

Re_Formed

The project Re_Formed is composed of four original hand-carved sandstone objects, digital 3D models generated by scanning the original objects, and files for 3D printing replicas/variants of the original objects. This work relies on viewers' interaction with the digital format to produce the associated "re-formed" digital variants. The Re_Formed project encompasses the original carvings, the virtual models, and printing files, and links to all iterations of the re-printed files - the originals re_formed. The digital components of this project are located at www.audreyshakespeare.net

Project Context

On March 20, 2020, I was in Jaipur, Rajasthan, on a Fulbright grant working on material and tool research, when I received a call from the Delhi consulate requesting that I travel to New Delhi immediately. India had announced its borders' imminent closing on March 22, and all foreigners on research visas were asked to depart. Within 10 hours of the phone call I was sitting in the Delhi airport, with bags packed and two small pieces of Rajasthani sandstone safely stored amongst my belongings.

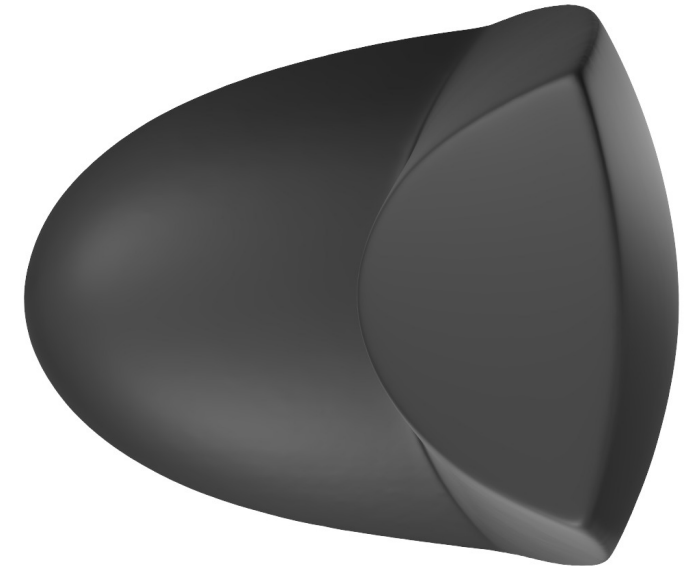
For me this material carried with it the heat, joy, and dust of the desert. I landed in San Jose, California, to quarantine with family, arriving to deserted highways and overcast chilly mornings.

Quiet, distant, un-touchable.

The immediate familiar was abundantly available, but access to anything external to the established "shelter-in-place" location was accessible only via digital platforms. The screen was both access to, and barrier from, information on the external world.

Opportunity, limitation, access.

The desire to touch, hold, and connect, led to the physical and digital design of Re_Formed, objects carved to be held in the hand, experienced across formats.



Object 3. Sandstone. 72 x 70 x 79 mm, (12.8 oz). 2020



Object 2. Sandstone. 70 x 80 x 70 mm, (8.8 oz). 2020



Object 4. Sandstone. 70 x 102 x 64 mm, (13.4 oz). 2020



Object 1. Sandstone. 67 x 89 x 101 mm, (11.4 oz). 2020

Sandstone Objects

Each Re_Formed object was designed to be hand-held. The sandstone originals were hand-carved, resulting in the slight irregularities in the geometry seen in the digital scans. The sandstone lends a significant weight to the objects for their size - average weight of the sandstone objects being 11.6 oz compared to the average weight of the 3D print which is 1.5 oz.

Given the distinct strata layers of this sandstone, each object was carved out of a stone block in an orientation that would highlight these lines around each object's subtle curves.

Digital Models

The project webpage hosts an interactive 3D model of each object which can be rotated on-screen to see the objects from all sides. These models were generated by digitally scanning the original sandstone carvings. The models can be explored in further detail by downloading the files from Sketchfab or Thingaverse and opening them on your device with any 3D modeling program. In either Sketchfab or Thingaverse, search for “Re_Formed” to bring up the project.

<https://audreyshakespeare.net>

3D Printing

The same Re_Formed project files from Sketchfab or Thingaverse, can be used to 3D print. The 3D files are a 1:1 scale with the original objects. If no modifications to the project files are made, and they are printed as-downloaded, the resulting 3D printed object will be an exact dimensional replica of the original sandstone object. Videos of an example print in-process can be viewed on Vimeo. The example video used Cura for a slicing software, and is printed using black PLA filament on a Creality CR-10S.

<https://vimeo.com/482800172>

<https://vimeo.com/482793103>

Augmented Reality Objects

The AR (Augmented Reality) models can be used to interact with the Re_Formed objects as digital overlays onto a live-view of your physical surroundings using a smartphone. The easiest way to link to these models is to open the project webpage on your smartphone. Each AR link on this page will open a browser window that will load a model of the object. To view the object in AR, click on the rectangle with AR in the upper right corner of the screen. The AR objects can be re-positioned, rotated and scaled, by moving your finger across the smartphone screen once the AR object model loads. The AR object will initially load at 100% scale - this is a visualization of the exact size the original sandstone object would be relative to the physical objects seen through your smartphone's camera.

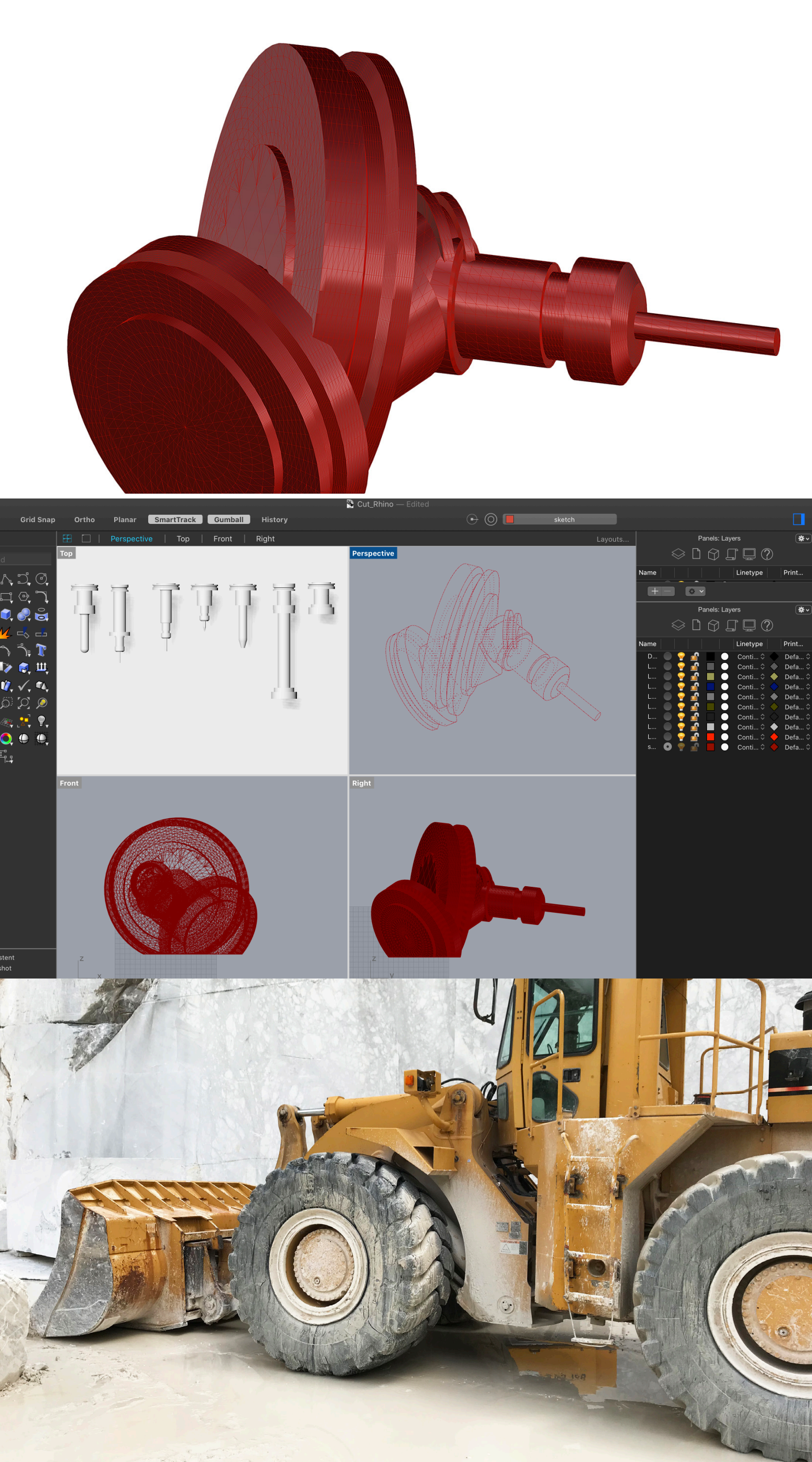


Fulbright Scholar: 2019-2020
Grant Dates: (Expected) Jan 1 - July 1, 2020. (Actual due to global COVID outbreak) Jan 1 - March 21, 2020

Jali Screens of Northern India: Investigating a Sculptural Framework for Perception, was a Fulbright-Nehru project researching the Jali screen's sculptural significance as an object that focuses the viewer's awareness on the act of looking. This project was to be a hybrid research/creative-project, the initial research forming the springboard and reference for a new series of sculptures examining how we frame the act of "looking" toward someone or someplace today.

Stone, Tool, and Process Research. (Photos Above)

Process and material reasearch in several locations in Jaipur, Rajasthan, and New Delhi, Delhi, completed as a component of the Fulbright-Nehru grant. I use research into historical and contemporary stone carving formats and techniques as a catalyst for both conceptual and technical components in my work. Documentation of tools, practitioners, and the surrounding carving environment, is a large component of my studio practice. The above montage showcases hand-made steel/carbide chisel production, "soft impact" hammer style (significantly different from a European style), and a collection of stone yards and carvers.



Digital Stone
June 1, 2018 - July 2, 2018

I participated in the 2018 Digital Stone Project, where I completed the carving *Cut: Digital File to Marble Form* (rendering pictured above). The Digital Stone Project is an annual event that brings together an international cohort of designers, architects, artists, and programmers at the Garfagnana Innovazione studios in Italy. The composition for *Cut* is an abstract digital collage of seven different mechanical cutting heads used in the CNC stone milling process. Designed entirely with pre-existing data points (3D models of physical milling bits - the

component of the robotic arm that makes contact with the stone) the composition aims to capture the elegance of repetitive motion seen in the milling process. *Cut* was milled on a 7-Axis robotic water-cooled mill, in Venato Orto di Donna Marble and exhibited in Carbo Nato di Calcio, Villa Bertelli, Forte dei Marmi, Italy.

(Photos Above) Stone research in Tuscany, Italy, at the Cava Focolaccia Quarry, located at the Focolaccia pass, 5,490ft above sea level, between the Monte Tambura and Monte Cavallo. In the heart of the Apuan stone district, the quarry is developed in 29.61 acres and cut with 45-degree benches in order to better exploit the morphology of the mountain. Stone for *Cut: Digital File to Marble Form* was sourced here.



Image/Object

A series of sculptures exploring the moment of transition in perception between a two-dimensional graphic silhouette and a three-dimensional form. The work in this series is designed to recede into 2D graphic “icons” when viewed from center mass, and “pop” into complex 3D geometry when viewed at any other angle. The series is composed of quadrilateral objects, each sculpture is a composition of variations of this one shape. The only flat surfaces of the sculptures are the parallel sides between components and the back surface that is parallel to the wall; all other surfaces are subtly twisted planes. Each work in this series is wall mounted. Custom-designed aluminum cleats float the stone objects a quarter of an inch off the wall. These cleats balance out uneven weight distribution of individual elements to maintain the precise spacing of the relative components. The upper or “tongue” half of the cleat is epoxied to the back of the stone element, and it’s corresponding lower or “groove” half is affixed to the wall.

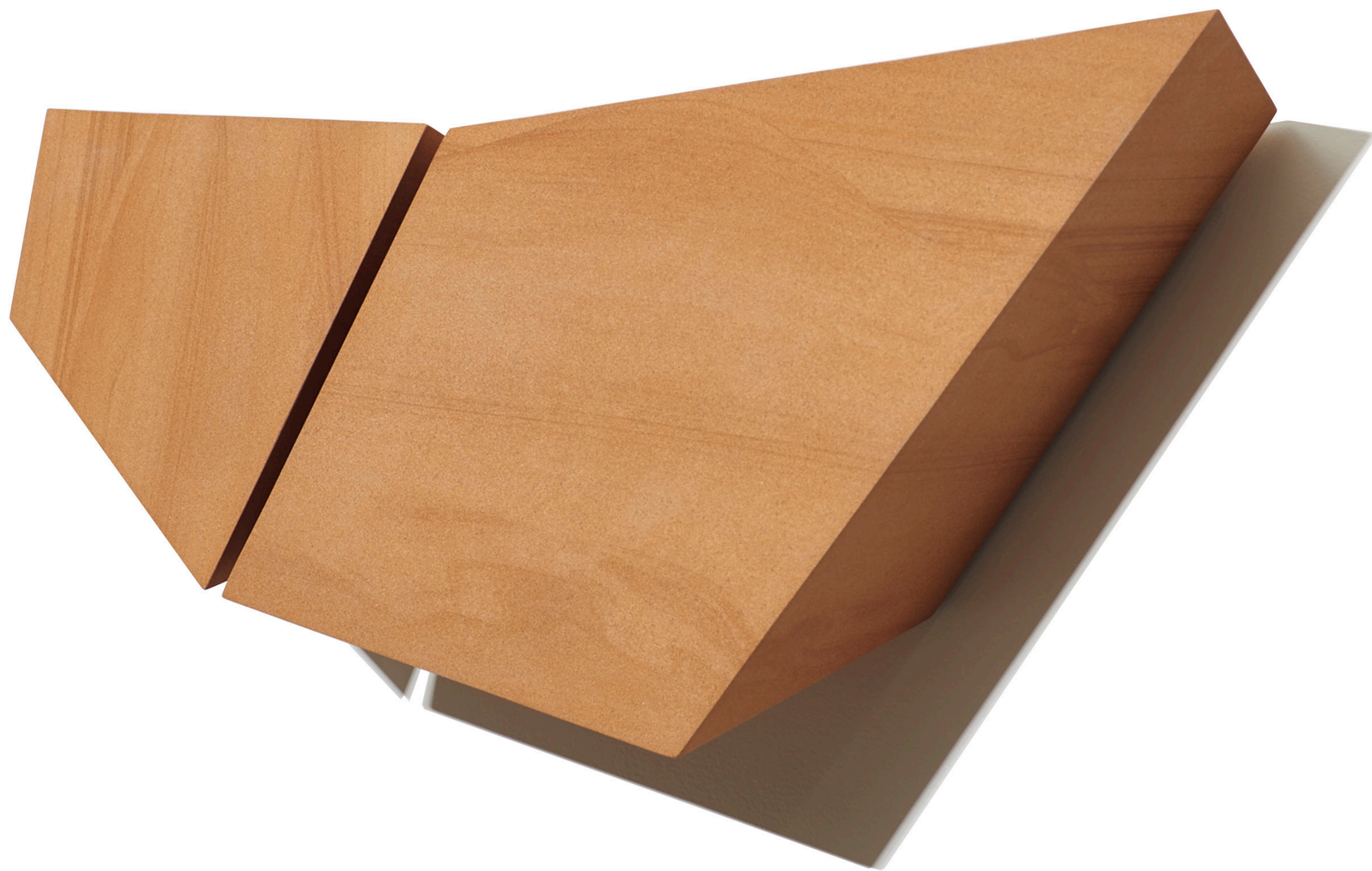
SV. Arkansas Batesville Marble, 35in x 34in x 4in. 62lbs.

Photograph taken from the left side of sculpture; the next photograph is taken from front center in an attempt to capture the desired effect in two images.



SV. Arkansas Batesville Marble, 35in x 34in x 4in. 62lbs.

Photograph taken from front center of sculpture.



SIII. Sandstone. 24in x 12in x 5in. 43lbs.

Photograph taken from the right side of sculpture; the next photograph is taken from front center in an attempt to capture the desired effect in two images.



SIII. Sandstone. 24in x 12in x 5in. 43lbs.

Photograph taken from front center of sculpture.



SI. Tuxedo Limestone. 30in x 19in x 4in. 37lbs.

This photograph of the work is on the left side, the next pdf page photograph is taken from center in an attempt to capture the desired effect in two images.



SI. Tuxedo Limestone. 30in x 19in x 4in. 37lbs.

Photograph taken from front center of sculpture.



Image/Object

The Image/Object Wall installations are built to operate in a similar manner to the stone carvings, but here the focus is on having the “objects” disappear into the architecture of the wall. These structures are built directly off of pre-existing walls, with their surfaces blending into the painted drywall.

WI. Metal, Wood, Plaster, Paint. 8ft x 28 ft x 3.5ft. 2015.

Photograph taken from front center of sculpture.