2022 CITATION

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LYCEUM

A traveling fellowship in Architecture

C A E S T

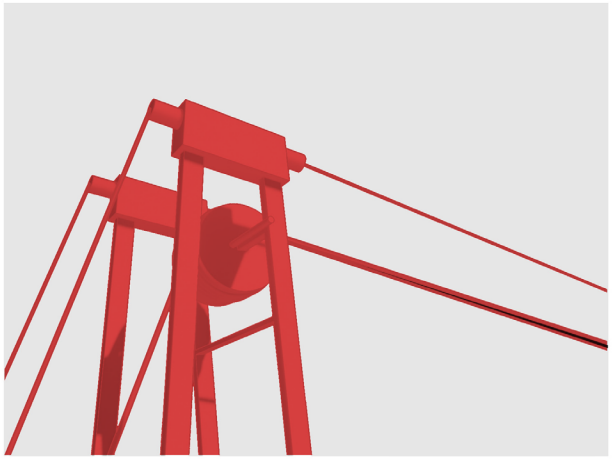
ID LF-9927

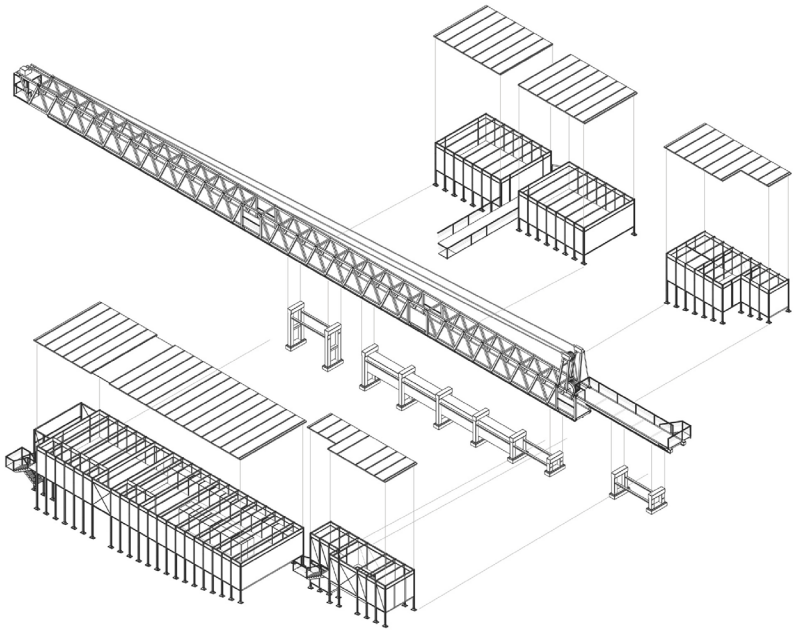
PROJECT STATEMENT

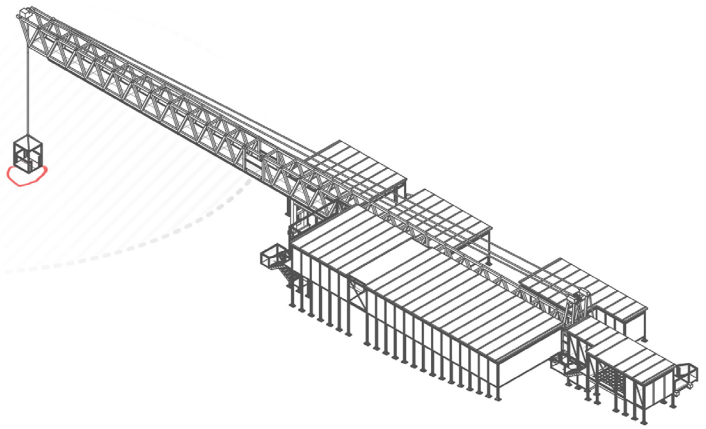
The Cave Artifact Extraction and Study Tool (CAEST) is a time-conscious and minimally invasive structure designed to extract prehistoric fossils from Friesenhahn Cave without puncturing the subterranean preservation zone (SPZ) that safeguards the site located in the suburban sprawl of San Antonio, TX.

CAEST reaches over the SPZ that enshrouds the cave, and a manriding cage is lowered into the sinkhole below, transporting passengers 20,000 years geologically into the past to a cave that once served as home to a family of Saber-tooth Cats and an ancient sea bed long before that. Artifacts are extracted via the same means researchers enter the cave and are examined within the research facilities adjacent to the base of the cantilever.

With the goal of minimally invasive structure in mind, CAEST takes full advantage of the Bosch t-slot system to create dynamic enclosed spaces. Program spaces can be disassembled and reassembled by hand to better suit the needs of researchers and the site, reinforcing the stance that we should treat this cave and its SPZ as a sacred space to be honored.





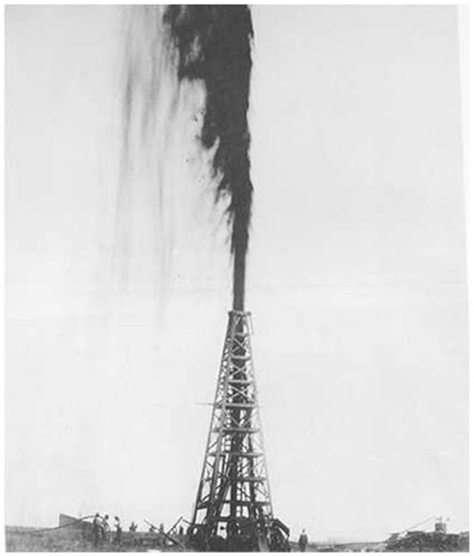


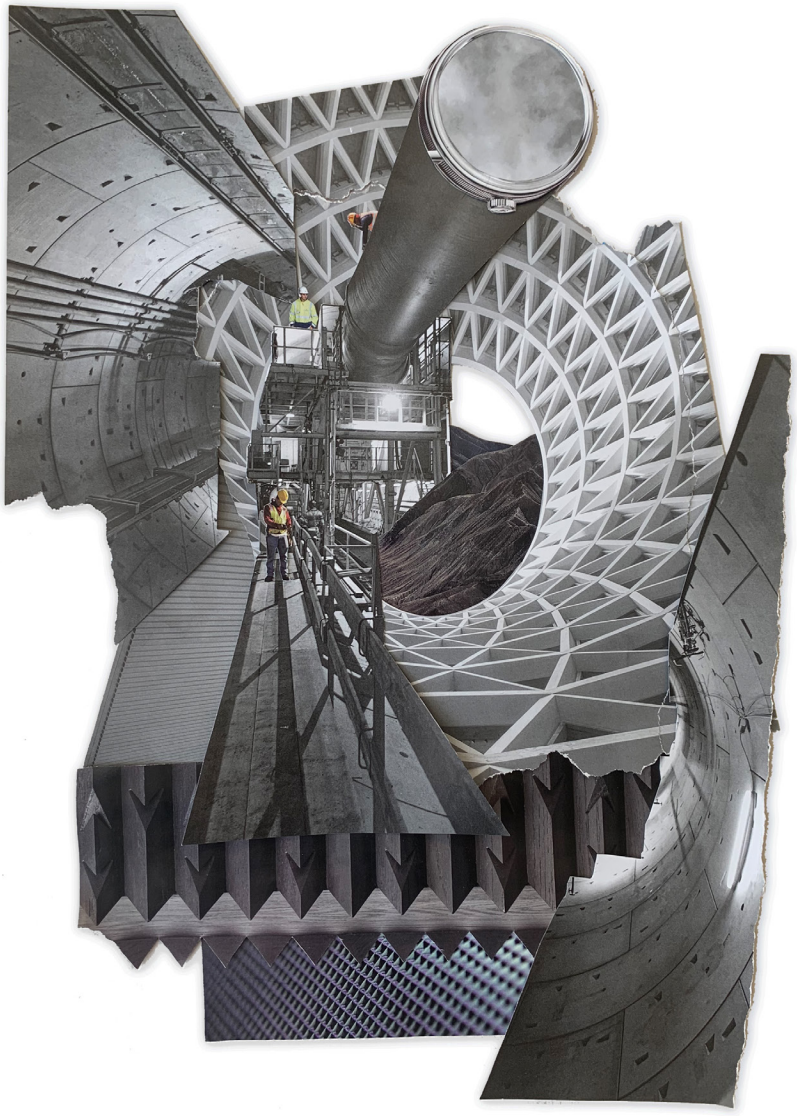
A HISTORY OF EXTRACTION

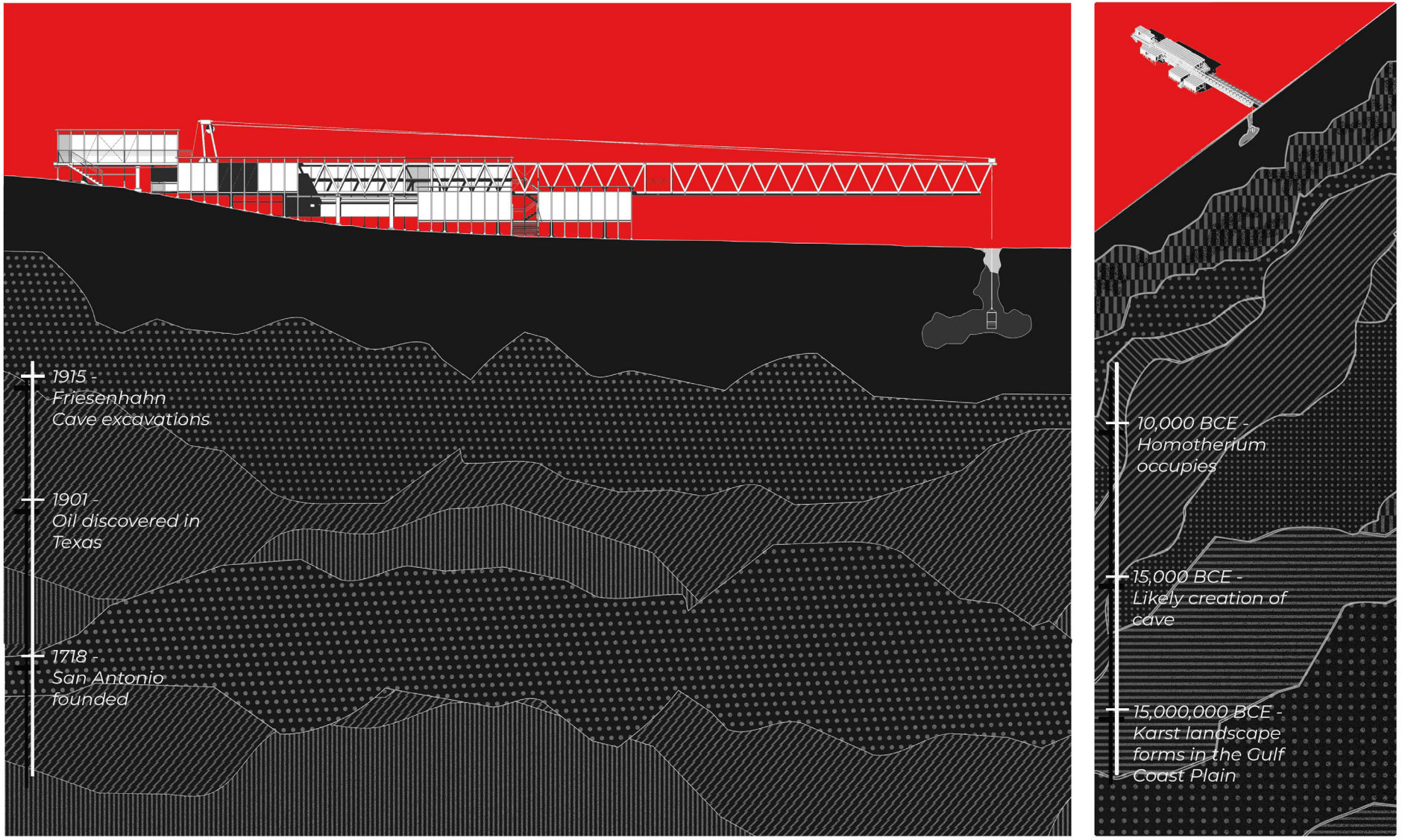
Nestled beneath a grove of evergreen ash juniper, Friesenhahn Cave is a threshold to the ancient landscape below San Antonio. forgotten rivers carved extensive caves in the limestone long ago, and in those karst voids history is preserved.

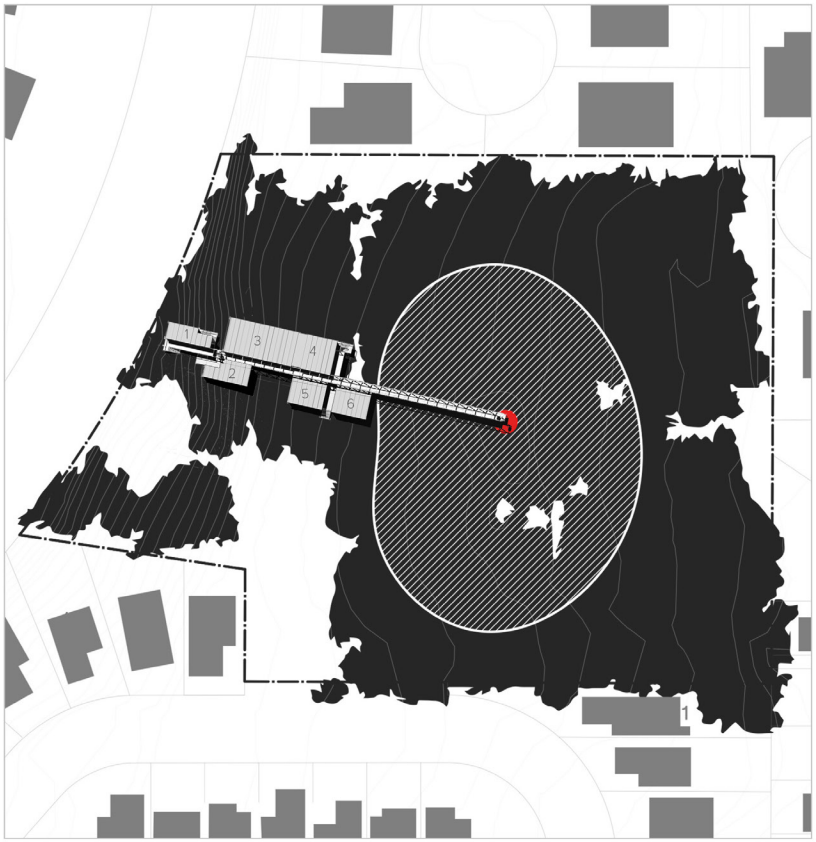
This threshold to deep time presents an interesting juxtaposition, the incomprehensible scale of deep time and the relative minuscule lifespan of the surrounding timber framed homes that dominate its suburban context. Had we the scale of mind to understand the difference, a greater emphasis on placement in the temporal sense might have greater value than the immediate surface conditions. Friesenhahn cave provides the opportunity to reevaluate the impact our extraction efforts have on the underland.

Where miners and oilers have pillaged the earth in an effort to capitalize on time as a resource, CAEST instead approaches the underland as a library to be delicately studied and preserved so that future generations can learn from the past.



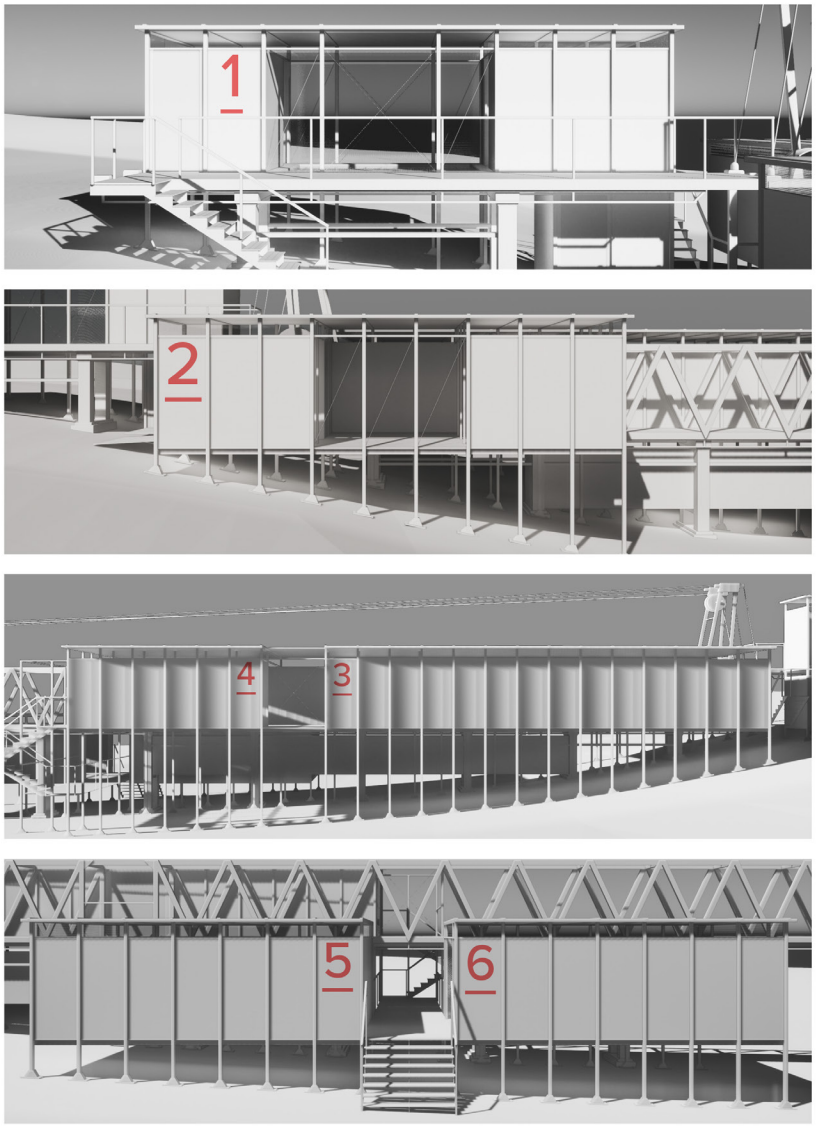



1915 -
Friesenhahn
Cave excavations
1901 -
Oil discovered in
Texas
1718 -
San Antonio
founded
10,000 BCE -
Homotherium
occupies
15,000 BCE -
Likely creation of
cave
15,000,000 BCE -
Karst landscape
forms in the Gulf
Coast Plain



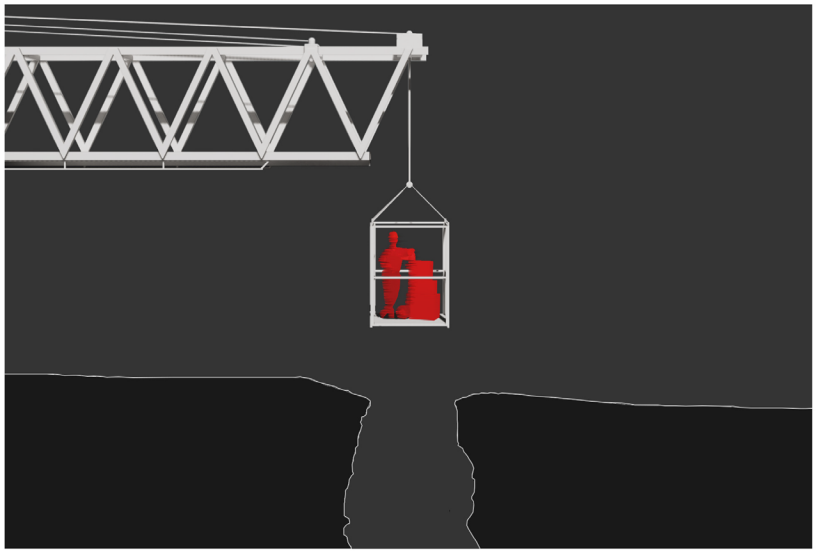
1. Visitor Center
2. Field House
3. Archive
4. Lab
5. Library
6. Classroom

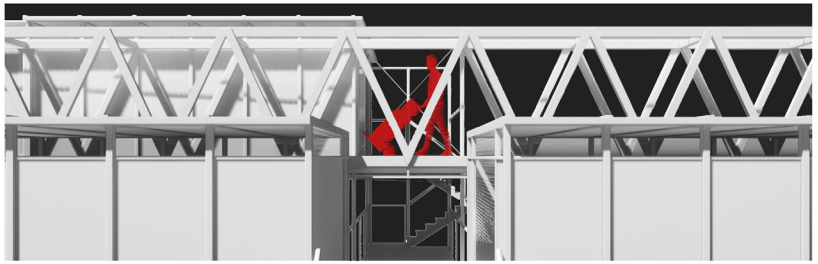
A cantilevered crane serves as the primary axis upon which program spaces orient themselves. The bulk of the structure is placed outside the subterranean preservation zone so as not to penetrate the sacred space within. Program is further subdivided into use-compatible pairs: visitor center with field house, archive with lab, and library paired with classroom.



CAEST IN OPERATION

Operation of CAEST is a simple exercise in basic pulley systems. Fossils are extracted on the manridding cage that archaeologists enter the cave with and are hauled up the crane arm to the lab and archive wherein the findings are examined, categorized, and stored for safe keeping.

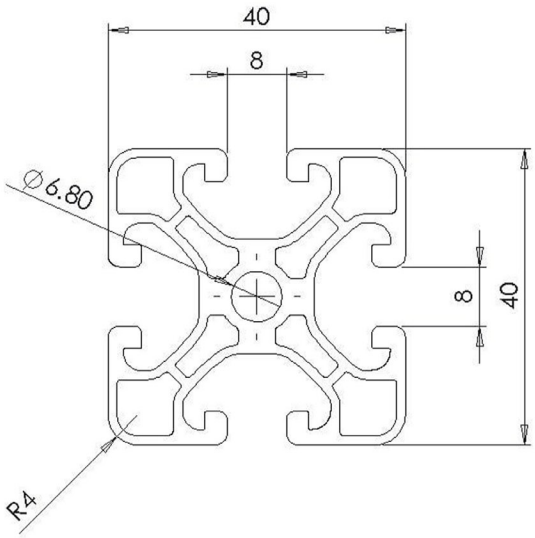




ALUMINUM T-SLOT SYSTEM

Bosch aluminum extrusion t-slots were selected as a primary framing material of CAEST due to the system's recyclability, modularity, and easy assembly

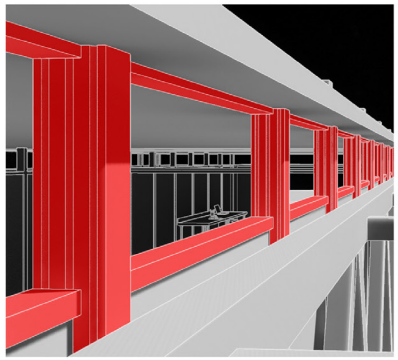
Every successful archeology operation seeks to be as minimally invasive as possible so as not to disturb the natural surroundings. This reverent approach to extraction is inspirational in the era of sustainability, and with this position in mind CAEST fills the role of a research center while remaining conscious of its impact on the layers of history just beneath the surface. The majority of the program spaces attached to the underlying crane structure are composed of hand assembled aluminum extrusions and corresponding prefab wall panels and attachments. Once the researchers have determined there is no more to be learned from Freisenhahn Cave, CAEST will be disassembled and rebuilt on a new archaeological site to further the reaches of human curiosity.



typ. 4040 series extrusion (mm)

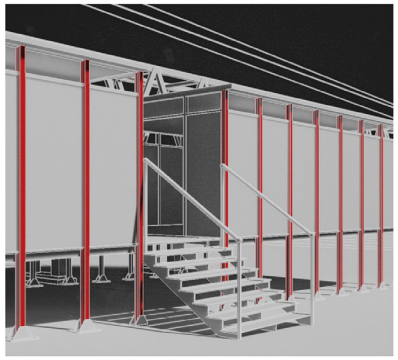
CLERESTORY

T-slot extrusions provide opportunity for clerestories, allowing indirect natural light to flood program spaces without compromising climate controlled areas.



T-SLOT PILLAR

3” x 4.5” extruded t-slot pillars serve as the primary framing element of program spaces. The t-slot extrusion profile provides opportunity for prefab wall panels and glass panels attachment in multiple configurations.



FOOTING ATTACHMENT

Flexible cleated footers are fastened to the base of the t-slot pillars and account for the sloping terrain. though outside of the SPZ, puncturing the ground is avoided where at all possible to reinforce the reverent approach CAEST takes in regard to Freisenhahn Cave.