RICE UNIVERSITY

DE-VOID:
Tracing Shadows in the American Desert

by
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DE-VOID: Tracing Shadows in the American Desert

ABSTRACT

In 1945 President Truman carved out 860,000 acres of the Nevada desert to create the Nevada Test Site, our continental nuclear proving ground. Since that time the DOE performed a total of 928 nuclear tests. Littered across the Nevada desert are the records of these 928 tests, and given the scale of each intervention and their relatively stable geologic location they may be our longest lasting marks on the land.

**DE-VOID** serves as a way of understanding this site, a site that until recently existed only as a void in the American desert. It amplifies the existing conditions of the site weaving together the scales of human intervention with the geologic and atmospheric conditions which alter them. As the atmospheric conditions change, the project reacts and allows for a new and varied understanding. **DE-VOID** serves as a laboratory for understanding how we mark and use the surface of the land.

Michael Schanbacher
ACKNOWLEDGMENTS

THANK YOU

First to my Parents for always being there for me including my final review. Even though you weren't there physically you did try to call me

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## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Subsections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>01</strong></td>
<td>Introduction</td>
</tr>
<tr>
<td></td>
<td>What are we leaving behind?</td>
</tr>
<tr>
<td></td>
<td>Center for Land Use Interpretation</td>
</tr>
<tr>
<td><strong>02</strong></td>
<td>Nevada Test Site</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
</tr>
<tr>
<td></td>
<td>Maps</td>
</tr>
<tr>
<td></td>
<td>Fallout</td>
</tr>
<tr>
<td></td>
<td>Crater Formation</td>
</tr>
<tr>
<td></td>
<td>Current Land Use</td>
</tr>
<tr>
<td><strong>03</strong></td>
<td>The Craters</td>
</tr>
<tr>
<td></td>
<td>Underground Detonations</td>
</tr>
<tr>
<td></td>
<td>Above Ground Detonations</td>
</tr>
<tr>
<td><strong>04</strong></td>
<td>The Center</td>
</tr>
<tr>
<td></td>
<td>Program</td>
</tr>
<tr>
<td></td>
<td>Overlook</td>
</tr>
<tr>
<td><strong>05</strong></td>
<td>Endnote</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
</tr>
<tr>
<td><strong>06</strong></td>
<td>Resources</td>
</tr>
<tr>
<td></td>
<td>Bibliography</td>
</tr>
</tbody>
</table>
WHAT ARE WE LEAVING BEHIND?

The Dixie Valley Bombing Range is a Naval electronic warfare range. No live ordnance is used on the range and it is open to the public. The ranches in the valley were bought by the Navy in the 1970's and have been left in ruin since.

| Michael Schanbacher |
WHAT ARE OUR MARKS ON THE EARTH?

The Dugway Proving Ground is our largest conventional weapons test area and has also tested every biological and chemical weapon we have ever produced. The lines on the ground serve as a way for the scientists to measure the rate and distance of dispersal for a particular weapon.

Michael Schanbacher
From the pyramids of Egypt to the terraces of Machu Picchu, human culture leaves us signs of its own existence. These traces of past civilizations remain as our only connection to the people who constructed them because they built their landmarks of a scale and material to remain long after their civilization had vanished. They desired to build permanently. The modern world, however, is of a scale and materiality that is ephemeral and disposable. In an increasingly digital world, what does permanence mean for us? The Internet and computers have an increasing presence in our lives, but constantly shift and reinvent themselves. The paper edition of the New York Times changes once a day, but the front page of their web presence shuffles and mutates itself numerous times over that same time period. We build in a similar manner, erecting sub-divisions overnight, with life-spans of 20-30 years. If we continue to build in a relatively temporary manner what will be left our buildings in 100 years or more?

What are we leaving for those who may come after us, long after our hard drives are erased?

Michael Schanbacher
Past cultures have created works that greatly surpass their own existence.

**These ghosts and traces have come to represent those cultures; as we try to recreate an understanding of them, they become the only record of their existence.**

But what are our records? The importance of the ruin has evolved over time from the Renaissance to today. During the Renaissance the ruin was thought to be a collection of written knowledge. From the text on monuments to the scraps found on various sculptures, ruins became the detritus of lost civilization, revealing to us what we can piece together of a lost culture. But what of an environment built for the future, can it ever “fall into ruin?”
Introduction
The Bingham Pit, operated by the Kennecott Mining Company is the largest open pit mine in North America. The mine is two and a half miles across and half a mile deep. Kennecott plans on operating the mine until at least 2020.

Our legacy lies in the way we mark the earth.

**Our traces on the land will greatly surpass the permanence of anything we could dream of building.**

Long after our cities have collapsed the lines etched across the land will remain as records of a time, and civilization forgotten. Particularly the large scale earth shaping that has occurred in the last century. These great earthworks stand as our greatest and most permanent marks on the land. From the act of constructing a highway as we blast away the side of a mountain to maintain the perfect radius, to mining huge pits to extract the smallest amount of material out of the ore, we leave a record of our existence. Simple acts of infrastructure are our greatest legacy.
The Center for Land Use Interpretation:

DEDICATED TO THE INCREASE AND DIFFUSION OF INFORMATION ABOUT HOW THE NATION'S LANDS ARE APPORTIONED, UTILIZED, AND PERCEIVED.

Mission:

The Center for Land Use Interpretation is a research organization interested in understanding the nature and extent of human interaction with the earth's surface. The Center embraces a multidisciplinary approach to fulfilling the stated mission, employing conventional research and information processing methodology as well as nontraditional interpretive tools.

The organization was founded in 1994, and since that time it has produced over 30 exhibits on land use themes and regions, for public institutions all over the United States, as well as overseas. Public tours have been conducted in several states, and over ten books have been published by the CLUI. CLUI Archive photographs illustrate journals, popular magazines, and books by other publishers, and have been used in non-CLUI exhibitions, and acquired by art collectors.

The CLUI exists to stimulate discussion, thought, and general interest in the contemporary landscape. Neither an environmental group nor an industry affiliated organization, the work of the Center integrates the many approaches to land use - the many perspectives of the landscape - into a single vision that illustrates the common ground in "land use" debates. At the very least, the Center attempts to emphasize the multiplicity of points of view regarding the utilization of terrestrial and geographic resources.

Areas of Research:

01 Programs and Projects

02 Land Use Database

03 American Land Museum
Section 01:
Programs and Projects

01 Exhibits
The Center produces public exhibits on land use themes and issues for galleries and museums, and for exhibition in CLUI spaces in Los Angeles and elsewhere. Regional exhibits focus on land use within a defined geographic area, such as a state or neighborhood. Thematic exhibits are usually national in scope, and examine a particular land use phenomena or issue.

02 Tours
The Center conducts guided tours for public and private groups. Usually these tours are led by the CLUI on video-equipped buses, as part of a CLUI Exhibition Program. The Center can be commissioned to conduct specialized tours for educational organizations, if scheduling permits.

03 Independent Interpreters
The Independent Interpreters program is an ongoing series of presentations by selected artist and researchers whose work might be of special interest to the CLUI audience. These presentations are in the form of an evening lecture with slides or films, or as an exhibition of material, and sometimes both.

04 Extrapolative Projects
The Center engages in a number of interpretive projects in the field that are designed to draw meaning from land use sites and phenomena. Many of these projects represent extensions of traditional interpretive techniques, and are designed to expand the methodology into new fronts.

05 Thematic Program Areas
Thematic Program Areas are subject categories that have been selected for extended research and examination by the CLUI. Selected themes are studied in an ongoing manner, with findings periodically presented to the public in the form of publications, lectures, exhibits, or other programs.

06 Residence Program
The Center operates a residence program to support the development of new interpretive methodologies and ideas. The program is open to artists, researchers, theorists, or anyone who works with land and land use issues in an innovative and engaging manner. Residents primarily work out of the CLUI facilities at Wendover, Utah, and explore and interpret the landscape of that remarkable desert region.

07 Publications
The Center publishes guidebooks, catalogs, and other books addressing land use issues. These publications, as well as selected titles from other publishers, are available through the CLUI store in Los Angeles and at our online shop. The Center also publishes a newsletter, The Lay of the Land, which is distributed to interested parties worldwide.
Section 04: Extrapolative Projects

01 The Event Marker Project
A series of markers, similar to those roadside markers installed by historical organizations, that commemorate significant but obscure land use phenomena. Several themes are being explored, including Inundations and Denudations, Perpetual Flames, and Selected Film Location Sites.

02 The Sound-Emitting Device Project
The Sound Emitting Device (SED) Program consists of an on-going series of outdoor site installations that alter the landscape by the infusion of a sonic element. Some installations are meant to be seen as well as heard, as the device itself can be a transformative agent. In other installations the device is concealed, in which case the sound is the essential ingredient. Most installations are in remote locations, "concealed", as it were, "in plain sight". The SED's all seem to indulge in some form of negation, a human trait that is often evident in our methods and perspectives of land use.

03 Submersions and Burials
Some of the on-going activities under the Submersions and Burials Project heading include a videotaped record of a series of burials of selected objects in selected locations, and a program entitled "Submissions," involving the deposit reliquaries in aquatic environments, including the Marianna Trench and selected lakes and rivers.

04 Suggested Photo Spot Project
Media Artists Melinda Stone and Igor Vamos initiated and executed the Photo Spot Project for The Center, installing over 50 "Suggested Photo Spot" signs at selected sites from coast to coast. Sites designated as a "Suggested Photo Spot" include the tailings pile of a copper mine and the waste water treatment facility for the Kodak company's headquarters. But the spots are not selected simply according to the function of facilities or land uses at the site. The criteria for selecting the Spots primarily relate to tourist photography issues, based on visual and aesthetics considerations, and a sense of what might be "photogenic". "In most cases, you have to be there to fully get it", says Stone, "the pictures we take of the Photo Spots represent just one aspect of the site, but the project is really about the interaction of viewers with each location".

05 Monoliths
This monolith, one of several proposed megalithic constructions in the Monolith Series, is intended to be a 150 foot long black rectangle, hanging five feet above the ground by chains, attached to a steel support system. The proposed location for the installation is at the ruins of Carrara, a former marble and cement plant, located south of Beatty, Nevada. The configuration of the industrial remnants at the site form an existing base for the steel support beams, and the pure form of the monolith will interact poetically with the rough geometric concrete ruins.

06 CLUI Mobile Exhibit Units
CLUI Mobile Exhibit Units are manufactured buildings and trailers that can be moved to locations to house temporary exhibits.

Michael Schanbacher
Section 02:
Sound-Emitting Device Projects

01
“Remote Tree Fall”
Sound-Emitting Device Installed in Central Maine

The first unit in CLUI’s Sound-Emitting Device (SED) Project was installed in central-northern Maine in late June, of 1994. The installation consists of a device that automatically emits the sound of a tree falling once every evening. The context for the device is a small, natural clearing in the forest, north of Millinocket. The device, built in collaboration with the Southern California company Solar Sensor, is composed of a looped audio cassette mechanism, battery, solar panel, amplifier, speaker and timing mechanism, housed in a weatherproof steel container.

The steel box with the solar panel attached to it is mounted at the optimal sun-catching angle on the top of a ten foot pole, which is cemented in the ground at the pre-selected location.

Each SED application in the on-going series of installations has its own taped message, specifically designed to interact with the “environment” of the installation. Maps locating this and other SED’s are available.

02
“Water Ghost”
Sound-Emitting Device installed at Owens Lake

The CLUI installed a Sound-Emitting Device in the middle of Owens Lake, California. The self-contained mechanism automatically emits the sound of gently lapping water for a few hours every night.

Owens lake is a dry lake in the Owens Valley, famous as the area that was robbed of its water by the developers of Los Angeles, starting with the opening of the Los Angeles Aqueduct in 1913. The lake, once filled with enough water to float steam ships on it, is now one hundred square miles of alkali dust.

The sound of running water, emitted by the device starting a few hours after sunset, is meant to be a ghostly nocturnal presence, only potentially heard, as the remoteness of the area does not encourage visitation.

The device, mounted on a steel pole which was firmly affixed to the dry lake bed, has a solar panel mounted on its top to recharge the amplification system and tape loop. The tape begins a few hours after sun-down, and plays until the battery runs out, three to six hours later. The battery is then recharged by the sun the following day.

The installation, which took place in October, 1995, is part of the on-going Sound-Emitting Device (SED) Program, a continuing campaign to introduce specific sounds into selected environments.

Photos courtesy of Center for Land Use Interpretation
Introduction

Section 02:

Land Use Database

The Center for Land Use Interpretation's Land Use Database is a collection of unusual and exemplary sites throughout the United States. Files, photographs, and other material are kept at the CLUI location in Los Angeles, where visitors can access this source material, and peruse the Center's in-house computer database, which has a few thousand complete and near-complete entries. A selection from this master version of the database is made available on the internet.

The database is a free public resource, designed to educate and inform the public about the function and form of the national landscape, a terrestrial system that has been altered to accommodate the complex demands of our society.

The database describes these sites, and offers links for more detailed information. In many cases information on how to visit these sites is provided, so that they may be directly experienced.

The database is continuously being updated by increasing the number of sites listed and expanding the information it contains. We encourage input from those interested in helping us improve this resource.

Browse by Category:

- Transportation
- Water
- Cultural
- Industrial
- Mining
- Waste
- Military
- Nuclear/Radioactive
- R + D

Michael Schanbacher
Section 03:

American Land Museum

The Center for Land Use Interpretation is the lead agency in the establishment of the American Land Museum, a network of landscape exhibition sites being developed across the United States. The purpose of the museum is to create a dynamic contemporary portrait of the nation, a portrait composed of the national landscape itself.

To establish this far-flung museum, the country has been divided into separate zones called Interpretive Units. Each unit is to have a museum location to represent it, providing regional programming for the area it represents. Interpretive Units were created out of the continuous national fabric through an accumulation of criteria, and finally actualized through the process of combining “districts” and “regions.”

Regions are general topographic and land use areas with gradual or transitional boundaries. They generally follow physiogeographic features (such as mountain ranges, and drainage systems), as well as cultural, economic, and historical development patterns (which are often delimited by physiography). Regions could be described as being defined from within, rather than from without, as the edges of these regions are often indistinct, overlapping and dissolving into one another.

Unambiguous boundaries were then drawn around these regions, following the existing political boundaries that separate states. The cluster of states define the District that makes up each Interpretive Unit.

The physical form of the individual museum locations will differ according to site considerations and available development resources. The primary “exhibit” at each location is, naturally, the immediate landscape of the location. As other interpretive exhibits are prepared for the location, they will be installed in structures that reflect the architectural styles of the region, and usually occupying existing structures.

Collectively the individual exhibit sites comprise the American Land Museum, a museum both situated in and made up of the landscapes of America.
Introduction

Current Locations
And Potential Future Locations
While the Center for Land Use Interpretation already has two locations within Interpretive Unit 02, neither would be considered a location for the American Land Museum. Could the Nevada Test Site serve as such a location?

Given the secret nature of the site and an ever fluctuating global treat level it is unknown what will become of the Test Site? The Department of Energy currently controls the Nevada Test Site and after the test moratorium signed into law by President Clinton in 1992, no nuclear tests have been performed on the site. The DOE currently has four plans for future use of the test site: a complete closure of the site; a cessation of most defense work at the site, and a concentration of remediation work on the site; an increase in defense research and other activities on the site; and a continuation of the status quo. Any of the four scenarios that the DOE has laid out are equally possible. What is certain though is that Yucca Flat and its 660 underground nuclear test sites is of decreasing use to the DOE. Hundreds of feet below the surface of the dry lake bed lie chimneys of radioactive stone created with each detonation. With remediation nearly impossible it is unlikely that the land would ever be returned to the Nevada Bureau of Land Management and thus return to public hands for the first time in 100 years.

So what should be done with such a rich and extremely toxic site? What if the Nevada Test Site became the cornerstone of the American Land Museum? Yucca Flat is a charged site and the perfect example of what we felt science was capable of producing after the second World War. We had conquered the frontier, yet vast stretches of the barren desert had no function. That function was given to the site with the detonation of the Soviet hydrogen bomb and the desire to have a continental nuclear proving ground. It is said that the Cold War was won in the High Nevada Desert at Yucca Flat, but what function does the desert serve now? Interestingly it is the containment of the byproducts of atomic energy which will be the Test Site's new function. The Yucca Mountain Project with it's contents of highly radioactive material, projected to stay radioactive for thousands of years, will truly be our greatest legacy and our greatest land use project of all. Given the site's interesting position wedged between such an important past and such a lasting future, is there a more appropriate place?
NEVADA TEST SITE
American Land Museum: Interpretive Unit 02
The Nevada Test Site is a study of the American sublime landscape. The vastness of the continent, particularly the allure of the unexplored American West, was important to the country at the turn of the 19th century. By the turn of the 20th century the wild frontier that shaped the maverick image of the young nation had been conquered. The vision of expanding the United States westward to the Pacific Ocean, known as Manifest Destiny, could be seen as complete. Photographic images of various sublime landscapes from Niagara Falls to the Grand Canyon were being distributed around the country. The visuals of these places became a part of the national identity. These majestic images fit perfectly into the American story of freedom and independence. Although the continent had been explored and settled, it remained untamed. The Roosevelt Administration created The Bureau of Reclamation as the first step toward harnessing the power of the western wilderness. One of their first projects was controlling the Colorado River in Southern California and redirecting its waters to irrigate crops in the Imperial Valley. The series of levees and dams worked for a few years but shortly thereafter the levees broke and filled the previously dry Salton Sink, forming the Salton Sea. It took years to fix the levees and stop the Colorado from filling the sink. Now all that is left is highly toxic lake constantly replenished by the runoff from the current agriculture of the valley, made possible by the damming of the river. Far more successful was the Hoover Dam, which finally tamed the Colorado and allowed for the agricultural production contained within the Imperial Valley.

It is this inclusion of the “technological” with “natural” that redefines the face of the country. In addition to naturally sublime, such as the Grand Canyon, Americans are also recognizing the importance of the technological. Places such as the Hoover Dam, the skyscrapers of Chicago and New York, or The Golden Gate Bridge are as visited as some of our precious natural sites.

The Nevada Test Site combines these two sublimes. It is both as vast as our national parks and as much of a technological marvel as the Hoover Dam. It also has been completely off limits to the general public for the last 60 years. Only in the last five years has the Department of Energy with the initial prodding of the Center for Land Use Interpretation opened up the site to a very limited touring schedule. Up until this point the Test Site was a void in the American consciousness, serving only as a backdrop for espionage and B-movies. Now once a month the DOE allows civilians to tour the Test site from within the confines of a charter bus. The tour starts and ends in Las Vegas, the city that perhaps most exemplifies our conquering of the American West.
80% of the state of Nevada is public land

Relative Sizes

- NTS Border
- Nellis Range Border
- State Borders

1,214 Square Miles
Nevada Test Site Land Use

- Defense and Industrial
- Nuclear Test
- Nuclear and High Explosives Test
- Radioactive Waste Management
- Research, Test, and Experiment
- Solar Enterprise
- Yucca Mountain Site Characterization
Radiological Air Sampling Locations

- Air Particulate and Tritium Station
- Air Particulate Station
- Tritium Station

Measuring the radiation in the air

Michael Schanbacher
TLD Locations

- Area with measurable radiation
- Area with negligible radiation
- Area around waste operations

TLDs measure the gamma radiation present
**Areas crossed by more than one radioactive cloud**

This map shows that even with a location the size of the State of Rhode Island, the Nevada Test Site was not large enough to contain the by-products of the atmospheric detonations. Only one test since the atmospheric test moratorium took effect in 1962 has vented any radioactivity into the atmosphere. The combined effects of the atmospheric test during the 1950s affected the entire country.
Nevada Test Site

Depth of Detonation Results

Crater Depth as a result of Detonation Depth

Michael Schanbacher
How to make a crater in five easy steps

Crater Diameter as a Result of Detonation Depth

- Wet Soil Line
- Dry Soil Line
- Wet Hard Rock Line
- Dry Hard Rock Line

Apparent Crater Diameter (Feet)

Depth of Burst (Feet)
Nevada Test Site

30° Above Surface  20° Above Surface  10° Above Surface  Surface Detonation

Punched crater depth as a result of the detonation height

0 milliseconds  
Bomb is dropped from plane or detonated from tower

1 millisecond  
Blast wave begins to form intense heat wave

1 second  
Blast wave punches crater and forms the blast wall
PUNCHED CRATER FORMATION

Punched craters are formed from an above ground detonation typically either dropped from a plane, affixed to a tower, or suspended from a balloon. These tests occurred during the early years of the test site and result in radioactivity being vented into the atmosphere. The physical result on the land is typically a shallow depression formed from the intense blast deforming the surface.

30 seconds
Blast wave and blast wall reach critical point and begin to lose energy

> 30 seconds
Radioactive soil and dust get sucked up into the vacuum created by the exiting blast wave

> 5 minutes
Punched crater with radioactive soil remains
Nevada Test Site

Shallow Depth of Burial

Deep Depth of Burial

Nuclear Device must be buried at precise optimal depth for maximum crater creation

3 milliseconds
Cavity begins to form

500 milliseconds
Cavity expands rapidly toward surface

1 second
Cavity grows deforming ground surface

2 seconds
Cavity continues to expand until venting occurs
BLOW-OUT CRATER FORMATION

Blow-out Craters occur from slightly buried detonations. They are designed to create the largest crater possible and must be buried at the optimal depth for a particular soil type. Project Plowshare wanted to use these craters as a way of cutting a lockless Panama Canal, the so-called “Panatomic Canal.”

> 2 seconds
Shortly after venting tons of earth are thrown into the atmosphere

> 5 minutes
Displaced earth settles into crater burying the original detonation point and radioactive debris
Nevada Test Site

0 milliseconds
Nuclear device is lowered into hole

3 milliseconds
Cavity begins to form

500 milliseconds
Melted rock lines the pressurized cavity

1 second
Cavity is lined with fused earth fracturing of surrounding earth occurs

> 1 second
Fractured rock begins to fall into cavity
SUBSIDENCE CRATER FORMATION

Subsidence craters are formed from deeply buried detonations where there is not sufficient force to break the surface of the land. A majority of the craters found on Yucca Flat are subsidence craters. After the atmospheric test moratorium of 1962 all testing moved deep underground.

> 1 second
Fractured rock falling into the cavity loosens rock closer to the surface forming chimney

> 1 second
Chimney formation reaches surface creating subsidence crater

Days – Months
Chimney stabilizes
Current Land Use

The Department of Energy does currently have some use for Yucca Flat, including sub-critical experiments used to test how our nuclear stockpile is aging. However, only a fraction of the original use still remains.

The map to the right shows how the DOE shuffles visitors through the Test Site on their monthly tours, allowing visitors to get off the bus at only one location on Yucca Flat. People are allowed to get off the bus at the Sedan Crater which is the largest crater on the Test Site. The crater is on the national register for historic places and was formed from a Project Plowshare test used to prove the feasibility of using nuclear detonations for excavations. The resulting Blow-out crater is 1200 feet across and 300 feet deep.
Yucca Flat is a wide flat basin located in the northeastern corner of the Nevada Test Site. It is here that we conducted a great majority of our nuclear tests. Over 660 tests were performed between the years 1954 and 1992 on the flat. At the south end is Yucca Lake the dry lake bed that lies at the bottom of the basin. North to south the flat is approximately 20 miles and from east to west approximately 10 miles.

Everything from an EPA run farm with its own cattle to seating for dignitaries to watch the detonations were located on the flat. This was the center of our nuclear weapons program and was at one point the most secure location in the country.

DE-VOID focuses on Yucca Flat because of the intense human interaction with this incredibly stable geologic place. The flat is where the natural and technological sublime intersect. The question of how to understand this place remains though. One problem for understanding the site is that given the massive scale of the site that the relatively small crater become almost invisible. It is not until you are right on top of the craters that they become perceivable. How can we understand a site on such a massive scale where such a great undertaking took place?
Craters
The project is laid out in two major pieces, the first being an intervention amongst the craters, the second being a home for the Center for Land Use Interpretation. The site map shows the relative location of both. The intervention with the craters is seen as the first layer in a serie of layers, that artists and scholars in residence at the Center for Land Use Interpretation would be building. It could be seen as the infrastructure upon which an understanding of this site is built. It must be made clear that it is not the intention of the project to impose a singular view onto the visitor. The visitors is encouraged to search through the field finding a varied understanding of a place that cannont be captured in a simple explanation.
The craters are broken down into two categories: underground detonations and above-ground detonations. Different interventions are then planned for each detonation type allowing the visitor to quickly distinguish between detonations that occurred in the atmosphere and those that occurred within the earth. Underground detonations are marked with a tower which registers the fleeting atmospheric conditions of the wind with two parallel panels. Atmospheric detonations are marked with a sonic wall which again registers the fleeting atmospheric conditions of the site. The interventions are meant to amplify the atmospheric conditions that are constantly molding and shaping the craters.
Craters

The craters formed from underground detonations, mainly subsidence craters but also blow-out craters, are marked with a tall tower containing a stack of wind powered electrical generators. There are two factors used in determining the scale of the towers. There is a small illuminated band that wraps the pole that marks the depth of burial for each crater and the height of the tower is determined by the size of the detonation measured in tons of TNT. A larger blast would yield a much taller tower. The crater size themselves are not an entirely accurate measure of the size of the blast since their size is tied directly to the depth of burial as well.
The towers are then aligned to catch a specific direction of wind. That alignment is determined by the wind direction at the precise moment of the original detonation. Two vertical illuminating panels are hung on the sides of a stack of wind powered electrical generators. These serve to both direct the wind into the generators and to give a real-time feedback of the current wind direction in relation to the historical wind direction. As the wind that whips across Yucca Flat shifts, the intensity of the glowing panels will change so the entire field becomes a direct representation of current wind conditions that are slowly shaping site.
Every tower becomes a direct translation of the original detonation. Each event is encoded into the tower. The bottom of each tower actually sits at the original ground line prior to the detonation and becomes the datum line through which the entire field can be understood.
Craters

The towers can also serve as locations for people to experience each site. RV's are allowed to drive down into the craters and plug into the towers for the night, pulling energy off of the system. Descending into a single crater isolates the visitor from experiencing the entirety of the field thus altering their perception of both the scale of the craters as well as the field itself.
The craters formed from above ground detonations, all of them punched craters, are marked with a concrete wall that has a piece of steel wrapped over it. Three factors are used to determine how they are built. The height of the walls off of the pre-detonation ground plane marks the size of the original detonation, the higher the wall that larger the blast. The steel plate bends up and over the wall to form a walkway and platform and the height of the platform is determined by the height of the blast. Lastly the length of the concrete wall is determined by the wind speed at the time of the original detonation so a visitor can understand the direction and intensity of any fallout from each distinct blast.
Craters

The walls just like the towers are aligned to catch a specific direction of wind. That direction is determined by the wind direction at the precise moment of the original detonation. The concrete wall is tapered such that it gets wider as it extends out from the detonation point. The steel then wraps up and over the wall forming a cavity to trap and channel the wind. An opening is left in the wall so as the wind blows across it. It begins to resonate just like blowing over the top of an empty bottle. That resonance is transferred to the steel and sound is amplified and projected. As the wind shifts the intensity of the sound from any given wall will change and the hum of the entire field will change.
The walls are also direct translations of the original detonations becoming a record of the events that occurred on the site. The resonance of the wall will also change slightly depending on the size of the original detonation and the field will hum a variety of tunes.
Craters

The walls are also meant to be explored and understood from a variety of perspectives. Given the relative scale of these craters in relationship to the subsidence and blow out craters smaller activities would occur here. The lack of utilities that the towers provide would allow for camping and other such activities in these smaller more intimate environments.
The craters at night are a critical part of the experience. During the day the massive scale of the flat will make a great majority of the field almost invisible even with the glowing panels. At night, however, the field becomes alive, lighting up and relaying a real-time representation of the wind intensity and direction across the field. The panels on the sides of the towers would seem to be breathing as the wind changed direction and intensity.
The Building has two main components, a home for the Center for Land Use Interpretation and Interpretive Unit 02 of the American Land Museum, and a hotel for visitors to the site. Visitors approach the Center from the north completing their trip through the Test Site on the charter bus. As they approach to the building the road cuts into the ground and the flat disappears from view. The bus then lets them off on the lower level of the building. The road actually cuts through the middle of the building so all traffic using it will pass through the Center.
After leaving the bus the visitors ascend a ramp which takes them up to the main level of the building. This level is a clear plane with unobstructed views out over the flat. At this point they can either ascend into the hotel or descend into the Center for Land Use Interpretation. The Center has two different sections, first a visitor enters into a public space which includes gallery space and a large auditorium used for conferences and other large gatherings. Raised up from this level is the more private functions of the center which is the home to the artist/scholar-in-residence. Living and working space are included and the living space of the resident is the only enclosed space of the building with a view out onto Yucca Flat so that they are constantly exposed to the site.
The three levels are most apparent in the section where the lowest level is the Center for Land Use Interpretation, the second level is the public space of the lookout, and the upper two levels consist of the hotel. The Gallery space of the Center cuts across the building and exposes the rather large change in topography on this seemingly flat site.
Center for Land Use Interpretation

Michael Schanbacher
Some visitors may wish to stay at the hotel provided at the Center rather than camp out on Yucca Flat. Simple rooms are provided for them. These rooms contrast the charter bus which they have ridden all day. The bus has panoramic windows on both sides allowing for an uninterrupted view of the terrain. The hotel is inward looking. The open windows of the rooms face each other and do not allow for an easy view of Yucca Flat. Instead it is intended that you are to leave your room and walk down to the public space of the overlook in order to view the field.
A Cor-ten steel skin wraps the hotel bars providing shade for the rooms as well as the public space of the overlook. Concrete bathroom cores suspend the steel wrapped hotel bars allowing them to break free of the surface of the overlook. The light steel bars and even lighter steel skin contrast the heavy concrete bathroom cores and the heavy nature of the public plane which cuts into the hill side.
The Overlook of Yucca Flat serves as the main public space of the building. It is meant to be a gathering space for people to be able to have a collective experience of the site. This contrasts the isolated feel of being in the field and on the flat. It is only when you are with a group of people that you are able to experience the entire thing.
Site as Source, Laboratory, and Environment:

How can architecture compete on a site so large where such a massive undertaking occurred? Perhaps it doesn’t need to compete, it only needs to add a layer onto the fabric of the surface of the earth. Altering that surface slightly only to be immediately erased within a geologic time frame.

The scale of the site and the weight of history that overlays the Test Site were certainly a struggle over the course of this work. Many questions as to how it would be seen and interpreted have been left unanswered, and a great majority of this was intentional. The project has always had the goal of allowing the visitor to interpret the site as they understood it rather than forcing a particular view or understanding. Overtime as multiple layers are built on top of and into the system the initial infrastructure would begin to recede. The project would then become more of a vehicle for understanding this place. Eventually it is the desire that the infrastructural layer presented here almost disappears or at least becomes secondary to the greater collective understanding, not shaped by one but by many.

The Test Site should be visited by more than just atomic history junkies and government conspiracy theorists. It is of the same importance as our national parks. The test site varies from the national parks because it was man-made. Carved out over a 30 year period, it exists now somewhere between the natural and the artificial. We have left geological marks on the surface of the earth.


