



# Forest takes me into the Sky

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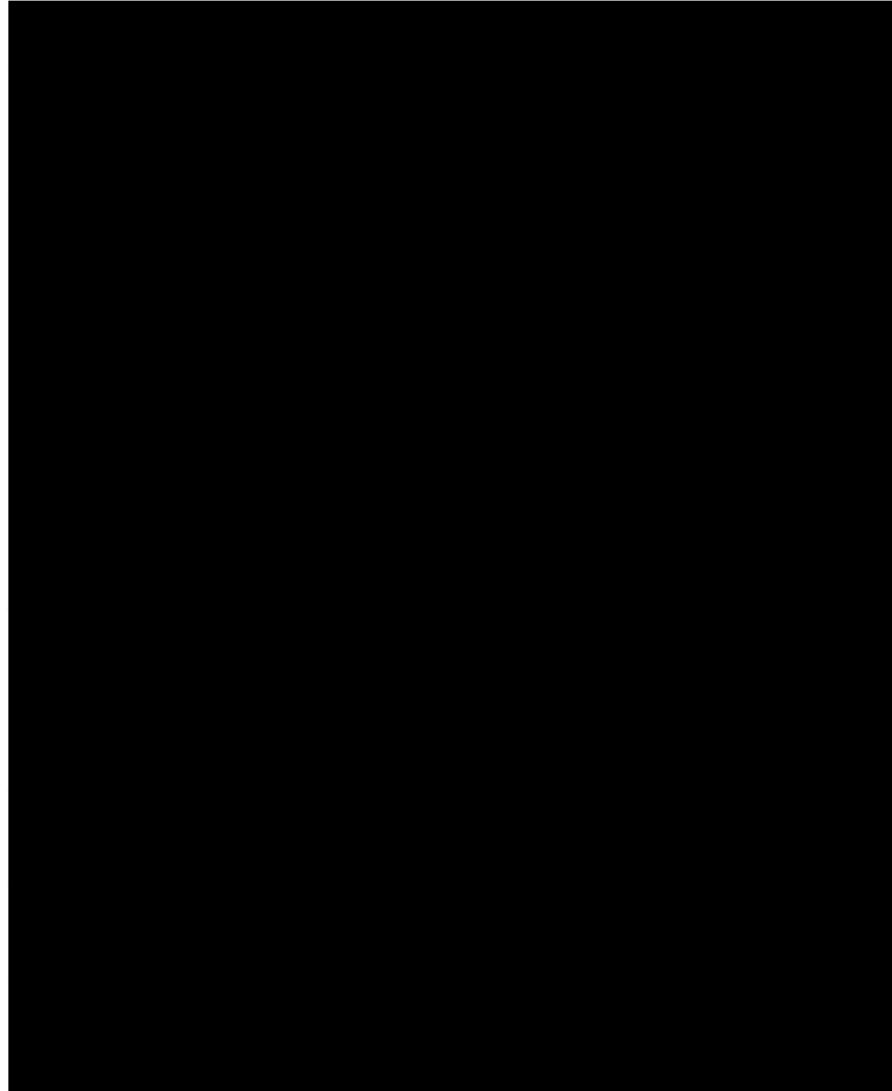
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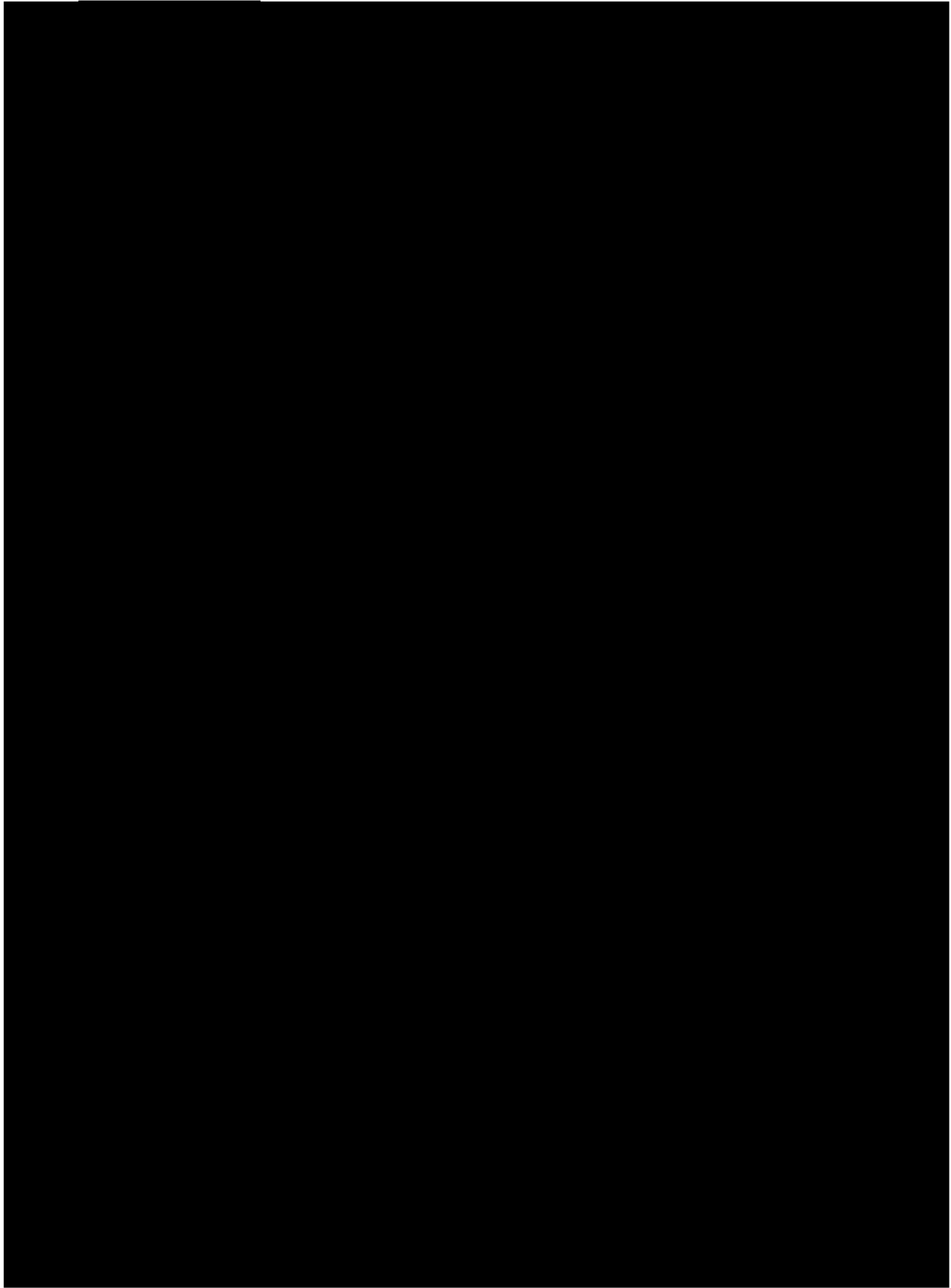




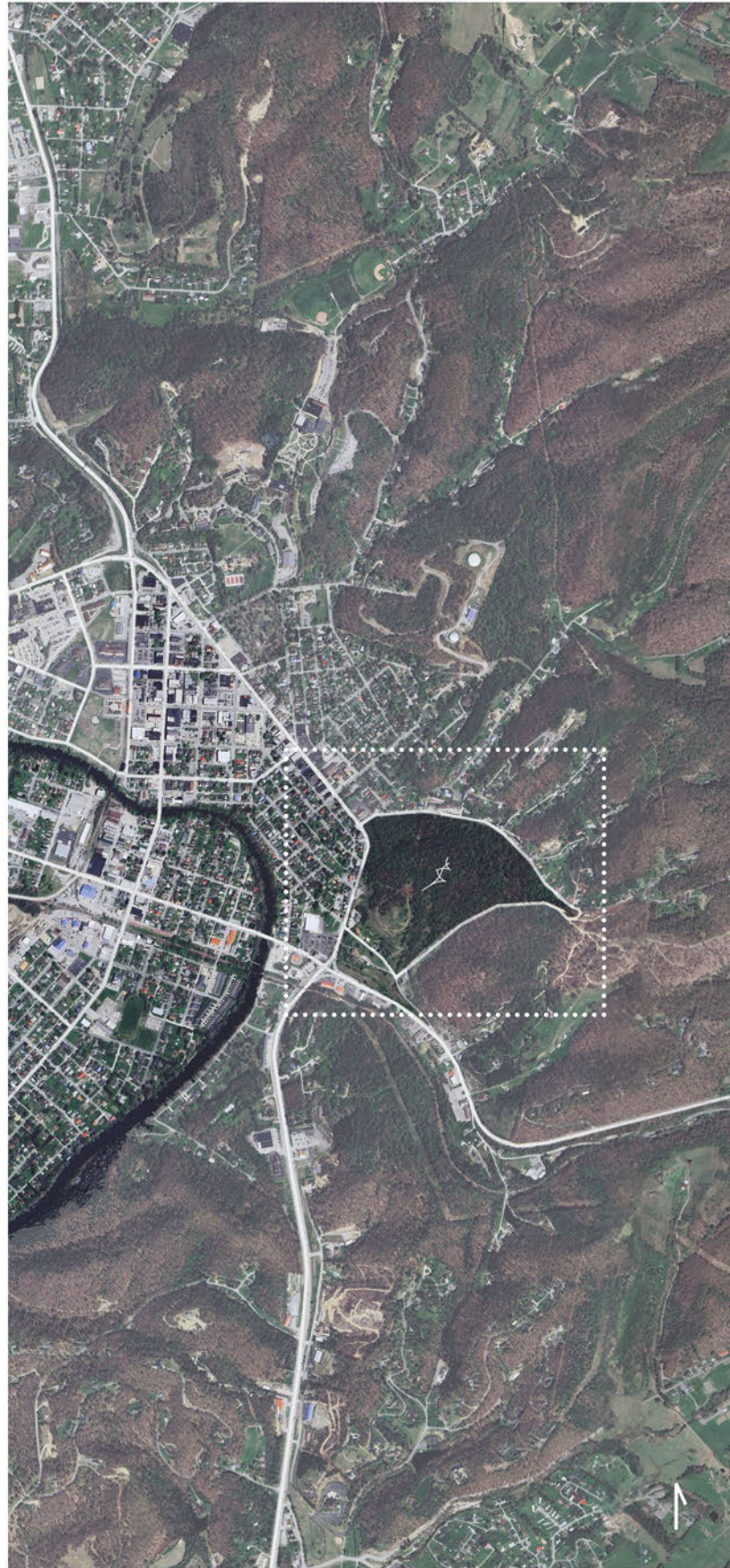
Introduction



Aarif Ahmad



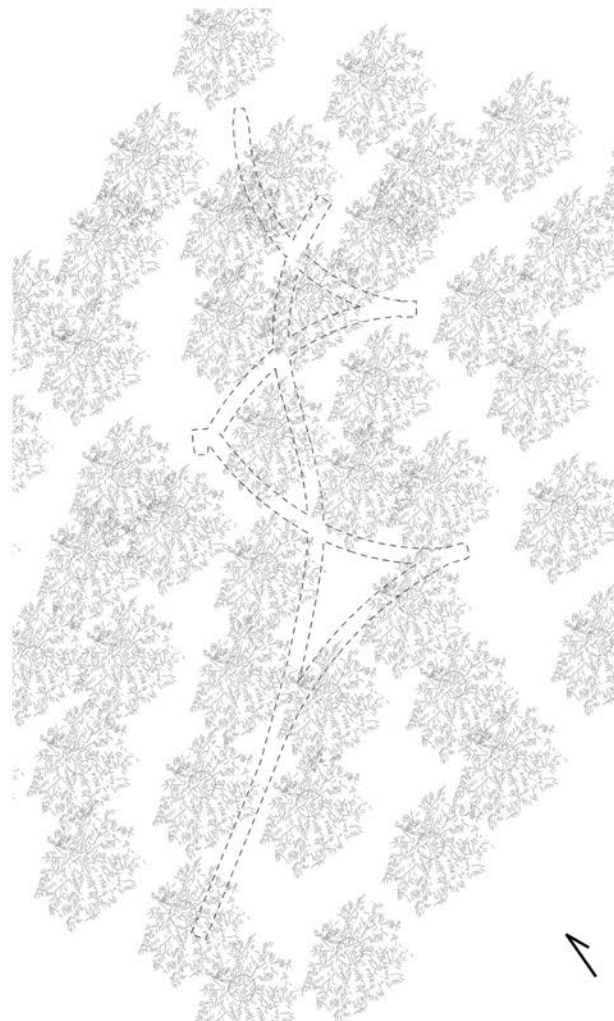




Site Plan 1:3000



Site Plan 1:1000



Site Plan 1:250

## Site Selection

The chosen site for the *MOA Design & Build Competition* was the Appalachian Forest, among the most iconic deciduous forests in the entire world. When considering land and the celestial, pairing the deciduous forest intimately with the vast sky provided the opportunity to explore endless possibilities to gaze at the sky in meaningful ways. For experiencing the vastness of the sky, what could be a greater framework for the tree canopy?

From a large scale, it is difficult to discern what potential could lie amongst hundreds of thousands of trees. When approaching the scale of a \$100,000 construction, the forest canopy begins to offer endless possibilities to frame the sky. Nature creates dense and open spaces, and everything in between. As trees are gathered closely together, tight moments become a tight-knit vessel for light to burst through the canopy. Clearings in the canopy are openings to see the night sky fully; The Little Dipper is seen through the most beautiful frame of the delicate leaves of the tree. The scale of the tree and the galaxies are juxtaposed. These possibilities led to the immediate selection of the Appalachian Forest.

This beautiful forest covers a wide range of ground; When determining a specific location, there were three criteria at play; Potential for public access, safety, and the potential for views. There are numerous facilities spread across the Appalachian Forest for its discovery and appreciation; The Appalachian Forest Museum, The Appalachian Ranger District, and The Appalachian National Forestry Heritage Area, and The Appalachian Forest Discovery Center. Many small towns are scattered around the city of Elkins; Multiple tourist paths also cross through the City. This area is declared an Appalachian National Forest Heritage Center, and it is here that The Appalachian Forest Discover Center is located. By siting the project in this area, the sourcing of materials and development of construction and final use are meant to contribute to the social, economic, and material sustainability of the area. As depicted in the site plans, the beautifully shaped plot of land is a beautiful sampling of the Appalachian Forest; By nestling the project here, the area is accessible and safe, while simultaneously providing the experience of being fully engaged with the forest. Elkins provides a strong social base for events to be held for stargazing and constellation viewing events at night while being safe.

Where the project lands at the scale of the trees is fully determined by what the earthen and celestial landscapes offer, and where they coincide. Trees are carefully mapped to understand the clearings, small moments, and potential of the canopy to view the sky, The clearings at the site offer views to significant constellations (including the Little Dipper), as well as a variety of naturalistic views of the sky, intertwined with leaves, branches, and clearings in the forest sky.





As I gaze into the sky intertwined with the Appalachian Forest,



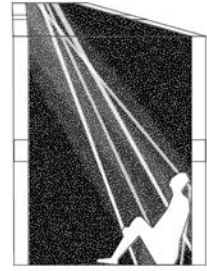


I walk amongst the trees, and I gaze at the stars....

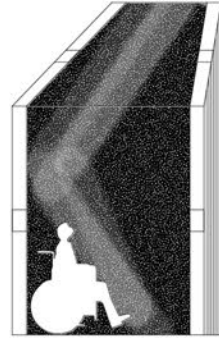




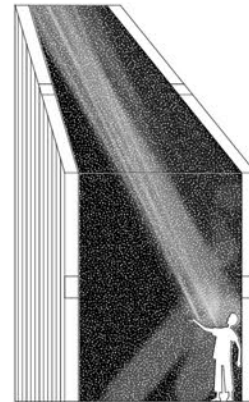
Building Section Diagrams 1:15 and Respective Views



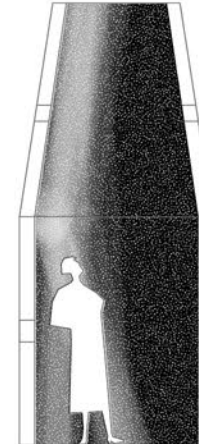
**A**  
Flower-lit Room  
2' Aperture  
East-Facing



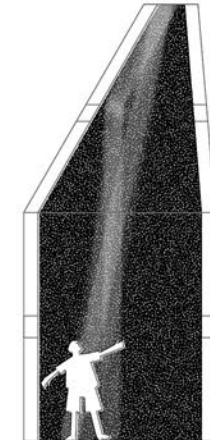
**B**  
Sunlight Room  
9am  
3' Aperture  
South-Facing



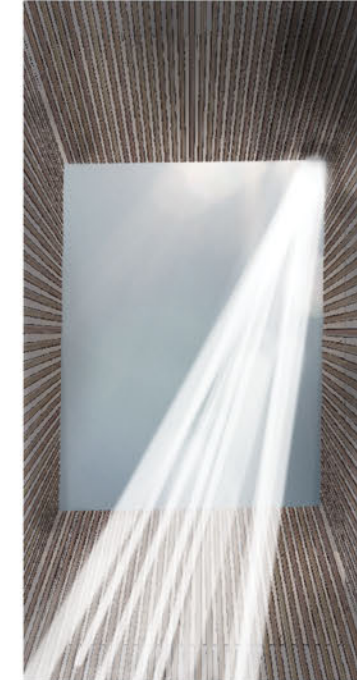
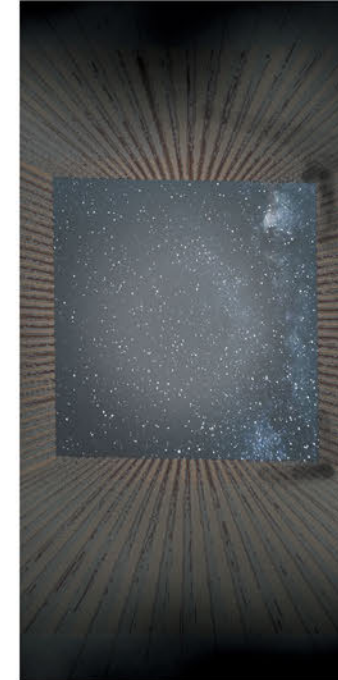
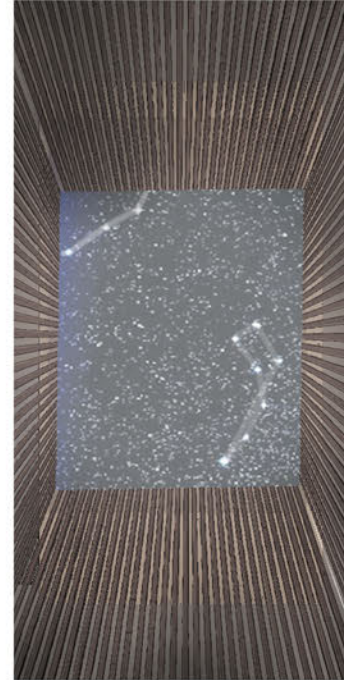
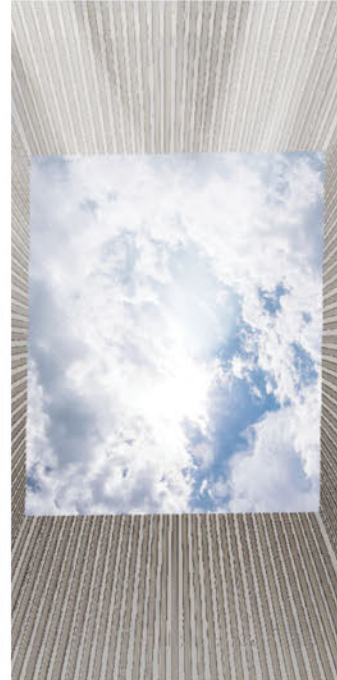
**C**  
Little Dipper Room  
9am  
2.75' Aperture  
Straight Up



**D**  
Contemplative Room  
9am  
3.25' Aperture  
East-Facing



**E**  
Light-Beam Room  
9am  
.75' Aperture  
Northeast-Facing



Watching the forest frame the sky in multitudes, changing with the seasons, night and day.



Sky Elevation: 1:100000

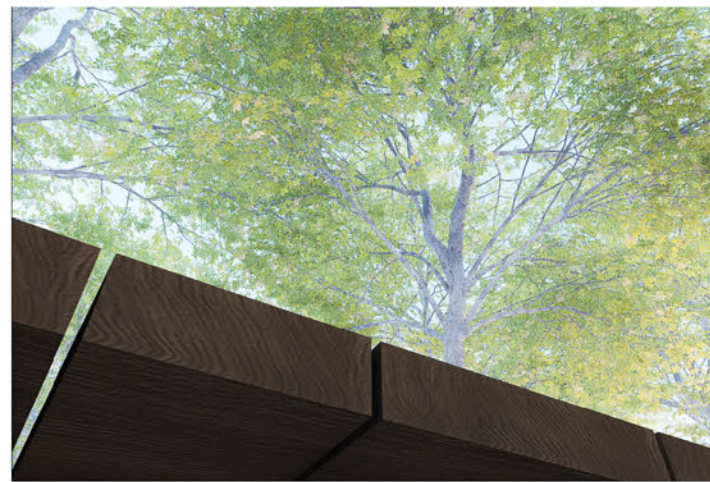
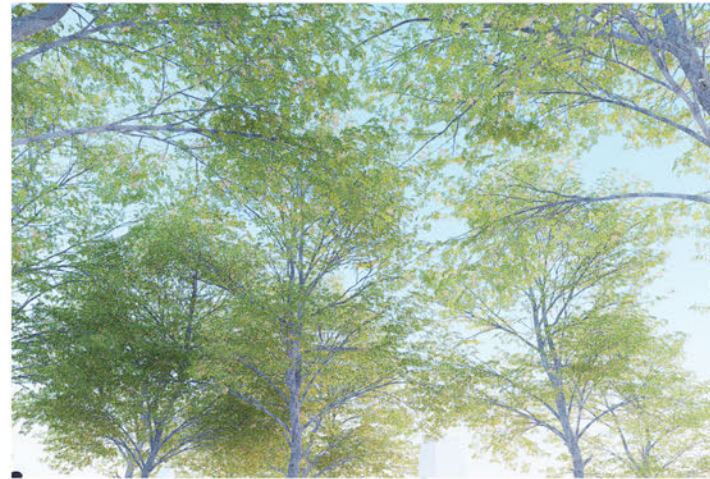


Building Elevation 1:75



While getting lost in celestial contemplation,





Conceptual Renders of the Path

**I trace a constellation of my own through the forest.**





## 1. How does your design relate to the theme of Land Art: Celestial Architecture?

The design evokes a deeper connection to our environment by focusing the gaze into the beauty the sky offers us, and how the Earth provides the land and means to construct that experience. Responding to its environment within the wooded deciduous forest, the land art is intertwined with the forest, creating a path that is a constellation of its own, and providing viewing points to the sky that are compelling throughout the day, and taking advantage of the increased depth of our view to the stars at night. The tree canopy becomes a frame to view the celestial; viewing the dappled light come through the trees and foreground the brilliant sky, or viewing the night sky through the frame that a clearing in the canopy creates. The leaves foreground the sky, creating a celestial artwork of its own between trees and the Earth, which is close to the viewer, and the sky, which is seemingly infinite miles away. During the nighttime, when the stars come out, the leaves are under less contrast, and the sky and the stars are the main perceptible feature. In their viewing of the celestial, the observers trace a constellation of their own.

As the seasons change, so too does the experience within the pavilion. In spring, the budding leaves create a delicate veil through which the sunlight filters, casting ever-changing patterns of light and shadow on the ground. Summer brings lush foliage, providing a cool respite from the sun while still allowing glimpses of the sky above. In autumn, the canopy transforms into a kaleidoscope of fiery colors, adding another layer of visual richness to the experience. Finally, in winter, when the trees are bare, the structure itself takes on a new prominence, its angular forms stark against the winter sky.

Each visit to the pavilion offers a different perspective of the sky, influenced by the time of day, weather conditions, and seasonal changes. Whether it's the soft pastel hues of dawn, the vibrant blues of midday, or the fiery reds and oranges of sunset, the pavilion provides a unique vantage point to appreciate the ever-changing beauty of the sky.

In addition to its aesthetic appeal, the pavilion serves as a gathering place, strengthening community bonds and promoting a sense of safety and security within the forest. By providing a designated space for communal activities and events, it fosters a stronger sense of belonging among residents while also drawing tourists who are eager to experience its unique beauty. This, in turn, contributes to the local economy, supporting businesses and creating new opportunities for growth and development.

The pavilion itself is designed as a series of beautiful rooms, each with its own unique qualities and characteristics. Some rooms are bathed in sunlight during the day, while others are illuminated by the soft glow of the moon and stars at night. Each room offers a different perspective of the celestial, inviting visitors to contemplate the vastness of the universe and their place within it. Whether it's the intimate warmth of a sunlit space or the awe-inspiring expanse of the night sky, the pavilion offers a truly immersive experience that celebrates the beauty and wonder of the celestial realm, 24 hours a day.

As I walk through the forest, the canopy above me becomes a portal to the sky, inviting me to gaze into its infinite depths. The pavilion, nestled within this natural sanctuary, is a testament to the interconnectedness of Earth and sky, of land and cosmos. With each step, I am reminded that the forest takes me into the sky, offering a journey of discovery, connection, and wonder. It is a place where time is measured not in hours but in the changing hues of the celestial canvas, where the beauty of the natural world intertwines with the boundless expanse of the universe. In this enchanted space, I find solace, inspiration, and a profound sense of belonging—a reminder that, no matter how far we may journey, we are always rooted in the embrace of the Earth and the vastness of the sky.





Tongue-And-Groove Member



Curved Wooden Path



Wood Milling Machine for On-Site Construction

## 2. Describe the proposed materials, including required native materials, and methods used to build/install your structure/artwork/installation.

Hardwood timber, derived from the deciduous trees, is the primary material for this project. Considering sustainable forestry practices, quality of materials, and accurate production of lumber pieces, sourcing hardwood lumber from the Appalachian Forest is an opportunity to use world-class wood products in their home environment. Cutting wood with precision requires careful consideration of the wood's grain direction, density, and moisture content. Skilled woodcutters from the city of Elkin and neighboring smaller towns are able to select sawing techniques appropriately sized to the hardwood timber to achieve clean and accurate cuts, minimizing tear-out and maximizing the wood's structural integrity. Additionally, employing specialized measuring tools ensures the wood is cut to precise dimensions relative to the planks, the cladding, and the handrail, meeting the exact specifications to form the path and the rooms.

The decking is cut to fit into each other tongue-and-groove for structural integrity. This cut has the opportunity to be achieved by highly skilled craftsmen who are able to examine and engineer the local connection between two boards of decking. The cladding for the rooms is cut out of standardized materials as well. During the construction process, excess lumber is used to board trees on the site to protect them during the construction process. Due to the nature of the light construction, which does not use a foundation, but rather touches on the ground only at points of structure, the entire structure is able to be constructed on site.

When it comes to the word pavilion, one expects a structure with roof shading. A generic pavilion covers the sun uniformly. A more expensive pavilion may manipulate light in different ways using the form of the roof. By concentrating the creative, financial resources of the project towards dancing safely along the trees and impacting the site minimally, the entire canopy of the forest, which is priceless, becomes an integral part of forest pavilion.

## 3. Describe how your concept will be constructed? How long would construction take?

The concept will be constructed using dimensional lumber (specified in the budget section) and on-site construction. Construction will take approximately three weeks to construct the pavilion. The time of labor accounts for the importance of skilled craftsman slowly constructing the path, rather than a large team of works, trampling through the forest. This is in harmony with the path touching very lightly upon the ground. Construction will take approximately 3 weeks to complete, accounting 4 days of a grace period to account for weather delays and unexpected emergencies out of control of the construction crew. The elements the project are composed of are extremely simple; There is a path, and there are rooms along the path. The path and the rooms are supported by cross-braced structural wood members. The path uses a simply constructed wooden handrail, and it is equipped with lights as well. This simplicity in formal elements enables for a reduction in the elements used; this assists the execution of the concept, as the sensuality and continuity of the materials engages the physical touch, however the eye is directed to the complex visual effects in nature occurring around them. Also key is that this enables the project to spread across the landscape while being in accordance with the budget. Standardized sizes of materials are cut using the highly skilled craftsmen of the Appalachian Forest, thus enabling the project to be constructed reliably and within budget.





A site inspector determining the tree's root zone

#### 4. How was collaboration utilized in realizing the design?

An underlying desire of the project was to touch very lightly upon the Earth in structure, and also in concept. By tiptoeing through the forest, and keeping the structure, and the inhabitants bodies very light, and engaged upwards, the sky gains a deeper appreciation and meaning. Collaboration enables us to follow this desire through, from the initial conception of the ideas, form, and materials, to the quantitative rigor necessary, including labor, sustainable materials and processes, sourcing, and lifecycle; the impacts that you may not necessarily see.

A key collaborator is the craftsmen that make Elkins and the adjacent towns their home. Through their expertise, it is possible to focus on high-quality labor, which enables a stream of positive effects; standardized materials can be cut and used in multiple parts of the project, the wood is cut with precision, and the materials are assembled with a deep care for those that live in this environment. The lumber industry in the Appalachian Forest runs deep, from craftsmen who work with products, to those who sustainably harvest the trees.

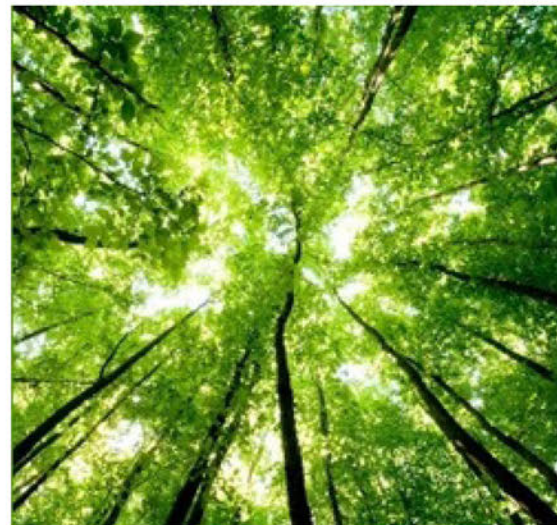
A generational practice of sustainable forest harvestry is set in place. Those who live here feel strongly about living among the trees, and they respect them in their naturally occurring state, as well as how they can properly be used to sustain life and its valuable processes. The standard is extremely high in the Appalachian Forest, and there is a culture of honouring the forest.

A forestry inspector is brought to the site to determine critical root zones of each tree local to the site so that the path stays out of the radius of the tree, and avoids bringing any harm to the tree.

#### 5. How will your structure/installation be used by the public? How was safety addressed?

The pavilion is made safe and accessible through materials/construction and its geographic siting. The pathway is equipped with simple lighting (site specification) at regular intervals to make sure that it is visually navigable, and that during night viewings, any activity is made public and visible. As part of a consideration for the criteria of the form, depth, and positioning of the various rooms, it is important that they are highly visible from multiple angles, are accessible on the pathway, and are not too deep to create an isolated experience. Demographic consideration population, proximity, and adjacency to the site; Towns, cities, public features, and tourism were all considered. The site is located (specify distance, roads, how to get there briefly) from the Appalachian National Forest Heritage Area. This location intersects with the great Appalachian trail, and is near the city center of the heritage area; several small towns feed into this area. There is a communal base, as well as a strong, constant influx of tourists who contribute to the economy of these populations. The wood is engineered with tongue-and-groove construction, and is specified not to leave gaps with a greater tolerance of 3/16". The material, being wood, is sensual to the touch, and has a good balance of smoothness but also tactility. Through both of these factors, the path is completely ADA accessible, providing a pleasurable and safe surface, and it is also welcoming to others. The path and structures are also 4.5' wide at a minimum, exceeding the turning radius requirements for a wheelchair user.





The four seasons in a deciduous forest

## 6. How does the structure/artwork/installation address the climate in which it would reside?

The sustainable sourcing of materials creates a pavilion that is derived from and directly relates to the environment from which it emerges. There is a natural linkage of the materials in their constructed form to how they are found in their natural environment. The experience of the design is enhanced by fully experiencing the full range of the Appalachian Forest climate. Summer brings warm temperatures, ranging from mild to hot. While rainfall continues, it may be more sporadic than in spring. The forest is lush and green, with trees in full leaf and the understory filled with a variety of plants and flowers. Wildlife is abundant, taking advantage of the plentiful food and warm temperatures. As fall approaches, temperatures begin to cool, with crisp, cool mornings and mild afternoons. Rainfall remains fairly consistent, but it may start to decrease toward the end of the season. Trees change color as they prepare to shed their leaves, filling the forest with vibrant shades of red, orange, and yellow. Many animals begin to prepare for winter by foraging and storing food. Some species, like birds, may begin to migrate to warmer climates. Winter brings cold temperatures, often dropping below freezing. Precipitation falls as snow, covering the forest in a blanket of white. Most trees have shed their leaves, and the forest appears barren. However, evergreen trees provide some greenery, and some plants may still be visible beneath the snow. Many animals are less active during the winter months, either hibernating or relying on stored food to survive. In spring, temperatures begin to rise, but they can still be quite cool early in the season. The forest receives plenty of rain, nourishing the soil and promoting new growth. Trees start to bud, and the forest floor becomes covered with wildflowers and new green growth. Many animals emerge from hibernation or migrate back to the area. Birds return to nest, and small mammals become more active.

Considering the different seasons with this granularity is key to understanding how the project, by embedding itself in nature, and amongst the trees, will be able to offer a different, individual interpretation to each inhabitant over the course of the year.

## 7. What type of technology is implemented in your design, if any?

Tongue-and-Groove technology is implemented in the design to create stability in the structure. This added bracing and structural stability makes a difference over time, and enables the building to last longer. Building technology is key; Otherwise, the pavilion creates situations where the inhabitant relies on their eyes to naturally connect and perceive the sky throughout different lighting conditions, and experiencing different levels of contrast, saturation, light, and optical effects in their line of sight. Depending on the way you perceive technology/nature, the pavilion is either simple and low technology. It was important for the design to consider that leaves are not 100% opaque; Light filters through the leaves themselves, as well as the spaces in between them. The color, form, shape, and opacity changes with the seasons. All things considered, the defining elements of visual perception are all at complex play in the consideration of the tree canopy, light, and viewing of the stars. The design argues for the complex optical effects that are enabled by the organic tree canopy that is in constant fluctuation.





The Appalachian Forest Depicted in the Spring



The Appalachian Forest Depicted in the Fall

## 8. What makes the design environmentally friendly / sustainable?

Sourcing materials and construction locally in their prime environment makes the design environmentally friendly/sustainable. The form of the building is careful to touch the ground lightly, it is a rule to avoid touching the ground near the critical root zones of the trees. This becomes a formal relationship, and creates hundreds of options for paths and a form in the forest. It is important for the pavilion to be environmentally friendly because the stronger the health of the environment, the stronger the experience of the pavilion is. Considering the labor process more deeply, the pavilion also supports heritage craftspeople and local traditions. The project is sited adjacent to many small towns and a city center where much of the activity of the Appalachian trail accumulates; by demonstrating a new kind of construction and special function, the beauty of wood-craft and construction has an opportunity to be revitalized and shown in a new light.

Considering the social sustainability is also key to environmental sustainability, because the project stays alive by seeing constant use and the vibrancy of life; Also, the design itself is a method to share and inspire sustainable building practices in others. How many people are using the project? Is it useable year-round? How is it used throughout a 24-hour cycle? These are questions that were incredibly to consider in the design. Global changes in the climate are unequivocally reflected everywhere in the world; they are no less reflected in the Appalachian Forest. A design so intimately tied to the environment means that as people gaze at the sky through the trees, they have a heightened awareness of their environment. Thus, over time, there can be the strong development or rooting to the environment, and even the anthropological effects on the climate that affect the trees in all four seasons. Even the duration of these seasons is affected by the climate.

## 9. Open question: Is there anything else you would like to tell us about your proposal?

Embedding the words Land Art: Celestial Architecture into our vocabulary was crucial during the design process. From the beginning we asked ourselves how we can use the land, and our design within it, to fully engage the inhabitant with the Celestial. In this pursuit, we began to define land, and define celestial. Land was the earth, the trees, the soil we stepped upon. The sky was that which possessed an infinite depth; always accessible visually to humans, yet physically beyond our immediate grasp.

Understanding the relationship between these scales, and visually projecting the viewer into the sky was the focus of *Forest Path into the Sky*





Construction lines being established for a raised path built with on-site construction

#### 10. Provide an estimated budget.

Wooden Boards: \$17,900

*Calculated at \$15/sf.*

Wooden Structural Members (Rooms): \$11,600

*Calculated at \$43/sf.*

Wooden Structural Members (Decking): \$15,250

*Calculated at \$22/sf.*

Wooden Cladding: \$8,100

*Calculated at \$8/sf.*

Light Fixtures: \$3,750

*Calculated at \$125/fixture*

Labor: \$35,250

*Calculated wages respective to operating the various machinery and assembly techniques, including but not limited to: Operating the milling machine, cutting wooden planks, cutting wooden cladding*

**Total Estimated Cost: \$91,850**