

white stone flats

an analysis by Sydney Tucker



“*As an architect, place is one of the tools in our toolkit. Place is obviously a site, but it's also a culture and a community... Architecture grows from a sense of place, which has so many levers and gears.*”¹

—— Benjamin Hall



Figure 01
South Facade White Stone Flats in the Morning

© 2023 Sydney Tucker, Kansas State University

All rights reserved. No part of this document may be reproduced in any form without written permission of the copyright owner. This document was generated for educational purposes and not for profit. It is not for distribution outside of fulfilling the educational requirements of assigned coursework and the author's personal use. Every effort has been made to properly cite all source material.

contents

04 introduction

architect / firm
project

08 analyses

moving in the shade
protective shell
aperture

20 citations

endnotes
references

page

04

architect & firm

benjamin hall design

Benjamin Hall, of Phoenix-based Benjamin Hall Design, is an architect with a passion for designing through every step of the project, from conceptualization to fruition. Receiving numerous accolades for their work, Hall's firm has become a prominent name within Arizona, with inspiration drawn from pioneers of Arizona architecture including Will Bruder and Rick Joy. Hall attended both the University of Arizona and the Danish International School, eager to gain knowledge in fabrication, as well as to learn to design in response to climate. While working alongside Bruder in his early, post-college career, Hall developed a desire to celebrate the inherent beauty of the landscape, while integrating cutting-edge technology and innovative materials to his process. These radical tectonics, best described by Annette LeCuyer, "...[look] to the construction

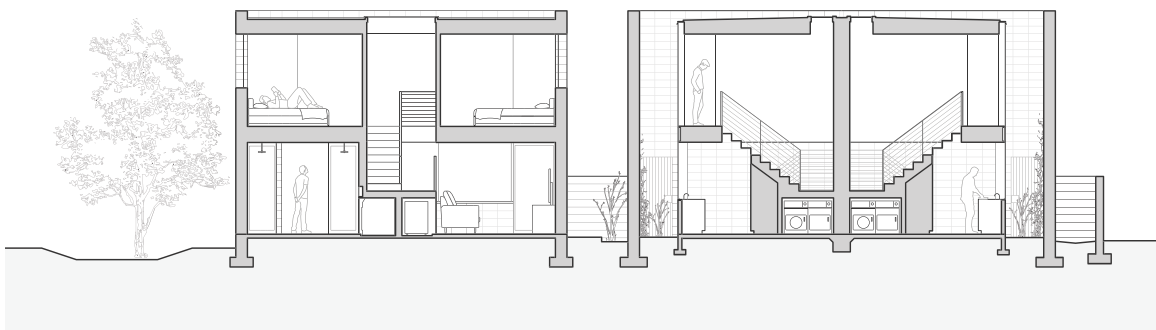
itself -- shaped by craft, culture, and context - as the source of its iconography."² Using this philosophy, Benjamin Hall Design focuses on the most important aspects of Arizona architecture: developing place and considering the environmental qualities of the Sonoran Desert.³ The firm is committed to revitalizing the lost profession of the "master builder", one who can perform both design and construction tasks. In addition to this, Hall creates architecture that alludes to the Native construction of the region, acknowledging the delicate climate and preserving the surrounding terrain. With this ethos in mind, the firm can bring timeless design that captures the unique Arizona landscape within the architecture, creating an elegant and natural sense of place for every project.



Figure 02

White Stone Flats from Above

With health and wellness in mind, White Stone Flats are designed with atriums and nature in each unit, simultaneously allowing for light to enter into the space, and emit from within during the night.



0 10' 20'
0 3m 6m

Figure 03

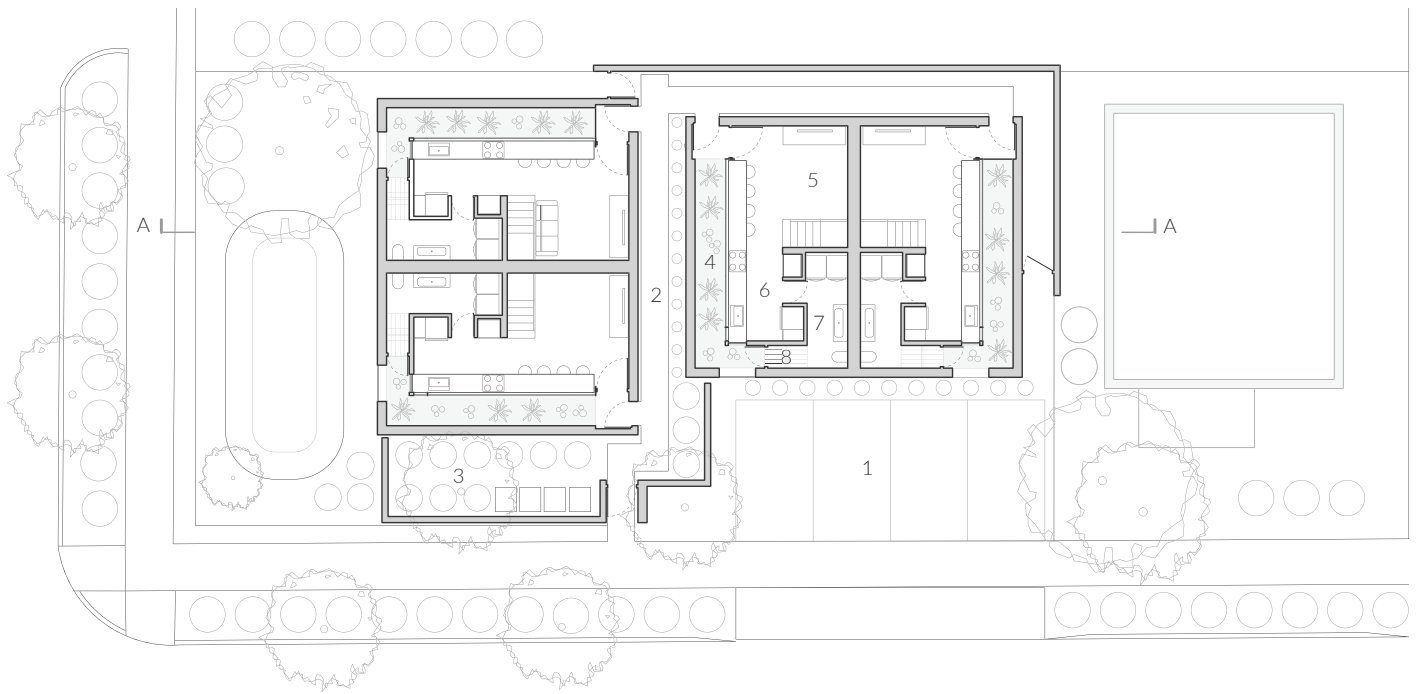
Section

project introduction

white stone flats

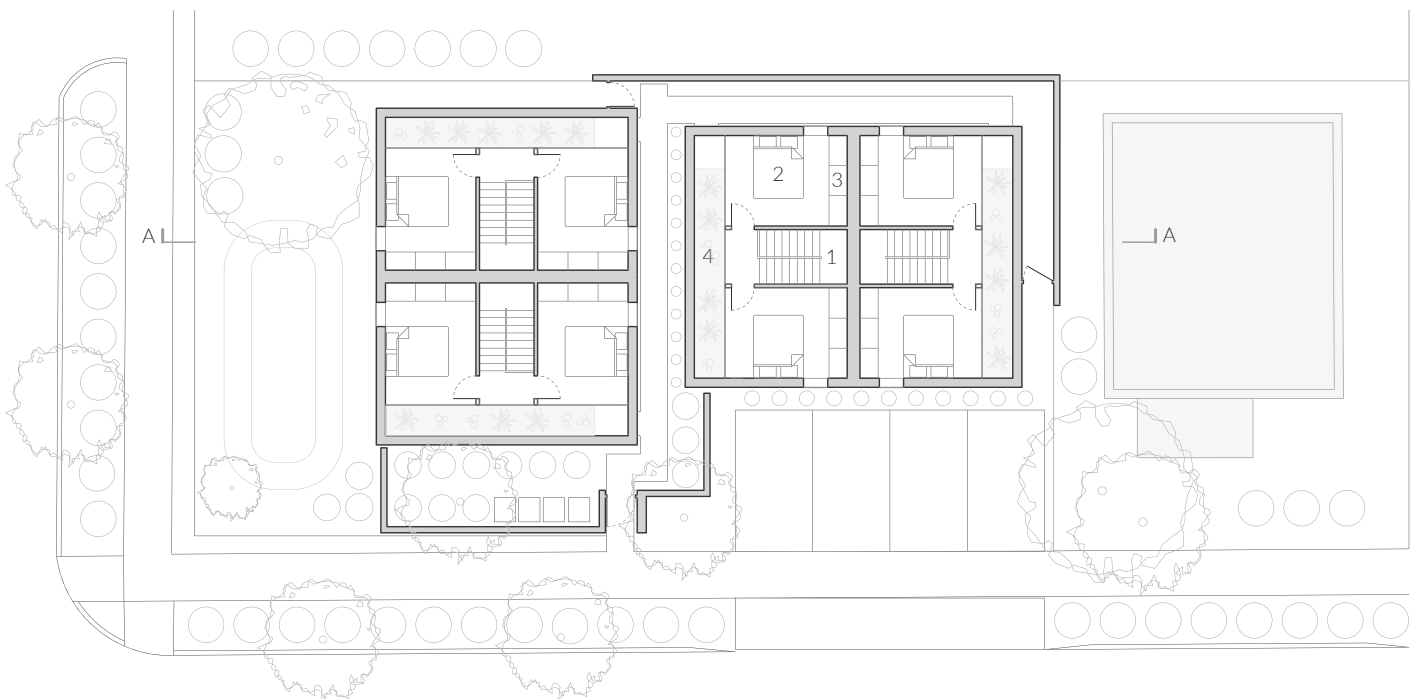
White Stone Flats, located in downtown Phoenix, Arizona, is a modern two-story development with numerous accolades for its innovative design and simple architectural solutions. With the Benjamin Hall Design ethos in mind, the team designed a unique structure focused on user health, connection to nature, and addressing the surrounding Arizona landscape. The complex is composed of two identical volumes, one rotated ninety degrees from the other, meeting the restrictive site requirements. Barrio architecture, most prominently found in Tucson, is comprised of stone block construction, flat roofs, wood doors, and buildings placed close in proximity to one another for maximum shading. At White Stone Flats, each unit is provided with a private atrium to bring nature into the interior. Custom-insulated white concrete blocks serve as the hard-shell exterior, specially designed to combat the desert heat and increase sunlight throughout the interior. Inspiration

from the desert landscape is more than apparent throughout Hall's designs. According to Benjamin Hall Design, [the buildings are] a choreographed series of compress and release moments, reminiscent of the experience of exploring slot canyons in Northern Arizona." ⁴ Throughout the construction process, Hall and his team worked hand in hand with contractors and construction workers to create a beautifully detailed, and innovative piece of architecture. Best defined by architect Michael Webb, author of *An Architecture of Landscape and Light in the Arizona Desert*, the most influential Arizona architects focus on passionately nurturing the land and the light, using appropriate materials and forms, and striving for sustainability.⁵ Driven by inspiration from these pioneers of Arizona architecture, White Stone Flats exhibits a masterly work of architecture, as well as Hall's dedication to detail, innovation, and contextual design.



- | | | | |
|---|-----------------|---|--------------------|
| 1 | Parking | 5 | Living |
| 2 | Entry Walkway | 6 | Kitchen |
| 3 | Community Space | 7 | Laundry + Bathroom |
| 4 | Private Atrium | 8 | Shower |

Figure 04
First Floor Plan



- | | |
|---|----------------|
| 1 | Stairs |
| 2 | Bedroom |
| 3 | Closets |
| 4 | Private Atrium |

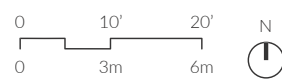


Figure 05
Second Floor Plan

page

08

analysis I

walking through the shade

Designing for the brutal heat and connecting back to the cultural traditions of underlying historical Arizona design were two critical architectural problems Benjamin Hall Designs looked to solve in White Stone Flats. Using a traditional technique of barrio construction, the two primary forms are placed close to one another, allowing for maximum shading of the primary walkway circulation. By doing this, the walkways stay cooler throughout the year, even in the intensity of the desert summer heat.

With the barrio technique in mind, the two buildings are placed five feet, three inches apart from one another, creating a narrow distance between the two masses. The walkway winds between the two buildings and measures three feet wide - comfortable enough for one person to circulate. Each building stands at twenty feet, four inches tall, while the city allowance for the property is 48 feet. The buildings stay conscious of the city's one-story homes, and historic Phoenix architectural style.



Figure 06

Exterior Walkway Between the Two White Stone Flats Buildings

Shading for the primary walkway was crucial to the architecture team. By pushing the forms closer to one another, the barrio technique can be seen working above to create maximum shade coverage.

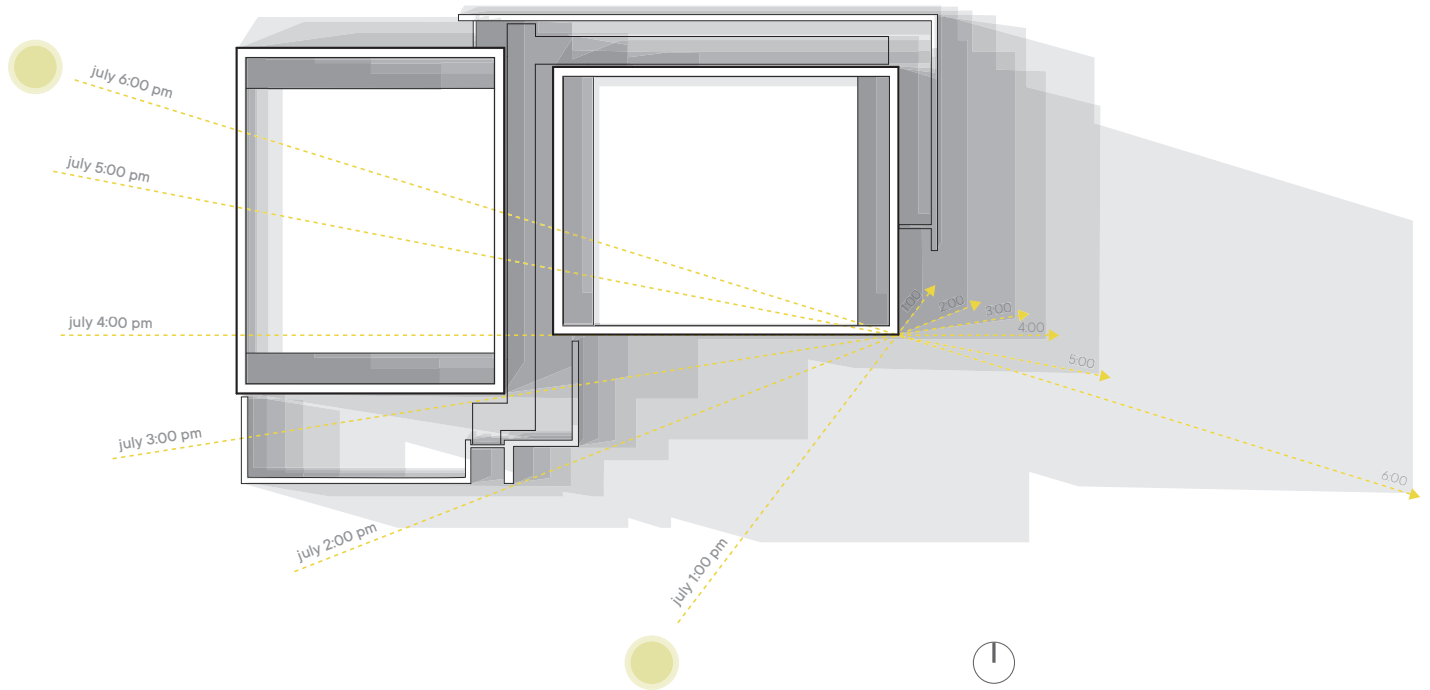


Figure 07

Shading Analysis

Diagram depicting shading of walkway during the hottest time of the year in Phoenix, July from 1:00-6:00 pm. Diagram shows walkways get optimal shading, even in the hottest desert sun.

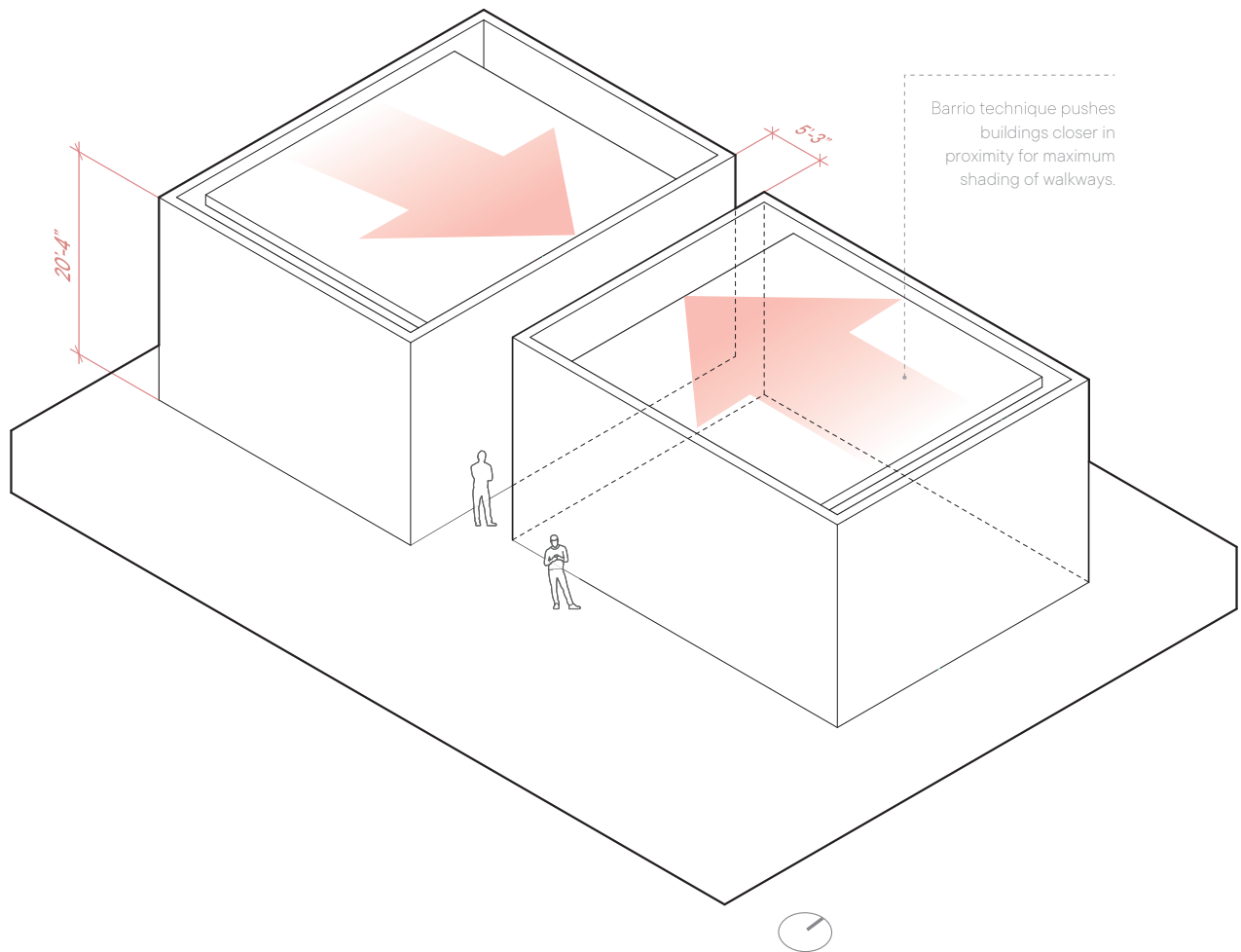


Figure 08
Barrio Construction Technique

Simplification of the barrio technique, pushing the two forms closer to one another for a historical, functional approach to shading all entries into the residential units.

page

12

analysis II

protective shell

Throughout the process of designing White Stone Flats, Hall and his team were interested in unique details that could be applied throughout the building to create a temperate, livable environment. With a focus on the simple gestures of living, White Stone Flats was designed with a protective shell of concrete masonry units wrapped around an interior void. This thick, concrete shell creates a cool, shaded interior that is separated from the downtown context, creating a space of shelter and retreat. In addition to the shell, windows on the exterior facade are composed of mirrored glass, allowing for the surrounding Sonoran landscape and Phoenix cityscape to reflect off the building. Creating an architectural canvas, the reflections of

the surrounding environment allow the building to become a piece of the desert landscape and city itself. To create this comfortable living environment, Benjamin Hall Design was tasked with developing a unique solution to combating the harsh desert heat while creating a bright, airy interior space. In response, the firm designed a concrete masonry unit shell equipped with separate treatments for the interior and exterior of the wall. The interior treatment consists of a burnished finish to allow for maximum reflections of natural light entering through atriums and windows. The wall is then constructed of a specially fabricated foam-filled block and painted white on the exterior to minimally absorb the Sonoran sun and heat with low cost, and low maintenance.



Figure 09

White Stone Flats West Facade in Morning

Acting like a canvas to the context, exterior windows reflect the environment around White Stone Flats, bringing it back into the building. This shell creates a life within, yet absorbs the life outside.

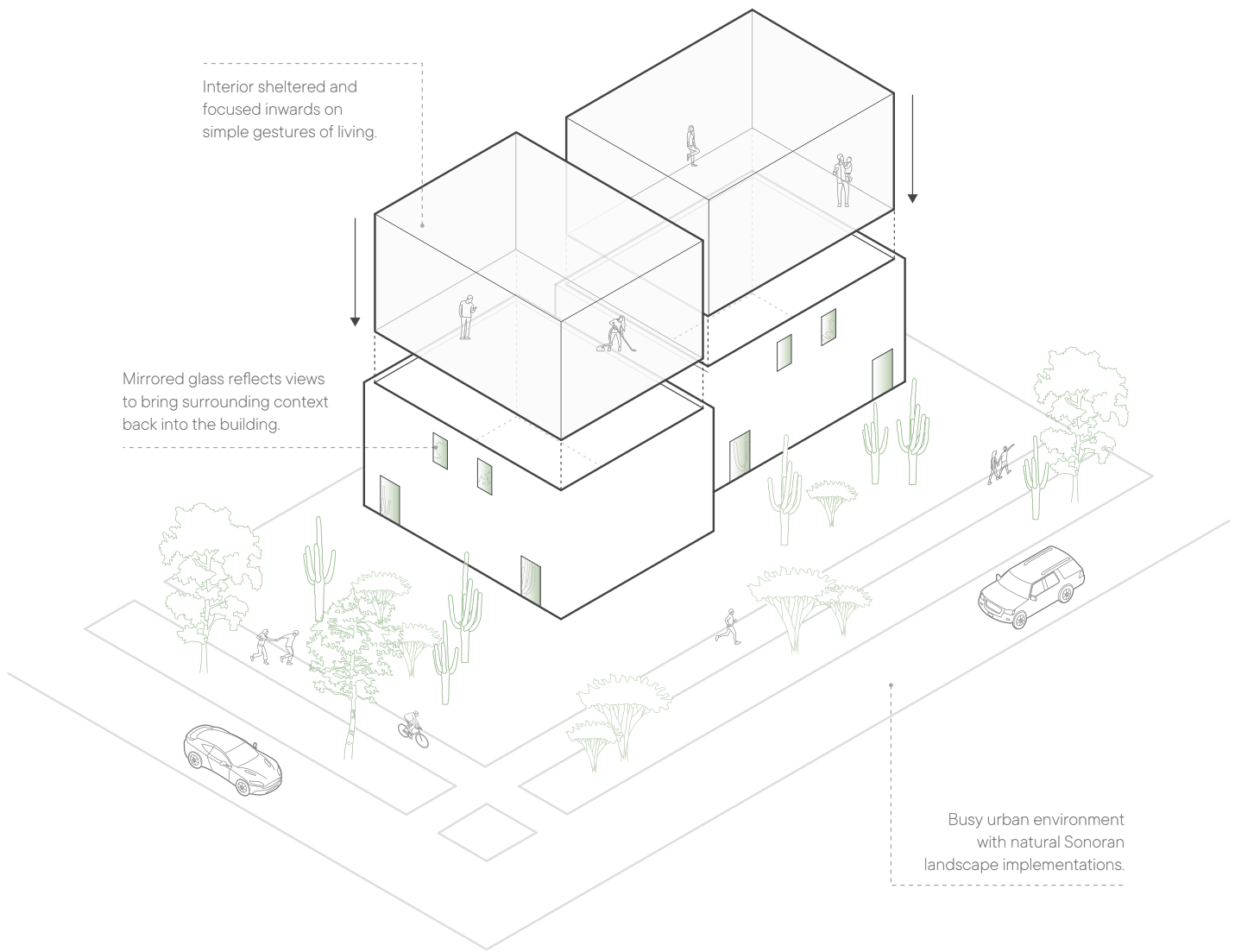


Figure 10

Protective Shell and Reflective Windows

The environment outside of White Stone Flats is bustling and lively. The protective shell shields from this activity, yet the reflective windows pull this urban energy back into the building itself.

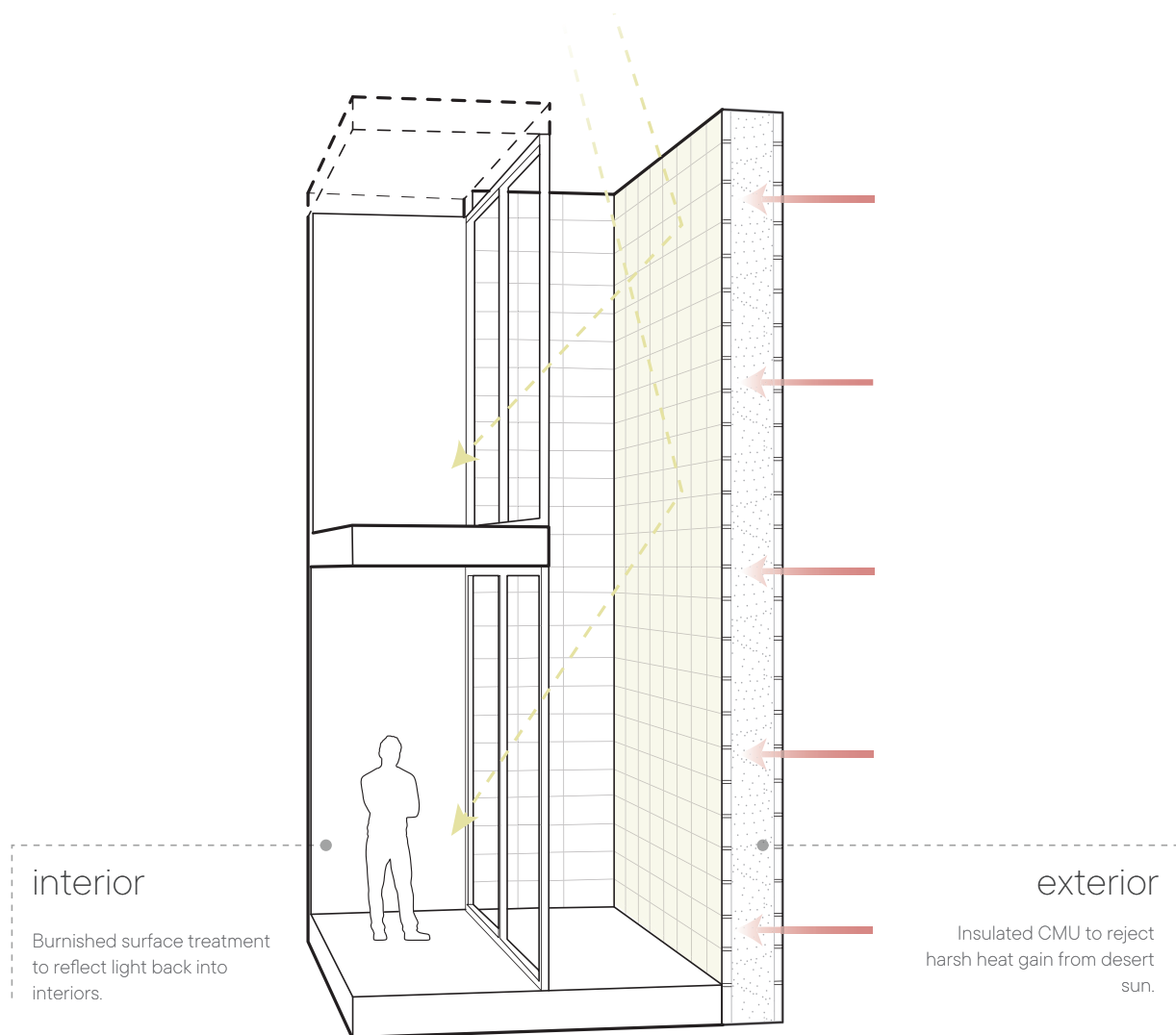


Figure 11
Exterior CMU Wall Detail

Benjamin Hall Design made the detail of this protective shell simple, with surface treatments to the interior face of the wall for maximum natural light, and insulated CMU to keep the interior cool throughout the summers.

page

16

analysis III

apertures

Inspired by a childhood trip with his father, Benjamin Hall looked to Hopi Pueblo style architecture when designing White Stone Flats, particularly its fenestration details. The small apertures throughout the bedrooms of the complex are right-sized, meeting the minimum code requirements for width (twenty inches) while only allowing for small amounts of direct light, without intensive heat gain. Hall mentions in an interview, "I have distinct memories in being in old, Pueblo-style mud boxes...with their little windows. The interiors were cool, even though it was 115 degrees outside, and the light pierced through those small openings...White Stone Flats was inspired by that Hopi trip."⁶ With the enclosed atrium space on the

adjacent side of each bedroom, the space gets substantial amounts of indirect light and access to natural elements while the interior space stays cool and comfortable for the occupants. In addition to the fenestration of White Stone Flats, further elements can be compared to the Hopi Pueblo architectural style. This includes the use of wooden doors that mark the entry to the building, masonry use for the exterior walls, and the simple rectangular forms of the building. By taking inspiration from this style, the buildings utilize functional techniques for passive cooling and pay homage to the traditional histories of Arizona architecture.



Figure 12

White Stone Flats Interior Bedroom

Just meeting the code requirements, small apertures are punctured through the exterior CMU shell to allow for small slices of light, and complimented by indirect light from the atrium window.

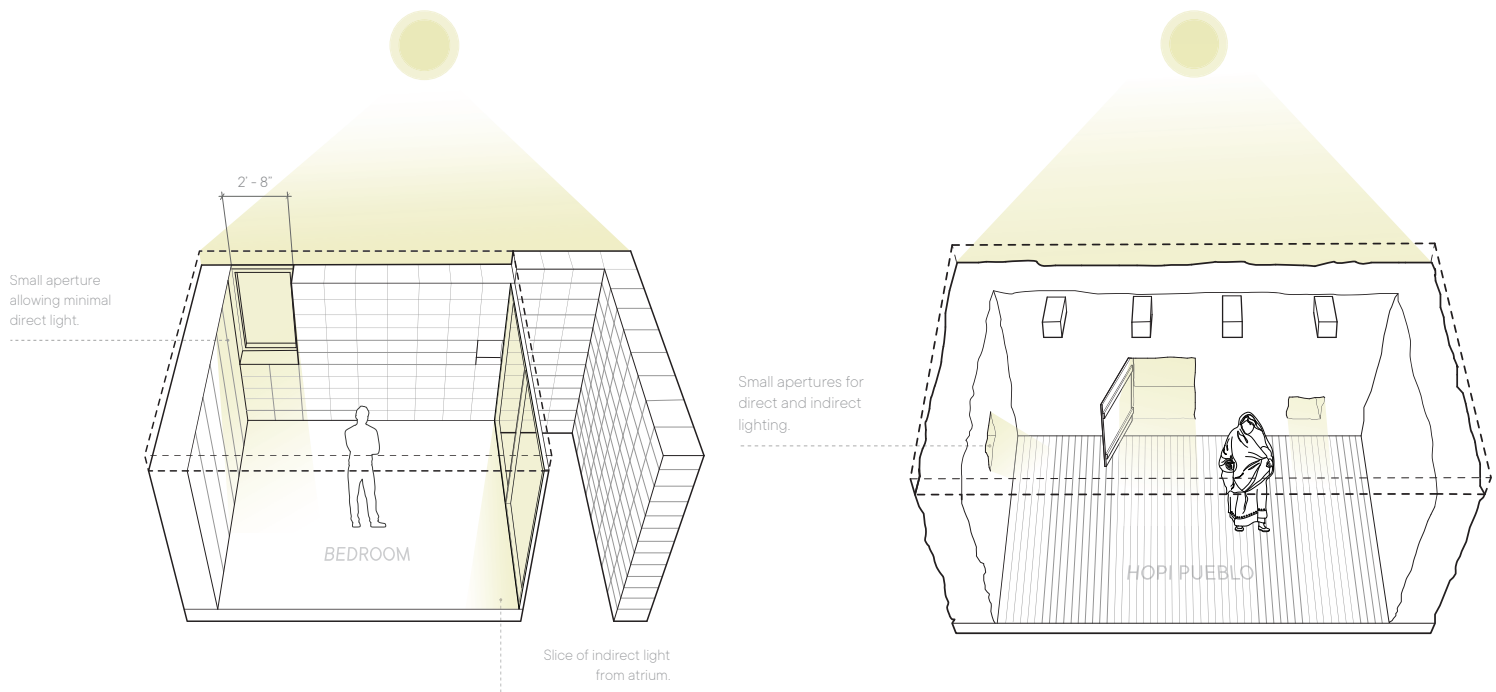
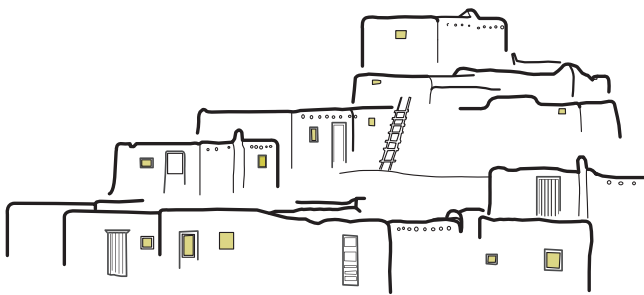
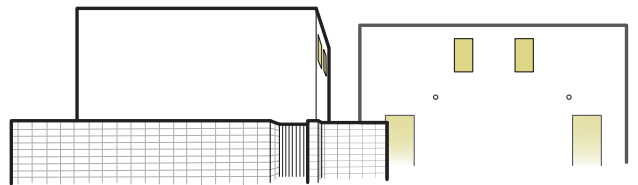


Figure 13
Aperture Historical Analysis

Pulling inspiration from the Hopi Pueblo style throughout parts of Arizona, Hall and his team make clear architectural moves to minimize harsh light through small apertures, and keep interiors cool with thick walls.



Hopi Pueblo Architecture



White Stone Flats

Figure 14

Hopi Pueblo Architecture to White Stone Flats Comparison

By simplifying these exterior facades, similarities between the Hopi Pueblo style and the approach to White Stone Flats become obvious. Use of masonry, small apertures, and wood accents are critical to the adaptation of the Hopi style.

figure credits

figure 01	Winqvist, Matt. Photography. Phoenix: Matt Winqvist Photography, 2019. Benjamin Hall Design
figure 02	Winqvist, Matt. Photography. Phoenix: Matt Winqvist Photography, 2019. Benjamin Hall Design
figure 03	(Section) - Figure by Author, derived from provided documents by Benjamin Hall Design
figure 04	(First Floor Plan) - Figure by Author, derived from provided documents by Benjamin Hall Design
figure 05	(Second Floor Plan) - Figure by Author, derived from provided documents by Benjamin Hall Design
figure 06	Winqvist, Matt. Photography. Phoenix: Matt Winqvist Photography, 2019. Benjamin Hall Design
figure 07	Figure by Author
figure 08	Figure by Author
figure 09	Winqvist, Matt. Photography. Phoenix: Matt Winqvist Photography, 2019. Benjamin Hall Design
figure 10	Figure by Author
figure 11	Figure by Author
figure 12	Winqvist, Matt. Photography. Phoenix: Matt Winqvist Photography, 2019. Benjamin Hall Design
figure 13	Figure by Author
figure 14	Figure by Author

endnotes

- 1 Chad Schwartz, Interview with Benjamin Hall (2023)
- 2 Annette LeCuyer, *Radical Tectonics* (London: Thames & Hudson, 2001), 15-16.
- 3 Chad Schwartz, *Tectonics of Place* (2023), 5.
- 4 Benjamin Hall Design, *White Stone Flats*, benjaminhalldesign.com, unknown date, <https://benjaminhalldesign.com/whitestoneflats>.
- 5 Michael Webb, *An Architecture of Landscape and Light in the Arizona Desert* (A+U: Architecture and Urbanism, 2002), 33
- 6 Chad Schwartz, Interview with Benjamin Hall (2023)

bibliography

LeCuyer, Annette W. *Radical Tectonics*, 2001.

Schwartz, Chad. *Introducing Architectural Tectonics: Exploring the Intersection of Design and Construction*. Taylor & Francis, 2016.

Benjamin Hall Design. "Benjamin Hall Design | MODERN ARIZONA ARCHITECTURE," n.d. <https://benjaminhalldesign.com/whitestoneflats>.

Webb, Michael. "A+U: Architecture and Urbanism." *An Architecture of Landscape and Light in the Arizona Desert*, 2002.

Details of the Desert | Chad Schwartz

