Abstract

Boundaries that define space are physical and implied. This thesis seeks to explore, manipulate, and document a set of implied boundaries. The physical aspects of the project hold the responsibility for translation, and documentation of the implied elements of a camp and cabin situations.
Acknowledgements

This book is dedicated to my parents, Reed and Pat, who instilled an appreciation of creation and never stifled my exploration of it. My time in the wild places has forever shaped me.

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Line and Dot
Simplification of two major project elements: grid of columns and ramp.
Color and Space

View of the site from the lake's edge, blurred to communicate the essence of the scene. Sand, sage, mountains, sky.
Columns in a Grid

Explored spatial conditions afforded by a rigid column grid for the project...
The desert was created simply to be itself, not to be transformed by man into some thing else. So too the mountain and the sea. The desert is therefore the logical dwelling place for the man who seeks to be nothing but himself—that is to say, a creature solitary and poor and dependent upon no one but God, with no great project standing between himself and his Creator.

Thomas Merton

Thoughts in Solitude
During summers in college I worked as a back-packing guide to parts of New York’s Adirondack Mountains. Impressed upon me from that experience was the idea that in the wilderness amplified life’s lessons. This amplification is possible through the removal of modern life’s distracting conveniences. Lessons are no more valuable in the middle of nowhere than they are in the middle of nowhere. It is my hope that this is the case with the project that follows. The same architectural principles explored in the project could be gleaned in a dense urban setting. It is the absence of typical settled circumstances that provides a simple pallet, resulting in unencumbered divination of learned principles.
Early Study Models
Forms of column grid and inserted boxes begin to become part of project.
Diagrammatic sketches of Mono Lake within greater site.
The site for a project must be more than just the footprint the structure sits upon. The immediate topography and restraints may inform many design decisions, but equally informative is the greater site.

In this project, a structure sits on the edge of a lake. The immediate environment includes a plane of water and contrasting rolling foothills. The greater environment is made up of the mountain range, the expansive lake, the ceiling of the sky, and the open desert to the east. The grandeur and vastness of this greater site influenced the design as did the immediate one.

Aspects of the project were designed such as a reaction to blurring the relationship of inserted man-made structures and the threshold with immediate and greater sites. This blurring provides a series of suggested relationships between the inhabitants of the project and the wilderness they are in.
Directly east of where Tuolumne River crosses the Sierra Nevada Mountains is a large salt lake. Mono Lake is supplied by inflow on only one side, creating a high gradient. This lack of mixing creates very concentrated salt levels that range up to 27 parts per thousand. The lake has a high pH and high alkalinity. The lake bed is a complex mix of rocks, sand, and silt, with the surface being a combination of soft silt and rock. The lake is fed by two streams, the Middle Fork Mono River and the South Fork Kern River. The lake is bordered by mountains on all sides, creating a unique landscape.

The project is sited on the lake's southern edge. It is on public land which currently has only a visitors center and ranger station. The surrounding area is desolate except for a small town just west of the project. Its proximity to Yosemite makes Mono Lake a frequent stop for outdoor enthusiasts. The lake is known for its high alkalinity and salt content, which create unique conditions for aquatic life. The lake is an example of a saline lake, which is a type of lake that has a salt concentration higher than that of the ocean. The lake is an important part of the Mono-Sierra system, which is an important part of the larger Mono Inyo High Sierra ecosystem. The lake is located in a region that is rich in biodiversity, with a variety of plant and animal species that are adapted to the unique conditions of the lake.
Views of Model

Abstracted views of the model exhibit two of the project’s primary forms—boxes and a field of columns.
A field of concrete columns bridges the high desert and a salt lake. Perched within this rigid grid are wooden boxes and platforms. A ramp meanders through the columns terminating at the lake.

This project is a camping facility on Mono Lake in Eastern California. A series of cabin shelters, tent platforms, and a ramp cluster within a grid of concrete columns. The design allows these elements to accommodate their stay.

This thesis explores the spatial opportunities resulting from the repetition of a single element. It also looks at the implications of neighboring juxtaposed forms.

The repeated element is a cast concrete column, multiplied in a grid. The spatial opportunities afforded by this grid include a number of real and implied boundaries. The boxes that emerge echo an age-old desire to create separation between man and nature—between the concrete structure that is the naturalized form and the boxes that are made of natural wood. Comfort is afforded in these boundaries, real or implied.

The juxtaposed forms are the continually contorting ramp and the series of boxes placed on a uniform horizon. The differences between these forms highlight the difference between man and nature. As the boxes continue at the same level, the extreme changes in the topography are noted. The ramp substitutes for this land, as it mimics its contours. By placing this difference in such a frame, the site is examined closer. It was a goal of the project to allow the user to not merely be overwhelmed by the grand site, but be able to digest such minor aspects as well.
Entrance to the project occurs at two major points. From the land, the ramp marks the sur-
tface of the sand while the columns are their shortest in relation to the land. From the water,
the same set of columns tower and further emphasize its base. The ramp again mediates
its rise into the water, becoming a transition.
A grid of cast concrete columns is the primary element of the project. Within the column grid, boxes are perched and a ramp wanders through. It mediates the land and lake, an end in each. From the water, the columns echo the disappearing tufas, allowing those on the lake to travel among the towering formations.

Cast footings are poured in a grid before the columns. Since the precision of the column grid is important to the project, allowance is built into the footings. The rebar that ties the footing to the column can be shifted into a number of places, tied in, and poured.
The construction process for the column grid is three fold. First the footings are poured. Second the column formwork is built. All the columns are tied to each other with bracing attached to the threaded sleeves. This aids in assuring that the grid is uniform. Lastly the columns are poured. The lumber used in the bracing is then reused in the framework for the ramp and cabin joists.

Placement of Column Grid within the larger context of the project.

The columns are cast with threaded sleeves which eventually support the brackets for the cabin joists. Cast in a series along the column, they offer a choice for bracket attachment.
A wooden-decked ramp connects the land and the water, following the contours of the land with a series of angled steps. Contrasting the strict right angles of the wooden cabins and column grid, it offers travelers a variety of interactions with the columns and cabins. Stairs and additional surfaces are regulated by a grid of six metal grate pans used in their construction.
Two piece metal surrounds make up the distance between the edge of the ramp and the concrete columns. In a location where continuing the wooden deck would be very difficult, these mediate.

Placement of Ramp and Stairs within the larger context of the project.

The ramp terminates at a dock which operates as the water entrance. The dock naturally accommodates those who depart or arrive by canoe and kayak.
The steel skeleton of the stairs and walkways are covered with a skin of metal pans. Six metal grate pans of varying dimensions are used to configure this skin. Limiting the number of these pans and placing them in a variety of configurations allows for simplicity in the construction.

A central spine, formed by the concrete columns and wooden ramp together with a series of metal stairs, defines the principal circulation.
The cabins between the concrete columns are two-story volumes, defined by a wooden shell enclosure. The upper level provides a place to sleep, the lower levels offer spaces for cooking, gathering, and gear storage. The roof slopes to a central drain which then connects to a scupper in an end wall of the Cabin Shelter. This permits an unencumbered crisp horizontal line of the wooden shell to promote the pure volumetric appearance of the cabins.
Exploded Perspective

- metal roof
- concrete column
- wooden screen
- roof drain and scupper
- roof beams
- railing
- ladder
- rain shields
- metal brackets

Section through the typical cabin unit.

Placement of Cabin Shelters within the larger context of the project.
Three cubic structures act together as a meeting shelter. The option to use the three as one united space or as individual spaces exists.

Meeting Shelter

Secondary meeting space is created by the ramp and the underside of the meeting room.
The datum line defined by the wooden cabin shells clearly emphasizes the slope of the deck towards the water.

The Meeting Shelter volumes within the larger context of the project.

Section through the meeting room. The Meeting Shelter structure is identical to the cabin structures minus the second floor. The shell is open on both long sides as well.
A series of wooden platforms provides users a place to set up tents. They have the same footprint as the cabins, but unlike the leveled cabins, they inhabit a variety of heights regulated by the walkways under them.
The tent platforms can accommodate three to four people and their tents. The columns rise past and suggest boundaries of walls and ceiling.

Placement of Tent Platforms within the larger context of the project is under consideration.

Perforated steel pans are inset into the wood decking of the tent platforms. These allow for users to have a safe place to use backpacking stoves and cook. The same metal pans are used in a series as the rain shield found below the cabin scuppers.

Clip rings are inset into the wood decking. They provide attachment points for tents. The pattern of these rings accommodates a number of tent footprints.
Topographical maps consist of manufactured regular horizontal lines to present an understanding of the land. The stones and moss that form the surface are gently altered and predicted based.
The work of both Richard Long and Robert Smithson include the con-
frontational mark of man in the greater realm of nature. Strong, simply,
and often geometric forms are juxtaposed with the otherwise untouched
landscape. These interventions are reserved as they do not call attention
to themselves too loudly. They instead are concise and accomplish a
greater recognition of their natural setting.

Whether it is the manufactured lines of a topographical map, the edges of paint which define lanes of highway traf-
ic, or the confines of an office cubicle, the human animal
seeks to understand and regulate the world around it. We employ these implied limits to create order. Definition
of “here” versus “there” allows us to mark our territory. This marking offers comfort and reinforces the hierarchies
that our process of creating civilization demand.

In this project various implied limits have been created. The major tool for these limits is the column grid. This
grid offers a number of such implied boundaries. These are demonstrated in the following section where the grid
itself is singled out and examined.
The grand scale of the site contains natural barriers and boundaries. Mountains rise on three sides, with the sky beginning at their peaks. This outdoor space can be seen as a room. The project then becomes a room within it.
Examples of a secondary ceiling exist in other architectural projects. The roof of the Luzerne Performing Arts Center by Nouvel creates a true secondary ceiling to the waterfront as well as an implied plane that seems to project into the horizon. Both aspects offer an alternate boundary to that of the surrounding Swiss Alps.

A section of the larger site demonstrates the relationship between the naturally implied ceiling and the ceiling implied by the project.

Ceiling of Surrounding Mountains

Ceiling of the Project

Project

Ceiling of Surrounding Mountains
Perspective of project from the lake with actual plots of the gridded topography.

The column grid inserts a man-made temporary landscape into the expansive landcape. This measure is demonstrated in the variety of highlighted plots shown here.
Site topography with pile grid insert. Red boxes indicate the segmentation of the landscape between the piles.

On a larger scale, the project as a whole is sectioned off from the landscape. As central park offers New Yorkers respite from the vastness of their metropolis, the project offers a human scale in the vastness of the site. Central Park provides breathing room, greenery, and reprieve from the pressures of city life. The project interjects a consistent grid and implied ceiling. These boundaries seek to provide familiar aspects of urban development.

Similar to the column grid, the leveled regular placements of the cabin volumes provide a baseline from which the surrounding natural environment can be measured. The result is varying "boxes" of inhabitable space between the changing ground and constant cabin datum.
The repetitive grid of columns provides a number of effects. Within the grid, perpendicular to it, and approaching it from afar all reveal differing patterns and spatial suggestions.
The long rows of the columns appear as four screen walls that vary in density. At points, the column grid seems to suggest corridors. These three “hall-ways” offer pathways into the project. Each is different once the ramp and cabins are inserted.

Like passing a field of crops in a car, the rows of columns from the short axis offer an undulating pattern when viewing it from afar.
Placing a structure in any pristine setting is a challenge. The architect must decide upon a position in regards to the intended interaction between the site and the project. The architect must decide upon the position of the structure and the position of the project in the site. This is the start of the project, but it must continue into the project's end, right down to the finish line.

In this project I sought to recognize the vast grandeur of the site. The implied boundaries indicated by the natural tufa formations of the greater site, homage is paid to the importance of the desert and the lake in the project's design. The course elements allow the spatial conditions between the site and inhabitants to continue even though the natural tufa formations slowly disappear.

While the broad strokes of the project could be seen as large gestures, they were necessary in providing a place within the larger place of the site. Authority and delicate moves would be swallowed up in a site like Mono Lake.

As I move into the next phase of the profession, I hope to learn the lessons of taking design cues from both immediate and greater sites, the power of implied boundaries, and the opportunities a limited pallet of materials and forms afford. These lessons were made clearer in a wilderness site, but must be applied to settings more and more complicated.