

KEMPELEN'S OWLS
New American Public Art

Credits



Artist
New American Public Art



Commissioning Body
Art in Public Places Austin (AIPP)



Fabrication Partner
Autodesk BUILD Space



Collaborating Artist
Christine Angleone



Owner
City of Austin



Sponsor Department
Economic Development Department



Green Water Site Master Developer
Trammel Crow Company



Block 188 Site Owner/Developer
The Kor



Project Site
Austin Proper Hotel and Residences



Landscape Architects
Ten Eyck



Art Conservator Verification
Smith Art Conservation LLC



Structural Engineering Verification
Hollingsworth Pack



Electrical Engineering Verification
Blum & Sons Electric



Prototyping Partner
Artisans Asylum

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Kempelen's Owls

New American Public Art

Final Design Presentation | Art in Public Places Program
Green Water Development, Austin TX





Concept Origin

A synthesis of Austin's traditional symbols and emergent cultures provided the initial inspiration and ideas for the Green Water Redevelopment Treatment AIPP Project.

The 'Rivers and Streams' aesthetic motif for the Seaholm District, set forth by the Great Streets program, is manifested by nature-themed urban details, public artworks, and a prioritization of trees in the streetscape. To honor this traditional narrative we wanted a regional animal to be a focal point of our work.

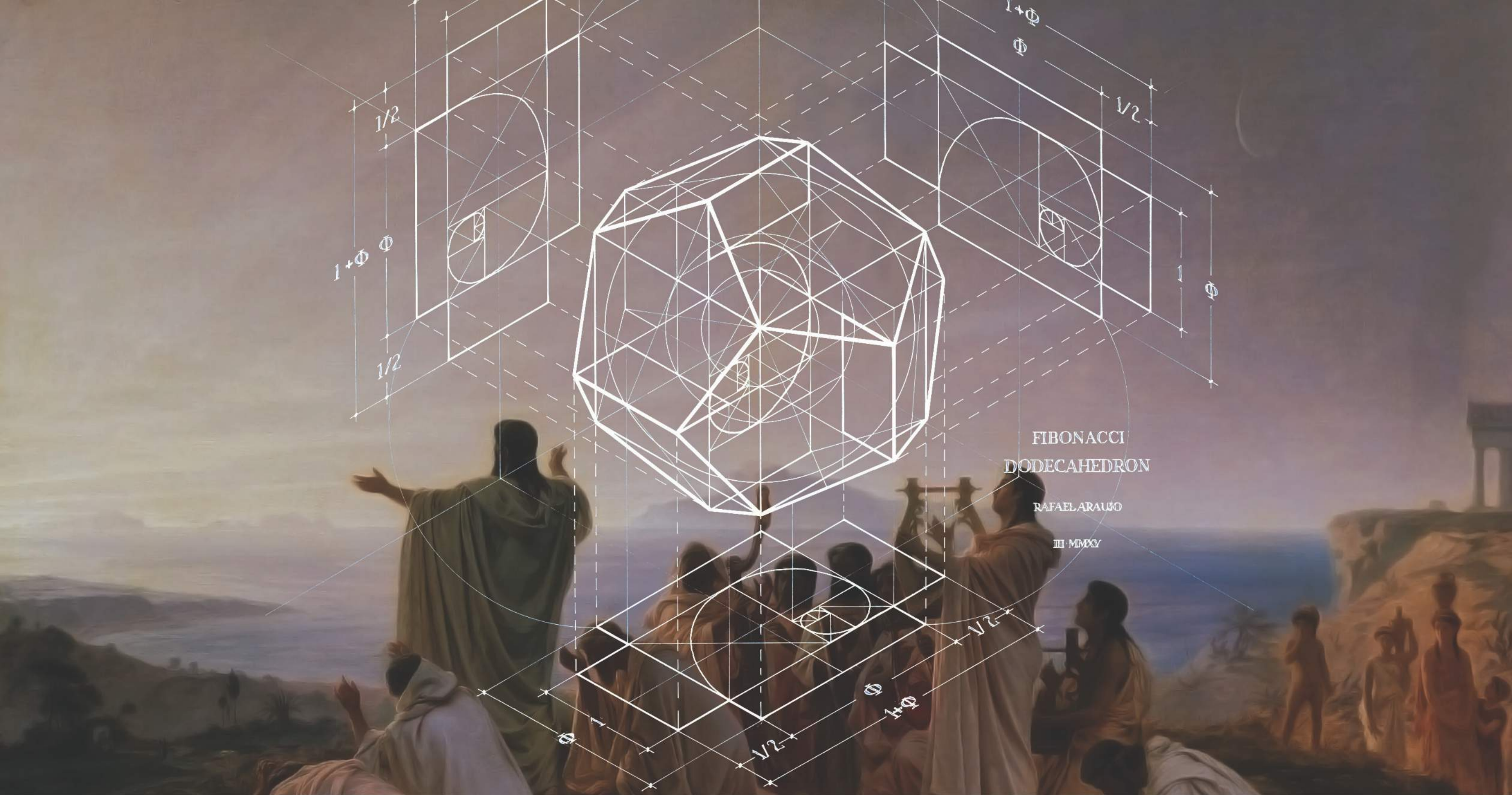
To counterpoint nature, we turned to the zeitgeist of the Seaholm development. The completion of the new library, Google's Austin headquarters, and multiple co-working spaces will turn this new downtown into a home for innovators and thinkers: Austin's New Knowledge District. As homage, we have emphasized digital design and fabrication techniques in the creation of our sculpture. The duality of nature and technology at play here is addressed in various forms throughout this artwork.



Concept Great Horned Owl

To manifest the combination of traditional narrative and modern considerations, we were intractably drawn to the iconic and local Texan great horned owl as the work's focal point. It is a symbol of knowledge and wisdom for the burgeoning Seaholm district; it is an apex predator watchfully residing in the theme of Rivers and Streams. It is a creature marshaling both the familiarity of day, and the mystery of night. The great horned owl's familiarity gives the work an easily describable and approachable quality,

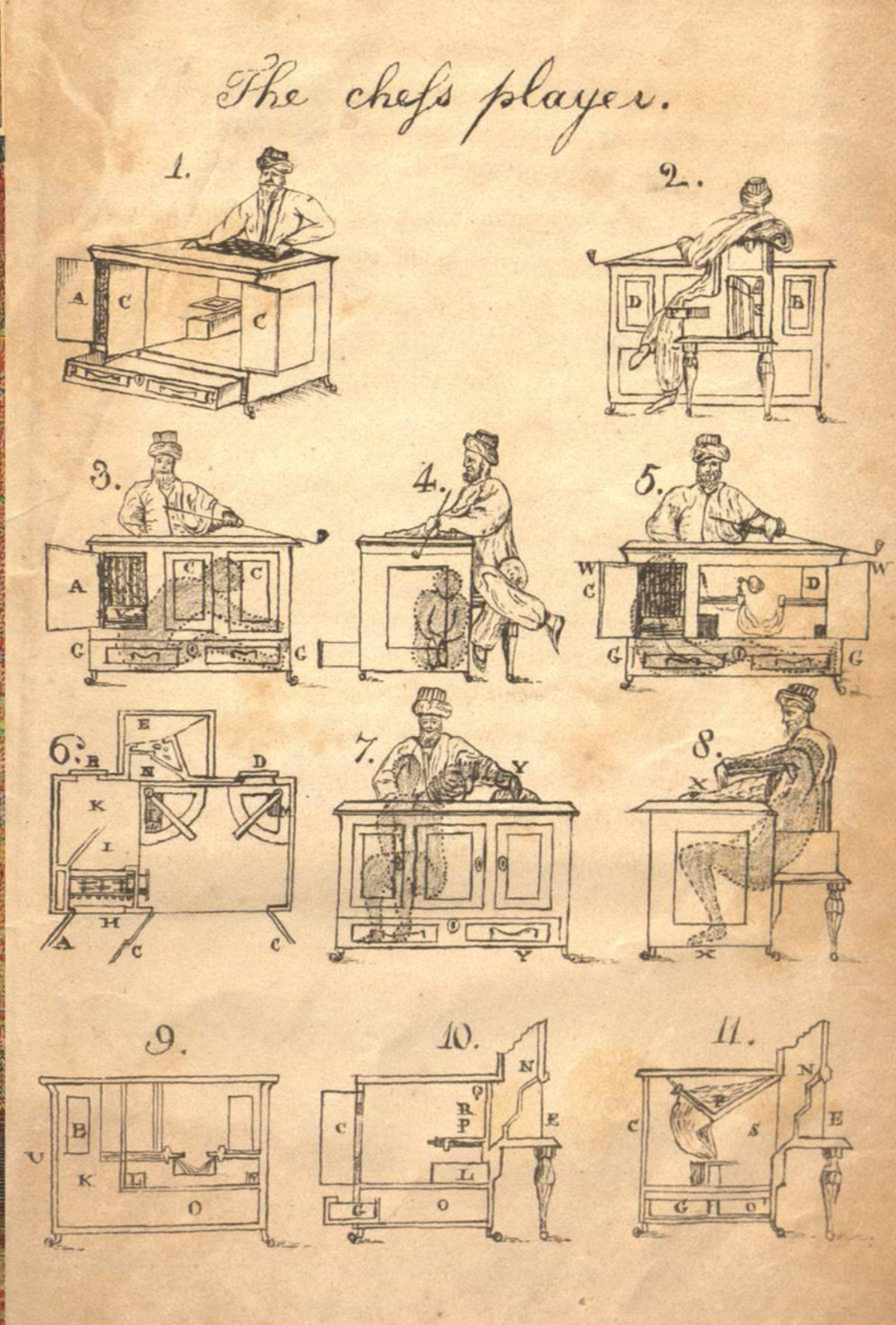
lending itself to being a meeting point and landmark. This social fluidity is particularly important for permanent artworks, where community adoption creates a sense of place. People will soon simply say, "Meet me at the owls." Familiarity transitions to subtlety in the evening hours. With the ability to see in the dark, the owl becomes an augur of hidden meaning and veiled fortunes. Its piercing eyes hint at riddles unsolved and truths unknowable. It summons the secretive and compels the curious.



Concept Dodecahedron

NAPA believes public art should be public from conception to completion, an unimpeded resource for innovation and the creative economy. For us the symbol of our open source philosophy has always been the dodecahedron. When discovered by the Greek Pythagoreans, the dodecahedron was kept hidden from outsiders. They feared that the public would uncover the principle of irrationality from the dodecahedron's pentagonal faces, which would undermine their mathematical assertions about the

universe and thus their political power at the time. Hippasus, a dissenting member, was said to have shown a dodecahedron to the public. His fellow Pythagoreans drowned him for this act. For us, a public dodecahedron represents elite information made open, and embodies the duality of hidden vs public knowledge. The inclusion of this shape in the artwork is a reminder to those with knowledge and those in power, to be open with discovery and information.

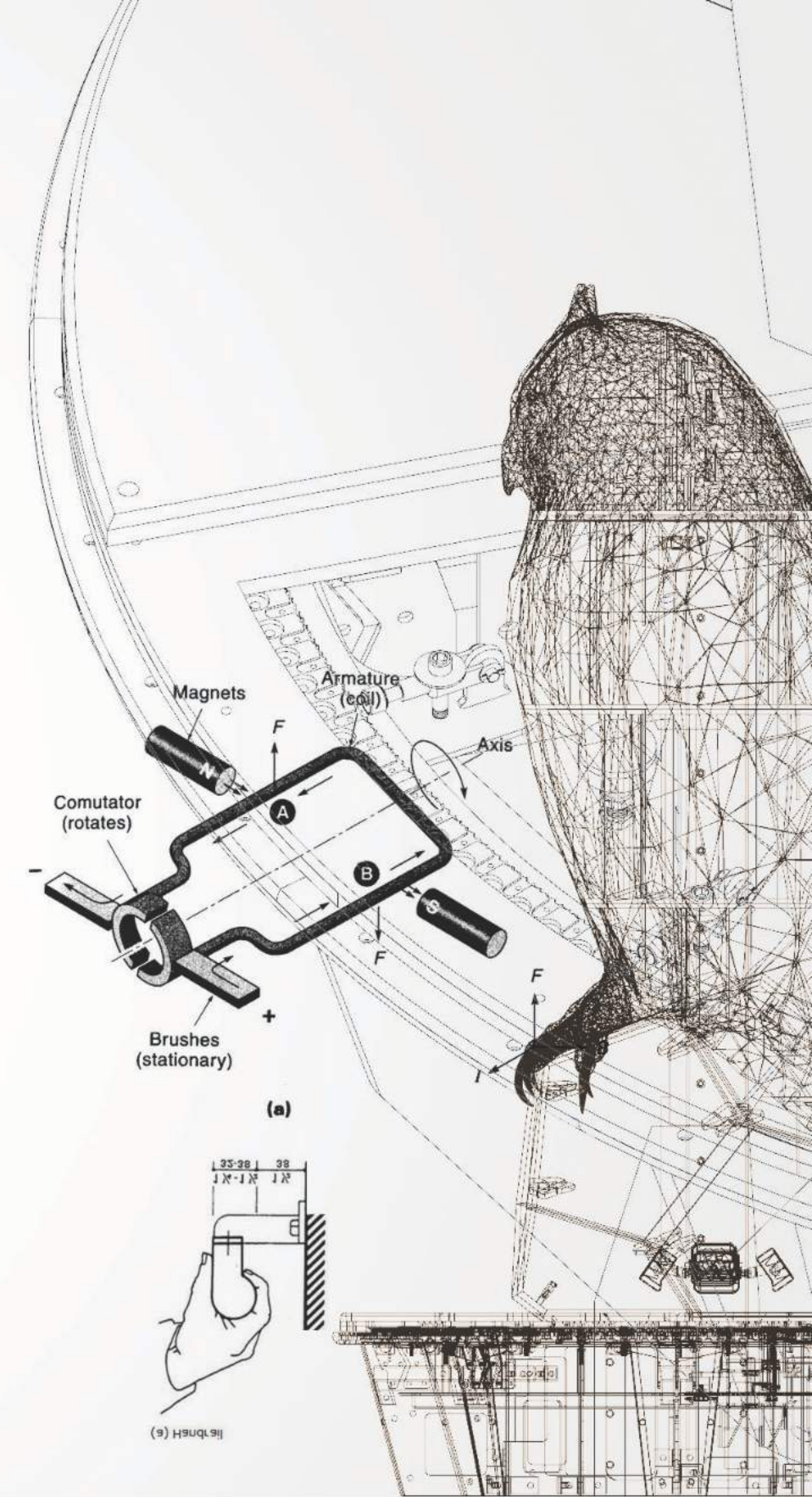


Concept

Wolfgang Von Kempelen

The sculpture's title references Wolfgang Von Kempelen who, in the mid 17th century, infamously created 'The Turk'. This chess-playing automaton, a primitive robot, was notorious for being able to beat any opponent. However, it was later revealed to be a hoax: instead of a computational mechanism, 'The Turk' cleverly hid a human chess master in its base.

Person-to-person interaction through a medium is a staple of our work. In light of the dualities already at play, the aspect of a hidden control system for this project intrigued us. What would happen when people are given agency of the illusion? How does a community of in-the-know participants form? Is the secret closely guarded or freely communicated? To answer these questions we needed a clandestine interaction mechanism, levers for a hidden master, which give life to the iconic great horned owl.



Concept Interaction Mechanism

We have made a conscious decision to omit explicit instructions on how to use the interaction mechanism. How one manipulates the work, and the result of those actions, shall reside in the domain of curiosity, observation, and word of mouth. This act of omission empowers the local community with a secret of the Austin streets, to share or to keep as they desire. The mechanism is hidden in plain sight, and readily accessible to all ages. It can be used alone or by a group. If subtly used on a lively day or night,

passersby new to the work will be surprised at the effect. Will the jolted newcomer investigate the circumstances? Will the thinly-veiled secret be discovered? Will they become keepers of the secret for their own tricks, or will they tell others to create solidarity? Of course, these secrets are not protected, but merely hidden. The open source mechanical documentation can be read to reveal its truths. After all, we must reward the curious.



Design Process Natural Specimen

With the concept in place, our design process begins in the office of Pamela R. Owen, Ph.D., Associate Director of the Texas Memorial Museum at the University of Texas Austin. It is a felony in the United States to own a Great Horned Owl, alive or dead, unless you are a educational institution. After weeks of unsuccessful searching, and then seriously considering the notion of a trip to Canada, the NAPA team struck gold with Dr. Owen, who had a perfect local specimen literally above her office desk.

We now had access to a Texas owl. Dr. Owen calls the owl 'The Watcher' and tells us that not much is known about the specimen. She estimates that this specimen was preserved circa the 1930's. A photocopied pamphlet entitled "A Guide to Night Shift Alcove - Texas Memorial Museum - Museum Notes No. 12" dons the owls image on it's cover, but does not contain any further information. The owl is, for the most part, a mystery: a perfect beginning for our design.



A GUIDE TO THE NIGHT SHIFT ALCOVE

TEXAS MEMORIAL MUSEUM

Museum Notes No. 12



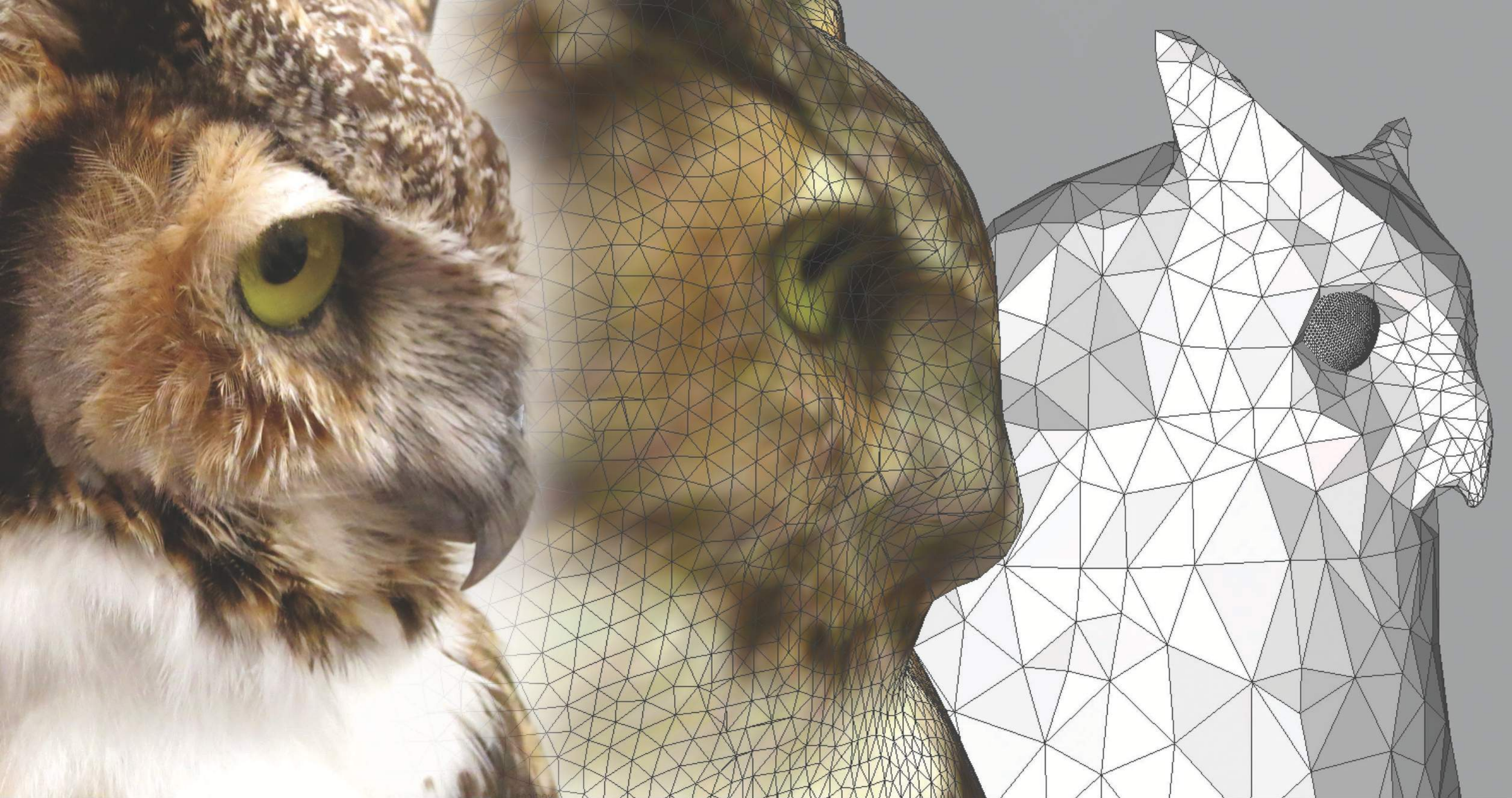


Design Process 3D Scanning

The first step in the design process is translating the taxidermied owl into a 3D digital model. For this our LaunchPAD collaborator, Christine Angelone, used a Structure IO 3D scanner connected to an iPad. This scanner uses a combination of laser photogrammetry and traditional light photography to capture shape, color, and texture information.

Multiple passes and angles are required to record as much detail as possible, from the overall form to the intricate details of claws and talons. In addition to the 3D data, over 50 traditional photos were taken of the owl. These photographs greatly aid as a reference in refining the 3D model in the subsequent design steps.

To learn more about the LaunchPAD program please visit :
<http://www.austintexas.gov/page/launchpad-program>

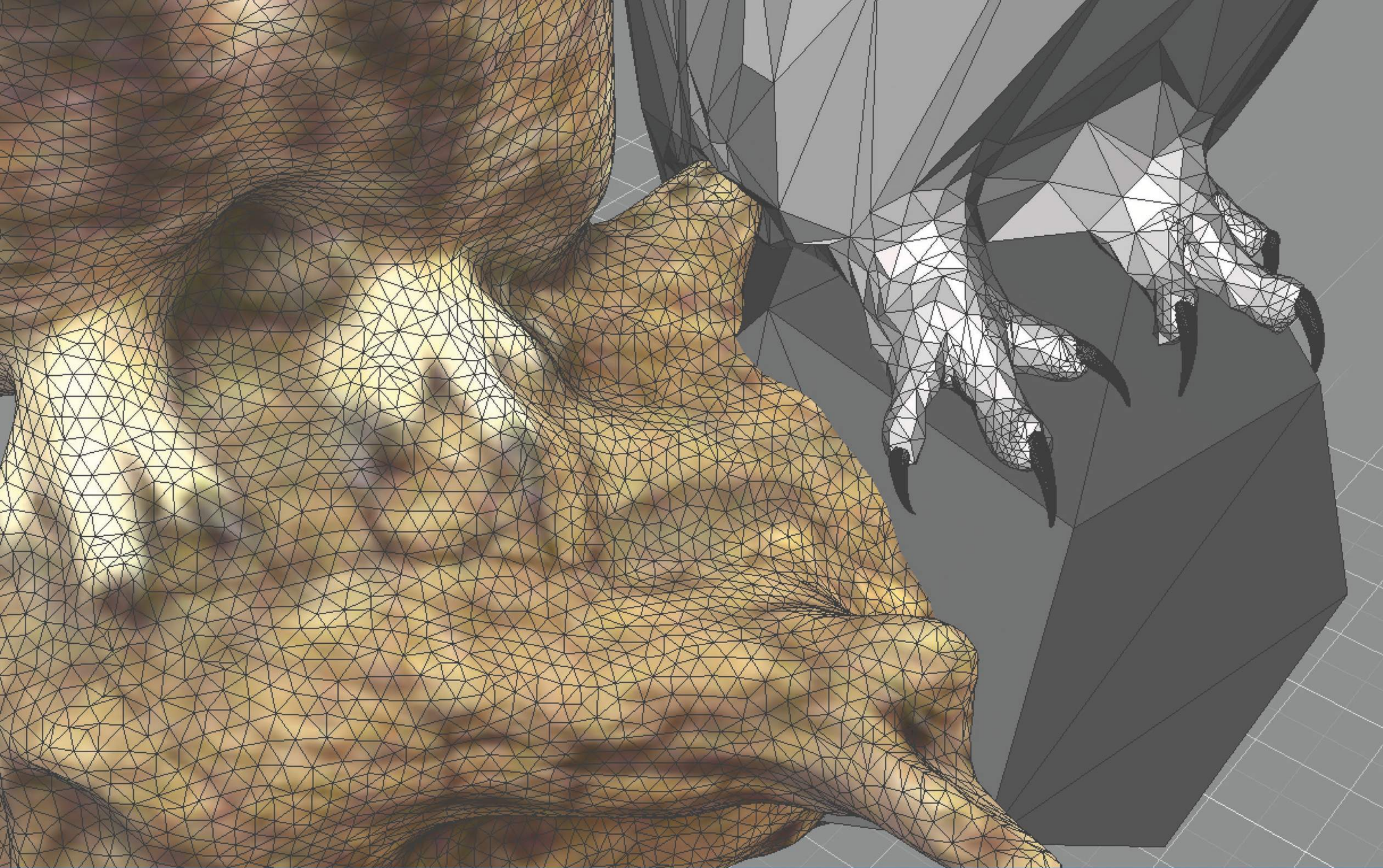


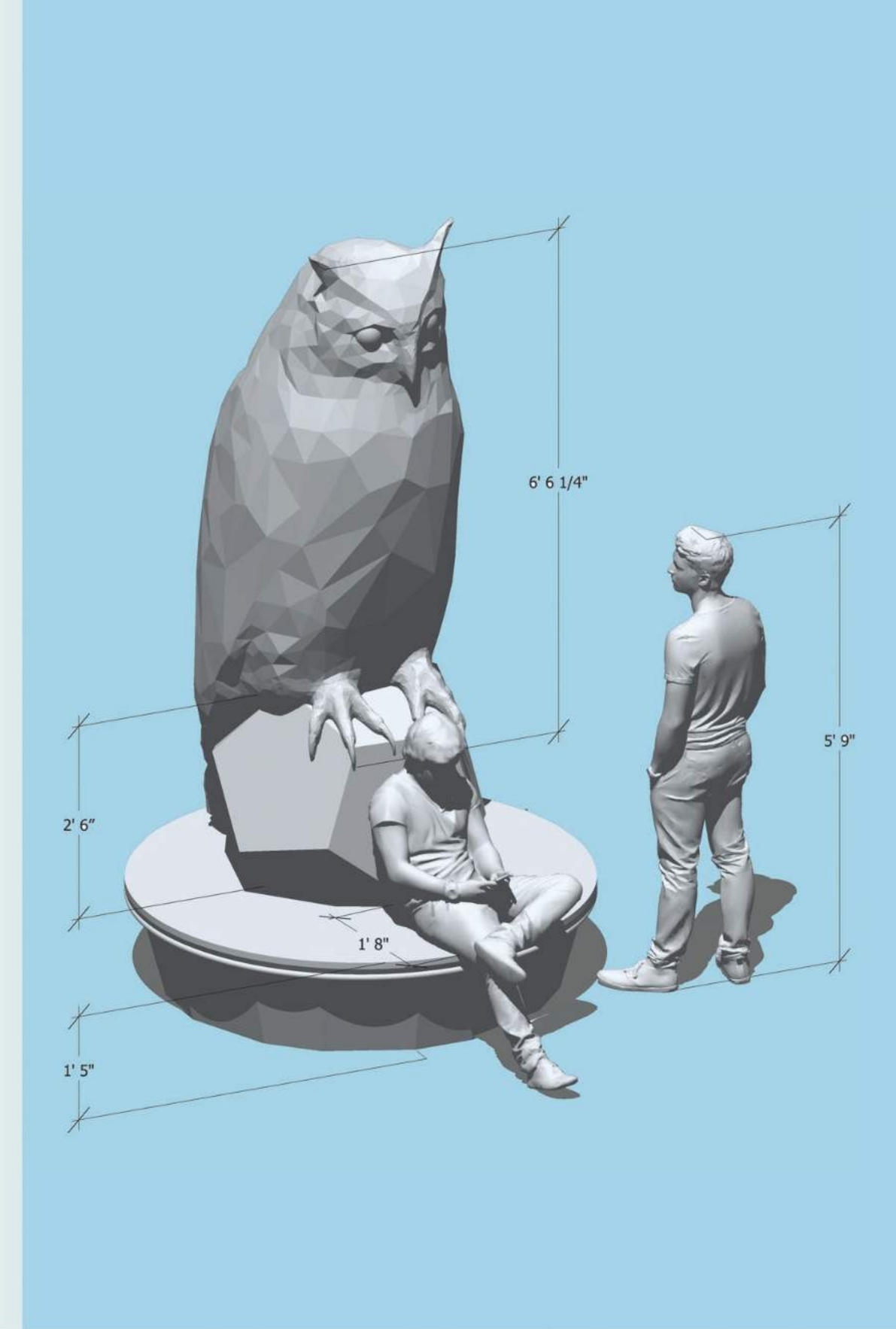
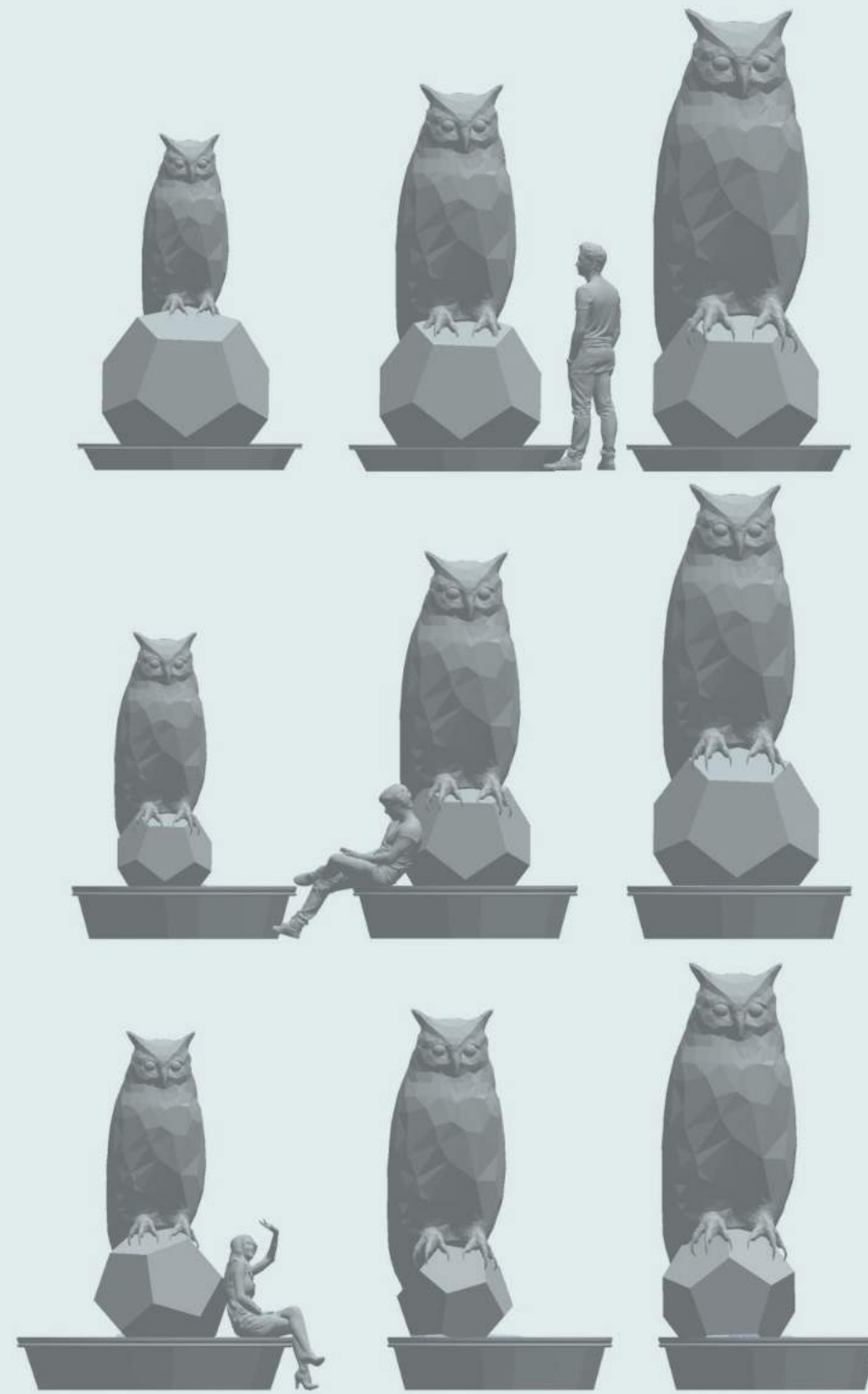
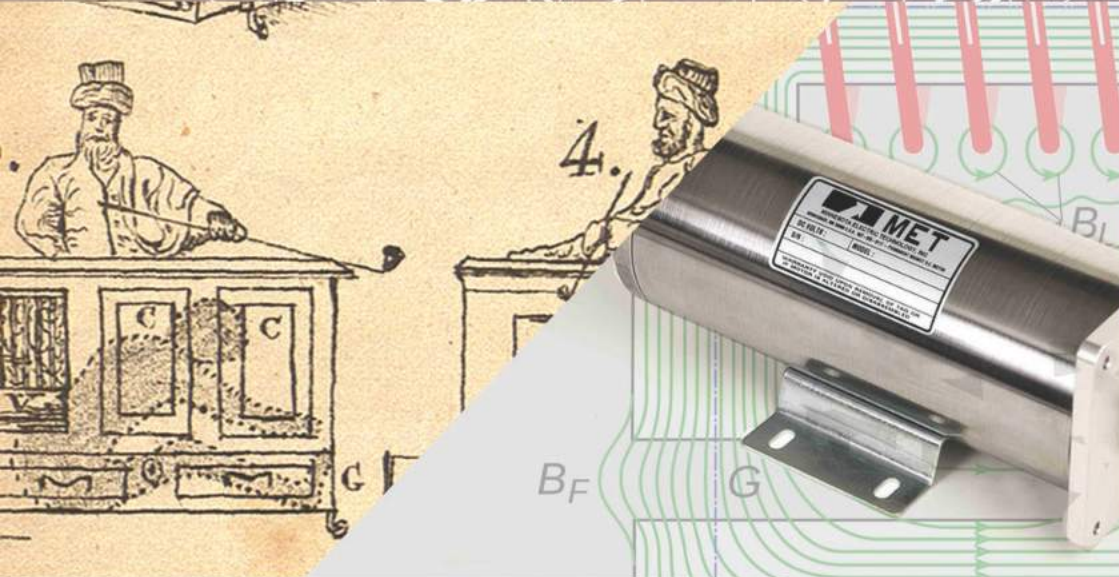
Design Process

Digital Sculpting

Once the 3D scan of the real owl is completed, the data is imported into Autodesk Meshmixer to be refined and sculpted. Although the scanning process gives an accurate big-picture model, hair and feathers are hard for the apparatus to detect, as are small intricate areas. Thus, working from photos, refinements were made using digital sculptural tools to accentuate important visual cues and areas such as the face, claws, and musculature of the back and wings.

It is here in Meshmixer where the faceted surface quality of the sculpture is finalized. Automatic polygonization of scanned models is a common digital practice; however, we go a step further by manually sculpting the important areas, and edit with the foresight of the large-scale engineering necessities which will come into play down the line. The final visual aesthetic spans the duality of natural and technological.

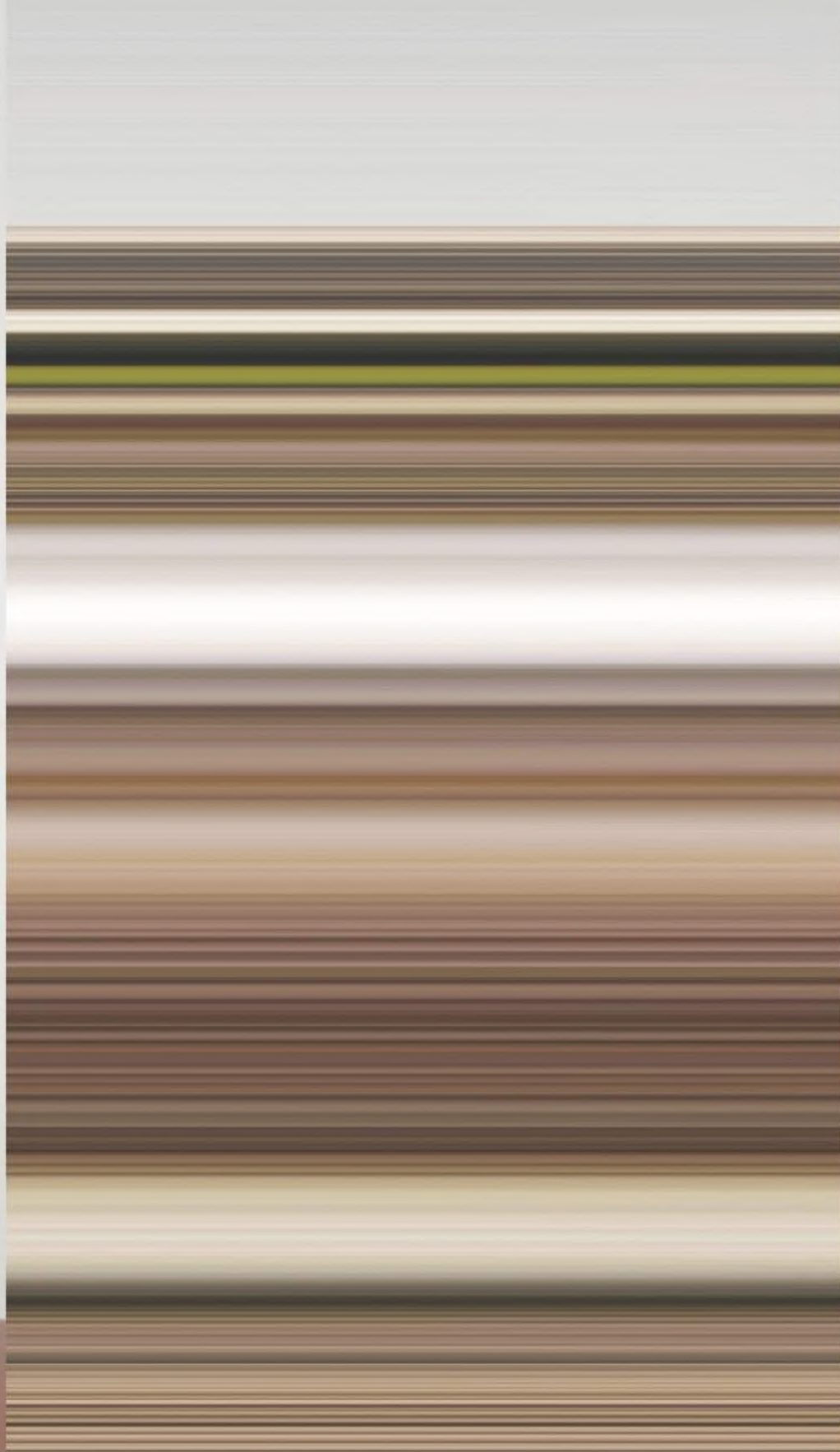




Design Process Arrangement

Combining conceptual elements, design strategy, and real-world considerations is always an iterative exercise. It was important that the owl be slightly larger than the average person, and that the overall height of the sculpture be around 10' tall. This triggers instinctual feelings of deference toward the owl, and puts the entire sculpture at a scale that will not be diminished in an outdoor setting. A seating element, following common standards for height and depth, was added to enhance placemaking

presence and to house the mechanical interaction components. The public seating then informed the size and orientation of the dodecahedron, which in turn shaped the maximum scale of the owl. Through an iterative process of multiple size options, the combination of owl, dodecahedron, and public seating was integrated and refined. The balance of these three elements resulted in a sculpture whose internal relationships are cognizant of each other and of the scale and considerations of an urban environment.



Design Process

Color Palette

To help guide the color palette for the sculpture, we referenced the natural tones of the real owl using a method known as 'pixel stretching'. A single vertical line of pixels is isolated from a photograph of the owl, and then stretched horizontally, making the pixel colors apparent. Even in just one line pixels, the essence of the natural palette expresses itself.

The resulting aesthetic evokes sedimentary geological layering, of time before history, while also alluding to the current computational restructuring of natural forms common in laser cutting, 3D printing, and CNC fabrication. This direction and color palette is used to inform the material and physical choices.



1 - White Onyx

2 - Whisper

3 - Hickory Smoke

4 - Witch Hazel

5 - Saffron

6 - Allspice

7 - Linen

8 - Canyon

9 - Silt

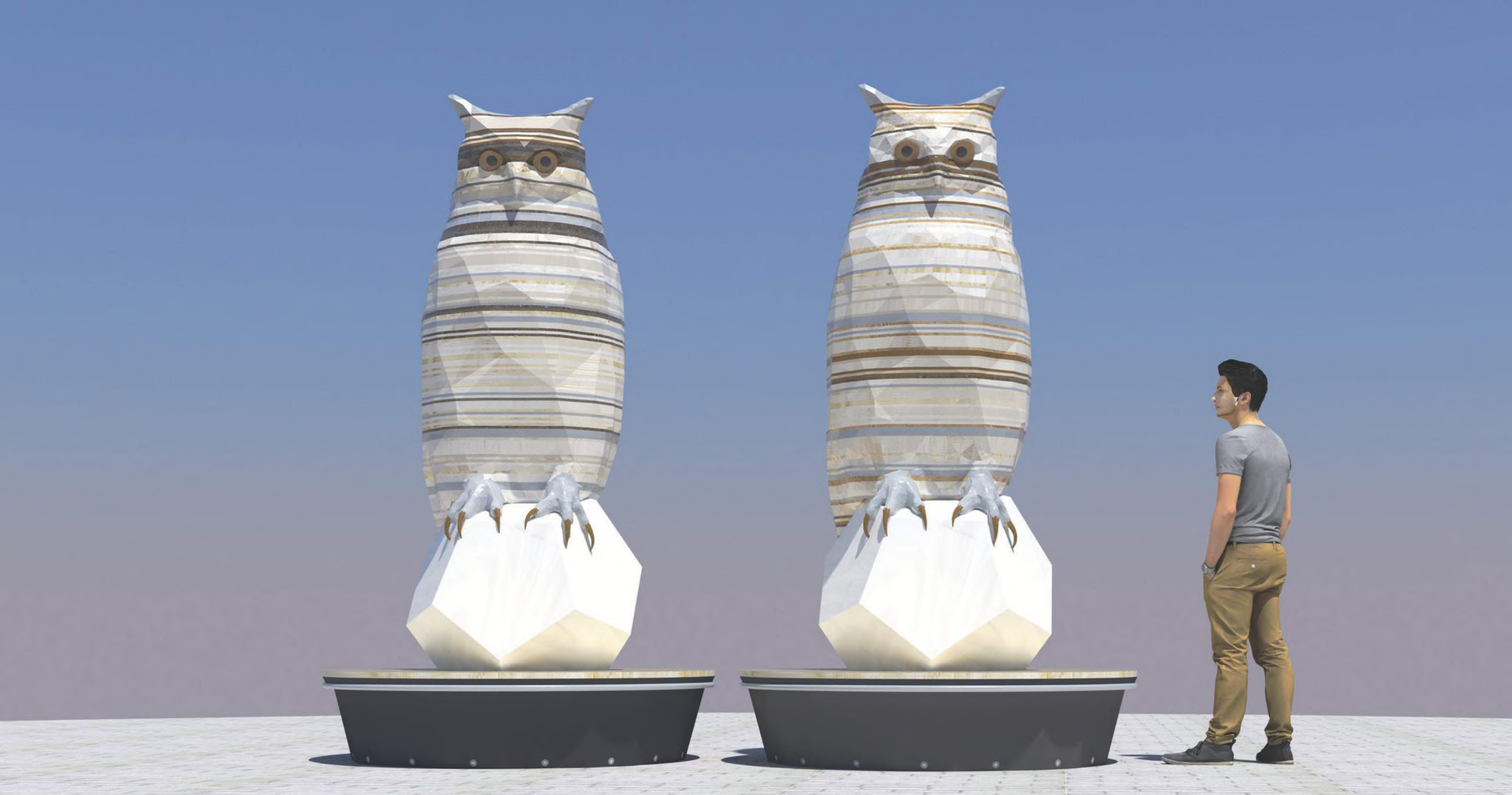
10 - TIVAR

11 - Aluminum 6061

Design Process Materials

It was necessary for the material of the owl to reflect the dualities already present in the concept and design of the work. This material needed to communicate the natural palette of the owl and also reference geology. Simultaneously, it needed to be manufacturable with modern techniques and resistant to both weather and vandalism. Wonderfully, Corian satisfies all these requirements, and sits comfortably in the tricky duality of nature and technology.

Corian is a synthetic material which recreates the aesthetic of natural stone. Within the diverse Corian color library we easily found textures that embodied our owl / geology color palette. It is scratch-resistant, easily repaired in situ, and cleanable with common products. Perhaps most incredibly, certain variants are transmissive to light, giving select elements of the sculpture stone-like appearance in the day and internal illumination at night.

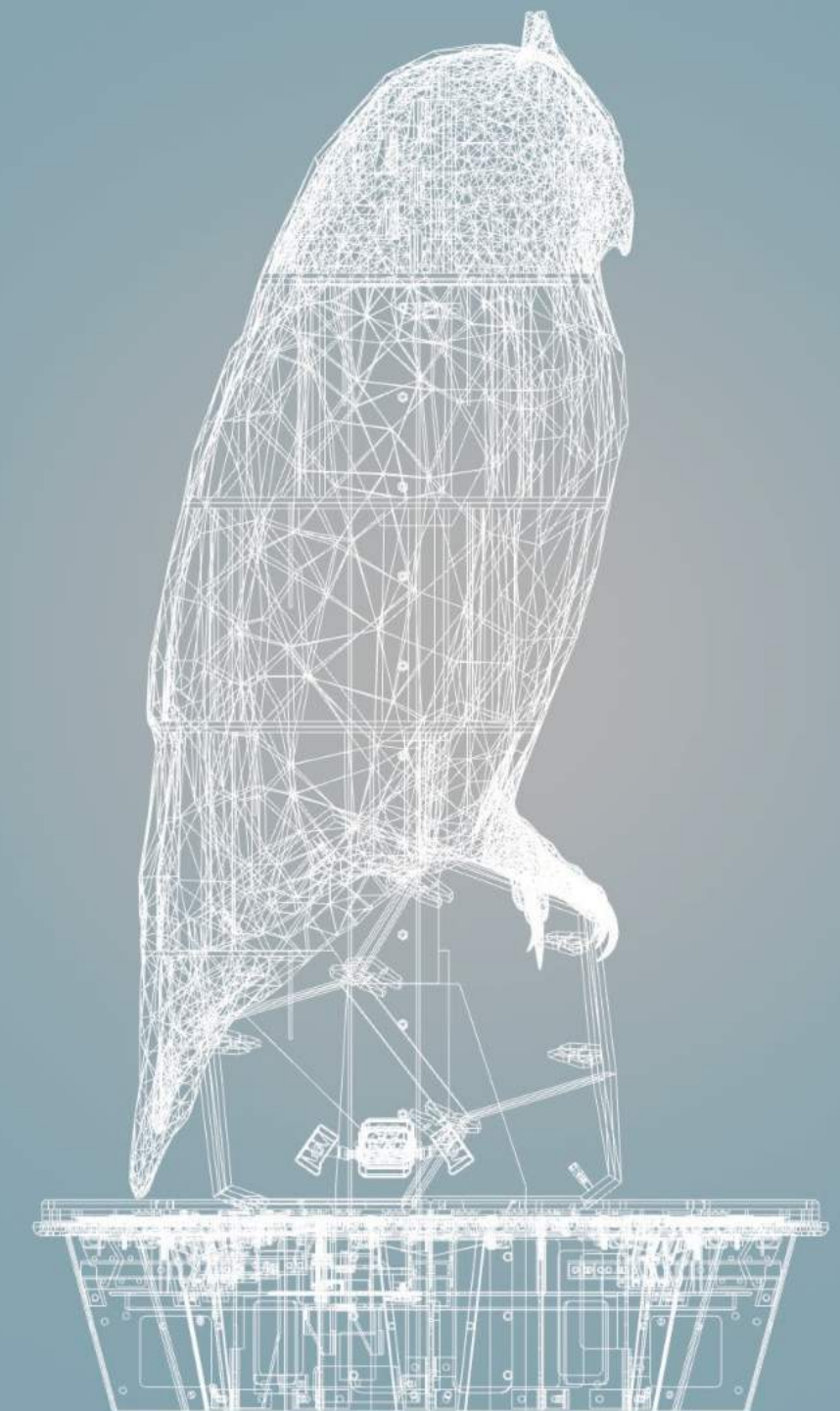
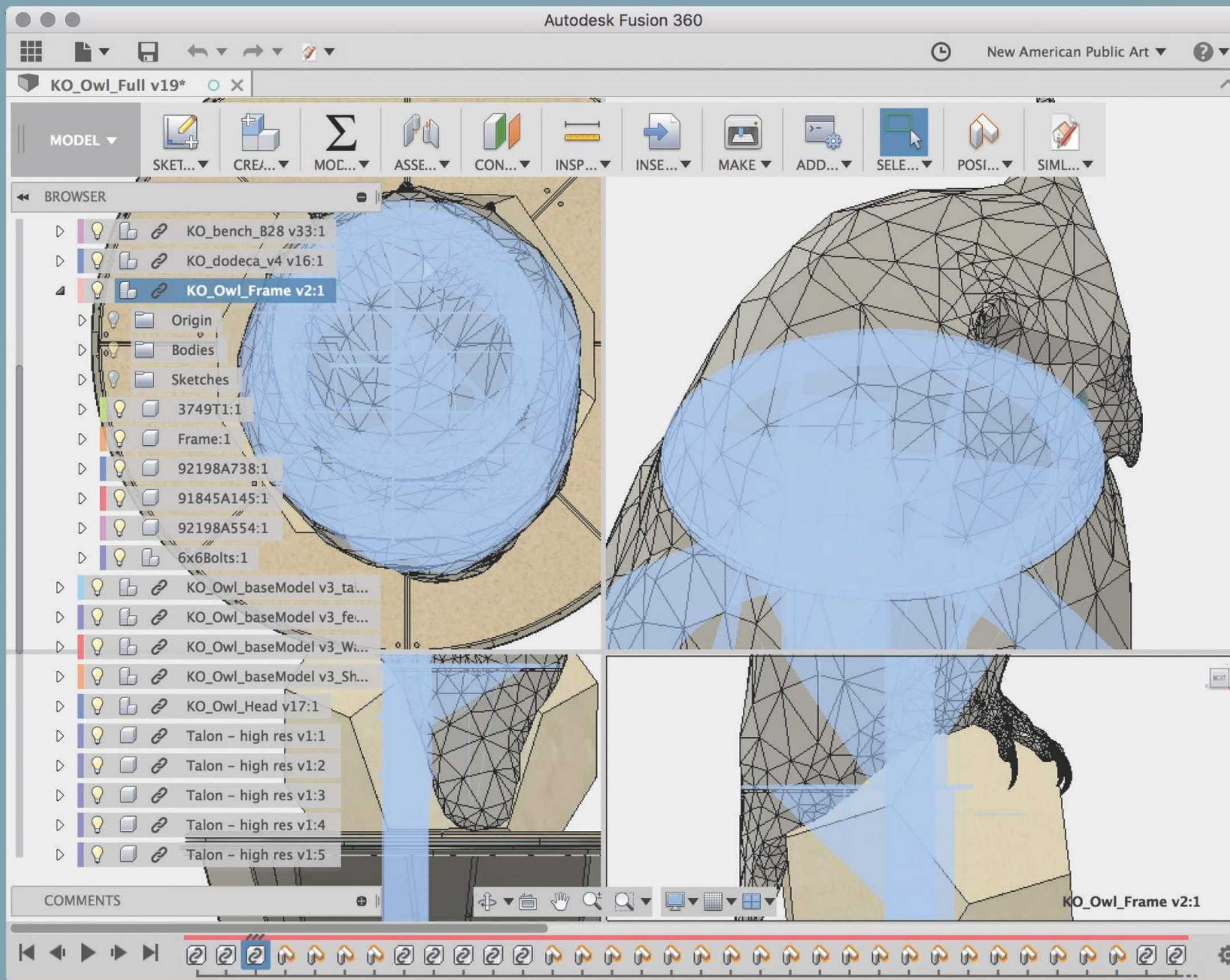


Design Process

Personalities

Though geometrically identical, each owl was given a different aesthetic layering. We wanted to create distinct personalities between them while keeping within the color palette. The owl on the left was given a dark band above its eyes and highly contrasting layer orders, creating a more ominous effect and masculine impression. The owl on the right was given darker bands below its eyes and smoother transitions in layer tonality, creating an approachable, wiser, and more feminine effect.

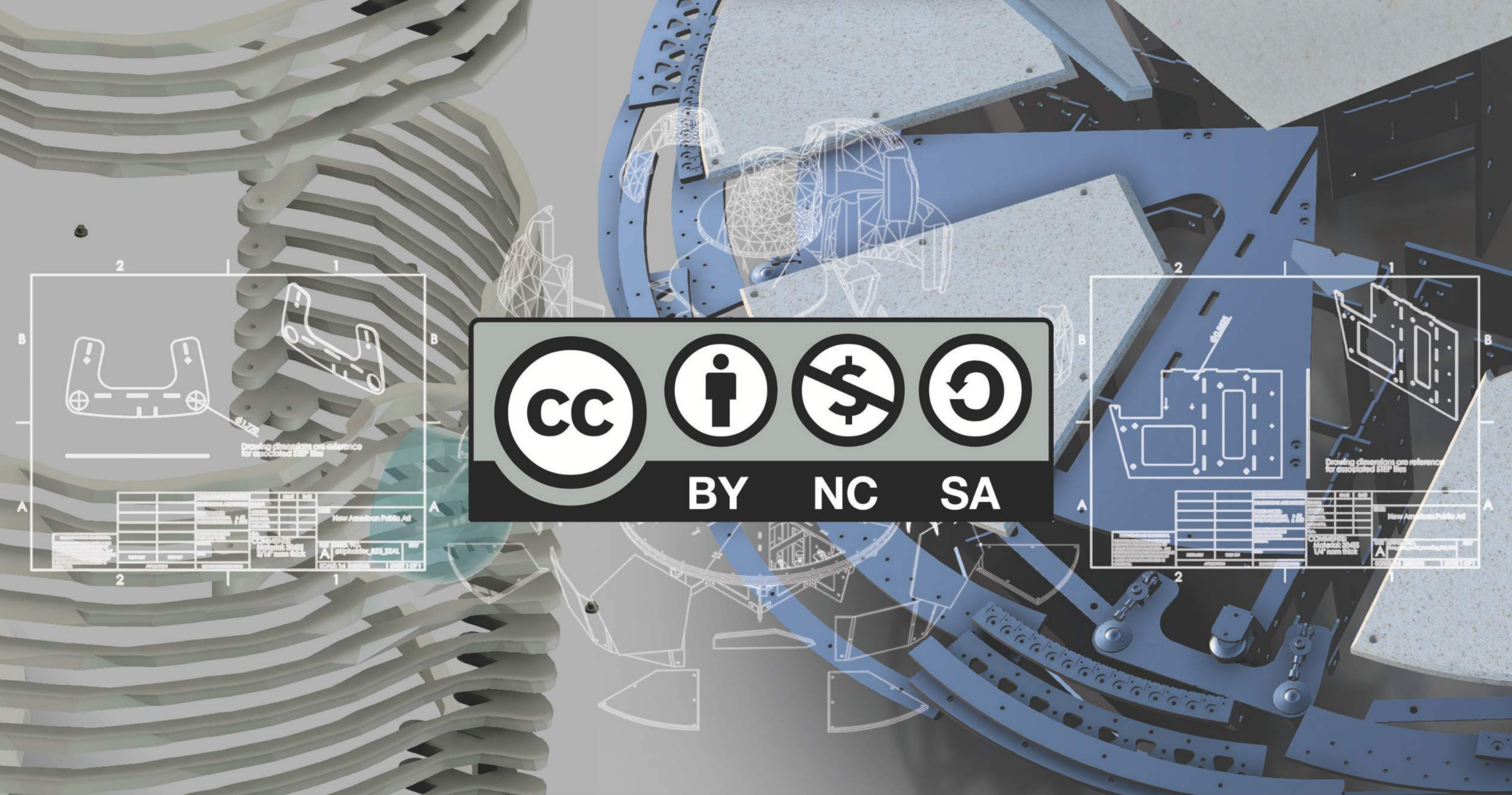
This contrast is a subtle nod to the dichotomy of how owls are represented in myth. Many Native American stories depict the owl as an ominous warning and symbol of death. Conversely, the ancient Greeks held the owl as a symbol of knowledge and intellect. The owl of Athena, the goddess of wisdom, was inscribed onto Greek currency. We find this juxtaposition beautiful and fitting, that a single animal can inspire associations across the duality of the known and the unknown.



Design Process Engineering

The aesthetic design meets rigorous engineering in Autodesk Fusion 360. Here we bring the design into reality, assembling and connecting the mechanical, electrical, and material elements. For each of the 600+ individual pieces that comprise each sculpture we address weather stability, mechanical wear, off-the-shelf replaceability, maintainability, and manufacturability. The engineering of structural connections, lighting solutions, and novel mechanical apparatuses is done in-house to ensure

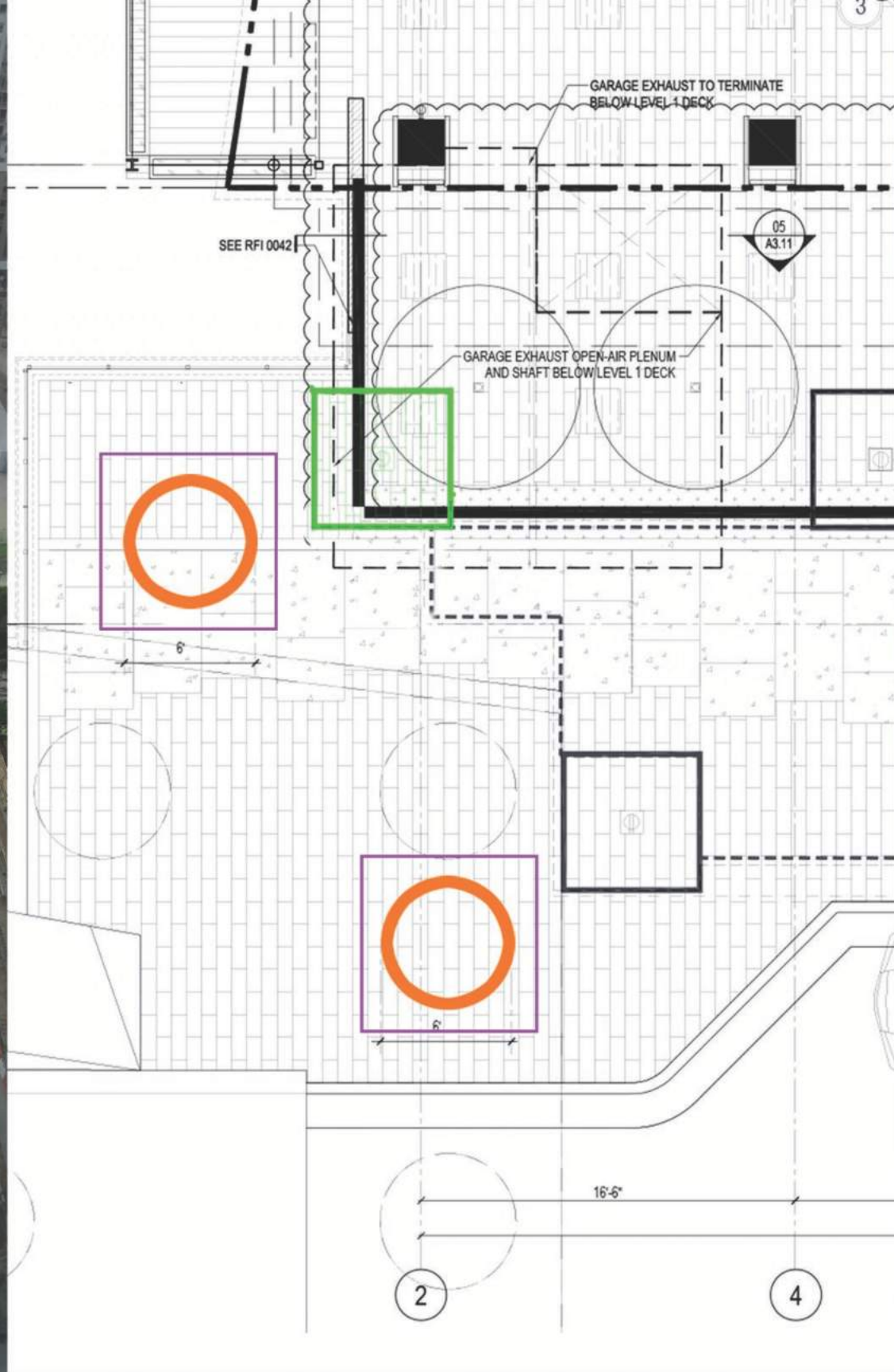
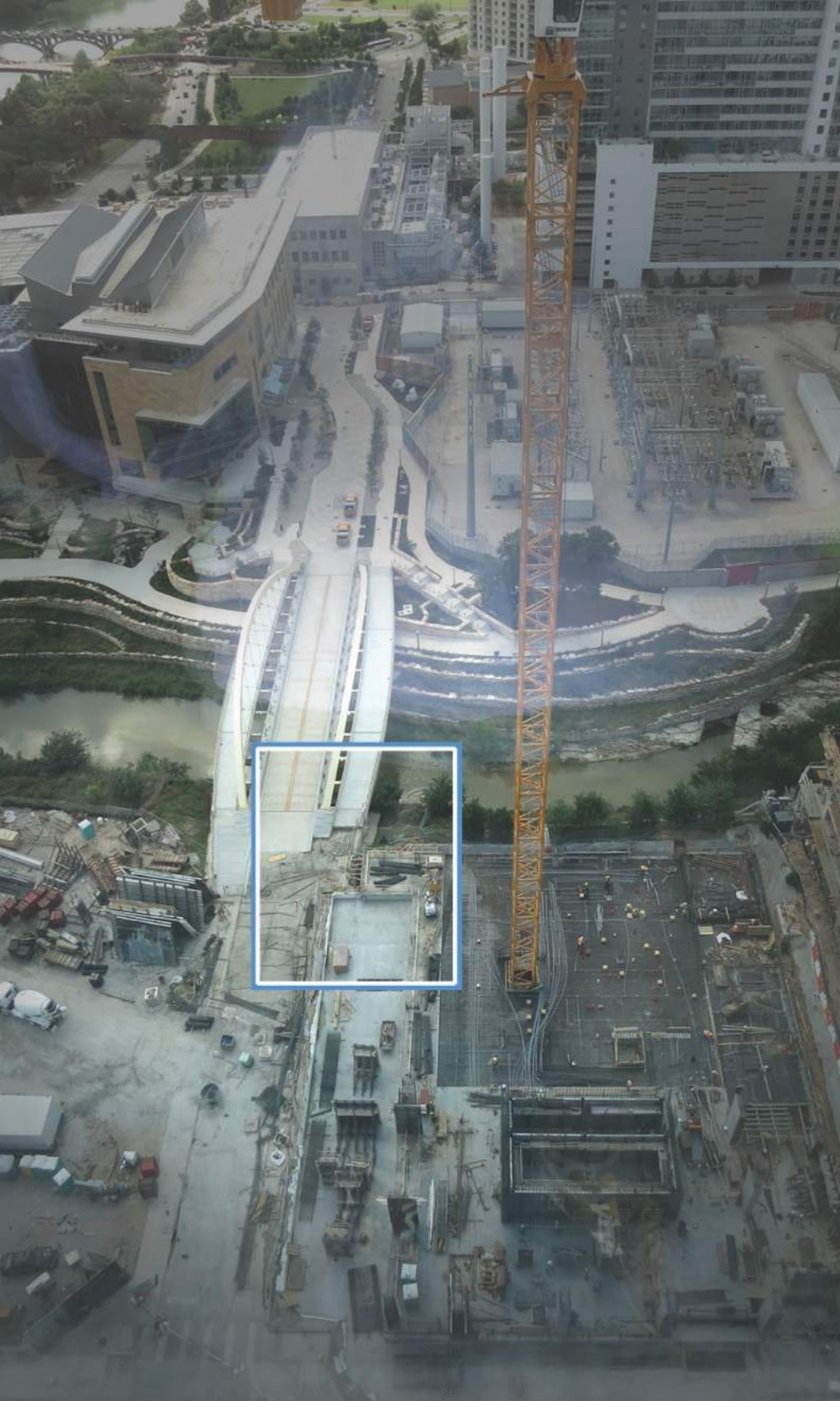
coherence and compatibility. We leverage industry-standard solutions from architecture, marine, automotive, and consumer product fields. This ensures support and supply chain stability, enhancing lifetime conservation of the work. This engineering is mostly invisible to the average participant, resulting in an immersive experience. However, since the mechanical designs are open sourced, the curious will be rewarded with as detailed a view of the mechanism as they desire to see.



Design Process Open Source

For public art to truly be a catalyst for inspiration, we believe it needs to go beyond its aesthetic contribution and take steps toward generating resources for the creative community. To actualize this belief, we are working to make the designs of all our past and present projects open source and readily available to makers, builders, and the curious. In this way we hope to lead by example and usher in a new era where public art is truly “public” in all its forms, from conception to completion.

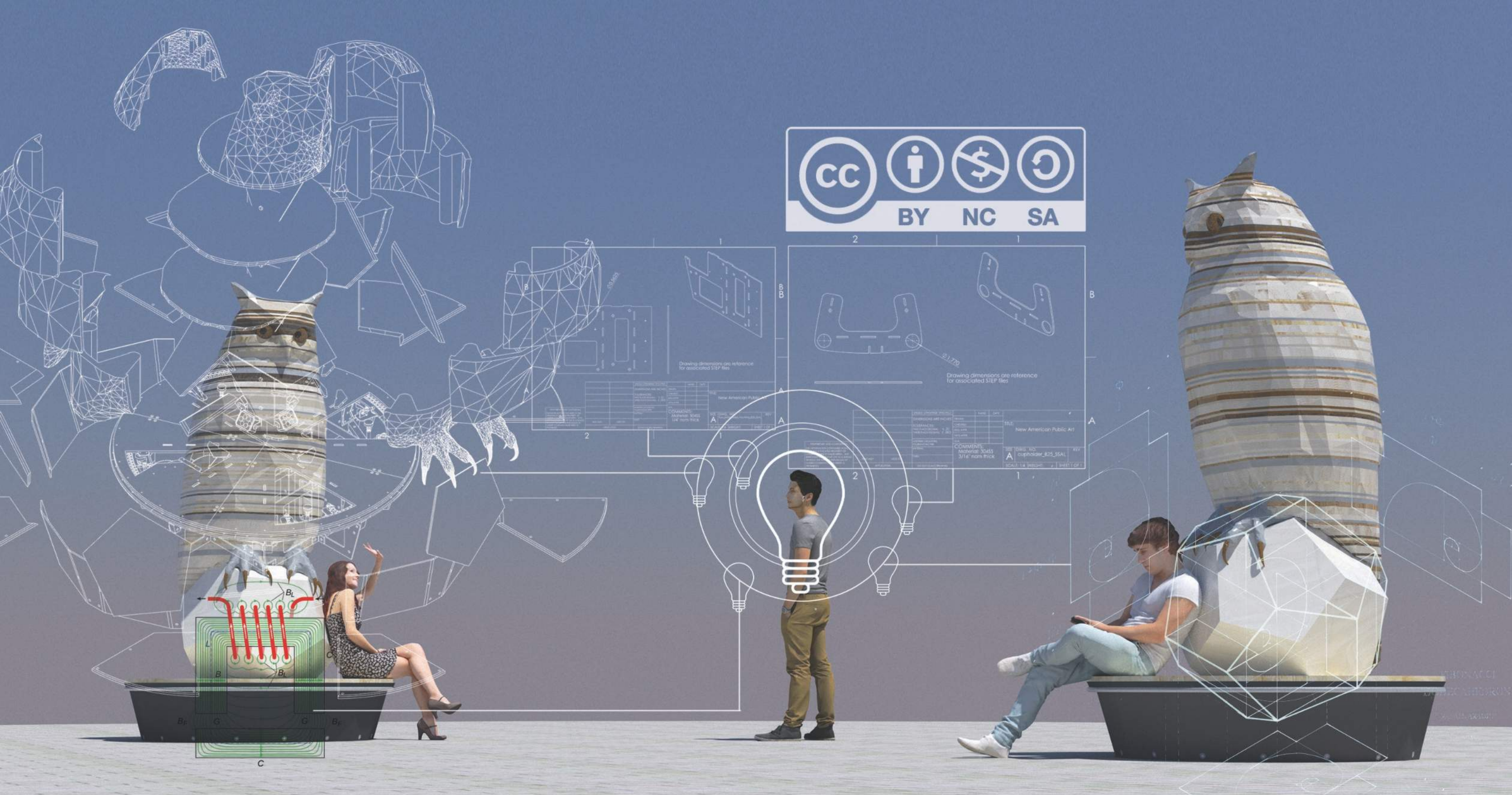
We are excited that for this project, in partnership with the City of Austin, all the designs and documents associated with Kempelen’s Owls will be attributed a creative commons Share-alike non-commercial license [CC BY-NC-SA 4.0]. To our knowledge, this is a first in the world of public art. This creates an opportunity to generate additional interested and utility of the artwork. We are pursuing relationships with local institutions to usefully integrating this work into their educational activities.



Design Process Placement

The work's final placement at the entrance of the new 2nd street bridge is a natural and ideal one. Perched on an overlook and the last expanse of sidewalk before the bridge, the owls watch over the stream ecosystem below. Pedestrians flow between them, giving them a sentry-like quality as they guard an invisible gateway through the Seaholm district. This boundary position, in combination with their recognizable form and seating elements, creates a natural meeting place. "At the owls, by the bridge".

Their bodies are arranged orthogonally to each other to maximize pedestrian attention. The northern owl faces the sidewalk, while the southern owl faces the bridge. Although the owls will exist on only one of the four properties at the new 2nd Street and Nueces intersection, their presence will create an identity for the whole block and will be an asset to the entire New Knowledge District.

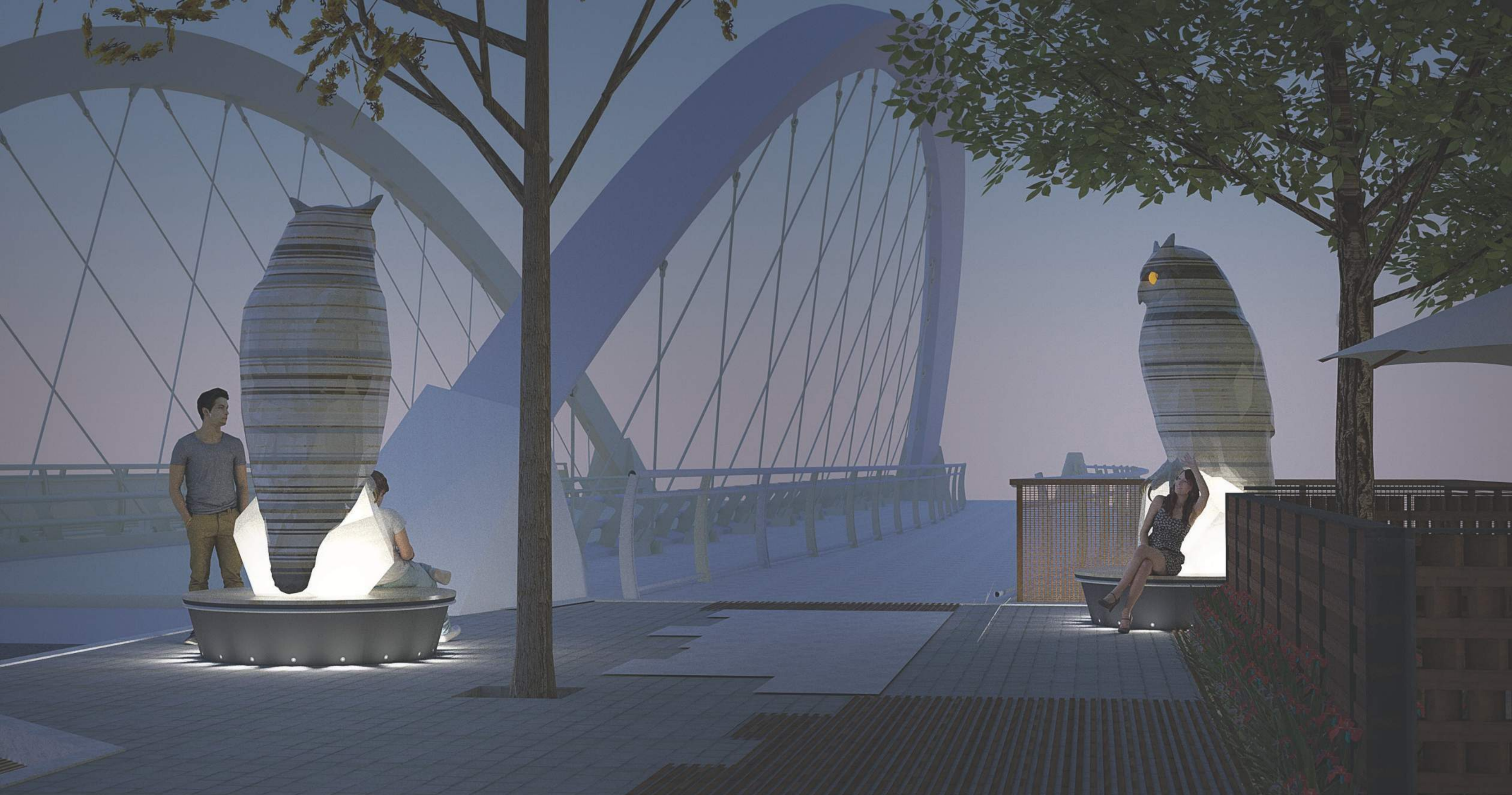


Goals

Advancement of Public Art

Kempelen's Owls represents a new paradigm of making public art: highly engineered, interactive, and open source. Developed in modern makerspaces and built using cutting-edge manufacturing techniques, this new approach lives as both a physical work and as digital assets. Discarding traditional assumptions about proprietary artistic techniques, material sources and reproductions, the new methodology manifests as a resource for the creative economy. For both inquisitive pedestrians and motivated

makers, Kempelen's Owls rewards the curious and provides multimodal resources for better understanding public art. The visual elements of the sculpture are technological and geometric but driven from natural forms and palettes, approachable yet intriguing. Their interrelation to the nearby natural stream setting and the manmade urban landscape creates an aesthetic and conceptual bridge between the two, uniting the Seaholm District's disparate influences.



Goals

Sense of Place

Placemaking occurs in the hearts and minds of people. No art or architecture can guarantee this sixth sense, but a thoughtful design can encourage its manifestation. Kempelen's Owls leverages three major design aspects toward this goal (all previously mentioned but collated here).

Location: Placed on a natural border/transition, the focal qualities of the location and the gateway presence of the sculptures reinforce each other.

Language: The easily describable owl is socially fluid, jump-starting community adoption. Their recognizability and shareability create and sustain buzz, contributing to the sense of place.

Secrets: The kinetic motion imparted by the mechanism brings an element of delightful surprise, imbuing the area with a duality of playful delight and serious repose.



Goals Interactivity

New American Public Art believes that true interactivity only occurs between people. As long as people find other people interesting, an interactive artwork that translates the actions of people between each other will be timeless. Kempelen's Owls uses and builds on this concept. The work's interaction mechanism is designed to be used clandestinely while seated at either owl. In this way the sculpture's translated action can appear to have a mind of its own. A powerful relationship is created between

participants who may in turns be unaware, become tricked, are in-the-know, or are 'pulling the strings'. Enabling the public to directly control the motion of the owls amplifies the agency that people have over this environment, creating a truly engaging and transformative art experience. The artwork transforms itself in appearance and mood from day to night, using illumination to reveal parts of itself and its environment, changing how people experience their setting depending on the time of day.



Goals

Urban Environment

Kempelen's Owls integrates into the Austin streetscape in many ways. Designed to aesthetically fit in the Great Streets theme of Rivers and Streams, it also provides public seating for 10 comfortably. At night each sculptural base provides area and sidewalk illumination. The work is ADA compliant and built to be interactive for all ages, during both day and night.

Modularly engineered with durability and maintenance in mind, Kempelen's Owls has received a glowing review by one of Austin's preeminent art conservators, Smith Art Conservation LLC. The concept, design, engineering and open source philosophy of Kempelen's Owls are tailored for Austin's New Knowledge district. Its addition to any streetscape would be beneficial, but here it plays a specific and symbolic role for a new, inquisitive, and engaged community.



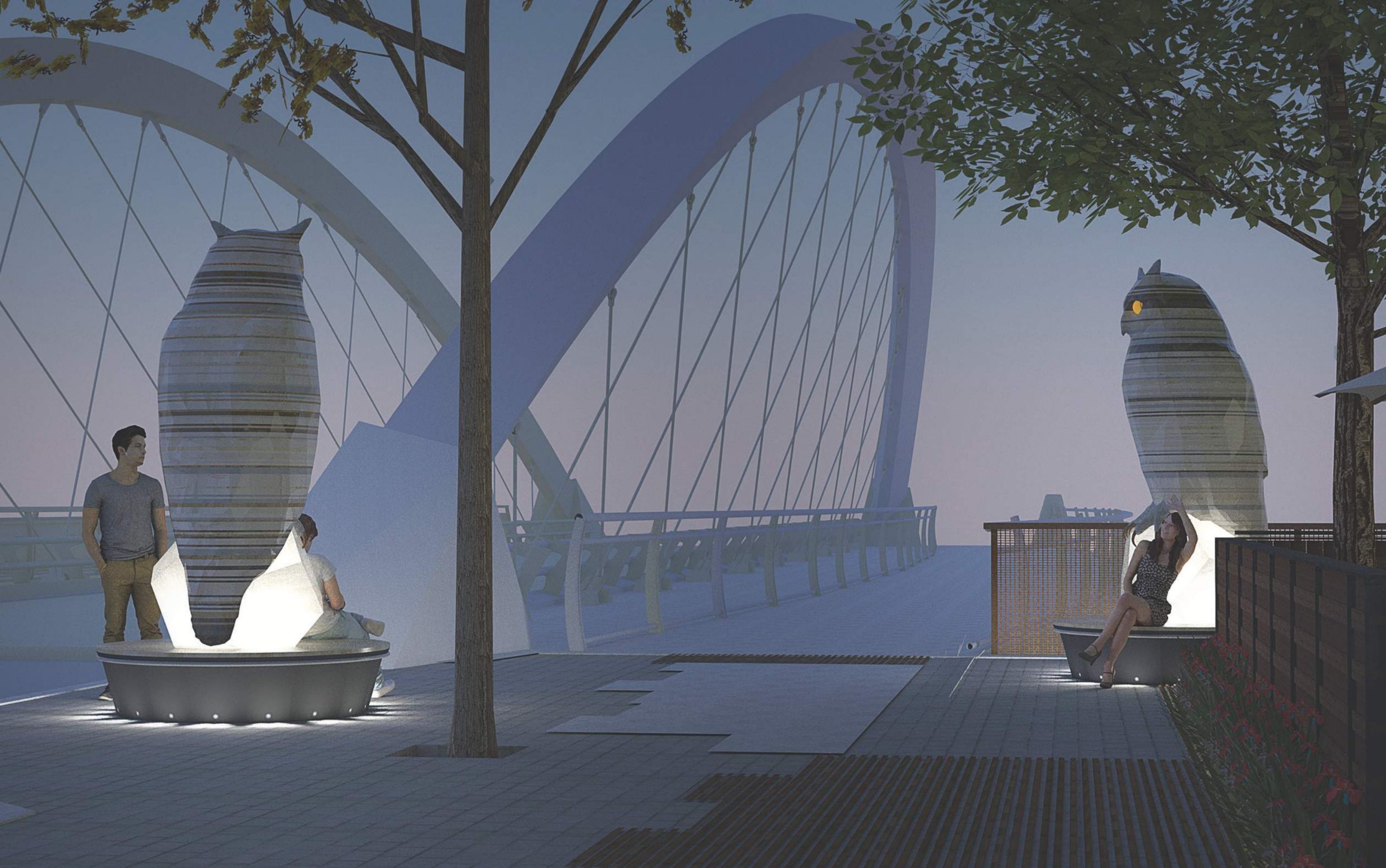






























Additional Exhibits

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