

## ABSTRACT

Title of Document: DYNAMIC SPACES:  
INTEGRATING PRESERVATION AND  
DESIGN AT KNIGHTS FERRY

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Architecture

Integrating the disciplines of Historic Preservation and Architectural Design can provide opportunities to re-vision cultural and building traditions in a modern context. To demonstrate how these opportunities can be met, this thesis will explore the transformation of an abandoned historic mill building in Knights Ferry, California, into an olive orchard and oil production center. The design will create flexible spaces for use by the community and visitors, introduce a new economic foundation on which a renaissance could be built, and provide an opportunity to revitalize and repurpose ruins that have fallen into disuse, combining them with new buildings, landscapes, and reasons for being. This thesis maintains that by recovering and revitalizing disused historic places in a sensitive and dynamic manner we can ensure that these places not only remain relevant, but encourage the creative evolution of history and tradition.

DYNAMIC SPACES:  
INTEGRATING PRESERVATION AND DESIGN AT KNIGHTS FERRY

By

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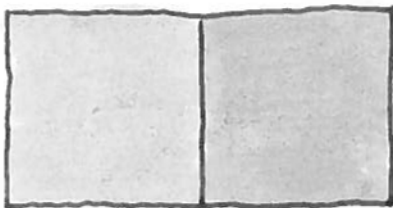
## Conflicting Vocabularies

The field of architecture thrives on creativity and problem solving, which is apparent in all aspects of thinking and communication. Architects are trained to cultivate and refine their visual communication skills, an important and powerful tool of the profession. The visual nature of architecture ensures that ideas and concepts can be communicated quickly among architects and their clients. However, when architects encounter other fields that may not have been trained in visual communication the advantages of visual communication become a deterrent to successful communication. Many of the philosophical and conceptual tools regularly employed by architects become difficult to translate into a written medium.



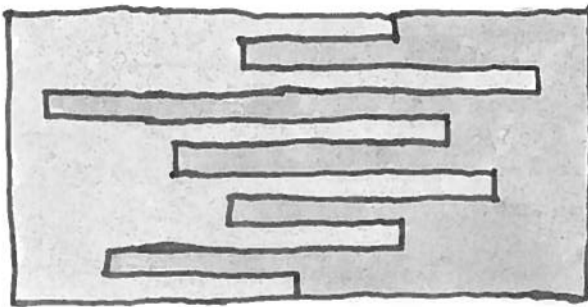
The reliance on visual conveyance by architects is aggravated when working with those in the field of historic preservation. Preservationists put value

and emphasis on descriptive writing, a professional necessity used to convey not only the historical significance of places and objects, but also to further preservation discourse. Communicating abstract ideas using visual mediums is not a skill cultivated in the preservation field, where visual aids are commonly historical material or for documentation purposes.



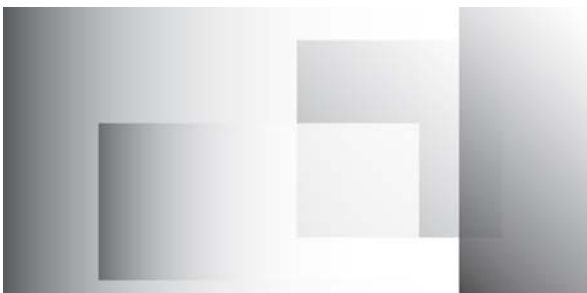
Considering the close nature of the fields of historic preservation and architecture it is natural that overlapping interactions and conflicts

will occur. However, these interactions are often aggravated by insufficient communication, a symptom of conflicting vocabularies and disjunctive mediums. Design concepts can easily be disregarded as insignificant scribbling, while significant preservation ideology can be dismissed with disappointment for lack of images and imagination. This conflict is often aggravated by each clinging to ideologies that, while having served them well for the primary thrust of their careers, have locked them into a mindset that can become restrictive. The perpetual forward momentum of design is driven by a desire to continually be on the forefront of innovation and leadership, falling behind risks irrelevancy. Conversely, preservationists long to recreate a past that can never be again, or pause the flow of time to conserve what remains.



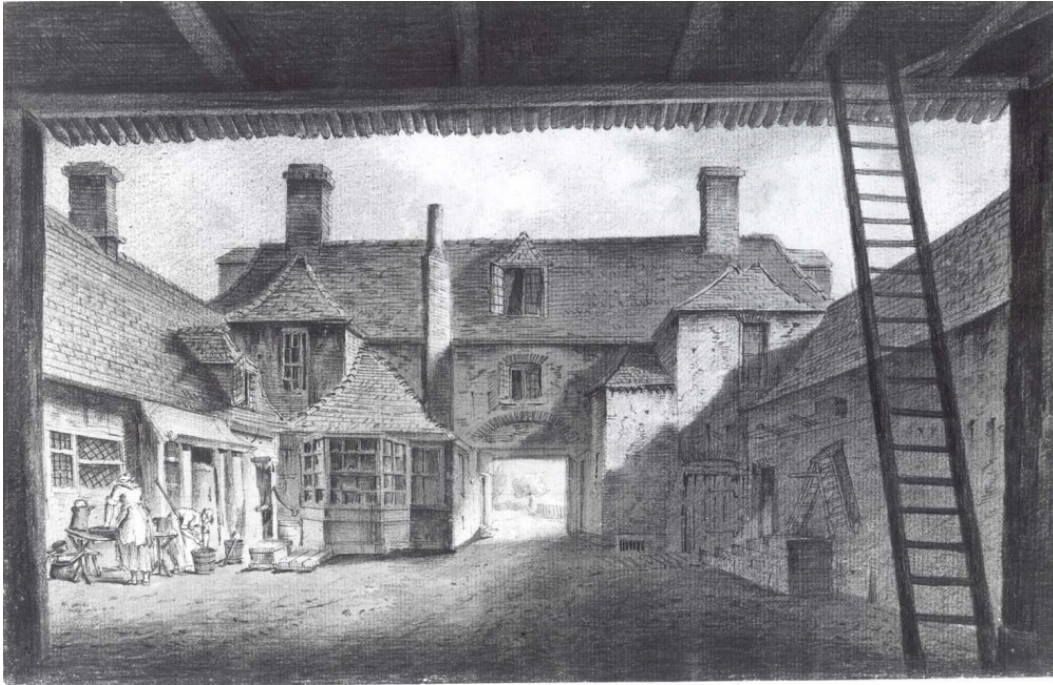
These divergent goals appear to be in conflict, though I believe they present an exceptional opportunity for collaboration. This collaboration, however, needs to be

driven by a mutual understanding, the vehicle of which is a mutual vocabulary, both visual and written. Ideas shared by designers and preservationist may yield interesting and dynamic success if correctly integrated. In this regard, of interest is the visitor center at Stowe, a former manor and pleasure garden in England.



Originally constructed in the 17<sup>th</sup> century for the express purpose of catering to visitors tour the expansive

gardens, the building fell into disuse and remained derelict until the 21<sup>st</sup> century, when the remains were not only restored to their original condition, but sensitively integrated into a new visitor complex for the restored gardens.



**Figure 1 Historic New Inn**

From a design standpoint the “program,” function, of the original building was a visitor center. When restored by preservationists to its original appearance that same building was “interpreted,” presented as, a visitor center, while at the same time regaining its original programing. This revival is complimented by the sensitive addition of a new visitor center, to house the extensive but necessary visitor amenities, using a design philosophy that drew both visually and conceptually from the original building. Given a free hand to construct a new building independent of the existing historic fabric, the choice was instead made to accentuate the original building with a complimentary design. In doing this equilibrium was achieved in

which the historic fabric and new design ascend to a level unobtainable to each independently. Indeed, had the historic building been simply restored and interpreted it would have been successful, as would the new building as a standalone, but together they create a conceptual integrity that surpasses their independent success.



**Figure 2 Modern Visitors Center at Stowe**

From my vantage point the Stowe visitor center serves to expose several failings of both design and preservation. The rigid desire to adhere to authenticity in preservation is a force whose natural outcome is preserved buildings isolated and static. In contrast the desire for architecture to be blatant and assuming also drives it with a need to be alone and unencumbered. Both opinions reveal underlying professional bias tendencies which, I believe, can be overcome by each side understanding and expanding their appreciation of the other. Design can learn from

the rigorous investigation and interpretation preservationists apply to their study of historic buildings and in doing so gain new insights that can expand readings and creative possibilities of the existing circumstances. Preservation can be informed by design's creative insights, loosening a dogma that has shackled it to a strict adherence to the past and restricting opinions for it to become part of a possible future. The resolution of this conflict is at the heart of my thesis, as I explore ways to integrate the concerns and values of two disciplines, the result of which, like Stowe, could push each field further than they might go alone.



## The Nature of Time

Understanding the role time plays in the life of a building, both physically and conceptually is a key component to uniting design and preservation. Time is a forward functioning system, the concept of past, present and future happen in a set order that is irreversible. The function of this tripartite system inherently constrains the ambitions of preservationists. The past is not retrievable, there is no backwards motion. The ideas of restoring, reconstructing, and preserving, are all activities that happen in the present as attempts to reach the past of a building. However, the past cannot be recreated, only imitated, once it is gone, it inevitably becomes the present, while residing in the future.

This paradox is exemplified in the ubiquitous house museum, an old building held in suspended animation as it appeared at one time. Even though it is in the present the illusion of the past is perpetuated, though erroneously, as what is seen is not the true past, the day of a buildings birth, but a false past, the building as it appears after decades, if not centuries of use.<sup>1</sup> The conflict is obvious, a 17<sup>th</sup> century New England house museum appears run down and uninspiring because it is. The building's "past" which is preserved is the culmination of use and weathering, not as it would have appeared when first executed. This phenomenon is also seen in architectural design, as postulated by Mostafavi and Leatherbarrow, as the architect's fascination with photographing their creations prior to use, endeavoring to sustain a time in which a building is not ravaged by use and elements.<sup>2</sup> Both professions,

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<sup>1</sup> Mansfield, *The Same Ax Twice*, 53

<sup>2</sup> Mostafavi and Leatherbarrow, *On Weathering*

preservation and design, exhibit the desire to pause the march of time in order to save a building.

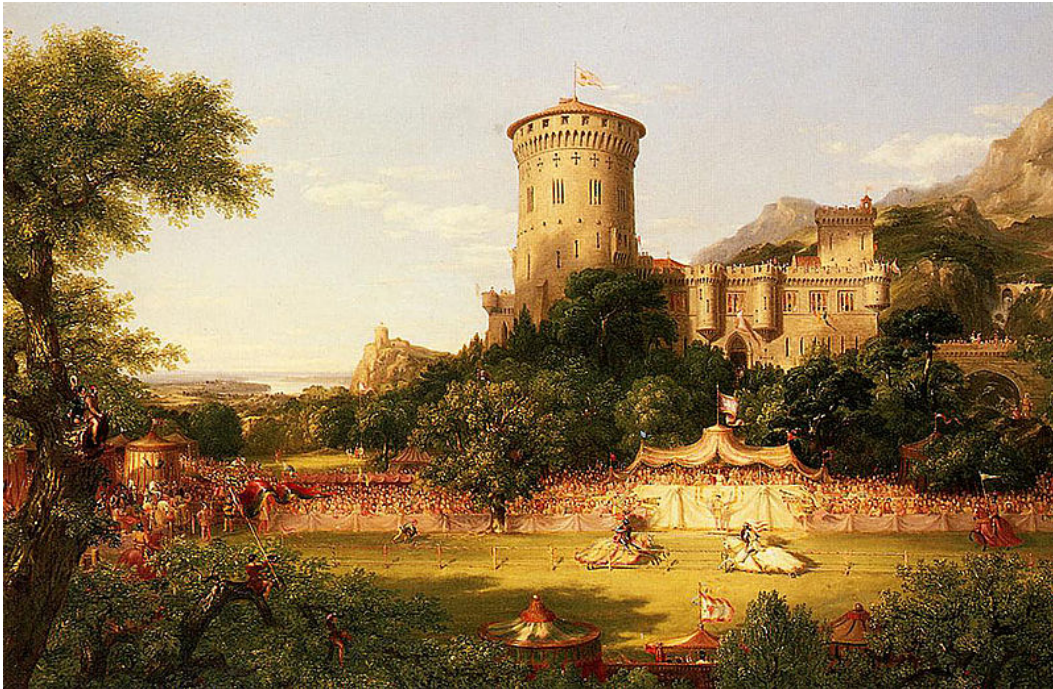


Figure 3 “The Past” Cole, 1838

However, the forward movement of time can be utilized as a catalyst for change. Mostafavi and Leatherbarrow propose that the weathering of a building can be a dynamic activity, the so called “functional deterioration.”<sup>3</sup> They argue that when the designer takes into account the inevitable deterioration of a building, the affects can not only be foreseen but utilized as another design aspect. Tangential to this idea is the thought that a ruinous state is the final phase of a building. The landscape painter Thomas Cole often depicts the deteriorated building as the condition of the present, a perpetual final stage divorced from a glorious past and deprived of a potential future. Cole also exhibits the desire the stop the flow of time and hold buildings in their ruinous condition, deciding that phase was the most desirable. Thus

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<sup>3</sup> Ibid., 31

his 1838 series depicting a romantic castle is a pair rather than a triumvirate, “The Past” depicting the castle in its glory, and “The Present” depicting the castle as a romantic ruin, but with no desire to dwell on the future of the castle.



**Figure 4 “The Present” Cole, 1838**

The potential of future use for a building is championed by Howard Mansfield, who describes the transformation of a building over time as a natural progression in opposition to unnatural suspension.<sup>4</sup> Mansfield argues that attempts to impose strict preservation on buildings are not saving them but, indeed, killing them. An attempt to halt the progress of time is an attempt to halt the very nature of a building that is meant to be malleable.<sup>5</sup> This opinion is shared by Edward Hollis, who argues that “At the heart of architectural theory is a paradox: buildings are designed to last, and therefore outlast the insubstantial pageants that made them.”<sup>6</sup>

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<sup>4</sup> Mansfield, 54

<sup>5</sup> Ibid., 58

<sup>6</sup> Hollis, *The Secret Lives of Buildings*, 8

The philosophy put forth by Hollis and Mansfield that buildings are inherently imbued with a changeable nature would seem to contradict both the desire of preservationist to reclaim the past, and also the designer who clings to the unsullied present. However, as proposed by Mostafavi and Leatherbarrow, a clever designer would take the future into account and use it as a benefit, just as preservationists should work with an eye to the future as well as the past. The potential of a building or ruin to transform itself again is not restrained by the nature of the object, but by the failure of imagination in those who could bring about its renaissance.

## Values

Given the importance of providing modern relevance for historic resources, adaptive reuse of dilapidated buildings provides an opportunity to combine the interests of preservation and design. The conversion of these buildings does not mean the subversion of one aspect to another, but rather the search for a harmonious blending that gives purpose to a place beyond mere aesthetics.

The attraction of people to old buildings is innate, as is their ability to program a space as they see fit, not needing an event dictated to them. Creating spaces that incorporate the historic attraction of the building and provide gathering places for people is not creatively difficult or financially prohibitive.



**Figure 5 Dumbo Tobacco Warehouse, Brooklyn, New York**



The Dumbo Tobacco Warehouse in Brooklyn New York is the remnant shell of a former 1800s warehouse that is used for a variety of events. It is the simplest of spaces, four walls, and lacking even a room. However, the community has found innovative and diverse ways to use the space. The flexibility of the space is appealing as it adapts to constantly changing needs of the community, while minimizing the impact to the ruins. This use can be extrapolated to provide covered enclosures that are flexible in use, giving dynamic possibilities to the many ruinous buildings that currently go abandoned.



**Figure 6 Used as a flexible gathering place for the community.**

Another important intersection is the idea of sustainability, environmentally, economically, and culturally. Reusing materials provides a connection to the past that

is lacking in modern production. This applies to buildings as much as personal objects. Re inhabiting a building that has fallen into disuse provides an opportunity to envision a new purpose while taking advantage of already crafted material. Culturally, the reuse of spaces provides an opportunity to retrieve objects and traditions from the past and envision them in a modern context. Crystalizing divergent ideas and histories can also provide an opportunity for sustained economic growth for a community, attracting visitors and generating creative endeavors.

Given these values the conversion of the ruinous Tulloch Mill in Knights Ferry California into an olive orchard and mill would provide a modern envisioning of a traditional practice with a long history in the area combined with the repurposing of the historic ruins for a new chapter in the life of a building that is characterized by its ability to change and evolve.

## Knights Ferry and Tulloch Mill

The area that would become Knights Ferry has often attracted inhabitants due to its many benefits. Before American settlers arrived overland from the east, native Walla tribes took advantage of the abundant stocks of fish in the Stanislaus River. In 1844 William Knight, a physician turned frontiersman happened upon the area after crossing the Sierra Nevada mountains with an expedition. The location struck Knight, who recognized its potential for a successful river crossing as it was where the Stanislaus River emerged from the tight canyon confines of the foothills and spread out to the plains of the San Joaquin Valley. Several years later, in 1848, gold was discovered in the Sierra foothills and the California Gold Rush began. Acting on his previous inclination, Knight returned to the Stanislaus River and constructed a hotel, trading post, and ferry crossing, establishing Knights Ferry. As the Gold Rush continued the southern Sierras area was inundated with prospectors, who uncovered significant gold fields along the Stanislaus and Tuolumne Rivers. Knight's investment in infrastructure paid off handsomely, the enormous influx of miners came with it a voracious demand for supplies and materials, all of which needed to cross the river on the ferry barge.





**Figure 7** The terrain upstream from Knights Ferry differs greatly from the valley downstream.  
**Own work.**

Unfortunately Knight did not live to savor his success, as he was killed on November 9<sup>th</sup>, 1849 in a duel on the main street of the town he founded. Following Knight's demise his assets were purchased by John and Lewis Dent, brothers from St. Louis who had immigrated to California following the gold. The Dents, trained lawyers and savvy politicians, upgraded the ferry and improved the amenities in the town, which by 1850 was seeing an average of one hundred wagons a day using the crossing. The Dents prospered and by 1852 had become wealthy and influential, and in March of that year they further advanced their standing. A torrential downpour had swollen the Stanislaus River beyond its banks, destroying all the other ferries along the river. Having foreseen the possible destruction caused by the river, the Dents had taken pains to secure their barge, which was now both the most continent, and only crossing on the entire river.



**Figure 8 Miners in the Stanislaus River, early 1850. John Chriswell.**

Later that year a San Francisco businessman and machinist, David Locke, passed through Knights Ferry, and like Knight before him, Locke recognized the potential of the river. Striking a partnership with the Dent brothers, Lock set about constructing a grist mill powered by the Stanislaus River, along with the first of many dams devised to regulate the river. Diverting the water via canals and flumes, the land surrounding Knights Ferry was transformed from foothill chaparral to abundant farms, catering to the ever growing traffic of miners. The town and mill continued to prosper through the next decade and attracted many prospectors looking to make their fortunes. One such prospector was David Tulloch, a Virginian who had become wealthy mining the banks of the river. The son of a miller, Tulloch had grown up working his father's mills on the James River, and when Locke decided to sell the mill in 1857, Tulloch used his considerable fortune to purchase a stake.

In 1862 another devastating flood inundated the river, spreading far into the heart of the San Joaquin Valley, and destroying the ferry station and the mill. Tulloch's partners in the mill were financially ruined, losing much of their farm and ranch holding in the valley, which led to Tulloch purchasing their shares and becoming the sole proprietor. Unfortunately his mill was gone, the light wooden structure swept away in the flood, along with the first wooden dam constructed by Locke, and he had spent his savings buying the mill shares. Tulloch began looking for investors, eventually striking a partnership with Nate Harrold, a successful wheat farmer with over five thousand acres under cultivation in the surrounding area.



**STANISLAUS**  
**MILLS**

**PATENT**

**ROLLER**



**EXTRA FAMILY**

**HARROLD TULLOCH & SON**  
**KNIGHT'S FERRY, CAL.**

**Figure 9 Harrold, Tulloch, & Son flour bag. To save money the printer used an arbitrary picture. A missing comma also sent many distributors looking for one Harrold Tulloch. John Chriswell.**

Harrold's farms had become a significant source of food for the continuous flow of people through the region, and looking to expand his operation, saw Tulloch's mill as an opportunity to market his wheat as flour.



**Figure 10 View of Knights Ferry by Lawrence & Houseworth, 1866. Library of Congress.**

Together Harrold and Tulloch set about reconstituting the mill, hiring the engineer Thomas Vinson to construct a sturdy stone mill house and replace the ruined dams with new stone ones. Simultaneously, Vinson was working on substantial stone

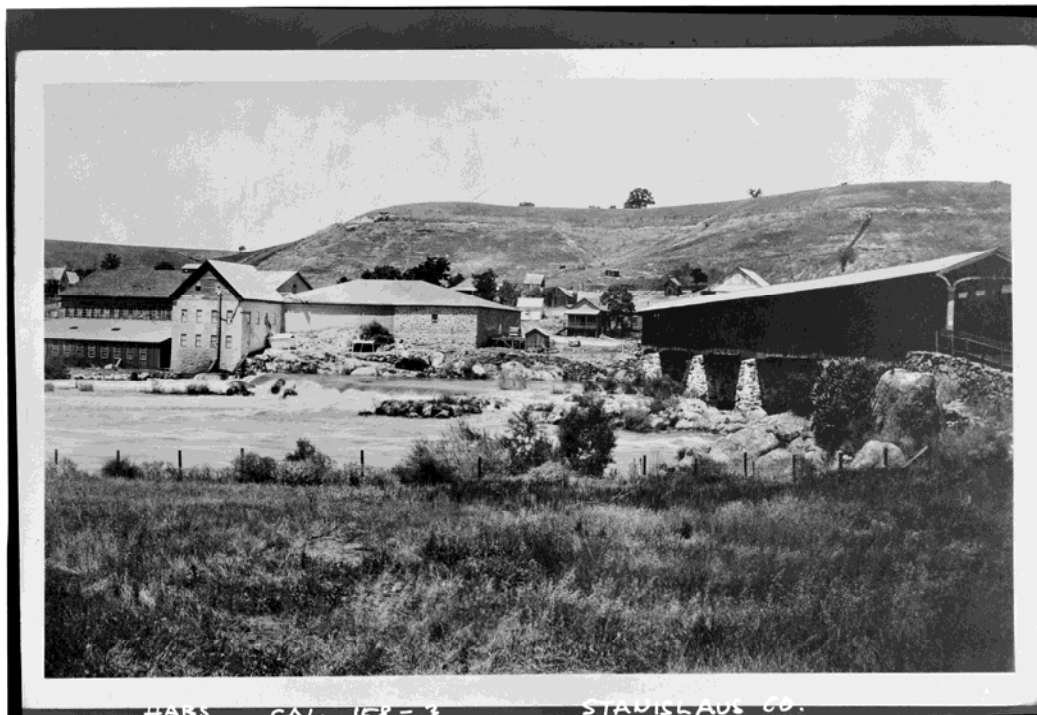
supports for a new covered bridge adjacent to the mill. This bridge was to replace another one commissioned by Locke, who had taken the profits from the sale of the mill and challenged the Dent's monopoly of river crossing. Locke's new covered bridge won out over the Dent's ferry as, thanks to Vinson's exceptional skills, it could easily handle the endless stream of wagons and cattle converging on Knights Ferry.



**Figure 11 View of Knights Ferry by Lawrence & Houseworth, 1866. Library of Congress.**

The growing importance of the town, now the seat of Stanislaus County, guaranteed a constant stream of customers for Harrold and Tulloch's mill. It was not uncommon to see wagons queuing up in the early hours of the morning to pick up flour and

transport it to the many camps and towns dotting the Sierra foothills. The



**Figure 12 View of Tulloch Mill during the late 1890s. Notice the substantial wooden warehouse addition, a result off Harrold and Tulloch's booming trade. Library of Congress**

mill prospered for many years, and by 1883 David Tulloch's son Charles had joined the business. The younger Tulloch had been educated at the State University at Berkeley, the forerunner to the University of California, and was a shrewd businessman.



**Figure 13 Vision of Knights Ferry from 1887, larger than the greatest extent of the town. Army Corp of Engineers.**

By the 1890s the boom in the foothills was dying down, with populations moving down into the San Joaquin Valley to take up the next big enterprise, agriculture. Moving along with the population was Charles Tulloch, who had inherited the mill on the death of his father and Harrold. Tulloch established another mill further down the river at Oakdale, closer to the expanding rail network and new county seat in Modesto. The Tulloch Mill closed in 1899 but was not to stay shuttered for long. Recognizing the revolutionary potential of electricity, Tulloch again harnessed the force of the river, this time to produce electricity. Converting the old mill into a hydroelectric power plant, Tulloch secured a contract in 1904 to supply electricity to Modesto and Oakdale. Tulloch's power plant operated until 1910 when it was purchased by a larger power company and dismantled.





**Figure 14 Tulloch Mill as a hydroelectric power plant, early 1900s. Notice the disappearance of the wooden warehouse and the addition of the lower power house that held the dynamo, the remains of which can be seen today. Library of Congress.**

This closure was the last time the mill was used as a production facility. The building fell into disrepair and lay abandoned. In 1938 the mill was surveyed and documented by the Historic American Building Survey, but no further use for the building was devised. Repeated flooding in the mid-20<sup>th</sup> century hastened the deterioration of the mill until only the sturdy stone walls remained. Interest in the Stanislaus River continued, and the ruins of the mill were incorporated into the Knights Ferry Historic District in 1975, becoming a National Register of Historic Places site. In the 1990s an Army Corp of Engineers post was established in proximity of the mill to care for the dams along the river. The ruins and surrounding bank of the river were formed into the Knights Ferry recreation area are now a

popular place for hiking, camping, rafting and fishing.



**Figure 15 The powerhouse and mill building today. Own work**

## The Role of Water in the Sierra Foothills

Since the establishment of Knights Ferry during the California Gold Rush there has been a complex and evolving relationship between the inhabitants and the natural world. The desire to extract mineral wealth from the surroundings hills drove the development of an extensive canal system to provide water for mining operation.



**Figure 16 The abandoned San Joaquin Canal. Own work.**



**Figure 17** View north from the covered bridge, the canal can be seen on the hill behind the old mill cabin.

While the river bank provided a civic supply of fresh water, the increasingly elaborate mining techniques that provided higher yields than traditional panning required a steady and continuous stream of water. The construction of a canal on the north side of the river began in 1855. Stretching four miles from a dam constructed upstream of the town, the eight foot wide, eighteen inch deep San Joaquin Canal provided a reliable supply of water for the miners.



**Figure 18 View of the town with the large flume in the background. Library of Congress.**

The canal was so successful that it was eventually expanded, crossing the canyon north of the town on a giant flume, providing water for further mining operations. Following the decline of mining in the area the canal was used to provide water for an extensive irrigation network, heralding the era of agriculture in the area. The canal was connected to the mill via a four foot diameter penstock, providing an



alternative source of water for the mill, and later power plant, allowing continued operation even when the river was low.



**Figure 19** Remains of the penstock linking the mill to the canal. Own work.



**Figure 20** Knights Ferry and the extensive modern canal system. Own work.

When the power plant closed in 1910 the canal fell into dis use and the flume was dismantled. However, the irrigation system surrounding the town has been continuously expanded, eventually encompassing the current San Joaquin Irrigation District north of the river, and the Oakdale Irrigation District south of the river. The irrigation of the area has provided extensive agricultural development while marking a decisive divide between the working land to the east and the arid, non-irrigated land to the west.

The reconstruction of the San Joaquin Canal and the reintroduction of water to the site serves not only to provide water crucial for the economic viability of an olive grove but also the a reconnection to an important era of the area's past. The pattern of collecting and harvesting the potential of the water in the region was a driving factor in the settlement of Knights Ferry, as well a profitable contributor to the varieties of new enterprises that have appeared in the different eras of the town. Similarly the potential of the unused land to support an olive grove is reliant on the flow of water through the canal, but also representative of how components of the past can be utilized to create new activities.

## **Olives in California**

Olive cultivation was first introduced to California by Spanish missionaries who established a chain of settlement stretching north from San Diego beginning in 1775. Due to its cultural and religious significance to the Catholic Spanish settlers olive trees were often planted immediately upon the establishment of a new mission. The olive trees were cultivated both in expansive orchards and in formal allees, providing table olives for food, oil for religious ceremonies, and shading against the hot California sun. The missions served as centers for the settlement of their surround country side and often provided settlers with olive cuttings and saplings which were carried and planted throughout California.



**Figure 21** Traditional olive mill at Mission San Fernando.



The extensive cultivation of olives disseminated from the missionaries gave rise to a distinct sub-species, the Mission Olive, which is the only species recognized as native to the United States. Mission olives were the dominant species until the introduction of mechanized agriculture in the 1870s. By this time the missions had been abandoned and left to deteriorate, however their olive trees thrived despite being unattended for decades.

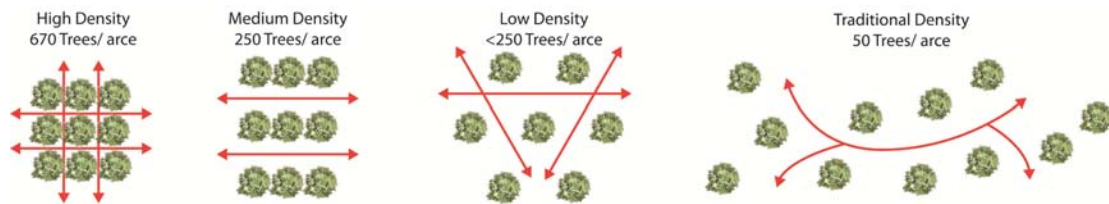


**Figure 22 Typical olive orchard in the Central Valley.**

Farmers in the heavily planted central valley region began transplanting olive trees from abandoned missions to serve as pollinators as well as for aesthetic decoration. Since the trees were well suited to the climate of the central valley they began to be widely cultivated for commercial sale. Eventually new varieties such as the Mazanillo and Sevillano supplanted the Mission due to their higher yields of fruit and oil. The Mission olive is now considered a heritage food as it is not as commercially viable as other varieties, accounting for only a small fraction of the planted acreage in California, which produces over 95% of cultivated olives in the United States.

## Olive Cultivation and Consumption

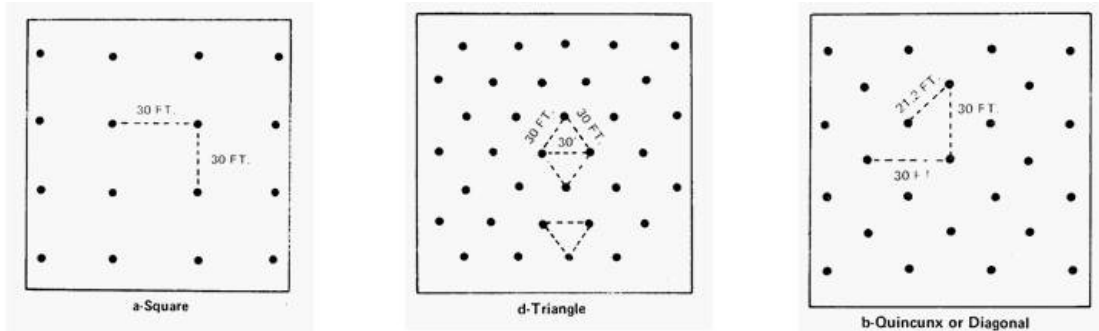
Olives were traditionally cultivated in widely spaced, free form groves, with trees commonly more than 40' apart. This reduced competition between trees for water as olive root systems spread up to 20' beyond the branch line of the tree. As irrigation became more readily available more organized and formally planted olive orchards developed with trees first being placed in an equilateral pattern, and later in linear rows.



**Figure 23 Different orchard patterns.**

Trees also began to be planted much closer together, as close as 4' within rows spaces 12' apart, as is common in large high density commercial orchards. Higher density orchards produce more olives faster than further spaced orchards, however the productive life time of the tree is significantly reduced. Growth in olive trees alternates between enlarging of the tree and creation of fruit. Years in which a tree grows it produces a smaller volume of fruit than years it is not growing. This provides a problem in commercial cultivation as slower growing trees will produce

more but lower quality fruit.



**Figure 24 Quincunx planting pattern.**

To circumvent this orchards are often planted in a dense quincunx pattern which encourages rapid tree growth while producing a usable volume of fruit. After several years the central trees are removed and the remaining trees convert almost entirely to the production of fruit.

Olives are inedible directly from the tree, being bitter and unpalatable. To convert olives to an edible form the fruit is either pressed into oil or cured in brine as table food. The oil production process is ancient and relatively simple. Traditionally harvested olives, which are picked between October and December in the central valley, were washed and placed into a large flat stone bowl which served as the base

of the oil mill.



**Figure 25 Traditional stone oil mills.**

A heavy round stone wheel was then propelled around the center of the bowl, crushing the olives into a paste masticating the pulp and releasing the oil trapped inside. The paste is then gathered and spread onto disks made of wound fibers. The disks are then stacked and a large amount of pressure is applied to them, either by a lever or by tightening a screw. The pressure forces out the oil from the paste, and it is collected and stored for later use.



**Figure 26 Modern oil mills.**

While traditionally proceeded with natural and organic materials, such as stone, hemp, wood, and ceramic, modern oil production is most often accomplished by a mechanized process. Olives are harvested, washed, and passed into a hammer mill, which uses spinning serrated weights to pulverize the olives. The paste is then passed into a milaxer which agitates the paste to encourage the separation of oil. The mixture is then sent to a centrifuge which extracts the oil from the lighter olive water. The oil is then stored in stainless steel tanks while the left over pulp is collected for use as fertilizer.

## Building in a Historic Context

I had the opportunity to spend a semester studying architecture at Kiplin Hall in northern England. During my time there I discovered many example of how design can enhance historic buildings to create new interesting narratives. This is

seen in a variety of settings and programmatic functions, but the overall quality of design and attention to historic context is exemplary.

Stowe Visitors Center  
Stowe, Buckinghamshire  
Cowper Griffith Architects, 2012

Formerly: New Inn and Stables  
Key Elements: Appropriate massing for new construction, Reuse of programing

The visitor center at Stowe is an interesting example of combining restoration with new construction, while at the same time integrating the same program in two instances. Originally constructed in 1717 as an inn and stable, the purpose of the New Inn was to serve as a rest area for visitors coming to view the gardens of Lord Cobham, the owner of the Stowe estate. The Inn became a favored way point for traders from nearby Buckingham and visitors to the gardens, however by the 1850s the estate had diminished and the buildings associated with the Inn were converted into ancillary agricultural buildings. By the mid twentieth century the buildings had deteriorated to a decrepit state until it was purchased by the English National Trust in 2005. The Trust implemented an extensive stabilization and research program on the Inn and the adjacent buildings that were still standing. The goal of the project was to restore and interpret the Inn as well as construct a new visitors center on the foot print of the original adjacent barn, which had deteriorated beyond repair. Through meticulous research and conservation many of the original materials from the Inn were reused in the restoration of the Inn and as cues for the design of the new visitor center.

The new construction portion of the project consists of a restaurant, shop, ticketing desk, and museum. This programming was adapted for the foot print of what was once a barn attached to the New Inn, and the massing of the original structure was applied to the new building. This move had several benefits. Keeping the relationship between the new construction and historic fabric balanced allowed for the addition of needed space for the center while not blatantly imposing on the original structure. To the contrary, the new construction is designed to blend in with the original conditions when not in use. The automatic glass doors, and other modern amenities, are placed behind rustic board and batten doors that can be closed to hide the modern intervention. The new construction also integrates the remains of the original buildings, as well as taking design cues from their original construction techniques. In addition to the construction of the new visitor center, the restored New Inn is interpreted as it would have appeared when it originally served that purpose, including smells and sounds that would have been heard during its heyday. This creates an interesting juxtaposition between the “old visitors center” and the new.





**Figure 27 Historic Depiction of the New Inn.**



**Figure 28 Existing conditions prior to construction and restoration.**



**Figure 29 The Stowe Visitors Center Location, Before and After Construction**





**Figure 30 Modern features in a sensitive context**



**Figure 31 Restored New Inn.**

Whitby Abbey Visitor Center  
 Whitby, North Yorkshire  
 Stanton Williams, 2002

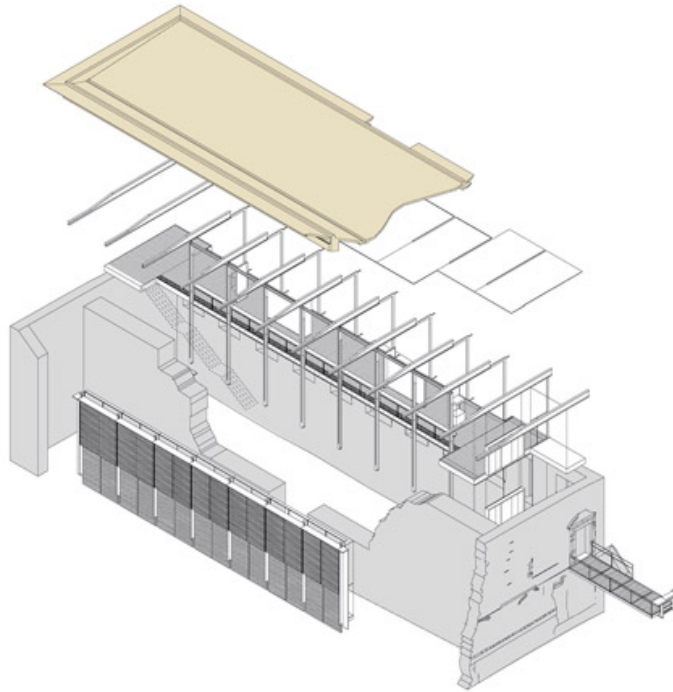
Formerly: Cholmley House

Key Elements: Insertion of new construction into an historic shell

The visitor center at Whitby Abbey began as Cholmley House, a luxurious banqueting venue owned by Sir Huge Cholmeley, who had it constructed in 1672. The Cholmeley family had purchased the ruins of the Whitby Abbey and the surrounding land following its dissolution in 1539 and had maintained a residence in the former gate house on the west side of the abbey. The construction of Cholmley House completed a square court that was used to display the family's extensive sculpture collection. In 1790 the roof of the house was destroyed in a storm and the building fell into decay until it was stabilized with the addition of bracing in 1866. The house came into the possession of the Ministry of Works, the predecessor of English Heritage, in 1936, which replaced the bracing and maintained the structural integrity of the ruins until 2002, when the new visitors center was constructed.

The visitor center is an exceptional example of how inserting new construction into a historic envelope can be done in a delicate and sensitive manner. The remains of the banqueting hall consist of a nearly complete front façade with partially collapsed side and rear facades. Thanks to the continued bracing, the ruins were able to support themselves but not additional loads. The new construction component of the visitor center has been inserted into the void created by the ruins and serves as the main structural support for the entire building. The insert delicately braces the ruin walls, only connecting in a minimum number of places to ensure structural stability. The second story and roof of the insert are supported entirely by new construction and do not strain the ruin walls. The insert pays particularly close attention to how it interfaces with the ruins, making delicate connections and closely

approaching, but never touching, the ruin walls. This close connection is best seen in the floor detailing on the second story, where structural glass is extended the last foot to the ruin wall, but stops short of connecting. This allows the walls to be seen up close, but clearly demarcates the new construction from the historic fabric. The use of the new construction to accentuate the ruin walls extends throughout the entire building, with the architecture designed to float over and around the remains of the hall. This is a particularly good example of how the design of a new building can be both aesthetically modern and sensitive to the historic context.



**Figure 32 Inserting new construction into a ruin.**



**Figure 33 Sensitive integration of new load bearing structure.**





**Figure 34 Sensitive connections.**





**Figure 35 Materials provide sleek design while complimenting the historic ruins.**

Fountains Abbey Porters Lodge Interpretive Center

Rippon, North Yorkshire

Woodhall Planning and Conservation, 2009

Formerly: Abbey Porter Lodge

Key Elements: Insertion of new construction into an historic shell

The Interpretive Center at Fountains Abbey began as the porter's residence for the abbey complex. Following its dissolution in 1539 the ruins changed hands several times and were modified into a folly park and pleasure garden. The English National Trust acquired the property in 1986 and the porter's lodge was chosen as the site for an interpretive center following the restoration and interpretation of many of the site's ancillary buildings. The location of the porter's lodge is ideal for this program as it is much closer to the abbey ruins than the larger main visitor center, which is located away from the park up a large hill.

The insertion of new construction at the porter' lodge is done in a manner that is respectful of the existing ruins. None of the structure touches the lodge walls, but instead comes close. The use of glass walls in the new pavilion creates a situation in

which the ruins themselves appear to be a museum display, similar to the other artifacts in the pavilion. By removing the walls of the pavilion away from the historic ruins the design also creates an interesting instance in which the visitor passes through the ruins into the pavilion. This instance is accentuated by the fact that the new pavilion is hidden from view behind the ruin walls. When entered the ruins behave in a similar manner to the many other ruins around the park, but the visitor discovers the modern pavilion hidden behind.



**Figure 36 Ruins conceal the building while providing for a moment of discovery.**





**Figure 37 Pulling the building away from the ruins creates an interesting transition zone.**

People's History Museum  
 Manchester, Greater Manchester  
 Austin-Smith Lord, 2011

Formerly: Hydraulic Pumping Station  
 Key Elements: Modern addition to a historic building

The People's History Museum presents an interesting convergence of two distinct architectural types, a historic pump house and a modernist museum. The merger of these two pieces presented a design challenge, but is successful both programmatically and in a preservation sense. The pumping station served a key role in the industrial development of the city, providing power to drive the many mill machines in the area. Operating from 1894 until 1972, the station fell into disuse until it was purchased by the museum in 1993. The museum interpreted the station but soon outgrew its space and considered building a large addition on an empty adjacent lot. Though the massing of the addition dwarfs the pump station the designers took many cues from the historic building in their process.

The new addition is clad primarily in corten, a pre-rusted material with a deep brown color, which not only diminishes its presence next to the station, but also clues back to the many pieces of machinery housed there. What is of particular interest in the connections between the two buildings, which make use of not only the main floor entrances, but also elevated openings on the pump station. In particular, a new cat walk allows access to the historic building from the new addition by entering through a large second floor window. The new intervention takes care to not impact the existing historical structure while providing visitors an elevated view of the pump house that was not available before. This building presents itself as both an independent building while enhancing the surrounding area by drawing design cues and exploring them in a sensitive manner.



**Figure 38 Existing conditions.**



**Figure 39 New addition is sleek, yet unassuming.**





**Figure 40 Sensitive connections between historic and modern.**





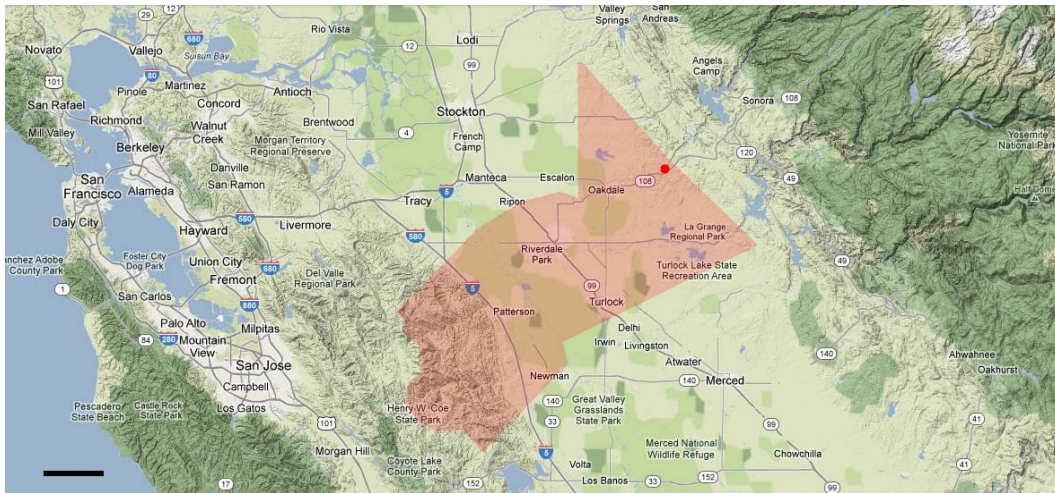
**Figure 41 Creative integrations provide for unique experiences.**

## The River Revisited

The Tulloch Mill building represents an exciting and interesting opportunity to explore how a sensitive transformation can bring the site into a new era. The remains of Locke's original brick warehouse (1852), Tulloch's stone warehouse addition, and new mill building (1862), Charles Tulloch's power house (1904), and Locke's covered bridge (1862) are the most significant features of the site. Thanks to the constant supervision of the nearby Army Corp of Engineers, the remaining exterior masonry walls are stabilized and in no danger of deteriorating. The site is currently part of the Knights Ferry Recreation Area, a state run park frequented by many visitors year round. Popular activities include hiking, picnicking, camping, rafting and fishing. In addition it is a favored spot for photographers. Despite its popularity the site lacks many visitor amenities. The Army Corp building has a small museum, but it is only open once a month. Public restrooms are also located in the Army Corp building but are Spartan. The Stanislaus River plays an important role on the site, seasonally flooding a portion of the area, and attempting to find its way back into the remains of the mill headrace.



**Figure 42** Knights Ferry at the convergence of the Sierra Nevada Mountains and the San Joaquin Valley (100 miles).



**Figure 43 Knights Ferry in Stanislaus County (10 miles).**



**Figure 44 Topography around Knights Ferry (1000').**





**Figure 45 Knights Ferry and Tulloch Mill.**



**Figure 46 Topography around Knights Ferry. Note steep bluffs to the north and west, with rolling plains to the south.**



**Figure 47 Stanislaus River downstream from the town.**



**Figure 48 Significant Roads.**





**Figure 49 Typical road approaching town.**



**Figure 50 Typical road in town, note topography.**



**Figure 51 Typical road in town, narrow width.**



**Figure 52 Former town square.**





**Figure 53** Figure ground of Knights Ferry.



**Figure 54** Residential.



**Figure 55 Commercial.**



**Figure 56 Civic.**



**Figure 57 Infrastructure.**



## Reconnecting the Historic Fabric

Knights Ferry's reason for being is inherently linked to the river and its crossing. This was the generator for the town's political and commercial success and is a strong force for future prosperity. By reconnecting the town and the mill, and reengaging the river crossing, a unique experience can be created that encourages visitors to explore and discover the many unique instances around the site.

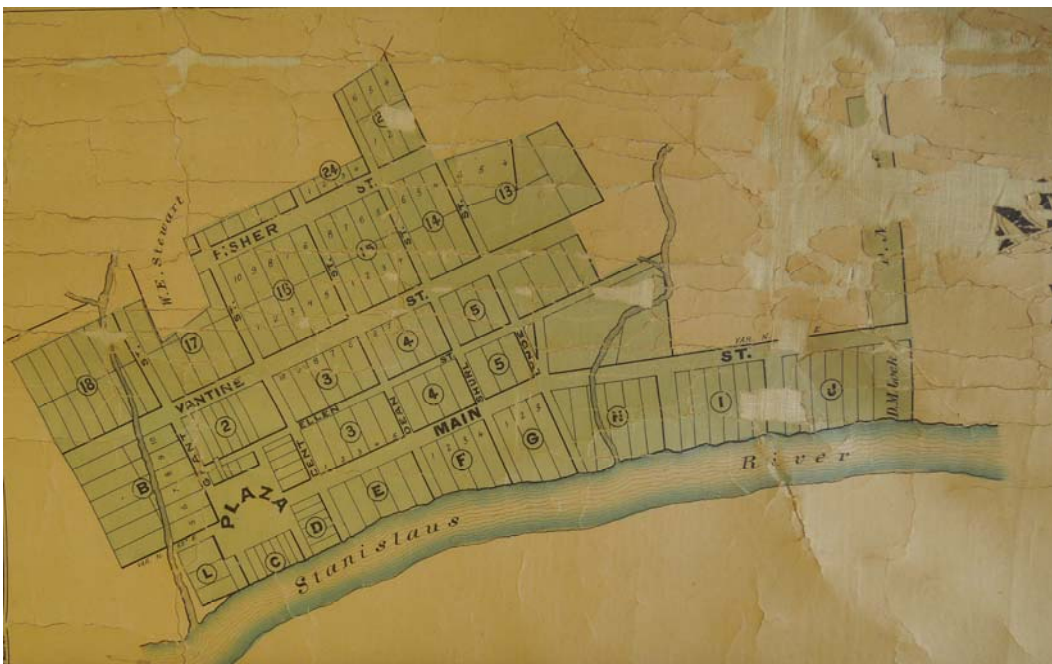


**Figure 58 Historic Fabric**





**Figure 59** Historic Route through Knights Ferry.



**Figure 60** Map of Knights Ferry from 1887 showing the main plaza.

As seen in the historic map of Knights Ferry the central plaza was a key civic space, supporting the county court house and providing a place for the community to interact. What remains of the plaza is an empty gravel lot which is occupied by power substation. Re-imagining the plaza as a park and amphitheater provides not

only a pleasant and dynamic civic space but the presence of olive trees hints at the greater cultivation in the surrounding area.

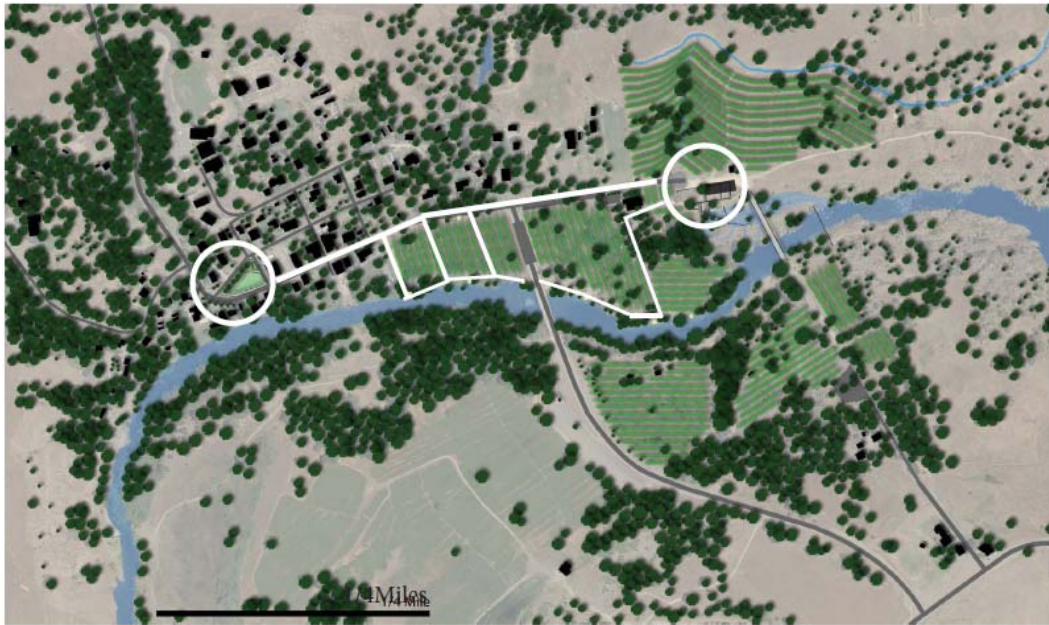


**Figure 61** The site of the former plaza



**Figure 62** Proposed plaza featuring amphitheater and olive trees





**Figure 63** Connecting the town and mill area using olive groves.

By turning underutilized land between the town and the mill towards olive cultivation not only provides an economic driver for the town, it also creates a pleasant experience when traveling between the two sites. Pavilions placed at intervals provide opportunities to overlook the orchard as well as progress through the rows and engage with the river



**Figure 64 Current road condition**



**Figure 65 Empty fields**



**Figure 66 Observation pavilions and stairs to access the orchard**



**Figure 67 Section through orchard**

## Integrating Design with the Historic Mill

Due to the unique history of the mill and its complex orientation of spaces, many possibilities exist to engage the ruins with new design. Several explorations lead to the formation of my final design.





**Figure 68 Existing mill ruins.**



**Figure 69 Mill ruins.**



**Figure 70 Brick Warehouse, 1852.**



**Figure 71 Existing conditions.**



**Figure 72 Potential event space.**



**Figure 73 Stone Warehouse, 1862.**



**Figure 74 Existing conditions.**



**Figure 75 Millhouse, 1862.**



**Figure 76 View from south.**



**Figure 77 Industrial artifacts.**



**Figure 78 Wood Barn, 1888-1900.**





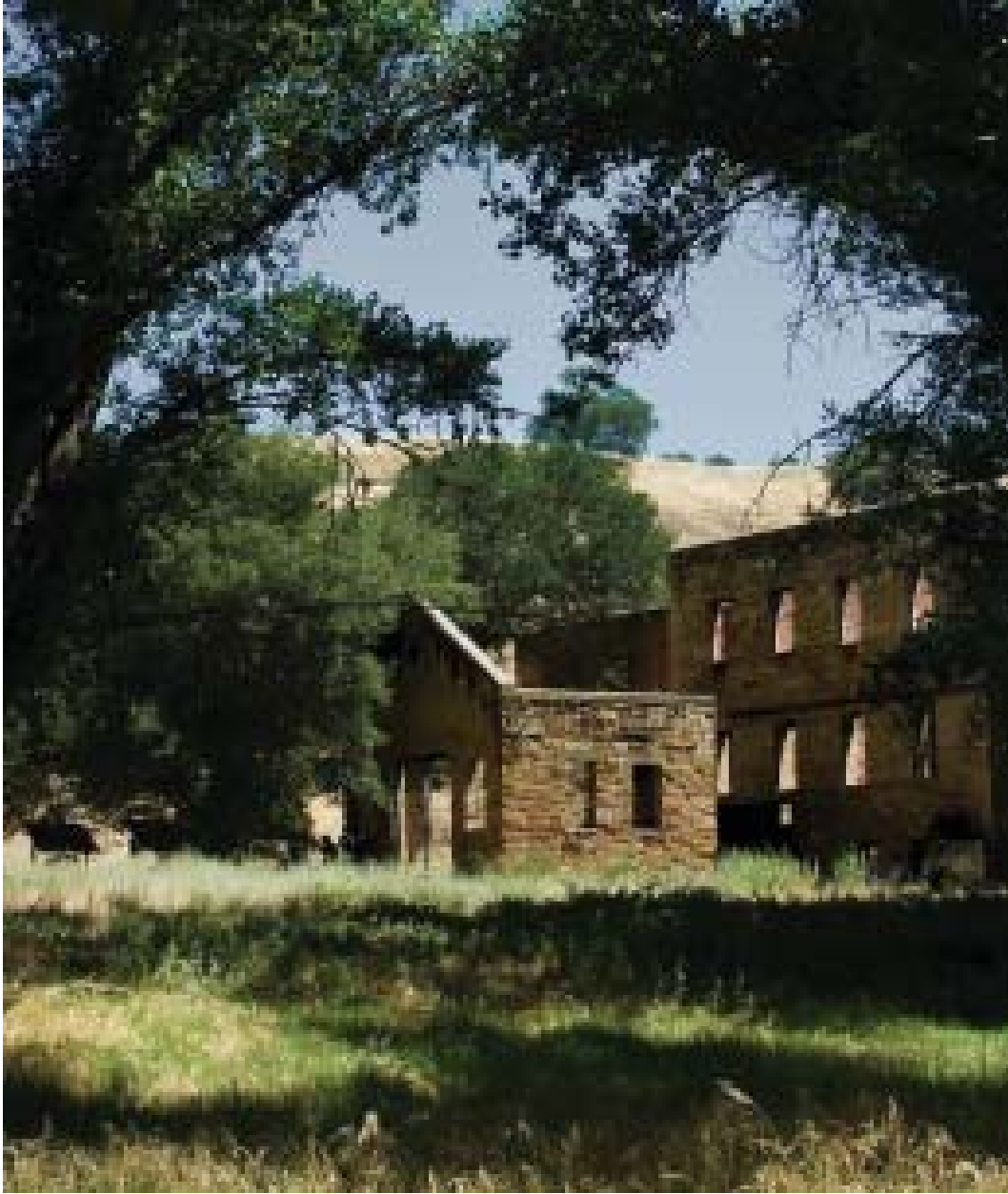
**Figure 79 Wood Barn massing.**



**Figure 80 Remains of the Wood Barn foundation form a retaining wall at the front of the mill.**



**Figure 81 Powerhouse, 1904.**



**Figure 82 View form the south.**



Figure 83 Industrial artifact.

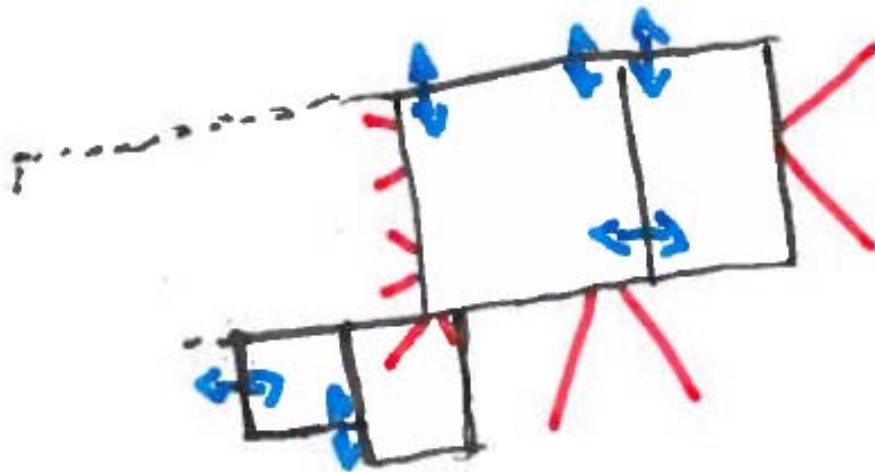


Figure 84 Views and connections.



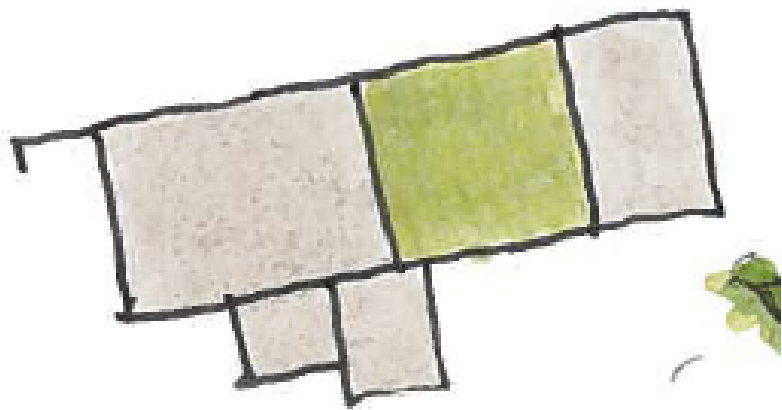
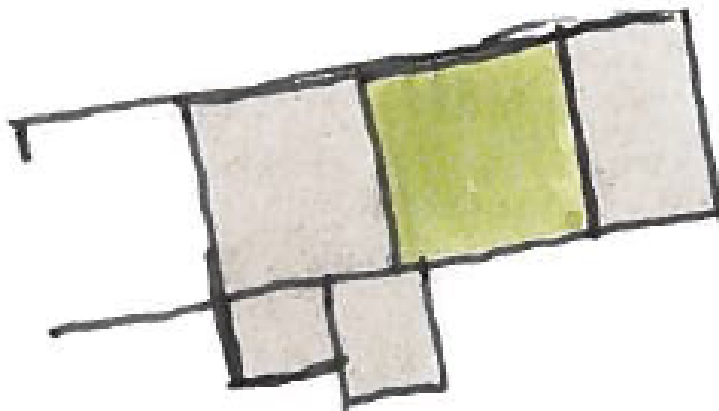
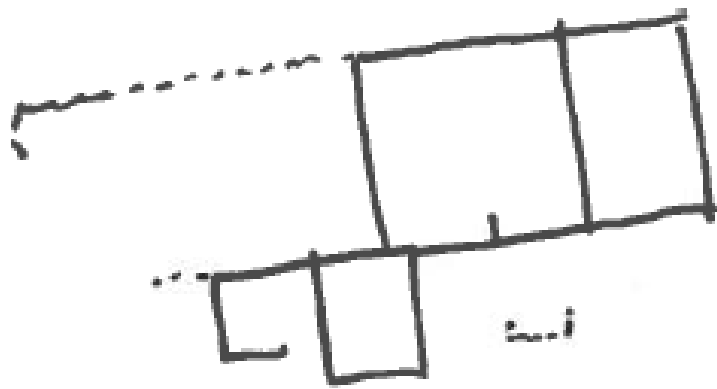


Figure 85 Massing explorations.

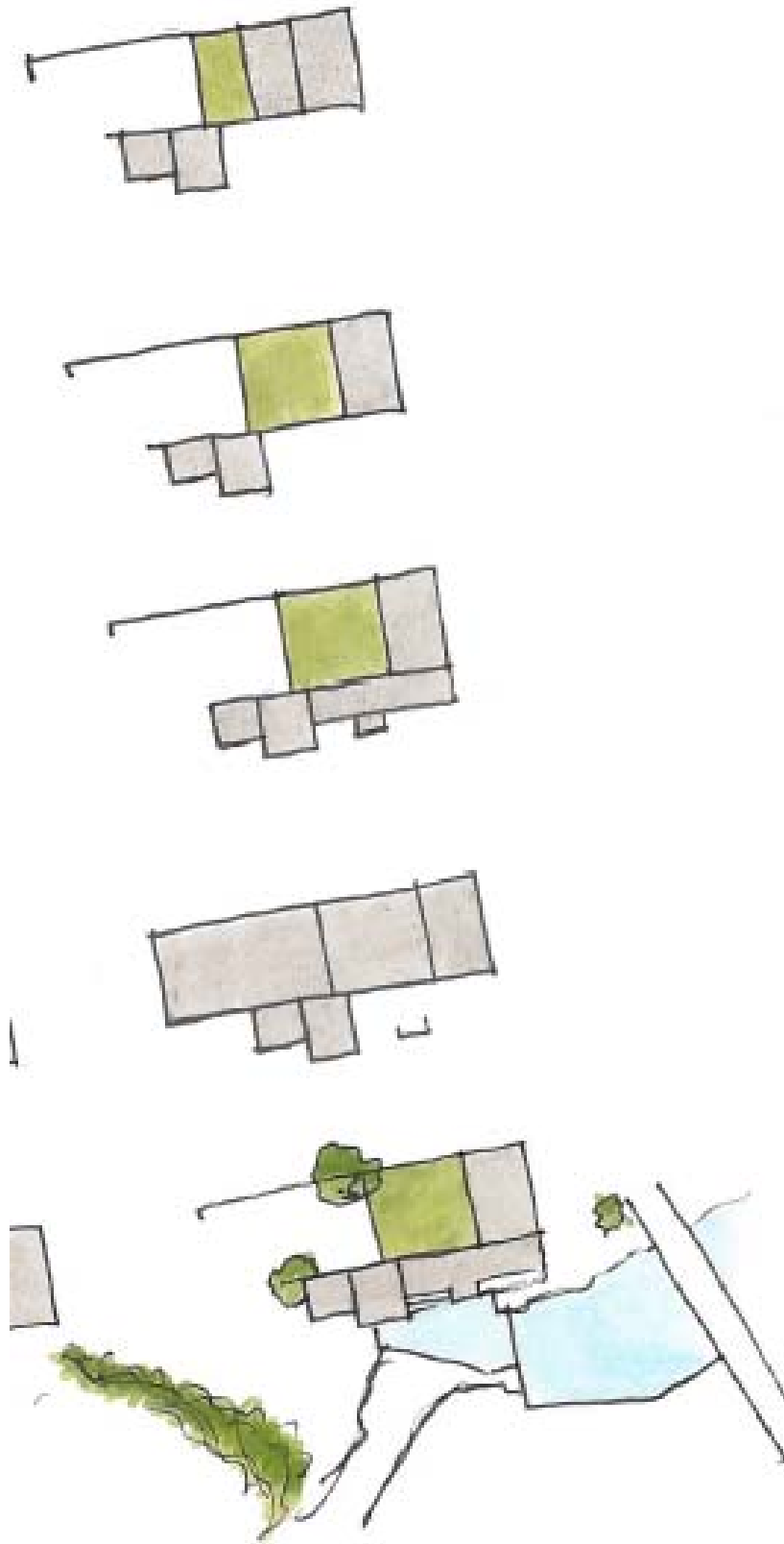
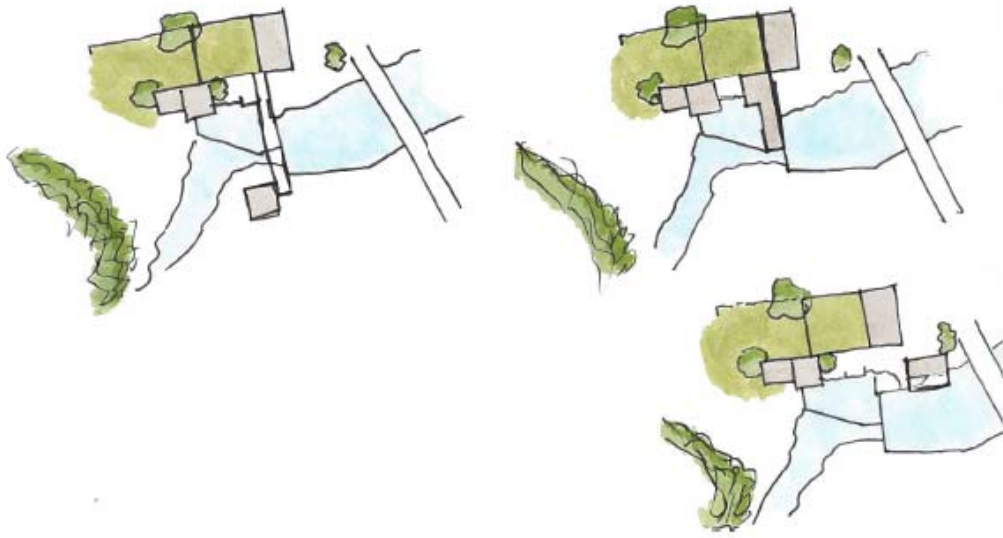


Figure 86 Massing explorations.

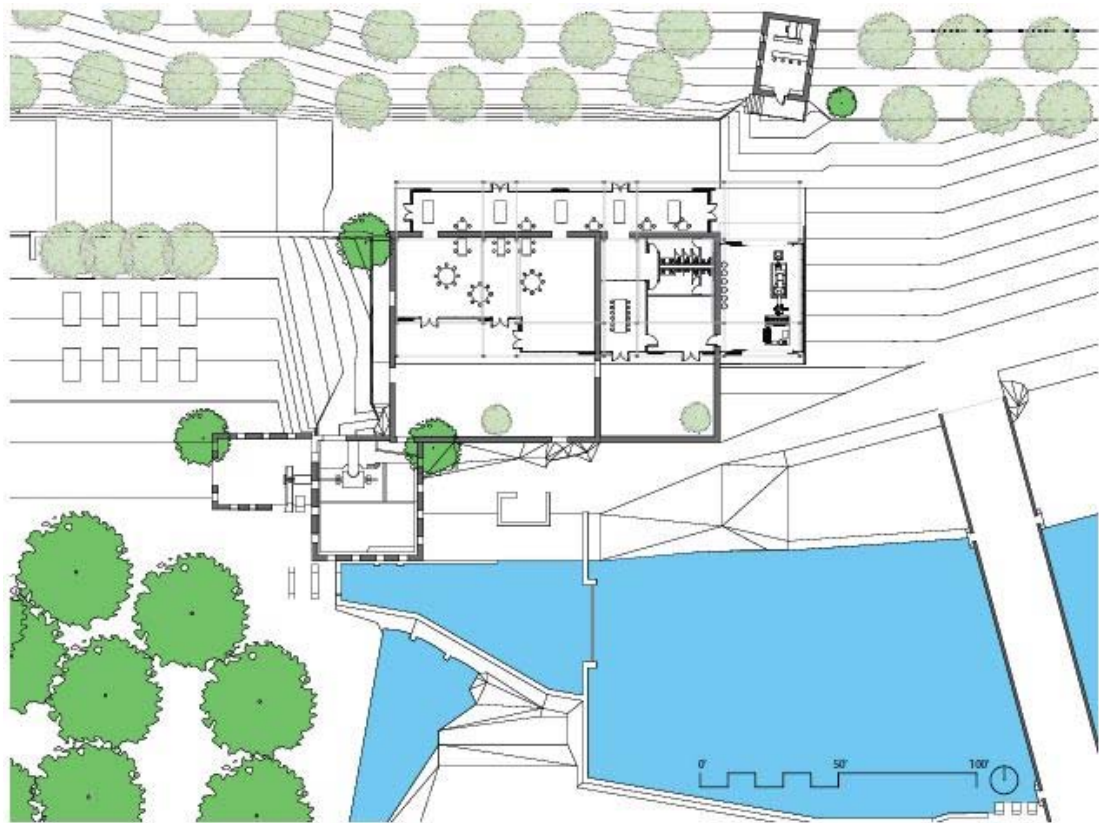


**Figure 87 Massing explorations.**

The introduction of the olive oil production process is facilitated by the addition of a new piece on the end of the building that acts as a hinge between the approach from the town and the approach from the bridge. A new event space is placed in the remains of the brick warehouse and support space in the remains of the stone warehouse. All three parts are connected by a hall space that provides views of the orchard terraces located on the hills. The old mill owner's cabin is reused as a tasting room and small office for the production activity. The milling room is easily accessible from the foot path and is also very visible, encouraging public participation in the oil production. The building is protected by movable oak lovers that can be adjusted to disperse sun light or enclose the building when not in use.

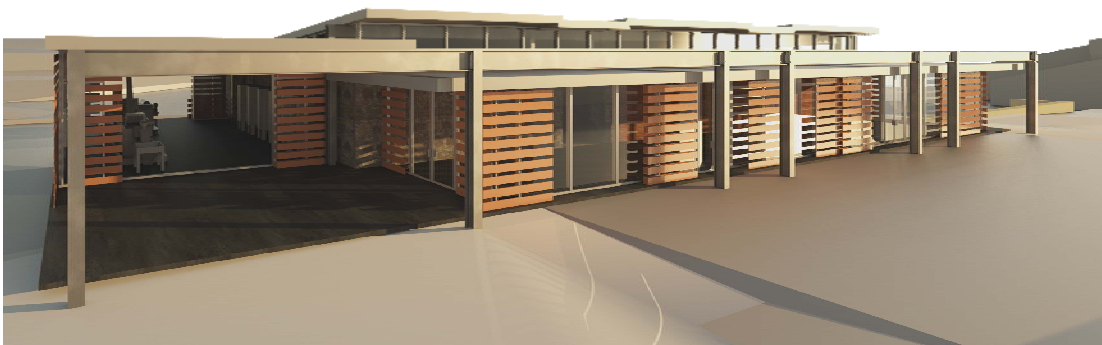
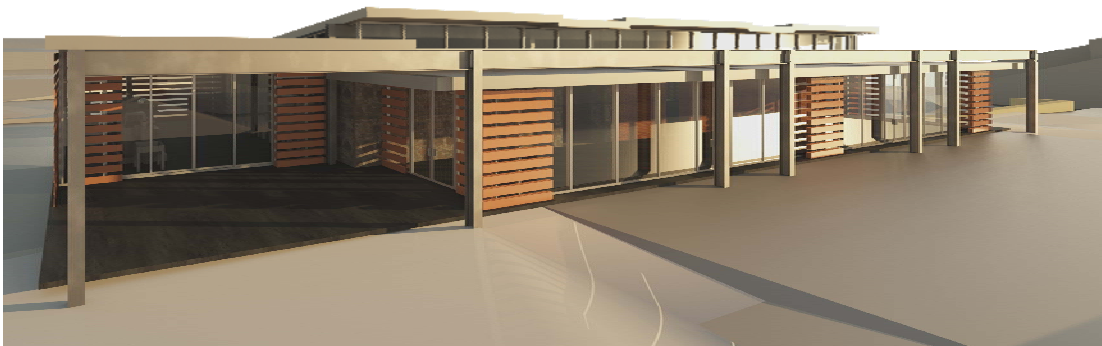
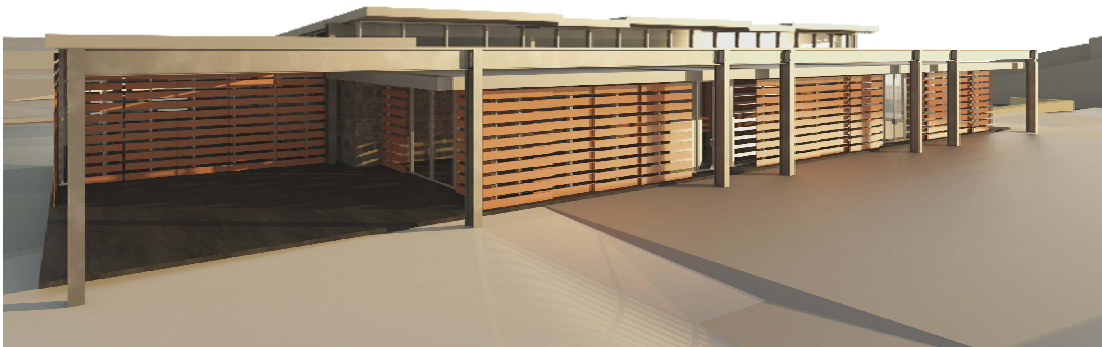
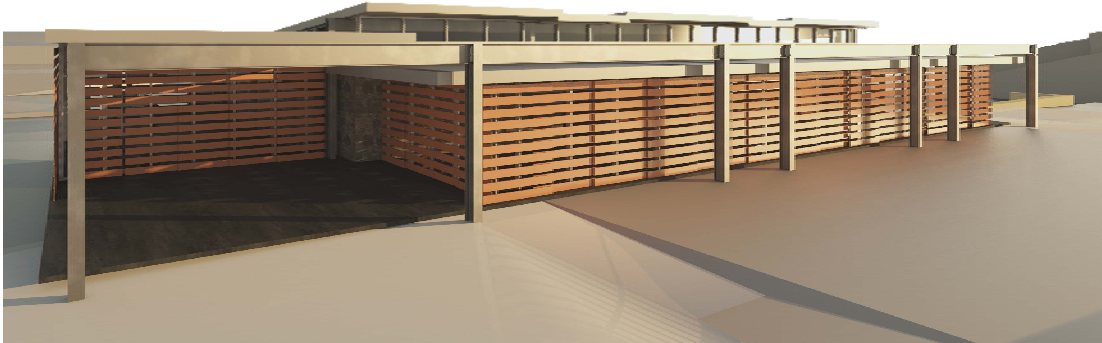


**Figure 88 View approaching the new building from the town. The hall portion hints at the new building contained in the ruins**



**Figure 89 Plan of new oil production facility and event space**





**Figure 90 Movable louvers of California Black Oak, which is endemic to the region, provide protection and flexibility**



June



December



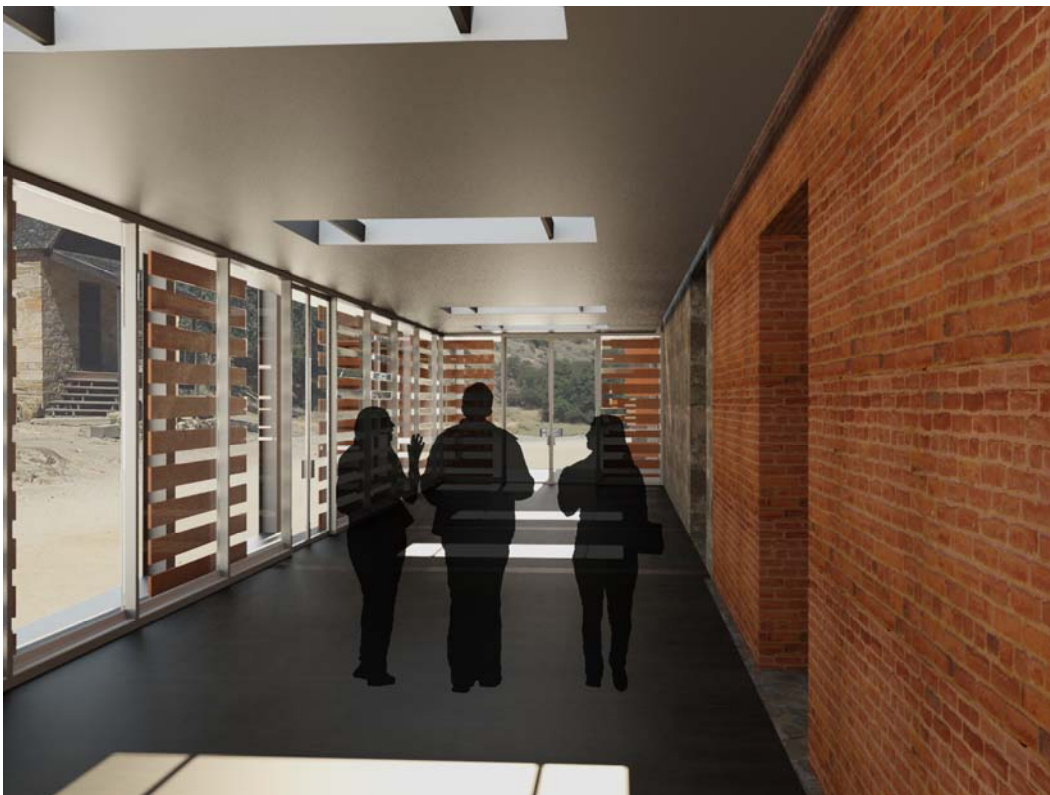
**Figure 91 The changing season provide dynamic lighting in combination with the louvers**



**Figure 92 Flexible event space for both community and visitor activities**



**Figure 93** The event space opens into the remains of the brick warehouse, creating a semi private outdoor space with views of the hills and the river through former doorways



**Figure 94** the hall connects the three programed spaces while providing views of the hills





**Figure 95** The production center and new additions use materials that contrast with the existing materials, continuing the tradition of additions differentiating themselves



**Figure 96** Sliding doors facilitate easy movement of olives and connect the production process to visitors

## Conclusion

The transformation of an unused ruin of historic value by integrating elements of the past to develop a new function has wider reaching implications. Derelict buildings are scattered throughout the country in almost every neighborhood, waiting to be reclaimed. As seen in my exploration at Knights Ferry, an underutilized place can be progressively transformed with a small investment of design, while highlighting its past and integrating it into the present. As designers and preservationists we owe it not only to our communities and ourselves to take an active approach to transforming these lost places into dynamic and vibrant spaces. This approach is not only responsible as a sustainable utilization of buildings, but also as an active way to demonstrate that the past is still reinvent and engaging in the present and future.



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