2021 Aydelott Travel Award

Student: Gabriel Laos
Mentor: Gregor Kalas Ph. D.

Sites:

- Pueblo Bonito
  - Architect: Chacoan People
  - Location: Nageezi, New Mexico
- Arcosanti
  - Architect: Paolo Soleri
  - Location: Yavapai County, Arizona
- Taliesin West
  - Architect: Frank Lloyd Wright
  - Location: Scottsdale, Arizona
- Dr. Franz Alexander House
  - Architect: Walter White
  - Location: Palm Springs, California

Institutional Information: University of Tennessee Knoxville College of Architecture and Design

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Biographical Sketch:

Gabriel Laos is a 3G Master of Architecture Student at the University of Tennessee Knoxville. This course of study is designed for students with no previous experience in design. He was chosen to receive the Aydelott Travel Award during his second semester of the three-year program.

Prior to commencing studies in architecture, Gabriel earned a Bachelor of Science degree from Northeastern University Boston graduating Cum Laude. He double majored in Finance as well as Marketing and double minored in two languages: German and Italian. The International Business degree program required studying abroad at a partner university and interning for foreign companies. Upon concluding his Bachelor degree Gabriel had lived, worked and studied

on three different continents communicating in three different languages.

After working in the financial services sector both in sales and recruiting in New York City as well as Los Angeles, a decision was made to pursue a latent passion that finally deserved the attention it merited. As an architecture student at the University of Tennessee Knoxville, he enjoys complementing classroom studies and projects with hand drafted drawings reflecting an interest in analog methods of representation in the digital age.

A native of Lima, Peru, a city rich in colonial architecture, Gabriel spent an important part of his childhood at his family's farm in the Lurín valley outside of the capital. The former cotton plantation of Cieneguilla holds a special place in his memories where he lived a rural life in the Peruvian coastal desert. It was inevitable that as an admirer of the desert that Gabriel's research would revolve around a desertic region until recently unknown to him: the American Southwest.

Analog Insistence:

Note taking, sketching and analog photography were the means of recording my travels throughout the Desert Southwest. Given the age of the buildings studied and the focus on temporality I thought it would be appropriate to practice a cherished hobby of mine. Film photography has been a personal outlet for creativity and curiosity for almost a decade. All the photographs included in this paper were shot on various types of film and a mechanical film camera from the 1970s equipped with a sole 35mm prime lens. Assisted by only an external light meter and no tripod, equipment considerations made provisions for the bare minimum to avoid malfunction and ensure consistency.

The reason I shoot with film is because it slows you down and forces one to carefully compose an image taking into consideration the changing patterns of light. In this way both architecture and film photography write with light. Because of the pause it invites greater thought and thus reinforces the intention of the photographer. Being an analog process, many more choices are taken by the practitioner ranging from film type (color, black and white, color slide), film speed (all images were shot on 100 ASA) to decisions about deliberate over/under exposure and even chromatic filters (these weren't implemented).

In slowing down we permit our faculties of observation to sharpen and become more sensitive in changing illumination. Over time gauging light and atmosphere becomes instinctive. It's precisely this instinct that we gain when practicing analog photography, hand drafting or any

manual activity that require our patience and attention. Of course, a program or algorithm is faster but instinct is decidedly more human.

The Protracted Scale of Time in the Desert South West

Desert living is very much about the landscape, one way to realize its dormant potential is through an architecture that seeks to work with nature. The desert outwardly may appear barren that but it isn't a *carte blanche*. The basic ingredients of architecture are light and mass. When the characteristics of these basic elements (mass and light) depart from expectations and take on new qualities, the modulation of these elements must adapt concomitantly. Massing is a question of material, technology and choice of structure making it a more malleable component, budget and availability willing. Light is welcomed in, filtered, blocked and shadows are cast by the elected massing. Shadows in the desert aren't just consequences of massing but an opportunity for respite and repose. Nevertheless, the architect cannot change the quality of light at a given site, it's an immutable feature that requires understanding and cooperation.

Desert light has a completely different quality to it when compared to other latitudes and regions. It bathes the landscape with sun and the bare rock reflects the light thus amplifying its effect. There's a sense of brilliant clarity corroborated by an azure sky. The result is a sense of a changing of scale through light, time seems to slow down and so does life itself. The passing of time is visible through the strata of rock and not through changing foliage. The rock indicates a far grander scale of time before our eyes. The temporality

of drought has led to adaptation in the desert. Many plant species and their seeds can become dormant for months, even years at a time. In the desert you realize that life is the exception, not the rule.

Ian McHarg would say the desert finds itself in a primitive state because of its highly entropic nature as the sun's energy cannot be harnessed by abundant plant life which would in turn support a much larger, diverse animal population. However, in the desert one focuses not on sylvian exuberance manifested as flora and fauna but, rather the potential for life to emerge. For this to occur a series of conditions must coincide all of which involve vital water.

The desert reminds us of an earlier time in Earth's history and exhibits a temporality that we in different climates are unaccustomed to. It's loath to divulge its secrets hastily, instead the desert reveals the results of processes that have taken many human lifetimes. Life in the desert is slow but unremitting.

Introduction:

I proposed to study four different buildings and sites within the Desert Southwest: Pueblo Bonito, Arcosanti, Taliesin West and the Dr. Franz Alexander House. This selection of desert buildings encompasses different approaches and mentalities to occupying the desert from the viewpoint of pre-Columbian Native Americans, a Midwesterner traversing the country to arrive at the desert, an Italian immigrant and a native Californian looking into the desertic interior of his home state. What attracts me to the desert is the rough, raw landscape; sweeping views of an arid plain, jagged, bare mountains protruding over the horizon and its indominable nature. It would seem whereas many parts of the United States have been settled in an ongoing fashion, here, an untamed, inviolable spirit prevails. The persistence of a rawness to the desert and its distinct cycles that operate on a different scale bring up questions about temporality and the scale of time. For instance, how does the passage of time relate to human activity and the landscape? Is it possible to occupy the past and future but not the present? How does dormancy effect a site? And lastly, what's necessary to transcend the vicissitudes of time and become atemporal?

The desert is a place of extremes: hot, penetrating sun, cold nights, altitude, parched valley floors and dunes. It's a less than subtle reminder of nature's force. Sun bleached valleys, escarpments and snowcapped peaks are juxtaposed with life giving rivers, deep shaded canyons and oases that support hardy flora as well as resilient fauna. Life because of limited resources is less pervasive

than in temperate climates. It's precisely this scarcity which makes the presence of life in the desert that much more precious and an important factor to consider before an architect intervenes. The role of plant life and water erosion is limited so landscapes evolve relatively slowly over a longer window of time when compared to other regions. By virtue of this characteristic a different scale of site evolution occurs relative to lush climes. All these factors must be brought into consideration when designing an architecture appropriate to the desert. A viable solution cannot negate factors (largely climatic and site related) out of the designer's control and these limitations must be viewed as opportunities to seat the building into its context. Additionally, temporality must be taken into consideration; desert architecture requires a different rhythm.

Perhaps the exigencies of the Desert South West lead us to a better-defined set of *partis pris* relative to other areas in the United States. The paucity of plant life allows one to explore elemental shapes, to consider rock formations and materiality through the unique desert light. Time or light changes significantly in span of just twenty-four hours with hot days and cool or even freezing nights. Massing is also important; the building's envelope must be able to absorb significant amounts of daytime heat and retain it to dissipate slowly as the air cools at night. The Chacoan people at Pueblo Bonito were well aware of this property and built thick stone walls. Using natural ventilation and evaporative cooling via a body of water can also bring down temperatures to comfortable levels during the heat of the afternoon and once more stabilize them at night. This

is why large pools of water can be found at Arcosanti, Taliesin West and the Dr. Franz Alexander House in Palm Springs. Here we see architecture grasping the temporality of changing temperature and attempting to mitigate extremes. as a backdrop for Palm Springs and the Dr. Franz Alexander House.

In the desert a return to fewer but more pressing challenges begs landscape analysis coupled with formal exploration so that a building may coexist with the desert. Generic solutions don't fare well, a design that addresses fundamental issues of desert living is more successful because it will weather the trials of time better. In short, nature is intricately complex, even in the desert where outward appearances can be deceptive like a mirage.

This paper will explore the physical, spatial, theoretical qualities of each site and will contemplate their existence through the lens of temporality and the scale of time. In doing so questions about what brought the architects to the desert will be addressed as well the formal qualities of the individual buildings. Lighting and massing will be determining factors that set the tenor for such discussions. Also worth noting is local geology, siting, the use of materials, how are they sourced, how the projects were made and who did the building.

My goal ultimately is to gain a better understanding of temporality with the intent to craft an architecture native to the desert. Not just in a material sense, but one that acknowledges a different scale of time. The desert may appear bare, but strata of complexity abound.

Pueblo Bonito: Largesse of the Landscape

Fig. 1. Stopping on the dirt road to Chaco Canyon, San Juan County, New Mexico. (photo: author)

Sunrise provided a backdrop to the final leg of my journey to Chaco Canyon, New Mexico. The cool air carried with it the freshness and promises of a new day. Backlit clouds slowly changed from dull purples tinted with blue to saffron and vermeil-fringed pillows. They graced the otherwise pale blue sky while most were still fast asleep. A country road led me to a highway with motorists few and far between. The earth had a Sienna hue and where there were hills, their umbra cast long dark brushstrokes onto the valley below. Turning off the highway to a rural road my pace slowed not just because of the increasingly rustic tracks but due to the scenery that seemed grow more beautiful with each passing mile. Eventually, the black ribbon of asphalt ceded to the terrain, giving way to gravel, sand and silt. The earth path crunching and slipping underneath leads visitors through a

landscape whose immensity dwarfs the few visible artifacts of people. A broad horizon, escarpments tipped with shadows and fresh shoots of green after the summer monsoon complete the awe-inspiring setting. As the sun rises in the sky, the blue overhead intensifies to a brilliant azure and the craggy plateaus shed the long shadows of earlier to reveal their desert patina of ochre. The late morning sun washes out the values of the rich colors and eventually by noon all is bathed in brilliant light. The Fajada Butte announces the end of the driving portion of the trip and from here on the visit is by foot.

Fig. 2. Fajada Butte, San Juan County, New Mexico. (photo: author)

The state of ruination at Pueblo Bonito isn't like that of Roman monuments in Italy surrounded by an urban setting. Rather, Pueblo Bonito is of the rock and contained by canyon walls, hewn with stone tools into modular pieces that when fragmented through the passing of time eventually return as pebbles and dust on the canyon floor. It is

of the earth and to the earth it shall return one day but for now it persists.

The transition from the quotidian to the atemporal was a ninety-minute exercise in preparing to see Chaco Canyon and Pueblo Bonito by first understanding the landscape and its unique context. Throughout the drive there were no brusque changes, simply a gradual shift in time, light and material qualities. In visiting Pueblo my goal was to see architecture at an elemental level through the lens of temporality and found rich layers of complexity enveloping the site in unexpected ways.

History

At over 6,300 feet in the New Mexican high desert this site would not be considered an ideal location for agriculture given a brief growing season and a paucity of water as well as other resources like timber. And yet, the hardy Puebloan people made this site the center of their culture, eventually becoming an important regional site.[1] Chaco Canyon is situated in the heart of the San Juan Basin that makes up the southeastern edge of the Colorado Plateau geological region. The area is noted for large, expansive sedimentary rock formations which through erosion have been transformed into plateaus, mesas, buttes.

[1] National Park Service. 2016. *Chaco Culture*.

Fig. 3. Upper strata of the Menefee sandstone formation, San Juan County, New Mexico. (photo: author)

Though there is shale and coal in the older strata, the canyon walls and cliffs are primarily sandstone from both the Menefee and subsequent Cliff House Formation. The Menefee formation has the curious quality of being able to erode from under the Cliff House Sandstone resulting in heaps of rock accumulating on what is referred to as a talus slope.[2] It would appear Pueblo Bonito is of this very material.

[2] National Park Service. n.d. "Geology of Chaco Canyon Formation." Accessed November 17, 2021. http://www.npshistory.com/brochures/chcu/geology.pdf.

Fig. 4. Talus slope to right and Pueblo Bonito in Chaco Canyon, Nageezi, New Mexico. (photo: author)

Pueblo Bonito at Chaco Canyon was an administrative, ceremonial and economic nexus for the Puebloan culture. From approximately 850-1150 AD the great house or Pueblo accreted to what we see today.[3] The inhabitants and builders of this urban refuge in the high desert of New Mexico had working knowledge of astronomy and even measured the gradual changes in moon phases over long periods of time on petroglyphs. Though much of their architecture was rectilinear, Puebloans considered siting a primary consideration for their architecture and this resulted in a south facing hemicycle design to increase solar gain in the cooler months.

Pueblo Bonito to date stands as one of the best-preserved examples of Pre-Colombian architecture in North America and during its

[3] National Park Service. 1982. "Chaco Canyon." NPS History. 1982. http://www.npshistory.com/brochures/chcu/1982.pdf.

peak connected over one hundred fifty communities in the four-corners region.

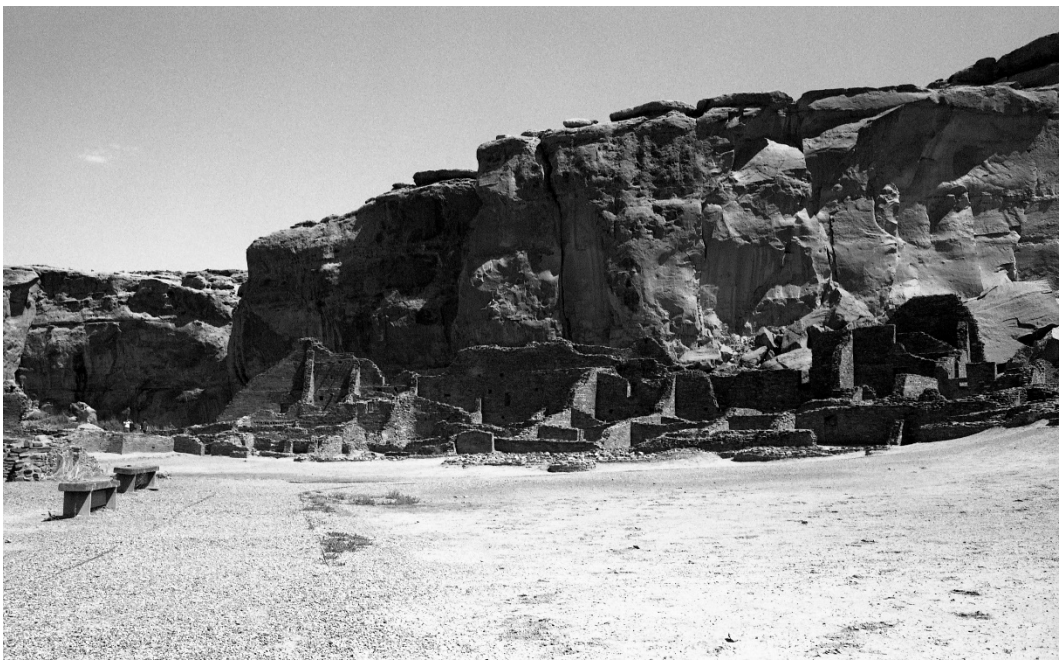


Fig. 5 Curving of adjacent buildings into a hemicycle from western plaza at Pueblo Bonito, Nageezi, New Mexico. (photo: author)

Slowly, but surely over the span of centuries, Puebloans crafted a public architecture that eventually would occupy a monumental scale. The material used for most of the architecture was sandstone for the stereotomic walls quarried locally complemented with wooden lintels, beams and bracing of oak, piñon, ponderosa pine, and juniper from forests found as far as 75 miles away. The taller walls notably have wider, thicker bases to support a floor above the ground level. Pueblo Bonito reached at its height four stories tall, offered more than six hundred rooms and had approximately forty kivas or sunken public spaces.[4] These kivas are especially interesting because unlike the

[4] National Park Service. 2016. Chaco Culture.

sunken open-air plazas seen in other Pre-Colombian cultures, these spaces when executed at a smaller scale were given a hemispherical roof using timber and then backfilled with soil. It was accessible from above through an oculus via a ladder from the ground level. Kivas are believed to have been places where important ceremonial and public rituals took place. Anecdotally, many point to the formal similarities between the Puebloan kiva and the Navajo Hogan with the exception that the latter has its wooden frame above ground. Speaking of timber, archaeologists have estimated that nearly a quarter million trees were harvested from surrounding areas to build Pueblo Bonito. Dendrochronology has dated the wood used to be up to two thousand years old, and was principally sourced from the Chuska mountains fifty miles to the west.[5] Though an arroyo can be found at the bottom of the canyon, few trees grow there as water is not found year-round.

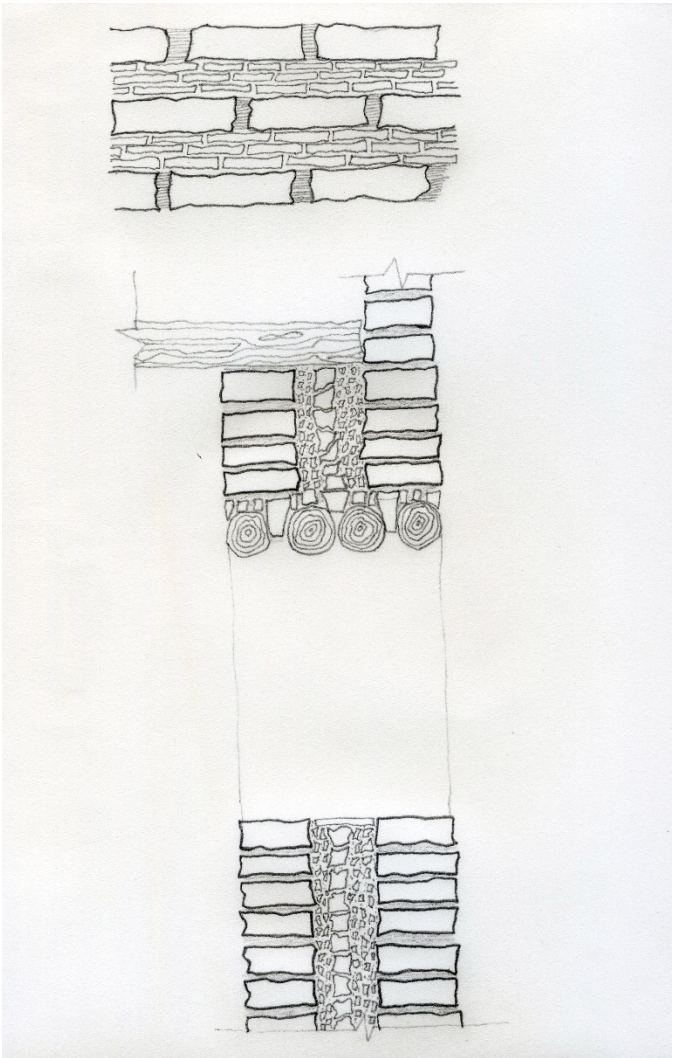
[5] Visitor Center Chaco Culture National Historical Park. n.d. Telling Time with Trees.

Fig. 6. Kiva in western part of Pueblo Bonito, Nageezi, New Mexico. (photo: author)

Despite the continued use of stone tools to till and build their Pueblo, the Chacoans participated in and contributed to a highly sophisticated trading network that stretched as far south as modern-day Mexico. Remains of seashells, cacao beans and macaw feathers have been found as well as copper bells to support this claim. Furthermore, the black and white Cibola pottery commonly unearthed at Chaco Canyon is not native to the site and was imported from nearby communities. One cannot overlook the broad commercial ties of Pueblo Bonito to neighboring communities that extended for hundreds of miles making it an important place of commerce and exchange; be it of material goods or religious customs and administrative initiatives like road building. Moreover, the road network, besides the practical benefits, may have had an important impact of the world view of the Chacoan peoples and how they related to other cultures. It's fascinating to consider the degree of connectivity in the context of limited technology whereby the roads were the conductors of this dialogue.

By the early 1100s Pueblo Bonito reached its peak and distinguished itself from the approximately two hundred great houses of the region; yet this apogee was not to last. During the late 1100s many of the residents of Pueblo Bonito went on to found other Chacoan settlements. The reason for the decline of the Chaco culture at Chaco Canyon is unknown. Some suggest internal and external conflict may have scattered the inhabitants of the settlement, however, there is little archaeological evidence that suggests this. It's more likely a

prolonged period of drought would have forced farmers to seek new lands to grow their crops. A steady decline ensued and despite dwindling numbers of canyon dwellers, occupation of the site persisted until the mid-1200s. It's stipulated that the population of Chaco Canyon shifted to what's known today as the Aztec Ruins, Mesa Verde as well as the Zuni Region to the south and west of Chaco Canyon which were sites that provided the arable land and rainfall necessary for agriculture.[6]



[6] National Park Service, 2016.

Fig. 7. Site sketch of coursework and sectional qualities at Pueblo Bonito, pencil on vellum. (drawing: author)

Impressions

One quickly notices on the walk to Pueblo Bonito that in the summer months shade is a rare and welcomed relief in an otherwise treeless landscape. Neighboring dwellings were often built abutting the canyon walls themselves and sometimes into the very rock. This creates the effect of a human rookery. The sensation of being so exposed under cloudless skies makes shady nooks and crannies seem appealing. It's little wonder desert dwelling animals make their dens in the earth. Around the site is an arroyo which has running water during the monsoon season. Also, a small waterfall could be sighted behind the pueblo dropping off from the canyon which when I visited was only as a dark stain indicative of recent water flow. Since Pueblo Bonito had to incorporate a program large enough for hundreds if not thousands of inhabitants during later years, it provided the sheltering quality of these early constructions at a grander scale. Arguably Pueblo Bonito is a transmutation of the landscape by humans to make the high desert inhabitable.

Fig. 8. Chetro Ketl neighboring Pueblo Bonito in Chaco Canyon, Nageezi, New Mexico. (photo: author)

Moving into the interior a cool breeze permeates the walled spaces. The window openings are held up with wooden lintels that use multiple rounded profiles to support the weight of rock above. One can imagine that when there were roofs, the spaces must have been very somber and dark; cave-like even when compared to the resplendent plaza. The sun-blasted sandstone wearing its desert varnish is the principal building material of Pueblo Bonito along with wooden beams and rubble infill for the walls. The smaller kivas are now fully exposed and lacking their former roofs stand out because of their finished floor level relative to the rest of the site. In this raw state, their walls project circular shadows onto the earthen subfloor in contrast to the shadows cast by the orthogonal superstructure. At Pueblo Bonito shade and shadow become compositional elements of their own. It is in fact the current state of ruination that emphasizes this

quality in the absence of its former program. Modern architects have used a self-imposed austerity to emphasize the qualities of light and shadow such as Louis Kahn and Tadao Ando. For them and the desert, shadow is the ultimate decorative element.

Fig. 9. Materiality and shadows at Pueblo Bonito, Nageezi, New Mexico. (photo: author)

Another feature that is fascinating at Pueblo Bonito are the thresholds. The transitions to and from the walled interior to the exterior can be dramatic. At a more conceptual level, one can contemplate the the changing scale of these thresholds from the door frame, room, kiva, sequence of rooms and beyond into the landscape. The roofs of Pueblo Bonito maybe gone but the doorway remains indicating a point of transition that was passed innumerable times by people long forgotten. It still partially functions, slowing the visitor down and indicating the beginning of a new space. If the doorway is a threshold to a new room, one wonders if at a larger scale

the negative space between massing volumes function in the same way. For instance, the low entrance to a kiva invites viewers to consider the surroundings not in an open rectangular plaza but rather in a low walled circle. The sky overhead is still the same as before but the space is modulated different by the large circular shape. Increasing in scale, is the space between the many rooms of Pueblo Bonito separated by the large south facing plazas within the site. The scale of the massing and the large interstitial voids seem to hold that space much like a doorway but the space appears to be slipping away. The reason for this may lie with the area of the plazas that begins to outsize the walled environment and serve as a transitional buffer to the landscape. Yet at another, grander scale, are the canyon walls themselves. When a gap appears in the escarpment one has the impression that the void of the canyon spills out toward the horizon, away from the viewer. Here time and space slip away at a rate greater than any public space such as the plazas at Pueblo Bonito and far more than any doorway.

The architecture unintentionally now frames marvelous landscape views perhaps more than it did when inhabited almost a millennium ago. The perforations created to make doorways, windows and walls generate interesting sightlines. The stereotomic sandstone walls in different states of ruination can coincide, skew or guide the eye of the viewer to an interior wall, a nearby courtyard, a far-away building, kiva and perhaps most poignantly, the escarpment. There is an austere yet compelling aesthetic quality to these views that interrelate Pueblo Bonito to its site in a profound way that had it been restored would

lack this anchoring property. This quality took me completely by surprise because I was expecting disorder and instead found cohesion to a greater context, in this case, the landscape.

Fig. 10. Canyon wall opening framed by remaining massing elements of Pueblo Bonito site, Nageezi, New Mexico. (photo: author)

Fig. 11. Canyon wall opening framed by building threshold and deteriorated wall section at Pueblo Bonito, Nageezi, New Mexico. (photo: author)

Ruination has blurred our understanding of scale and boundaries. Norberg Schulz discusses the latter and covers their confines, limitations and implied points of dissolution.

> The basic property of man-made places is therefore concentration and enclosure. They are "insides" in a full sense, which means that they "gather" what is known. To fulfill this function, they have openings which relate to the outside. (Only an inside can in fact have openings). Buildings are furthermore related to their environment by resting on the ground and rising towards the sky. Finally, the man-made environments comprise artifacts or "things", which may serve as internal foci, and emphasize the gathering function of the settlement.[7]

This quote provokes the reader to revisit what is typically an established concept under a new light, specifically, "Only an inside can have openings."[8] Arguably, even a natural feature as large as a canyon can share this quality. More traditionally speaking, these perforations or openings (e.g. windows and doorways) often look into a successively more open condition be it a courtyard, street scene, public square or landscape. There may be a succession of openings each one admitting more than the last until we arrive at a condition that is far beyond the human scale. "Whereas landscapes are distinguished by a varied, but basically continuous extension, settlements are enclosed entities. Settlement and landscape therefore have a figure-ground relationship. In general, any enclosure becomes manifest as a 'figure' in relation to the extended ground of the landscape."[9] The author makes a distinction in use of landscape as a territory by

[7] Christian Norberg-Schulz, 1979, *Genius Loci: Towards a Phenomenology of Architecture*, (New York: Rizzoli, 1979), 10.
[8] Norberg-Schulz, 10.
[9] Norberg-Schulz 12.

people that wish to contain it in a scale that is fathomable and that landscape that rolls on far beyond the horizon.

Then there is the very nature of these boundary lines, these imaginary lines of projection which indicate some programmatic intent. Are they meant to be "hard" lines which prohibit circulation past a certain point or are they to be understood as thresholds that indicate a change in spatial quality and place? Thinking about these ideas proposed by Norberg-Schulz in the context of Pueblo Bonito highlight the fluid state of the decayed enclosure and continuous extension at Pueblo Bonito exaggerated by its state of ruination. Temporality at Pueblo Bonito has allied itself with the landscape to create harmonious attributes even in a state of decay.

Given that Pueblo Bonito is at different states of ruination, one aspect of this deterioration is how the wall sections once reduced into ever thinner upper stories come to resemble buttes. A wall what once enveloped many rooms now no longer holds the space together and consequently releases the space once contained into the canyon. In the absence of compressive elements, expansion dominates which as a visitor has the effect of making one look out onto the horizon. This further reinforces the role of the inextricable desert landscape. The wall is slowing returning to the landscape it emerged from.

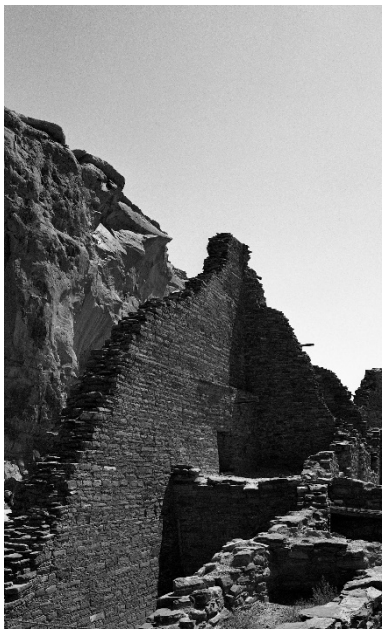


Fig. 12. A man-made wall section over time comes to resemble the landscape it emerged from in a butte like fashion, Nageezi, New Mexico. (photo: author)

The precarity of life in such a setting is a testament to the resilience of the Chacoan culture whose existence was closely intertwined with the arid earth that they were in an unforgiving communion with. The climate and landscape defined every aspect of the lives of these people who practiced rudimentary agriculture in a difficult environment. This stress on natural resources developed the impetus for trade which incentivized the urbanization of Chaco Canyon. Pueblo Bonito a thousand years on demonstrates to us that desert living is very much about the landscape. One way to realize this dormant potential is through an architecture that seeks to not only work with nature but arguably become an extension of her.

When the scale of the landscape is felt at such an immense level the broad open spaces make time slow down, easing into a lithic pace. The silence that blankets the desert is interrupted only by passing

birds or the occasional hum of insects. Here the temporality of human construction through ruination may have delayed our understanding of the built environment but reinforced our comprehension of where Pueblo Bonito is sited.

Fig. 13. Delicate clouds passing over jagged rocks with an exposed wall section of Pueblo Bonito in the lower left quadrant, Nageezi, New Mexico. (photo: author)

Arcosanti: Architectural Experimentation

Fig. 1. View of the Agua Fria canyon from the Arcosanti guesthouses, Yavapai County, Arizona. (photo: author)

The road worn rental wheezed into the thin mountain air of Flagstaff, Arizona surrounded by verdant pine forests and imposing peaks. This was no desert but it would be our gateway. The car zipped downhill along the highway, following the rolling hills that continued to tumble into lower altitude. The trees soon disappeared and the scrubland that replaced them soon ceded to sparser vegetation and seasonal grassland. Now in the high desert, passing Sedona, the rock took on multiple hues of red and earthen tones. It was visibly worn by the passage of time with little plant life to hide these scars. At an unassuming highway junction an exit led to a dirt road with signage. Past the cattle guard, small, hardy cacti dotted the ground in an act of resistance. Eventually the path narrowed obliging the driver to

take a sharp left turn downwards onto a road in the Agua Fria Canyon. To the left: rock walls, to the right: a precipice, behind: a sinking sun and before us: Arcosanti. It clings to the canyon walls and appears to leisurely hang off the side surveying the arroyo, towering six stories into the sky. Though it may be an imposing construction especially when compared to the immediate surroundings, it doesn't announce its presence by jutting over the canyon walls in a conspicuous fashion and is in fact only visible once within the canyon.

Fig. 2. Arcosanti in the morning from the dirt road entrance for overnight visitors, Yavapai County, Arizona. (photo: author)

The tires whisked gravel about until reaching the end of the road punctuated with a man-made lake. To hear duck calls and the buzzing of insects in the high desert is an unexpected surprise. In this sight visit I sought to understand how faithfully Arcosanti, Soleri's physical manifestation of architectural principles, represented the

authors lofty goals. Needing to stretch my legs after driving from New Mexico I went on a small hike and was rewarded with a view I had only seen in photographs. A panoramic view of Soleri's built work with the tell-tale crane looming in the background and workers busily remodeling a roof. Arcosanti remains an unfinished job site even after the founder's death in 2013. In many ways, Paolo Soleri's vision was too grand to condense into one lifetime, today his legacy and foundation offer us an urban laboratory full of ideas and unexplored possibilities.

Tomiaki Tamura, longtime friend of Soleri, shared with me that while most daydream, Soleri attempted to bring his dreams to life during his waking hours. The intellectual author of Arcosanti was a man deeply versed with the past, unsatisfied with the present and fascinated by what the future could hold. His production of arcologies hinted at a multiplicity of futures based on the tenets of the past and needs of today. Arcosanti, an urban laboratory in the high desert, continues to serve its original purpose despite the passing of its founder. What others have labeled as an ensemble of Roman ruins at Cordes Junction, I regard as objects of a Soleri dreamscape that defy our understanding of temporality. Arcosanti is of the past and simultaneously the future but not of the present.

Fig. 3. View of Arcosanti from across the Agua Fria Canyon, Yavapai County, Arizona. (photo: author)

History of Arcosanti

Paolo Soleri was a graduate of the Turin Polytechnic and earned his degree in architecture. After studying with Frank Lloyd Wright he settled in Arizona's Paradise Valley with his young family in 1955.[10] That was the same year he founded Cosanti whose origins are the fusion of the Italian words for thing "cosa" and opposition "anti". This was a criticism and ideological negation of a society Soleri saw as decadent and ultimately hampered by excessive consumerism. It was at Cosanti in collaboration with Arizona State University beginning in 1958 that Paolo Soleri offered immersive studio courses for students allowing them extended stays on the premise.[11] There, techniques such

[10] Claire C. Carter, Larry Busbea, Garth Johnson, and Jonathon Keats. *Repositioning Paolo Soleri: The City Is Nature* (Scottsdale, Arizona: Scottsdale Museum of Contemporary Art, 2017), 23.
[11] Carter et al, 25.

as screen printing, silt cast concrete and foundry work were used to explore the architectural visions Soleri drafted on long sheets of butcher paper. In 1963 Soleri became an associate professor at ASU and in 1965 his scrolls of other-worldly architectures were featured at the Museum of Modern Art[12]. 1969 was a pivotal year for Soleri when his book describing the concept of arcology was published titled *Arcology: The City in the image of Man*. Having now outgrown his backyard in Scottsdale and met with commercial success with his bells, Soleri decided to extend the reach of his work by expanding a foundation. He established Arcosanti in the high desert seventy miles to the north at Cordes Junction in Yavapai County, Arizona where he acquired 800 acres to test his provocative thesis on urban implosion and experiment with arcologies, both of which will be addressed in the following page.

Fig 4. Agua Fria arroyo below Arcosanti, Yavapai County, Arizona. (photo: author)

[12] Carter et al, 30,31.

Construction at Arcosanti began in 1970, and has since its inception been described by the Cosanti Foundation as an urban laboratory. Soleri aimed to create a sustainable model of urban development in the high desert country of Arizona combining the ancient with the modern. Over the years it's estimated 6,000 volunteers have lived, learned and helped build Arcosanti under the tutelage of Soleri. Many of the thirteen separate buildings, accommodating at any given moment about one hundred people (despite the goal for 5,000 inhabitants), were constructed using earth casting. This a process traditionally used in adobe construction to used here to cast concrete structural elements utilizing the ground as formwork. The collection of buildings provide housing for the volunteers, workshops for construction as well as the foundation's bell foundry and ceramics studio.

Fig. 5. Arcosanti viewed from the man-made lake and wetlands habitat at the rear of the site, Yavapai County, Arizona. (photo: author)

Arcology, as the name implies, is the union of architecture with sustainable ecological practices. The underlying belief takes cellular development as a model for cities, drawing upon the ways cells evolve in nature and become increasingly complex through refined systems leading to miniaturization. Taking this idea from the minute scale of the cell and imposing it on the larger landscape, Soleri states, "In an arcology the built environment and the living processes of the inhabitants interact as organs, tissues and cells do in a highly evolved organism."[13] If urban centers were to uphold these ideals they would evolve and grow like living beings as opposed to purely abstract constructs which might suppose a potentially unbroachable distance from the people it aims to serve. Arcology recognizes population growth, pollution, energy/natural resource depletion, food scarcity, and quality of life as areas of investigation and ultimately determinants of urban success. To achieve these ends Cosanti proposes in Soleri's own words to promote, "the radical reorganization of the sprawling urban landscape into dense, integrated, three-dimensional cities in order to support the diversified activities that sustain human culture and environmental balance."[14] Essentially arcology sought to be practical, resource conscious and condensed.

The aspect of urban implosion refers to consolidating where one resides, eats, drinks, works and socializes to a relatively small perimeter. In the drawings of these arcologies Soleri generalizes the

[13] Paolo Soleri and Lissa McCullough. *Conversations with Paolo Soleri*. (New York: Princeton Architectural Press 2012), 45.
[14] "What Is Arcology? The Arcology Concept,"Accessed November 21, 2021, Arcosanti Organization, https://www.arcosanti.org/arcology/.

functions such as waste management, production, commercial districts, education and civic affairs. All of these are stacked on top of one another in concentric circles and surrounded by rings of residential housing and additional rings at a further distance that supply food production. Ideally, these practices would make urban living compact and leave rural areas free of suburban sprawl. Tract homes and extensive road networks wouldn't be necessary in a world with arcology. Soleri in 1977 described the notion of urban implosion:

> The problem I am confronting is the present design of cities only a few stories high, stretching outward in unwieldy sprawl for miles. As a result, they literally transform the earth; turning farms into parking lots, wasting enormous amounts of time and energy transporting people, goods, & services over their expanses. My solution is urban implosion rather than explosion.[15]

Soleri was an idealist with pretensions of building a future for humanity unlike the urban centers of the second half of the 20th century. This struck a chord with disaffected youth in the early 1970s seeking social change against the grain of prevailing political currents. It was these young men and women that came to labor for free and entertain the possibility of a reality so distinct from their own experiences. Soleri's architecture provided a means of exploring meaningful alternatives for them. He nevertheless distanced himself from other counter culture movements and maintained his status as *sui generis* by referring to the hippies among others as luddites in a 1974 televised interview with Paul N. Ylvisacker.[16] In 1978 a tragic fire caused by vehicular explosions ended the Art and Environmental

[15] Cosanti. 2020. "About Arcosanti | Historical & Architectural Site in Arizona." Arcosanti. 2020. https://www.arcosanti.org/about/.
[16] Carter et al, 185.

Festival at Arcosanti and the resulting financial and legal repercussions stunted growth for decades to come. Job site injuries incurred by volunteers and visitors further compounded problems at Arcosanti.[17] Personally, Soleri suffered the unexpected death of his wife Colly in 1982 and his poor health during this difficult period halted the once ebullient development of arcologies and curtailed many projects.[18]

His organization today is interested in, "a new urban paradigm geared towards cultural evolution, frugal resiliency, and balance with nature." Arcosanti stands as a means to achieve these goals and whether we collectively as humanity decide to embrace these precepts is one matter, however, at Arcosanti they explore not what it is, but what could be.

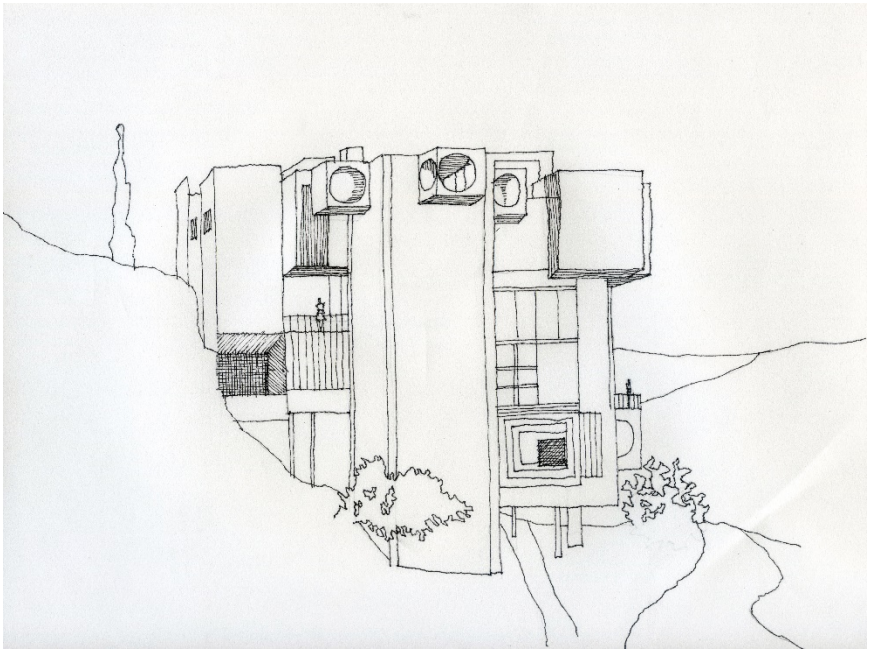


Fig. 6. Sketch of Arcosanti from canyon wall, India ink on vellum. (drawing: author)

[17] Carter et al, 35.
[18] Carter et al, 35.

Fig. 7. Arcosanti main building and visitor's center, Yavapai County, Arizona. (photo: author)

Impressions

One cannot help but to compare Arcosanti and Chaco Canyon. Arcosanti and Chaco Canyon were meant to be occupied year-round and were aided by the fact both are found at higher elevation. Arcosanti could be considered a modern-day pueblo, at a modern scale with modern materials and conveniences. Like a pueblo it serves as place of exchange for people, provides housing, is surrounded by small tracts

of farmland that serve the year-round population and the public spaces created resonate with a religious tone. Moreover, like the pueblos of the past, it was built with communal labor. Soleri may have had an architectural background yet his means of construction were adjusted to the limited skills of his volunteers and budget constraints. Resembling handicraft more than the professional practice of Frank Lloyd Wright and the architects of Palm Springs like Walter White, Arcosanti is a continuation of the building practices at Chaco Canyon more so than what we're familiar with today.

Moving onto Arcosanti itself, aesthetically speaking I could imagine Pier Paolo Pasolini shooting a film on this location. Others have been less complimentary and said its akin to a Roman ruin. Baudrillard who openly criticized Soleri for his arcology proposals in 1969 stayed at Arcosanti in the 1980s.[19] Arcosanti can elicit strong reactions on either end of the spectrum, peaking my own curiosity. I had the opportunity to stay at Arcosanti for two nights and was taken aback by the site and Soleri's approach to building. The guest houses are perched atop terraced gardens and the interiors feature ceilings adorned with Soleri's non-representational art work in intaglio. Accommodations feature only the essentials and the location is isolated but one visits Arcosanti for the complex and its grounds. At the end of my second day at Arcosanti after a site tour I was able to speak to Hanne Sue Kirsch, archivist at Arcosanti and Tomiaki Tamura a Japanese architect who was a close friend and confidant of Paolo Soleri. Both of them were more than generous with their time and our

[19] Carter et al, 35.

conversation allowed me to better understand the scope of Soleri's work.

What struck me first was the way both of them spoke about and described Arcosanti. Near the end of the interview Kirsch admitted "This place gets into your bone marrow," it's so unique and appealing to some that it becomes an inseparable part of their lives. Kirsch remarked that Soleri was very much a sculptor, enamored with manipulating the plasticity of materials and taking them to their tensile limit. This was far more important to him than to create drawings of interiors or details. In dealing with issues at a landscape level it was understandable Soleri wanted to equate this scale to the urban condition at a time prevailing discourse in architecture shied away from addressing this concern.

Perhaps most notably through his work and particularly through the construction of Arcosanti, Soleri kept the flame of urbanism and urban design alive despite not being considered part of the discussion on cities during his most prolific production in the 1960s and 1970s. Even though he created an urban laboratory and the architect didn't expect clinical precision, Soleri proposed a hypothesis and set goals for progress. Perfection wasn't expected, but getting things into motion was. Tamura pointed out that some would say that Soleri had a Don Quixote complex, charging the windmills of sprawl and unabashed consumerism. All of this coincided with an extended period of economic growth in America so that the public perceived abundance as the norm and not the global exception. Soleri wasn't antagonistic to capitalism but he was critical of the allocation of resources in the United

States and wanted to maximize the returns on these resources for the benefit of society.

> "The lean alternative is an attempt to reformulate the materialistic tide into a considered balance, where production, consumption, and worth form a balancing act, a graceful trinity working on the basis and inspiration of knowledge, learning and transcendence. The lean alternative resonates with the lean hypothesis, finding the grace in leanness of means to achieve coherence and harmony in ends."[20]

Or perhaps more concisely put by the architect, "My position is not reductionist; my position is minimalist."[21] Arcosanti became a canvas for his ideas to be put to work and this process was laborious. Tamaru said Soleri was constantly examining himself and consequently, there was a very slow learning curve because what he was doing was novel. A new concept was ideated, sketched, drafted, modeled, and then construction techniques were slowly mastered while considerations for resources such as labor, materials as well as know-how taken into account. Once built post occupancy research was conducted and the space was critiqued through use, how it aged, if it may be repurposed and so on. This rigorous approach was especially time intensive and explains the chief limiting factor to the development of his miniaturized arcology in the high desert. The working process as proposed by Soleri sets forth a course of investigation that discards present expectations and aims for long term goals to materialize somewhere, sometime in the future. It was this at this point that it became clear to me that Arcosanti wasn't attempting to be any specific arcology or about fulfilling checklist goals but rather it's a three-

[20] Soleri and McCullough, 51.
[21] Soleri and McCullough, 76.

dimensional sketchbook. Here we can imagine that Soleri lived in a sort of suspended present where his analysis of the past and current affairs is fully invested in the future. A future that may or may not come within his lifetime or that of his collaborators. He was steadfast in is his quest for clarity: "My new target? The old target. Coherence for one and all."[22]

Arcosanti adopts a conceptual approach drawing upon biological metaphors that is very similar to the Metabolism Movement in Japan occurring at the same moment in time. However, when I made this association, Tamaru was quick to point out having traveled to Japan with Soleri if anything the Japanese architects were influenced by him and not vice versa. Whereas the Japanese freely used modern construction methods and materials such as steel space frames and large panes of float glass, Soleri employed simpler means (e.g. earth casting) and materials. Larry Busbea commented on the Soleri's choice of materiality by stating: "The cement, the bronze, the wood, the silt – there are the raw materials that must be worked and made more complex in order to enrich the subjects' environment…It is the material means of transcendence, the substance that must be formed and folded into itself in order to push consciousness to a higher order of organization."[23]

[22] Soleri and McCullough, 29.
[23] Carter et al, 55.

Fig. 8. Apse at Arcosanti used for silt casting near visitor's center, Yavapai County, Arizona. (photo: author)

For Soleri it was paramount to see the forest before the trees. He understood design as fitting into its next larger scale. On this very subject matter Eliel Saarinen comes to mind, "Always design a thing by considering it in its next larger context - a chair in a room, a room in a house, a house in an environment, an environment in a city plan."[24] Soleri would elaborate on the theme of interrelating design solutions at all scales by claiming that most architects create orchids[25], however these orchids must rest on a tree in a forest. He wished that more architects would be concerned in designing the forest. This was a break from his former master Frank Lloyd Wright who according to Soleri pursued the beauty of the tree which was too

[24] Nast, Condé, 2014, "AD Remembers the Extraordinary Work of Eliel and Eero Saarinen." Architectural Digest, July 31, 2014, https://www.architecturaldigest.com/story/saarinen-father-and-son.
[25] Soleri and McCullough, 30.

specific and lacked a broader, landscape scale approach. Soleri sought to influence the domain, not just the cell, for the cell operates within the domain. Thinking in this way about architecture and the intersection of different scales involves profound thought aiming to produce a more coherent result. Soleri realized the orchid may bloom in a year yet a forest takes many lifetimes to mature. He dwelt on the past to produce a vision for the future that met his expectations of coherence and in the process defied present day temporality.

Fig. 9. Earth cast vaults at Arcosanti initially built to provide a work place shielded from the sun, now function as public space, Yavapai County, Arizona. (photo: author)

Soleri only got to experience fragments of what he envisioned. His approach using arcology distinguished him from contemporaries who were more pragmatic regarding the near term but perhaps overlooked the future. The architect of Arcosanti possessed a steadfast, uncompromising vision and this was a quality that Tamura deeply

respected and admired in Soleri. His dedication to professional exploration is a luxury few can afford or aren't willing to sacrifice for. He may have failed to construct an arcology at the scale he wished, however, Soleri was a prolific builder even if the client was himself. The arcology he did achieve at Arcosanti is more akin to the natural process of experimentation and the challenges that arise when confronted with the new and unknown. Though Soleri was disappointed by how little he was able to accomplish relative to the over thirty different arcologies he proposed, he maintained a healthy outlook on life and sought to bring about what he termed "positive possibilities".

The frustration with society's reticence to employ the architecture he proposed didn't discourage him. Ultimately, Soleri was convinced that existence itself is a miracle and though he may have been pessimistic about the short term, he was indeed positive over the long term. Soleri in his last project "Then and Now" looked into his legacy as a continuum. Here he used collage to compare his formal approach to architecture with those of the ancients. The message he wished to convey to his public is the view that one can only build on the past and how we have many generations to be thankful for their diligence over the millennia. Soleri realized the human project isn't determined by a singular generation working on the miniscule scale of one human lifetime in the present. But rather, it's the continued efforts and direction of successive generations that permit us to shape the future. Arcosanti, a reflection of Soleri's work, is based on the past experiences of humanity and projects itself beyond today

defying present temporality. In a 2011 interview with Lisa McCullough, he stated: "I always maintain that in the short-term I am a pessimist, but I am convinced and dedicated long term optimist. History and evolution are on my side…"[26]

[26] Soleri and McCullough, 79.

Taliesin West: Drafting Desert

Fig. 1. Entrance to Taliesin West with sculpture and fountain, Scottsdale, Arizona. (photo: author)

Does an object or a place lose its character in dormancy? The Drafting Room when I visited Taliesin West was like a manufacturing plant shuttered closed provoking nostalgia and fatalistic shrugs. Empty drafting tables, the distinct absence of personal effects and unbroken silence imparted a somber mood of abandonment. At its founding Taliesin West was home to Wright's apprenticeship program which became the School of Architecture at Taliesin (SoAT). Today this school no longer operates within the building and the act of creating architecture has momentarily ceased too. This state of suspended animation, tense with latency in a feat of architecture such as Taliesin West invites an air of ruination and decay. The old master has long since departed and his legacy once assured through the perpetuation of the school seems uncertain now.

Finding the Drafting Room in a state of desolation, interrupted from its original purpose was a gloomy prospect. One can only imagine the stories exchanged over the years, the breakthroughs, heartaches and wisdom passed down. The Drafting Room is where architecture was produced. Here ideas were developed, axed, improved, criticized, praised and shared. The act of architecture more so than the physical building was the quintessence of the Drafting Room, even in a building of architectural significance. Lacking this function, the Drafting Room becomes an artifact almost like an object displayed in the vitrine of a museum.

Will the closure be episodic or a permanent departure from Taliesin West's original mandate? Irrespective of one's personal opinions of Wright's *oeuvre*, he was a prominent voice in 20th century architecture and set precedents for public and domestic spaces. More importantly, the school at Taliesin West sought to educe the same guiding principles among students that Wright proposed in his own work within a purposefully designed building. The same ideals and architectural tenets that Wright strove for are on display, providing a degree of immersion rarely seen elsewhere. For now, the Drafting Room seems to be experiencing a period of drought and one wonders when the rains will come.

History

Located in Paradise Valley within the Sonoran Desert, Taliesin West became the permanent home of the Taliesin Fellowship and office for Frank Lloyd Wright's architectural practice. After several bouts

of pneumonia during the long Wisconsin winters, Wright's physician recommended spending the cold months of the year in a warmer clime. Wright had been visiting Arizona since the 1920s and became enamored with the desert. His first encounters with the desert were on long train journeys crossing the continent to Los Angeles where he designed and built a series of homes for wealthy clients such as Charles and Mabel Ennis in the textile block style. It wasn't however until he took an automobile to explore Arizona that Wright felt the sensorial impact of the desert's beauty.

The predecessor for Taliesin West was the Ocatilla Desert Compound built during 1928 in anticipation of the construction of the San Marcos in the Desert Resort. This curiously enough was ocotillo misspelled[27], ocotillo being, *Fouquieria splendens*, a semi succulent desert plant native to the Sonoran Desert which is bushy in appearance, covered in thorns and has crimson flowers. The financial backer of the project, Alexander Chandler was a successful developer in the area and wanted to attract wealthy coastal clientele to his desert retreat during the winter months. Following the stock market crash in 1929 however, financial duress obligated Chandler to abort the project and sadly this hotel complex outside of Phoenix was never built.[28] All was not lost however, and in those early days of desert dwelling Wright proposed a series of small structures constructed on the stone slopes of the mountainside with redwood filagree supporting

[27] Frank Lloyd Wright Organization. 2021. *Taliesin West: Frank Lloyd Wright's Desert Laboratory*, 7.
[28] "San Marcos in the Desert - Frank Lloyd Wright: Designs for an American Landscape, 1922-1932 Exhibitions - Library of Congress." November 14, 1996. November 19, 2021. https://www.loc.gov/exhibits/flw/flw06.html.

canvas cloth roofs. This initial scheme would influence the design language of Taliesin West. The concept of the tent would continue to be refined in the design of Wright's Arizona home influencing the tonality, semi-transparency and shape of the building's roof. Wright's intent was to make Taliesin a fixture of the landscape, not imposing or disturbing but integrating. This appearance of Wright's architecture as it had stood there all along is a theme in his work. How he achieved this is partly explained by Peter Serenyi who compared Taliesin West's author to other 20th century architects. Serenyi wrote that while Le Corbusier resolved design conflicts through juxtaposition and Mies van der Rohe sought to neutralize these differences, Frank Lloyd Wright practiced syncretism[29]; he was a man of the Americas after all. At Taliesin West for instance, Wright amalgamated in his design the modular floor system of the Japanese, the spirit of American Transcendentalists, his own ideas about horizontality as well as spatial qualities, a Native American petroglyph and even used a hybrid structural system that is at times stereotomic and at other moments tectonic. All of this was accomplished while attempting to forge relationships to the landscape by addressing local conditions with architectural adaptations. Arguably, it was this unique brand of syncretism that aided in lending an atemporal quality to the architect's projects in this case Taliesin West. Neil Levine in quoting Frank Lloyd Wright wrote, "Taliesin West

[29] Serenyi, Peter. 1983, "Timeless but of Its Time: Le Corbusier's Architecture in India," Perspecta 20: 92, https://www.jstor.org/stable/1567068?seq=1&cid=pdfreference#references_tab_contents.

was meant to be the architect's definitive expression of the desert – a space 'beyond the reach of the finite mind' – and to look as if it belonged 'to the Arizona desert as though it had stood there for centuries.'"[30]

Fig. 2. Petroglyph atop prow to the right and Drafting Room at Taliesin West from the western elevation, Scottsdale, Arizona. (photo: author)

Seeking more permanent accommodations than a campsite, Wright purchased and leased a total of 800 acres 26 miles north of Phoenix writing, "On the mesa just below McDowell Peak we stopped, turned, and looked around…the top of the World!"[31] Resting on the Maricopa Mesa with the McDowell Mountains serving as a compelling background, the building that would become Taliesin West was sited masterfully. Wright in the plan made provisions to allow the prevailing year-round East

[30] Levine, Neil, "Frank Lloyd Wright's Diagonal Planning Revisited," in *On and by Frank Lloyd Wright: A Primer of Architectural Principles*, ed. Robert McCarter (London: Phaidon 2012), 261.
[31] Frank Lloyd Wright Organization, 7.

wind to naturally ventilate the building by positioning it to safely to withstand storms that originate in the Pacific and reach the Maricopa Mesa.[32] The south-southwest orientation permitted the architect to control the harsh desert sun in summer months while welcoming it in winter by virtue of the eaves and fenestration. In respecting the heritage of the site, Wright found a Native American petroglyph while collecting stone rubble for the load bearing walls, and he decided to place the stone on the prow shaped ledge near the entrance which for him had special meaning.

Construction of Taliesin West began in 1937 with 30 apprentices[33] and continued into the late 1950s. Primary materials are stone rubble masonry sourced on the site and the least expensive redwood available. Labor was provided by the apprentices of the fellowship program who, despite being unpaid, learned valuable lessons in construction. The building is a marvelous play of light and shadow which in the absence of dense vegetation becomes markedly noticeable rising gently over mesa. In fact, in the desert where one cannot mimic or dialogue with dense forests, Wright sought a relationship to the McDowell range and this inspiration appeared to have been the crux of his design, "The tent like structures branch off both sides of an elongated circulation spine paralleling the range of mountains."[34]

The progression and execution of such an important undertaking was gradual and buildings were constructed when time and resources

[32] Aguar, Charles E, and Berdeana Aguar, 2002. *Wrightscapes: Frank Lloyd Wright's Landscape Designs*, (New York: Mcgraw-Hill 2002), 243.
[33] Frank Lloyd Wright Organization, 8.
[34] Levine, 261.

would allow between his many projects. The last addition that was supervised by Wright himself was the Music Pavilion as late as 1957.[35] Wright himself referred to Taliesin West as his "'…great architectural sketch.'"[36] Nearing completion of the project Wright was spending increasingly more time in Arizona than Wisconsin. It would seem he preferred the austere beauty of the desert and admired viewing a matured architectural vision in the twilight of his life.

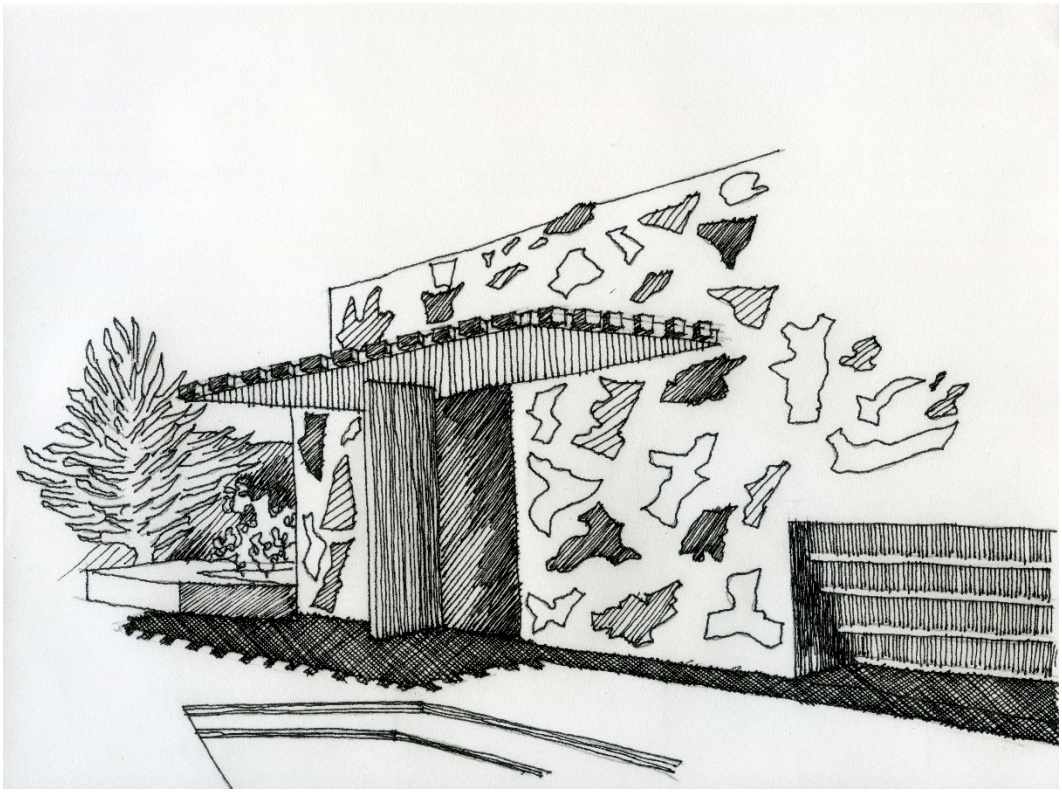


Fig. 3. Site sketch of Kiva (projection room) at Taliesin West, India ink on vellum. (drawing: author)

Impressions

In comparing Taliesin West to the previous sites, i.e., Arcosanti and Chaco Canyon, all were built with communal labor. Wright certainly

[35] Frank Lloyd Wright Organization, 21.
[36] Aguar and Aguar, 242.

was a professional architect, however construction was largely done by his students and not contracted construction companies with skilled laborers. This meant that the means and methods of construction understandably had to be simplified and if sophistication was sought, it was necessary to reach this end through ingenious ways given the pressure of limited resources.

Both Arcosanti and Taliesin West were considered by their architects to be active laboratories and a healthy distance aided resuming their work. Frank Lloyd Wright would come back every year with fresh eyes and make new additions or changes. Soleri, a former apprentice of Wright, would visit Arcosanti routinely because of the vicinity to his home. He too would benefit from separation and subsequent reengagement. This commonality provided new perspectives and undoubtedly stimulated much work for both architects.

Nevertheless, unlike Arcosanti and Pueblo Bonito that were and continue to be permanently occupied, that wasn't the case at Taliesin West until the advent of air conditioning. Wright's Arizona compound is most certainly of the desert and yet its former seasonality makes one question authenticity. Life in the desert doesn't get put on hold in the hotter months, it marches on to an antediluvian rhythm.

Light and horizontality, two important themes in Wright's built work, manifest themselves most clearly as the wood slats of the formwork that were encrusted in the rubble masonry or as he referred to it: desert masonry.[37] When removed, they left behind a deep, shaded channel groove which provides a nuanced transition and signifies a new

[37] Frank Lloyd Wright Organization, 8.

stratum. This brings to mind images of rustication like the ground floor of the Palazzo Pitti in Florence; yet whereas in High Renaissance Italy the symbolism of a rusticated ground level implied separating a building from the public street, there was no need for this in the then-rural surroundings of Taliesin West. Furthermore, the façades of the subsequent stories aren't the subject of increased refinement as is the case with Palazzo Pitti's *opus quadratum*. Instead, the author in this architectural operation wishes to emphasize the heaviness of the cyclopean walls and imbue the building with typical Wrightian horizontality.

Fig. 4. Drafting Room at Taliesin West from the southern elevation with horizontal channels and pergola, Scottsdale, Arizona. (photo: author)

These channels are particularly noticeable due to the contrasting play of shade as the viewer scans the sweeping desert views and finds an element that breaks up a sight plane and divides it with another horizontal reference. The cast shadow makes the channels dark, almost

black in stark contrast to the bleached appearance of materials under the desert sun. While on the topic of light, the Garden Room holds a rarely photographed feature which is the bracing in the exposed roof members under a glass envelope. The clerestory and translucent skylights allow plenty of light to saturate the living spaces and near the stereotomic wall section there are “X” shaped motifs that cast intriguing shadows on the shafts of light admitted. As the sun’s position changes it leaves behind a crisp shadow on the desert masonry in an unexpected way. This same bracing can be observed outdoors in the pergola of the Drafting Room’s southern elevation.

Fig. 5. Garden Room at Taliesin West, Scottsdale, Arizona. (photo: author)

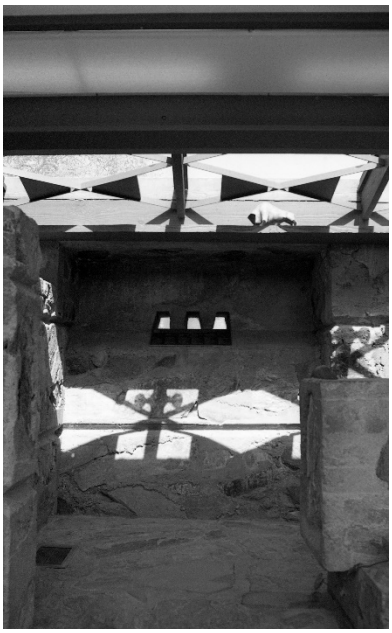


Fig. 6. Cast shadow from bracing members of the Garden Room at Taliesin West, Scottsdale, Arizona. (photo: author)

Fig. 7. Pergola from southern elevation of Drafting Room at Taliesin West, Scottsdale, Arizona. (photo: author)

However, in the interior of the Garden Room, the effect appears more sophisticated as it touches not just the floor but also an angled wall

section. The strong shadow cast by the skylights modulated by the bracing are a surprising visual treat given that it occurs indoors. The millwork has a similar effect and when observed outside, it resembles the needles and thorns of desert plants that cast shadow on themselves. Also, in the Garden Room we see large panels of fenestration covered in canvas to provide translucency. Originally, Frank Lloyd Wright envisioned Taliesin West without plate glass, his wife sensibly convinced him otherwise.

Massing is another subject worth discussing and here Wright used a hybrid stereotomic, tectonic approach. Wall sections tend to have broad bases that thin out to a given depth before assuming the expected verticality. Imposing cyclopean piers on the northern elevation in the Drafting Room emerge from the desert floor and at the height of approximately six feet reveal the redwood main frame rafters that suspend the roof. This overhead cover is placed contrary to conventional applications, not above but in between. The purposeful exposure of the load bearing element allows us to appreciate the geometry of the redwood members with their jagged quality being very much of the place. At the southern elevation the piers protrude from desert masonry wall, slightly cantilevering before projecting upwards and away from the building until reaching a certain height and functionally assuming their role as a rafter. Here the symbolism is stronger still as the members angle upwards, mimicking the hard edges of the mountainous background.

Fig. 8. Mainframe rafters of Drafting Room from northern elevation at Taliesin West, Scottsdale, Arizona. (photo: author)

While at the site one notices the fundamental importance of the courtyards, terraces, walkways, terraced pergolas, gardens, pools that function not only in the sense of circulation or program, but also serve as transitions for the roofed spaces thus connecting the major volumes to minor ones. This imparts a year-round indoor-outdoor continuity that is strongly felt in the architecture as a whole.[38] Pools of water also reinforce the idea of the oasis, hinting at the site's exceptionalism.

[38] Aguar and Aguar 243.

Fig. 9. Drafting Room to the left and Loggia to the center/right from northern elevation at Taliesin West, Scottsdale, Arizona. (photo: author)

Another theme in Wright's architecture worth mentioning is the concept of infinite space. Formally speaking, after observing Wright I would say he creates complex boundaries that slip away towards the infinite horizon between enclosed indoor spaces, semi enclosed and lastly exposed outdoor spaces. Wright was a master of incorporating exterior spaces into interior ones. There is a blurring of the line, a longing for an infinity that transcends the quotidian and universally attractive. For instance, the forty-five-degree axial shift seen in the foreground of Fig. 9 along the South-Southwest orientation, provides a vanishing point at the perpendicular angle of the triangle when viewed from the Drafting Room outwards onto the valley. The crafted corner resembles the prow of the ship and from it we can enjoy the view of the desert like the ocean (another kind of desert), with distant mountains resembling islands and saguaro cacti representing

coral. This point or vertex is a moment of confluence described by Wright as, "'a look over the rim of the world. 'Just imagine,' he said, 'what it would be like on top of the world looking over the universe at sunrise or at sunset with clear sky in between. Light and air bathing all the worlds of creation in all the color there ever was… nothing to imagine-all beyond the reach of the finite mind.'"[39] This concern for the diagonal sight line also coincides with the completion of another landmark building in 1938: Fallingwater. When speaking of this project Neil Levine states, "…in Fallingwater the diagonal from the entry to the far west terrace connects the rocky earth ledge, from which the house springs, to the sky, while the cross axis joins the elements of fire and water on a line that internalizes the conjunction of architecture and nature."[40] He completes the thought by expressing, "Fallingwater derives its unique immediacy of impact and oneness with the landscape from the overriding force of the diagonal axis. While the special circumstances of such a commission produced a highly charged symbolism, the house's formal principles could be reused by Wright…"[41] Wright was seeking to create this concept of infinite space not just by exploiting the diagonal axis at Taliesin West but he also attempted to mimic the landscape in certain ways. The craggy mountains were a datum for Wright's design at Taliesin West. "The continually changing angles of approach, the slope of the exposed redwood trusses of the canvas roofs, and the canted 'desert stone'

[39] Levine, Neil, "Frank Lloyd Wright's Diagonal Planning Revisited," in *On and by Frank Lloyd Wright: A Primer of Architectural Principles*, ed. Robert McCarter (London: Phaidon 2012), 262.
[40] Levine, 253.
[41] Levine, 253.

walls all echo the shapes of the of the surrounding mountains, while the right-angle triangle of the terrace seems to reflect the image of Thompson Peak onto the plane of the desert below."[42]

Fig. 10. Drafting Room from the southern and eastern elevation at Taliesin West, Scottsdale, Arizona. (photo: author)

Impressions

After visiting Taliesin West, I had the opportunity to speak to Fred Prozzillo who is the VP of Preservation at Taliesin West and holds a Master of Architecture degree from the School of Architecture at Taliesin (SoAT). He was especially generous with his time and provided valuable insight.

First and foremost, he underscored how Frank Lloyd Wright was site specific. To put things into context he reminded me that Wright grew up in a time without distractions like radio, television, let

[42] Levine, 261.

alone social media. His formative experiences such as working on his uncle's farm in Wisconsin made him a keen, interested observer of nature. Perhaps this was the impetus for the organic approach that Wright would hone in his professional career. An approach that became a conviction once tempered by his interest in transcendentalism through authors such as Thoreau. Where Wright stood out is that he wanted to produce an architecture that would respond to the vastness of the American condition, specific to our uses, needs and aspirations. Though this may seem obvious today, the United States of America was not even a hundred years old when Wright was born and the Beaux-Arts method, a wholly European, specifically French approach was taught at the few institutes that offered architecture studies at the turn of the last century. At Taliesin West, Frank Lloyd Wright's greatest sketch, one sees so many facets of the architect. The pragmatism of a Midwestern farmer, the cosmopolitan flair of a well-traveled individual and his principles too. Individualism, idealism, and the divinity of nature form the basic values of Transcendentalists. Here we see a project imbued these qualities. For example, it is largely self-sufficient, imaginative in the sense his architecture frames human interaction in a novel way and lastly the buildings at Taliesin West show a deference to the local environment through material use as well as how the building mimics the silhouette of the McDowell Mountains that serve as its backdrop.

Prozzillo explained that if Wright was to design a building for the desert it should be of the desert, much in the same way a building designed for a pine forest should belong to the forest. This reminded

me of what has been said of buildings by Wright and Aalto whose designs physically and conceptually emerged and were of the earth. They weren't Miesian pavilions that descended from above to land on a sterile plinth that neutralizes the existing natural condition. At Taliesin West the desert masonry and piers give the impression through the use of local rock that erosion has shaped them. Almost as if wind and water had created the wall sections instead of workers.

Fig. 11. Garden at Taliesin West with sun breakers from Drafting Room visible in middle ground, Scottsdale, Arizona. (photo: author)

When asked about what draws people to Frank Lloyd Wright's work Prozzillo responded that Wright's ideas about living resounded with people outside of architecture. He would welcome them into his organic concepts and sell the advantages posed by his approach. Frank Lloyd Wright intimated the human experience through his architecture and writing in a way that was palpable to broader audiences, not just

architects. He was careful to analyze the purpose of the spaces he crafted, how they function, elicit certain sensations, make us feel and interrelate with other spaces including the outdoors.

Prozzillo expressed that architecture should attempt to create spaces for people to live in and lead happy, fulfilled lives. I am of a similar opinion and would add architecture should play the role of the enabler for these ends and not get in its own way.

When discussing Wright's approach to architecture Prozzillo noted that he was painstakingly intentional. He could craft an experience that involved different rooms and spaces, brought together like movement of a symphony. His powers of observation were such that they translated minutia into complex compositions. Frank Lloyd Wright played with light, the power of the sun's ability to cast shadow on fastidiously sculpted masses, while simultaneously not forgetting about the subtleties of details.

During our conversation Prozzillo made an adroit observation by noting Wright used rock of the desert in the desert masonry and elsewhere to reflect light in similar way to the surrounding desert floor and hills, thus making Taliesin West especially integrated to its setting and reinforcing the organic quality of the project.

Fig. 12. Corner Detail of Frank Lloyd Wright's personal office/study at Taliesin West, Scottsdale, Arizona. (photo: author)

In fact, this organic approach was alive and well when Prozzillo attended the architecture school in early 1990s. Apprentices when studying a site were encouraged by their instructors to go out on the site, observe the plants, topography, rock formations, sun, sky, water, any natural features present on site that leant character and context. For instance, one technique was to break down plants present at the site into basic geometries that would then resound through the design at different scales from plan, section to furniture details. These subtle cues would provide inspiration for form finding, it would help to understand the site and relate the project at different scales. One can also interrelate the plants, rocks and water, thus weaving a story, expanding the concept of warp and weft beyond a standardized diagrammatic grid layout. Intellectual curiosity and rigor are the qualities this exercise honed within students and

furthered the cause of architectural production. Succinctly put by the organization itself: "Most important, Taliesin West is about learning."[43] If this is the organization's vision statement, how will it achieve its ultimate objective of learning without an architecture school?

When I visited Taliesin West our tour guide understandably focused most of his attention on the exterior of the Drafting Room and only briefly stepped in before shuffling off to the Music Pavilion. Through a lack of use and exposure the Drafting Room is wasting away, and despite the immaculate grounds and well-maintained buildings at Taliesin West, the dormancy of the Drafting Room signals the decline of the institution. However, in the desert where plants and seeds can remain dormant for extended periods of time all it takes is precious water to revive and rejuvenate a parched landscape.

With an uncertain future one can only hope that the SoAT receives that needed life blood to reinvent itself and continue to function at its original and intended place. Hopefully, the Drafting Room will be occupied once more, busy to the tune of spinning lead holders, unfurling sheets of vellum, rushed footsteps and pensive stares. Being a noteworthy architectural site is a laudable feat but to instigate and facilitate the production of architecture is a beneficent goal.

[43] Frank Lloyd Wright Organization, 9.

Dr. Franz Alexander House: Desert Escapism

Fig. 1. View from the Terrace of the Frederick Loewe Estate, Palm Springs, California. (photo: author)

Palm Springs is a resort town bathed in hedonism. An oasis in the desert it became the playground for the monied elite and a test bed for Regional Modernism during the mid-20th century. Since the early 2000s there has been a revival of Midcentury Modern architecture and Palm Springs is the Mecca for this movement. At times it would seem this affinity becomes delusional as followers relish in celebrating a past that was never their present. The Dr. Franz Alexander House by Walter White was very much a product of the times but holds atemporal qualities that transcend popular culture.

Beyond the veneers of kitschy décor found at antique shops and droves of tourists chauffeured around to photograph the exteriors of celebrity owned homes, lies a deeper fascination with, "the good life." With it comes a decadent, even profligate romanticization of

better times complete with gas guzzling land yachts and vast airconditioned estates. The overt displays of wealth aside, there appears to be a genuine longing for simpler times swimming in the tides of nostalgia that keep the movement afloat. However, that nostalgia isn't easily explained. For nostalgia to occur a certain amount of time must pass. Time and the ruin of a dream, specifically a dream transposed in time outside of its historical context makes for a seductive escape.

What struck me was how the buildings that had been underappreciated and even mutilated up until the early 2000s suddenly became revalued and even registered as historical land marks in the 21st century; this was the case with the Alexander House. These works of architecture never lost their intrinsic worth but rather fell to the wayside as newer trends took center stage. It's precisely this vacillation in public opinion that irrespective of the architect can spell praise or demise as in the tragic case of Richard Neutra's Maslon house.

And yet the promise left behind by Midcentury Modern architects remains unfulfilled. To date for instance, most domestic space in the United States doesn't have the modern qualities of Midcentury Modernism. Few of us live and grew up in Eichler homes or went to a school designed by an easily recognizable Midcentury architect or their disciple. Even new construction lacks the spatial nuances and material characteristics these designers sought. Thus, this fascination with the past is perhaps a yearning for an unrealized future, therefore creating an aspiration and a sense of optimism in

our everyday lives. The Alexander House though unequivocally Midcentury Modern, possesses timeless characteristics that the ebb and flow of popular culture can't wash away.

Fig. 2. North facing street elevation of the Dr. Franz Alexander House, Palm Springs, California. (photo: author)

History

Before we can delve into specifics about the Alexander House and its protagonists, it's important to discuss Palm Springs and the concentration of extraordinary architecture. Palm Springs is located on the northern fringes of the Palm Desert just south of where the Mojave Desert begins nestled within the Coachella Valley which extends to the south. Palm Springs has water in a way few places in the desert do. Its siting is propitious as it sits atop a subverted, ancient lake that is now an aquifer and source of the settlement's year-round water supply. To the west appear the imposing San Jacinto mountains that

rise precipitously from the valley floor to a verdant pine forest at over 8,000 feet above sea level crowned by Mount San Jacinto at 10,834 feet. Eastwards lie the Little San Bernardino Mountains which enclose and separate the Coachella Valley from Joshua Tree National Forest. Being in the Palm Desert means approximately 340 days of sunshine and a scant five inches of rain fall per year. Palm Springs is a natural oasis, blessed with snow melt from the San Jacinto Range to replenish the aquifer.

In discussing plant life it's important to note that Washingtonia filifera, otherwise known as the California Fan Palm, is native to the Palm Desert and is also present at the Alexander house. Given the city's height restrictions on construction means mature palm trees tower man-made edifices. In the hills just outside the Palm Springs the city looks like a crown of palms extending to where the ancient lake once had its shores. Bright green tendrils contrasting against the desert patina of the surrounding primeval rock show at a grander scale the fragility of life in the desert.

Palm Springs in the early 20th century was seen as a health retreat due to the dry desert climate and also became winter home for celebrities. Before the days of jet aviation, major Hollywood studios imposed a travel radius limit on their signed actors and Palm Springs was within that zone. Due to the extreme heat of the summer months with daytime temperatures surpassing 110 degrees Fahrenheit, these houses were often not occupied year-round hence little concern for building performance.

In discussing the site and project it would be helpful to address who Walter White was. This autodidactic practitioner is relatively unknown in architectural circles with his work having achieved only recent popularity largely through the restoration of the Wave House, also known as the Bates Residence. White would later on receive a patent for the innovative dowel roof construction in 1959.[44] He was a prolific architect and when interviewed about the scope of his *oeuvre* estimated that he designed, "300 residences, 40 recreation homes, ski lodges, commercial buildings, churches, luxurious club houses and guest rooms, and condominiums. Of the 300 residences designed I have built approximately 15% of them myself."[45] Born in 1917, Walter Stares White Jr. a native of San Bernadino, California, took a keen interest to architecture early on. White's father was in the construction industry and it was on job sites that a young Walter learned about the building trade.[46] He attended San Bernadino Valley Junior College for one semester and quickly decided to get practical experience by working with local architects. Prior to the Second World War he was employed by Harwell Hamilton Harris as well as Rudolf Schindler. During the war years he worked for Douglas Aircraft as a machine tool designer[47] where his technical as well as drafting skills were honed. It's here that White was exposed to metal construction and lightweight

[44] "Walter S. White: Inventions in Mid-Century Architecture," n.d., www.adc-Exhibits.museum.ucsb.edu, Accessed November 21, 2021, http://www.adcexhibits.museum.ucsb.edu/exhibits/show/walterwhite/introduction.
[45] "Finding Aid for the Walter S. White Papers, circa 1935-2002," n.d., Online Archive of California, Accessed November 21, 2021, http://www.oac.cdlib.org/findaid/ark:/13030/c8k35t0n/entire_text/.
[46] "Walter S. White: Inventions in Mid-Century Architecture," n.d.
[47] "Walter S. White: Inventions in Mid-Century Architecture," n.d.

framing which would have an impact on his architectural work years later.

In the early post war years White continued working with Douglas Aircraft and in 1947 joined the office of Clark and Frey in Palm Springs. The desert had a hold of White and he would remain there until 1960 before moving to Colorado.[48] By the early 1950s White's work no longer exhibited the easily identifiable influences of other architects like Frank Lloyd Wright or Albert Frey and was developing a voice unique to himself. The construction of the Wave House (1955) was one such project and that was quickly followed by the Alexander House (1956) as well the Willcockson House (1958), all three poignant but distinct projects flaunting expressive roof designs. With regards to the Willcockson House, it was said: "He freed the roof from the plan, creating complex shapes that captured light and cross ventilation, and maximized views while providing shelter."[49] In fact, White was already playing with the decoupling and plasticity mentioned above in his design of the Wave House and to a larger degree at the Alexander House. His ambitious roof design became a signature of his work during these years. The Max Willcockson House used an all-steel[50] broad hyperbolic paraboloid roof (as opposed to reinforced concrete like Félix Candela) and like the Bates House, earned him a patent for its state-of-the-art construction.[51] Walter White wouldn't attain licensure

[48] "Walter S. White: Inventions in Mid-Century Architecture," n.d.
[49] "Walter S. White: Inventions in Mid-Century Architecture," n.d
[50] "Society of Architectural Historians/Southern California Chapter," 201, www.sahscc.org. 2015. http://www.sahscc.org/site/index.php?function=past_event_details&id=164.
[51] Jim West, 2016, "Palm Desert: An Architectural Tour into Modernism," City of Palm Desert, 2016,

until 1967 in Colorado, seven years after he departed the desert, and consequently couldn't sign the construction documents officially as an architect.[52] Due to his upbringing and hands-on approach it wasn't uncommon to see White at a job site not just supervising construction but working alongside building crews.[53] In 1957 while being interviewed by National Geographic for their November issue, White articulated his maturing design ethos by saying, "Conventional architecture is just static and self-conscious and doesn't fit the freedom of the desert… We are abandoning the tyranny of rigidly parallel walls and 90-degree angles. We strive for a form that seems to spring from the ground, like a native plant."[54] This organic approach can be seen in how the Alexander House was sited and how the how the building's relationship to site is resolved through the structure. White valued spaces with the character of place. He regarded the desert as liberating and sought to improve design from an environmental point like many Regional Modernists of his time.

Dr. Franz Alexander, whose spouse Anita Alexander commissioned the home, was an eminent figure in psychiatry and psychoanalytics.[55] An immigrant from Hungary, Dr. Alexander came to the United States to disseminate Freudian Psychoanalysis in academia as well as through his

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https://www.cityofpalmdesert.org/home/showpublisheddocument/16898/636262150411570000.

[52] "Finding Aid for the Walter S. White Papers, circa 1935-2002," n.d.

[53] Volker Welter, 2013, "A Feeling of Oneness with the World: On the House of Dr. Franz Alexander," Berfrois, December 16, 2013, https://www.berfrois.com/2013/12/on-the-house-of-dr-franz-alexandervolker-m-welter/.

[54] Jim West, "Palm Desert: An Architectural Tour into Modernism."

[55] Steve Vaught, "The Dr. Franz Alexander Residence 1011 West Cielo Drive Palm Springs, ca 92262 Nomination Application for City of Palm Springs Class 1 Historic Resource."

private practice; though he would later distinguish his approach from that of Freud. Alexander argued in his book titled *Our Age of Unreason* from 1942, "'frontiers of the intellect and fantasy, science, art, and art of living' which will 'offer to all opportunities for self-expression, courage, pride, and persistence.'"[56] This quote describes not just intellectuals but settlers of the American frontier. Dr. Alexander goes on to describe the settlers of these frontiers, both literal as well as metaphorical, and in so doing describes himself and White, "'explorers of the unknown forces of nature… the masters of the creative fantasy who make life more enjoyable for everyone.'"[57]

The driving force behind this degree of architectural experimentation was Dr. Alexander's Italian wife Anita. She set a precedent in 1933 by unilaterally purchasing two cliffside lots in La Jolla, California and hiring an architect to build a family home.[58] Now in her mid-50s and suffering bouts of arthritic pain she was advised to seek a drier climate and Palm Springs with its vicinity to Alexander's Los Angeles practice was chosen.[59] Just like in 1933 she selected the architect and was present to oversee progress during construction. White's preoccupation with the site regarding questions of environment and structure aided in advancing Modern desert living by attempting to answer questions few had tackled before him.

[56] Welter, 2013.
[57] Welter, 2013.
[58] Vaught, 13.
[59] Vaught, 14.

Fig. 3. Street elevation of the Kaufmann Desert House by Richard Neutra, Palm Springs, California. (photo: author)

Fig. 4. Street elevation of the Edris House by E. Stewart Williams, Palm Springs, California. (photo: author)

The Alexander residence on 1011 West Cielo Drive finds itself in Palm Spring's Little Tuscany neighborhood within the vicinity of Richard Neutra's Kaufman House (1947) and a stone's through away from

E. Stewart William's Edris House (1954). A building permit issued on November 11, 1955 heralded the beginning of construction outlining a single family, two story, 1,656 square foot home with a 430 square foot studio for Anita on the ground floor.[60] This was a variance from the typical one-story residential construction ordinance. The boulders strewn across the sloping lot encouraged the architect to lift the main volume of the home from the ground on a steel skeleton. This reduced the building's site impact and improved the home's southeastern gaze onto the Coachella valley and adjacent San Jacinto Mountain Range which can be viewed from the cinematic terrace.

Fig. 5. Interior of Alexander House looking onto south facing terrace, Palm Springs, California. (photo: author)

Once the siting was established, White set about decoupling and redefining the Modernist rectangular main volume. He chose structure to be the parti pris and like in so many of his other projects, he

[60] Vaught, 14.

sought the help of a structural engineer, namely Stanley E. Malora. Malora's signature was required in executing a residence as ambitious as the Alexander House and he provided the technical acumen to materialize White's vision for the Alexander House.

Concrete footings were poured and a concrete masonry unit wall was erected on the northern elevation to harbor the steel skeleton of the house. Six of the distinctive "V"-shaped steel columns were positioned twelve feet apart to create five bays totaling sixty feet lengthwise.[61] The photograph above shows the varying heights of the steel members in the "V" columns. The inclined, northern member supports the curved overhead beam which in turn holds up the roof and the shorter, southern, vertical member helps frame the balcony glazing and supports the light shelf above.

Fig. 6. Interior of Alexander House showcasing structural system and light shelf, Palm Springs, California. (photo: author)

[61] Vaught, 16.

These "V" columns were both welded and bolted to wide flange beams to provide a suitable superstructure capable of accommodating upper floor dwelling areas. [62] To accommodate the program these beams cantilever by eight feet on the southern elevation where the terrace lies and jut out five and a half feet to the north on the street facing elevation.[63] With the aim of adding rigidity to the super structure an additional concrete masonry shear wall was placed on the western elevation in addition to the northern elevation mentioned earlier. To achieve the expressive roof design Malora was consulted to help achieve the desired effect with the six wide flange steel beams that run along the bay boundaries to support the roof overhead. The beams are curved slightly and rise five feet in elevation over their span covering north to south from seven feet to twelve feet respectively. White's goal with the cambering was to make the upward curving steel beams tangential to the horizon thereby grounding the building into the landscape with invisible projection lines sensed but perhaps not palpable to the casual observer. [64] Additionally, White, in order to counteract this strong southward movement, though still asymmetrical, put slightly curving eaves on the northern elevation as well.

[62] Vaught, 17
[63] Vaught, 17
[64] Vaught, 19

Fig. 7. Interior of Alexander House looking onto south facing terrace showing details such as frameless clerestory windows, Palm Springs, California. (photo: author)

Fig. 8. Interior of the Alexander House looking onto south facing terrace emphasizing "V" shaped column, clerestory windows and curved beam, Palm Springs, California. (photo: author)

The reason for this degree of concern and detail with the roof had to do with White's conviction that the roof of a building influenced environmental performance at a time when temperature control, lighting and airflow considerations were still in their infancy. To put this into perspective, the Olgyay brother's *Design with Climate* wouldn't be published until 1963, seven years subsequently. The roof in arching upwards partially reveals and exposes the interior via clerestory windows, allowing indirect light to enter in summer and direct light when needed in the winter. The light shelf at the height of the northern wall serves the role of casting shade and protecting occupants once the harsh desert sun rises above a predetermined angle in the southern sky. A former owner of the Alexander House, William J. Grimm M.D., attested to the roof's functionality by stating in an interview, "It heats itself in the winter…and in the summer the sun is directly over the house, so it doesn't shine in any of the windows."[65] In more literary terms some have equated this to peeling back the layers of a building and later freezing them in place once a desired level of deconstruction of the rectilinear volume was achieved. [66] White accounted for the temporality of the seasons through his environmental design that was integrated to very structure of the Alexander house. The home was designed to adapt and work with conditions unique to the desert.

[65] DiPierro, Amy. 2018. "Palm Springs 'Modernist Masterpiece' Hits the Market for $2.8 Million," The Desert Sun. February 9, 2018, https://www.desertsun.com/story/life/entertainment/events/modernism/2018/02/09/modernistmasterpiece-palm-springs-hits-market-2-8-million/323057002/.
[66] Vaught, 18.

The exterior ground floor façades and interior walls received partial stone sheathing. It was not from a quarry at the site but from one local to the region. Here the architect wanted to relate the desert to this manifestation of man-made artifice in the way Wright used rocks found on-site for the cyclopean walls. For the most part the major volume sheathed with redwood and partially glazed on all sides except the southern elevation where glass dominates to bring in as much light as possible while still being able to control it with the light shelf and roof system. Since White's Alexander House is steel framed, it facilitates the use of expansive sheets of glazing. Here again White made a conscious decision to incorporate local material and as mentioned by Prozzillo earlier, the way the light reflects off the rock anchors the building to the site in a meaningful way. The rock and wood unlike the manufactured steel and glass, aren't industrial materials and will over time visibly show their age. This contrasts with the glass and steel which if properly maintained will remain relatively untouched by the vicissitudes of time.

Lastly, landscaping was also considered by White. A swimming pool, a ubiquitous Palm Springs domestic feature which provides evaporative cooling, was placed in the backyard and boulders were located along the pool to demarcate the space and serve as a wind break.[67] The use of rocks as well as native plant species that defined the desert landscaping at the Alexander House was both a practical and environmentally conscious decision like the tangential roof that affixes the building to its context. Again, we can observe White is

[67] Vaught, 21.

making conscious decisions that tie his design to elements such as the landscape and environmental design that transcend contemporary fashions to achieve harmony and lend a timeless quality to the home.

Fig. 9. Exterior view of the Alexander House from the southern elevation, Palm Springs, California.

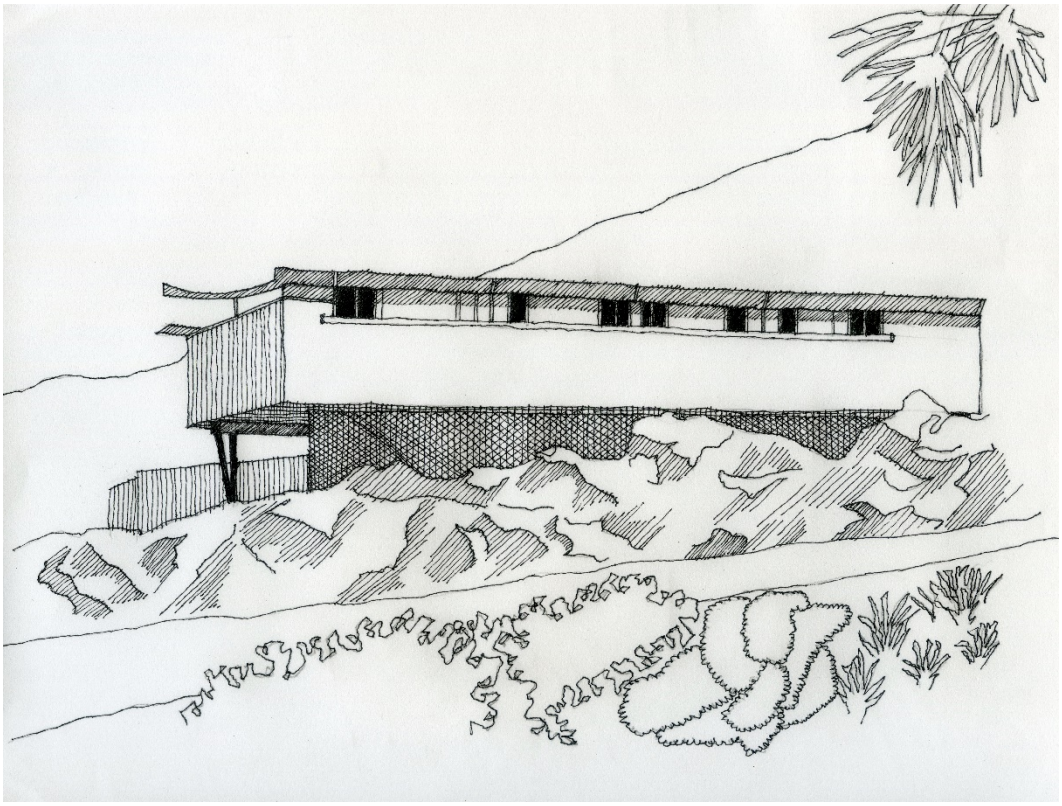

Fig. 10. Sketch of Alexander House, India ink on vellum. (drawing: author)

Impressions

Being a second home market for affluent individuals meant that the commissioners of these buildings were more receptive of an architect's vision making it a testing bed for progressive architectural thought. [68] A favorable climate, solvent clients and openminded stances towards new ways of living created ideal conditions for Desert Modernism to flourish. The spirit of the age was very much about entertainment and glamour following the Second World War as Pax Americana took on an air of excess in Palm Springs embodied by exclusive golf courses and vast estates.

[68] Michael Stern and Alan Hess, *Julius Schulman: Palm Springs*, (New York: Rizzoli 2008), 11.

In the Post War Period, what were once the pleasures of the wealthy became accessible to middle class individuals and jet age optimism was stratospheric. Palm Springs grew with an influx of new residents ready to experiment with architecture. "Typically, the architecture is understated, sophisticated, and horizontal, contrasting, contrasting and deferring to the spectacular vertical natural landscape."[69] Ordinances were passed to maintain privacy keeping single family homes largely limited to one story thus ensuring everyone's backyard was free from prying eyes. The public facing façades of most homes are "discreet to the street" with limited fenestration visible from the street elevation. An example of this is Cody Glass House that from the outside has an unassuming character with whitewashed slump brick garden walls yet reveals itself in characteristic Palm Springs exuberance within.

Fig. 11. Exterior view of the Cody Glass House by William Cody from the southern elevation, Palm Springs, California. (photo: author)

[69] Stern and Hess, 11.

The Alexander House too has an introverted street facing façade and like the Cody Glass opens up with expansive glass to the south facing a garden complete with a swimming pool. Being nestled alongside the San Jacinto range also makes for dramatic scenery as one rests on valley floor with the steeply rising mountains to the west. At sunset the glowing orb of the sun projects the peaks onto the valley and once it dips below them it backlights the craggy outcrops in hues of red, followed by orange, yellow, purple and blue. It's a poetically prolonged affair that gives a surreal quality to and bathes the greenery in unexpected tones of light.

Fig. 12. Exterior view of the Alexander House from the entrance garden featuring Sprites from Frank Lloyd Wright's Chicago Midway Gardens project, Palm Springs, California. (photo: author)

The Alexander House has achieved the status of being listed on the National Register of Historic places in 2016. Despite renovations and embellishments such as sprites from Frank Lloyd

Wright's Chicago Midway Gardens inserted into a garden as well as the conversion of Anita's studio and the carport into bedrooms, the house has maintained much of its original charisma. The structural skeleton of the Alexander House can accommodate the changing uses of new occupants and is encoded to adapt the temporal passage of owners.

One of the successes of Walter White's project is the way it engages the difficult topography. The main volume thanks to its framework seems to hover above the desert floor guiding views to a lush garden below and framing views of the brilliant blue skies above with the desert valley beyond. Most homes in Palm Springs use conventional slab-on-grade foundations due to their tame sites. However, by using the lightness of a steel frame armature to gently rest on the challenging lot and then embed itself with masonry walls White shows great environmental sensitivity. Furthermore, the concrete masonry unit shear walls are only partly sheathed in local rock and this appears purposeful. Walter White wasn't afraid to show the wall's modular pattern which add regulating lines that define the home's footprint from the elevation. To the south expansive glazing uses passive shading and cooling thanks to an innovative roofing system providing far reaching views of the Coachella valley framed by the San Jacinto mountains. The terrace isn't just a balcony from which contemplate the privileged view, it also serves as a link between the outdoors and inside. It's a mitigating interstitial space which binds the project together. One especially admirable characteristic of the Alexander House is that it was designed to be occupied year-round when that was still an exception in Palm Springs. Only later in the 1960s

did the Alexanders build a winter cabin in Idyllwild that they used occasionally as a summer retreat.[70] White's commitment to sustainability continued throughout his long and fruitful career making him an early pioneer. The design strategies that he implemented sought to ensure the union of occupant comfort and *Avant Garde* design.

If one were to classify White's approach to architecture it could be interpreted as Modern Regionalism. White was receptive to changing architectural attitudes of the age and took a predisposition to Wrightian syncretism but was also exposed to the International Style Modernism of Albert Frey which aided to develop his own voice as an architect with an emphasis on technical solutions in the demanding desert climate. Regionalism in the best sense shouldn't be characterized as an obdurate resistance but rather conscious adoption of modern means (particularly of construction) to suit a specific people in a particular place. Kenneth Frampton argues that, "One of the mainsprings of regionalist culture is an anti-centrist sentiment, an aspiration for some kind of cultural, economic and political independence."[71] Regionalists adapted some tenets of Modernism but understandably weren't content to receive design diktats from figures like Le Corbusier, rather they valued dialogue in the process. "On the other hand, Critical Regionalism is a dialectical expression. It self-consciously seeks to deconstruct universal modernism in terms of values and images which are locally cultivated, while at the same time adulterating these autochthonous elements with paradigms drawn from

[70] Vaught, 22.
[71] Frampton, Kenneth, 1983, "Prospects for a Critical Regionalism," *Perspecta* 20: 148, https://doi.org/10.2307/1567071.

alien sources"[72] Here there is a fusion of basic, universalist beliefs with site specifics and regional conditions that help anchor a project to its unique location. Perhaps these are the qualities that Volker Welter alluded to when he expressed, "The home that Alexander owned in Palm Springs can be understood as evoking comparable notions of making its inhabitant feel at home in the world while at the same time opening up the universe."[73] Perhaps this is greatest achievement of the White's Alexander House. By crafting a sense of belonging to something greater like the landscape, White slows down our perception of time and for a moment we perceive a different, more paused passage of time.

Frampton went on to discuss inextricable qualities that the individual site plays in Regional Modernism and how this uniqueness serves as a distinguishing feature from which fundamental design decisions stem from. "If any central principle of critical regionalism can be isolated, then it is surely a commitment to place rather than space, or, in Heideggerian terminology, to the nearness of *raum*, rather than the distance of *spatium*."[74] Conceivably what this means is that whereas Modernism and the practitioners of the International Style focused solely on repeatable spatial qualities it made their architecture at home in no particular site. Those that favored regionalism took into account the greater context of where these spatial properties were to take place. Generic spaces quickly become dated, specific spaces that were rigorously conceived have staying power and impart a different sense of temporality.

[72] Frampton, 149.
[73] Welter, 2013.
[74] Frampton, 162

T.S. Eliot in *Dante* wrote, "Genuine poetry communicates before it is understood."[75] This is arguably a phenomenological observation and an effect that exceptional architectural leaves behind. Even if the occupants of a building are wholly ignorant of the convictions and intent of the architect, they can sense through material, light, space and order a concerted effort to shape their experience. It's important to consider that architecture in modulating time and gravity or alternatively, light and mass, give sensorial qualities that occupants ascertain and process. The senses then often elicit emotions shaped by an individual's cultural and personal experiences which push the person experiencing the architecture to qualify it some way. Walter White's Alexander house stirs up the sensations of lightness through its construction, integration into the landscape by using two levels to engage the topography at different parts of the site, harmony by forging relationships to the outdoors via the terrace and glazing as well as luxury in the choice of materials and compositional balance.

The Alexander house emerges out of a fortuitous condition whereby solvent clients permit an eager, young architect to explore and manifest his architectural vision to create a memorable work of architecture. What was once cutting edge in 1956 is in many ways still remarkably modern today, from the custom steel framing used to attitudes about space and what a house should achieve for its occupants. In particular, using the architecture itself to partly ensure occupant comfort and its greater relationship to the environment. Though Walter White never achieved the recognition of

[75] T S. Eliot, 1965, *Dante*, London: Faber and Faber.

some of his peers, the home he designed and built for the Alexander family stands as a testament of his talent and a desire to thrive in the desert.

The Alexander House, a Midcentury Modern single-family home, has seen trends come and go. Its design purposefully engages the local environment and the concomitant challenges associated with the desert. White sought to link the Alexander House to constructs beyond the scope and temporality of human existence and relied on keen observations of the natural world to achieve this end. Consequently, at the Alexander House, time seems to relent and we perceive its passage in a new light. By establishing complex relationships between man-made as well as natural, White has imparted a sense of balance and harmony that greet occupants with unexpected luxury. Outwardly, one could categorize the building as another Midcentury home, and yet White through the Alexander House hints to a greater scale of time making his architecture both at home in 1950s and today.

Concluding Thoughts:

The four sites studied reveal to us the complex nature of temporality in the desert. In the American South West there exists a distinct form of illumination that casts architecture in a unique light within the context of an openly lithic landscape. This dramatic setting, bordering on scenography, reveals a temporality that manifests itself as a protracted scale of time. Architects have lived with and addressed this temporality in novel ways.

At Pueblo Bonito we saw how the passage of time and ruination engender an architecture that converges towards the landscape in unexpected ways. Arcosanti challenged the temporality of the present by focusing on the past and assigning trajectories far into the future. During the site visit to Taliesin West the notion of dormant spaces was contemplated and an analogy to the cycles of life in the desert made. Finally, the Alexander House provides an example of how by addressing the site context in a rigorous fashion and crafting an architecture of the desert, we achieve a product that endures and becomes atemporal.

Undoubtedly, this is just an initial foray into the topic of temporality in the desert and there is still much to be learned from the American South West. I chose this region and topic with the intent of studying exceptional examples of desert architecture as a formative experience in my education. One day I aspire to build a domestic or civic project as a practicing architect in the desert. That day may be far off but all journeys begin with one step.

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