

project_**summit**: FOSTERING SOCIAL CONNECTIONS ON SNOWMASS MOUNTAIN

Scott Axel | ARCH 492H Thesis | 2016 | Pennsylvania State University

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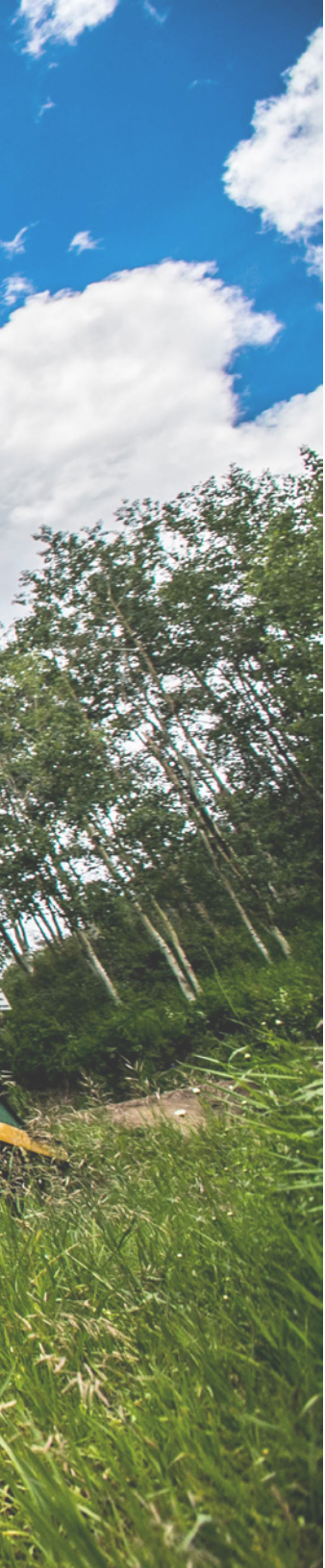
But most thanks to my family, and friends back home, who introduced me and share my passion with skiing and the wonderful landscape of mountains.

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“to be a part of the deep silence,
lost in the magnificence of something
so much bigger and more enduring
that anything I am or can do,
that the present is gone completely”

- Annie Coleman
Ski Style: Sport and Culture in the Rockies

ABSTRACT

Mountains are sources of awe-inspiring vistas, thrilling downhill adventures, and intrinsic environmental beauty. Mountain resorts are becoming ever more prolific across the world; from historical villages in Europe, to destination resorts in the Rockies, to brand new mega-resorts in China; the mountain sport industry is more popular than ever. However, the large resort corporations that now dominate mountain landscapes sideline the connection to their surroundings for increased profits, larger trails, and more invasive infrastructure.

Synonymous with skiing, the town of Aspen has long been on the forefront of resort design, village community life, and environmental stewardship. The nearby Snowmass Mountain is an all-around diverse mountain in terms of terrain and amenities. While Snowmass boasts a unique on-slope village relationship - extending halfway up the mountain - there remains disconnect between people and their surroundings. This physical and spiritual divorce from the landscape stems from a fundamental flaw in the way people participate in mountain sports. The built environment does little to encourage users to interact with each other, with nature, and with the greater network of mountain sport communities.

Numerous surveys suggest the number one reason why people don't go to the mountain is because they have no one to go with. This issue arises from the lack of interpersonal connections and causes athletes and enthusiasts alike to ignore why they participate in mountain sports: the thrill of experiencing such extreme terrain.

The purpose of Project_Summit is to find a way to accentuate the beautiful mountain landscape through architecture and reinvigorate the users about the activities, community, and environment in which they partake. Four modes of social connectivity are made possible by the small, light-handed architectural interventions proposed on Snowmass Mountain: connecting with oneself, one's peers, the environment, and the larger community through an enhanced digital presence. Through careful criteria and guidelines for siting, design, and programming, the hope is Project_Summit can be applied to any environment in need of connection to its users.

THESIS

To change the way users interact with the mountain and environment, a fundamental shift in the way people participate in mountain sports is necessary. At multiple sites on Snowmass Mountain, huts or complexes of huts will provide refuge, solitude, community, and reprieve to all types of users so as to reengage them with the landscape, their peers, and their sport. These interventions break the repetitive actions of mountain sport participants and help them discover the roots of their passion again.



3__RESEARCH

3.1 [AREA OF FOCUS]

The structure of research for this project branches from user groups of Snowmass and mountain sports in general, to case study analysis for determining the strengths and weaknesses of different mountain resorts, to environmental studies so as to preserve the pristine geography of the area, to psycho-social data that backs up the claims and designs further in this project.

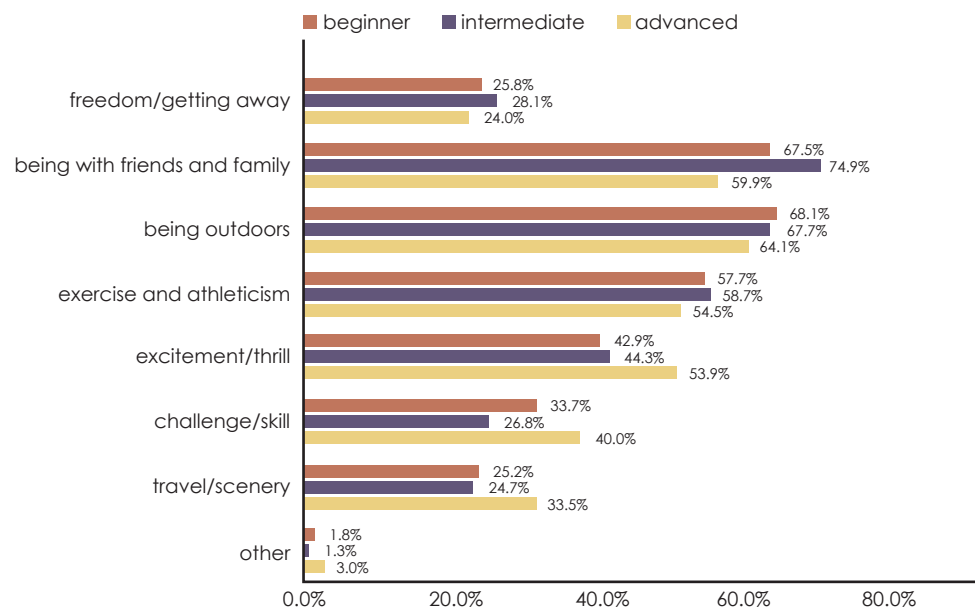
Demographics show that while Snowmass draws in more foreigners and out of state residents than most of Colorado, the average length of stay after moving in is drastically shorter (“Demographics” 2015). This coincides with data showing that the average household income of Aspen to Colorado is \$30k higher (“Snowmass Village, Colorado” 2015). Perhaps the relationship here is in a long line of results proving Snowmass is mostly a destination to the average person and a part time home to those well off (incomes over \$100k). While this may seem like an insurmountable hurdle, most mountain sport participants are willing to travel to gain access to their mountain of choice.

Cost is an often perceived barrier to entry for mountain sports, as equipment prices are steep, rentals are hard to find, ticket prices are high, and lodging and food is expensive. But according to surveys conducted in 1999 and again in 2011, cost went from a major concern down 72% to drop out of the top 15 reasons why people did not participate in mountain sports (“Revisiting Growing” 2012).

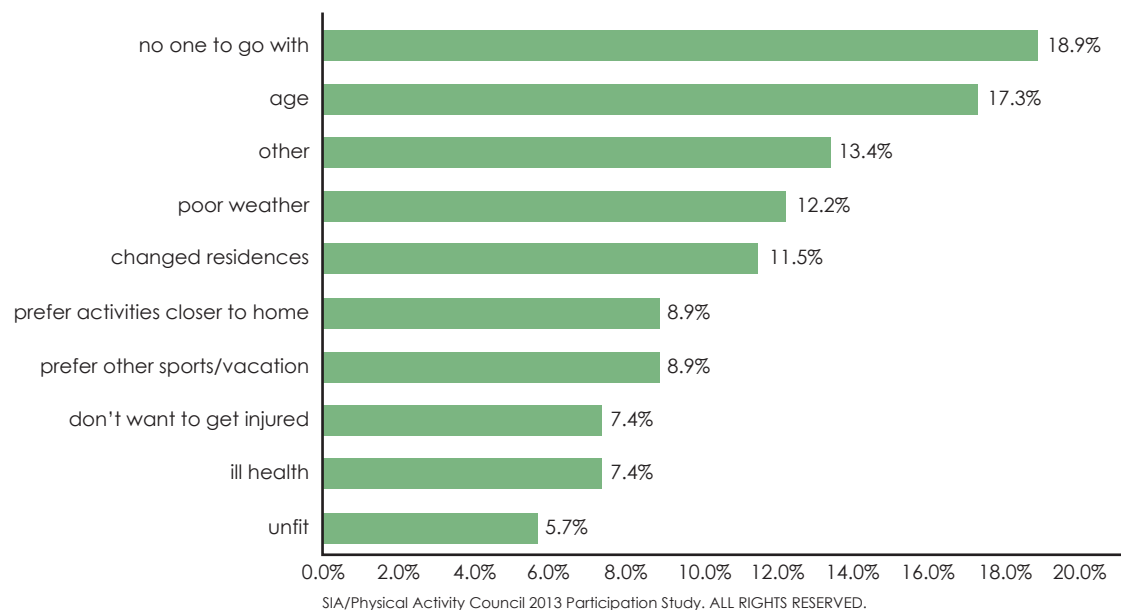
Mountain sports include but are not limited to skiing, snowboarding, mountain biking, hiking, climbing, camping, disc golf, kayaking, canoeing, and fishing. Each of these activities uses a connection to the landscape to help envelope the participant in a feeling of euphoria. Successful engagement is when “people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at a great cost, for the sake of doing it” (Lee 2013). Allowing the event to consume one’s mind is a way to become a part of the bigger picture in nature.

There are many reasons people begin mountain sports and specifically skiing, the largest of them all. But once someone is hooked they will admit “the physical act of skiing is not just about descending a mountain” (Coleman 2004). Aspen, in particular, is often looked upon now as a fake, glitzy town, but it “can still feel real, however, largely due to the grace with which they maintain the tensions surrounding their mountain landscapes [and] local community identities” (Coleman 2004). There is room to grow,

2011 POSITIVE ASPECTS OF MOUNTAIN SPORTS BY PROFICIENCY



2011 REASONS NOT TO PARTICIPATE IN MOUNTAIN SPORTS





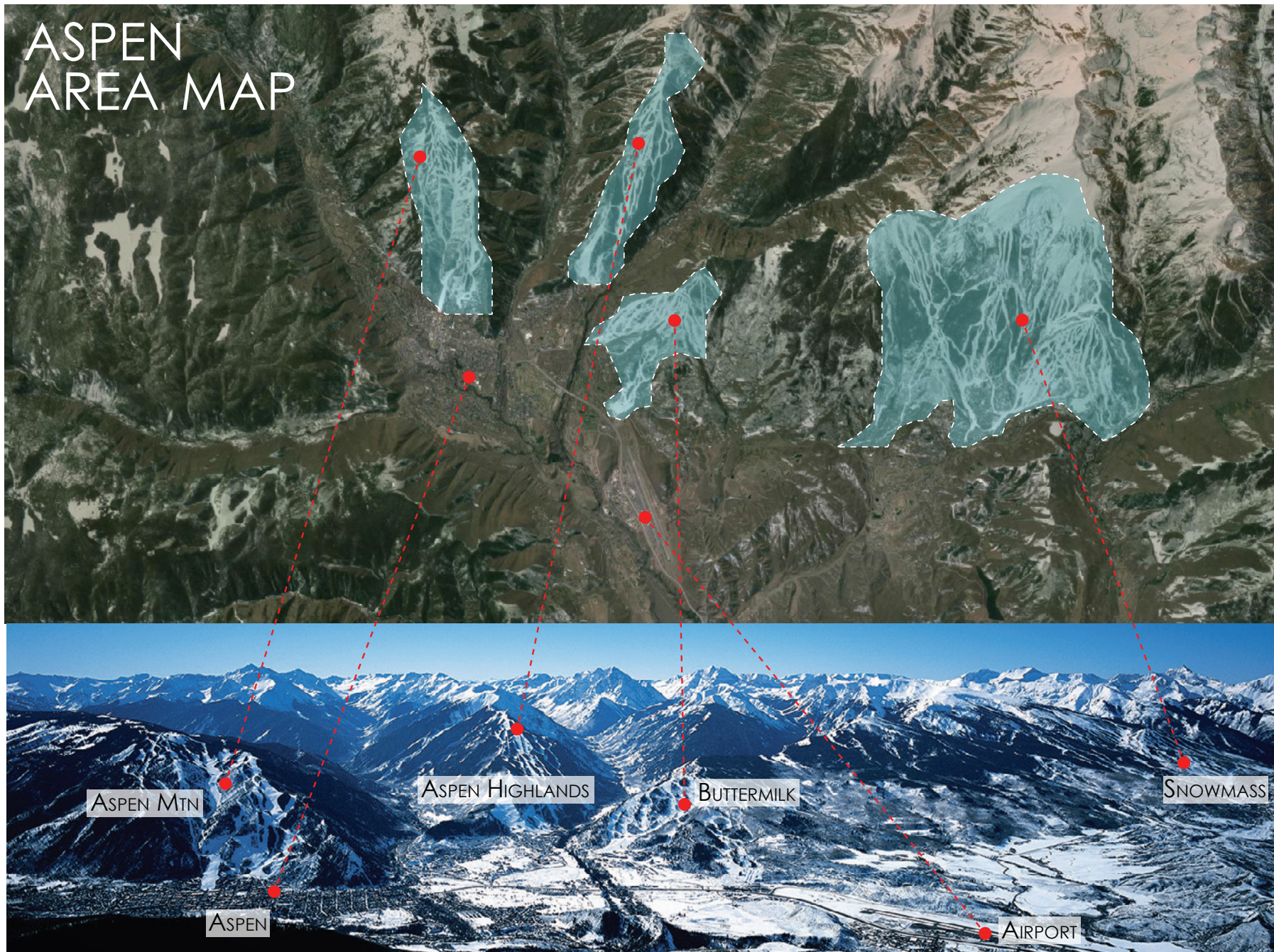
to redefine mountain resorts, and to reconnect the users to the magnificence they first saw when they joined the mountain sport community.

Renovations in the 90s and early 2000s posed mountain resorts for great booms, but similar to the rest of the construction industry there remained the “environmental insensitivity of many American ski resorts” (Skinner 2014). Presently, environmental stewardship is a large factor in design, products are sold due to being labeled as ‘green,’ ‘organic,’ or ‘natural.’ This proves beneficial to the natural ecosystems of mountains because people now do not have to be convinced to appreciate nature, they now just have to find it. Luckily enough, Snowmass – an advocate for advanced environmental progress (“Green Aspen” 2015) – touched very little in terms of major renovations since the early stages of the village and mall (Schmitz 2008). This means Snowmass can move forward instead of having to rectify the past, and now can make progress and define new paths for mountain resorts and their relationships to the environment.

Left: Successful integration between Aspen Mountain and the town of Aspen

3.2 [LITERATURE REVIEW]

Snowmass is the largest of four mountains located in the Aspen area. The Aspen Ski Company owns all four and runs them under the Aspen/Snowmass resort name. Aspen Mountain, Aspen Highlands, and Buttermilk are all located within reach of the town of Aspen itself. Separated by Aspen Sardy Field (ASE), the airport, Snowmass Mountain boasts taller peaks, larger area of terrain, and its own village system. Snowmass is the ideal candidate for research and intervention of this scale because of its well established history in the mountain resort culture, its success as a forefront in resort design, and as an advocate for environmental issues.

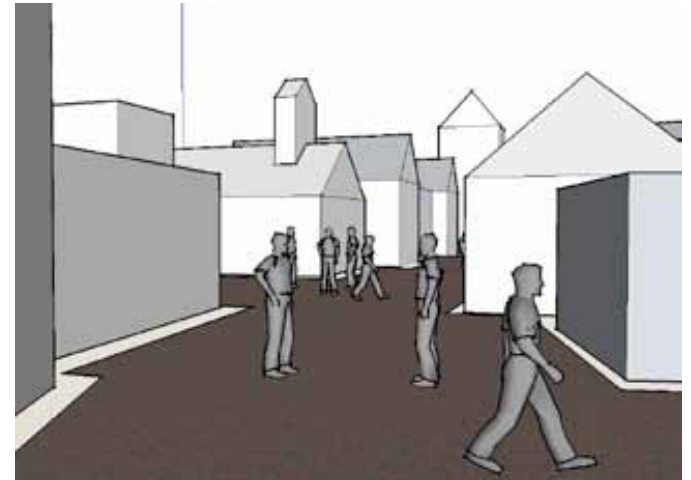
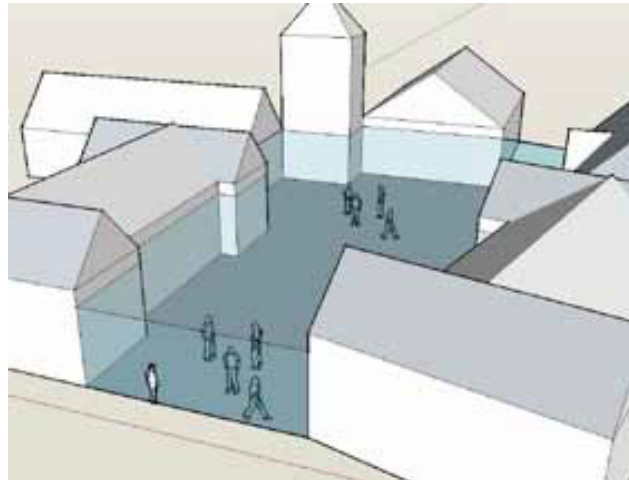
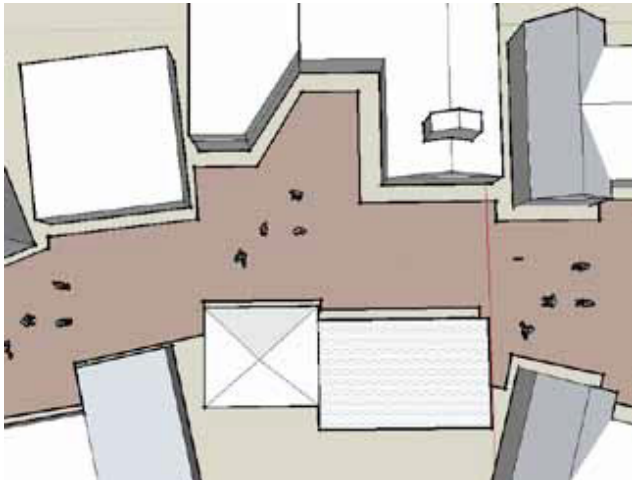




Above: Well established village at Chamonix, France

Below (left to right): From the “Full Comprehensive Plan” an example of an irregular pedestrian edge, creating ‘outdoor rooms’ and providing serial views.

The resort as it is known today, established in the 1970s, “was to provide a village or series of villages similar to those in the Alps...unit[ing] the ski slope and village experience” (Schmitz 2008). Since its inception, Snowmass has done things differently from other large mountain resorts. Vail, for example, founded in the same time frame, focused on master planning of a resort complex in the basin below the mountain, while Snowmass incorporated the village and amenities directly into the mountainside so as to create a better flow from living room to trails. Alas, the concepts were excellent in the planning of Snowmass Village, but the execution left much to be desired. With the addition of a few hotels plopped between the mall and base village, Snowmass remains a “disjointed series of pedestrian malls and lodges” (Schmitz 2008). This project aims to fill the gaps left behind in those designs, correcting the connections to the mountain from base to summit. There are already guidelines in place to help move Snowmass Village forward. In the “Full Comprehensive Plan” of the Town of Snowmass, the organization outlines principles to shape design and renovation for continuity of the village. Part of the plan has language to help maintain a small mountain town feel by designing “Public gathering places that allow personal interaction and people-watching, easy pedestrian or mechanical connections between nodes, and building placement that preserves long views from key public areas” (“Full Comprehensive Plan” 2010). In this case the mall and the base village are the nodes to be connected.

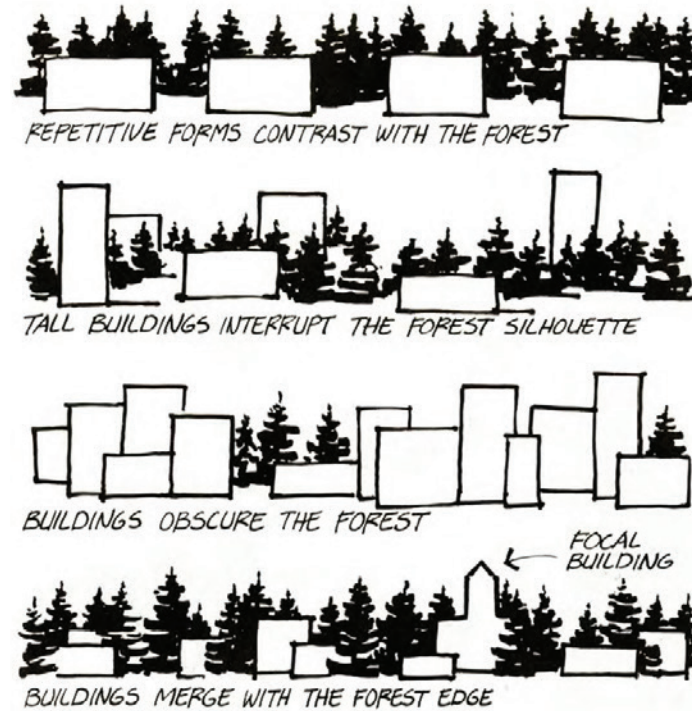


Focus while participating in skiing, the most common mountain sport, has shifted from interacting with the landscape, the people, and the resort, to making it down the mountain as fast as one can in order to get in a lift line, and go back up. The magic of gliding down the snow, pausing at interesting points on the mountain and gazing at the wondrous vistas before oneself are far and few between. The restaurants, cafeterias and shops now on the mountain do not help in this effect. They are boring and overpriced tourist traps for people who forgot to pack a lunch. Instead of encouraging participants of any mountain sport to unstrap their boots, unclip their helmets, and put down their equipment to grab a drink, they fade into the background until a starving tourist has to stop in to buy a five dollar granola bar. These stops should be celebrations of the terrain they perch upon, opening up view frames for everyone to fall back in love with the landscape they chose to enjoy.

Today's resorts are not built in North America, for the land is mostly designated as national forests or occupied. Instead, companies are investing internationally in China, Eastern Europe, and South America. When these resorts are planned, there is a general consensus as told by Paul Mathews, a renowned resort architect: "a classic ski resort is a place that's nice to stay at – where you can ski in and out; where there's little or no traffic; where you can get great food easily; which is keeping with the environment. I can't stand those purpose-built French ski factories" (Skinner 2014). Mathews' use of the term 'factory' precisely identifies what the mountain resort industry focus too much on. Corporate ski companies take the personal level of interaction between users and between the environment out of the equation. They design for the poshest of hotel rooms, the most lodging packed on the slopes, and for eye catching ways for people to spend money. This should not be their concern though, because "lift tickets...will always provide the foundation of ski-nomics" (Thompson 2012). If these large companies market themselves towards spreading awareness of more mountain activities all year round, they can increase their overall sales instead of trying to overcrowd the trails.



According to a 2011 survey, mountain sport participants value 'being outdoors,' 'getting away,' and 'scenery' very highly when searching for resorts ("Revisiting Growing" 2012). Bottling up mountain access and congesting trails through large lodges at the main junction points of the mountain work directly against the desires of the patrons. To help facilitate a connection between the desired outdoors and sport participants on the mountain, the architectural interventions of this project are located on sites where current lodges or structures need supporting elements to provide a full mountain experience, or are located in isolation – away from the beaten path – so as to further encourage mountain sport participants an opportunity to pause and appreciate their surroundings. Striving to create a psychological and emotional connection to the mountain is an architectural goal of this project. "Consumers are emotional beings in search of sensitive experiences...[and] can be a motive for consuming and can influence the choice between competing products and services" (Bonney-Claudet 2013). The interventions impact users by influencing their emotions into positive ones valuing not only their activity, but the people and environment they participate within.



Above: Principles of layering in design on mountains



Snowmass Mountain is located in the White River National Forest. The United State Forest Service, unlike national parks, allows for using these lands in conjunction with protecting habitats and wildlife. The Aspen Ski Company places paramount importance on protecting ecosystems. For example, there are permanently closed areas on mountain reserved for lynx hibernation zones and elk calving areas. While designs must be submitted to the USFS, there are principles in places from their “Land and Resource Management Plan,” namely, “protection of scenic values is emphasized through application of basic landscape aesthetics and design principles, integrated with forest management and development objects. Reasonable efforts are made to limit the visibility of structures...and harmonize with the national forest setting” (2002). Logistics behind such a large scale design endeavor may become difficult to work around. A successful integration of architecture at the village and Elk Camp would benefit the resort and the participants as “the transformation of mountain landscapes goes hand in hand with the formation of skier and ski town identities” (Coleman 2004). The perception of Snowmass Mountain to the public, users, and industry all revolve around its architectural link with the terrain.

Left: A feeling of bliss overcomes many on the slopes

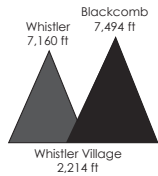
3.3[QUESTIONS]

- i. To what extent does the environment impact design?
- ii. Will this design be architecture of conservation or preservation?
- iii. Can the village image be maintained across such a large distance?
- iv. Should links between site elements be physical or visual?
- v. What is defined as natural? How much can man intervene to create a natural landscape?
- vi. What can be drawn from other successful resorts and still have Snowmass Mountain retain uniqueness?
- vii. How will self sufficient programs work on such an isolated scale?
- viii. What about interventions that require links to existing infrastructure?
- ix. What level of design shows a link between various pieces of architecture?

3.4 [ARCHITECTURAL ISSUES]

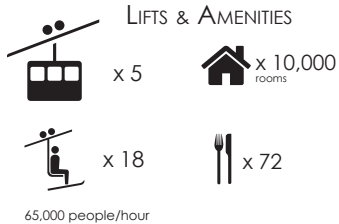
- i. Will sustainability be a driving force in design? Active or passive?
- ii. How self sufficient can these huts be?
- iii. If in a complex, will they work with each others' systems?
- iv. How much will the physical limits of transporting goods up a mountain restrict design?
- v. Designing on a slope while maintaining constant access
- vi. Extreme climate conditions for winter, and accommodation of 3 other season for use
- vii. Flexibility of program for four season use
- viii. Low impact design for habitats – working in a national forest
- ix. Providing emotional impact through physical design
- x. Uniqueness of architecture while maintaining visual language to link mountain together
- xi. Construction of huts in multiple sites complicates transportation of materials or construction crews

3.5 [RESORT PRECEDENTS]

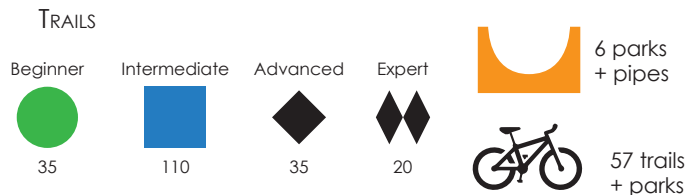
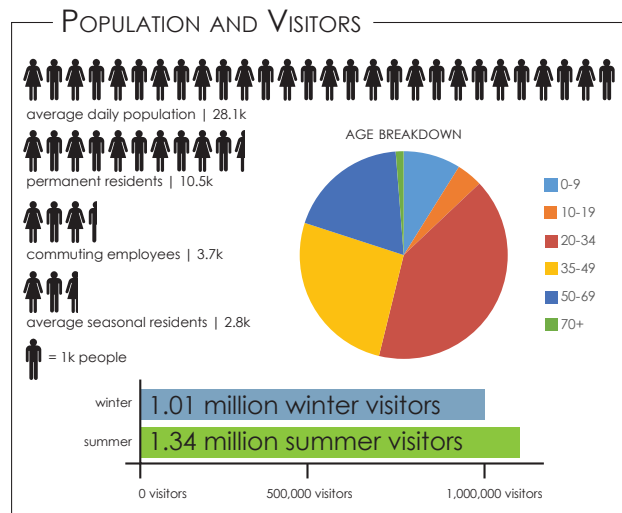


Available Terrain:
Whistler - 4,757 acres
Blackcomb - 3,414 acres

\$\$\$\$
484 dollars
* 4 day lift ticket
** mid-season



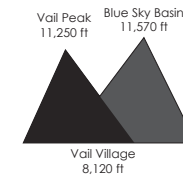
A twin-peak mountain resort: the largest of its kind in North America. Boasting intense terrain, home to international competitions, and defining the frontier of lift systems for mountain access yearlong enjoyment.



Whistler Blackcomb: Twin peak resort located 80 miles north of Vancouver, British Columbia, Canada. Massive tram link from main mid-slope lodge on each mountain. Roundhouse Lodge in particular on Whistler Mountain is of architectural significance and precedence for this project's intervention at Elk Camp. This mountain is a much larger scale than Snowmass and has the most skiable area in North America. Whistler is owned by Intrawest, the parent company of Aspen Skiing Company. Whistler derives its success in its village from creating a corridor for pedestrians through unique shop fronts, composed streetscapes, and seamless transition from slope to village.

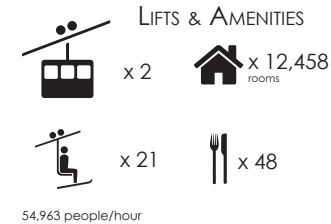


Vail: Essentially a sister mountain to Snowmass, it was developed at the same time and caters to largely the same user group. The designers took a different approach when developing the village; they decided to create a resort complex well below the base of the mountain, into the valley. This is contrasting to the persistence of the Aspen Ski Company to place the village along the mountain's slope at Snowmass. While in recent years Vail experiences more success monetarily, Aspen's four mountains are poised to retake that lead due to Vail's lack of investment in affordable housing, green endeavors, and their commitment to maintaining their reputation as a mountain for celebrities.

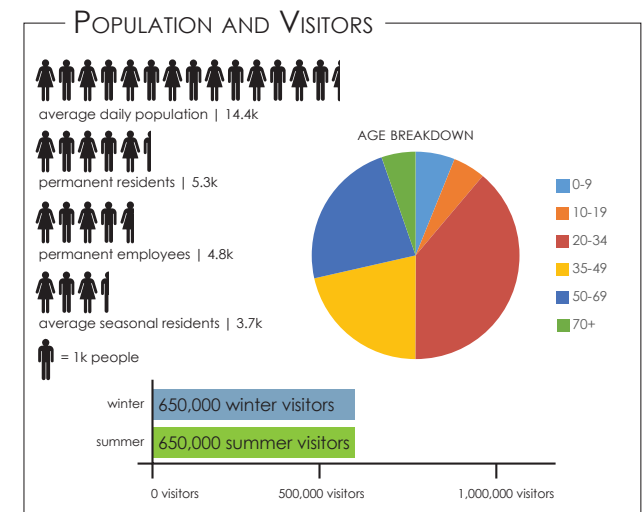


Available Terrain:
5,289 acres

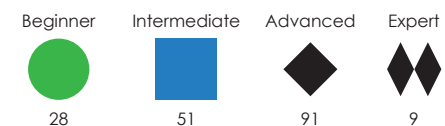
\$\$\$\$\$
512 dollars
*discounted online
4 day lift ticket
**midseason



Since founding, Vail has been synonymous with skiing - a competitor to Aspen - and defining complex village planning. Attracting celebrities and the upper class, Vail is an upscale resort focused on the entire vacation experience.



TRAILS



The Snowmass Acquisition Company LLC in 2015 commissioned a full retail feasibility study from Thomas Consultants Inc. Some of the relevant results are listed below. They studied the vitality of mountain resorts with pre-existing sister mountains that are already successful (how Aspen can be looked at in context with Snowmass). This shows that if a separate variety of entertainment or retail enters the market, it can succeed if unique.

Case Study: Deer Valley (Park City), UT

Opened in 1983, Deer Valley is a high-end ski resort located just outside of historic Park City. Deer Valley restricts the availability of lift tickets to 8,000 passes per day, resulting in usage of only 4 skiers per acre. Snowboarders are also prohibited from the slopes, adding to the exclusivity of the resort.

Annual Visitors:	Maximum of 960,000 skiers	
Proximity to Larger Resort:	2.6 mile drive (7 minutes) to Park City	
Retail GLA:	40,100 sf	
Types of Tenant:	F&B	26%
	Retail	48%
	Services	19%
	Misc	3%
Estimated Sales Performance:	\$558 psf blended	
Estimated Retail Vacancy:	<5%	

Issues & Considerations:

- Deer Valley generates over \$77 million in lodging sales per annum, while Park City generates only \$13 million. However, both generate similar retail sales of around \$85 million, which suggests that Main Street, Park City is capturing sales from surrounding communities.
- Deer Valley is more susceptible to seasonality than nearby Park City. 60% of Deer Valley's sales occur during the winter season, as opposed to Park City which sees 45% of its sales during this period.
- Park City's retail mix is far more dynamic and features a wide range of higher end goods including boutique clothing stores.
- Convenience retail in Park City / Deer Valley has moved down valley, in order to find larger space and be located in closer proximity to the area's residential population base.
- Both Park City and Deer Valley are home to household name events such as Park City's Sundance Music festival.



Additional studies were conducted specifically with the idea in mind of what could Snowmass Village support. The results show that community level investments in small, boutique or trial shops and entertainment are more catered towards the availabilities in Snowmass versus big shops.

Tenancing at Future Development



Comparison

Tenants include consumer goods such as apparel, accessories, sporting goods, electronics, etc. Existing comparison tenants in Snowmass are primarily comprised of ski-related retailers, tourist-oriented specialty retail, and sporting goods.

Comparison retail currently occupies approximately 42,000 SF of retail within Snowmass' three main retail nodes.

High quality national and international retailers are likely to view Aspen as a more viable and attractive retail environment to enter the local market, due to its established critical mass of luxury and lifestyle retailers, and higher foot traffic.

Future comparison retail would therefore likely be comprised of local operators.



Convenience

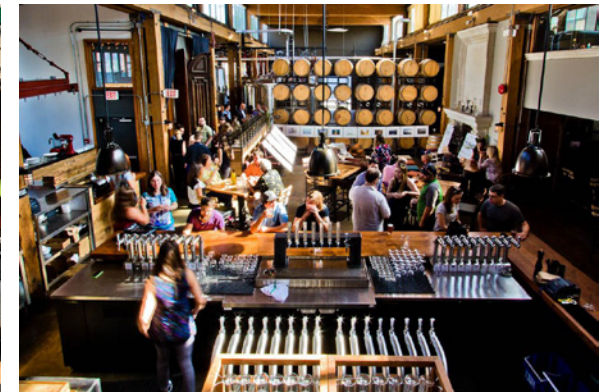
Retailers include grocers, pharmacies, banks, and other personal services.

Convenience retail currently consists of approximately 19,000 SF of Snowmass.

Second homeowners and local residents of Snowmass are likely to continue to do larger grocery trips in either Basalt or Glenwood Springs, which feature nationwide retailers including Whole Foods, Target, Walmart, and Safeway. These stores appeal to consumers as they are able to compete with local convenience retailers on price, quality of goods, and selection.

Due to Snowmass' location as a terminus, with limited passing traffic, the likelihood of national grocery operators to regard Snowmass as a new market is limited.

Snowmass' grocery store sales are heavily skewed towards winter months, with spending in the last four months of the year accounting for 57% of spending. A future grocer in Base Village would likely cannibalize sales of its existing grocery store, Clark Market, particularly due to its proximity.



Restaurants and Entertainment

Restaurants include both full service and quick service formats, coffee shops, and bars, etc. Entertainment retail consists of uses such as movie theatres, live performances, and music shows.

Restaurant and entertainment uses within Snowmass' three main retail nodes total 39,000 SF.

Restaurants in resort environments typically are located either in areas receiving higher pedestrian footfall (particularly at the base of ski slopes), in hotels or located in areas with exceptional views.

At present, TCI understands from discussions with local tourism bureaus and businesses that visitors to Snowmass are likely to dine out in Aspen, but reverse visitation is less common. Attracting concept restaurants from some major tourism source markets such as Denver and New York to Snowmass could stem restaurant spending leakage and encourage visitation from Aspen visitors.

3.5 [ARCHITECTURAL PRECEDENTS]



Volcanic Inspiration | Observation Deck
Pinohuacho, Chile | Rodrigo Sheward



High-altitude Modern | SkiBox
Portillo, Chile | dRN Arquitectos



Los Canteros Mountain Refuge
Farellones, Chile | dRN Arquitectos



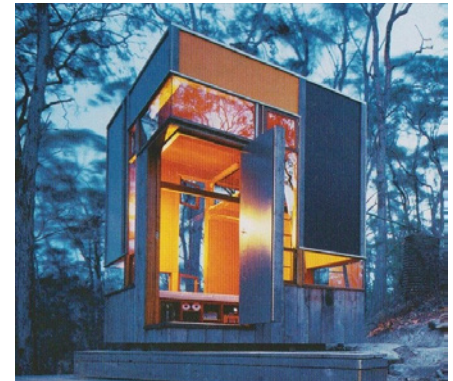
Mountain Cabin | Hemsedal, Norway
div.A Architects



Nearpoint House | Anchorage, Alaska
Workshop for Architecture and Design



Angles of Reflection | Gazebo Kuusi
Mantyhärju, Finland | Juhani Pallasmaa



a Beer in the Bush | ZigZag Cabin
Wollombi, New South Wales | Drew Heath Architects

Investigations into architecture of mountains in the South American Andes, American Rockies, and the Swiss Alps revealed themes, material palettes, and architectural gestures that succeeded across the board. Examples of cutaways, screens, glazing systems, and scale were taken away from these studies.



Going Over the Edge | Mirador
Zapallar, Chile | Contreras & Cortese



Rolling Stock | Rolling Huts
Mazama, Washington | Olson Sundberg Kundig Allen



Administration Building for Governor of Svalbard
Longyearbyen, Norway | Jarmund/Vignsnaes Architects



Turtagro Hotel | Sognefjellet, Norway
Jarmund/Vignsnaes Architects



Mitchell Residence
Aspen, Colorado
Poss Architecture + Planning



Delta Shelter | Mazama, Washington
Olson Sundberg Kundig Allen



Carmenna Chairlift Stations | Arosa, Switzerland
Beaerth & Deplazes Architekten



Chicken Point Cabin | Northern Idaho
Olson Sundberg Kundig Allen



Colorado Outward Bound Cabins | Colorado Forest
University of Colorado Building Workshop



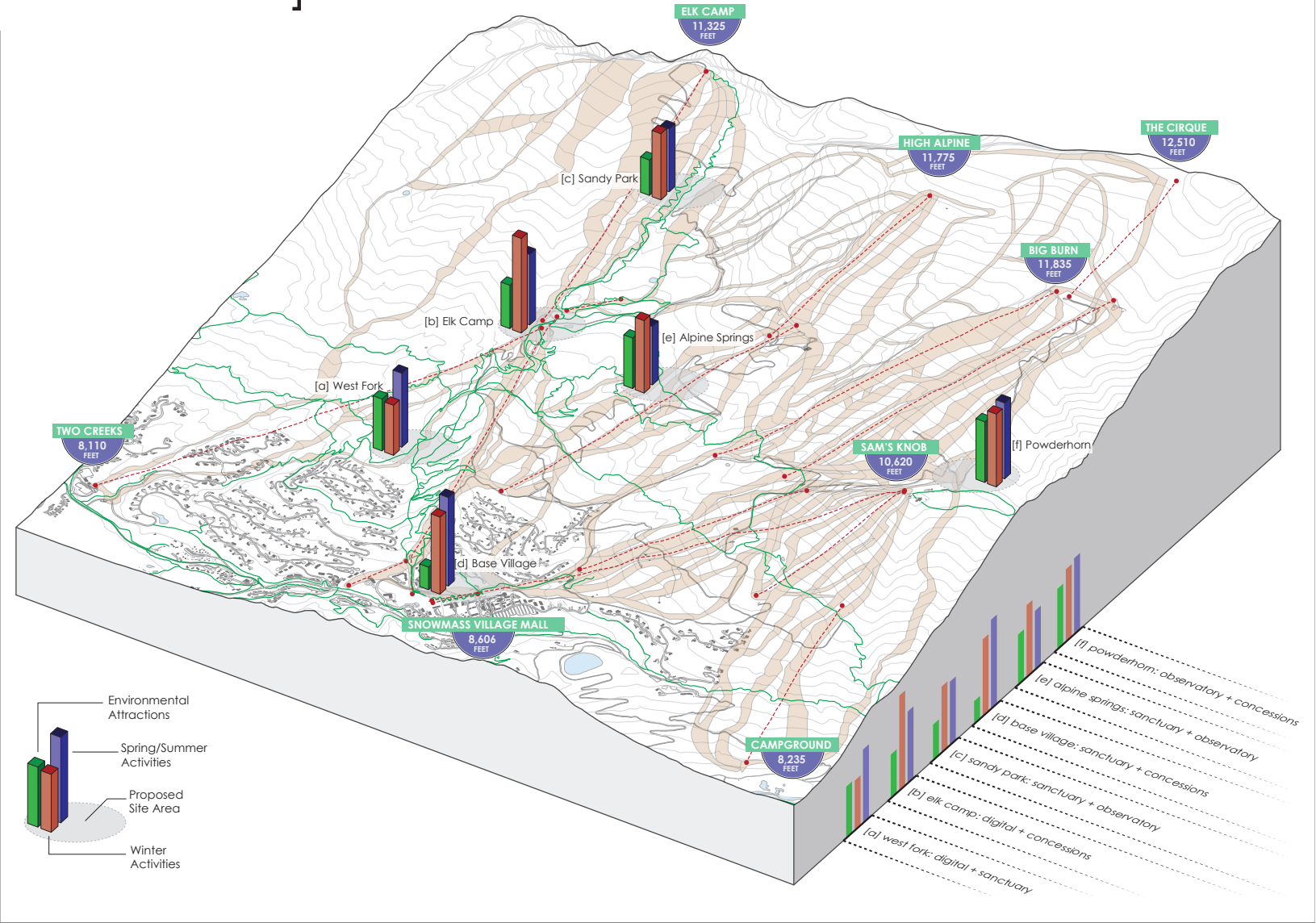
Tilted Cabin | Oberwiesenthal, Germany
Sebastian Heise

4_ SITE AND CONTEXT ANALYSIS



Six sites dotted across the mountain landscape will provide a variety of program in multiple types of terrain.

4.1 [ANNOTATED AERIAL PHOTOS AND MAPS OF SITE]



Above: 3D representation of mountain comparing summer, winter, and natural attractions to influence site locations.

Areas of work were chosen using rigorous criteria taking into consideration winter activities, summer activities, and environmental attractions. The proximity of hiking/biking trails with ski runs and access roads provide utility and pleasure at each site. Having opportunities for landscape interaction or appreciation is an added benefit. Depending on the proximity of other lodges, the isolation of the trails, the difficulty or steepness of terrain, and the views, different configurations of huts were chosen per site. Given two huts per site, four hut typologies, and six sites, there were a total possible number of combinations set at 12.

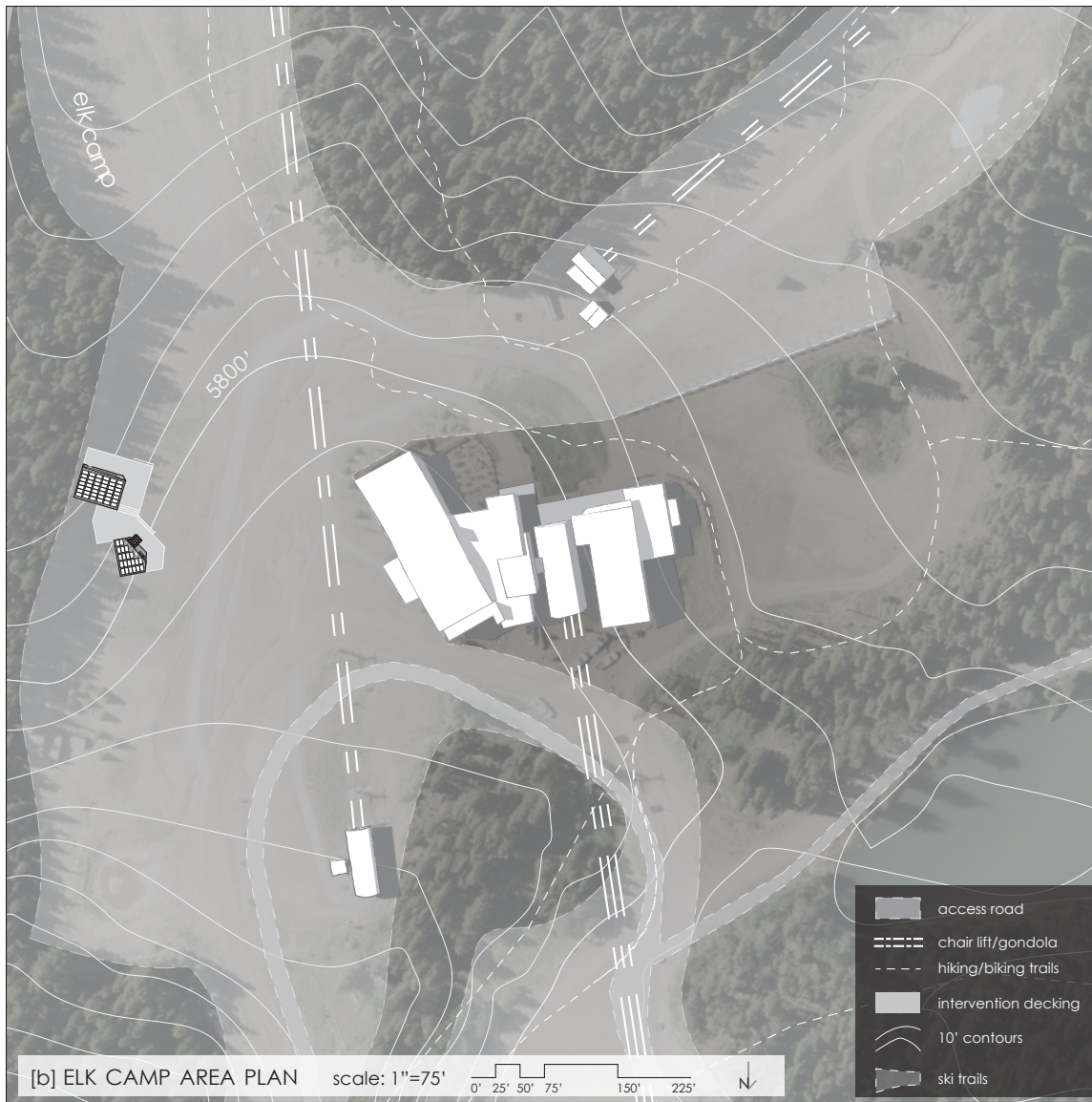
4.2 & 4.3 [SITE DOCUMENTATION & STUDIES]

A. West Fork

Digital + Sanctuary

Located deep into powder territory, the West Fork site will act more as a sanctuary to observe and appreciate nature. While it only services one trail in summer and two in winter, the huts located here can offer solace in storms, and seclusion in an otherwise commercialized mountain. The site is situated on a bend in a clearing so that it invites users inside and also blends into the background so as not to interfere too much with the environment.





B. Elk Camp

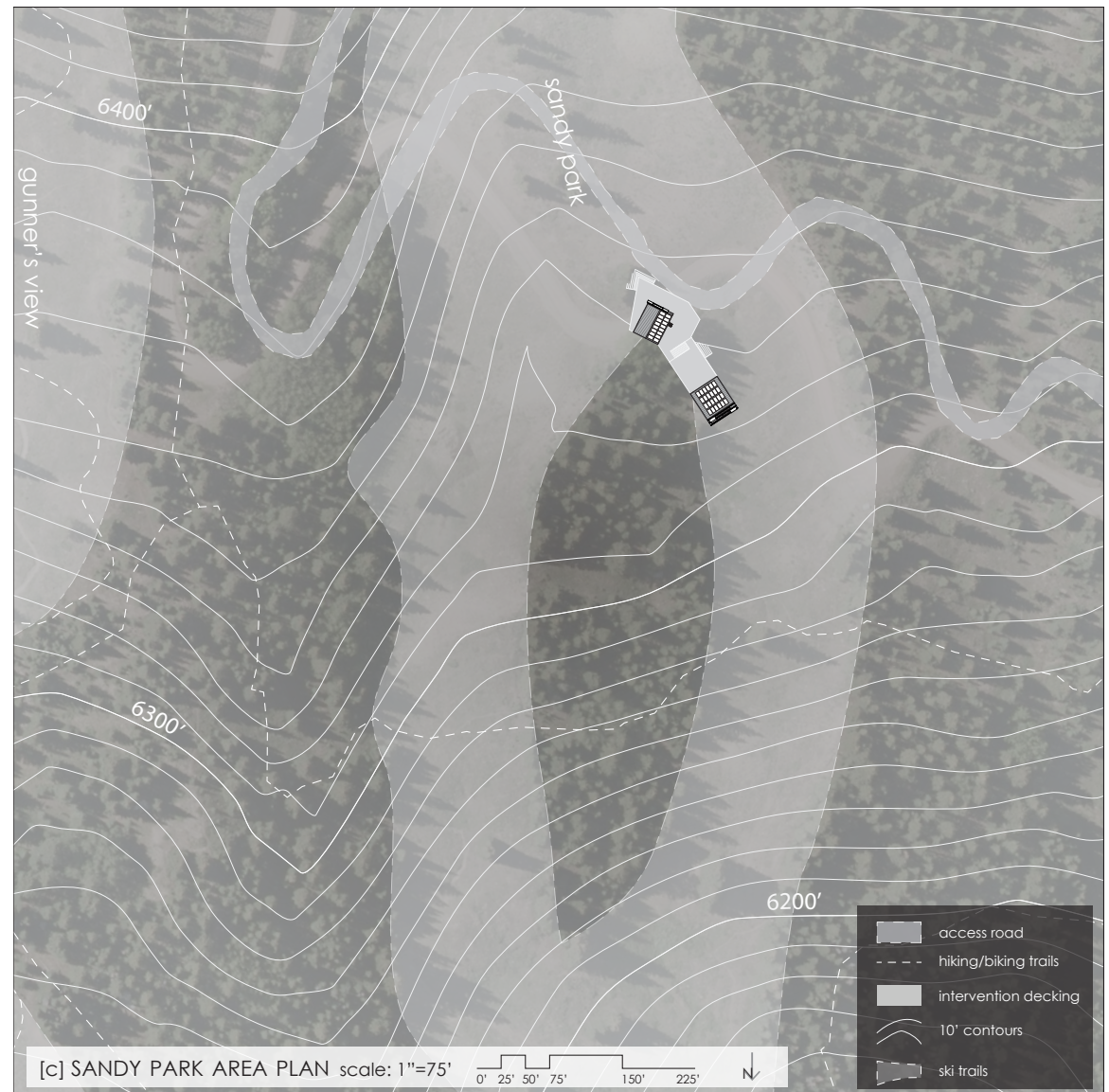
Digital + Concessions

A natural crossroads between 4 chairlifts, including a major gondola, many summer and winter trails, Elk Camp is an obvious choice for a siting of these huts. A cafeteria already exists on site, but support functions are lacking. The area offers ski school meeting areas as well. With a variety of difficulty in terrain, a wide range of users pass by the area set aside for development of this complex of huts. A slowly sloping area off to the side trails exists naturally and will allow for the huts to perfectly nestle into the tree line while still drawing enough attention from passersby.

C. Sandy Park

Sanctuary + Observatory

Higher up on the mountain, Sandy Park is an adventurous area. Situated between both hiking and skiing trails, this complex provides an amazing opportunity to sit and enjoy the views. The valley below can be seen for almost one hundred miles to the surrounding ridgelines. A lack of amenities on the Eastern face of the mountain at this altitude provides strong arguments for a complex to be sited here. Again, the huts will be placed near the edge of the wooded area in order to avoid getting in the way of users but also being accessible.





D. Base Village

Sanctuary + Concessions

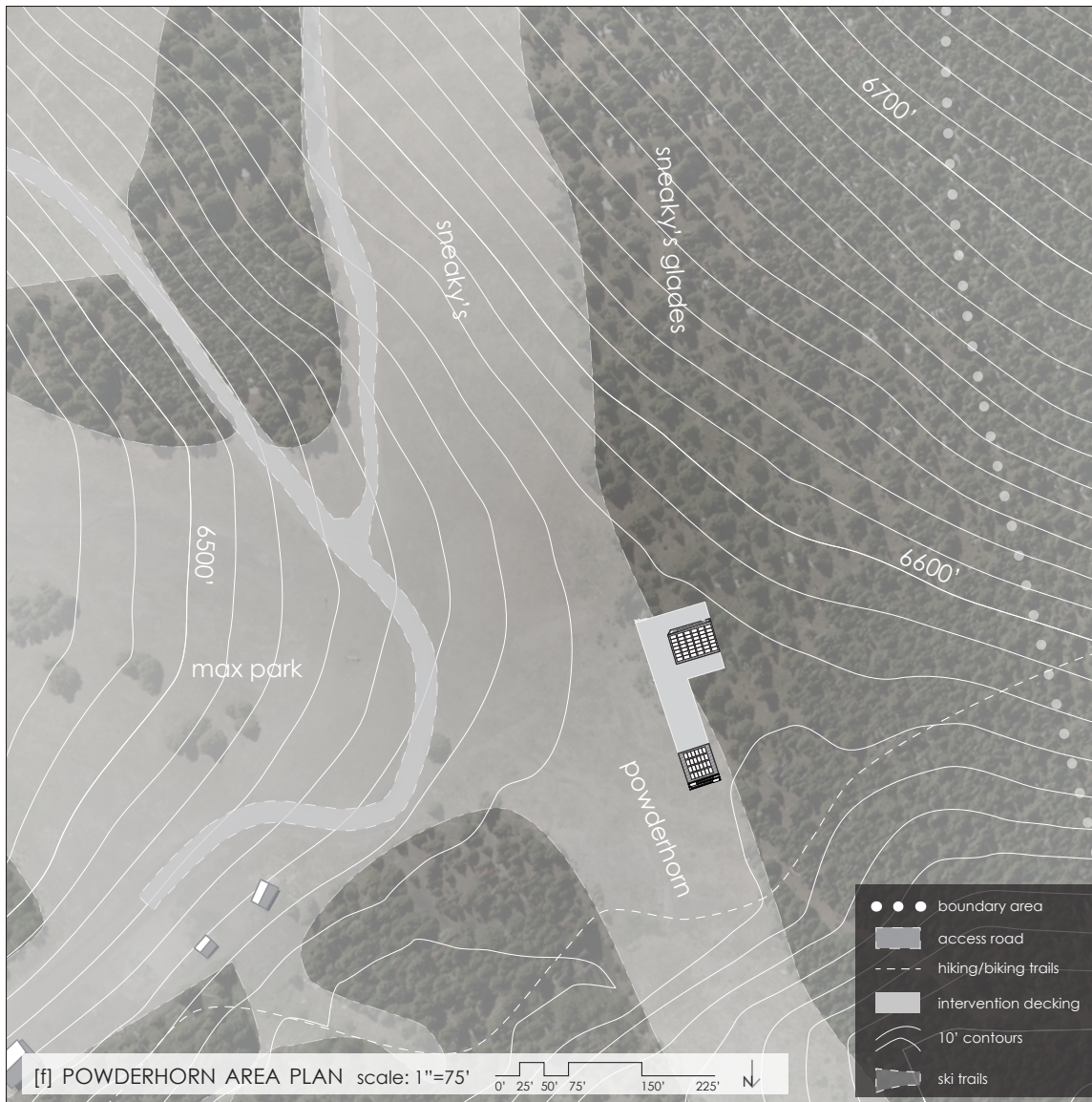
Snowmass Village is undergoing a major development at its base. This leaves a large gap between the village and the mall of 'hotel wasteland' that is inaccessible for users and cordoned off for those not staying at those hotels. The whole band of amenities on the west side of Snowmass Mountain are accessible by mountain sport participants and non-participants at the same time. It is a common meeting point for ski school, after-hours drinks, lunch time shopping and general lounging. What stops the village from being as successful as it has potential to be is its discontinuity. The huts located at the village will be open to local concessions, ski school, repair stations, and relaxation areas.

E. Alpine Springs

Digital + Observatory

The heart of Snowmass Mountain lacks any development. In order to provide support for the users and keep the 'untouched' feeling intact, a complex will be located underneath the Alpine Springs lift on the Naked Lady ski trail. This complex is located near a few hidden (not marked on the map) trails running through the trees and will carry that spirit through its complex of huts. From here, there are moderate views of the valley, and short trips to many lifts as well as the base village. It can serve as a central point for the mountain and its users.





F. Powderhorn

Observatory + Concessions

Situated between the Sam's Knob summit area and the entrance to Powderhorn – home to some of the mountain's most daunting terrain – this complex of huts can mix the user groups of an extremely varied set of terrain. This area is home to both summer and winter trails, as well as an established restaurant. While only slightly higher up the mountain, these huts can provide views of the landscape to the west, a chance to rest without the crowds, and a programmatic support network for the restaurant.

4.4 [SITE PARAMETERS]

Design parameters are in place to maintain environmental balance at each on mountain site as per the US Forest Service regulations. Each case is reviewed separately but there are guidelines in place. In general, buildings and infrastructure must attempt to blend into the environment through material selection and geometric configurations. Using existing natural elements to site buildings and existing structures to minimize invasiveness is a plus. See the final paragraph of section 3.2 for more details.

Snowmass Village also has principles of design in place for continuity. Their desired image for their village is to have a composed group of interdependent units from the lower base village all the way up through the condos crawling up the mountain. To accentuate this, the guidelines set forth in the village development plans will be adapted so as to create a single cohesive design purpose spread across the entire mountain. See paragraph two of section 3.2 for information on the “Full Comprehensive Plan.”

5__PROGRAM

5.1 [PROGRAM TYPE, DESCRIPTION & ASSESSMENT]

- A. West Fork – Digital + Sanctuary | isolated hut grouping for natural resting area
- B. Elk Camp – Digital + Concessions | supportive hut complex for Elk Camp Cafe
- C. Sandy Park – Sanctuary + Observatory | viewing deck area on top of hill
- D. Base Village – Sanctuary + Concessions | village connection and increased public access
- E. Alpine Springs – Digital + Observatory | independent central hut locations with views
- F. Powderhorn – Observatory + Concessions | supportive hut complex above Sam's Knob restaurant

5.2 [PROGRAM ELEMENTS]

Total Square Footage ~ 13,200 sqft

All Sites: Program elements include huts for repair of equipment, refilling of water, fire pits in winter, large seating areas within huts during both season. Opening window walls for indoor/outdoor relationships. Additional seating outside with heat lamps if weather permits. Additionally, a first aid station and ski patrol phone will be in one of the huts. Located outside will also be equipment storage areas.

A. West Fork – 2 huts (1200 sqft), decking (1000 sqft) – 2200 sqft

Digital + Sanctuary | Peaceful isolation lends itself to two self sustaining program elements. The digital hut works well in terms of interaction between outdoor/indoor spaces and promotes joint program with the other hut sited. The sanctuary hut will provide more of a quiet refuge area while still in direct dialogue with the digital hut through a carefully designed exterior deck.

B. Elk Camp – 2 huts (1200 sqft), decking (1000 sqft) – 2200 sqft

Digital + Concessions | The Elk Camp Cafe supports the majority of the high traffic area here. But with such a variety of patrons flowing through this bottleneck, alternative methods for relaxation, satiation and interaction are needed. Back of house waste areas for temporary concessions minimal as employees can take waste to existing areas at Elk Camp Cafeteria.

C. Sandy Park – 2 huts (1200 sqft), decking (1000 sqft) – 2200 sqft

Sanctuary + Observatory | As an added benefit to reaching this altitude on the mountain, a quiet resting area is provided next to but removed from the observatory hut. The observatory takes advantage of the stunning views in the distance.

D. Base Village – 6 huts (1200 sqft), 2x decking (1000 sqft) – 2200 sqft

Sanctuary + Concessions | The Base Village and Snowmass Mall are complete programs on their own, but they lack a linkage with the mountain and are highly privatized. To capitalize on the experimental and enthusiastic mountain sport community, this resting area with the sanctuary hut will include a concessions hut that will cater to both athletes and residents. Vendors such as local craft breweries and dispensaries will be encouraged to set up small sample market stalls and bring the community onto the mountain.

E. Alpine Springs – 4 huts (1200 sqft), decking (1000 sqft) – 2200 sqft

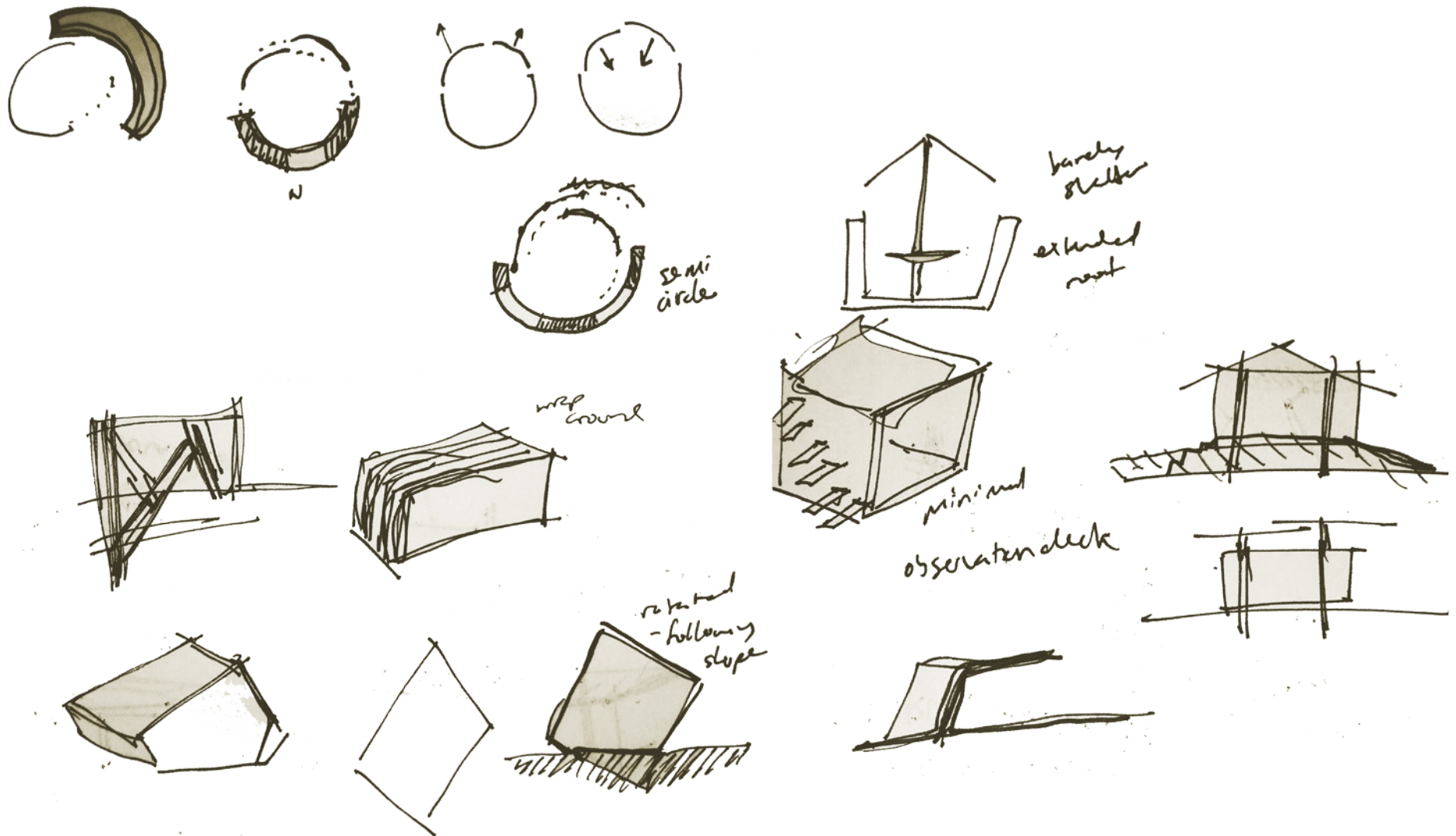
Digital + Observatory | Centrally located on the mountain and in between advanced and novice terrain, the Alpine Springs complex caters to a connected mountain through a digital sphere, and also appeals to the isolated rugged mountain nature of its users by providing a connected but separate observatory hut.

F. Powderhorn – 4 huts (1200 sqft), decking (1000 sqft) – 2200 sqft

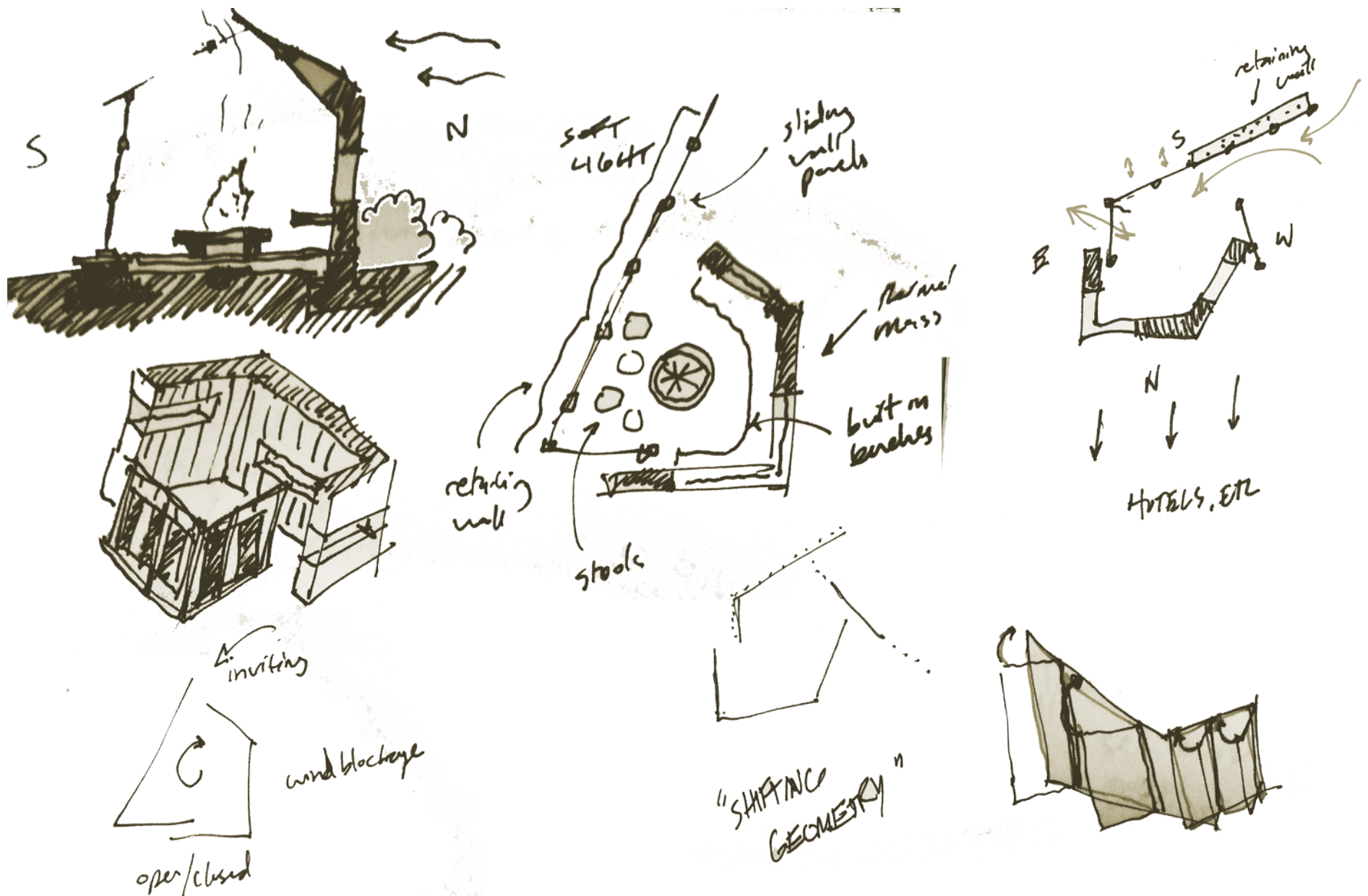
Observatory + Concessions | Powderhorn serves as a gateway between one of the most difficult trails on the mountain and an intermediate lodge area. It supports the lodge functions through the concessions hut and the observatory hut peaks over the daunting trail ahead, giving non advanced patrons a chance to glimpse into the beyond.

6__DESIGN

6.1 [STUDIES REVEALING IDEAS]



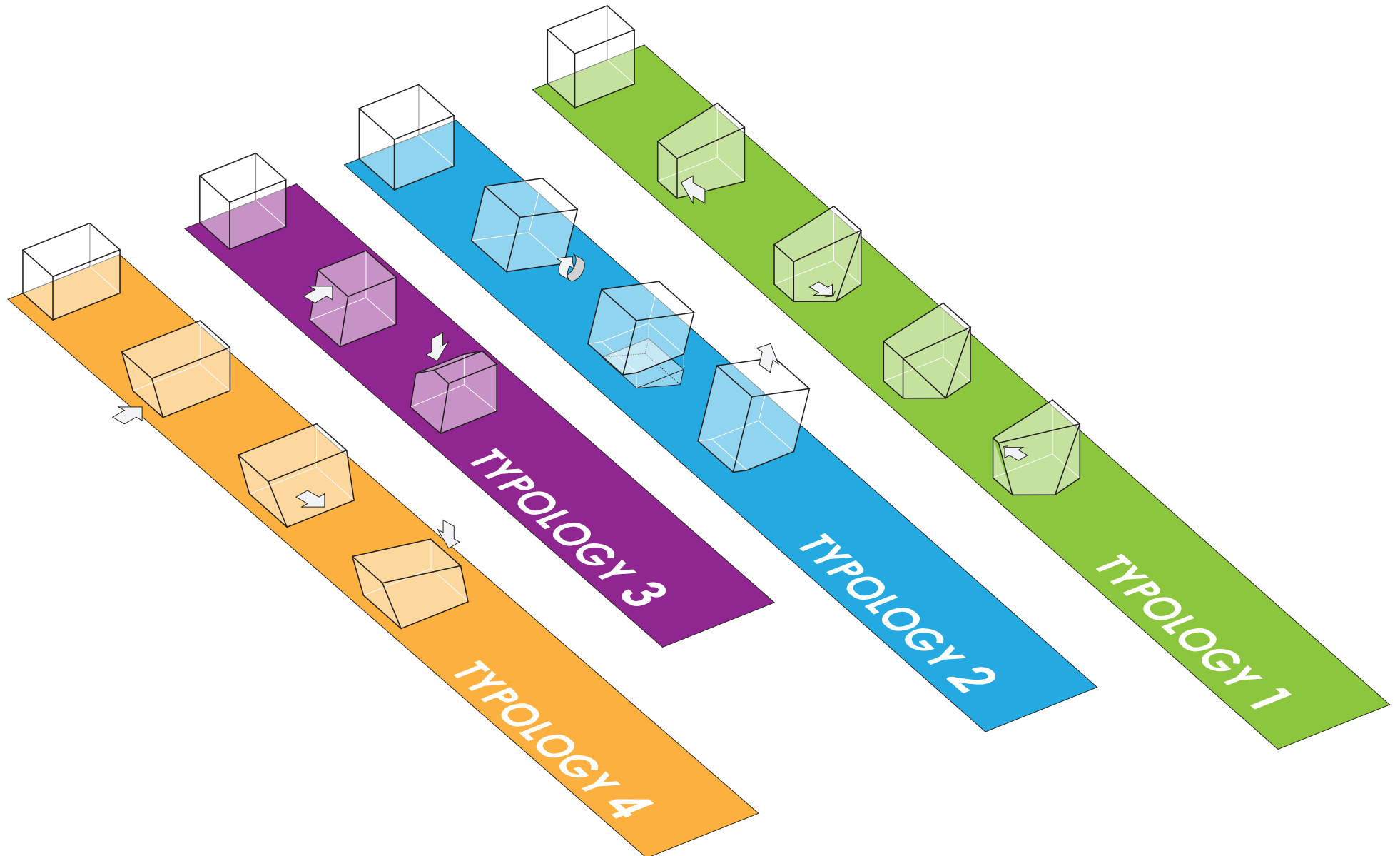
The beginnings of conceptual sketching included studies of form, geometry and scale. Tying between sculpture and minimalism or functionality or simplicity, these shapes and vignettes began forming ideas of how possibly all of them could make their way into the project.

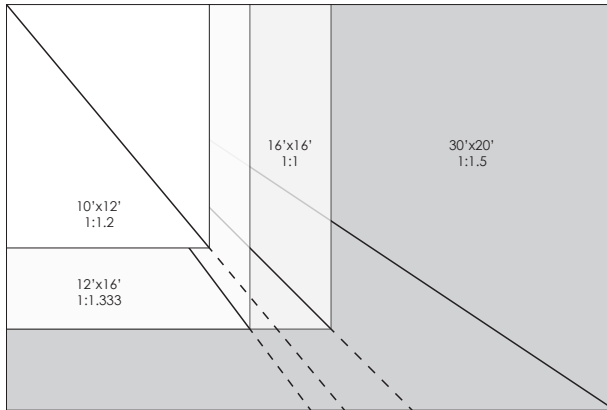


These studies moved in the direction of site-dependent architectural moves. Thinking about privacy, thermal massing, wind, access, and materiality all took place at the early stages of the project. In fact, with such complex forms and details, they would make the small buildings into big architecture.

6.2 [FORMAL STUDIES]

FORM AND GEOMETRY STUDIES





Hut Base Dimension Diagram

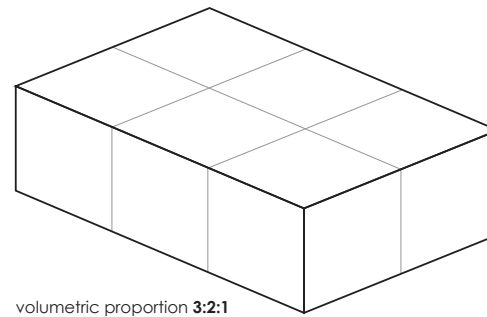
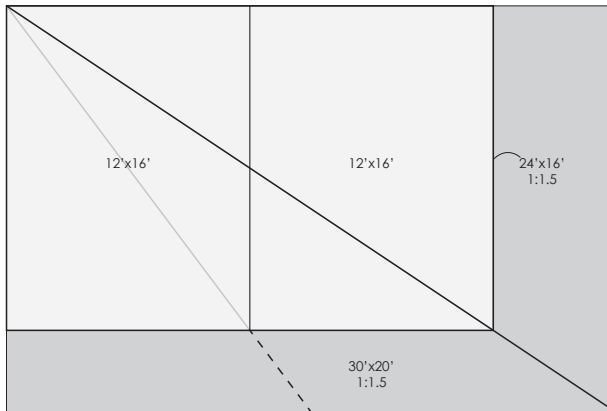
10'x12' - 1:1.2
sleeps 4

12'x16' - 1:1.333
sleeps 6 + storage

16'x16' - 1:1
sleeps 8

Design 30'x20' - 1.5:1
double 12'x16' configuration = 24'x16' - 1.5:1
increase in size by 125%
occupancy (if sleeping) - $[6 \times 2] \times 1.25 = 15$
suggested occupancy - 10 to 20 indoors

*cabin sizes taken from US Department of the Interior, Bureau of Land Management



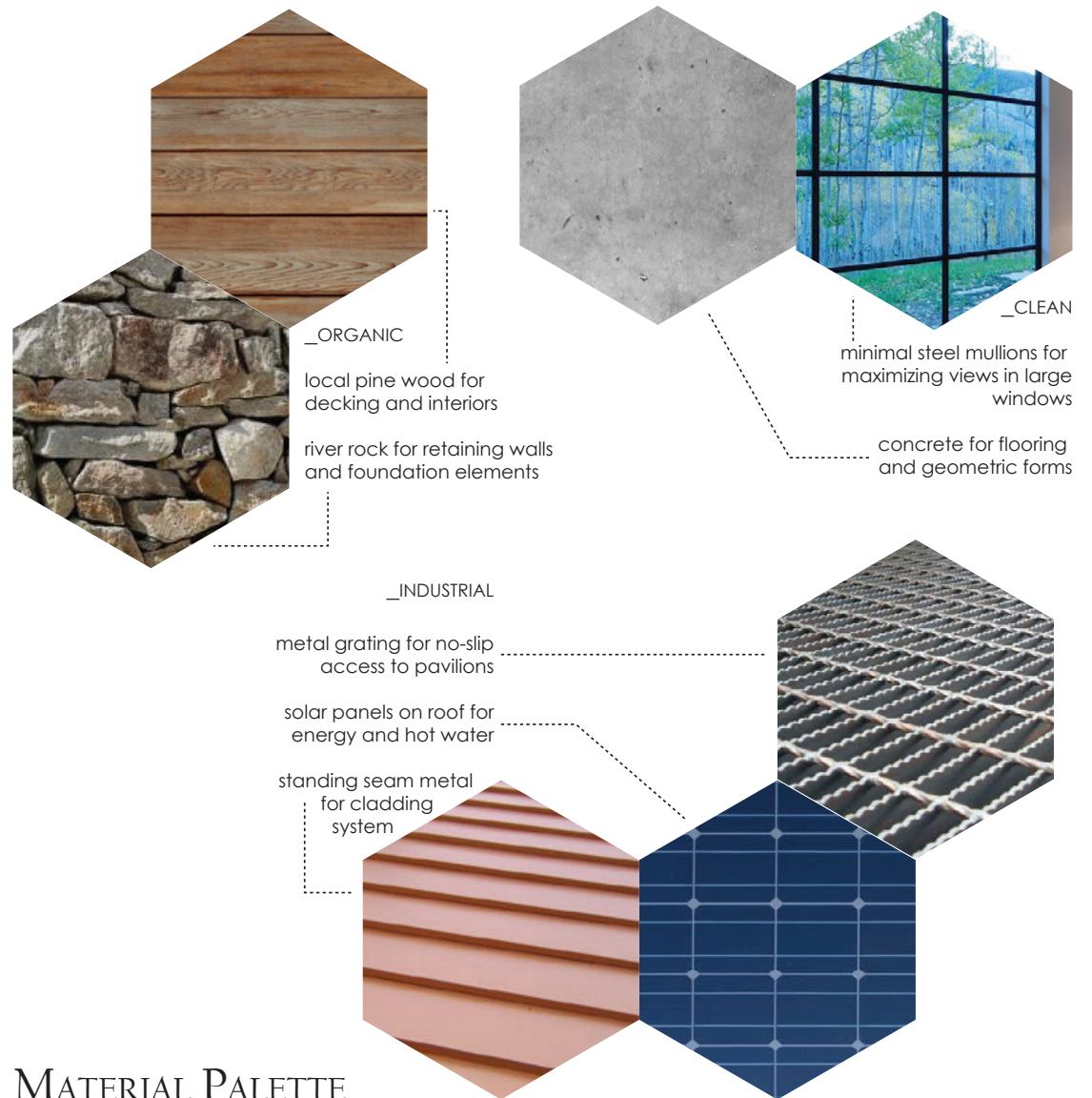
volumetric proportion 3:2:1

Above: Proportion study to determine hut size

Left: Form Progression study of the four typologies

Typologies are formed to create a basis of design. These architectural moves define the language and vocabulary for the rest of the mountain's interventions. By doing this, a clearly laid out set of rules will allow for grander architectural gestures to be made on a site by site basis.

While different geometrically, each typology operates within the same architectural boundaries. Each with its faceted sides uses natural lighting to create special spaces on the interior. In nice weather, when the window walls open up, these indoor spaces become outdoor spaces too. The threshold is no longer at the door, but at the beginning to each deck. Program can be varied due to the not overly specific spaces defined by each structure.



MATERIAL PALETTE

Materiality of the architecture is important to facilitate a visual and thematic connection to the mountain, existing structures, and the ideology of the project. Keeping a simple palette of materials allows for the architectural gestures in the form of geometrical moves to be showcased as opposed to materials to define the architecture.

Components such as wood and concrete are neutral and blend well with the ground plane, while the ribbed and bold standing seam metal siding contrasts with the landscape while still portraying a unified look - something that corresponds to the mountain language.

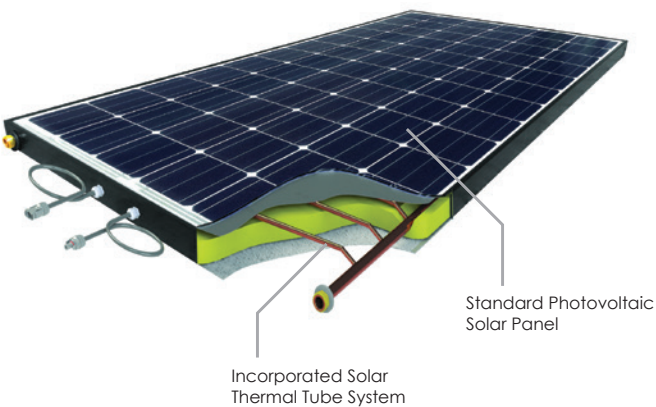
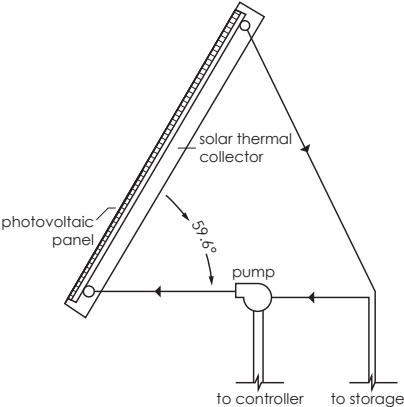
6.3 [TECHNICAL DESIGN]

Sustainable Design

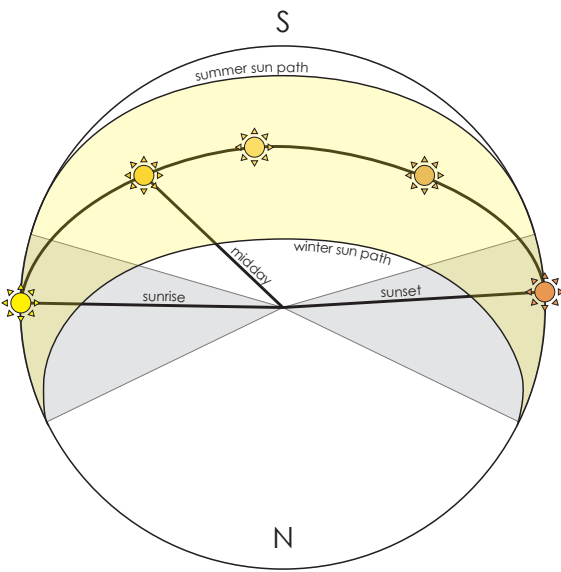
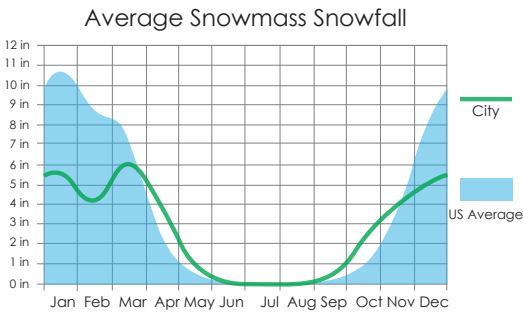
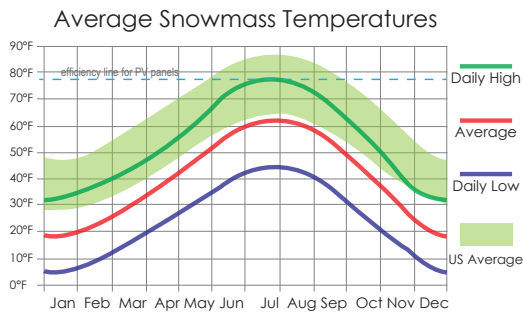
Latitude: 40°
Optimal Tilt: 59.6°
Season
Winter
Spring/Autumn
Summer

Insolation
4.7
5.8
5.1

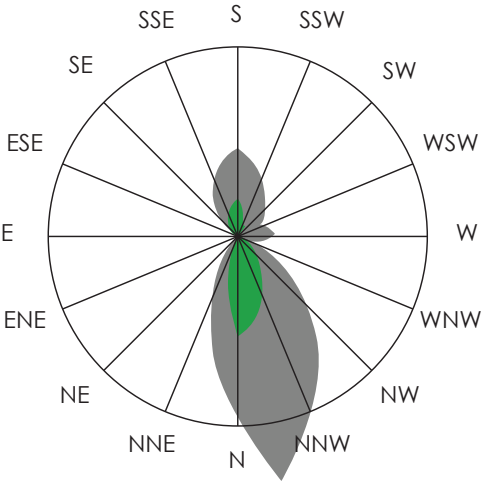
Projected 30-40 kW
generated per ft²
(PV alone - 10 kW/ft²)



- Sustainable Design Components:**
- LED lighting system
 - occupancy sensors
 - daylight sensors
 - radiant floor heating
 - 'home battery' power
 - PV-T panel system
 - passive heat gain
 - thermal mass
 - local materials

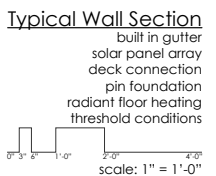


Sun Path Diagram

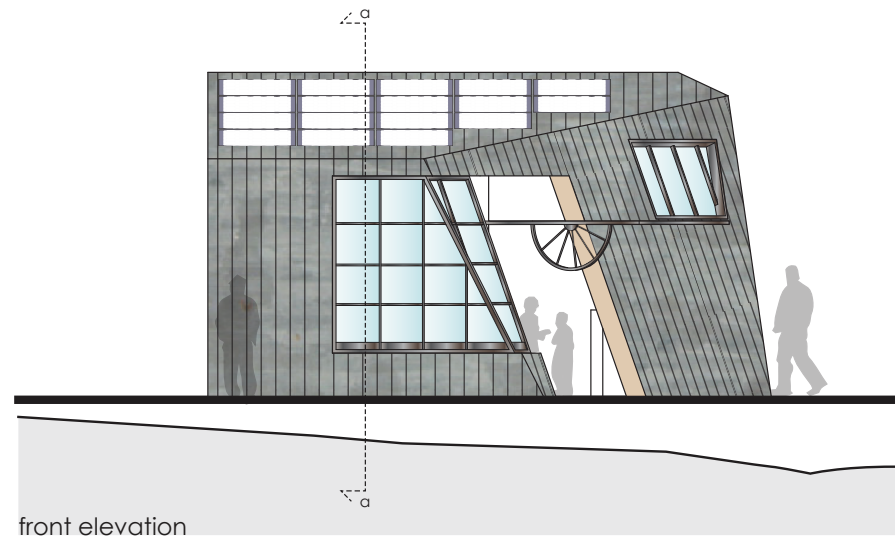
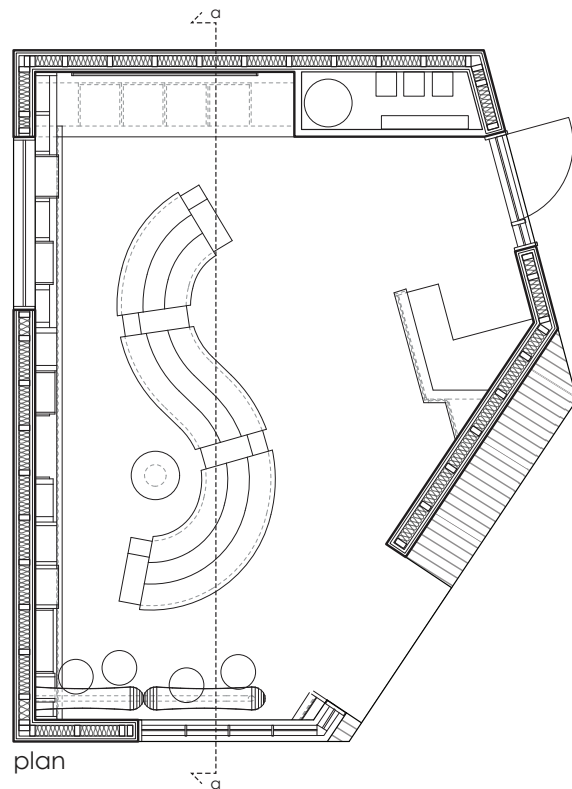


Wind Rose Diagram

Passive efforts to control the interior conditions of the building envelopes included a sandwich panel concrete foundation slab, high efficiency insulation in the walls, and a continuous exterior membrane of zinc coated standing seam metal.

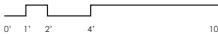


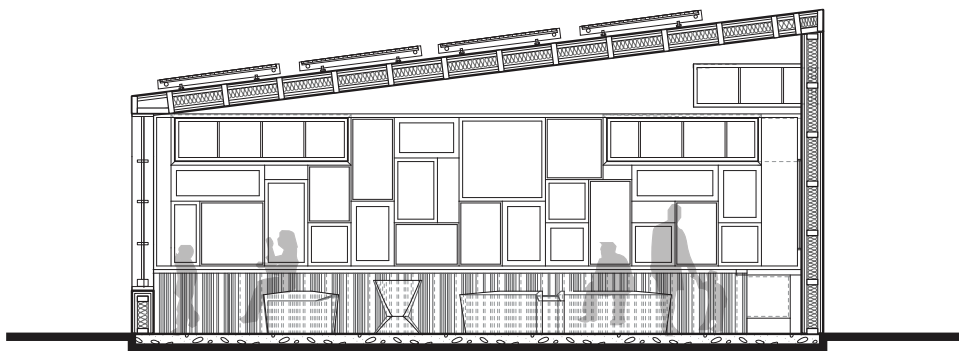
6.4 [ARCHITECTURAL TYPOLOGIES]



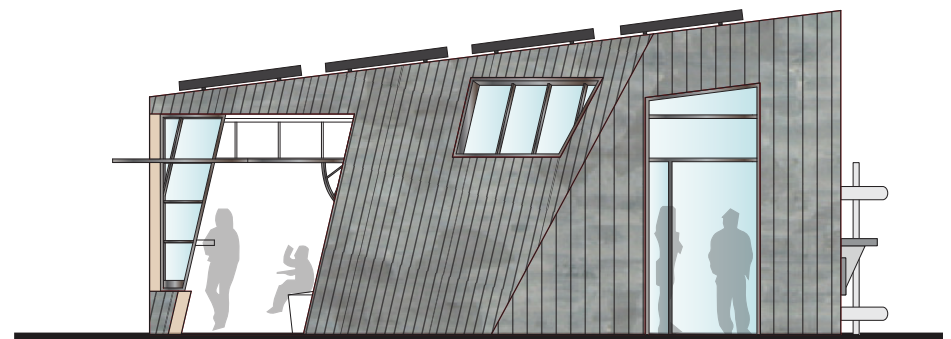
typology 1 | Digital Hut

SCALE: $\frac{1}{4}" = 1' - 0"$





section a-a

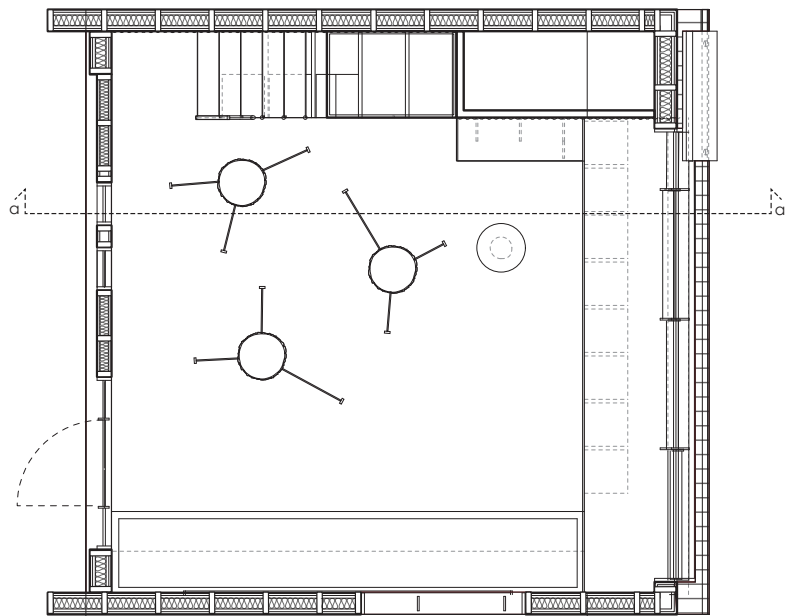


side elevation





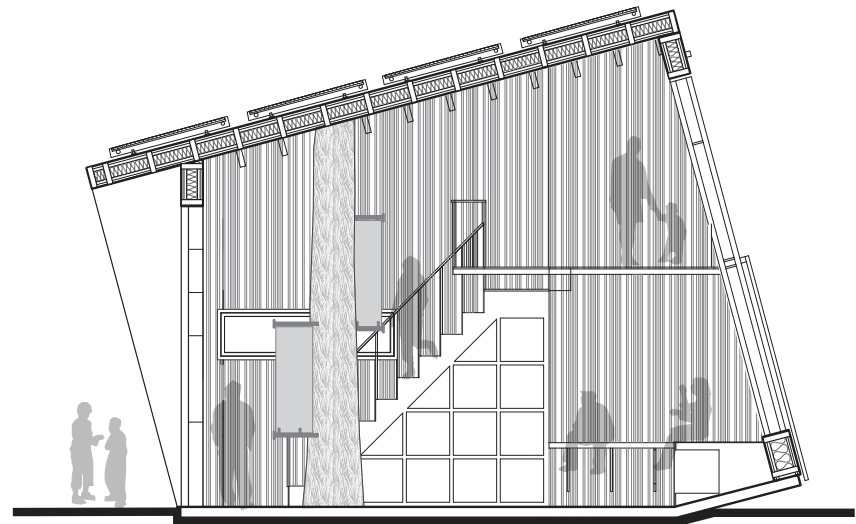
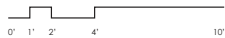
Left: Digital Hut interior rendering



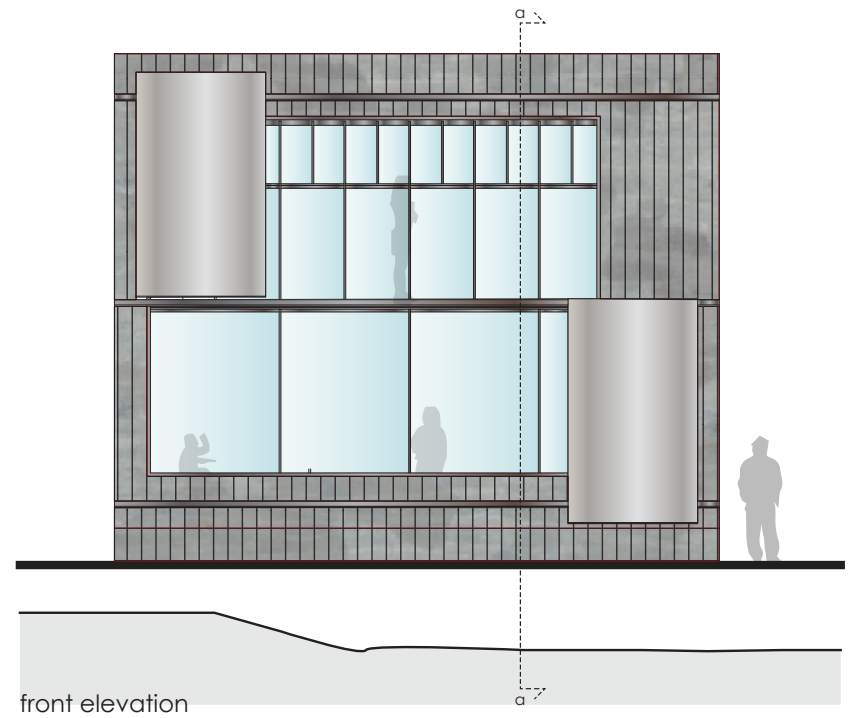
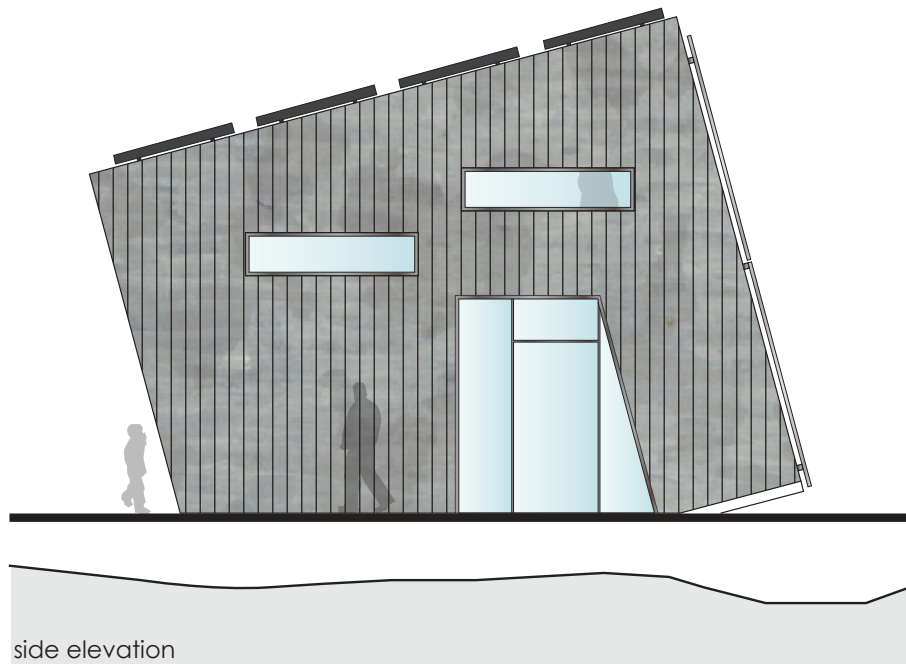
plan

typology 2 | Observatory

SCALE: $\frac{1}{4}" = 1' - 0"$



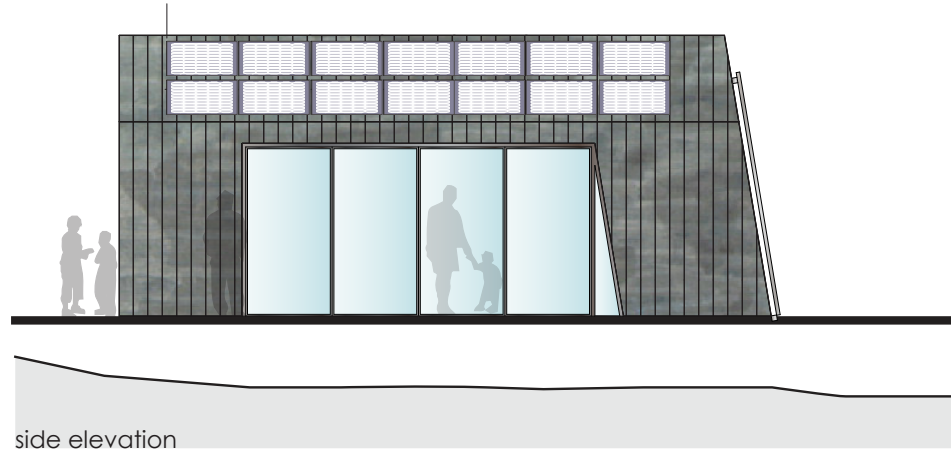
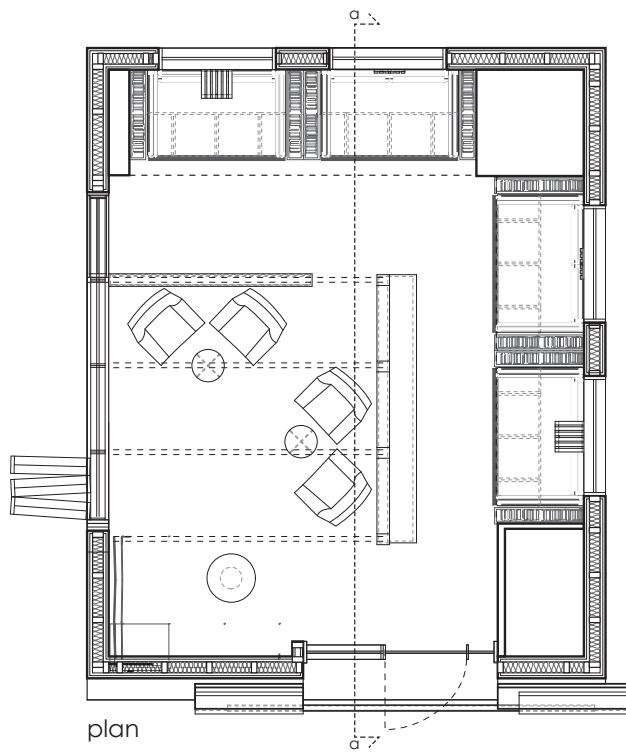
section a-a





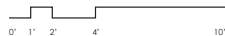


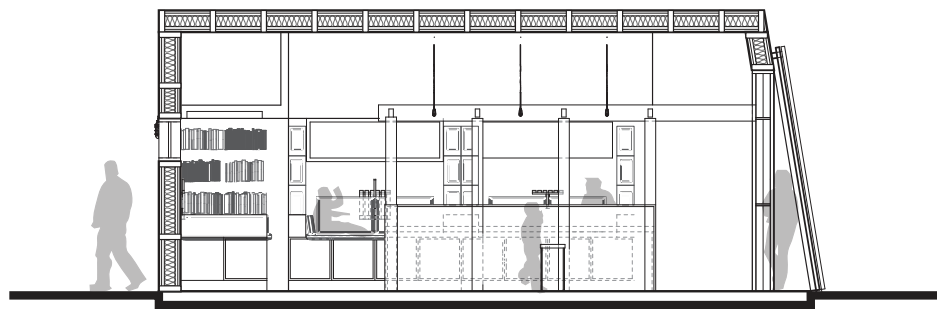
Left: Observatory interior rendering



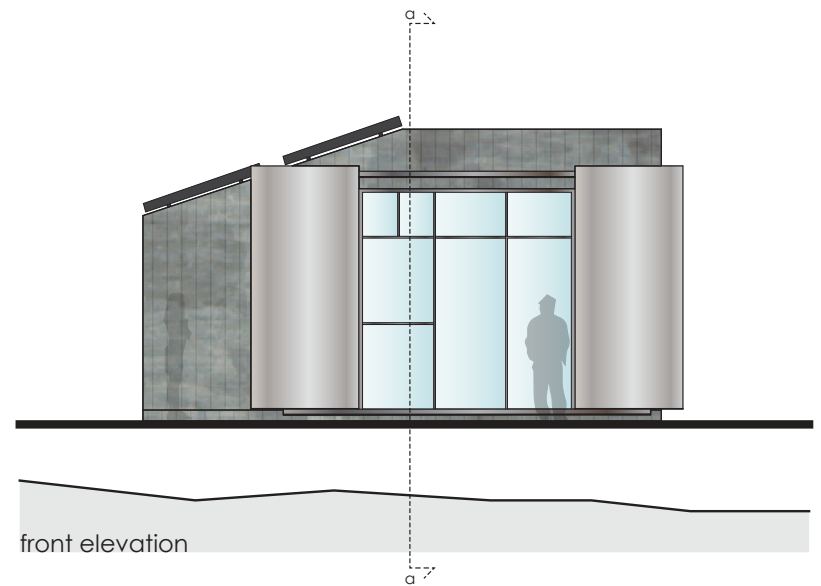
typology 3 | Sanctuary

SCALE: $\frac{1}{4}" = 1' - 0"$





section a-a

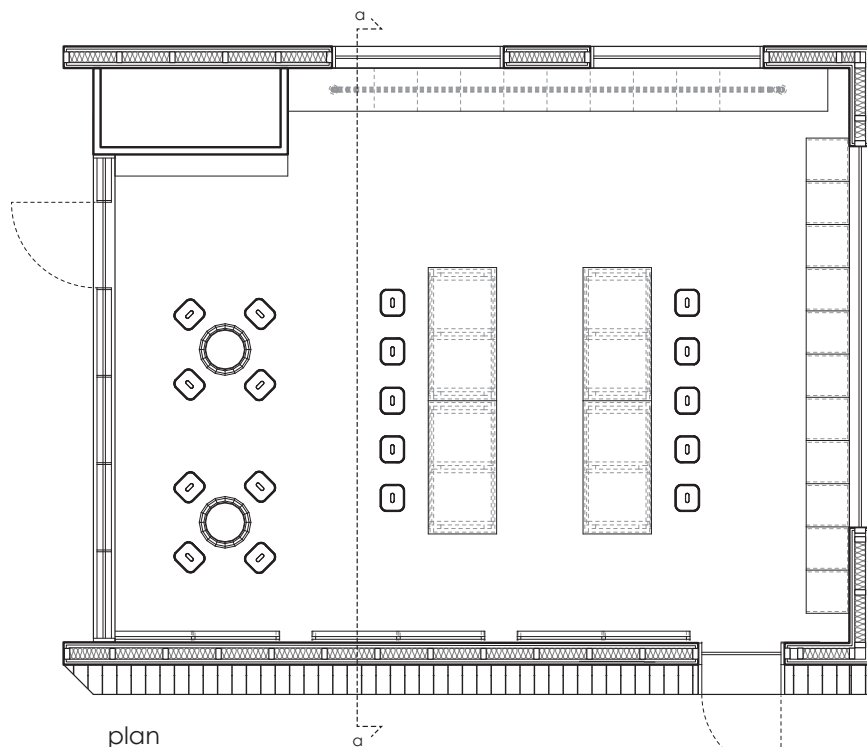


front elevation

Right: Sanctuary interior rendering





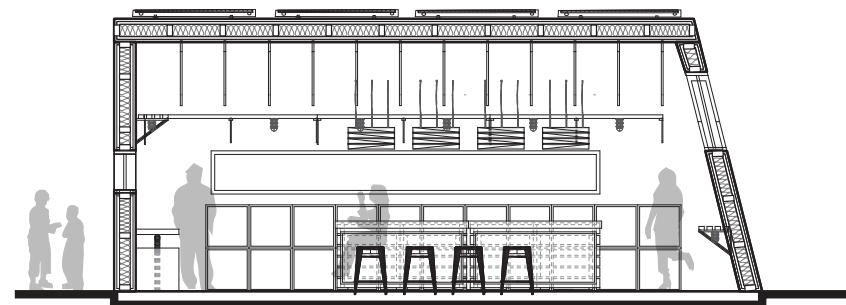


plan

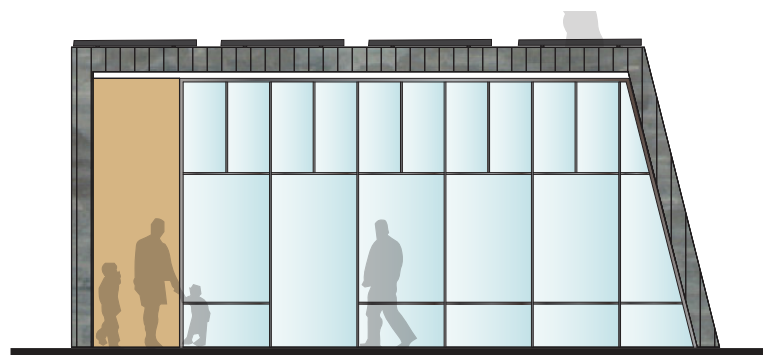
a-a

typology 4 | Concessions

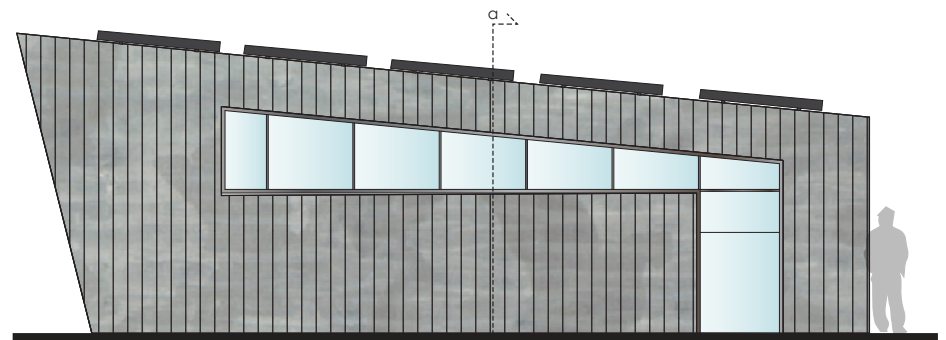
SCALE: $\frac{1}{4}" = 1' - 0"$



section a-a



front elevation



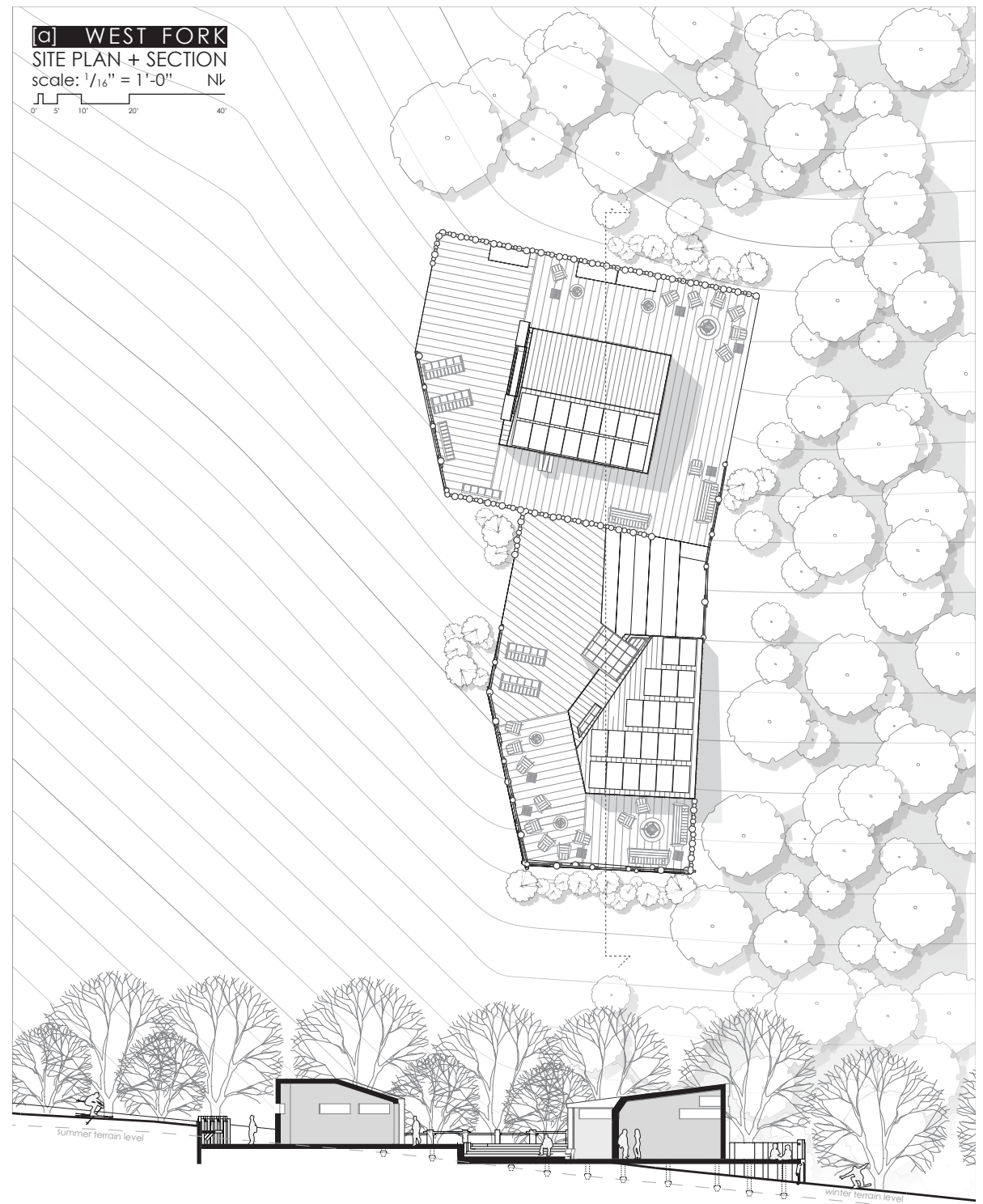
side elevation

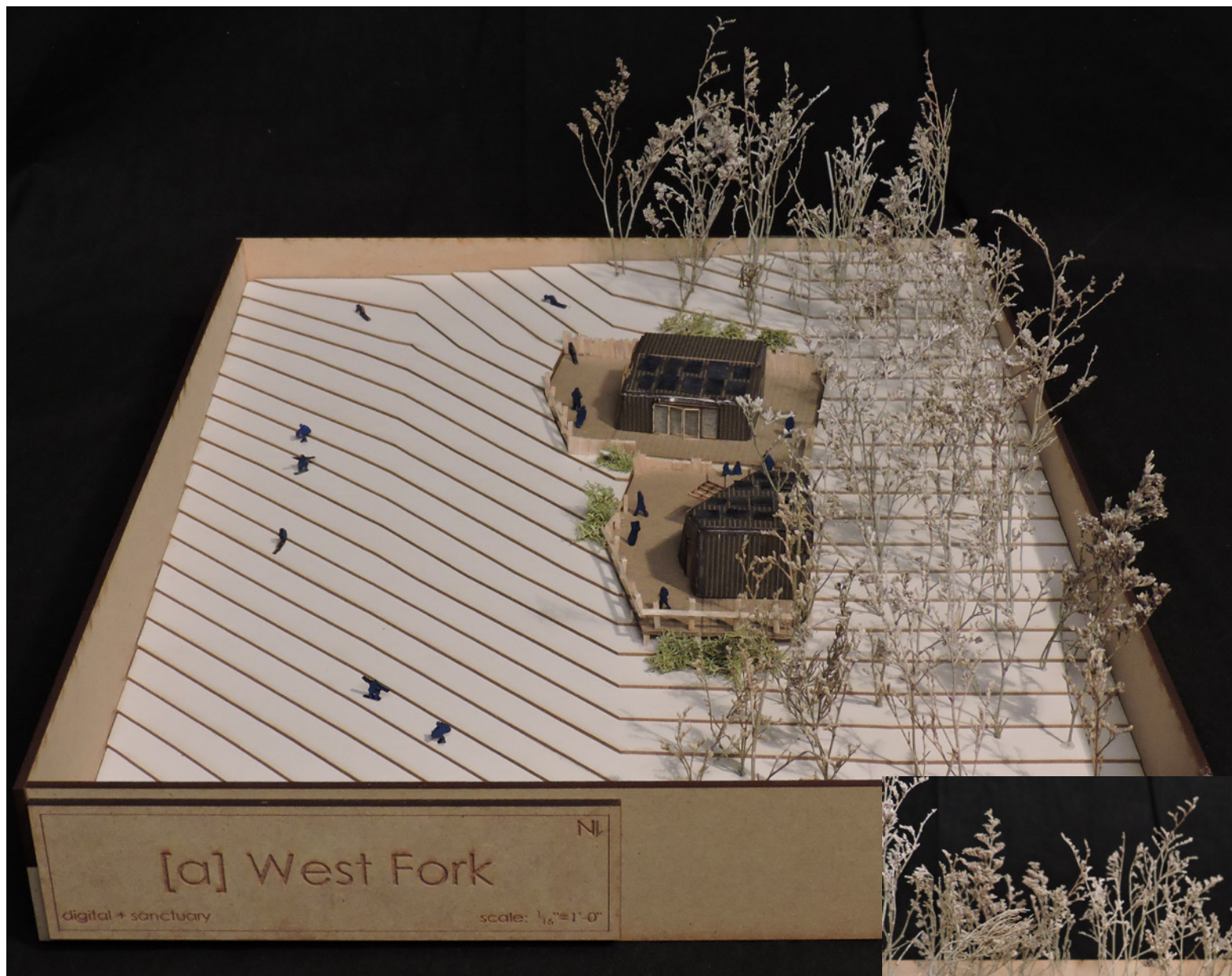


Right: Concessions interior rendering

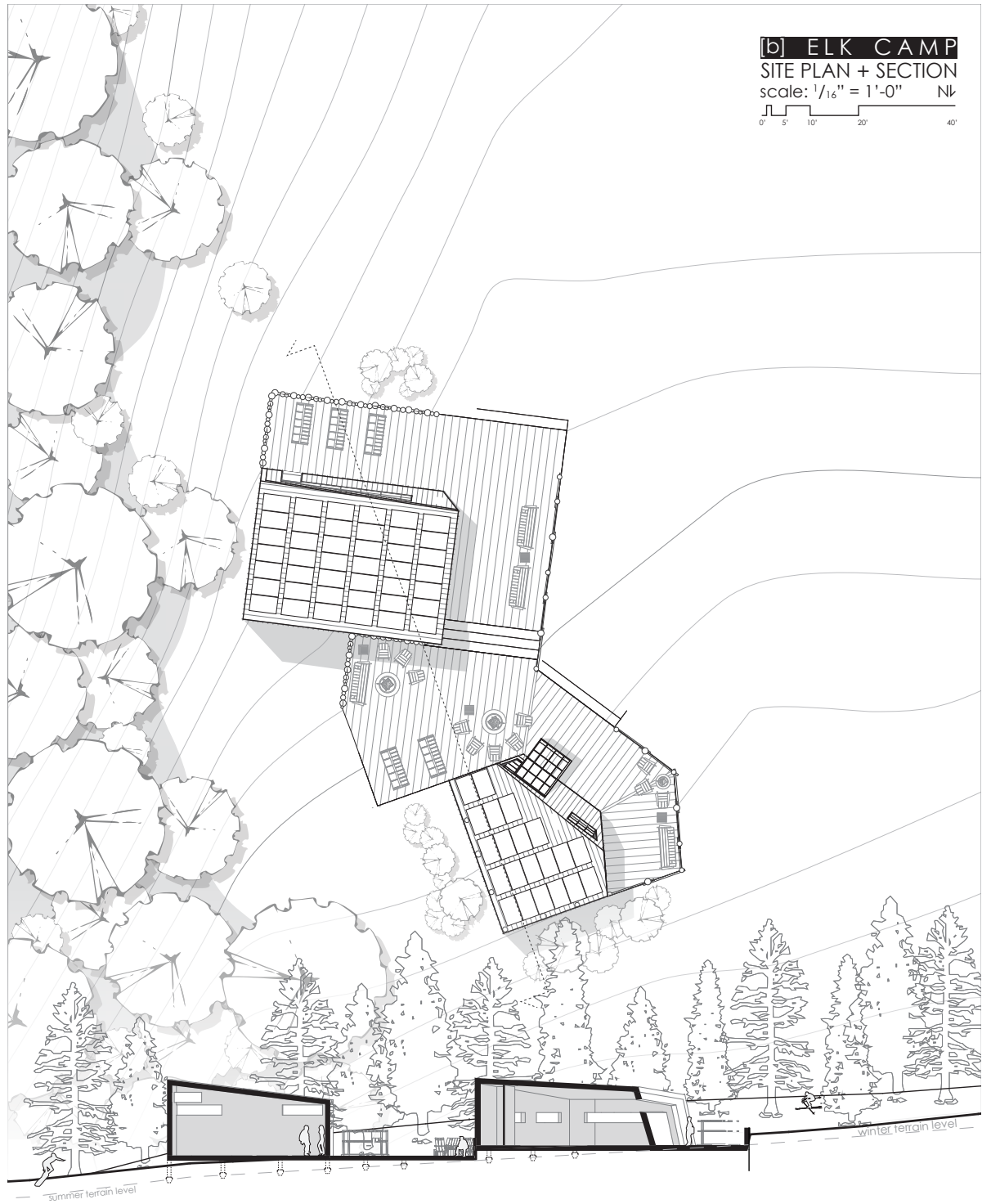


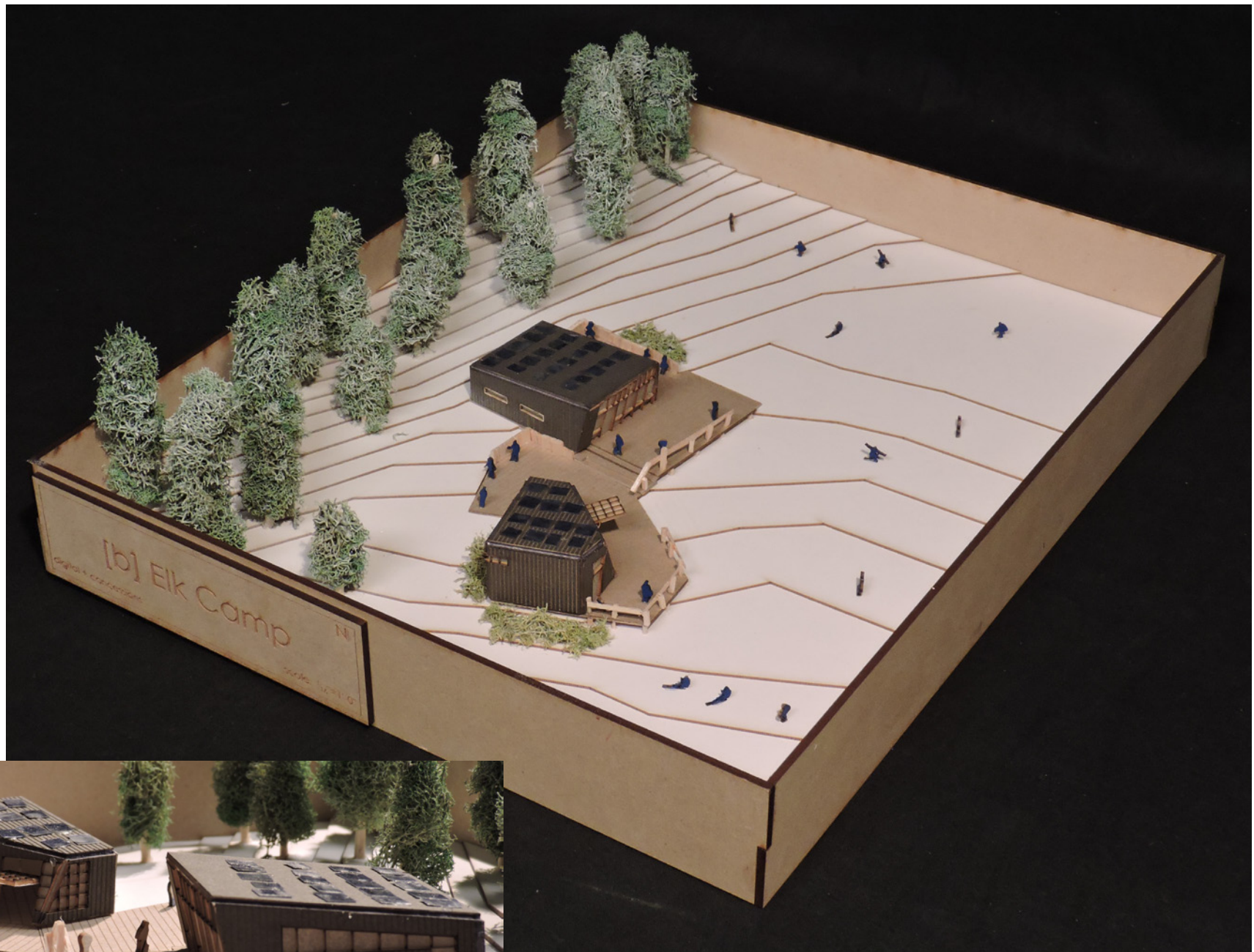
6.5 [SITE DESIGN]





[b] ELK CAMP
SITE PLAN + SECTION
scale: $1/16" = 1'-0"$ NW



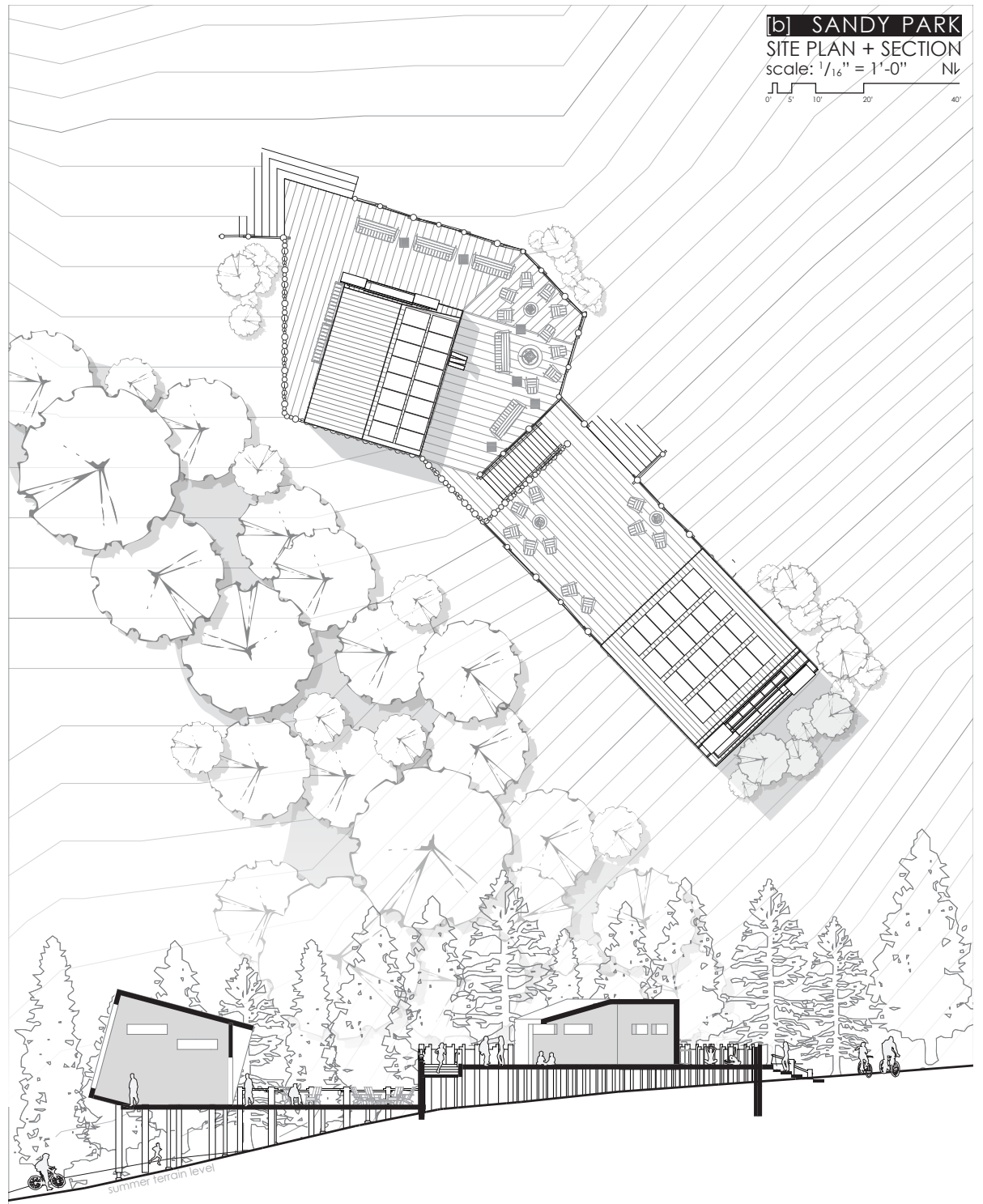




Below: Elk Camp exterior panoramic rendering

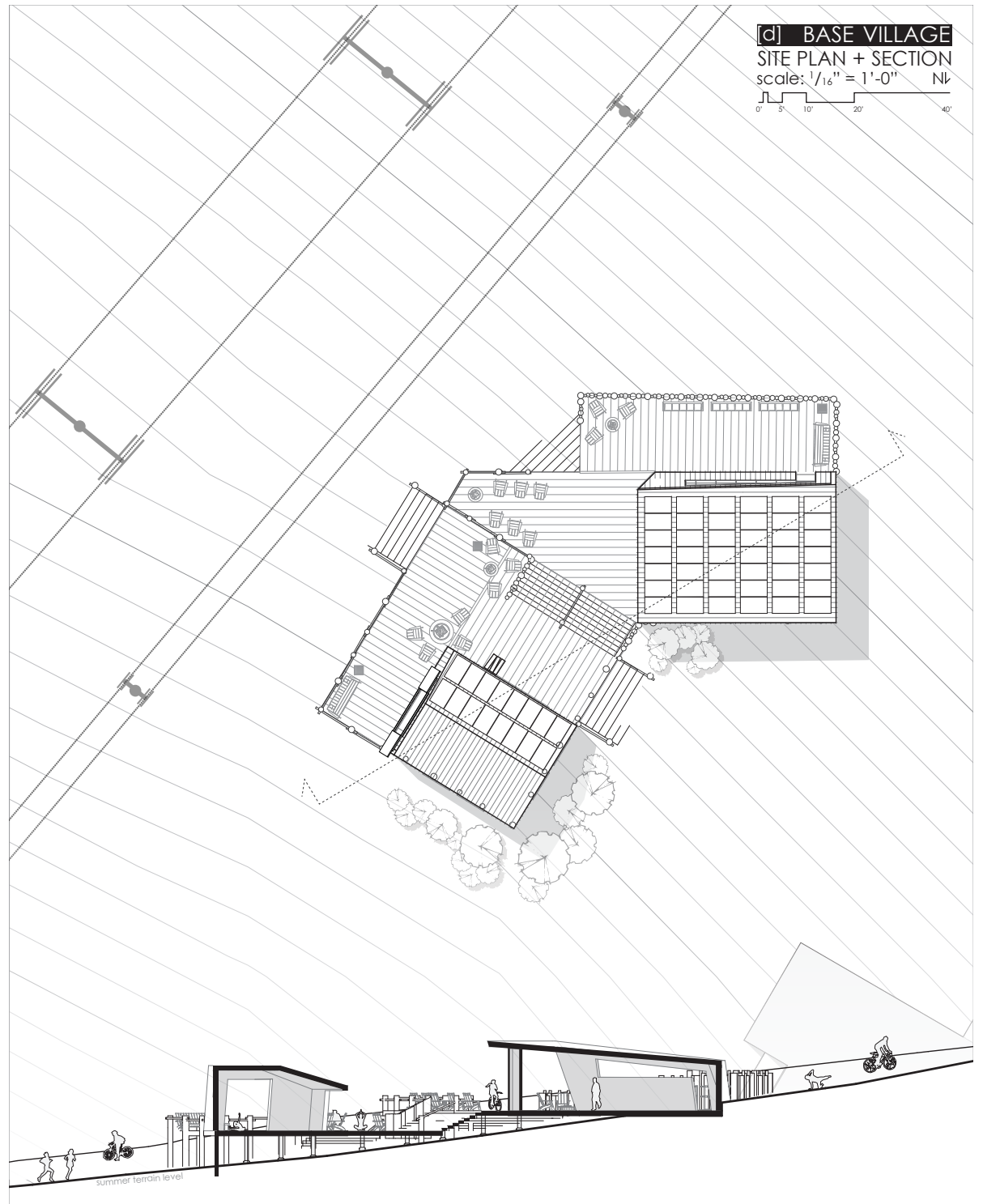


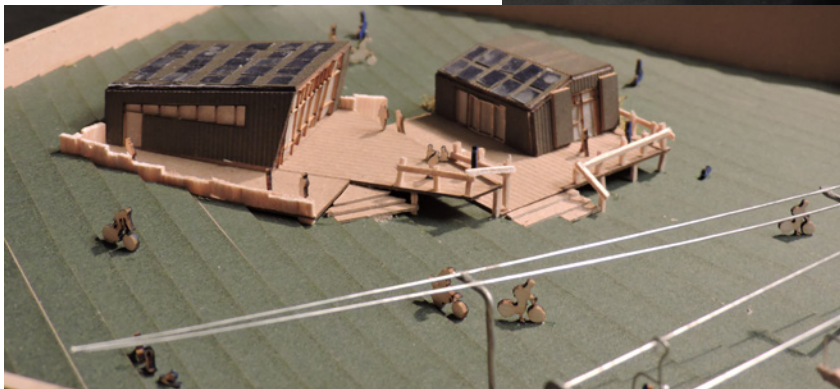
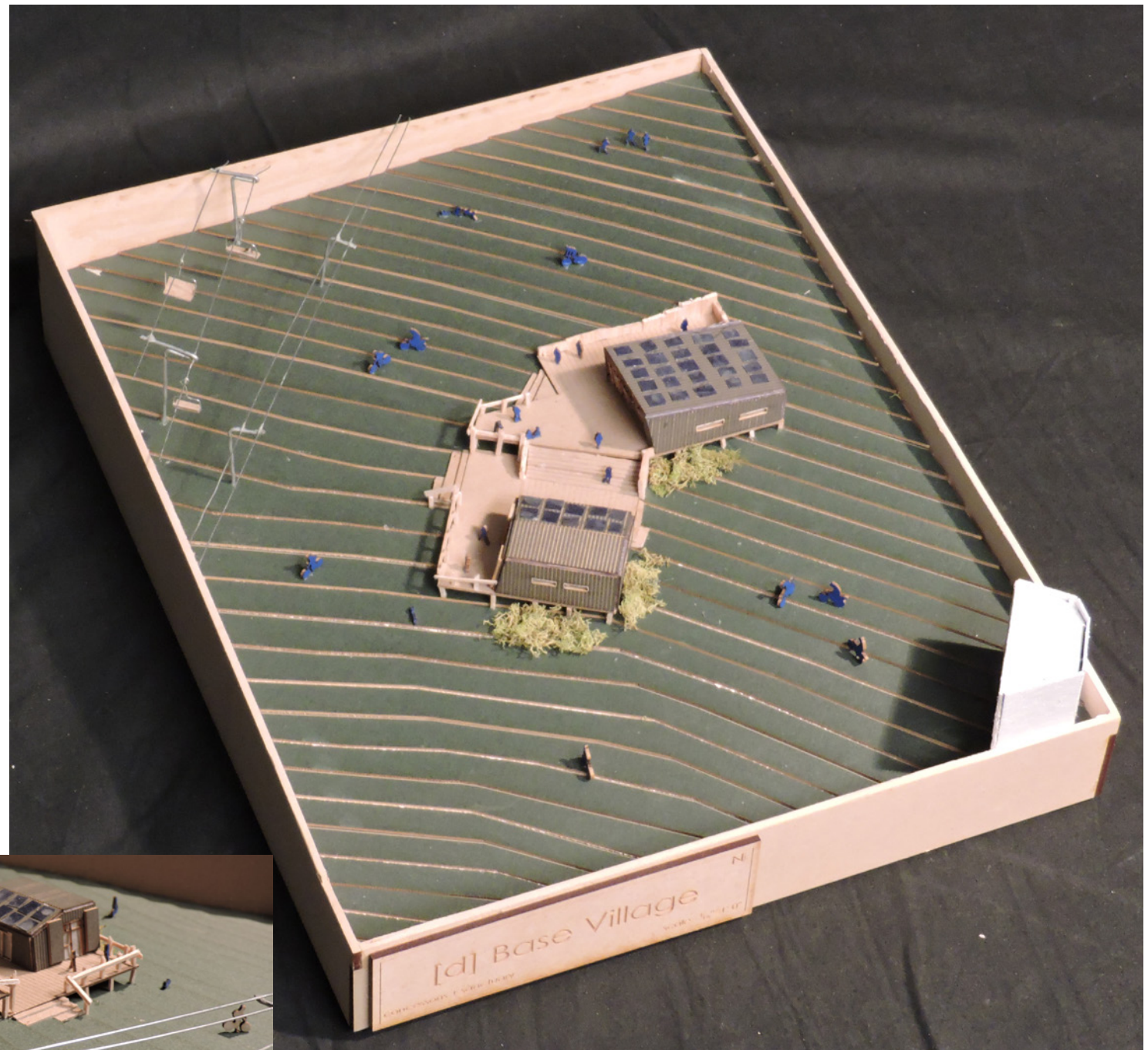
[b] SANDY PARK
SITE PLAN + SECTION
scale: 1/16" = 1'-0" N↓
0' 5' 10' 20' 40'





[d] BASE VILLAGE
SITE PLAN + SECTION
scale: 1/16" = 1'-0" N



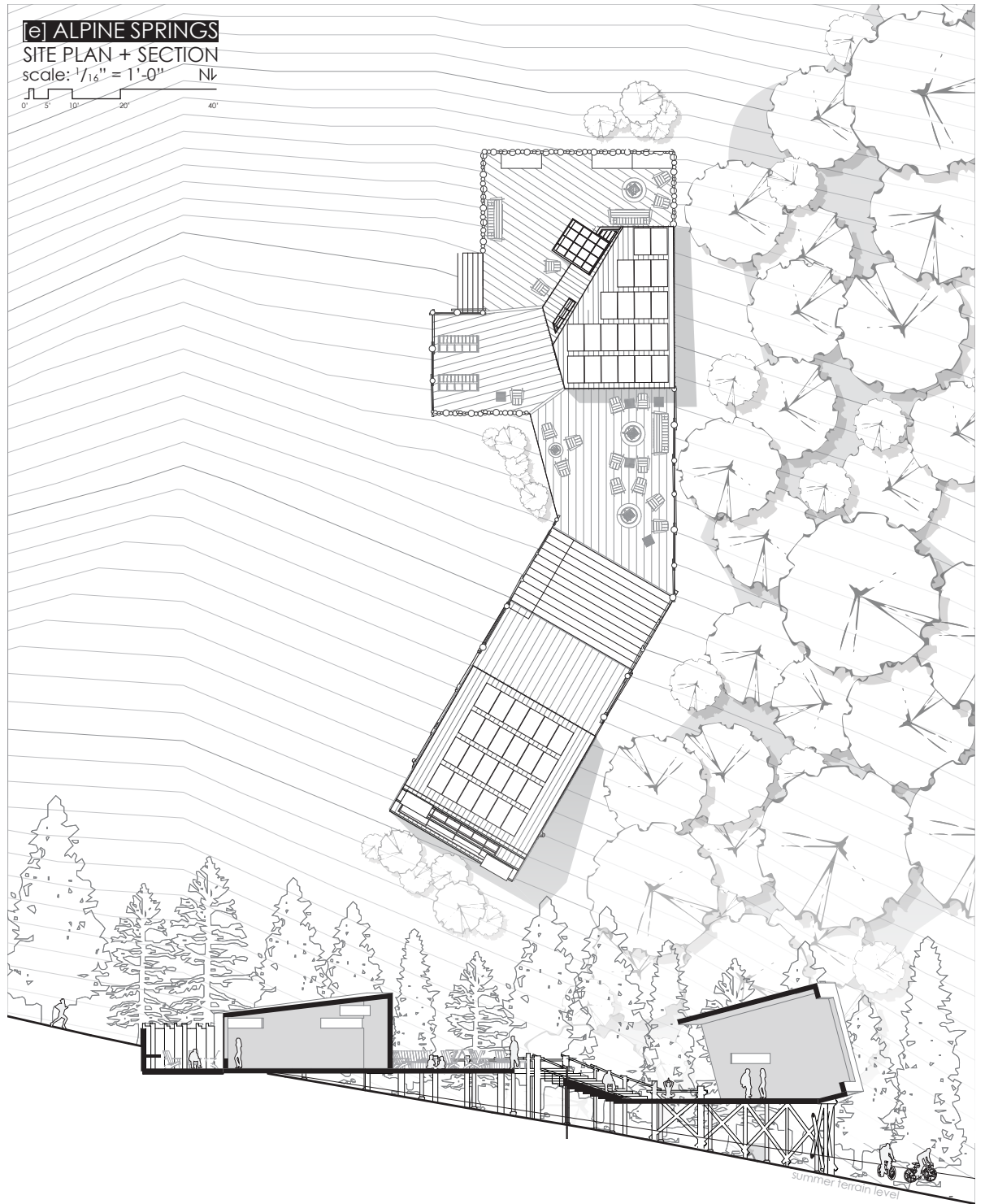


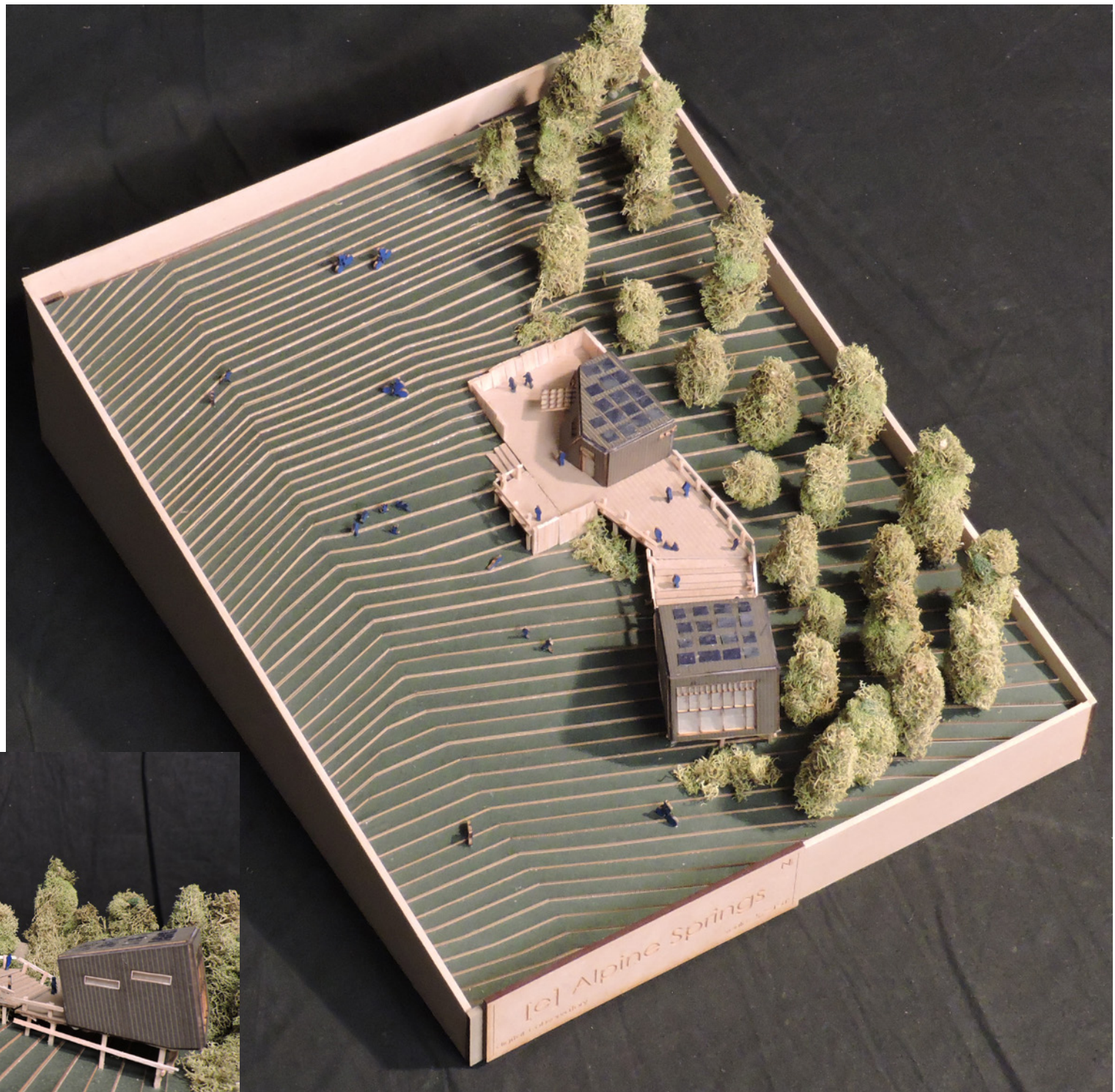


Below: Base Village exterior panoramic rendering

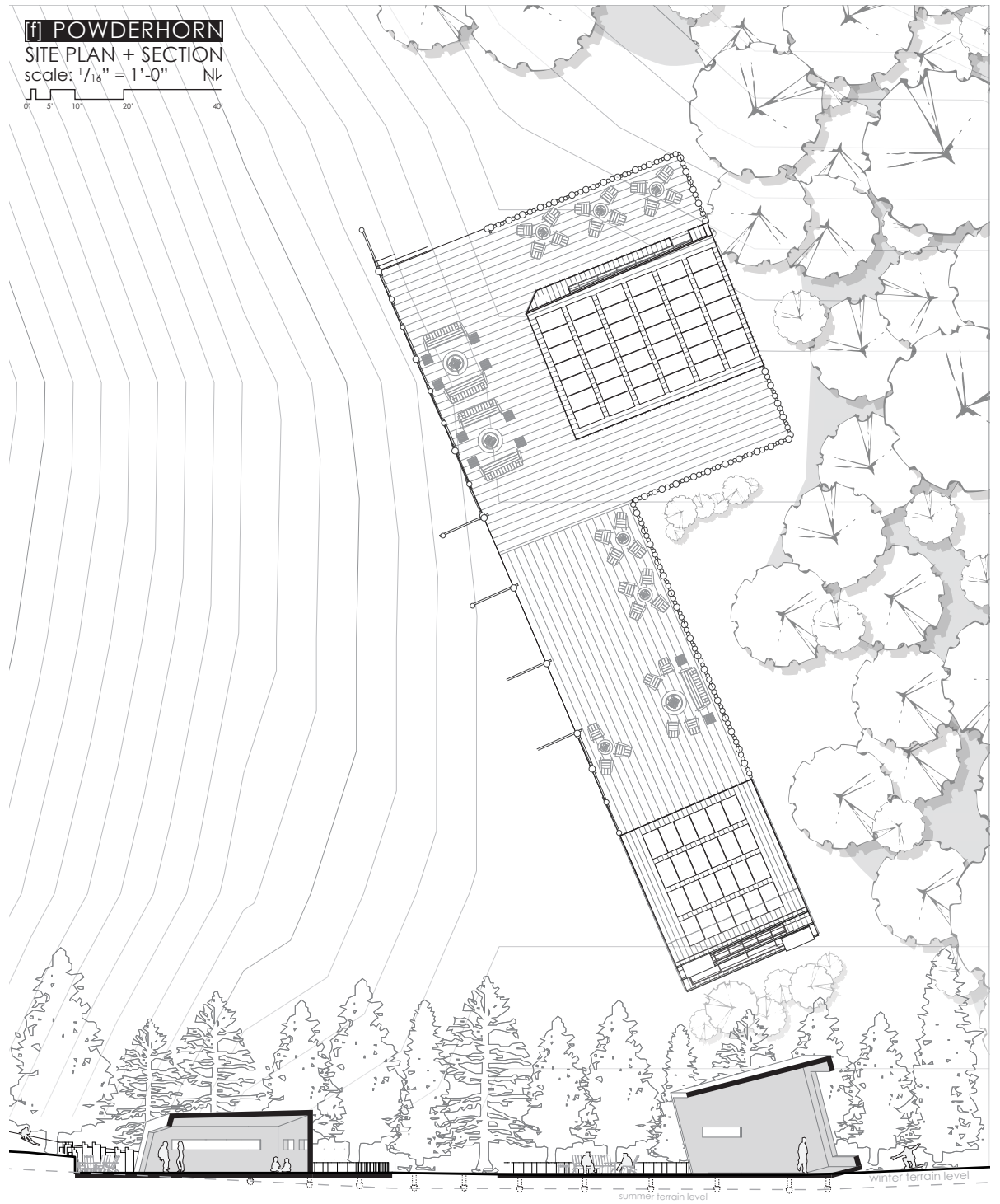


[e] ALPINE SPRINGS
SITE PLAN + SECTION
scale: 1/16" = 1'-0" N↓





f) POWDERHORN
SITE PLAN + SECTION
scale: 1/16" = 1'-0" N↓





7__CONCLUSIONS

While the topic of mountain resorts and sports is not one of grave importance to the social issues plaguing our society; recreational enjoyment, appreciation of nature, and coming together with your peers is something our culture needs to trend further towards. This topic is especially relevant as we become further isolated in our smartphones, overpopulate the earth and deplete its resources, and lose participants in non-mainstream sports. This project does not aim to solve all those problems directly. But through intervening at Snowmass Mountain in Aspen, Colorado, precedence can be set for other resorts to better the industry.

Designing a set of huts to reinvigorate mountain users at each of the sites will link patrons back to the environment, foster communication between fellow sport participants, and allow for pausing during activities for better appreciation of the landscape. The language of each hut translates down the mountain to the village and residences nestled within the trails. Snowmass Village is supposed to be a linked, composed group of lodging, retail, and entertainment. Instead, hotels and condos have been plopped between them with little to no cohesion. To connect them and in conjunction with the other sites, this project will unify the entire image of Snowmass Mountain. As a whole, the project will encapsulate Snowmass Mountain under one identity, bring passion and renewed interest into mountain sports, their users, and the environment surrounding them.

This project has the potential to inform other resorts, the mountain sport industry, and participants in the form of design, planning, and daily choices.

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