

SOUTHWEST APPROACH VIEW



SUNDANCE

LUKE COMMONS

FOURTH YEAR
B.S. IN ARCHITECTURE
THE UNIVERSITY OF CINCINNATI

[Redacted]
(PRIMARY CONTACT)

RAVI KUMAR

FOURTH YEAR
B.S. IN ARCHITECTURE
THE UNIVERSITY OF CINCINNATI

[Redacted]

NATALIE OVERSTREET

FOURTH YEAR
B.S. IN ARCHITECTURE
THE UNIVERSITY OF CINCINNATI

[Redacted]

REECE SHERMAN

FOURTH YEAR
B.S. IN ARCHITECTURE
THE UNIVERSITY OF CINCINNATI

[Redacted]

JOYCE ZHENG

FOURTH YEAR
B.S. IN ARCHITECTURE
THE UNIVERSITY OF CINCINNATI

[Redacted]

MOA
MUSEUM OF
OUTDOOR
ARTS

THE TEAM



**LUKE
COMMONS**

Luke was born and raised in the suburbs of Indianapolis and acquired an interest in art and design at a young age. Starting his first architectural internship at 16, Luke has spent the past several years gaining professional experience and honing his skills as a designer. A natural leader, he hopes to one day open his own firm and leave behind an enduring legacy of unique creativity. For the near future, however, Luke is focused on securing/ saving up funds and enhancing his portfolio in preparation for pursuing a master's degree and subsequent licensure.

STUDIO M ARCHITECTURE
CARMEL, INDIANA
AUGUST 2018 – APRIL 2022
MAY 2023 - PRESENT

STANTEC, INC.
CHICAGO, ILLINOIS
AUGUST 2022– DECEMBER 2022



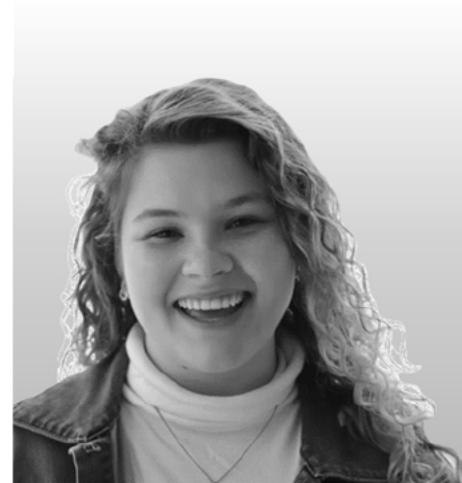
**RAVI
KUMAR**

Ravi, a Columbus, Ohio native, has long been fascinated by the built environment and its everlasting impact on its inhabitants. He has taken particular interest in the careful sculpting and gestural design involved in shaping contextually responsive urban environments. With constant input from existing conditions and contemporary solutions, his work has led him to architectural design positions in four distinct cities. Continued experimentation with material science and parametric design will drive his pursuit of a dual masters in Architecture and Urban Design at the University of Michigan.

PERKINS EASTMAN
NEW YORK, NEW YORK
MAY 2023 – AUGUST 2023

HARTSHORNE PLUNKARD
CHICAGO, ILLINOIS
AUGUST 2022 – DECEMBER 2022

BOWER LEWIS THROWER
PHILADELPHIA, PENNSYLVANIA
JANUARY 2022 – APRIL 2022



**NATALIE
OVERSTREET**

Natalie is originally from Naperville, Illinois and is greatly influenced by the mix of new and historical architecture in Chicago. She is in the historical preservation certificate program at the University of Cincinnati and has worked with the Smithsonian Institute in D.C. as well as participated in many historical preservation and adaptive reuse projects in northern Kentucky and Cincinnati. Post-grad Natalie plans to continue working in the historical field and eventually pursue a master's degree and licensure.

WORK ARCHITECTURE + DESIGN
COVINGTON, KENTUCKY
MAY 2023 – AUGUST 2023

EARL SWENSSON ASSOCIATES
NASHVILLE TENNESSEE
AUGUST 2022 – DECEMBER 2022

ARCHITRAVE P.C.
WASHINGTON, D.C.
JANUARY 2022 – APRIL 2022



**REECE
SHERMAN**

Reece was born and raised in Troy, Ohio. Following in the footsteps of his grandfather and uncle before him, he has been immersed in the design field since a young age. Currently pursuing his studies at the University of Cincinnati, he concentrates on renewability and sustainability. Engaged in the AIAS program, he also contributes to the athletic sphere as a coach at Dayton Football Academy. Post graduation, Reece has secured admission to the architectural graduate program at the University of Cincinnati, with aspirations to obtain licensure thereafter.

ALAMEDA ARCHITECTURE
CINCINNATI, OHIO
JANUARY 2023 - PRESENT

SMP DESIGN
CINCINNATI, OHIO
JUNE 2023 – PRESENT

COURT ATKINS GROUP
HILTON HEAD, SOUTH CAROLINA
AUGUST 2022 – DECEMBER 2022



**JOYCE
ZHENG**

Joyce, originally from Greenville, North Carolina, strives to base her work around sustainability, cultural sensitivity, and appreciation. She is certifying in urban design with a focus on green methodologies at the University of Cincinnati and has contributed to a diverse range of projects globally. She has also participated in extracurricular projects, notably an installation at the CAC in Cincinnati, Ohio, focused on rammed earth. Post-grad, Joyce plans to pursue a master's degree and licensure in architecture.

RESILIENT COMMUNITIES
RABAT, MOROCCO
MAY 2023 – AUGUST 2023

WOODS BAGOT
NEW YORK, NEW YORK
AUGUST 2022 – DECEMBER 2022

SMALLWOOD
ATLANTA, GEORGIA
JANUARY 2022 – APRIL 2022

SITE SELECTION

TERRAIN : GRASSLANDS

LOCATION : ART PARK, SOUTHERN PLAINS OF MONTANA

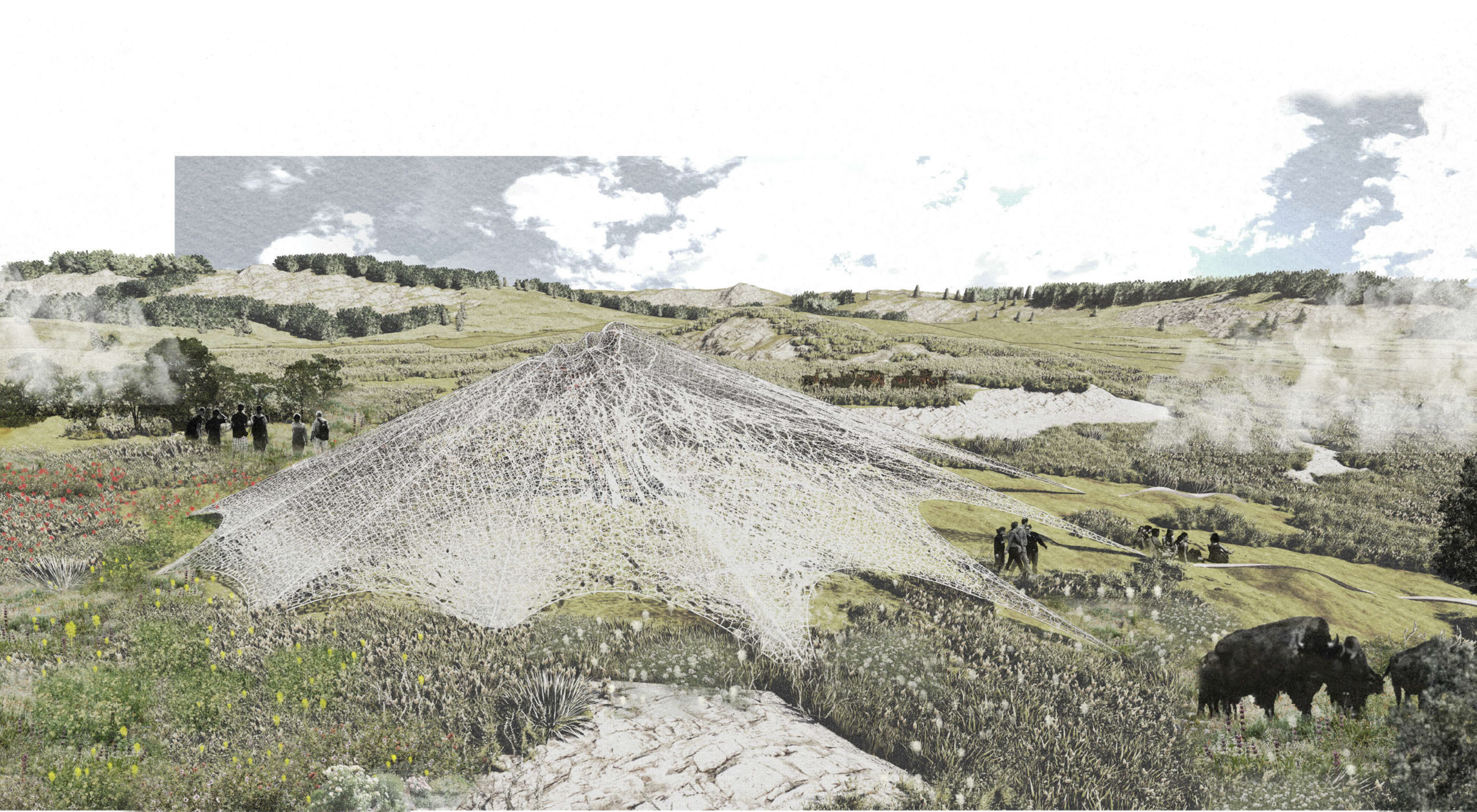
SUNDANCE LIES NESTLED WITHIN THE SPRAWLING GREAT PLAINS OF SOUTHERN MONTANA, WHERE IT IS SITUATED AT THE CONVERGENCE OF TWO PRIMARY HIKING TRAILS IN AN ESTABLISHED OUTDOOR ART PARK. HERE, HISTORY INTERTWINES WITH NATURE, OFFERING VISITORS A MULTIFACETED EXPERIENCE THAT EMANATES AUTHENTICITY AND SPIRITUAL SIGNIFICANCE.

THE SITE'S RICH HISTORY IS DEEPLY ROOTED IN THE CULTURE OF THE INDIGENOUS TRIBES OF THE GREAT PLAINS, WHO ONCE PRACTICED THEIR SACRED SUNDANCE CEREMONY ON THE LANDS THE PROJECT INHABTS. STEPPING INTO THIS HISTORICAL BACKDROP, VISITORS ARE INVITED TO DELVE INTO THE RITUALS AND TRADITIONS THAT ONCE DEFINED THE REGION, FOSTERING A PROFOUND CONNECTION TO ITS HERITAGE. THE GENTLE SLOPES AND VAST EXPANSES OF THE GRASSY PLAINS PROVIDE AN IDEAL CANVAS FOR THOUGHTFUL DESIGN AND A COMMITMENT TO INTEGRATING WITH NATURE. THE RESULTING "U" SHAPED CONTOUR OF THE PROJECT SEAMLESSLY MERGES WITH THE NATURAL LANDSCAPE, AND THE 'AMPHITHEATER' FORM SLOPES WITH THE SURROUNDING TERRAIN, PROVIDING A SERENE VANTAGE POINT FOR OBSERVING SUNRISES AND OTHER CELESTIAL EVENTS. THE PARK'S EXISTING AMENITIES, INCLUDING DESIGNATED PARKING AREAS, RESTROOM FACILITIES, AND WELL-MAINTAINED TRAILS, COMBINED WITH THE CONVERGENCE OF TWO TRAILS, HEIGHTENS THE SITE'S ACCESSIBILITY AND ELEVATES VISIBILITY.

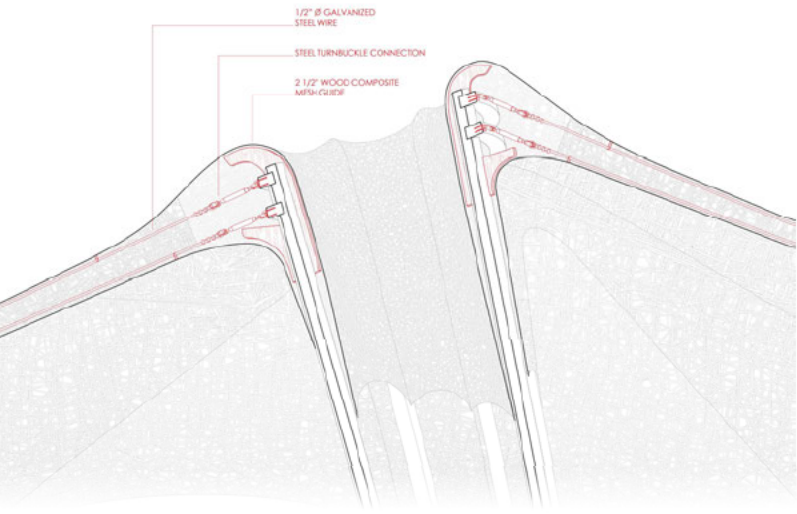
MOREOVER, THE SITE'S CAPACITY FOR VIEWING HEAVENLY EVENTS/ BODIES ADDS ANOTHER LAYER OF SIGNIFICANCE. THE EXPANSIVE VIEWS OF SUNRISE AND SUNSET, COMPLEMENTED BY MINIMAL LIGHT POLLUTION, ESTABLISHES AN IDEAL SETTING FOR CELESTIAL OBSERVATION. WHILE THE PROJECT'S TWO ASTRONOMICAL ALIGNMENTS OCCUR ON THE SAME DAY, THE SITE'S YEAR-ROUND SUITABILITY FOR SKYWATCHING ENSURES ITS ENDURING APPEAL FOR ITS VISITORS.

SUNDANCE WELCOMES YOU TO IMMERSE YOURSELF AS AN ACTIVE PARTICIPANT IN A NARRATIVE THAT WEAVES TOGETHER CULTURE, HISTORY, NATURE, AND THE CELESTIAL WONDERS.

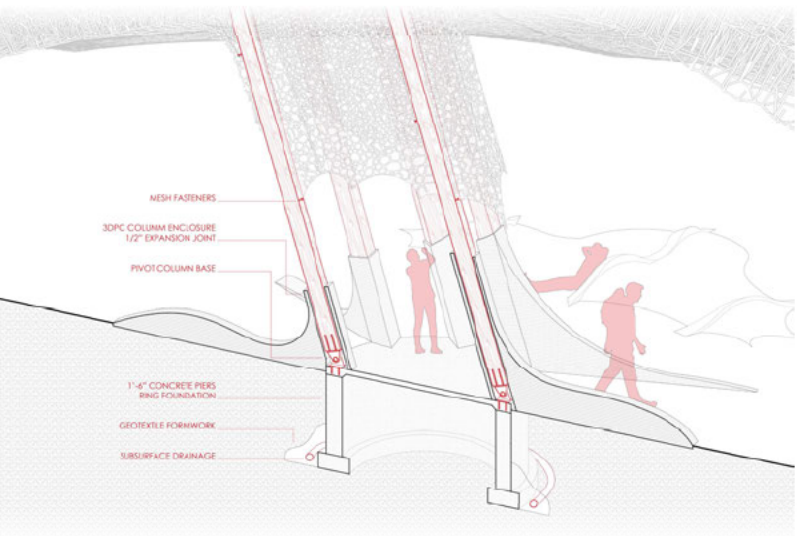




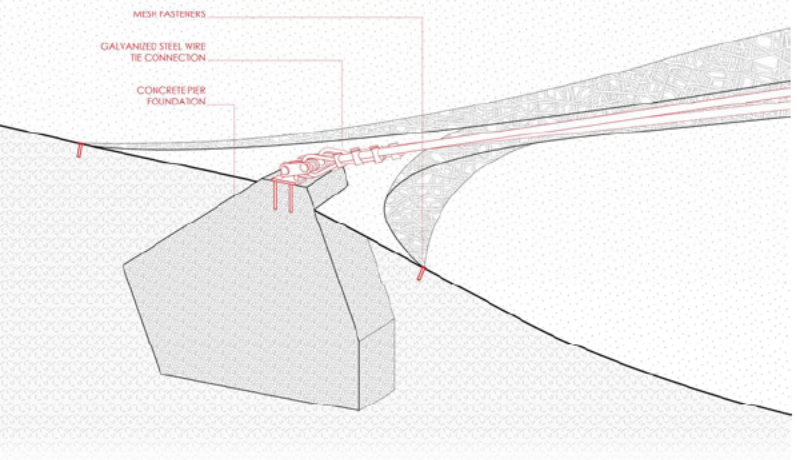
WESTERN BIRD'S EYE VIEW



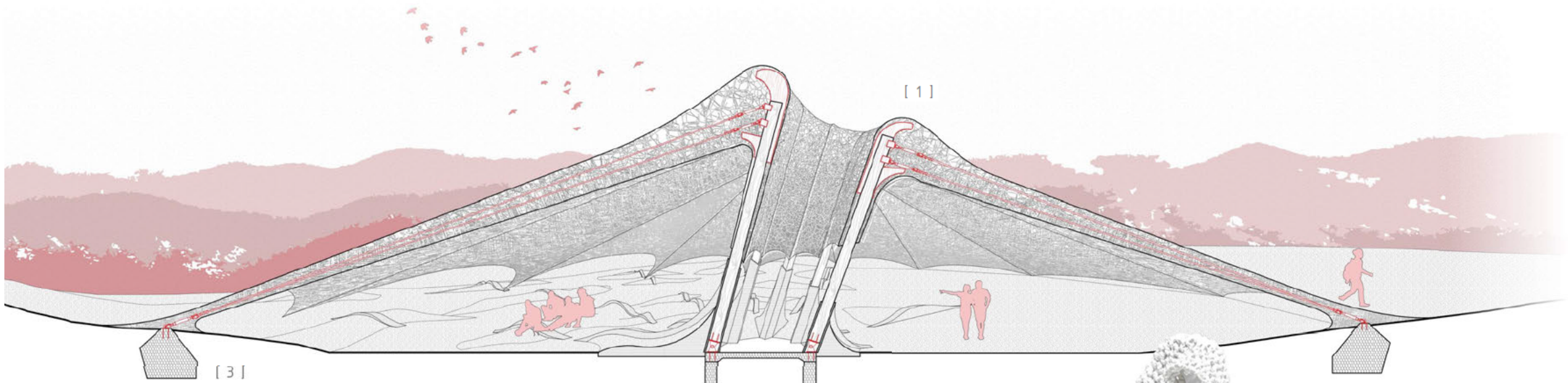
[1] OCULUS TOP DETAIL



[2] OCULUS BASE DETAIL

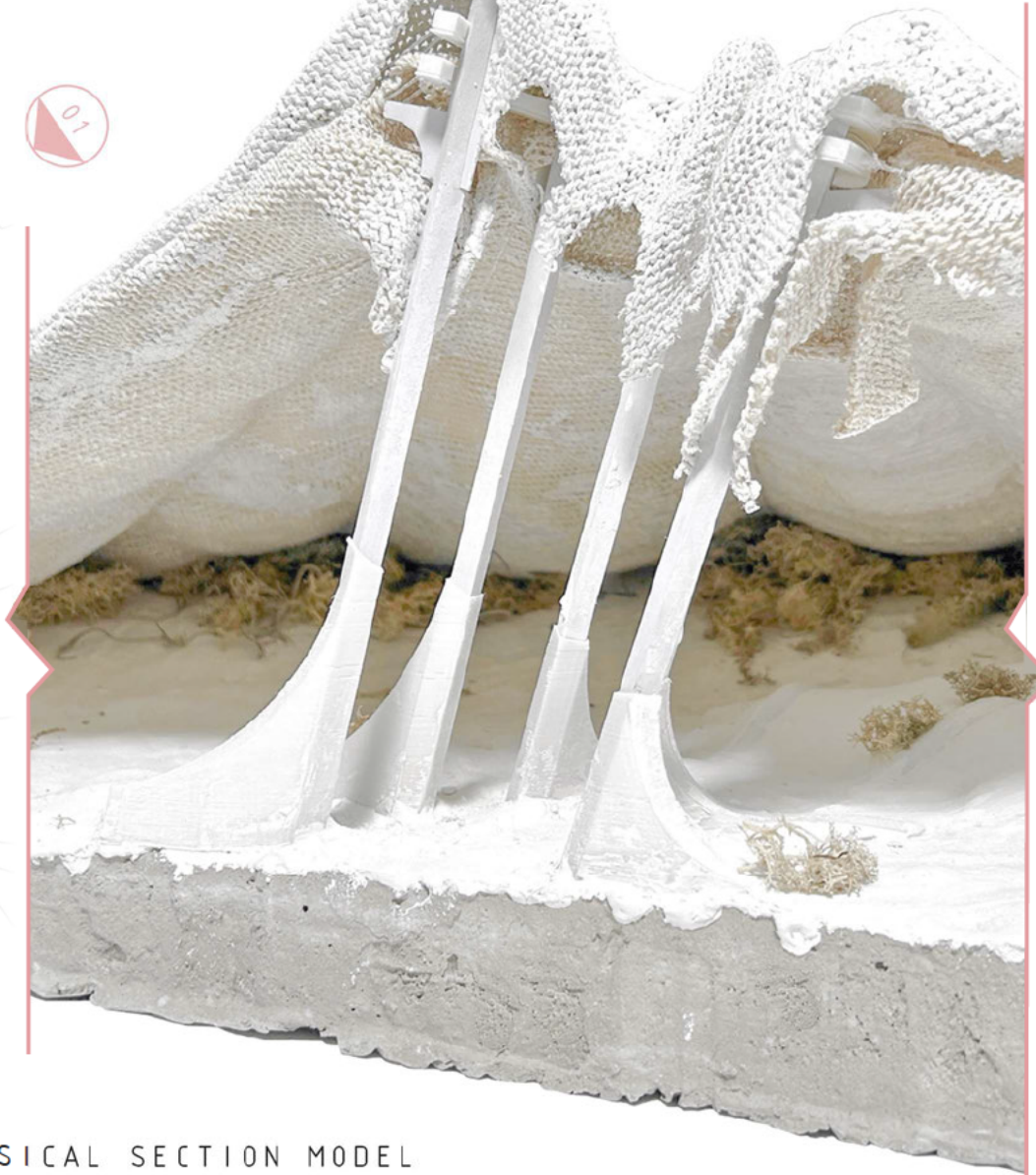
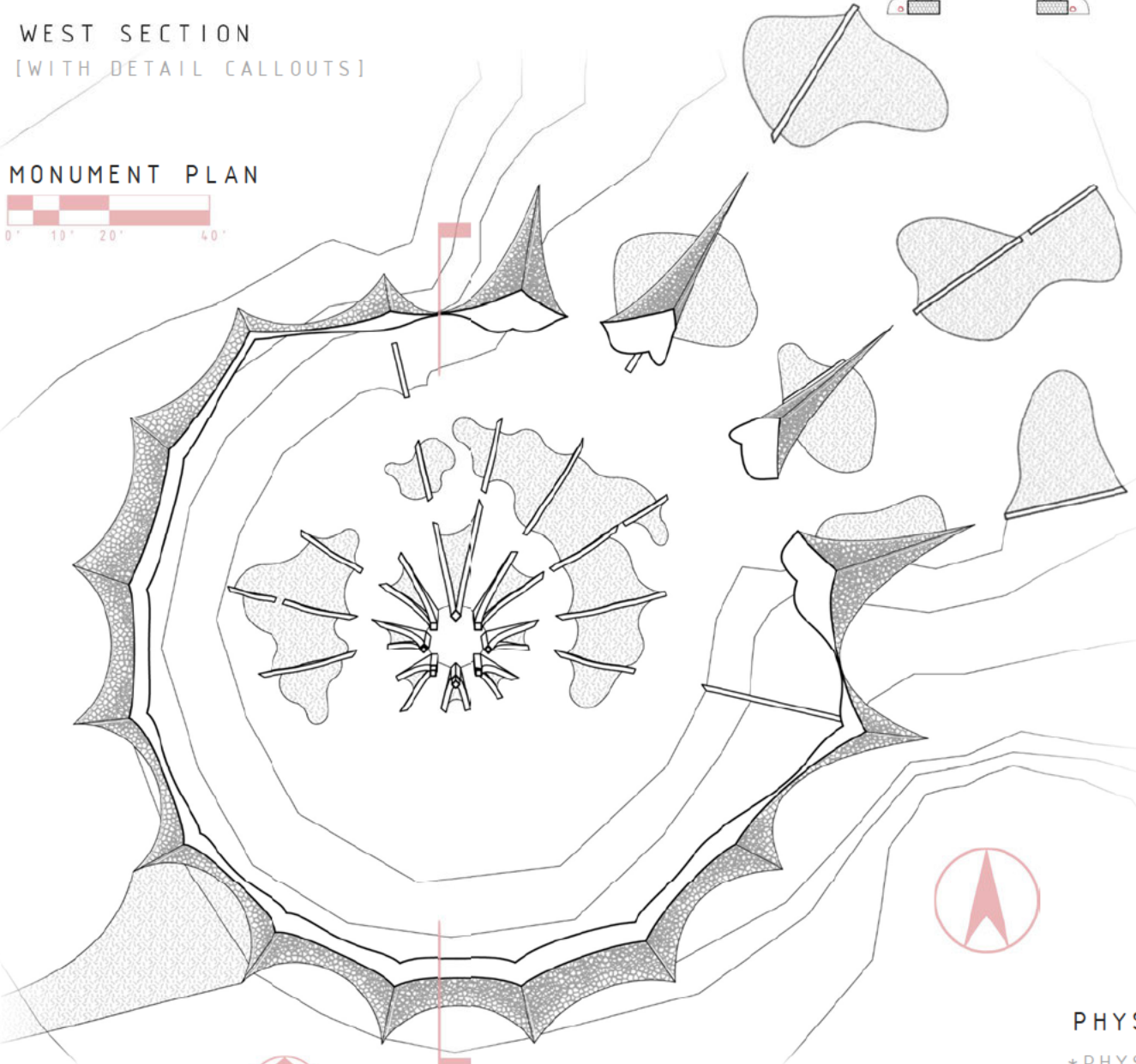


[3] GROUND ANCHOR & CONNECTION DETAIL



WEST SECTION
[WITH DETAIL CALLOUTS]

MONUMENT PLAN



PHYSICAL SECTION MODEL

*PHYSICAL MODELS ARE REPRESENTATIONAL AND DO NOT REFLECT EXACT CONDITIONS

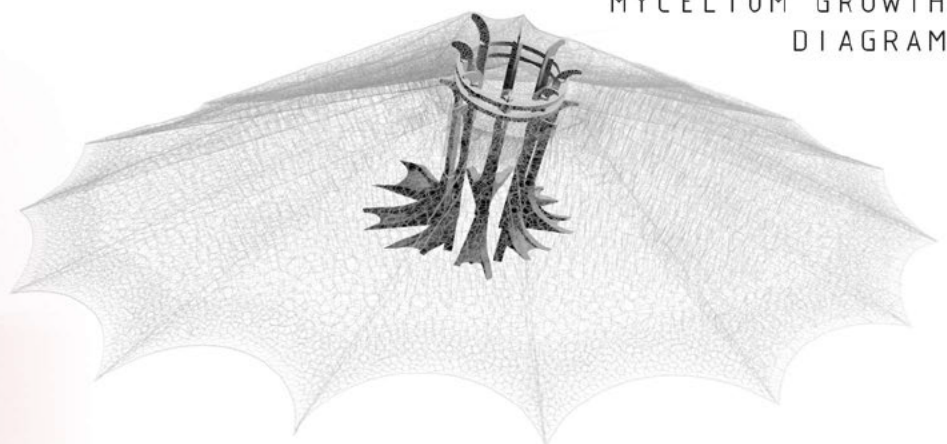


OCULUS VIEW - SOLAR NOON

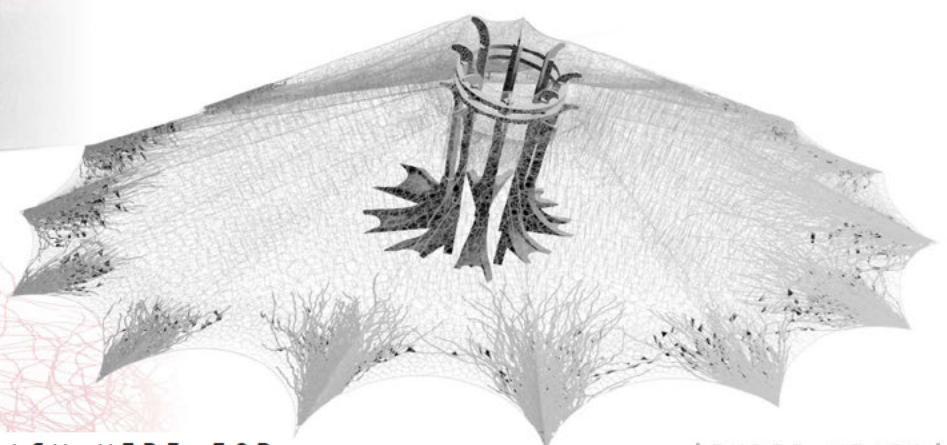


WEST SITE SECTION

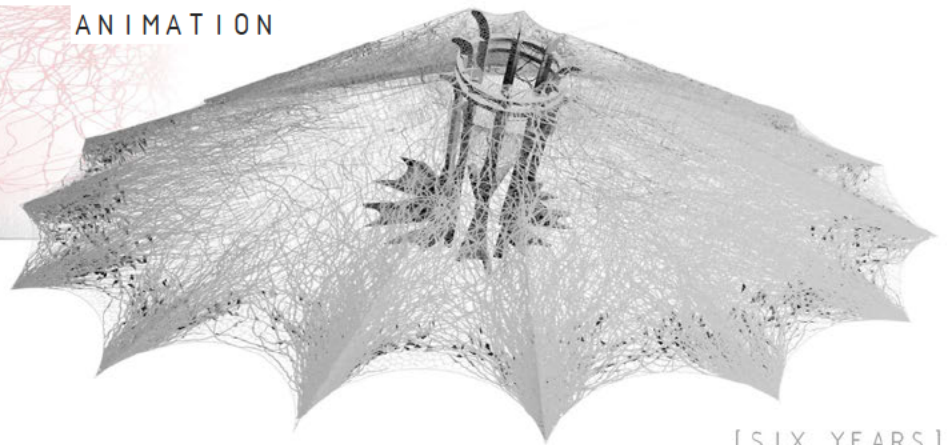
MYCELIUM GROWTH
DIAGRAM



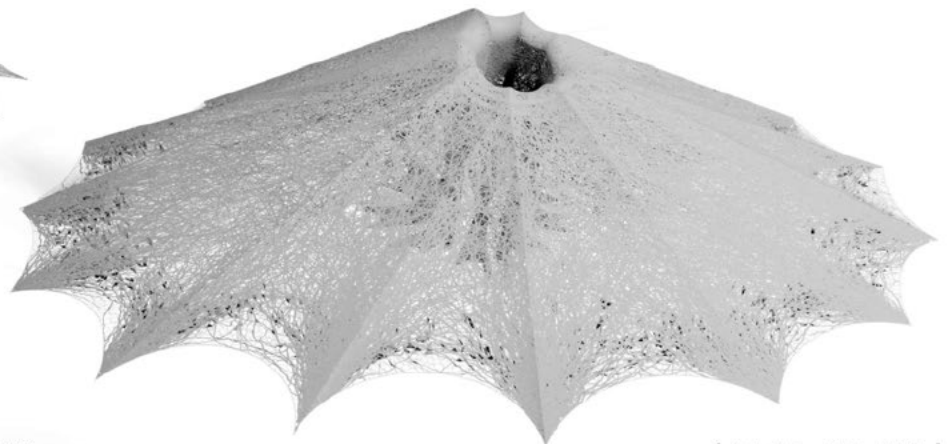
[INSTALLATION]



[THREE YEARS]



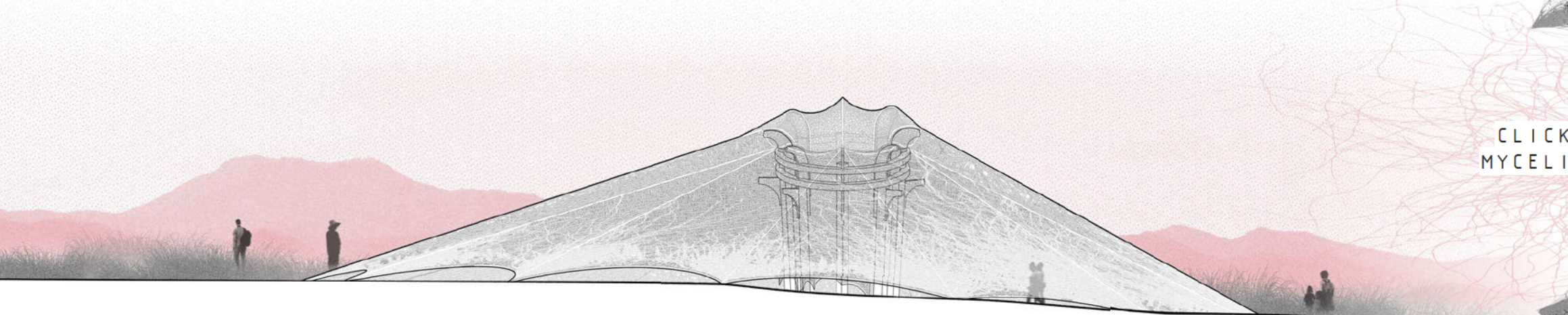
[SIX YEARS]



[NINE YEARS]



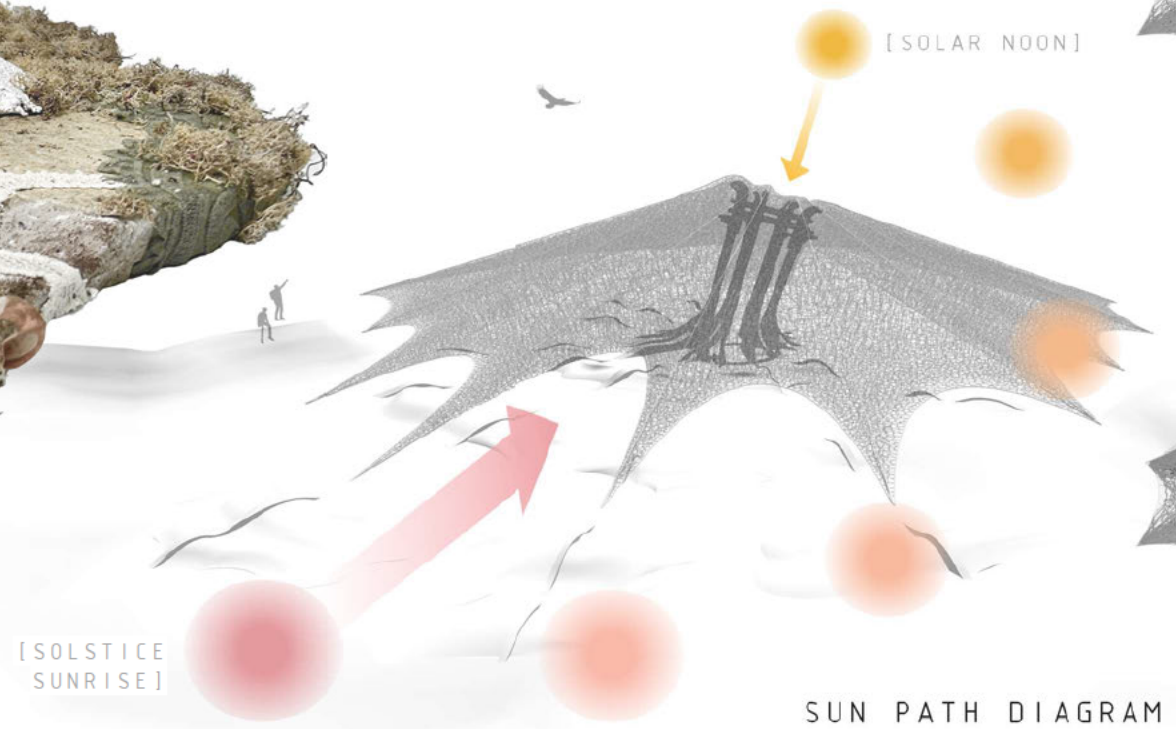
[01] NORTHEAST ELEVATION



[02] SOUTH ELEVATION

[CLICK HERE FOR
MYCELIUM GROWTH
ANIMATION](#)

PHYSICAL SITE
RELIEF



SUN PATH DIAGRAM



NORTHEAST VIEW - SOLSTICE SUNRISE

PROJECT NARRATIVE

01

HOW DOES YOUR DESIGN RELATE TO THE THEME OF *LAND ART: CELESTIAL ARCHITECTURE*?

OUR STRUCTURE IS **A LIVING, OCCUPIABLE ART INSTALLATION THAT COMMEMORATES THE SUMMER SOLSTICE** BY 1) CRAFTING AN EXPERIENCE FOR VIEWING AND ACKNOWLEDGING THE SUN AS IT RISES ON THE DAY OF THE SUMMER SOLSTICE, AND 2) WITNESSING THE HIGHEST POSITION OF THE SOLSTICE SUN AT THE MERIDIAN VIA AN OCULUS AT THE STRUCTURE'S SUMMIT. THE STRUCTURE'S MOTIF IS PRIMARILY BASED AROUND THE SUNDANCE, A SUMMER SOLSTICE CEREMONY CELEBRATED BY THE PLAINS INDIANS. FUNDAMENTALLY, THE SUNDANCE WAS A RITUAL THAT ENCOURAGED A SPIRITUAL RECONNECTION WITH NATURE (SPECIFICALLY THE NATURAL CYCLES OF LIFE, DEATH, AND REBIRTH), AND ITS PRACTITIONERS COULD BE CONSIDERED SUPPORTERS OF A PRELIMINARY FORM OF LAND ART AS THEY EXCLUSIVELY USED NATIVE, NATURAL MATERIALS AND PRACTICES IN THE DESIGN AND ASSEMBLY OF THE CEREMONIAL SUNDANCE LODGES (LEARN MORE IN RESPONSE 9). INCORPORATING PHYSICAL AND SYMBOLIC COMPONENTS OF THE SUNDANCE IN OUR STRUCTURE'S OVERARCHING DESIGN AND MOTIF WAS NOT ONLY INTENDED TO BRIDGE LAND ART AND CELESTIAL ARCHITECTURE IN A MEANINGFUL WAY, BUT ALSO TO PROVIDE A DEEPER CONTEXT TO ITS SITING IN THE AMERICAN PLAINS.

OUR STRUCTURE EMBODIES A CENTRAL, TIMBER-COLUMN TENSILE SYSTEM THAT PROVIDES THE FRAMEWORK FOR A THREE-DIMENSIONAL, WOOL MESH CONFIGURATION – GIVING OUR STRUCTURE A TENT-LIKE APPEARANCE REMINISCENT OF THE CEREMONIAL LODGES. GROWING ON THE MESH WILL BE DEPOSITS OF NATIVE MYCELIUM COLONIES THAT WILL, OVER SEVERAL YEARS, SPREAD OVER THE ENTIRETY OF THE MESH, CREATING A COMPOSITE, SELF-SUPPORTING, AND LIVING MATERIAL IN THE PROCESS (ELABORATION ON MYCELIUM PROVIDED IN RESPONSE 2). AT THE VERTEX OF THE MESH IS AN OCULUS TILTED 17-DEGREES SOUTH, ALIGNING WITH SOLAR NOON ON THE SUMMER SOLSTICE, THE MOST SYMBOLICALLY CRUCIAL TIME OF DAY DURING THE SUNDANCE ACCORDING TO THE NATIVE RELIGION. UNDERNEATH THE MESH, THE STRUCTURE'S INTERIOR IS CARVED FROM A HILLSIDE, FUNNELING VISITORS INTO THE MESH'S SOUTHWEST ENTRANCE. ON THE OPPOSITE SIDE OF THE STRUCTURE ARE THE NORTHEAST OPENINGS THAT ALIGN WITH THE POSITION OF THE SUMMER SOLSTICE SUNRISE, PROVIDING THE EMPHASIZED VIEWS MENTIONED PREVIOUSLY.

LIKE THE SUNDANCE LODGES, OUR STRUCTURE IS PRIMARILY MADE FROM LOCAL, SUSTAINABLE MATERIALS – THE MOST PROMINENT BEING THE COMPOSITE WOOL MESH AND THE MYCELIUM THAT IT WILL HOUSE AND NURTURE. THE MYCELIAL GROWTH PROCESS IS INTEGRAL TO BOTH THE LAND ART NARRATIVE AND DESIGN OF OUR STRUCTURE. THE MYCELIUM WILL DRAW ITS ENERGY AND NUTRIENTS FROM THE SOIL AND ORGANIC MATTER OF THE LOCAL ECOSYSTEM, AND THE SUN (DURING THE SPRING AND SUMMER MONTHS) WILL PROVIDE THE APPROPRIATE CLIMATE FACTORS FOR ITS PERPETUAL HEALTH AND DEVELOPMENT. ADDITIONALLY, THE MYCELIUM, WHICH FILLS THE ECOLOGICAL NICHE OF DECOMPOSER AND IS RESPONSIBLE FOR CLEANSING AND RECYCLING DECAYING ORGANIC MATTER THROUGHOUT AN ECOSYSTEM, TIES INTO THE SUNDANCE RITUAL'S THEMATIC MESSAGING ON NATURAL CYCLES.



PROJECT NARRATIVE

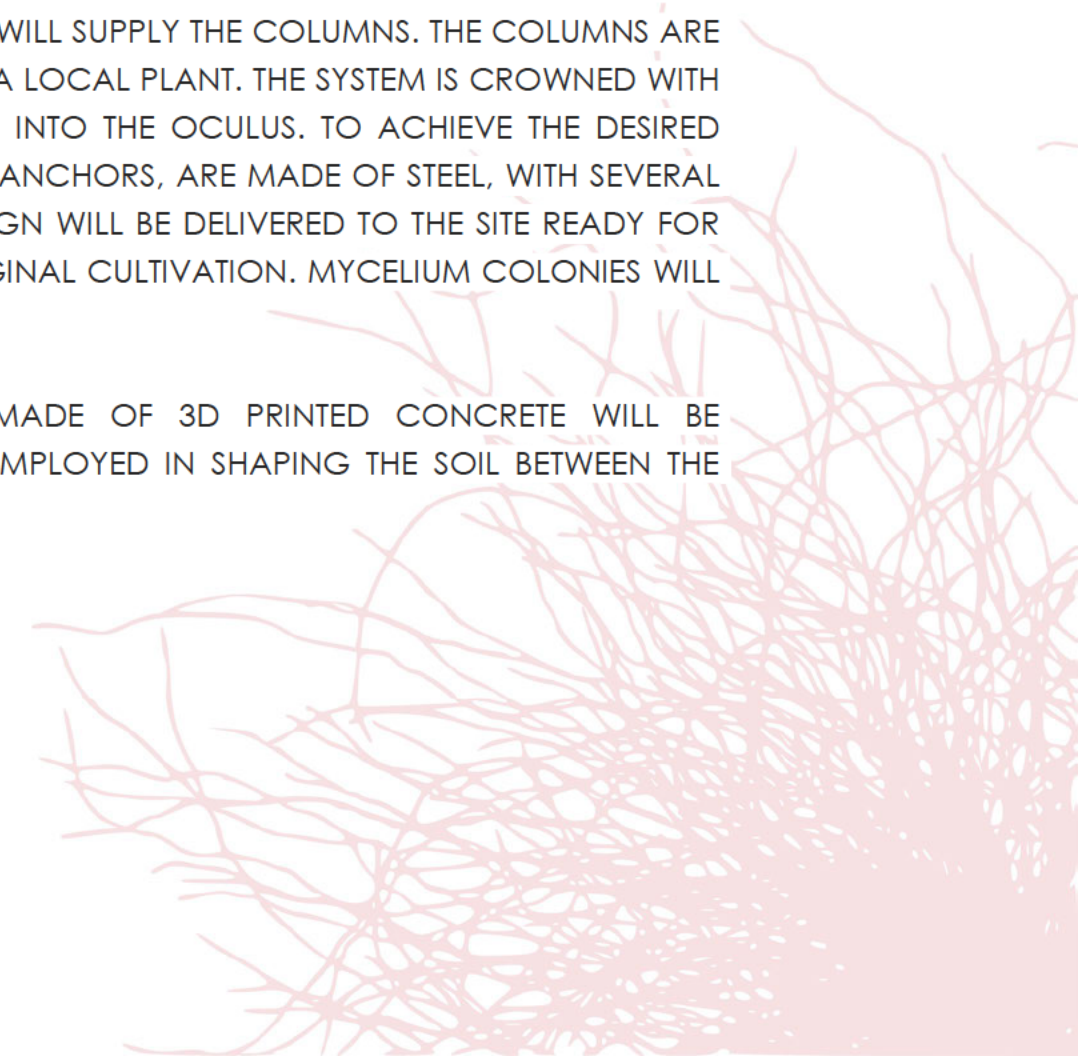
02

DESCRIBE THE PROPOSED MATERIALS, INCLUDING REQUIRED NATIVE MATERIALS, AND METHODS USED TO BUILD/INSTALL YOUR STRUCTURE/ARTWORK/INSTALLATION.

THE STRUCTURE IS COMPOSED OF TWO MAJOR SYSTEMS: THE MESH, AND THE SUPPORT STRUCTURE. THE MESH MATERIAL IS A COMPOSITE FORMED OVER TIME BY A GRADUAL PROCESS OF MYCELIAL GROWTH ENVELOPING A LOCAL MERINO WOOL NET. INSPIRED BY THE WEAVING CULTURE OF THE PLAINS INDIANS, THE MESH WILL BE WOVEN BY LOCAL ARTISANS. MYCELIUM, THE ROOT NETWORK OF FUNGUS, IS STRONG, ENDURING, AND ABLE TO SPREAD OVER SIZABLE DISTANCES WHILE FEEDING ITSELF FROM ANY POINT ALONG THE NETWORK. RECENT STUDIES HAVE PROVEN MYCELIUM TO BE A VIABLE BUILDING MATERIAL WHEN GIVEN A SUBSTRATE TO GROW AROUND- IN THIS CASE, THE SUBSTRATE IS THE MERINO WOOL. OVER TIME, THE COMPOSITE WILL BECOME SELF-SUPPORTING; HOWEVER, IT WILL REQUIRE A STRUCTURAL NETTING IN THE INTERIM.

THE SUPPORT STRUCTURE IS A TENSILE SYSTEM OF CABLES, COLUMNS, AND ANCHORS. THE EIGHT COLUMNS ARE MASS TIMBER, PROVIDING A NATURAL AMBIANCE WITHIN THE STRUCTURE. TWO MASS TIMBER PLANTS IN MONTANA, EACH APPROXIMATELY SEVEN HOURS AWAY FROM THE SITE, WILL SUPPLY THE COLUMNS. THE COLUMNS ARE STRUCTURALLY BOUND TOGETHER AT THE TOP BY TWO TENSION RINGS, ALSO MADE OF MASS TIMBER AND PURCHASED FROM A LOCAL PLANT. THE SYSTEM IS CROWNED WITH FITTED FINS (ALSO MASS TIMBER) THAT SUPPORT THE NETTING AND PROVIDE THE DESIRED FORM AS THE MESH CONCAVES INTO THE OCULUS. TO ACHIEVE THE DESIRED DRAPING EFFECT, THE NET IS SUPPORTED BY TENSION CABLES. THE CABLES, ALONG WITH THEIR GROUND AND TENSION RING ANCHORS, ARE MADE OF STEEL, WITH SEVERAL STEEL MILLS ACROSS MONTANA CAPABLE OF PROVIDING THESE COMPONENTS. ALL INDIVIDUAL COMPONENTS OF THE DESIGN WILL BE DELIVERED TO THE SITE READY FOR INSTALLATION. LOCAL CREWS WILL INSTALL THE STRUCTURE, DRAPE THE NETTING, AND TRANSPLANT MYCELIUM FROM ITS ORIGINAL CULTIVATION. MYCELIUM COLONIES WILL BE SEEDED AT EACH OF THE SIXTEEN ANCHORS WHERE THE NET MEETS THE GROUND.

COMPLEMENTING THE MESH AND SUPPORT SYSTEM, HOLLOW COLUMN BASE COVERS AND "ROOTS" MADE OF 3D PRINTED CONCRETE WILL BE UTILIZED, FACILITATING QUICKER CONSTRUCTION WITH REDUCED WASTE AND CARBON EMISSIONS. GEOTEXTILES WILL BE EMPLOYED IN SHAPING THE SOIL BETWEEN THE "ROOTS," CREATING AREAS FOR SITTING AND RESTING.



PROJECT NARRATIVE

03

DESCRIBE HOW YOUR CONCEPT WILL BE CONSTRUCTED. HOW LONG WOULD CONSTRUCTION TAKE?

THE PROJECT COMMENCES WITH EXCAVATING UP TO 6 FEET TO ACCOMMODATE A LEVEL CHANGE. EXCAVATED SOIL WILL BE REPURPOSED ON-SITE AROUND THE SCULPTURE FOOTPRINT TO ACHIEVE A TOTAL ELEVATION CHANGE OF 12 FEET. A STANDARD 4-INCH CONCRETE SLAB WITH FOOTINGS REACHING A DEPTH OF 60 INCHES WILL SUPPORT THE COLUMN STRUCTURE. CIRCLING THE COLUMN STRUCTURE, AT AN AVERAGE RADIUS OF APPROXIMATELY 90 FEET, 16 CONCRETE FOUNDATION BLOCKS WITH STEEL GAUGE WIRE ATTACHMENTS WILL BE INSTALLED. EIGHT STEEL PIVOT COLUMN ANCHORS WILL FORM A RING ALONG THE EDGE OF THE SLAB. LOCALLY SOURCED 12-INCH PRECUT HEAVY TIMBER COLUMNS WILL BE POSITIONED ON EACH PIVOT ANCHOR. TWO WOOD TENSION RINGS WILL BE ATTACHED AT 2-FOOT INTERVALS AT THE TOP OF EACH COLUMN, UNITING THEM INTO A COHESIVE, STRUCTURALLY-SOUND COMPOSITION. CONNECTING EACH TENSION RING WILL BE A 1-INCH STEEL GAUGE WIRE CABLE AT THE SAME CONCRETE ANCHOR, RESULTING IN TWO WIRES PER ANCHOR, REPLICATED ACROSS ALL 16 EXTERIOR FOUNDATION CONNECTIONS. TURNBUCKLES WILL TIGHTEN CABLES TO SUPPORT THE 17-DEGREE TILT OF THE COLUMN STRUCTURE.

MERINO WOOL SOURCED LOCALLY WILL BE WOVEN BY LOCAL ARTISANS AND CONNECTED ALONG EACH WIRE. THE 3D PRINTED CONCRETE (3DPC) "ROOTS" WILL BE FABRICATED OFF-SITE. GEOTEXTILES WILL THEN BE USED TO SHAPE THE GROUND AROUND THE 3DPC FOR LOUNGING. NATIVE MONTANA VEGETATION WILL BE PLANTED IN AND AROUND THE SCULPTURE. OFF-SITE CULTIVATED MYCELIUM SPORES WILL BE PLANTED AT EACH MESH GROUND CONNECTION.

THE PROJECTED TOTAL INSTALLATION TIMELINE SPANS APPROXIMATELY 11 WEEKS. SITEWORK IS ESTIMATED TO REQUIRE APPROXIMATELY 2 WEEKS, WITH FOUNDATION CONSTRUCTION ALSO ANTICIPATED TO REQUIRE ROUGHLY 2 WEEKS. SUBSEQUENT TASKS, INCLUDING COLUMN STRUCTURE ASSEMBLY AND CABLE INSTALLATION, ARE EXPECTED TO BE COMPLETED WITHIN A SINGLE WEEK. FOLLOWING THIS, ACTIVITIES SUCH AS 3DPC INSTALLATION, LANDSCAPING, AND SITE FORMING ARE SLATED TO TAKE APPROXIMATELY 2 WEEKS, WHILE NET FABRICATION AND INSTALLATION EFFORTS ARE PROJECTED TO OCCUPY APPROXIMATELY 4 WEEKS. IT IS IMPORTANT TO NOTE THAT THE TIMELINE PROVIDED DOES NOT ENCOMPASS THE MYCELIUM GROWTH PHASE, WHICH IS EXPECTED TO EXTEND OVER A PERIOD OF 10+ YEARS FOR COMPLETE CALCIFICATION.

04

HOW WAS COLLABORATION UTILIZED IN REALIZING THE DESIGN?

THE UNIQUE COLLABORATIVE NATURE OF THIS PROJECT FOSTERED A CONNECTION BETWEEN SPECULATIVE DESIGN/FABRICATION TECHNIQUES AND MORE TRADITIONAL CONSTRUCTION AND INSTALLATION PRACTICES. WITHIN THE DESIGN TEAM, A DIVERSE RANGE OF EXPERIENCES CONTRIBUTES TO A VARIED POOL OF APPROACHES. THREE REQUIRED EXPERIENTIAL LEARNING COMPONENTS (INTERNSHIPS) EMBEDDED IN THE TEAM'S UNDERGRADUATE CURRICULUM, ALONG WITH EXTRACURRICULAR OPPORTUNITIES, RESULTED IN DIVERSE EXPERIENCES, ULTIMATELY AMALGAMATING TO FORM A MOSAIC OF IDEALS AND APPROACHES TO A SINGLE SET OF CHALLENGES REVEALED BY THE COMPETITION.

THIS DIVERSITY SPARKED EXCITING DESIGN SESSIONS AND CONVERSATIONS, ALLOWING THE PROPOSAL TO COVER SIGNIFICANTLY MORE GROUND THAN A TRADITIONAL INDEPENDENT STUDIO SEMESTER. DURING MEETINGS, THE TEAM OPERATED IN A MANNER MUCH CLOSER TO THE PROFESSIONAL WORLD, PROVIDING EARLY EXPOSURE TO THE TRIUMPHS AND CHALLENGES ASSOCIATED WITH A SHARED PURSUIT OF SUCCESSFUL AND FEASIBLE DESIGN SOLUTIONS. DESIGN CHARRETTES ENABLED INDIVIDUAL INPUT AND DISCUSSION, ALLOWING THE SCALE OF ATTENTION TO SHIFT FROM A LEVEL OF GRANULARITY TO WIDTH IN MERE MOMENTS AS THE DESIGN PROCESS EVOLVED IN AN IDEALLY UPWARD CYCLICAL FASHION.

PROJECT NARRATIVE

05

HOW WILL YOUR STRUCTURE/ARTWORK/INSTALLATION BE USED BY THE PUBLIC? HOW WAS SAFETY ADDRESSED?

THE STRUCTURE IS SITUATED AT THE CONVERGENCE OF TWO HIKING TRAILS IN A MONTANA OUTDOOR ART PARK. THOSE WHO VISIT OR STUMBLE UPON OUR STRUCTURE WILL BELONG TO A VARIETY OF GROUPS – FROM OUTDOOR ENTHUSIASTS AND LAND ART ADMIRERS TO CASUAL HIKERS AND NATIVE AMERICAN CULTURE APPRECIATORS OR NATIVE AMERICANS THEMSELVES, TO NAME A FEW. AS AN OCCUPIABLE ART INSTALLATION, THE STRUCTURE'S FUNCTION IS NOT LIMITED BY A SPECIFIED PROGRAM, ALLOWING VISITORS TO USE IT ACCORDING TO THEIR PERSONAL INCLINATIONS WITH EXCEPTIONS TO DESIGNATED AREAS LIKE THE OCULUS AND SUGGESTED SEATING. VISITORS MAY REST, REFLECT, GATHER, LOUNGE, OR SIMPLY PASS THROUGH OUR STRUCTURE. SIMILAR TO THE NATURAL LANDSCAPE SURROUNDING IT, *SUNDANCE* IS INTENDED TO BE ADMIRERED, RESPECTED AND, IN HONOR OF THE RITUAL IT IS INSPIRED BY, RECONNECT ITS VISITORS WITH NATURE.

ON THE SUMMER SOLSTICE, AREAS OF SUGGESTED SEATING AND LOUNGING ARE ORIENTED TOWARDS THE SUNRISE DIRECTION (NORTHEAST). VISITORS CAN WATCH THE SUNRISE FROM EITHER INSIDE OR OUTSIDE THE STRUCTURE, BEFORE ENJOYING THE DAPPLED SHADE OF THE MESH AS THE DAY PROGRESSES. THEY CAN ALSO WITNESS THE SUN'S PEAKS AT NOON, AS A STRONG BEAM OF LIGHT PENETRATES DIRECTLY THROUGH THE OCULUS FOR A BRIEF PERIOD.

SAFETY CONSIDERATIONS REGARDING STRUCTURAL INTEGRITY WERE HEAVILY EMPHASIZED DURING THE DESIGN'S DEVELOPMENT PHASE TO ENSURE THE LONG-TERM PRESERVATION OF THE STRUCTURE AND THE PROTECTION OF ITS VISITORS. AS A TENSILE STRUCTURE LOCATED ON FLAT LAND NEAR THE FOOT OF A MOUNTAIN RANGE, IT IS PARTICULARLY SUSCEPTIBLE TO PREVAILING WIND FORCES. WHILE THE POROUS TENSILE MESH ALLOWS WIND TO PERMEATE FREELY, THE RIGID ELEMENTS – SPECIFICALLY THE COLUMNS – ARE AT A GREATER RISK OF SUSTAINING DAMAGE. TO MITIGATE THIS, THE COLUMNS (TREATED TO PREVENT TERMITE OR OTHER INSECT INFILTRATION) WILL BE TIMBER, OFFERING GREATER RESISTANCE TO TENSILE FORCES. NAVIGATION AROUND AND THROUGH THE STRUCTURE IS UNCHALLENGING, AND, ALTHOUGH IT LACKS A CONVENTIONAL SAFETY APPARATUS SUCH AS GUARDRAILS OR GROUND LIGHTING, IT CAN BE ASSUMED THAT, GIVEN THE LOCATION ALONG A HIKING TRAIL, THE MAJORITY OF VISITORS WOULD BE ABLE-BODIED AND AWARE. ADDITIONALLY, AREAS WITH STEEP DECLINES ARE OBSTRUCTED BY THICK VEGETATION, ENSURING VISITORS REMAIN AT A SAFE DISTANCE.

PROJECT NARRATIVE

06 HOW DOES THE STRUCTURE/ARTWORK/INSTALLATION ADDRESS THE CLIMATE IN WHICH IT WOULD RESIDE?

MYCELIUM IS KNOWN FOR ITS REMARKABLE ADAPTABILITY ACROSS VARIOUS CLIMATES, FROM FORESTS TO GRASSLANDS, AND EVEN AQUATIC ECOSYSTEMS. MYCELIUM-BASED MATERIALS OFFER SEVERAL ADVANTAGES WHEN CONSIDERING THE SEMI-ARID CLIMATE OF MONTANA. WHEN FACED WITH DRY OR FRIGID ENVIRONMENTS, MYCELIUM CAN ENTER A DORMANT STATE, CONSERVING ENERGY UNTIL CONDITIONS IMPROVE. THIS RESILIENCE ALLOWS IT TO PERSIST THROUGH PERIODS OF DROUGHT OR INTENSE FREEZE. MYCELIUM IS NATURALLY FIRE-RESISTANT, WHICH IS CRUCIAL FOR REGIONS PRONE TO WILDFIRES LIKE MONTANA. THE MYCELIUM COMPOSITE CAN ACT AS A PROTECTIVE LAYER, REDUCING THE RISK OF FIRE DAMAGE TO THE STRUCTURE.

WOOL, USED AS A SUBSTRATE FOR MYCELIUM GROWTH, ALSO CONTRIBUTES TO CLIMATE ADAPTATION. WOOL IS KNOWN FOR ITS MOISTURE-WICKING PROPERTIES, MEANING IT CAN ABSORB MOISTURE FROM THE ENVIRONMENT AND RELEASE IT BACK WHEN NEEDED. IN MONTANA'S SEMI-ARID CLIMATE, WHERE MOISTURE LEVELS CAN FLUCTUATE, THIS FEATURE IS VALUABLE. THE WOOL IN THE STRUCTURE WILL HELP MANAGE MOISTURE, KEEPING THE MYCELIUM HEALTHY AND PROMOTING ITS GROWTH.

THE SELECTION OF SPECIES NATIVE TO MONTANA FOR THE SURROUNDING VEGETATION ALSO HELPS CLIMATE ADAPTATION. THESE PLANTS ARE WELL-ADAPTED TO THE LOCAL CLIMATE CONDITIONS, REQUIRING MINIMAL WATER ONCE ESTABLISHED. THIS REDUCES THE NEED FOR IRRIGATION, WHICH IS CRUCIAL IN REGIONS WHERE WATER CONSERVATION IS IMPORTANT. THE NATIVE PLANTS, SUCH AS BUFFALO GOURD, BLUE GRAMA GRASS, AND INDIAN RICE GRASS, ARE ALSO DROUGHT TOLERANT. THEY HAVE EVOLVED TO SURVIVE IN MONTANA'S SEMI-ARID ENVIRONMENT, MAKING THEM LOW-MAINTENANCE CHOICES FOR LANDSCAPING AROUND THE STRUCTURE.

07 WHAT TYPE OF TECHNOLOGY IS IMPLEMENTED IN YOUR DESIGN, IF ANY?

ALL COMPONENTS OF THIS PROPOSAL, FROM THE FOUNDATION TO OCULUS, ARE THE RESULT OF THE RESEARCH AND THE FUSION OF EXPERIMENTAL BUILDING AND SCULPTURAL PRACTICES AT THE FOREFRONT OF THE TECHNOLOGICAL FRONTIER. THE RESULTING LIVING ORGANISM FROM THIS SERIES OF BUILT INTERVENTIONS STANDS AS A TECHNOLOGICAL ANOMALY OF ITS OWN, SERVING AS AN EXPERIMENT BETWEEN POROUS MESH AND RIGID COMPOSITE. ITS GROWTH IS A DYNAMIC REFLECTION OF THE SURROUNDING ENVIRONMENT AND THE SPORADIC TIDES OF MYCELIAL HEALTH. MOREOVER, THE FRAMEWORK UPON WHICH THE MYCELIUM COLONIES GROW IS THE OUTCOME OF INTRICATE PARAMETRIC CALCULATION AND MODELING, AN EXHIBIT OF PROVOCATIVE TECHNOLOGY. THE FORMULA UTILIZED TO ORGANICALLY SUBDIVIDE THE DRAPING TENSILE STRUCTURE DRAWS INSPIRATION FROM VORONOI APPROXIMATION, A GEOMETRIC SYSTEM USED TO MODEL COMPLEX ORGANIC STRUCTURES SUCH AS THE MICROARCHITECTURE OF HUMAN BONES. THE RESULTING VOLUMETRIC MESH CONFIGURATION ENCOURAGES THE SPORADIC AND ORGANIC NATURE OF MYCELIAL GROWTH IN ITS DEFINITION, WELCOMING THE UNCERTAINTY AND DIVERSITY WITH WHICH IT WILL EVOLVE OVER TIME.

BENEATH THIS MESH, SEVERAL OTHER INNOVATIVE TECHNOLOGIES BLANKET THE EARTH, BLURRING THE OFTEN HARSHLY DEFINED BOUNDARY BETWEEN BUILT AND UNBUILT ENVIRONMENT. HOLLOW 3D PRINTED CONCRETE FORMS MITIGATE THE OVERUSE OF POURED OR PRECAST CONCRETE USED TO GENERATE COMPLEX SCULPTURAL CURVATURE, RADIATING INTO THE SITE AND INFORMING THE NATURAL PROGRAM. SUBSURFACE GEOTEXTILES WORK TO DEFINE THE SMOOTH YET INTENTIONAL LANDFORM, STRATEGICALLY PLACED IN RESPONSE TO THE RIPPLING ROOT STRUCTURES THAT CREATE OPPORTUNITIES FOR SEATING, LAYING, AND CONVERSATIONAL ARRANGEMENTS. THE NATURAL INTRODUCTION OF THESE HIGHLY TECHNOLOGICALLY INFORMED ELEMENTS JUXTAPOSES A UNIQUELY ADVANCED PIECE OF LAND ART INTO A VAST PLAIN, MELDING THE VALUE OF SUSTAINABLE, UNINTRUSIVE LANDSCAPE INTERVENTION WITH EXPERIMENTAL TECHNIQUES.

PROJECT NARRATIVE

08

WHAT MAKES THE DESIGN ENVIRONMENTALLY FRIENDLY AND SUSTAINABLE?

MYCELIUM-BASED COMPOSITES ARE FULLY BIODEGRADABLE, CONTRIBUTING TO A CIRCULAR ECONOMY WHERE WASTE MATERIALS CAN BE TRANSFORMED INTO USEFUL PRODUCTS WITHOUT HARMING THE ENVIRONMENT. THE PRODUCTION OF MYCELIUM-BASED MATERIALS TYPICALLY EMITS LESS CARBON DIOXIDE COMPARED TO TRADITIONAL CONSTRUCTION MATERIALS LIKE CONCRETE OR STEEL, CONTRIBUTING TO MITIGATING CLIMATE CHANGE. MYCELIUM CAN BE CULTIVATED ON VARIOUS ORGANIC SUBSTRATES, INCLUDING AGRICULTURAL WASTE PRODUCTS, WHICH ARE RENEWABLE RESOURCES THAT DO NOT DEplete FINITE FOSSIL FUEL RESERVES.

WOOL IS A NATURAL FIBER THAT DECOMPOSES OVER TIME, UNLIKE SYNTHETIC MATERIALS WHICH CAN PERSIST IN THE ENVIRONMENT FOR HUNDREDS OF YEARS. COMPARED TO THE MANUFACTURING PROCESS OF SYNTHETIC FIBERS, WHICH OFTEN INVOLVES SIGNIFICANT ENERGY CONSUMPTION AND CHEMICAL POLLUTION, WOOL PRODUCTION HAS A LOWER ENVIRONMENTAL IMPACT. WOOL-PRODUCING ANIMALS LIKE SHEEP CAN HELP SEQUESTER CARBON DIOXIDE FROM THE ATMOSPHERE, CONTRIBUTING TO MITIGATING CLIMATE CHANGE.

NATIVE PLANT SPECIES ARE ADAPTED TO THE LOCAL CLIMATE CONDITIONS AND REQUIRE MINIMAL IRRIGATION ONCE ESTABLISHED, REDUCING WATER CONSUMPTION COMPARED TO NON-NATIVE SPECIES. PLANTING NATIVE SPECIES PROMOTES BIODIVERSITY BY PROVIDING HABITAT AND FOOD SOURCES FOR LOCAL WILDLIFE, CONTRIBUTING TO ECOSYSTEM HEALTH AND RESILIENCE. NATIVE PLANTS HELP IMPROVE SOIL STRUCTURE AND FERTILITY, REDUCING THE NEED FOR SYNTHETIC FERTILIZERS AND PROMOTING LONG-TERM SOIL HEALTH.

THE CONSTRUCTION PROCESS MINIMIZES ENERGY CONSUMPTION BY UTILIZING NATURAL GROWTH PROCESSES OF MYCELIUM AND PLANTS, RATHER THAN RELYING ON ENERGY-INTENSIVE MANUFACTURING PROCESSES. THE STRUCTURE'S ONGOING MAINTENANCE INVOLVES MINIMAL ENERGY AND RESOURCE INPUTS, AS IT RELIES PRIMARILY ON NATURAL PROCESSES FOR GROWTH AND REGENERATION.

PROJECT NARRATIVE

09

IS THERE ANYTHING ELSE YOU WOULD LIKE TO TELL US ABOUT YOUR PROPOSAL?

OUR STRUCTURE, *SUNDANCE*, DERIVES ITS TITLE FROM THE NATIVE AMERICAN RELIGIOUS CEREMONY OF THE SAME NAME. THE SUNDANCE RITUAL WAS THE MOST IMPORTANT AND SACRED TRADITION OF THE PLAINS INDIANS, A GROUP OF AROUND TWO DOZEN TRIBES INHABITING THE GREAT PLAINS REGION. THE CEREMONY OCCURRED ANNUALLY AT SUNRISE ON THE SUMMER SOLSTICE, A DAY BELIEVED TO MARK THE CLOSEST ALIGNMENT OF THE HEAVENS AND EARTH, MAKING IT THE PREDOMINATE HOLY DAY OF THE NATIVE ANIMISTIC RELIGIONS. TO CELEBRATE THE HOLIDAY IN ACCORDANCE WITH TRADITION, PRACTITIONERS OF THE SUNDANCE WOULD CONSTRUCT A CEREMONIAL STRUCTURE, OR LODGE, THAT WOULD HOUSE THEM AS THEY WORSHIPED.

THE LODGE WAS ASSEMBLED BY ARRANGING A FRAMING SYSTEM OF BOUND BRANCHES IN A CIRCULAR FASHION AROUND A CENTRAL POLE CRAFTED FROM A FELLED TREE- THIS CENTRAL POLE HELD GREAT SYMBOLIC AND STRUCTURAL IMPORTANCE. THE LODGE'S SIDES ALWAYS NUMBERED A MULTIPLE OF FOUR DUE TO THE NUMBER'S RELIGIOUS SIGNIFICANCE. THE LODGE'S EXTERIOR WAS TYPICALLY SHEATHED WITH FABRIC, HIDES, OR FOLIAGE TO PROVIDE SHADE. WITHIN THE LODGE, PRACTITIONERS ENGAGED IN VARIOUS RITUALISTIC ACTIVITIES SUCH AS PRAYER, SINGING, DANCING, PLAYING INSTRUMENTS, AND IN SOME CASES, ACTS OF SELF-TORTURE. THESE ACTIVITIES, EVEN THE MOST GRUESOME, AIMED TO FACILITATE A SPIRITUAL RECONNECTION WITH THE DIVINE, EMBODIED BY THE SUN, BY EXPRESSING GRATITUDE AND RESPECT FOR THE NATURAL FORCES – NOTABLY THE CYCLES OF LIFE AND DEATH. ONCE THE RITUAL CONCLUDED, THE LODGE WAS LEFT STANDING TO BE RECLAIMED BY NATURE OVER TIME. THE SUNDANCE WAS WIDELY OBSERVED AMONGST THE PLAINS INDIANS UP UNTIL THE LATE 19TH CENTURY WHEN THE AMERICAN AND CANADIAN FEDERAL GOVERNMENTS BANNED THE PRACTICE OF NATIVE RELIGIOUS CEREMONIES- RESULTING IN THE RITUAL'S GRADUAL DECLINE INTO OBSCURITY. THE SUNDANCE, WHICH HAD BEEN PRACTICED AND PASSED DOWN BY NATIVE COMMUNITIES FOR SEVERAL GENERATIONS DATING BACK TO THE 1700S, WAS- AND REMAINS IN THE HEARTS AND MINDS OF MANY- THE PREEMINENT CELEBRATION OF THE SUMMER SOLSTICE ON THE NORTH AMERICAN CONTINENT.

THE DESIGN ELEMENTS OF OUR STRUCTURE DRAW DIRECT INSPIRATION FROM THE TRADITIONS AND CULTURE OF THE SUNDANCE RITUAL. THE PROCESS OF MYCELIAL GROWTH AND CALCIFICATION MIRRORS NATURE'S ROLE IN THE CYCLES OF LIFE, DEATH, AND REBIRTH (AN INTEGRAL ASPECT OF THE RITUAL'S ESSENCE, A CONCEPT THAT WAS REFLECTED IN THE ACT OF PRACTITIONERS LEAVING THE SUNDANCE LODGES TO BE RECLAIMED BY NATURE). THE MESH SEGMENTS, NUMBERING SIXTEEN, CORRESPOND TO THE 'MULTIPLE-OF-FOUR' RULE IN THE PRACTICE OF LODGE CONSTRUCTION. THE INTERIOR COLUMN STRUCTURE, WITH ITS FORMAL ROOT-BASE SYSTEM, IS INTENTIONALLY REMINISCENT OF A TREE, SYMBOLIZING THE CEREMONIAL CENTRAL POLE. HOWEVER, IN OUR DESIGN, THE CENTRAL POLE IS REPLACED BY A VOID SPACE BELOW THE OCULUS, OFFERING AN INTIMATE AREA FOR SELF-REFLECTION AND SYMBOLIZING THE FORGOTTEN AND ERASED HISTORY AND CULTURE OF THE SUNDANCE

ESTIMATED BUDGET

CATEGORY	ACTIVITY	DESCRIPTION	COST/ UNIT	UNIT	QUANTITY	TOTAL COST	%
SITE WORK							
Excavation	Earth Excavation/ Relocation	Excavator; 4.5 C.Y. Bucket, no truck loading	\$0.98	B.C.Y.	11,304	\$11,304	11.3%
SUBTOTAL						\$11,304	11.3%
FOUNDATION							
Concrete Foundation	Column Structure Foundation	40" thick concrete slab w/ 60" deep footings	\$22.00	SQFT	100	\$2,200	2.20%
	Wire Ground Connection Foundation	Excavator; 4.5 C.Y. Bucket, no truck loading	\$0.98	SQFT	260	\$2,600	2.60%
SUBTOTAL						\$4,800	4.8%
STRUCTURE							
Heavy Timber Column	Labor/ Material	Pre-cut 12" heavy timber column	\$1,100	EA	8	\$8,800	9%
3DPC	Labor/ Material	3DPC column bases/ "roots"	\$25	CU FT	400	\$10,000	10%
Steel Wire	Labor/ Material	1-1/2" galvanized steel wire	\$15.22	LN FT	640	\$9,740	10%
Net	Labor/ Material	Composite wool mesh	\$1.25	SQFT	17,662	\$22,007	22.1%
Mycelium	Labor/ Material	Seeded mycelium colonies	\$15	EA	16	\$240	2.40%
Connections	Labor/ Material	Steel pivot column anchors	\$200	EA	8	\$1,600	1.60%
	Labor/ Material	1-1/2" galvanized steel wire connections	\$130	EA	64	\$8,320	8%
SUBTOTAL						\$60,777	60.1%
FINISHES							
Landscape	Geotextiles	Geotextile earth forming around roots/ exterior of monument	\$0.35	SQFT	40	\$1,256	1.20%
	Plants	Interior and surrounding exterior vegetation and planting	\$15	SQFT	11,304	\$5,087	5.10%
SUBTOTAL						\$6,343	6.30%
CONTINGENCY							
20% Contingency					0.2	\$16,645	16.6%
SUBTOTAL						\$16,645	16.6%
						TOTAL COST	\$99,869