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[dis]LODGE; a transformation of the ski lodge in response to function and site

Jacob E. Schneck

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A Capstone Project Submitted in Partial Fulfillment of the Requirements of the Renée Crown University Honors Program at Syracuse University

Jacob E. Schneck

Candidate for B.Arch. Degree
and Renée Crown University Honors

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Capstone Project Advisor: _____
(Richard Rosa)

Honors Reader: _____
(Edward Sichta)

Honors Director:_____
Samuel Gorovitz

Date:_____

ABSTRACT

Over the past century skiing has experienced remarkable growth in popularity, equipment and technique. From 1946 to the present the number of ski resorts in North America with operating lifts has grown from 15 to over 600. During this time skiing has developed from a means of winter travel into a sport that combines paramilitary precision and control with leisure. Driven by economic interests and the superficial imitation of European alpine architecture the contemporary ski lodge model has failed to meaningfully address these changes and has failed to address function and context in terms of both its formal organization and expression. This has resulted in the current ski lodge model that is detached from its site and primary functions. Through a critical study and analysis of the functions of the contemporary ski lodge and their relationship to a specific site a transformation of the ski lodge typology can occur in which the ski lodge meaningfully responds to the relationship between form, function and site. This transformation will manifest itself in the formal, material and tectonic expression of the ski lodge.

Through the analysis of the functions of the contemporary ski lodge and their relationship to the specific site of Hunter Mountain, New York, the study of the evolution of the ski lodge typology and a graphic study of the contemporary ski boot a ski lodge was designed for Hunter Mountain, New York which critically responds to the relationship between form, function and site and attempted to address the changes which have occurred in skiing culture.

The transformation of the ski lodge manifests itself in two primary ways. The first is through a reconsideration of the current notion of the ski lodge as a single entity that exists at the base of the mountain. In order to respond to the variety of functions existing within the contemporary ski lodge and to have a more meaningful impact within the larger site of the ski area specific functions of the ski lodge have been critically dislodged from their current location at the base of the ski area and integrated throughout the entire site. These lodge fragments include a base lodge, summit observation lodge and restaurant, shelters for reflection, several observation platforms, ski patrol stations and a terrain park lodge. They are located according to existing site characteristics such topography, views, density of use, and materiality. Through a unifying formal, tectonic and material language the fragments of the ski lodge form a unified system which utilizes the site to its full potential and promotes discovery and interaction between the natural and the constructed throughout the entire site of the ski area.

The second way the thesis manifests itself is in the formal organization and expression of the lodge fragments. Primarily focusing on the design of the base lodge the formal organization and expression manifests itself as a series of fluid concrete blades, which emerge from the landscape. The form of these walls is derived from the multiple

functional sequences of the ski lodge and a desire to integrate the lodge with the landscape. The programmatic spaces of the ski lodge are located between these blades to maximize efficiency and enhance the experience of the ski lodge constantly connecting the users to the landscape and the mountain beyond. A fluid shell that functions as a double skin to provide opportunities for passive ventilation in the summer as well as heat gain in the winter encloses the base lodge. This enclosure analogically references the fluid shell of the ski boot and fluid movement of the skier.

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THESIS STATEMENT

Over the past century skiing has experienced remarkable growth in terms of popularity, equipment and technique. From 1946 to the present the number of ski resorts in North America with operating lifts has grown from 15 to over 600. During this time skiing has developed from a means of winter travel into a sport that "combines paramilitary precision and control with leisure"[1] and ski equipment has developed a high-tech language through the use of advanced technologies, materials and construction techniques. The ski lodge typology driven by economic interests and a fixation on the image of vernacular alpine architecture has failed to respond to the evolution of skiing and the increasing multiplicity of functions associated with the ski lodge. *The current image based architecture of the ski lodge typology has generated a disjuncture between skiing and the ski lodge in terms of function and expression.*

The continuing evolution of the sport of skiing and ski equipment suggests a need for the transformation of the existing ski lodge typology in response to function and formal expression achieved through material, tectonics and form. ***Through an understanding of the complex functions found in the contemporary ski lodge and their relationship to site, architecture can effectively integrate the multiplicity of functions found in the ski lodge with site, while introducing a contemporary formal language that analogically references the advanced***

technology of ski equipment. In this way an architectural transformation of type will occur which responds functionally and aesthetically to a new generation of skiers for whom the current ski lodge no longer meets their needs or reflects their culture.

The proposal is for a new ski lodge placed into the existing site of Hunter Mountain Ski Area that responds to the contemporary functions of the ski lodge in relationship to the particular characteristics of the site. The expression of the ski lodge, manifested in its materiality, tectonics and formal language, will be derived from a hybrid of advanced ski equipment, vernacular traditions of alpine architecture, and site character. The result will be an evolution of the ski lodge type that accurately reflects contemporary skiing culture and is grounded in a particular site.

TYPOLOGY

The notion of type refers to a grouping of objects based on similar or shared characteristics. As humans we ultimately group all objects into categories in order to compare them against other objects of similar characteristics and ultimately pass judgment on them. The architectural notion of typology first introduced by Ouatremere De Quincy can be defined as "a concept which describes a group of objects characterized by the same formal structure."[1] All architecture is compared and ultimately judged against buildings within specific types and thus the notion of typology is necessary for architectural discourse and comparison. While the notion of type implies the elimination of individuality, its origin lies in the individual architectural work and it relies on variation between individual elements.[2] The type while easily misunderstood as a limiting factor in architectural design is used only as a starting point for the architect from which "he can destroy it, transform it, respect it."[3]

In this way the type allows for variety and transformation within architecture, while maintaining a dialectic relationship with history. While the notion of type alone does not require transformation, as society's values and needs change and technology increases the architectural type must transform to this change rather than remaining fixated on historical models. This is emphasized by Rafael Moneo in his text "On Typology"; *"One of the architects greatest efforts . . . is made when he gives up a*

known type and clearly sets out to formulate a new one. Often external events – such as new techniques or changes in society – are responsible for impelling him toward this creation of a new type, in accordance with a dialectical relationship with history."[4] Within this quote Moneo establishes the role of the architect in the advancement of the type. It is the architect's responsibility to respond to changes in culture and technology through the manipulation and creation of new types. Moneo also establishes the tool by which the architect transforms type; *"Composition is the tool by which the architect deals with the variety of programs offered by the new society; a theory of composition is needed to provide an instrument capable of coping with a diversity that, with difficulty, can be reduced to known types. In this sense composition should be understood as the mechanism that resolves the connection between from and program – or form and function – to which a new idea of architecture is wedded."*[5] Within this quote Moneo also establishes the goal of the type as the resolution of form and function.

While Moneo and others such as Micha Bandini discuss the generative potential of the type in architectural design the notion of the type has been reduced and in some cases denied over the course of the past century.[6] "Typology today has come to be understood simply as a mechanism of composition. The so-called "typological" research of today merely results in the production of images, or the reconstitution of traditional typologies."[7]

The architectural typology of the ski lodge has fallen into this common trend reducing type to the image of vernacular alpine architecture in the Alps associated with the origins of skiing. Remaining fixed on the representation of the vernacular alpine image, the origins of these buildings as a direct result of function, available technology and site has been ignored. In this way the ski lodge as a type has failed to properly transform in response to the changes in ski culture and technology. This has resulted in an unclear notion of the ski lodge as a type and a disjuncture between skiing and the ski lodge in terms of function and expression. Understanding the historical ski lodge type in terms of function and expression will enable the transformation of the ski lodge type.

[1] Quincy, Quatremere de, Encyclopedia methodique d'Architecture, Paris 1825.
[2] Moneo, Rafael. "On Typology," Oppositions v. 13, summer 1978. Cambridge, MA; The MIT Press, 1978; p. 23
[3] Moneo
[4] Moneo; p. 27-28
[5] Moneo; p. 28
[6] The reduction of type began during the Beaux Arts in the 19th century when the notion of type was reduced to a compositional and schematic device. During the modern movement the architectural notion of type was dismissed as a limiting factor to design. Seen as a hindrance to the use of advances in technology and building materials occurring at the time architects of the modern movement rejected history and turned to industrialized products such as the car and the ocean-liner, which were types in their own right, as inspiration for their architectural designs. Venturi and other post-modern architects later reduced the use of type to an image, interested only in the types ability to communicate through recognition rather than with the formal structure of types.
[7] Moneo; p. 38

ADVANCES IN SKI TECHNIQUE AND TECHNOLOGY

Skiing originated as a means of winter travel, hunting and waging war skiing and has since developed into a complex and multi-faceted sport and recreational activity. The sport of skiing now contains many specialized sub-disciplines and ski equipment uses advanced materials and technologies to meet the specific requirements of those specialized disciplines. The majority of this growth has occurred within the past century and within the past decade the sport of skiing has experienced an unprecedented evolution of culture, technique and equipment that has furthered the disjuncture between skiing culture and the ski lodge. Warren Miller frames the extent of the change well in his quote; *"Never before has the sport of skiing changed so rapidly . . . as it has over the past decade. Twin tip skis have guaranteed that skiers can spend as much time going forward as backward . . . resorts are building terrain parks larger than some of the mountains in the Midwest . . . with all the changes of equipment, accessibility of terrain and most important the mindset of some of the worlds best athletes . . . skiing today is not what it once was."*[1] The evolution of ski technology and culture is characterized by an increasing combination of specialization, precision and control combined with leisure, comfort and style, which reflects the evolution of skiing technique.

Current ski technique attempts to create the most fluid and effortless movement of the skier down the mountain. However this apparently

effortless and fluid movement is only achieved as a result of highly precise movements requiring full control of the bodies movements. This precision is revealed through the overlay of multiple images of a skier executing a seemingly fluid turn down the hill.

In response to the increasing precision required by skiers and the diversification of the sport ski equipment has advanced into a highly specialized industry utilizing advanced materials and construction technologies. Skis are now made of high-density foams, honeycomb structured plastics, bamboo, hardwoods, fiberglass, metal and any number of combinations of these. Traditional camber and side-cuts of skis[2] is now being reversed, eliminated and manipulated in countless ways to allow for more precise control on variety of snow conditions. Ski boot design is being challenged and rethought to allow skiers more control and comfort while on the mountain. Specific boots for aggressive park skiing, powder skiing, recreational skiers and beginner skiers are now commonplace. The materials used in the construction of boots range from high strength molded plastic shells and milled aluminum buckles on the exterior to rubber vibration dampers and thermo-molded boot liners on the interior increasing comfort and control. Advanced water-repellent materials, breathable fabrics and insulation less than 1/8" thick are now standard in ski outwear increasing its functionality and comfort.

In addition to the functional advances in ski equipment over the last ten

years, ski equipment design is also addressing the issue of sustainability. This can be seen in skis that utilize bamboo, a renewable material, as a core material and the use of sublimated top-sheets which eliminate the typical toxic solvents found in ski materials. Also out-wear companies such as Helly-Hansen are using recycled materials in their outerwear and designing outerwear, which reduces the amount of wasted material.

[1] Refresh. Josh Berman, prod and dir. DVD. Level 1 Productions. 2009.
[2] Camber - the arch built into the ski from tip to tail
Side-Cut - the arc that creates the side of the ski

SKI LODGE AND FUNCTION

Architecture is distinct from other art forms in that it is inhabited by people and contains events, programs, activities and rituals. Thus architecture in contrast to the other arts has a responsibility to function in accordance with human needs and the requirements of the specific programs and rituals housed in it. As changes in skiing technique and technology have developed to combine increasing precision and control with leisure and comfort the function of the ski lodge has become complex combining programmatic elements containing highly precise rituals and activities such as the ski patrol center and ski rental facility with programmatic elements of leisure and social gathering such as the bar and lounge spaces. The functions of the ski lodge have also become directly linked to the site, through its relationship to ski slopes, site access and environmental conditions. However the current ski lodge type has taken a reductive approach to function, failing to respond to the highly precise programmatic spaces and sequences present in the ski lodge and functionally separating the lodge from site. This reductive approach has reduced the potential richness of the ski lodges function. Thom Mayne writing on the general state of contemporary architecture clearly articulates the problem occurring in the ski lodge;

"What is ironic in a time of unprecedented advancement in scientific and technological advancement is the reactionary and superficial appropriation of historical form. The problem here is not just one of form, but of the tendency for this architecture to be acquiescent to the day-to-day

demands of utility and economics. The linkage of benign architecture passively serving the status quo society is what is so apparent about our current situation . . . The past is romanticized and seen as a place of safety and security . . . This romanticizing of an earlier time as simpler fails to grasp that it is in the realization of a complexity and contradiction that we begin to find our way out of the psychological malaise we're currently suffering."[1]

Mayne's position suggests that the complexity and diversity of programs that constitute the ski lodge and the complex relationship it has with site, should be embraced. It is in this complexity of function that the richness of the contemporary ski lodge exists. By embracing this complexity of function and responding to the function of the ski lodge in relationship to its site the accurate transformation of the ski lodge type can occur.

[1] Mayne, Thom. Morphosis: Connected Isoltion. London: Academy Group Ltd., 1992.

SKI LODGE AND SITE

Intrinsically linked to site through function the ski lodges location in topographically rich landscapes suggest a responsibility of the architecture of ski lodges to respond to site beyond functional requirements embracing the materiality, climate, topography and temporality of site. However the current ski lodge type, driven by revenue generating interests has developed autonomously from site, ignoring the functional relationship to site as well as the generative potential of site in architectural design.

The term site in architecture can be defined as the local positioning of a building, town, monument or similar work; a space of ground occupied or to be occupied by a building; or the place or scene of something. The notion of site can also be expanded from the specific physical location of an object to a much larger concept of regional context “as a means of promoting tendencies in a specific [regional] area.”[2] All sites are constituted of a system of complex and interrelated factors. These factors include materiality, topography, ecosystems, specific climates, cultural practices, activities or rituals and historical events. Architecture has the responsibility to thoughtfully respond to these factors, whether they are respected or construed. Architecture cannot be considered separately from site or only in terms of site but rather it must be considered as combination of the two “architecture arises from the studied relationship of the two [building and site].”[3]

In Carol Burn's essay "On Site: Architectural Preoccupations" she discusses two notions of site the cleared and the constructed. The cleared site is explained as a neutralization and rationalization of the site into a mathematical object in which natural constructions are considered secondary to human constructions. An example of the cleared site can be seen in Mies's Campus design for IIT. The notion of the constructed site discussed by Burns is much more in tune with the mountainous site of the ski lodge. The constructed site places emphasis on the "visible physicality, morphological qualities and existing conditions of land and architecture" in which the "earth as natural form" is connected to the "building as constructed form."[4] In the topographically rich sites of ski lodges the acknowledgement and understanding of landscape qualities can enhance both the constructed architecture and the natural landscape. Alvaro Siza's Leca Da Palmeira swimming pool demonstrates the notion of the constructed site. Representing a sensitivity and symbiosis with the landscape through its form, materiality, tectonics and organization the architecture of Siza and the site become one construct, which cannot be understood as separate entities. The section is an essential tool for the design of the constructed site.

Beyond responding to the material and spatial quality of the landscape, the ski lodge can also respond to the temporality of the landscape. James

Corner describes the notion of landscape temporality as a “serialistic and unfolding flow of befores and afters”.[5] This understanding of the landscape is especially pertinent to the experience of skiing and the ski lodge where the users are in direct contact with a landscape that is in constant flux. Snow conditions, temperature, visibility changes occur not only on a day-to-day basis but also from location to location on the mountain. When the base of the ski area may be in sun and warm temperatures, the summit may be cold and enveloped in clouds. These changes have a great impact on the experience of the landscape and ski lodge.

Further complicating this notion of temporality is the movement of the body itself [kinesthesis] which is a critical element to the experience of skiing. The skier experiences the landscape through motion perceiving the landscape from constantly changing vantage points visibly as well as tacitly. The skier’s kinesthetic and temporal experience of the landscape are critical elements to the design of the contemporary ski lodge.

[1] Frampton, Kennith. Studies in Tectonic Culture. Cambridge, Mass. : MIT Press, 1995
[2] Burns, Carol J. “On Site: Architectural Preoccupations.” Drawing Building Text. Ed. Andrea Kahn, New York, NY; Princeton Architectural Press. 1991
[3] Burns, Carol J.
[4] Burns, Carol J.
[5] Corner, James. “Representation and landscape: drawing and making in the landscape medium.” Word & Image. Vol. 8, no. 3, July-September 1992. 249-250

ARCHITECTURAL EXPRESSION

"Architecture is, finally, a means of communication, a way of describing things for which words are inappropriate or inaccurate and to speak about the culture from which it comes."

- Thom Mayne[1]

To express is to communicate, show or manifest an idea. Ideas can be expressed in many ways; writers express ideas through words, painters through a canvas and paint, sculptures through clay, marble, found objects etc. Architects also have the ability to express ideas and principles through the medium of buildings. While the primary focus of architecture is often placed on space and ideas, space cannot be achieved without construction through materials. Architecture is thus rooted in physical materials; stone, wood, steel, glass, etc. and their construction. The architect's medium for expression is materiality and tectonics. Frampton in his text "Studies in Tectonic Culture" describes the expressive potential of construction and structure. Developing from a technical activity the notion of tectonics evolved into an artistic activity focused on the "art of joining".[2] Some of the first instances where architectural construction techniques (tectonics) were used to express tradition was found in the cutting and laying of stones in ancient Greek temples, which reinterpreted and expressed ideas associated with the traditional timber frame.[3] Architecture through tectonics can represent not only materials but also technology and advances in society through which the technologies came into being. Frampton elaborates on this principle stating "To the extent that architecture remains suspended between

human self-realization and the maximizing thrust of technology, it must of necessity become engaged in discriminating among different states and conditions; above all perhaps among the durability of a thing, the instrumentality of equipment and the worldliness of human institutions. The tectonic presents itself as a mode by which to express these different states and thereby as a means for accommodating, through inflection, the various conditions under which different things appear and sustain themselves."[4]

The contemporary ski lodge can reflect the changes, which have occurred in skiing culture through the particular use of materials and tectonics. Looking to ski equipment for analogies of structure, shelter, construction, materiality and form the ski lodge can develop a new formal language, which expresses the culture from which its function is derived. The ideas of precision and control combined with comfort, protection and style found in ski equipment can be translated into the built form of the ski lodge. In addition to analogical thinking the ski lodge can reference constructional techniques of ski equipment such as lamination, layering, milling, and heat forming to advance the expression of the contemporary ski lodge.

[1] Mayne, Thom. Morphosis: Connected Isoltion. London: Academy Group Ltd., 1992.
[2] Frampton, Kennith. Studies in Tectonic Culture. Cambridge, Mass. : MIT Press, 1995
[3] Frampton, Kennith.
[4] Frampton, Kennith.

THE SKI LODGE AS A TYPE

An understanding of the origin and evolution of the ski lodge type will provide a framework within which the ski lodge can be transformed in response to the changes in the sport of skiing and a particular site. The ski lodge understood as an architectural type is underdeveloped and unclear both in its formal organization and function. The contemporary ski lodge type fails to understand and thoughtfully respond to the evolution of skiing and the particulars of site. The function of the ski lodge as a shelter for skiers from the exterior climate has endured since the origin of skiing 6000 years ago in the regions of Siberia and Scandinavia. At this time skiing was developed as a means of winter travel, hunting and waging war. From Siberia and Scandinavia skiing spread across Europe maintaining its primary function as a means of winter transport.

In this initial spread across Europe the origins of the ski lodge as an architectural type can be understood as the vernacular alpine architecture in the regions where skiing took place. Mainly private dwellings these structures met the basic functions required by the inhabitants and site as a place of shelter for individuals or small groups from the exterior climate. Their from was a result of the synthesis of function, local materials and construction techniques. The European alpine chalet of the 1800's is the image of alpine architecture most commonly associated with the ski lodge today, however this image has become highly embellished and

romanticized. In reality the majority of these alpine buildings were small structures constructed of the rough materials available relative to the specific site. Despite varying locations these early alpine dwellings can be categorized by their similar formal structures, materiality and construction techniques. Most were constructed with a rock foundation and cellar area embedded into the slope of the site. This area was primarily used for storage of goods and in some cases shelter for livestock. Elevated off the ground on this stone base was a wooden structure generally one to two stories in height, containing areas for cooking, eating, sleeping and in some cases a communal gathering space. Steeply sloping roofs were a common feature to prevent excessive snow accumulation on the buildings. Another common feature of these structures were large porch areas covered by overhanging roofs that sheltered the buildings from summer sun and provided an extra buffer space from snow and rain. The alpine architecture from this era was directly linked to the specifics of its site and function through its orientation, building materials, construction methods and programmatic organization.

This type of structure remained the primary building type associated with skiing into the mid 1800's. However as the act of skiing continued to gain popularity, it spread to North America where the origins but not the image of European alpine structures were lost. It was also at this time that the advent of ski jumping and downhill ski racing began to transform skiing

from a means of transportation into a sport and recreational activity, thus fundamentally changing the function of the structures associated with skiing. In North America until around the 1920's as a result of a lack of substantial participation and structured ski areas the notion of the ski lodge did not exist.

During the 1920's skiing's popularity began to increase and developments in the skiing followed rapidly. The first development was that of ski trains, which transported skiers quickly and easily from metropolitan areas to the mountains. The Canadian Pacific and the Canadian National rail lines offered the first ski train service in 1927, regularly transporting eleven thousand skiers from Montreal to the Laurentian Mountains. The first US ski train was organized four years later in 1931 and ran out of Boston.[1] Quickly the popularity of ski trains escalated and soon the concept of ski trains had spread across the continent from New York City and Boston to Salt Lake City and San Francisco. In many ways ski trains can be seen as an early manifestation of the ski lodge in North America. The ski trains, which ran overnight, attempted to adapt to the functional needs of skiers and included dining cars, sleeping cars, cars designated for socializing as well as storage space for ski equipment.

As skiing popularity increased the need for structured ski areas developed and the first contemporary notion of a ski area developed in 1931. Prior to

1931 skiers would gather at local mountains and hike in order to earn their runs. In 1931 Alex Foster, a Montreal ski jumper, constructed the first rope tow, a device run on an old dodge car engine which pulled skiers up the hill eliminating the exhausting hike. He charged 5 cent per ride and 25 cents for a day's ticket. At the base of the hill Foster constructed a simple log shack heated by a wood-burning stove. This was the first instance of a true base lodge in North America. The only function the building contained was a single bathroom. Quickly Foster's invention of the rope tow spread across North America increasing the popularity of the sport drastically. At the base of ski hills "entrepreneurs built warming huts, from which they sold hot dogs and hot chocolate," thus the ski area and ski lodge as a commercial entity emerged in North America.[2] The majority of these "base lodges" were minimal structures and contained only the most basic functions. They were often low-ceilinged, dark structures, which were little more than huts.

In Europe the development of ski areas at this time was primarily located in the Alps, which already contained alpine villages with hotels and amenities catering to summer tourists. These villages were far advanced compared to the minimal base lodges found in North America and easily met the needs of winter vacationers with their proximity to the mountain slopes. In 1930 the first resort built specifically for skiing, Sestrieres, was constructed in the Italian Alps. Sestrieres and other resorts similar to this

contained hotels, restaurants and other amenities directly adjacent to the ski slopes. Americans traveling to these European resorts admired the range of services offered by these resorts so close to the ski slopes and brought the idea of a European-type resort back to North America. The first ski destination resort based on these European ideals was Sun Valley, Idaho constructed from the ground up in 1936.[3] In addition to containing a variety of amenities directly at the base of the mountain such as lodging, spas and dining Sun Valley was also the first resort to introduce the ski lift. Following the success of Sun Valley several more destination resorts began opening across the continent. The base lodges of these resorts were large structures or a series of multiple structures and contained functions such as cafeterias, spas, fine restaurants, hotels and ski rental facilities. Despite the success of several resorts the majority of the ski areas maintained minimal base facilities into the 1950s because of a lack of commercial viability and lack of necessity.

Between 1950 and 1972 skiing experienced a period of its greatest development. Over a ten year period from 1955 to 1965 North America's total number of ski areas grew from 78 to 658. Enabled by increased access to the mountains via the construction of the interstate highway system and the arrival of jet passenger planes, the number of "visitors to U.S. ski areas soared from four or five million per winter to almost forty million. Spending on travel, equipment, and clothing rose above one billion

dollars annually."[4] During this era of rapid expansion for the sport of skiing the ski lodge also experienced its greatest growth as well. Increasingly large base lodges replaced the small, dark ski lodges of the past several decades. As the size expanded so did the variety of programs associated with the ski lodge and the ski lodges disconnect from its basic functions for skiers. Driven primarily by commercial interests the ski lodge design of this time gave little consideration to the basic functions required by skiing and often ignored the relationship of the lodge to the site. Instead large resorts added various revenue-generating elements of program to the ski lodge often conflicting with the functions directly associated with skiing. During this time smaller and medium sized resorts continued to meet the minimum functional requirements of the ski area. The majority of ski lodges attempted to mask their lack of response to function and site through the imitation of European alpine architecture. All these factors resulted in a disconnect between the lodge and the sport of skiing as well as the lodge and its context.

After 1972 a decline in the sport of skiing experienced a decline in the number of new participants and a slow in the development of ski resorts. During this time the architectural type of the ski lodge in particular experienced little development. However, within the past decade the sport of skiing is once again experiencing drastic changes to ski equipment, ski technique and the overall culture of the sport. Participation within the

sport of skiing is once again increasing this time as a result of increased accessibility and publicity driven by advances in skiing equipment that make the sport easier to learn and increased exposure through digital media and the internet. The changes in skiing equipment and technology are increasing the disconnection between skiing and the architecture of the ski lodge. A reassessment of the functional requirements of the ski lodge typology and the expression of the ski lodge is necessary to transform the ski lodge type in response to the changes in skiing culture and technology. Ski lodge architecture has the ability to be designed with respect to function and expression rather than revenue generating interests.

[1] Fry, John. The Story of Modern Skiing. Lebanon, NH; University Press of New England, 2006 p. 13
[2] Fry, John. p. 16
[3] Fry, John. p. 18
[4] Fry, John. p. 1

THE CONTEMPORARY SKI LODGE

As the sport of skiing has grown the program of the contemporary ski lodge has evolved into a complex combination of spaces containing highly specific sequences and rituals with spaces of leisure and relaxation. As a result the contemporary ski lodge must function in a multiplicity of ways; operating both as a place for efficient and seamless transition from the car to the mountain [the artificial to the natural] as well as a place of relaxation and leisure. It is a place that encourages social interaction, but also contains the opportunity for personal-reflection. The functions of the ski lodge are directly connected to the site they are a part of and cannot be considered separately from it. The functional complexity of the ski lodge imparts it with a richness of program that has been reduced and ignored in the current ski lodge. Architecture through an acknowledgement and understanding of this complexity can resolve the current disjuncture between the ski lodge and the act of skiing through a resolution of function and form.

The integrated relationship of function and site that exists in the ski lodge suggests a reconsideration of the current notion of the ski lodge as a single entity existing at the base of the mountain. The possibility of dividing the ski lodge into a system of structures integrated with the systems of the ski area can allow for a more effective response to function. The ski lodge and ski area can thus function as one system,

taking advantage of the differences which exist within the alpine landscape of the ski area.

PROGRAM DESCRIPTIONS

Equipment Staging Area:

A key component to the arrival and departure sequences. This is where skiers gather to change into ski equipment; pants, boots, jackets, helmets, gloves and goggles. The space must be designed in response to the equipment and movements associated with the transition into ski equipment and provide storage lockers. A dichotomy exists within the equipment staging area between the social interaction and gathering which commonly occurs here and the intimate act of dressing oneself.

Ski Patrol:

As the risk associated with skiing increases the ski patrol facility is an ever more critical element to the ski lodge. The design must allow for the effective and precise deployment of ski patrollers in response to mountain accidents and provide spaces for treatment of injured skiers. The ski patrol facility should be adjacent to the ski slopes and lift as well as the vehicular access to the site.

Multi-Purpose Lounge:

The multi-purpose lounge will provide a flexible space whose primary function is social interaction and relaxation after a day of skiing. This space will also be able to accommodate award ceremonies for events held on the mountain and screenings of ski movies produced in the digital

media studio. The multi-purpose lounge requires natural light and should be adjacent to the ski slope providing views back to the mountain.

Digital Media Studio:

The use of digital photography and video as a medium for capturing the sport of skiing has increased dramatically over the past decade. The use of digital media has inspired the progression and creativity of skiing among a younger generation of skiers. By introducing this program to the ski lodge a direct relationship of mutual progression can occur between the two.

Outdoor Event Area:

The outdoor event area will hold freestyle skiing competitions such as rail-jams, slope-style and half-pipe events. The event area should be located adjacent to the base lodge and will provide seating for viewers and a judging area. The event area should be built into the existing landscape and be usable during the summer months as well.

HUNTER MOUNTAIN SKI AREA

Hunter Mountain Ski Area is located in the heart of the Catskill Mountain Range in New York State. Part of the Catskill Park system, Hunter Mountain and the surrounding area has been preserved from future development ensuring the preservation of the sites natural character. It is located on the steeply sloping Colonel's Chair Ridge of Hunter Mountain, the second highest peak in the Catskills. The site is topographically rich consisting of a primarily deciduous forest punctuated by cliffs and rock outcroppings toward the summit of the ski area. The climate of Hunter is typical of the North-East with an average summer temperature of 78 degrees and an average winter low of 10.5 degrees. Hunter receives an average of 45.7 inches of rain and 113 inches of snow annually and experiences an average of 183 sunny days and 131 days of participation a year.

The typical ski season lasts 5 months running from late November into March, occasionally continuing into April. The ski season length of the ski season is ensured and extended through Hunter's advanced snowmaking system. One of the most advanced systems in the world the snow making is fully automated and covers 100% of the mountains terrain. This is necessary in the unreliable winter climate of the Catskill region. During the remaining months of the year Hunter hosts a variety of music and cultural festivals. Hunter's location approximately a 3 hour drive from New

York City, via the New York State Thruway makes it a popular weekend destination for the metropolitan residents drawing a variety of skiers ranging in skill level from beginners to professionals. Increasing numbers of annual visitors to Hunter and new functional demands of skiers and snowboarders have rendered the current ski lodge ineffective and outdated and suggest the need to replace the existing ski lodge. Hunter Mountain's rich topography and functional requirements will provide an ideal site for the contemporary ski lodge.

HUNTER AND THE CATSKILL MOUNTAINS

Originally the location of a large river delta the Catskill Mountains began forming 395 to 325 million years ago as erosion from the Acadian Mountains to the north deposited along the edges of this delta slowly compressed into rock. The current form of the Catskill Mountains is a result of erosion from successive glaciers and rivers have widened the valleys of the Catskills and rounded the edges of mountains. The region is also characterized by the large amount of exposed bedrock outcroppings and mountain peaks caused by the glacial flow.

The original inhabitation of the Catskill Mountains was by the Mohawk Indians, who lived along the Hudson River and traveled into the mountains using them primarily as a resource for hunting. In 1600's the first Dutch settlers began to travel up the Hudson River and explore the region of the Catskills. The Dutch began to settle in the Catskill region in the late 1600's and were followed closely by the English, Irish and Germans. These groups exploited the resources of the region heavily logging the wooded mountains and destroying much of the original growth trees. Other industries of the region included quarrying for bluestone, leather tanning, trapping and fishing, which continued into the 19th century.

During the 19th Century the Catskill Mountains became a destination retreat for the wealthy inhabitants of New York City. The region gained

cultural prominence through the paintings of the Hudson River School inspired by the landscapes of the Catskills and Hudson River Valleys. The desire to preserve the wilderness of the Catskill Mountains which were being destroyed by the logging, quarrying and tanning industries during the 19th century resulted in the founding of the Catskill Park and Forest Preserve in 1885, which protected the region from these industries. The introduction of railways connecting New York City to the Catskills, in the late 19th Century increased the number of vacationers to the region. By the middle of the 20th century the Catskill region contained numerous resorts and campgrounds that served as retreats for New Yorkers.

The town of Hunter was founded at the base of Hunter Mountain in the 1814 and based around the industry of tanning and logging. Hunter Mountain itself was heavily logged until the creation of the Catskill Park and Forest Preserve, at which time tanning and logging operations were halted. In the 1950's Orville and Israel Slutzky developed plans for Hunter Mountain Ski Area to stimulate the area's economy following the great depression and falling tourism. The plans to develop the ski area were taken on by a group called the Hunter Mountain Development Corporation and consisted of Broad-way show business people. The ground for the ski area was broken in 1959 and after extensive excavation and clearing work on the mountain the ski area opened for the first time on January 9, 1960 with the "B" lift in operation. Since its opening the hunter ski area

has demonstrated a dedication to the latest technologies in snow-making ensuring the mountains ability to have stay open during low snow years. In 1967 they became the first resort in the world to have summit to base snowmaking capabilities and in 1980 were the first resort to feature snowmaking capabilities on 100% of their terrain and in 1989 installed an automated snow making system the first in the US.

The original lodge for the ski area was housed in a converted hotel at the base of the mountain. In 1964 the present day base lodge was constructed, which originally contained an indoor pool. Over the subsequent years the ski lodge has been renovated and retroactively fitted to attempt to meet the changing needs and growing crowds of Hunter Ski area.

SOURCES CITED AND CONSULTED

Bandini, Micha. “Typology as a Form of Convention,” AA Files 9, 1984. 73-81
Bell, Eugina, ed. ROY: Architecture of Risk. Michigan: The University of Michigan, 2004.
Brino, Giovanni. Carlo Mollino: Architecture as Autobiography. New York: Thames & Hudson, 2005.
Burns, Carol J. and Andrea Kahn, Ed. Site Matters: design concepts, histories and strategies. New York : Routledge, 2005
Burns, Carol J. “On Site: Architectural Preoccupations.” Drawing Building Text. Ed. Andrea Kahn, New York, NY; Princeton Architectural Press. 1991.
Corner, James. “Representation and landscape: drawing and making in the landscape medium.” Word & Image. Vol. 8, no. 3, July-September 1992. 243 – 275.
Corner, James. “The Agency of Mapping: Speculation, critique and intervention.” Recovering landscape : essays in contemporary landscape architecture. New York : Princeton Architectural Press,1999
Frampton, Kennith. Studies in Tectonic Culture. Cambridge, Mass. : MIT Press, 1995
Fry, John. The Story of Modern Skiing. Lebanon, NH; University Press of New England, 2006
Goldsworthy, Andy. Time. New York : Harry N. Abrams, 2000
Hadid, Zaha. LF one : Landscape Formation one in Weil am Rhein, Germany. Boston; Birkhäuser, 1999
Jay, John. Ski Down the Years. New York, NY; The Guinn Company, 1996
Mayne, Thom. Morphosis: Connected Isoltion. London: Academy Group Ltd., 1992.
Moneo, Rafael. “On Typology,” Oppositions v. 13, summer 1978. Cambridge, MA; The MIT Press, 1978. 22-45
Quincy, Quatremere de, Encyclopedia methodique d’Architecture, Paris 1825.
Refresh. Josh Berman, prod and dir. DVD. Level 1 Productions. 2009.
Rossi, Antonio De. Alpine Architecture in Piedmont and Valle d’Aosta. Turin: Umberto Allemandi & C., 2001
Tschumi, Bernard. “Sequences.” Architecture and Disjunction. Cambridge, MA; The MIT Press, 1996

SUMMARY OF CAPSTONE PROJECT

My thesis is derived from a critique of the contemporary ski lodge and its divorce from site and function. Over the past century the sport of skiing has grown from a method of transportation and military travel into a highly competitive and complex sport as well as a leisure activity for millions of people within the United States alone, however the ski lodge typology has failed to respond to the evolution of the sport which it serves. The ski lodge has devolved from its alpine vernacular origins into a superficial box with doors and windows punctured into the walls that do not respond to the increasing specificity of function required by the ski lodge. My thesis is a reaction to this failure to respond to function as well as the specifics of a given site.

The thesis began with research into the origins and evolution of the typology of the ski lodge from the European Alpine Vernacular of the 17th and 18th century into contemporary ski lodges throughout North America as well as research into the evolution of skiing itself. From this departure point research was done on the various definitions and ideas of typology in architectural discourse and several ski lodges of varying sizes and complexities were chosen for analysis of program types, sizes and sequential flows. Simultaneously I preformed research and graphic analysis of ski equipment seeking opportunities for analogical references between high-tech ski equipment and the possible structure and organization of the ski lodge. Also I researched and

analyzed a series of architectural precedents containing complex programs embedded within rich landscapes.

Following research into these areas the specific site of Hunter Mountain, NY was chosen based on its complex programmatic requirements and the opportunities, which existed within the rich topographical and material characteristics of the site. I was able to perform several site visits to obtain a more experiential understanding of the site. In addition I preformed several graphic studies and analyses of Hunter Mountain Ski Area focusing on the topographical characteristics of the area and the organization of the existing system of ski lifts and trails. Based on the previous analysis a series of sites were selected as potential locations for lodge interventions during the spring semester design exercise.

In the spring semester I began the design phase of the thesis project. In this phase of the project the thesis that the contemporary ski lodge has the ability to transform in its formal organization and expression to more rigorously address the complex functions of the ski lodge and engage with site were tested through a design proposition. The design proposition was for a series of three interventions to be made within Hunter Mountain Ski Area; a base lodge; a summit lodge and a series of shelters for camping and individual reflection. The design for these series of lodges was developed through the continuous iteration of conceptual and physical building ideas

expressed through numerous sketches, architectural drawings, physical models and digital models. Architectural drawing methods included graphite on vellum as well as digitally produced images. Physical modeling methods ranged from abstract models built from a variety of materials including plastics, concrete, paper and metal to more realistic models exploring specific materials and spaces built from Plexiglas, cardboard, metal and wood.

The formal strategy for the final design of the lodges was based on a series of fluid concrete blades which emerge from the landscape. The form of these walls is derived from the multiple functional sequences of the ski lodge and a desire to integrate the lodge with the landscape. The programmatic spaces of the ski lodge are located on a series of floor plates, which seamlessly fit within these blades and are organized to maximize efficiency and enhance the experience of the ski lodge. The design for the base lodge includes the typical functions of a ski lodge such as rental area, ticket booth, ski shop, cafeteria, and ski patrol offices. In addition to these standard programs the ski lodge includes a digital media lab addressing the contemporary niche of ski filming and photography and a multi-functional lounge for use throughout the year. The base lodge is enclosed by a fluid shell which functions as a double skin and analogically references the fluid shell of the ski boot and fluid movement of the skier. The additional lodges contain amenities, which take advantage of their specific locations on the site. The summit lodge

contains a sun deck, an enclosed observation deck, and observation tower, restaurant and ski patrol facilities. The shelters for camping and reflection are located on the backside of the mountain and provide a sense of privacy and seclusion.

The project is significant in that it attempts to take an existing architectural typology, which does not effectively respond the requirements of the function it contains and transform it to create a new model/building type, which responds to those needs. The project explores issues of typological evolution, landscape, formal organization and expression and analogical thinking in architectural discourse. While there are still many elements to the final design, which are not perfected the project successfully begins to create a new type of ski lodge that responds to the changes that have occurred in skiing over the past century.