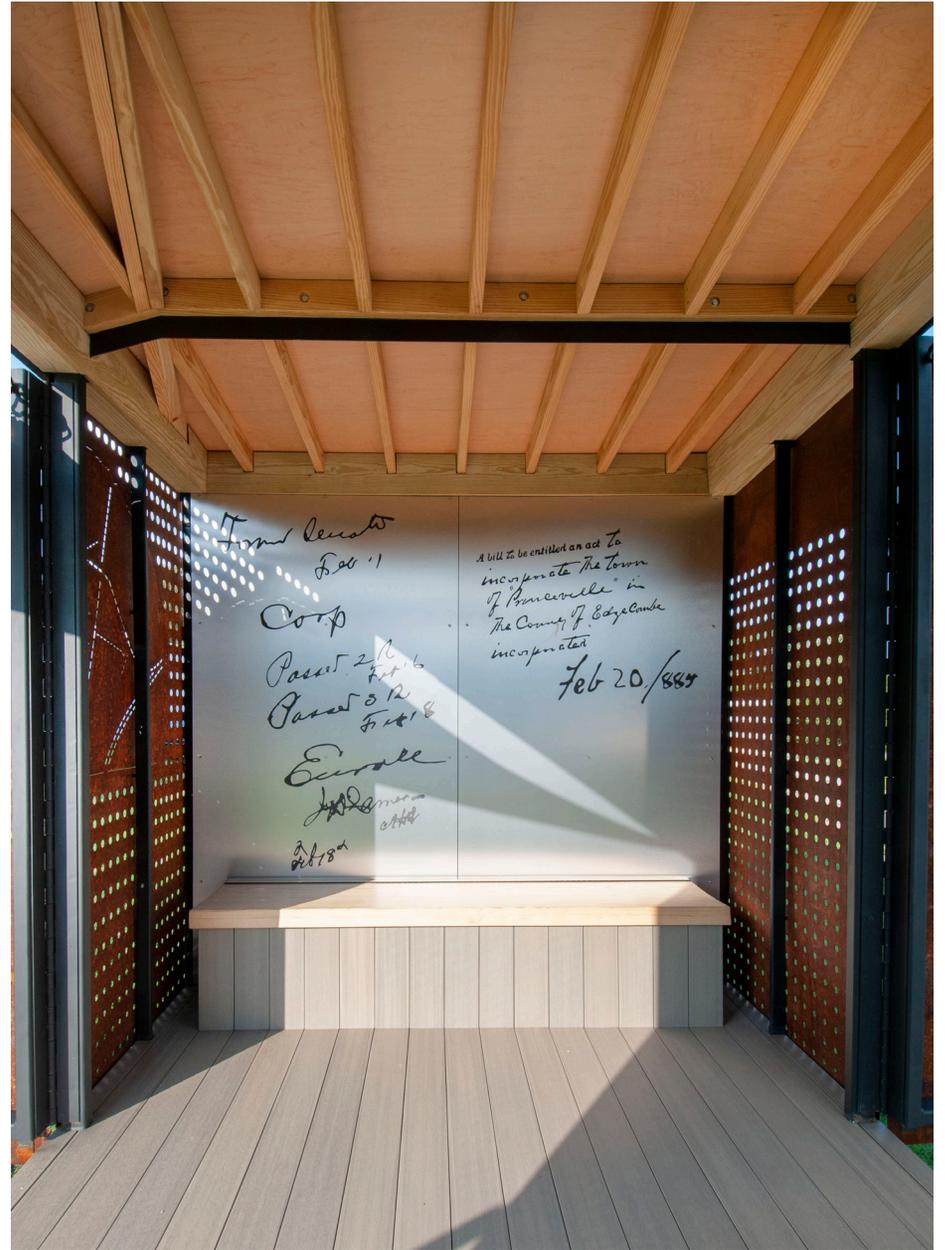
DETAILS



construction installing weathering steel panel

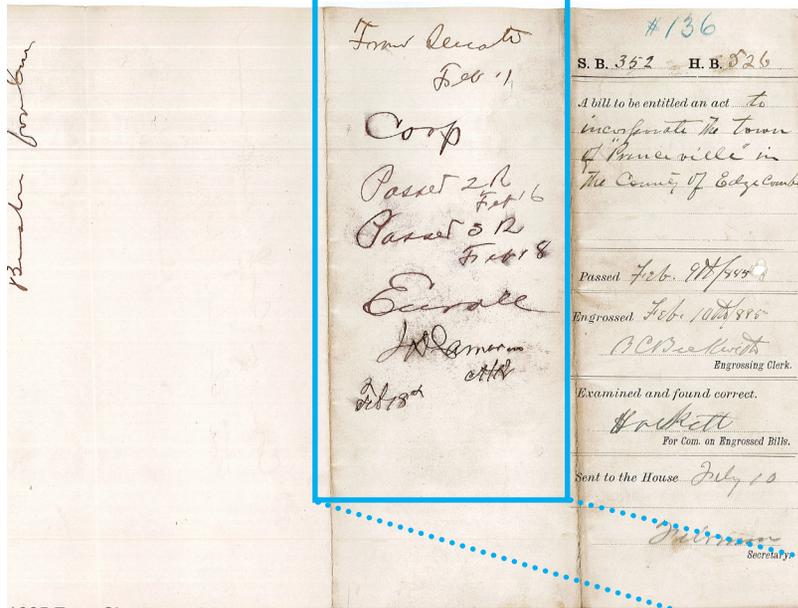


museum gallery



museum porch + town charter

GALLERY AND PORCH



1885 Town Charter



museum porch + town charter



TOWN CHARTER

Signatures on the bill officially incorporating Princeville, NC, the oldest town chartered by Blacks in America. NC General Assembly Records, 1884-85

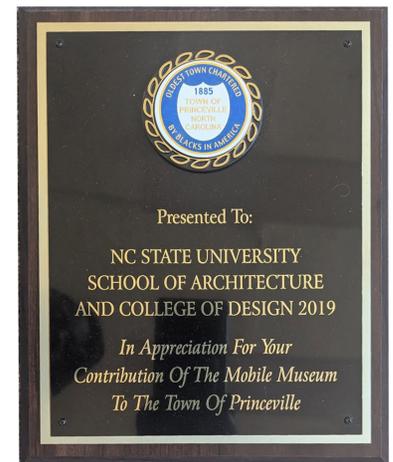
Map of Princeville, North Carolina (adjacent).



Museum exhibition



Ribbon cutting in Princeville (existing museum beyond)



RIBBON-CUTTING CEREMONY



Metropolis article:
 “The Coastal Dynamics Design Lab Helps Communities Plan for Resilience” (August 30, 2023)

<https://metropolismag.com/profiles/coastal-dynamics-design-lab/>

Project Team:

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 Dr. Glynda Knight, Town Manager

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 Clint Ronsick
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 Dusty Sicard
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