UNIVERSITY OF CINCINNATI

Date: 08 April 2004

I, Jay Christopher Blackburn, hereby submit this work as part of the requirements for the degree of:

Master

in:

Architecture

It is entitled:

Mapping Communication through the
[Re]-Codification of Place

This work and its defense approved by:

Chair: David Saile
        Nnamdi Elleh
        J. Barry Maynard
Mapping Communication through the [Re]-Codification of Place

A thesis submitted to the
Division of Research and Advanced Studies
of the University of Cincinnati

in partial fulfillment of the
requirements for the degree of

MASTER OF ARCHITECTURE

in the School of Architecture and Interior Design
of the College of
Design, Art, Architecture, and Planning

08 April 2004

by

Jay Christopher Blackburn

B.S. in Architecture, University of Cincinnati, 2002

Committee Chair: David Saile, Ph.D.
Committee Members: Nnamdi Elleh, Ph.D.
J. Barry Maynard, Ph.D.
abstract

“Why do we climb mountains?”
“It is easy my friends. Because it is there.”
   - John Long’s response.

The relationships among encompassing geology (site), built form and life are parts of a complex dynamic network of interactions. These interactions shape and codify the designer’s critical understanding of how spatial experience may find common human ground and how experiences are individually different.

The processes by which we communicate drive the approach to how we think, how we act, and how we respond. The ability to communicate and the capacity to experience the rituals of communication is the common thread assimilating everything unique into a greater phenomenon.

In society, the rituals of communication exist in many different forms. Communication may occur through the spoken word, visual stimuli or extra sensory perception – life and memories seem to be instantaneously received, processed, transmitted and/or perceived. Through the mapping of these forms of communication, designers themselves assume how a space will be interpreted and understood by constructing a conceptual framework. They encode elements within their networks for users to experience the place in a certain way and often expect others to see places similarly. The users and passers-by receive these messages and re-codify the original intentions into a
system more readily familiar, adding an additional layer of complexity and communication to the network.

Is there a correct meaning? Whose meaning matters? No one interpretation is in itself correct because we understand design intent does not always equate to perception. Each brings to the experience of space their own perceptions and past life experiences. The professional emphasis of architecture influences how designers and users perceive and (re)-codify a place. There are many different roles the designer plays according to the situation and the social and political environment. Designers believe they are experts and the client should listen mainly to them, however clients, builders, and users bring to the design their own perceived meanings. The role of the designer is to step in and map the similarities and differences and negotiate equitably these meanings of place.
acknowledgements

“You should go to a pear tree for pears,
not to an elm.”
-Publilius Syrus (~100 BC), Maxims

To all my family, friends, and loved ones, I look to you for guidance and support. Mom and Dad, you have given me unequaled support and love my entire life. It has not gone unnoticed. Words don’t begin to describe the love I have for you. You are the best parents I could ever have. Jeff you are always there when I need you and the best brother a brother could ever have. Grandmother and Grandfather, your endless support of my activities and life has given me the strength and courage to face obstacles which once seemed larger than life. You are the best Grandparents I could ever have.

Heather, my life in college is filled with precious memories of places we have traveled to throughout the world and in our soul, may our adventures continue into the future. You give me strength to face the next day with integrity and honesty. My studio peers, Matt, John, Brent, AJ, Shawn, and others who know who they are, you bring escape from reality and an endless outlet for soccer, ‘cabin’ talks, climbing, laughter, and quiet wisdom. Above all you provide friendship and experiences which are honest, bound by trust, and lived to the fullest extent.

Dan and Karin, this experiment is the fruit of valuable discussions over lunches and your capacity to listen and give endlessly your thoughts and experiences. Bruce Evans, informal
talks about myself and encouraging me to ‘find myself’ is the catalyst of this project and for this I am thankful. David Nash, your expertise has given me an accurate site to work from. Thomas Lowell, your keen observations have provided me with more questions than I can answer. Last, but never in the least my committee chairs David Saile, Nnamdi Elleh, and J. Barry Maynard, you have given your timeless knowledge, insight, and support throughout the entire year. Your collective effort has encouraged me to find where I overlap with different groups but above all pushed me discover who I am as an individual and a person.

I am immensely grateful to have each of you be a part of my life.
# Table of Contents

Title Page  
Abstract  

Acknowledgements  

Section: 01: Structure  
01 Table of Contents  
02 Illustration List and Credits  

Section: 03  
03 Introduction  
07 Background  
07 Human  
08 Built Form  
09 Geology  
11 Perception  
11 Communication  
12 Sign  
14 (Re)-Codify  
17 Response  
17 Methodology  
18 Design Project and Location  

Section: 02: Intervention  
20 Introduction  
23 Site  
23 Overall Description  
25 Site History  
27 Detailed Physical Analyses  
35 Facility Program  
35 History and Precedents  
41 Site Precedent Analyses  
43 Summary Facility Program  
46 Detailed Space Program  
62 Annotated Bibliography  
68
# Illustration List and Credits

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>section : 01 : structure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>A fictional unisex pop-star called Chappie. Sakamoto and Prat.</td>
<td>03</td>
</tr>
<tr>
<td>02</td>
<td>The social structure of an inter-human relationship. Fawcett-Tang. pg 124.</td>
<td>04</td>
</tr>
<tr>
<td>03</td>
<td>The interaction of built form and objects. Fawcett-Tang. pg 22.</td>
<td>04</td>
</tr>
<tr>
<td>04</td>
<td>A generalized glacial landform system. Potter. pg 48.</td>
<td>04</td>
</tr>
<tr>
<td>05</td>
<td>Abbreviated Human Timescale by author.</td>
<td>07</td>
</tr>
<tr>
<td>06</td>
<td>Abbreviated Built Form Timescale by author.</td>
<td>08</td>
</tr>
<tr>
<td>07</td>
<td>Abbreviated Geologic Timescale by author.</td>
<td>09</td>
</tr>
<tr>
<td>08</td>
<td>Combined Timescale by author.</td>
<td>10</td>
</tr>
<tr>
<td>09</td>
<td>Graphical representation of communication forms. Hatmaker. pg. 42.</td>
<td>11</td>
</tr>
<tr>
<td><strong>section : 02 : intervention</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Juan de Fuca plate at the center of the Ring of Fire. <a href="http://vulcan.wr.usgs.gov/glossary/platetectonics/maps">http://vulcan.wr.usgs.gov/glossary/platetectonics/maps</a></td>
<td>27</td>
</tr>
<tr>
<td>15</td>
<td>Sequence of a lahar forming due to volcanic activity. <a href="http://vulcan.wr.usgs.gov/about/highlights/rainierpilot">http://vulcan.wr.usgs.gov/about/highlights/rainierpilot</a></td>
<td>30</td>
</tr>
<tr>
<td>17</td>
<td>The Historic District of Paradise in MRNP. <a href="http://www.nps.gov/mora">http://www.nps.gov/mora</a></td>
<td>33</td>
</tr>
<tr>
<td>18</td>
<td>Historic photo of Paradise Inn <a href="http://www.cr.nps.gov/history/online_books/harrison">http://www.cr.nps.gov/history/online_books/harrison</a></td>
<td>34</td>
</tr>
<tr>
<td>19</td>
<td>Paradise Guide House by author.</td>
<td>34</td>
</tr>
<tr>
<td>20</td>
<td>Johnston Ridge Observatory <a href="http://www.fs.fed.us/gpnf/mshnvmdigital-gallery">http://www.fs.fed.us/gpnf/mshnvmdigital-gallery</a></td>
<td>40</td>
</tr>
<tr>
<td>21</td>
<td>Mount Washington Observatory site map <a href="http://www.mountwashington.org/maps">http://www.mountwashington.org/maps</a></td>
<td>40</td>
</tr>
<tr>
<td>22</td>
<td>Hawaii Volcano Observatory aerial photo <a href="http://hvo.wr.usgs.gov/observatory">http://hvo.wr.usgs.gov/observatory</a></td>
<td>41</td>
</tr>
<tr>
<td>23</td>
<td>Johnston Ridge Observatory <a href="http://www.riverdale.k12.or.us/~pnelson/56team/sthelens">http://www.riverdale.k12.or.us/~pnelson/56team/sthelens</a></td>
<td>41</td>
</tr>
<tr>
<td>24</td>
<td>Siding Spring Observatory <a href="http://www.tq-international.com/australia/addons">http://www.tq-international.com/australia/addons</a></td>
<td>37</td>
</tr>
</tbody>
</table>
section: 01: structure

“Homo sum, humani nil a me al lenum puto. “
(“I am a human being; I consider nothing human to be alien to me.”)

-Terence. (185-159 BC)
introduction

“`Who are you?’ said the Caterpillar.”

“`I--I hardly know, sir, just at present – at least I know who I WAS when I got up this morning, but I think I must have been changed several times since then.’ “

“`What do you mean by that?’ said the Caterpillar sternly. `Explain yourself!’”

-Alice in Wonderland,
by Lewis Carroll

The underlying focus of this Thesis is to “find myself” amongst the chaos and clutter of this world. Everywhere we look, there are sets of rules, sets of guides, sets of networks, all layered upon each other in time, each adding to the existing and creating a world growing more and more complex.¹ How is one to delve into a deeper understanding of meaning and existence of being if one is unable to even navigate a space without becoming lost in the sensory and conceptual clutter and disorder of life?

While it is important to understand how communication links one human experience to other’s experiences, it is also important to understand the difference in cultural customs and civilizations of the world. Communication can be transmitted and received either directly or indirectly through a variety of the senses. To what extent is our ability to communicate and how do we perceive what is communicated? How much or how far can designers influence the way in which a space is understood? What are the issues by which we codify design intentions and the subsequent re-codifications of the response? What is the role of the designer in attributing meaning to place?

This Thesis investigates these questions through two sections: the first as an investigation into the *Structure* and the second utilizes a design project as an experiment in *Intervention*. The *Structure* looks at the processes of Background, Perception, and Response associated with works of architecture while the *Intervention* examines the importance of site and program as they relate to the process of design.

The Background section sketches three domains important to the designer: the human, the built form, and the geological. A concise history of each and the significant contributions made in each domain are mapped out providing background for discussing perception. The Perception section analyzes the theoretical architectural problem. The various presumptions about intention versus perception and the role of the designer in coordinating these meanings on place are explored through narrative and graphic media. The Response section contains a brief overview of the design project and location as well as the methodology used in carrying out the experiment. The methodology segment describes the plan and schedule of the investigation and the Design Project and Location includes the size and scope of the project as well as how it provides an appropriate medium for the study. Where much of the interpretation is left up to the user, there seems not to be one correct answer, but many interpretations. The success is measured by how well the users are persuaded and convinced of a negotiated reality.

The Site section provides an overall description of the site including its geological and architectural history. A detailed description of the site breaks down into natural and man-made elements and significant site precedents are identified and described. The Program section presents a detailed account of each required space and its relationship within the environment.
A history of previous programs include significant precedents relevant to the project.

The final section is a *Working Bibliography* listing the key texts and built structures important in the analysis.
background

"Speak softly and carry a big stick; you will go far."
-Theodore Roosevelt

Human

According to science, life began 4000 million years ago (MYA), probably first as self-reproducing ribonucleic acid (RNA) molecules as the atmosphere did not contain any free oxygen. Around 220 MYA the first mammals appeared evolving from reptiles. 1800 thousand years ago (TYA) *Homo erectus* evolved in Africa and migrated to other continents, primarily south Asia. The first anatomically modern humans (*Homo sapiens*) appeared in Africa some time around 100 TYA. Agriculture first appeared around the Iraq region approximately 15 TYA and by 4 TYA, recorded history was first documented.

Quickly humans rise:

3000BC - Chinese ideograms, Crude writing existed in Egypt, and cuneiform writing was invented in Mesopotamia, the 365 day calendar year, the measurement of a foot, rock drawings.

2000BC - Definition of a cubit.

1000BC - Phoenician alphabet, first record of a solar eclipse, coins, Demotic script in Egypt.

1AD - Birth of Jesus Christ, paper invented, Buddhist writings and scriptures, Demotic replaced by Greek.

1000AD - First novel written, rise of Modern English from Middle English, one point perspective, Gutenberg’s refined printing techniques, Calculus, electric, telegraph, photography, mass media, computer.

2000 AD - Cloning.  

**Built Form**

15 thousand years ago (TYA) humans started permanent settlements and cities around present day Iraq. At 10 TYA humans reached Tierra del Fuego at the tip of South America, the last continental region to be inhabited by humans, excluding Antarctica.

4000BC - City of Ur in Mesopotamia, Civilization of Crete, Civilization of Sumeria, irrigation in Ancient Egypt, in Crete the rise of the Minoan Civilization, Neolithic settlement in Scotland.

3000BC - Drainage and sewer system in India, dams, canals, stone sculptures using inclined plane and lever in Sumeria, Pyramids in Ancient Egypt, Harappan Civilization.

2000BC - Seahenge, Stonehenge, Olmec Civilization in Mesoamerica.

1000BC - Carthage founded by Phoenicians, founding of Rome, Olmecs build pyramids, iron discovered in China, Athenian Empire forms and falls, Roman aqueducts, Great Wall of China construction begins, Silk road between Asia and Europe, the Acropolis.

1AD - Spread of Roman Empire, Colosseum, the Pantheon, The baths of Caracalla, Glendalough Monastery, demise of Mayan Culture, Hagia Sophia, Buddhist temples.

1000AD - Vikings settle in North America, Anasazi Civilization, abbey church at St. Denis is the first gothic building, Ottoman Empire, the Leaning Tower of Pisa, Chartes Cathedral, Mesa Verde Cliff Dwellings, Great Wall of China completed, St.

**Geology**

13,700 million years ago (MYA) the Universe began with the Big Bang. At 13,100 MYA the first galaxies were formed and at 5000 MYA the sun formed.

The planet Earth formed from the accretion disk revolving around the ‘young’ sun approximately 4500 million years ago MYA. At 4100 MYA the Earth’s surface cooled down enough for the crust to solidify. 3000 MYA Photosynthesizing cyanobacteria evolved using water as a reductant, thereby producing oxygen as a waste product. The oxygen initially oxidized dissolved iron in the oceans, which created iron ore, then the oxygen concentrated in the atmosphere rose, acting as a poison for many bacteria. 570 MYA marked the end of the Precambrian Era, which represents about 80-90% of all geological time.

450MYA produced the first flooding event. 300 MYA Vast forests of club moss (lycopsods), horsetails, and tree ferns covered the land; when these decayed they eventually formed coal. 225 MYA was the end of the Paleozoic Period from which rocks deposited during this interval contained a fossil record from which the evolution of life can clearly be traced.

---

3 +/- 200 million years according to NASA’s Wilkinson Microwave Anisotropy Probe (WMAP) data.
Around 180 MYA The supercontinent Pangea began to break up into several landmasses. The largest was Gondwana, made up of the landmasses which are now Antarctica, Australia, South America, Africa, and India. 55 MYA marked the end of the Mesozoic Period of which there are few records, mostly because of erosion.

This date, 55 MYA, also marked the beginning of the Cenozoic Period which stretched to the present day. At least three global glaciations, probably more, have occurred causing total reorganization of earlier drainage patterns. 35 MYA grasses evolved from angiosperm. 10 MYA the climate began to dry again and savannahs and grasslands took over the earlier forests.

---

perception

“It is not what you look at that matters, it is what you see.”
-Henry David Thoreau

Communication

Means of communication drive not only how we think and how we act, but also how we respond. Direct communication and indirect communication is experienced constantly providing a network through which we sense and process our world. This communication can be sensed through taste, touch, smell, hearing, vision, or even extra sensory perception, spirituality and genius loci (spirit of place).

However the communication we receive at the present is not autonomous. Instead it is only one slice of the whole experience of places. Should we take multiple slices or instances of the communication for one particular person at one particular time for one particular event and stack them on top of each other, we might add layer by layer the complex information which makes up place. We certainly would find overlapping similarities and differences. An analysis would provide an affirmation of some of the information and a confusion or rejection of other bits of information. Now, if we compare this information with the analysis of another person at the same times at the same event we would discover further affirmed actions, further confusions and further rejections.

If one were to take this approach to every event, every decision or to every context and map out all the forms of communication, it would take days to accomplish. Add to this the stack of maps of every other person who has ever had that particular experience
whether consciously or subconsciously and the analysis grows infinite. Our life is filled with layers and complexities, uncertainty and misunderstanding. Peter Fiell suggests,

“Throughout our daily lives we are surrounded and peppered by graphical messages. Indeed they have become so much of the fabric of every-day modern life – from breakfast cereal packaging and advertising billboards to logos on clothes and television company identities – that often we register their codes only on a subconscious level.”

Designers contribute to some layers of places along with other people. For this reason it seems important for me as a designer to make a personal mapping of the rituals of communication to be able to sort out what is not only important or trivial, but what is intended or meant and what is actually acknowledged or understood.

**Sign**

Images and signs\(^7\) are things which come to stand for something else. Much like the layers of communication, they are at once rooted deep within the structure of intent, context, and perception. Where the layering of communication takes intent and perception and adds a dynamic layer of life or existence, images and signs add the static layer of naïve suggestion. That is to say the dynamism and static are both elements of the intent with detached implications to the perception. The dynamic element or life’s own nature and ability to interpret and analyze, provides suggestion to meaning of images and signs. The static element by itself provides a meaning of the sign by its qualities

\(^7\) Charlotte and Peter Fiell, *Graphic Design for the 21^{st} Century. 100 of the world's best graphic designers*, (Taschen GmbH: Cologne, Italy: Ute Wachendorf, 2003), Introduction.

\(^8\) Symbols are signs of a special sort which 'suggest representation and signification.
of being the object deciphered and suggested. When each are layered separately with the intent, the perception will be different, however if both are simultaneously exposed to the intent, a combination of each will influence the resulting perception.

The study of semiotics deals with the concept of sign, the signifier and the signified. In simple terms, a sign is made when a thing (signifier) stands for something else (signified). Ferdinand de Saussure argued language is a cultural phenomenon; and it generates meaning in a special way. The same can be said for the way in which elements of architecture are communicated.

If one were to take a glass wall as an example, on one level there is a particular set of semantic assumptions by which we associate the physical indicator of a wall of glass with a transparency for a particular view. It may also carry the meaning of connection with nature, or for example, the structure of a curtain wall or even a place to see and be seen. Where the semantic component is not as straightforward as it first may appear, the phenomenon by which we generate meaning is integral in the relationship of the wall of glass to how it is perceived. The wall of glass has the potential to become a sign in quite different meaning systems.

On another level, there is a particular method by which designers design; a process by which each designer works and how they influence a place. How much or how far can designers influence the way in which a space is understood? Designers employ in their design certain meaning systems or signs to say what they wish. They build upon the prior precedents of the meaning and

---

further utilize it or add their own meaning. The user will see what is presented and understand the meaning of the intent or they will, add to, or replace it, with their own meaning.

Our point of departure occurs where this is a semiological and socio-linguistic problem and not an architectural question. So how much influence do designers, and specifically architects, have on the understanding of space? What is their role in attributing meaning to place? Mass and void, the difference between entry and the notion of entrance, public and private, scale and ornament are a few of the concepts which the designer wishes to convey. These are exploited to create a sense of the understanding which the designer wishes the user to recognize and identify.

The role of the architect is not concrete. There is no one hat the architect always wears, because the role is in a constant flux. Every situation requires a different set of parameters to be taken into account in order to successfully fulfill the duty. Each situation-specific problem must be met with diligence and care for the architect needs to critically map and meet the demands of the situation. The duty of the architect is to strike a balance in these multiple perceptions and meanings of place.

**(Re)-Codify**

What are the systems through which we codify design intentions and through which the subsequent responses are re-codified? Intent does not equal perception. The intent of designers is influenced by their expectations and media systems. Their perception relies on the understanding and analysis of the situation, involving codes for the map and for the design. The users, or anyone else for that matter, do not see things in the same light. They experience an altered form of perception using
all previous codes as guides to the intent, but they also subconsciously re-codify the design.

We use our life code in learning through past impressions, passed knowledge and through past experiences. These past experiences shape our code and as more knowledge is gained, more impressions and the infinite future experiences, our code will be re-shaped. It will not be re-shaped completely – for we cannot forget the past, but it will be altered to incorporate the past and prepare for the future. These codes by which we live are the impressions and perceptions we design through. We subconsciously map all we have lived through, read, heard, and dreamed and even that which we have not lived through. These are acquired through systems of communication and we base our design intentions from these.

It is not possible for buildings to take place without life interaction. The process of assembling a building on the site cannot be accomplished autonomously. It is this interaction which codes the critical understanding of how and why. A built form exists before any actual construction has ever taken place, initially through a need or a want from the user, proceeding to the proposal, the design, which begins in the mind and manifests itself through physical illustrations and depictions, represents the initial intention. There is a re-interpretation and refinement of the idea and the actual physical presence of the built form. The life of the built form as it is inhabited and dwelled in, and the abandonment and decay of the building, set up the foundation for the next interpretation. This code, this interaction is not possible without life and a specific place to build.

The code by which a site lives, exploits the same interaction of communication. It is shaped by the subtle shifting forces of nature which encode the land with gestures of its past. Where life
code can be challenging to map, the communication of the site is more easily mapped through the cross-section of the earth. This memory of place is physically recorded and can be analyzed geologically.

Reinterpretation occurs in the place where life memory is recorded. What is happening or has happened, not physically and not through geological processes, but through dynamic forces which have shaped the creation of the place? The interaction of physical transformations does not make a place. The process of the shape making of the place makes the place. It is the experience of making, the act of making, which codifies the place: the process of interaction between site, built form, and life.
response

“Reality does not conform to the idea, but confirms it.”
-Gustave Flaubert

Methodology

This Thesis is a designing experiment. The experiment is one involving intentions, communications, and perceptions. The product is not the main focus. The main focus is on the process whereby the product emerges. In other words, the end product is not the only concern, as the focus is on the entire process of initial and subsequent thoughts and how this effects the codification and re-codification of the perception. The Thesis is used as an experiment to “find myself” and find roots for understanding my individuality. Where it may seem the project is excessively or exceedingly personal, the purpose is quite the opposite. The experiment is a study of design using the process as a medium. The experiment may contribute to the documentation and comprehensive analysis of the process of design.

As the Thesis year evolves, increasing layers of information and the interaction of these layers with the designer occurs. The information received and processed affects the decision making process, the understanding of decisions, and ultimately the result of the decisions. The project bends to the one perception of the designer, but not necessarily to the perceptions of others as they have their own understanding of the information and also their own judgments of the designers’ perceptions.

In the experiment, I am documenting and mapping the process through an individual Thesis. Photographs, pictures, drawings, documents, as well as text are the media through which the
process is recorded. This plays the part of the initial perception of a thesis and design project. Friends and professors play the part of other perceivers. The designer, through the Thesis process during the course of the year, constructs decisions on this ongoing documentation. The analysis of these meetings and information affects the decision making process either re-affirming the course of perception or questioning and thereby changing the focus of the perception. It is up to the designer to sort through and distinguish what is clutter and what has merit and meaning.

Success is measured by the level of awareness and intensity recognized throughout the process. While other’s views of the success include deadlines met and physical material produced, success is also a measure of quality of documentation produced by the designer and others of the designer. The designer is responsible for his or her own analysis and assessments, but is less responsible for friends and professors. While bound to the others, their participation is purely on a collaborative basis. This is a self-conscious study of thought and understanding of ideas through analysis of the experience of design.

**Design Project and Location**

The design is a project which attempts to communicate the experience of both dynamic and constant forces: human life, built form, and site. A location which only exists is not sufficient in constructing an experience. A place which communicates the interaction of each element to the other, creates the experience.

The particular project focuses on a staging area for Search and Rescue (SAR) activities, a volcano observatory, and a place to raise the awareness of the hazards associated with volcanoes. The facility will be located in the Mount Rainier area of western
Washington. The facility will be the forward staging area of support operations and will be located in an area easily accessible to the mountain for rescues. Mountain rescue is an art with universally accepted techniques for rescue. Each technique is situation-specific, where the process of rescue is fundamentally the same, however different conditions necessitate the use of various assorted technical gear and procedures. The facility will also be a volcano observatory which scientists can temporarily use to monitor and observe geological processes, specifically for the threat of numerous lahars (volcanic debris flow) which number the Mount Rainier area. These dangers posed by nature will re-shape and alter the landscape once triggered leaving ‘destruction’ of site and built form. While the process may not be able to be stopped, monitoring its progress will enable a minimum of loss to occur. The facility, the focus in the Thesis, is a process of communication, assembling perceptions and attributing meaning to the place. It is a process which includes communications among, artists, climbers, National Park personnel, residents, tourists, geologists, and designers.
section : 02 : intervention

“Nil posse creari de nilo.”
(“Nothing can be created out of nothing.”)

-Lucretius, (c. 99-55 BC)
introduction

“Nothing endures but change.”
-Heraclitus (540-480 BC)

The design project will be a facility which will function both as a staging area for subsequent Search and Rescue (SAR) activities and volcanic observatory as well as a facility for raising the public awareness of the dangers which lie with active volcanoes. This facility is to be located in the state of Washington on the southern slopes of Mount Rainier in the Paradise area of Mount Rainier National Park. At approximately 5400’ above sea level and the closest settlement on the flanks of the mountain, Paradise is the primary destination for many visitors, in the summer for its alpine meadows and in the winter for its deep winter snow ideal for cross-country skiing and snowshoeing. The facility is sited on the northwest corner of the existing parking lot just west of the historical Paradise Inn. The forward base is ideal for those who wish to study in the field and need a temporary space for operations. It is also an ideal place of staging for SAR operations where base communication and operation can be set up as needed.

With the existing Jackson Visitor Center slated for demolition in 2005, there will be a need for a new interpretive exhibition space, small theater, and information desk from which the park rangers will operate. It is expected to accommodate and host an average 195,000 persons per year. The facility will actually be two separate buildings connected visually, with working spaces in one and support spaces in the other. While this new facility will have to acknowledge the existing identity and architectural fabric of the place, it need not be an imitation or artificial simulation. It will not be a destination place, but a place which quietly, significantly, and sensitively integrates with the existing...

---

site and built forms. It will be a building which complies with the ever-present change of the landscape and reflects the contemporary values of humans, built form, and site.

The thesis, “Mapping Communication through the (Re)-Codification of Place” is significant in the design project through its investigation of perceptions and place. The process through which one person experiences Mount Rainier will never be identical to another. They each may have similar analysis and understandings of the mountain, but each bring their own life experiences which precede the mountain and this is the posture which affects their interpretation. The rituals by which each person receives, collects, and interprets signs, will influence their understanding or signification of the mountain. ‘Signs’ as used here refer to carriers of information whether visual, verbal, or auditory. Architectural spaces and perceptions of space are dependent on the designer’s intentions and how the user interprets those intentions. Therefore the spaces designed can only suggest interpretations or implications, however, each user will be different and will re-interpret as they see fit and as their creativities and constraints allow them.
site

‘To live for some future goal is shallow. It’s the sides of the mountain that sustain life, not the top.” -Anonymous.

Overall Description

The Search and Rescue and Volcano Observatory facility will be sited in Paradise, on the southern slopes of Mount Rainier and in Mount Rainier National Park. At approximately 5400’ above sea level, the site is one of the highest sites on Mount Rainier accessible by vehicle. In addition to being located on the Southern side and close to park entrances, this site is one of the most visited in the entire park.

Paradise, located at approximately 46N 47’ 11” latitude and 121W 44’ 13” longitude, sits on the eastern side of a ridge between the Nisqually River Valley and the Mazama Ridge. The ridge is carved by the best known, most viewed, and most studied glacier in the nation, the Nisqually Glacier and the smaller interglacier, the Paradise Glacier (Little Nisqually Glacier) from which the Nisqually River and the Paradise River spring from. Almost directly to the north sits the summit of Mount Rainier and equally as far to the south is the Tatoosh Mountain Range.

Vehicular entrance to the site begins unceremoniously at a large expanse parking lot capable of parking 200 cars. The existing parking lot has two-way vehicular access on the western side and one-way egress on the eastern side of the lot. The parking can be bypassed by continuing on the road or one can pull off into the

---


parking lot. This parking also serves as access to the expansive Paradise Inn, Ranger Guide House, and as over-flow parking for the existing Visitor Center. Public vehicular access to the building will not actually be permitted, although a short 100 yard walk slightly uphill to the main existing trailhead will put the user at the entry plaza presenting them with the option of continuing through on the trail or stopping at the facility.

The site sits to the west of both the Paradise Inn and the Ranger Guide House within sight and earshot as there are no trees which separate the two. It is on a slope, draining southeast running slightly askew from perpendicular to the summit.

The steepness of the land, may prove to be an opportunity to explore the geography and scale of the mountain. The ridge, safe as any land in the area, is still dangerous for several reasons: One is its extremely close proximity to the mountain. If the volcano were to re-activate, lava flows, lahars, and landslides could wipe out or isolate the facility, the settlement of Paradise, and the entire ridge. This ridge is the only vehicular access coming across the Nisqually and Paradise river valleys. If there were mudflows, the most immediate of the dangers, they would block or destroy the roads and bridges spanning the valleys. Another issue is the large expanse of parking at the base of Paradise as it is a large eyesore in the environment. Parking is needed but its form and location create nevertheless a bittersweet irony to preservation and accessibility to the mountain.
Site History

Mount Rainier was most intimately known by local Indian tribes such as the Puyallup, Cowlitz, Nisqually, and Yakama, among others and used as both a place for cultivation and sacred rituals before any European ever set sight on the majestic peak. Although not the first, the ‘discovery’ of Mount Rainier is attributed to Captain George Vancouver, a British explorer, who stood in nearby Port Townsend on May 7, 1792 and named the natural landmark on the horizon after his friend, Rear Admiral Peter Rainier (who never actually saw the mountain in his lifetime.) The mountain was also recorded 14 years later by Lewis and Clark on their return trip to St. Louis from the present-day location of Portland, Oregon.

Mount Rainier sits inside the Mount Rainier National Park which was created on March 2, 1899 when President William McKinley signed the legislation which created the park, making it the fifth oldest national park. Mount Rainier, the mountain and the name, have played home and host to a vast and rich history including mining, the C.C.C., a military training facility, the 10th Mountain Division, the Mount Rainier Ordnance Depot, USS Rainier, over one billion recorded visitors, and Presidents Roosevelt, Taft, and Truman, “Bear Pit Tours,” Rainier beer, The Tacoma Mountaineers, The Mazamas, The Rainier National Park Co., U.S. Olympic downhill ski team tryouts, plane crashes at the summit, UFO sightings, surprise mudflows, among other distinctions. This history, although extensive, is no more varied than the history of Paradise.

The name Paradise can be attributed to Mrs. Elcaine Longmire, the wife of fabled James Longmire, who on her first visit to the area in 1885 exclaimed, “Oh, it looks just like Paradise!” Paradise is well known for its meadow flower fields, but the land has not always possessed this natural bucolic character.

The Longmires moved their laundry and ice cream plant to the fields of Paradise in 1923 in order to exploit the natural beauty of the environment. 1927 brought the Rainier Park Boat Company complete with boat rental concession and general store at Reflection Lakes. In 1931, the land was modified for a golf course littered with cabins, complete with a ‘tent city’, snowshoe rental facility, guide house, photo shop, a horse rental corral and barn and the “Tatoosh Club.” Winter brought seasonable rope tows to accommodate ski lift buildings. Other endeavors and activities at Paradise have included commercial dog sled rides, failed hotels, Tacoma Motorcycle Club hill climbing contests, Indian ritual demonstrations, sleigh rides, and a proposed tram to Camp Muir, located at 10,000’ above sea level. The only remaining buildings are the historic Paradise Inn, Paradise Guide House, seasonal housing for concession and park employees and the Henry M. Jackson Visitor Center, which is slated for demolition in 2005.

Ever since the mountain was ‘discovered’ by Europeans, from the Longmire’s hot springs to the failed ski lifts and golf course, there has been a history of tourism. Many if not all of these ventures have failed economically and ultimately have shut down and left or sold their business, except for one company, Rainier Mountaineering Inc. This mountaineering guide service run by Lou Whittaker and Jerry Lynch have bid on and won concession contracts for exclusive rights to guide clients to the summit and offer mountaineering courses on Rainier’s high

glaciers for over the past 30 years\textsuperscript{17}. This guide service has guided thousands of paid clients to the summit of Mount Rainier, some of them drawn to the beauty of the mountain, others as a passage rite to ‘being a north westerner’, and still others challenged by the danger.

All of this tourism is great for the local economy and an additional method through which visitors experience the mountain, but not everyone is thrilled with the onslaught of additional visitors to the area. There is a tension which the park has struggled with, between preservation and tourism. This fine line is straddled providing for a bittersweet decision between what point does providing access and amenities for visitors infringe on the environment and the mountain by which the tourist is there for in the first place\textsuperscript{18}.

### Detailed Physical Analyses

#### Volcanology/Geology

Mount Rainier was ‘born’ 500,00 to 600,00 years ago as successive eruptions poured layers of lava from the ground. These eruptions were the cause of the movement of the enormous Juan de Fuca plate from which the “Ring of Fire” is a part of. The Ring of Fire volcanoes, of which Mount Rainier is one, rims the Pacific Ocean and is caused in the United States by the Lighter North American plate forcing the Juan de Fuca plate beneath it. This grinding and crumbling of the plates along with liquid rock from the hot asthenosphere pushing up collides with the plates which make up the continents. These two forces are strong enough where one or the other has to fail at a weak point,


producing volcanoes where molten seeps or explodes to the surface19.

**Glaciers**

With one of the largest glacial systems in world radiating from its peaks (roughly 35 square miles), Mount Rainier’s glaciers cover about 9% of the total park area. There are 27 classified glaciers currently and approximately 50 small nameless glaciers and permanent snowfields on the mountain according to the National Park Service20. Bordering Paradise is the Nisqually Glacier to the west and the smaller Paradise Glacier to the east.

The Nisqually Glacier is most likely the best most accessible and most studied glacier at Mount Rainier if not in the nation. It is roughly five miles long and is less than one mile from Paradise where it is half a mile wide. It originates on the summit and descends 10,000 feet where it changes from smooth and white to crevassed and dirty from pollution, soil and rock. As with any glacier it is constantly advancing or retreating21. Since the 1980’s the Nisqually Glacier has been retreating22.

The Paradise Glacier also known as the Little Nisqually Glacier is one of the lower glaciers starting at around 9,000 feet in elevation. Around the 1920’s one of the main attractions at Paradise was the Paradise Glacier Area due to its proximity (about one-half mile) and vast ice caves. As the glacier retreated up the slopes, these caves shrunk into unstable crawl spaces until finally in 1991 disappearing when the ceiling of the last cave collapsed23.

---

21 Ibid, 119.
Lahar Danger

One of the largest dangers in the Mount Rainier area is not the danger of an eruption, although this could prove to be equally as dangerous, but of a lahar (volcanic mudflow) flowing down the slopes to the valley floors below. Although the threat of a lahar could be a danger to the natural environment, it will not be as catastrophic flowing down an empty valley as opposed to flowing down an inhabited valley. Mount Rainier has been listed as one of the world’s 16 most dangerous volcanoes by the geologic community in response to a request by the United Nations. This is largely because of the history of lahars and their flows into and through the growing nearby population in nearby Orting as well as the proximity to Tacoma and the Puget Sound.

The mudflows have been the subject of numerous studies by scientists tracing the history of previous mudflows. These studies help in predicting future mudflows, and setting up a system to detect and provide warning for mudflows down various valleys in communities close to the mountain. Studies of previous mudflows are not inclusive enough to even begin to scratch at an estimate of the total number of lahars which have occurred at Mount Rainier. Although there have been enough evidence and samples collected in order to date some of the major mudflows in the mountain’s ‘recent’ history.

The most well known and largest of the mudflows ‘recently’ took place about 5600 to 5800 years ago. Known as the Osceola Mudflow, its steam explosions were violent enough to collapse the summit and throw debris and volcanic mud down the mountain, through the White River Valley and across the Puget Sound lowland. The mudflow is estimated to have reached 500 feet high, traveled over 100 miles, reached speeds of 130mph.

---

and covered areas with up to 70 feet of thick mud. This volcanic event shaved off approximately 1,600 feet from the top of the mountain leaving it at its present height of 14,411.1’.

Scientists warn lahars are the most dangerous hazards on the mountain as they do not require a volcanic eruption to trigger them. A mudflow and the velocity and sheer volume of the mudflow can wipe out an entire town in seconds. Lahars can occur at any time from either volcanic activity or seismic activity. Hydrothermal alteration can occur causing ground water circulation to soak the rock which makes up the mountain, turning stone into clay. Volcanic activity or seismic activity have the power to trigger a slide of this soft clay producing a mudflow which can travel up to 30 km/h and reach communities such as Orting in as soon as half an hour to an hour. This leaves little time to detect and send out a warning to the residents to evacuate to high ground. For this, scientists have set up an automated detection and warning system in the Carbon and Puyallup River Valleys. Solar powered sensors and radios have been placed every half mile down these valleys which detect seismic vibrations in accord with those associated with mudflows and send radio signals. Should the transmitters detect a lahar, they would send out multiple warning signals to be relayed through repeaters to computers located at the Pierce County 911 Center and the Washington State Department of Emergency Management. These computers would activate a warning signal where a human will confirm the warning and proceed to remotely activate the warning sirens in the town of Orting, activate the Emergency Alarm System (EAS) which send out warnings on radio and television as well as make concurrent phone calls to local fire and law enforcement and emergency.

---


26 Steve Malone (Research Professor, Department of Earth and Space Sciences, University of Washington), in discussion with the author, October 31, 2003.
personnel. Periodic tests are conducted and from the time of the detection to the start of evacuation in the town of Orting, this process has been streamlined to a mere 10 minutes27. This leaves the residents at worst case scenario 20 minutes to stop everything they are doing and evacuate to high ground.

Weather
The weather at the mountain has been described as “fickle” with major storms descending in minutes and clearing just as rapidly making weather predictions difficult at best. The mountain is the largest and highest in elevation for hundreds of miles creating and generating its own peculiar weather system. Snowfall has been reported during every month of the year and annual precipitation ranges from 60-100 inches a year depending on which region of the mountain. Temperatures have been recorded as low as 18 degrees below zero Fahrenheit and precipitation through rain and snow should be expected at any time28. Snowfall at Paradise almost always exceeds 400 inches a year where it is not uncommon to have 25 feet of snow sitting on the ground making accessibility difficult for over half of the year.

Spring
Paradise is usually still covered with snow during the spring making the flower meadows inaccessible. The common conception of spring where snow melts and flowers bloom doesn’t actually usually occur until around July when it comes in fast for a two week period and then quickly turns to summer.

Summer
The temperatures in summer at Paradise average in the lower 40’s to mid-60’s making for cool days when cold air currents descend from nearby glaciers. Plants and animals hurry through

the birth-growth-reproduction cycle and flowers and trees bloom providing visitors with fragrances and sites worthy of the name “Paradise.”

Autumn
By mid-October animals are finishing their preparations for the onslaught of winter, collecting and eating the last of the nuts and seeds and packing layers of fat needed to survive the long winter. Fewer visitors and fresh snows dust the upper parts of the mountain and Sunrise begins to close down around Labor Day leaving winter to take its course.

Winter
Snow is to be expected in abundance at Mount Rainier during the winter. Heavy blankets of snow cause permanent employees to constantly dig tons of snow from the visitor facilities and park roads. These heavy snows also cause avalanches on the slopes making travel in the backcountry dangerous and requiring wilderness permits for those who wish to hike.

Natural Resources
There are over 787 native plant species and 107 exotic plant species in Mount Rainier. Native bird species number at 126 and 54 mammals and 17 reptiles and amphibians have been recorded. The mountain contains over 23,000 acres of glaciers and snowfields and approximately 300,000 acres of forests. A total of 382 lakes and 656 linear miles of rivers and streams inundate the park.

Wildflower Meadows
The biggest threat to the meadows at Paradise are humans and the impact of the damage they create. Other environmental threats are to the air quality, noise pollution, adjacent land use,
introduction of exotic species, wildland fires, and internal threats to park resources.\textsuperscript{29} Every year volunteers from the Washington Native Plant Society stabilize, fill and partially plant or seed the meadows from the 17,000 native plants produced in the park’s greenhouse. The staff and volunteers conduct revegetation projects annually while monitoring trails and collecting seeds\textsuperscript{30}. The efforts help the meadows at Paradise retain is charm, through which it acquired its name.

\textbf{Animals}

Everything from tiny chipmunks to black bears occupy Mount Rainier where the National Park offers the best protection possible for those living within its confines. The shelter of the park provides safety from poachers and hunters allowing for endangered species to continue to live without so much as an interruption. Black bears, deer, elk, and coyotes number the lower reaches of the mountain along with foxes, mountain lions, marmots, skunks, and raccoons. The mountain goats tend to stay in the Artic Alpine Zone and is the only true alpine mammal in the park where they prefer cliffs, ridges, and other high points on the mountain.

\textbf{Built}

Paradise is one of six historic districts inside the Mount Rainier National Park with all the roads connecting the settlements also being a part of the historical districts totaling only 3% of the entire park. Paradise Inn and the Paradise Guide House both are National Historic Landmarks and on the National Register of Historic Places. Mount Rainier was the first park to have a master plan originating in the 1920’s and is one the national parks with the most integrity as far as following the historic plans. This means all new work architecturally and landscape has


\textsuperscript{30} Ibid, 368.
to be compatible with the existing following the precedents of high angle, steep pitched roofs, heavy timber, and rustic park architecture with primary materials being stone and wood\textsuperscript{31}.

The Paradise Inn, which is a National Historic Landmark and on the National Register of Historic Places, was designed and built by Heath Grove, and Bell and the Rainier National Park Company. The building acquired additions and annexes of guestrooms in 1920, a mezzanine level in the lobby in 1925, a replacement kitchen in 1935 and was sold to the National Park Service in 1952. A new structural system and fire sprinkler system was the cause of a major rehabilitation in 1980\textsuperscript{32}. The building contains 129 rooms and is reminiscent of the national park architecture of the 1920’s with weathered Alaskan cedar being the bulk of the heavy timber construction reinforced with cables and iron rungs wrapped around the first-floor structural posts. Similar to Yellowstone Park’s Old Faithful Inn, the Paradise Inn is an experiment in finding a solution to the design problem of hotel architecture appropriate to national park settings. Unique to the Inn is the use of native materials and strong alpine form which tied it visually to the landscape.

The Paradise Guide House, built in 1920 is the headquarters for the Rainier Mountaineering Inc. (RMI). This four-story building has 23 rooms which can accommodate 43 beds and acts as a dormitory for RMI and concession employees. This building is also listed on the National Register of Historic Places and lies within the Mount Rainier National Historic Landmark District\textsuperscript{33}.


\textsuperscript{32}The National Park Service. Links to the Past, “PARKitecture in Western National Parks”, http://www.cr.nps.gov

facility program

“He who learns but does not think, is lost! He who thinks but does not learn is in great danger.”
-Confucius (551-479 BC)

History and Precedents

National Park Rustic Architecture

Rustic Park Architecture has its roots set with Yosemite in 1866 and Yellowstone in 1872, when public lands were set aside as parks. Early efforts at organization in these parks and subsequent other parks such as Mount Rainier National Park failed as a result of internal politics and a lack of funding for the parks and those who worked at the parks. As time passed and additional funding was secured, superintendents took personal likings to parks, and construction on buildings to house the functions required to operate parks began, a wide variety of experiments on architecture occurred with no prevailing style. The National Park Service website states:

“Among the most influential would be the fantasy pueblos of M. E. J. Colter, the “organic” buildings of Mark White, and the Swiss-alpine designs at Glacier. If there was a lesson available from the sample, it was that park buildings properly designed to harmonize with their natural setting were distinctly more appropriate. Such a lesson would be useful, however, only if a competent and efficient park bureau was created to apply it. “

On August 25, 1916, President Wilson signed a bill which had been passed by Congress thereby creating the National Park Service (NPS). After a slow and rocky start with delayed funding, the NPS finally gathered steam and went full ahead,

each time refining the ‘organic’ architecture, and playing to the notion of conservation and blending in with the existing environment. Eventually the rustic architecture would come to symbolize heavy timber construction along with stone and steeply pitched roofs playing as a background to the foreground of nature.

This style continues today in Paradise where each new building constructed acquires the flavor of the rustic park architecture which has come to symbolize an attachment or affection to nature and the conservation of nature. When repairs are made to the existing buildings, the architectural style must appear to match and similar materials must be used in order to achieve this look.

Search and Rescue Institutions

In the United States, local formal organized Search and Rescue Teams historically have not formed until after their community suffered a disaster or missing persons catastrophe. The Seattle Mountain Rescue is one of the first such organized groups being officially recognized in the spring of 1948 under the sponsorship of the Mountaineers, the Washington Alpine Club, and the Northwest Region of the National Ski Patrol35. Since then numerous local teams have formed around the country being staffed solely with volunteers. These local teams operate primarily out of a small region, but are not limited to supporting only one area as many or regularly called upon to assist in operations in surrounding areas and even on larger scale missions across the country. Most are a part of a larger national or even international organization such as the National Association of Search and Rescue (NASAR), Mountain Research Association (MRA) and the International Commission for Alpine Rescue (IKAR) among others.

35 Seattle Mountain Rescue, “Purpose and History”, http://www.smr001.net/info/frmInfo_800.htm
Primarily land Search and Rescue operations in the United States are managed by local sheriff’s departments while sea and military personnel SAR are operated by the military. The land SAR, better known as urban or back country SAR remains one of the only emergency services still to be operated by mostly volunteers. When an incident is reported and identified, the sheriff’s office is required to provide a service when the jurisdiction does not fall into the National Park, a fire department, or the military. The sheriff normally has at their disposal a variety of teams from which they can choose to call depending on the situation. These teams are competent in the most basic forms of search and rescue techniques while they usually have a skill or an environment in which they excel such as high-altitude, high-angle terrain, urban, and river terrains. When disasters occur which are larger than the local sheriff’s office can handle, larger organizations usually sponsored by the State or even National government are called upon to provide support in organizing the SAR mission. These larger organizations usually act on only a support basis in that they prepare for, coordinate response, logistical support and mitigate contact of teams from other regions and get them in contact with the local effort when emergencies occur.

In Washington around the Mount Rainier area, there are quite a few SAR teams including Pierce County Explorer Search and Rescue (PCESAR)\(^{36}\), Seattle Mountain Rescue (SMR)\(^ {37}\), Portland Mountain Rescue (PMR)\(^ {38}\) and surrounding county SAR teams. On the state level is the Washington Department of Emergency Management (WADEM)\(^ {39}\).

\(^{36}\) Pierce County Explorer Search and Rescue, “ESAR Purpose”, http://pcesar.org/
\(^{37}\) Seattle Mountain Rescue, “Info”, http://www.smr001.net/frmMain_800.htm
Volcano Observatories

Volcanoes have long been a threat, destroying settlements and affecting the weather patterns far as far away as several hundred miles. While it is a common myth that native and early Indians worshipped the mountain, this is not true however they were fearful of the area above the snowline and they did believe spirits lived in the mountain. In spite of this the Indians did not believe the mountain’s spirits were the cause of periodic eruptions, landslides, and mudslides. Instead they used the mountain only as a place for cultivating and picking berries as well as a place where their animals could be brought to graze only occasionally using the slopes of Mount Rainier for rituals and rites of passage unrelated to mountain.

When the white settlers of Europe made the move to the Mount Rainier area, they brought with them a greed to develop and manipulate the land in order to make a living. They paid no respect to the existing and looked past the frequent land and mudslides and the hazards surrounding the mountain. This most likely was due to a lack of understanding of the impending danger, but it is not out of the question they believed they could control nature and the mountain and thus be immune to the effects. The early settlers built tourist sites such as golf courses and ‘tent cities’ and settled in valleys despite being prone to regular slides.

As time went on, the public disposition for nature and the mountain changed, reflected by the push for preservation in the parks as well as for natural landscape in general. This laid the path for scientific research. These are the roots which would eventually become permanent centers for scientific research or volcano observatories. It wasn’t until recently in the past few

---

decades the concern for the potential hazards posed enough of a threat that full-time monitoring stations were installed throughout the outlying areas of Mount Rainier. As with the formation of Search and Rescue teams, most observatories have been the result of a local disaster where a loss of life occurred, land was ‘destroyed’, or there was a disruption in the local economy and society. On the international front, the World Organization of Volcano Observatories was formed as a subcommittee of the International Association of Volcanology and Chemistry of the Earth’s Interior (IAVCEI) in order to facilitate the monitoring of volcano hazards. In the United States, observatories were also set up to work hand in hand with the Volcano Hazards Program (VHP) in response to a Congressional mandate that the United States Geological Survey (USGS) issue “timely warnings” of potential geologic hazards. The Volcano Hazards Program (VHP) is a program which strives to lessen the harmful impacts of volcanic activity by monitoring active and potentially active volcanoes, assessing, conducting research, and responding to how volcanoes work.

In the United States, the USGS has established five permanent observatories to monitor sixty-five active and potentially active volcanoes. These include the Hawaiian Volcano Observatory (HVO), the Alaska Volcano Observatory (AVO), the Long Valley Observatory (LVO), the Yellowstone Volcano Observatory (YVO), and the closest in proximity to Mount Rainier, the Cascade Volcano Observatory (CVO) also referred to as the Johnston Ridge Observatory.

**Johnston Ridge Observatory**

*Mount Saint Helens, Washington.*

---


The Johnston Ridge Observatory is located just five miles from the north side of Mount Saint Helens at the end of Spirit Lake Memorial Highway. The observatory acquired its name from David A. Johnston, a USGS volcanologist who lost his life while on duty at an observation post during the eruption on May 18, 1980. After 12 years and $10.5 million, a visitor center / volcano observatory / memorial was constructed producing a one-story, 16,000 square foot concrete and glass building. It is set into the side of a ridge and houses monitoring equipment and interpretive exhibits to further the public awareness of potential volcanic hazards. The observatory features a 280-seat theater, a 10,000 square foot exhibit hall, parking for 400 vehicles, a viewing plaza, and trailhead access.

Mount Washington Observatory
North Conway, New Hampshire.

Located in the White Mountains of New England, the Mount Washington Observatory is located at the summit of Mount Washington where it is staffed year around. The actual observatory is located in the Sherman Adams Summit Building. Also at the summit sit various other buildings such as the Tip Top House and the Yankee Building which act as support structures. The Sherman Adams Summit Building was constructed in 1979 of concrete replacing the old deteriorating building and sitting at the end of the Cog Railroad which operates during the summer on good weathered days. The facility houses a museum, gift shop, post office, food court, exhibits, observatory room, and sleeping and work quarters for the scientists who man the station.

Hawaii Volcano Observatory
Hawai`i Volcanoes National Park, Hawaii.

---

44 USGS, “Hawaii Volcano Observatory (HVO)”, http://hvo.wr.usgs.gov/
The Hawaii Volcano Observatory is located in the Hawai‘i Volcanoes National Park on the main island of Hawaii. Spurred by Thomas A. Jaggar, a M.I.T. professor, who took advantage of an onsite facility to study volcanoes, the original HVO building housed a seismograph vault in its cellar before being moved to a new building at the top of Uwekahuna Bluff on the northwest rim of Kilauea caldera which was completed in 1986. The observatory actually utilizes three buildings: building 41, building 131, and the new building. Even though its climate is fair for most of the year it is still constructed mostly of steel and concrete with stone corner posts. The observatory conducts scientific research and interpretation of those projects to the public through offices, a machine shop, exhibit space, laboratories, lecture hall, and a seismograph vault.

**Site Precedents and Analyses**

**Johnston Ridge Observatory**

**Mount Saint Helens, Washington.**

Johnston Ridge Observatory sits at the end of Spirit Lake Memorial highway located approximately 5 miles away from Mount Saint Helens. This observatory sits in the side of a hill bunker with its concrete form and providing breath-taking views on clear days of the crater left by the blown cone which was a result of the eruption in 1980. A theater with a glass curtain wall is covered by curtains until the end of the show when they pull back offering a sheltered view of the mountain.
Siding Spring Observatory

New South Wales, Australia.

Located in the Warrumbungle Mountains on Siding Spring Mountain in the central west region of New South Wales, Siding Spring Observatory is Australia's premier facility for optical and infra-red astronomy. It is located on the side of a ridge on the edge of Warrumbungle National Park and houses telescopes for observing the night sky.

figure 23. Siding Spring Observatory perched at the edge of a ridge overlooking a valley.

Summary Facility Program

The project is a facility which functions both as a forward staging area for Search and Rescue (SAR) operations and volcano observatory as well as a facility used to raise the public awareness connected with active volcanoes. Located in state of Washington on the southern slopes of Mount Rainier in the Paradise area of Mount Rainier National Park, the facility sits approximately at 5400’ above sea level.

The facility is sited on the northwest corner of the existing parking lot just west of the historic Paradise Inn and Guide House. This will be an ideal location for those who wish to study in the field and need a temporary space for operations. It will also be an ideal place of staging for SAR operations where base communication and operations can be set up as needed. The facility complex is composed of two buildings, the Working Building and the Support Building. It will not be uncommon for an average of 195,000 visitors to circulate through the building throughout the year.

Connected visually through a similar style and aesthetic, the facility will acknowledge the existing identity and architectural fabric of the place. It is not an imitation or reproduction of the artificial and it is not a destination place. However, it is a place which quietly, significantly, and sensitively integrates with the existing site and built forms, complying with the shifting landscape and reflecting the contemporary values of the place.

Working Building Summary of Spaces

Indoor Spaces

Common Spaces

1. Entrance Lobby 300 s.f.
2. Outdoor Public Restrooms 700
3. Private Indoor Restrooms 250
4. Break-out Room 400
5. Locker/Personal Storage 80
6. Kitchenette 320

2050 2050 s.f.

Administration

7. Reception 100 s.f.
8. Director’s Office 220
9. Temporary Offices (4@ 160 ea) 640
10. Office Storage 50

1010 1010 s.f.

Work Area
11. Lab 2000 s.f.
12. Small Storage 350
13. Large Storage 550
14. Conference 400

3300 3300 s.f.

Net Area Total\(a\) 6360 s.f.
Utility and Maintenance @ 15% 954
General Circulation @ 10% 636
Gross Area\(a\) 7950 s.f.

Support Building Summary of Spaces

Indoor Space

Common Space

15. Entrance Lobby 600 s.f.
16. Front Desk/Information 180

780 780 s.f.

Visitor / Interpretive

17. Theater 1250 s.f.
18. Theater Camera Room 160
19. Exhibition/Interpretive 3000
20. Sales/Gift Shop 1000
21. Indoor Public Restrooms 500

5910 5910 s.f.

Support Area

22. Back-up Generator Room 160 s.f.
23. Un-interrupted Power Supply 160
24. Equipment Cache 500

820 820 s.f.

Private Area

25. Sleeping Quarters (6@ 150 ea) 900 s.f.
26. Private Restroom 350
27. Kitchenette 320

1570 1570 s.f.

Net Area Total\(b\) 9080 s.f.
Utility and Maintenance @ 15% 1362
General Circulation @ 10% 908
Gross Area\(b\) 11350 s.f.

Total Gross Area\(^{a+b}\) 19300 s.f.
Utility and Maintenance also includes space for the mechanical room as well as all elements not listed specifically in the program such as construction thickness, etc. The General Circulation is a rough estimate of elements not listed specifically in the program such as service and loading as well as trash requirements.

Outdoor Spaces

28. Parking  use of existing
29. Service Area use of existing
30. Entry Plaza 500 s.f
31. Viewing Plaza 1750
32. Helipad Landing Area 3000
Detailed Space Program

The Space Program is presented in the order employed in the Summary Facility Program.

Working Building

Indoor Spaces

Common Spaces

1. Entrance Lobby  300 s.f.

Activities:
This space supports greeting and waiting activities. It is a space used as the single point for orientation for the building as well as the control point. This is desirable as it allows for easy monitoring of the arrivals and departures of scientists and visitors.

Occupants/users:
During summer months all users at all times will pass through this space. For the winter months this space will most likely be used only on a weekend basis.

Spatial Relationships and Properties:
- Adjacent to and directly connected to reception.
- Near administration.
- Beginning of the primary circulation system.
- Orientations to major use areas of the building clearly announced.
- Near restrooms, lab and conference.
- Sight lines to parking.
- Natural light desirable.

Furniture and Equipment:
- Integrated soft seating for waiting for 6 people.
- Wall displays for events schedule, announcements, office locations, maps, and floor plan of the building.
- Coat rack.

2. Outdoor Public Restrooms  700 s.f.

Activities:
Personal Hygiene.

Occupants/users:
All users.

Spatial Relationships and Properties:
- Not connected to the inside of the building circulation system except through a common wall to house water and drainage pipes.
- Near the outdoor entry plaza.
- Near trailhead access.
- Separate female and male restrooms.

Furniture and Equipment:
- 3 toilets for female.
- 1 toilet and 2 urinals for male.
- 3 lavatories for both male and female.

3. Private Indoor Restrooms 250 s.f.

Activities:
Personal Hygiene.

Occupants/users:
All users.

Spatial Relationships and Properties:
- Connected to the primary circulation system of the building.
- Near the entrance lobby.
- Unisex.

Furniture and Equipment:
- 2 toilets.
- 1 lavatory.

4. Breakout Room 400 s.f.

Activities:
Social interaction among the temporary residents of the offices, receptionist, and director as well as guests. Use as a break from the office environment or for prolonged waiting. Can be used in conjunction with the kitchenette as a place to eat and drink.

Occupants/users:
Primarily the temporary residents of the offices, receptionist and director. Guests may use it for prolonged waiting.

Spatial Relationships and Properties:
- Should act as a ‘bookend’ to the building, anchoring the primary circulation path in the spatial hierarchy.
- Convenient to and possibly directly connected to the kitchenette.
- Convenient to the conference room.
• Should have out views of Mount Rainier and if possible views to the Tatoosh Mountain Range.
• Natural light is desirable.
• Near conference room.

Furniture and Equipment:
• Chairs and tables for 8-12 people.
• Soft seating for 8-12 people.
• Television and small entertainment stand.

5. Locker/Personal Storage 80 s.f.

Activities:
Storage of small personal items including boots, change of clothes, jackets, etc.

Occupants/users:
Temporary residents of the offices, receptionist, and director.

Spatial Relationships and Properties:
• Near administration spaces.
• Connected to the primary circulation system.

Furniture and Equipment:
• 8 lockers (12” x 12” x 72”).
• Benches.

6. Kitchenette 320 s.f.

Activities:
Storage of food and drink. Preparation for snacks and meals.

Occupants/users:
Primarily the temporary residents of the offices, receptionist, and director. Guests may also access this part of the building while prolonged waiting.

Spatial Relationships and Properties
• Convenient to and possibly directly connected to the breakout room.
• Convenient to the conference room.
• Should have out views to Mount Rainier and if possible views of the Tatoosh Mountain Range.
• Natural light desirable.

Furniture and Equipment:
• Refrigerator and freezer.
• Microwave.
• Small stove and oven.
• Countertop space for food preparation.
Administration

7. Reception 100 s.f.

Activities:
Primary reception point for the Working Building and visitors. Primary information dissemination point. Staff monitors arrival of guests and departures to/from the building. Controls access to administrative offices. Copy/printer machine, fax, etc. are located here.

Occupants/users:
Receptionist and staff.

Spatial Relationships and Properties:
• Directly connected to and open to the lobby.
• Adjacent to other administrative spaces.
• Sightlines to the public entry.

Furniture and Equipment:
• 10 linear feet of reception counter.
• Back counter containing 1 workstation.
• Mailboxes for incoming and outgoing mail.
• Filing cabinets for general storage of documents.
• Copy/printer machine.
• Fax machine.

8. Director’s Office 220 s.f.

Activities:
Administrative task, personal interviews, computer use, small meetings, and storage of documents.

Occupants/users:
Director, staff, and guests.

Spatial Relationships and Properties:
• Directly connected to the primary circulation system of the building.
• Adjacent to other administrative spaces.
• Access controlled by reception.
• Natural light desirable.
• Out views to Mount Rainier desirable.

Furniture and Equipment:
• Desk and chair.
• Computer workstation.
• Two side chairs.
• Bookshelves.
• Filing cabinets.
9. Temporary Offices (4@160 ea) 640 s.f.

Activities:
These offices are for temporary residents who have come to Mount Rainier for study in the field. The offices are meant to act as a temporary working space in which the visiting resident can lay out drawings, maps, and data for their stay. These offices can be locked allowing for storage and private use.

Occupants/users:
Visiting residents, staff and guests.

Spatial Relationships and Properties:
• Directly connected to the primary circulation system of the building.
• Adjacent to other administrative spaces.
• Access controlled by reception.
• Natural light desirable.
• Out views to Mount Rainier desirable.

Furniture and Equipment:
• Desk and chair.
• Computer workstation.
• Two side chairs.
• Bookshelves.
• Filing Cabinets.

10. Office Storage 50 s.f.

Activities:
Storage for paper and office supplies.

Occupants/users:
Staff

Spatial Relationships and Properties:
• Adjacent to other administrative spaces.
• Access controlled by reception.

Furniture and Equipment
• Wall shelving.
• Open to primary circulation system.
Work Area

11. Lab

Activities:
Used to process samples brought back from the field. Is a fairly open plan with movable tables so the setup can be altered accordingly to meet the temporal needs of the user. This space can also act as a spillover larger conference room where different users may interact when being used as a staging area. This space should we one of the more sound and stable rooms in the building as far as temperature variation, sound isolation, and vibration dampening. It is also desirable to be able to close the room off in order to conduct studies, tests, and experiments without interruption.

Occupants/users:
Staff and guests.

Spatial Relationships and Properties:
• Adjacent if not directly connected to the small storage and large storage.
• Near conference.
• Connected to the main circulation system.
• Out views are not desirable.
• Indirect natural light through clerestory windows are desirable.

Furniture and Equipment:
• Lab tables with solid tops, but not excessive in length which can be moved to suit the situation required.

12. Small Storage

Activities:
Storage for small samples brought for both temporary and longer term.

Occupants/users:
Staff and guests.

Spatial Relationships and Properties:
• Adjacent if not directly connected to the lab and large storage.
• Near conference.
• Connected to the main circulation system.

Furniture and Equipment:
• Wall shelves.
13. Large Storage 550 s.f.

Activities:
Storage for large samples brought for both temporary and longer term.

Occupants/users:
Staff and guests.

Spatial Relationships and Properties:
- Adjacent if not directly connected to the lab and small storage.
- Near conference.
- Connected to the main circulation system.

Furniture and Equipment:
- Wall shelves.
- Casement storage.

14. Conference Room 400 s.f.

Activities:
Meetings and main staging area for Search and Rescue operations. This will be the room where team members will convene for the briefing of the mission before deploying into the field. Various members of the support team may remain to use this room as a forward headquarters in case of extended, late night/early morning or overnight missions. This room can also be used as a communication room and if need be over-flow sleeping and dining.

Occupants/users:
Staff, guests, Search and Rescue team members.

Spatial Relationships and Properties:
- Near the lab.
- Adjacent to the heavy communication.
- Near lobby.
- Convenient to the kitchenette and breakout rooms.
- Access controlled by the reception.
- Connected to the main circulation system.
- Out views of Mount Rainier desirable.
- Natural light desirable.

Furniture and Equipment:
- Conference table and chairs for 12.
- AV projection equipment.
- Multiple phone lines and Internet access.
Support Building

Indoor Spaces

Common Spaces

15. Entrance Lobby 600 s.f.

Activities:
This space supports greeting, meeting and waiting activities. It is a space used as the single point for orientation for the building as well as the control point. This is desirable as it allows for easy monitoring of the arrivals and departures of visitors.

Occupants/users: During summer months all users at all times will pass through this space. For the winter months this space will be used on weekends as the weather permits.

Spatial Relationships and Properties:
• Adjacent to and directly connected to front desk/information.
• Near viewing plaza, restrooms, theater, and exhibition/interpretive space.
• Beginning of the primary circulation system
• Orientations to major use areas of the building clearly announced.
• Sight lines to parking, trailhead access, Mount Rainier, Tatoosh Mountain range, theater, and exhibition/interpretive space.
• Natural light desirable.

Furniture and Equipment:
• Integrated soft seating for waiting for 20 people.
• Wall displays for events schedule, announcements, maps, pamphlets, and floor plan of the building.
• Coatroom.
• Scaled model of Mount Rainier.

16. Front Desk/Information 180 s.f.

Activities:
Primary reception point for park rangers and visitors. Primary information dissemination point. Staff monitor arrivals and departures to/from the building. Controls access to the private area and support area.

Occupants/users:
Staff and park rangers.
Spatial Relationship and Properties:
- Directly connected to and open to the lobby.
- Adjacent to exhibition/interpretive and theater spaces.
- Sightlines to the public entry.

Furniture and Equipment
- 15 feet of reception counter.
- Back counter containing 3 workstations.

Visitor / Interpretive

17. Theater 2000 s.f.

Activities:
The theater will play the function of a place to show movies which further the public awareness of Mount Rainier, act as a viewing plaza from an interior space which is protected from the outside environment and be used when small scale presentations or lectures are in need of a public space. The movies which show public awareness of the immediate lahar danger and its consequences, the beauty of Mount Rainier, and the making of the facility will occur on a schedule available outside the theater and at the information/front desk.

Occupants/users:
Staff, park rangers, guests, and visitors.

Spatial Relationships and Properties:
- Directly connected to the theater camera and storage room and the sales space.
- Adjacent to the information/front desk and exhibition/interpretive space.
- The circulation will empty out into the sales space.
- Connected to the main circulation system.

Furniture and Equipment:
- Seating for 200.

18. Theater Camera and Storage 160 s.f.

Activities:
The projector and all the equipment which is used to project movies onto the screen will be used and stored in this room.

Occupants/users:
Staff and park rangers.

Spatial Relationships and Properties:
- Directly connected to the theater.
Furniture and Equipment:
- Camera projector.
- Wall shelving.
- Filing cabinet.
- Credenza and chair.

19. Exhibition/Interpretive 3000 s.f.

Activities:
Permanent and rotating exhibits will be showcased providing public awareness of the dangers of lahars and its immediate consequences, the history of the geology Mount Rainier, the history of Paradise and the new facility, as well as the impact on site, environment, and wildlife. The exhibits will be both of a show and tell nature as well as interactive media with the use of computers and scientific equipment.

Occupants/users:
Staff, park rangers, and visitors.

Spatial Relationships and Properties:
- Adjacent to the theater and information/front desk.
- The flow of circulation will empty into the sales space.
- Indirect natural light is desirable.
- Out views are desirable to Mount Rainier and if possible to the Tatoosh Mountain Range.
- Connected to the main circulation system.
- Will be a fairly open space which lends itself to change and modification.

Furniture and Equipment:
- Permanent glass displays integrated into the wall.
- Computers for interpretive and interactive exhibits.
- Seismometer.
- Interactive and interpretive permanent exhibits and temporary/visiting exhibits as required.

20. Sales / Gift Shop 1000 s.f.

Activities:
This space will be the termination of the public circulation system in the building. The sales/gift shop will sell paraphernalia associated with Mount Rainier and the National Park Service. Visitors will also be able to purchase maps, books, and videos. As it is not the only gift shop in Paradise, it is not necessary for it to contain every item, however this shop will sell more educational material.
Occupants:
Staff and visitors.

Spatial Relationships and Properties:
• Circulation comes from direct connection to theater and exhibition/interpretation space.
• Natural light and out views to Mount Rainier desirable.
• Connected to the main circulation system.
• Open plan for periodic modification and changing of products.

Furniture and Equipment:
• Wall shelving.
• Moveable product stands.
• Moveable bookcases.
• Possibly built in casements.

---

21. Indoor Public Restrooms  500 s.f.

Activities:
Personal Hygiene.

Occupants/users:
All users.

Spatial Relationships and Properties:
• Connected to the primary circulation system of the building.
• Near the entrance lobby.
• 250 s.f. For male and female restrooms.

Furniture and Equipment:
• 2 toilets for female.
• 1 toilet and 1 urinal for male.
• 1 lavatory for each.

Support Area

22. Back-up Generator Room  160 s.f.

Activities:
The sole purpose of this room is to provide back-up power for the facility should the power fail.

Occupants/users:
Staff and park rangers.

Spatial Relationships and Properties:
• Must have a solid base which can withstand seismic activity.
• Adjacent to if not directly connected to the uninterrupted power supply room.
• Not desirable for natural light or out views.
• Must be kept at indoor temperature throughout the year.

Furniture and Equipment:
• Back-up generator.

23. Uninterrupted Power Supply 160 s.f.

Activities:
The sole purpose of this room is to provide an uninterrupted power supply to the facility should the generator or back-up generator fail. The UPS machine will regulate power accordingly providing a continuous stream of power which will not cause communication or computer failures due to generator failures and surges.

Occupants/users:
Staff and park rangers.

Spatial Relationships and Properties:
• Must have a base which can withstand seismic activity.
• Adjacent to if not directly connected to the back-up generator room.
• Not desirable for natural light or out views.
• Must be kept at indoor temperature throughout the year.

Furniture and Equipment:
• UPS.

24. Equipment Cache 500 s.f.

Activities:
A room to be used for the storage of equipment to be used for Search and Rescue missions. The room may also be used for theater or exhibit/interpretive space storage as well as over-flow lab storage.

Occupants/users:
Staff and park rangers.

Spatial Relationship and Properties:
• Located off the main circulation path, but in the private area of the building.
• Must be able to be accessed at all times and at all days.

Furniture and Equipment:
• Lockers (48 x 36 x 96).
• Floor to ceiling open shelving units capable of holding heavy weight.
Private Area

25. Sleeping Quarters (6@ 150 ea) 900 s.f.

Activities:
- Personal private space to be used for sleep and storage of personal items.

Occupants/users:
- Staff, visiting residents, and guests.

Spatial Relationships and Properties:
- Not in the primary circulation system.
- Adjacent to the kitchenette and private restrooms.
- Natural light and out views to Mount Rainier and if possible to the Tatoosh Mountain Range desirable.

Furniture and Equipment:
- Bed.
- Desk and chair.
- End table.
- Closet or built in casements.

26. Private Restrooms 350 s.f.

Activities:
- Personal Hygiene.

Occupants/users:
- Staff, visiting residents, and guests.

Spatial Relationships and Properties:
- Adjacent to the sleeping quarters.
- Not in the primary circulation system.
- Unisex.

Furniture and Equipment:
- 2 Toilets.
- 2 Shower stalls.
- 2 Lavatories.

27. Kitchenette 320 s.f.

Activities:
- Storage of food and drink. Preparation for snacks and meals.

Occupants/users:
- Staff, park rangers, visiting residents, and guests.
Spatial Relationships and Properties
- Adjacent to the sleeping quarters.
- Should have outlook views to Mount Rainier and if possible views of the Tatoosh Mountain Range.
- Natural light desirable.

Furniture and Equipment:
- Refrigerator and freezer.
- Microwave.
- Small stove and oven.
- Countertop space for food preparation.

Outdoor Activity Spaces and Elements


Activities:
Parking for staff, guests, and visitors. The existing parking lot in addition to the new parking lot which will replace the site of the existing to be demolished visitor center will be used.

Occupants/users:
Staff, guests, and visitors.

Spatial Relationships and Properties:
- Parking will be the starting and ending point of the trip in Paradise to and from the new facility.

Furniture and Equipment:
- N/a.

29. Service Area use of existing.

Activities:
This area will support deliveries and service vehicles. It should be conveniently connected to the various mechanical and electrical spaces. Deliveries, trash removal, and servicing for the building condition systems are the primary activities involved.

Occupants/users:
Staff and service personnel.

Spatial Relationships and Properties:
- Screened from primary indoor and outdoor use areas.
- Vehicle circulation to this area should be as inconspicuous as possible.
- Near primary HVAC spaces, back-up generator, and UPS spaces.

Furniture and Equipment:
- Small trash dumpster.
30. Entry Plaza  500 s.f.

Activities:
This area is a transition space between the parking and the mountain. It should be the main point of arrival and departure for all staff, park rangers, visiting residents, guests, and visitors. It should allow users to understand how to proceed either into the building or to the trailhead. This area should also support casual meetings, social interactions, and a gathering space for interpretive walking guide tours among people coming and going. This is the point where first impressions are formed by the users. Qualities of the space should reflect this, however it should not be over-bearing to the mountain, as it is still only a pass-through to the mountain.

Occupants/users:
Staff, park rangers, visiting residents, guests, and visitors.

Spatial Relationships and Properties:
• Adjacent to the primary building entries.
• Some portion of this area should be protected to allow for people to wait outside during inclement weather.
• Views to Mount Rainier and the Tatoosh mountain Range desireable.

Furniture and Equipment:
• Seating.
• Trash receptacles.

31. Viewing Plaza  1750 s.f.

Activities:
A space to obtain a close-up view of Mount Rainier and the glaciers which cascade down the mountain at all times of the year. This outdoor space will provide opportunities to view hikers further up the mountain and provide a space where park rangers can stop to talk about the mountain on the interpretive walking guide tours.

Occupants/users:
Staff, park rangers, guests, and visitors.

Spatial Relationships and Properties:
• Outdoor.
• Near the entrance lobby.
• Sight lines to Mount Rainier and trailhead access are crucial.
• Sightlines to the helipad are desirable.
• Out views are desirable.

Furniture and Equipment:
• Set in place binoculars.
• Benches.
• Drinking fountain.

32. Helipad Landing Area 3000 s.f.

Activities:
Helicopter landings to be used for Search and Rescue missions. The forward staging area of the helicopter while pre-mission briefings occur or during rest periods.

Occupants/users:
Helicopter and rescue personnel.

Spatial relationships and Properties:
• Not directly connected to the building.
• Outdoor.
• Requires 300’ clearance from buildings for safety.
• Must be flat and stable, clear of trees and shrubs.

Furniture and Equipment:
• Concrete slab landing pad.
annotated bibliography


Besides being a monograph of his work, the Afterward essay by Richard Pare discusses interpretation and representation of architectural elements. He concedes photographs are only images which cannot fully administer the qualities of the space.


The author takes a phenomenological view of a house and the spaces which inhabit the house. How individuals experience the house through time, individual memory and dreams guide distinct traces to how space is viewed.


The author has revised this book three separate times since 1982 and has compiled a great deal of information. The history of modern architecture has been recorded in the book using a great deal of architectural examples with concise descriptions into the theory associated with the project and how it effects the built form.
   A critical theory, the first chapter of thesis’s describe how the present age values the sign to the signified and how life is no more than a representation of what once was.


Dehasse, Dr. Joel. “The Semiology of Communication Patterns between dog and man.”
http://www.vetpsy.org/archives/articles/dehasse01.html

   Maps can be representations of both the physical and the metaphysical world; representations and space, inhabitable space, information and space, and time and space. The case studies show anything can be mapped accordingly.

   A case study graphical monograph showing the best of what the graphic design field has to offer. The introduction discusses the increasing role image plays in communicating ideas to the public.

A scrapbook collection of graphical media separated into topics ranging from space and perception to communication and emotion.


This book is about an investigation of the private and public images between Japan and the United States as it is influenced by the information society.

A thesaurus of images meant to be a reference for graphic designers, but indirectly mapping culture, language, and image together. The iconography is one author’s code for different words, while the viewer re-interprets the images giving another meaning to the list.

A strong base for discussion, this work discusses the relationship between what it means to dwell and how man purchases his learning curve in dwelling. The author states building and thinking belong to dwelling and man must learn
to dwell in order to ‘bring dwelling to the fullness of its nature.’


A monograph of the firm’s work, attempting to show experience through images. The introduction by Stephen Bayley speaks of the growing complexity in modern society.


The values, qualities, and function of visual images are the main course of discussion. An introduction to design intention and the re-interpretation by the user is studied as well as methods for improvement.


The author attempts to familiarize the reader with universalities among image so as not to intrude or impose on local cultural customs. Symbols recognized subconsciously have previously transmitted universal interpretations, however as time moves forward, so do the symbolic meanings.

A short essay about space and place, this work talks about the phenomenological qualities associated with structure and spirit of place. A discussion about Martin Heidegger’s definition of boundary and the Roman concept of genius loci give way to the notion of the identity between man and nature.

A look into the typography and play of mass and void, interpretation of space through drawing, and the fundamental meaning of lines.

The case study provides general information on landslides, mudslides, and other natural disasters, discussing the cause and effect of the geological processes.

Reichold, Klaus and Graf, Bernhard. “Buildings that Changed the World.” Munich: Prestel Verlag, 1999

The condensing of big ideas into small packages provides an investigation of how to distill place and detail. Small spaces are unable to concede ‘lost space’, thereby being required to maximize the idea and concept of the project.


The monograph is a diary of the life of Stefan Sagmeister, his thoughts (whether they be factual or fabricated), his work (whether it be good or bad), and the in between. His studies of three-dimensional space in two-dimensional form brings to light the graphical nature of communication.


A portfolio showcasing the works of an exhibition at FAD, Convent dels Angels and RAS gallery in May 2002 at Barcelona. The book explores the environment and what makes the environment of Japan through design and media.


An introduction to cultural studies, the book discusses the history and the future of where this study may lead. Examples and graphics help explain to the reader how semiotics plays in shaping the landscape of societal thought.


Interviews

Long, Chris (Search and Rescue Program Instructor, Law Enforcement ICS Instructor, Washington Military Department Emergency Management Division)
Malone, Steve (Research Professor, Department of Earth and Space Sciences, University of Washington)

Newhall, Chris (Affiliate Professor, University of Washington, USGS)

Sharp, Tom (Logistics / OPS / GIS Specialist, Pierce County Department of Emergency Management)

Walkinshaw, Eric (Chief of Planning, Mount Rainier National Park)

Maps
