

# RE-ASSERTING THE PAST AND PRESERVING THE FUTURE

A Cultural Center in Wadi Rum



**RE-ASSERTING THE PAST AND PRESERVING THE FUTURE**

**A Cultural Center in Wadi Rum**

Randa F. Malkawi

*Thesis submitted to the faculty of the Virginia  
Polytechnic Institute and State University  
in partial fulfillment of the requirements  
for the degree of*

**Master of Architecture  
in  
Architecture**

Jodi La Coe  
Paul Kelsch  
Susan Piedmont-Palladino

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## ABSTRACT

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Although only a few of us have been to the desert, we all have a clear and chromatic image of it. Our mental representation of these landscapes has been formed throughout the years through photographic media and film. A few well known visual and literary works that contributed to the myth of the desert include:

Le Petit Prince (1943), Antoine de Saint-Exupéry  
The Seven Pillars of Wisdom (1926), T.E. Lawrence  
Lawrence of Arabia (1962), David Lean  
Theeb (2014), Naji Abu Nowar

This fascination led to an increase in demand for travel to these mythological places. Such an increase raises particular challenges for the desert and its inhabitants that include a demand for services and infrastructure and an appetite to learn more about the site. The phenomenon creates new issues that require creative solutions and interventions.

How can architecture provide spaces as a solution to mitigate these issues? The thesis examines the question in the context of the Wadi Rum Protected Area (WRPA), a UNESCO world heritage site that is located in the Arabian Desert region. It proposes a cultural center that reflects the ecological and cultural significance of the site. The architecture of the building converges elements from the desert with elements from local bedouin culture. The building aims to create spaces for educational opportunities to the bedouin and the tourist in order to enhance the visitor's experiences and enrich the local's knowledge.



**GENERAL AUDIENCE  
ABSTRACT**

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This thesis examines the issues that are associated with an increase in tourism in the Wadi Rum Protected Area (WRPA), a UNESCO World Heritage site that is located in the Arabian Desert Region. The thesis attempts to provide a solution through architecture and urban planning strategies that include the proposition of educational spaces for the tourist and the local. These architectural spaces have the ability to add value to the tourist's experience and enrich the local community in the future.



## DEDICATION

To my parents,

I did it! Thank you for your patience, your constant words of encouragement and for always cheering me on. Thank you for guiding me through the hard moments and for throwing me parties in the happy moments. Your constant enthusiasm and words of wisdom helped shape this project in ways that I am eternally grateful for.

To my sisters,

A big shoutout to you for entertaining me and staying up with me on the long nights that never seemed to end. Thank you for always complimenting my work, even when you had absolutely no idea what it was. I wouldn't be sane if it wasn't for you.



## ACKNOWLEDGEMENT

To my committee members, Jodi La Coe, Paul Kelsch and Susan Piedmont-Palladino,

Every conversation with you was a source of ‘aha!’ moments throughout this project. There is so much that I learned from this project, not only through research and design, but also through dialogue and feedback. Thank you for all your efforts to make sure that I kept moving forward, and for challenging me to constantly dig a little deeper.

To my fellow peers,

This has been a great collective journey, and although its time for each of us to diverge into our own paths, I have no doubt that we will cross paths again. Thank you for your friendship and support throughout this process. Until we meet again...



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## INTRODUCTION

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In 2017, I picked up the book ‘Desert Tourism: Tracing the Fragile Edges of Development’. The book was a compilation of essays that examined the topic of tourism in the desert from a multi disciplinary perspective and it focused on breaking down the reasons that led to an increase in demand for desert tourism. Around the same time, I visited the Wadi Rum Protected Area while I was in Jordan. While I was touring the site, the essays were still fresh in my mind and I was struck by all the ways that the site seemed to be responding to the topic. This was a time that the site was emerging as a desert tourism hot spot in the region, and was gaining popularity very quickly amongst tourists. My fascination with this landscape and topic continued over the years, and so it felt like a good use of my time to embark on this topic and further analyze how the site was responding to the issues of the rise in tourism.

Initially, the intent of my thesis was to examine and understand the importance of this site and its cultural heritage, and how it was being affected by the influx of tourists. The final aim of the proposal was to propose an architectural solution based on the research findings.

The thesis asks the following questions:

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WHY HAS TOURISM INCREASED OVER THE PAST FEW YEARS IN WADI RUM?

PART I

WHAT IS THERE TO DO IN WADI RUM THAT IS MAKING IT SO ATTRACTIVE?

WHAT ARE SOME ISSUES ASSOCIATED WITH THE INCREASE IN TOURISM?

PART II

HOW CAN ARCHITECTURE PROVIDE SOLUTIONS TO EMERGING AND EXISTING ISSUES THAT ARE ASSOCIATED WITH THE RISE IN TOURISM?

PART III

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These questions formulate the different phases of the thesis project. The first two questions are tackled in Part I of the thesis which involves an in depth site analysis. The third question is examined in Part II of the thesis, which includes a site visit and observing existing issues. Finally, the last and most complex question is tackled in Part III of the thesis, which attempts to propose a responsible architectural project that would act as an architectural intervention.



**PART I**  
**Site Analysis**



WHY HAS TOURISM INCREASED OVER THE PAST FEW YEARS IN WADI RUM?

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HOW CAN ARCHITECTURE PROVIDE SOLUTIONS TO EMERGING AND EXISTING ISSUES THAT ARE ASSOCIATED WITH THE RISE IN TOURISM?

PART I

## WHERE IS WADI RUM PROTECTED AREA?

Wadi Rum Protected Area, also known as WRPA, is situated in southern Jordan and near the border with Saudi Arabia. This site was an ideal one for understanding the impact of tourism on the landscape for a number of reasons. Part I - Research Analysis will present an in-depth examination of the following site characteristics:

### **It has a boundary**

The WRPA is bounded by both a political boundary (Jordan) as well as an invisible boundary that limits accessibility and controls access to the site. In 1997, Jordanian Authorities established the invisible boundary that defines the 'protected area' and it was further adopted by UNESCO in 2011.

### **It is accessible**

The landscape is easily accessed through a main highway from the major city of Amman and Jordan's international airport. It is also part of a larger network of tourist sites across the country.

### **It is culturally and ecologically significant**

WRPA was adopted as a UNESCO world heritage site in 2011. It was inscribed for both its natural and cultural importance in the region.

### **It has witnessed an increase in tourism over the last few years**

A combination of factors that include its world heritage designation and its portrayal in media led to a significant increase in tourists across the Protected Area over the last few years.

### **It has various types of tourism accommodation**

Various types of lodging are scattered across the WRPA and they consist of three major types of accommodation: the black tent, the geodesic domes and the inflatable bubble tents.





- THE SITE HAS A BOUNDARY (POLITICAL OR IMAGINED)
- THE SITE IS ACCESSIBLE (NOT REMOTE OR COMPLETELY ISOLATED)
- THE SITE IS SIGNIFICANT (HISTORICALLY AND ECOLOGICALLY)
- THE SITE WAS SEEING A STEADY INCREASE IN TOURISM
- THE SITE HAS DIFFERENT TYPES OF ACCOMMODATION

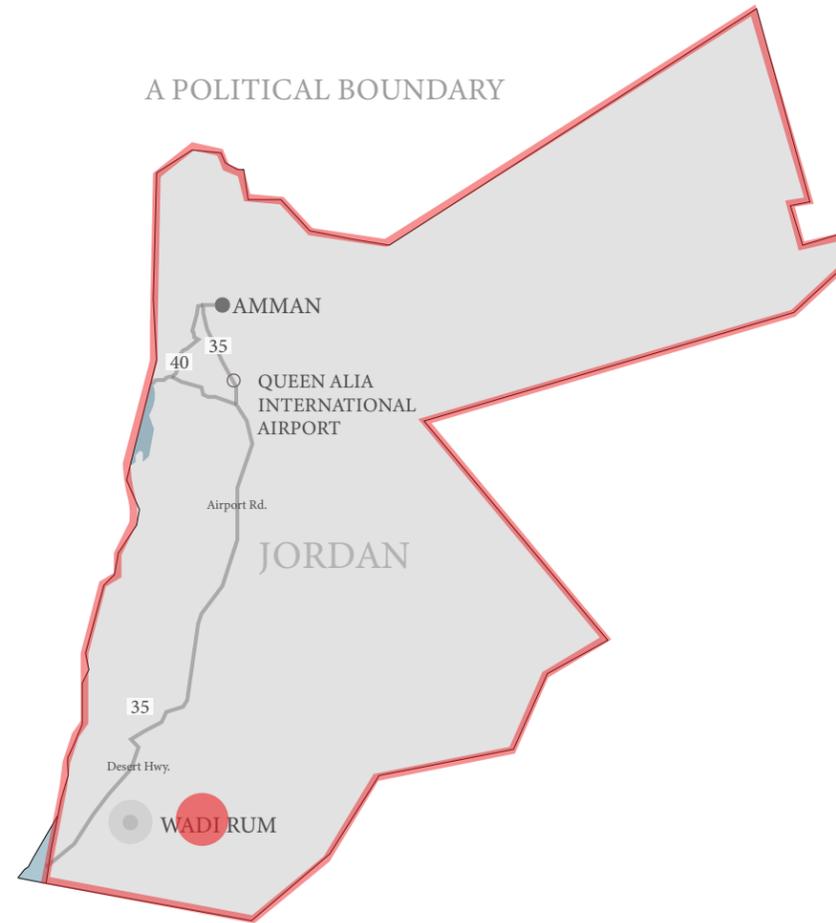
## A BOUNDARY

The vastness of the desert can pose many challenges. A site with a boundary would allow for more focused research. The Wadi Rum Protected Area (WRPA) has two defined boundaries.

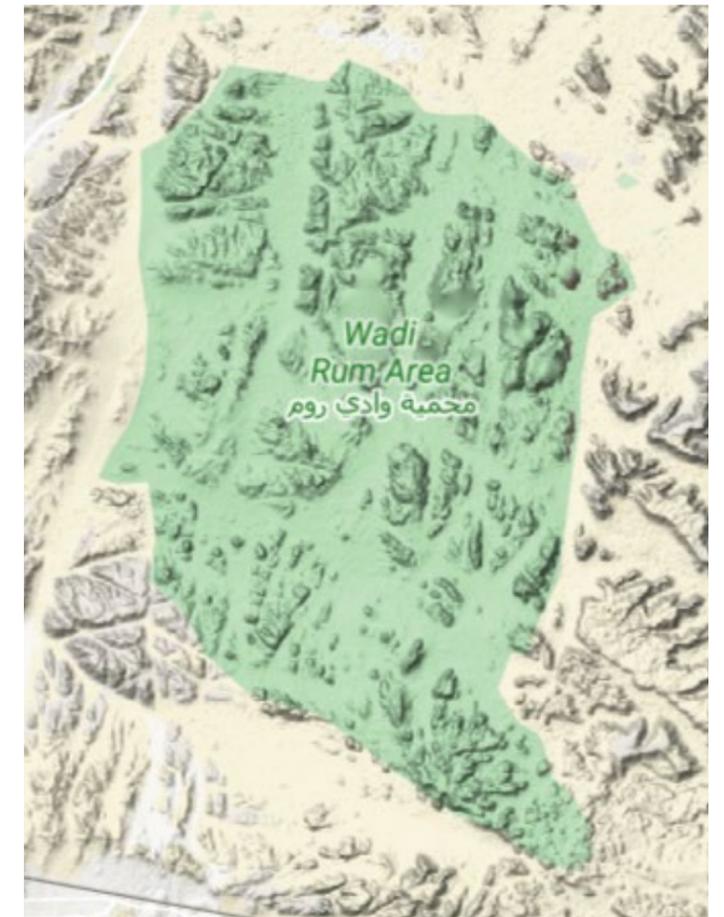
1. The first boundary is a political one; The protected area is located in the south of Jordan.

2. The second boundary defines the designated protected area. It is an invisible boundary that was established in 1997 by the Jordanian Authorities. The same boundary was further adopted by UNESO in 2011 when the WRPA was recognized as a World Heritage Site<sup>1</sup>. This boundary will define the site that is being analyzed in this thesis. The final design proposal shall be proposed somewhere within the protected area.

A POLITICAL BOUNDARY



AN INVISIBLE BOUNDARY



## A BOUNDARY

The site map highlights the protected area boundary in red. The exterior lighter grey zone is the buffer zone that exists between the rest of the desert and the WRPA. The landscape in the WRPA is split into two major canyons which constitute the site. To understand the scale of the site, WRPA is approximately four times larger than Washington, D.C.



Wadi Rum, Jordan

Total Area  
277.99 sq. miles  
720 sq. km

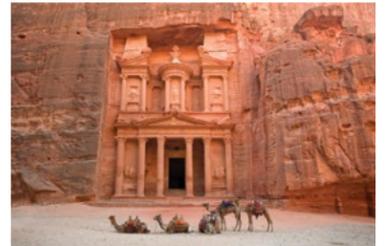
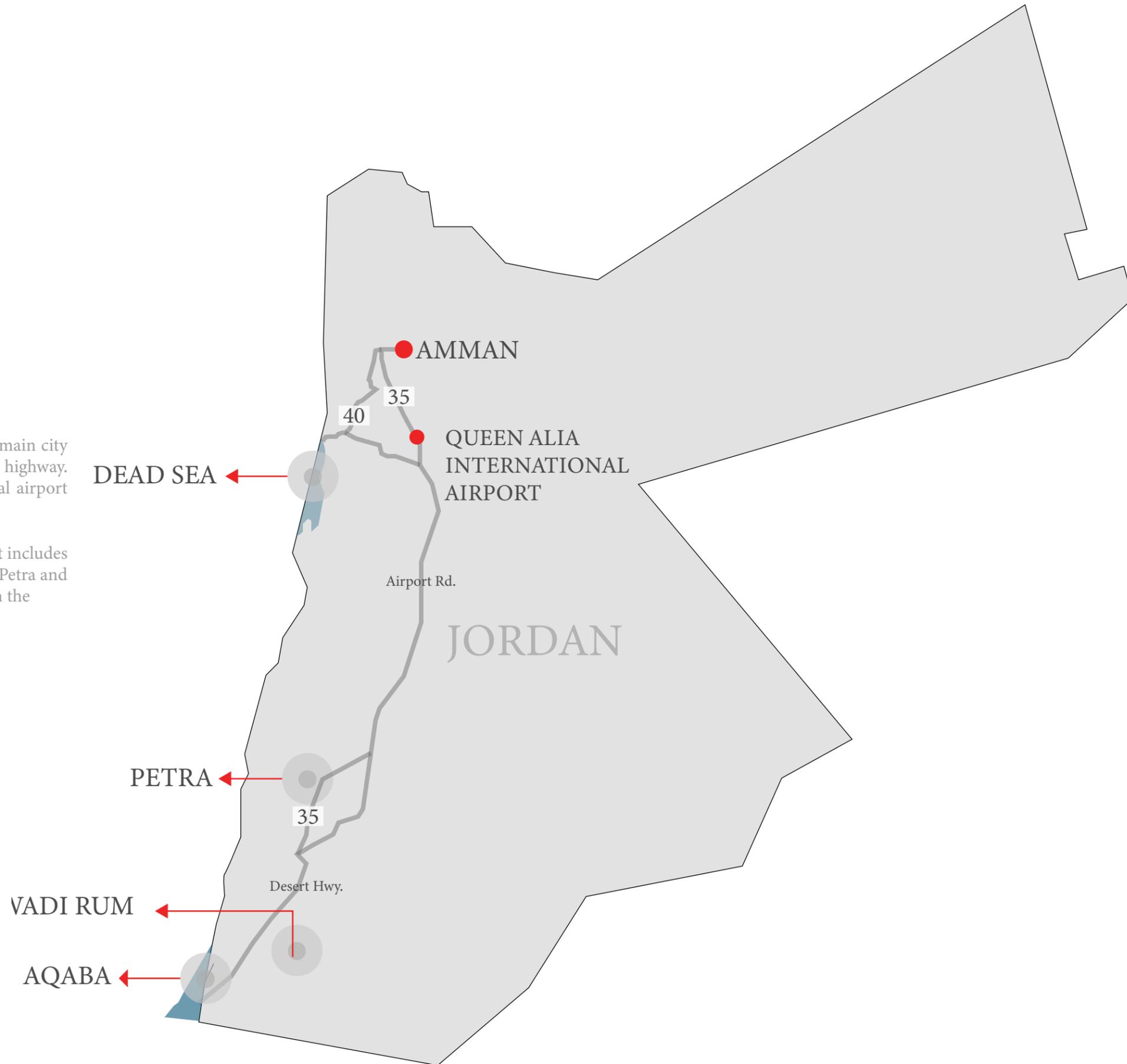


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## ACCESSIBILITY

The WRPA is easily accessible from Amman, the main city in Jordan, through the main highway - the desert highway. It can also be accessed from Jordan's international airport through the same highway.

WRPA is part of the larger network of tourism that includes Petra and the Dead Sea. It is a 30- min drive from Petra and so many people tend to stop by or spend a night in the desert.



## ACCESSIBILITY

The WRPA is officially entered through a local road just off the highway. The road takes you into the visitor centre, which is the official way to enter the Protected Area. Once dropped off at the visitor center, the tourist would purchase a ticket for sight-seeing and hop on one of the designated trucks that would drive south on the Wadi Rum Rd. all the way to the end of it to enter the desert where the landmarks exist.



Visitor Centre parking lot



Visitor Centre



Visitor Centre parking lot



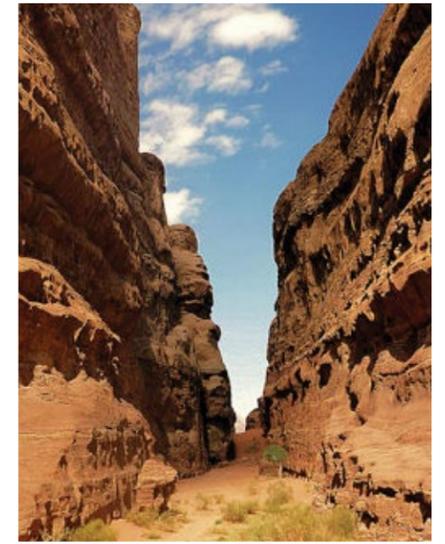
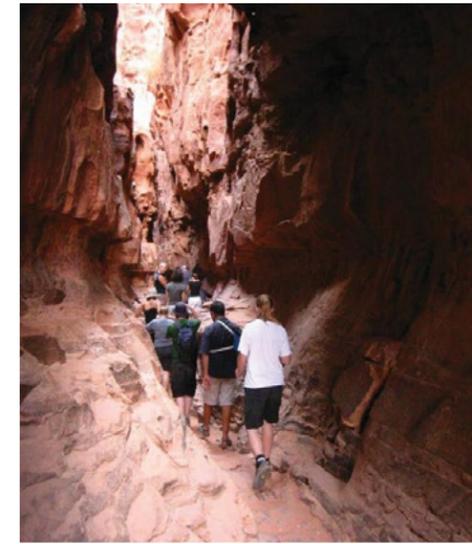
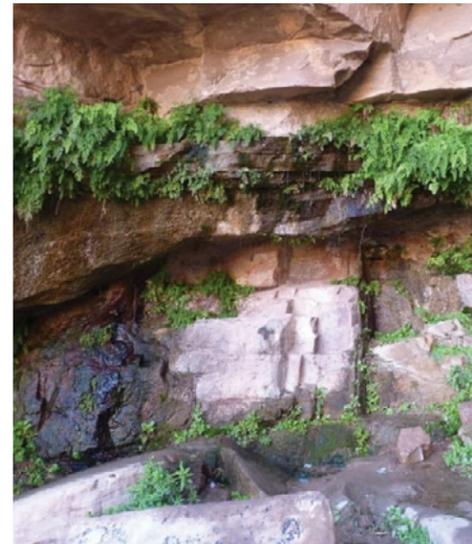
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- THE SITE WAS SEEING A STEADY INCREASE IN TOURISM
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## SIGNIFICANCE: LANDSCAPE

Wadi Rum has always been identified as a significant site in Jordan that illustrated the evolution of civilization and urban activity in the region. In 1997, the Jordanian Authorities acknowledged the site as a Protected Area, citing conservation methods to protect it<sup>2</sup>. Furthermore, the site was recognized as a World Heritage Site by UNESCO for its natural and cultural significance<sup>3</sup>.

The desert landscape was developed under various factors that include lithology, tectonic activity and weathering and erosion. It is constituted by many forms that include towering cliffs, sand dunes, springs (such as the infamous Lawrence's Spring) and a range of narrow gorges<sup>4</sup>.

The chromatic hues of the desert were formed at different periods in time. The bottoms of the cliff are made up of granite, while the middle and top are a combination of purple *um sahn* sandstone and white *rum* sandstone<sup>5</sup>.



## SIGNIFICANCE: CULTURE

The people of the landscape, known as the Bedouins have inhabited the site for the last thousand years<sup>6</sup>. The Bedouins, also known as Bedo in arabic, البدوي, which means desert dwellers.

Traditionally, the Bedouins lived in tents in order to wander the desert freely. They relied on pastoralism and trading for income and rode camels, donkeys and horses across the landscape.

Today, however, the Bedouins are settled in tribal villages. The two main reasons that led to their settlement are the need to access clean water and the significance of education to the future generations. They live in typical concrete homes today and rely on tourism for their income.



## SIGNIFICANCE

Wadi Rum Village sits within the Protected Area (PA). The only existing road in WRPA culminates at the end of the village to allow for easy access to the locals that live in the village.





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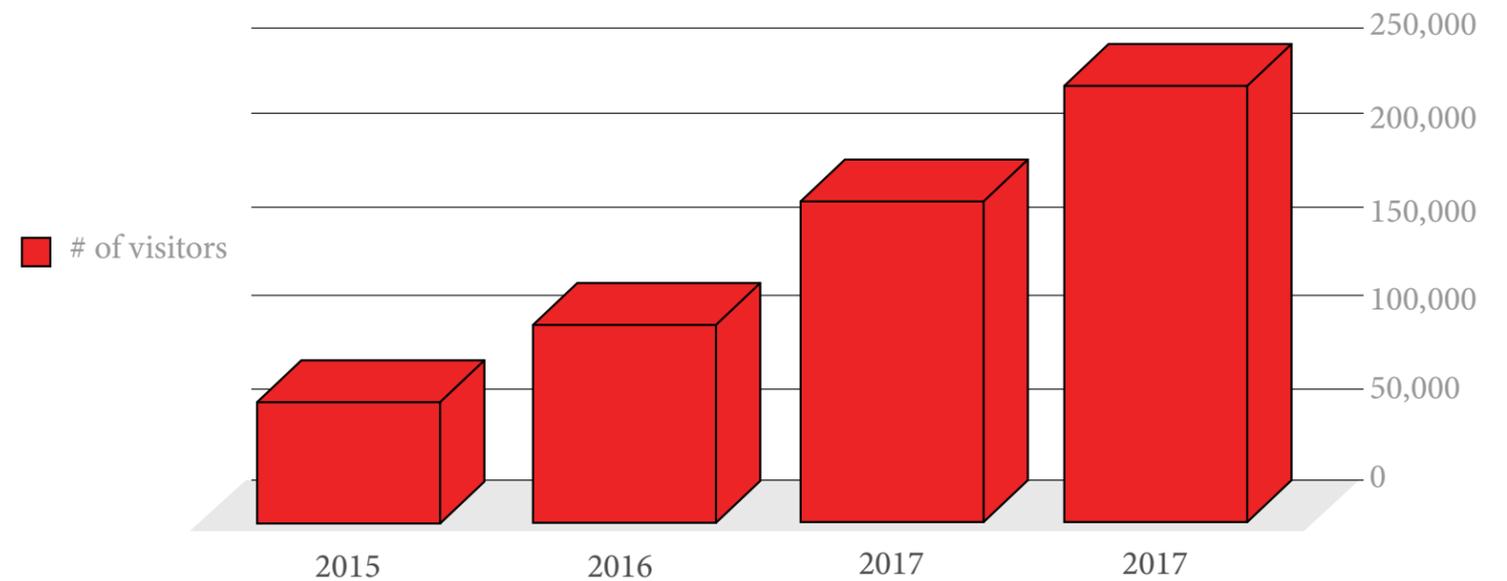
## TOURISM INCREASE

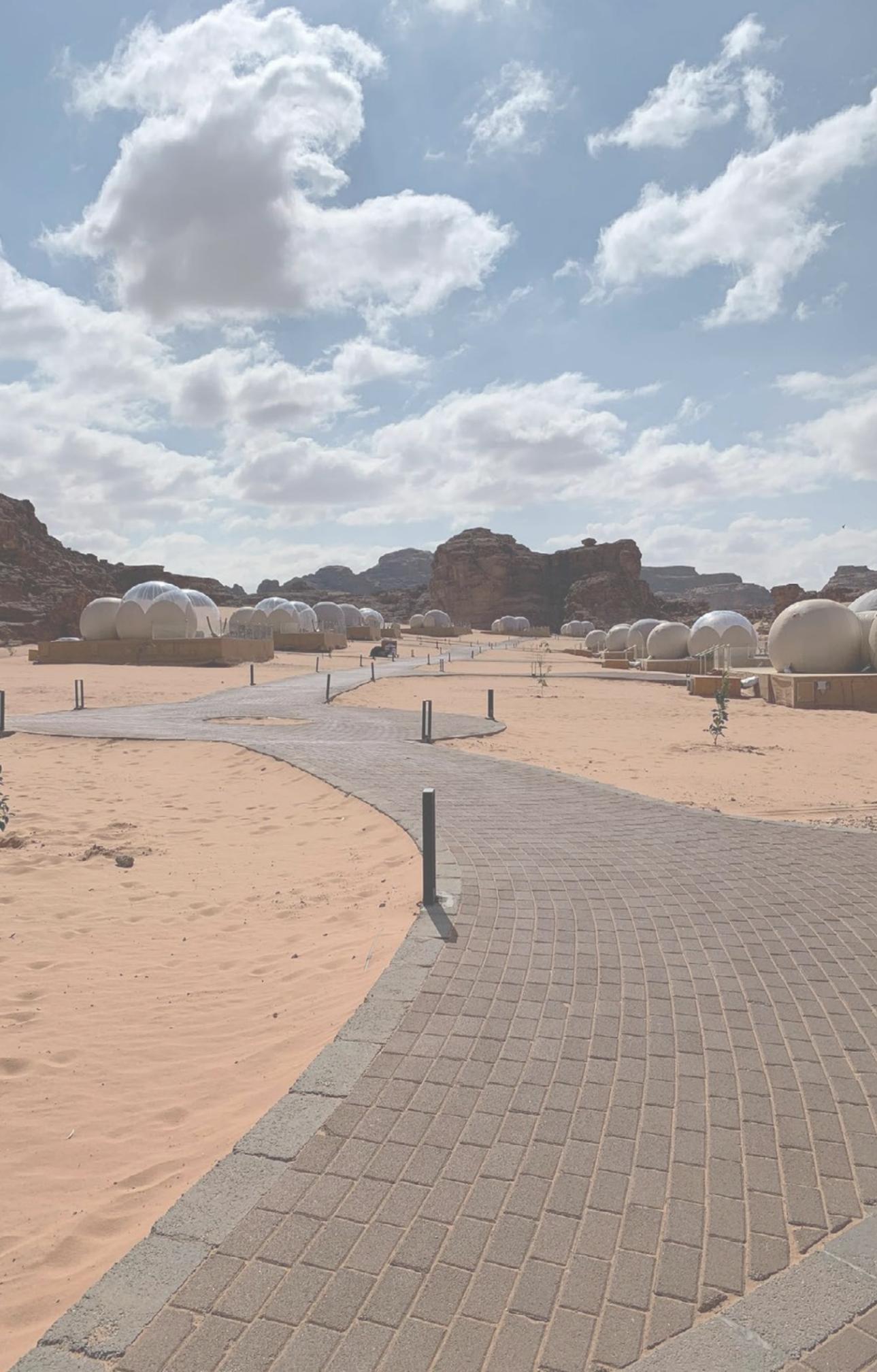
WRPA has witnessed a significant increase in tourism over the last few years. There are many underlying reasons for that, including the general increase in ecotourism and desert tourism. However, there are three major causes that contributed to the phenomena:

1. WRPA's world heritage designation by UNESCO promoted the site at an international scale, bringing curious tourists from all over the world to explore this historic site.
2. Jordan has invested heavily in tourism marketing over the last few years, which has also brought with it many visitors from other countries.
3. Finally, Wadi Rum has been featured and romanticized in various films, poetry and writing. It was first featured as the backdrop for Lawrence's 'Seven Pillars of Wisdom', as he writes about his time on the site and the locals that live there. Other notable media features such as *The Martian* and *Aladdin* most recently.



# OF VISITORS TO WADI RUM BY YEAR





- ~~– THE SITE HAS A BOUNDARY (POLITICAL OR IMAGINED)~~
- ~~– THE SITE IS ACCESSIBLE (NOT REMOTE OR COMPLETELY ISOLATED)~~
- ~~– THE SITE IS SIGNIFICANT (ECOLOGICALLY AND HISTORICALLY)~~
- ~~– THE SITE WAS SEEING A STEADY INCREASE IN TOURISM~~
- THE SITE HAS DIFFERENT TYPES OF ACCOMMODATION

## ACCOMMODATION

The increase in tourists on the site has led to a demand for accommodation, which the Protected Area (PA) has managed to meet very quickly. There are many different lodging types within the PA. Generally, all accommodations are laid out on the landscape as single units with communal spaces between them.

1. The first lodging type is the black tent. The tent maintains a black tent exterior but its interior resembles a hotel room, with its hardwood flooring and solid restrooms.

2. The second type, known as the Geodesic Dome, emerged in 2015, around the time that *The Martian* was released. The dome is meant to resemble *The Martian's* movie poster, which consists of an astronaut helmet emerging out of the earth.

3. The last accommodation type emerged most recently and is an inflatable bubble camp that allows for panoramic views of the landscape.



## SIGNIFICANCE

- 1 Lawrence's Spring
- 2 Khaz'ali Canyon
- 3 Sunset Sites
- 4 Sand Dunes Area
- 5 Burdah Rock Bridge
- 6 Burrah Canyon
- 7 Alalameh Inscription
- 8 Seven Pillars of Wisdom
- 9 Siq Um Al Tawaqi
- 10 Sunset Site 'Al Ghorub'
- 11 Su'eifan
- 12 Little Bridge
- 13 The Map
- 14 Anfashieh Inscriptions
- 15 Nabatean Temple
- 16 Al Shallaleh
- 17 Um Ad Dami
- 18 Um Frouth Rock Bridge
- 19 Lawrence's House



0 5 5 KM



- Visitor's Center
- Camp/ Lodging Sites
- Inscription Sites
- Rail Road
- Roads and Highways
- Water Springs
- Dirt Road
- Border
- Free Access
- Restricted Zone
- Buffer Zone
- Closed Area
- Protected Area Boundary
- Villages



**PART II**  
Site Visit

~~WHY HAS TOURISM INCREASED OVER THE PAST FEW YEARS IN WADI RUM?~~

~~WHAT IS THERE TO DO IN WADI RUM THAT IS MAKING IT SO ATTRACTIVE?~~

**WHAT ARE SOME ISSUES ASSOCIATED WITH THE INCREASE IN TOURISM? | PART II**



HOW CAN ARCHITECTURE PROVIDE SOLUTIONS TO EMERGING AND EXISTING ISSUES THAT ARE ASSOCIATED WITH THE RISE IN TOURISM?

## DAY 01

In order to grasp at the true issues that were arising from the increase in tourism, it was becoming more and more clear that a visit to the site was necessary. The design proposal would only be effective if it tackled the underlying issues that are being faced by locals that experience this landscape everyday, as well as tourists that spend only a short period of time on the site but want to learn as much as possible about the site. In order to do that, it was important to speak with the tourists, locals and professionals who are also looking at the Protected Area.

In November 2019, I embarked on a 3-day journey to the Wadi Rum Protected Area and interviewed various locals and tourists. I was lucky enough to befriend a wonderful local guide, Emad, who showed me around the village and took me to speak with a wonderful old man who was heavily involved in the formation of the village.

My conversation with Emad was perhaps the most fascinating. He spoke about all the ways that the locals were involved in forming the land into what it is today. He was extremely frustrated at how little the tourists knew about the Bedouin traditions and culture. When I asked him how he navigates the desert so well (it all looks the same to me), his answer was, 'can you distinguish between the kitchen and living room at your home? The desert is my home.'

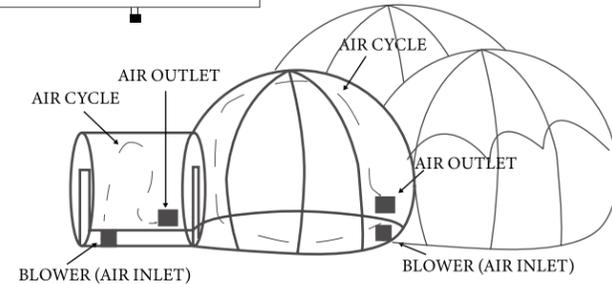
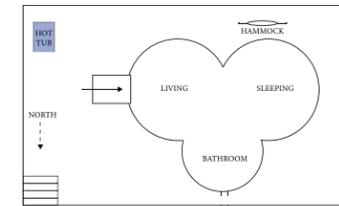
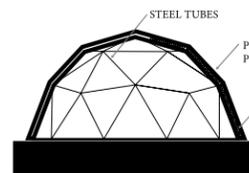
### ① THE JOURNEY



### ② ARRIVAL



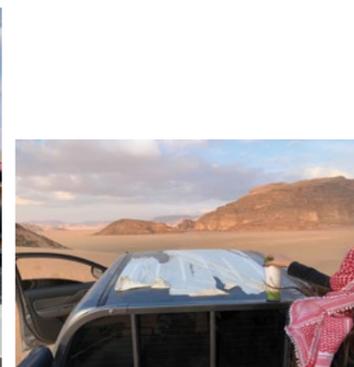
### ③ THE CAMP



### ④ ROOM



### ⑤ SUNSET TOUR



## DAY 02

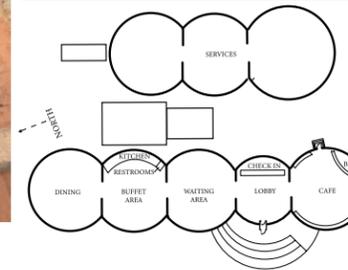
On the second day of my trip, I explored the lodging site a little bit and spoke to some other tourists that were visiting. The common inquiry seemed to be ‘what is there to do in Wadi Rum? Why is it so special?’ There seemed to be a lack of educational opportunities for the tourists. No brochures on the camp and no real Bedouin employees to showcase Bedouin culture or tradition.

Around noon, I met with an old man who lives in the village. He had been heavily involved in establishing the Diseh Village (a village in the buffer zone). He was excited to tell us stories and show us his mother’s hand maid rugs. He emphasized the need for future generations to pass on the traditions of weaving and spindling, even if they had settled and no longer need these skills.

When I asked him what is the one thing he wishes tourism could improve on, he answered:

Cultural programs that shed light on the history and heritage of the Bedouins and their relationship to the desert. Everyone will benefit from that because their culture and the desert are misunderstood by the Arab and the Westerner equally.

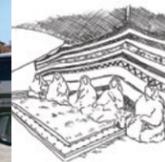
### ① SERVICES



### ② BUFFER ZONE



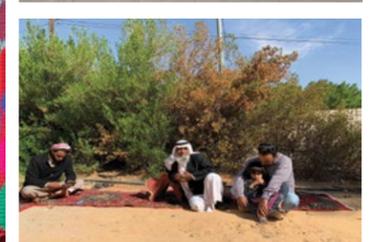
### ② RUM VILLAGE



### ② WRPA VISITOR CENTRE



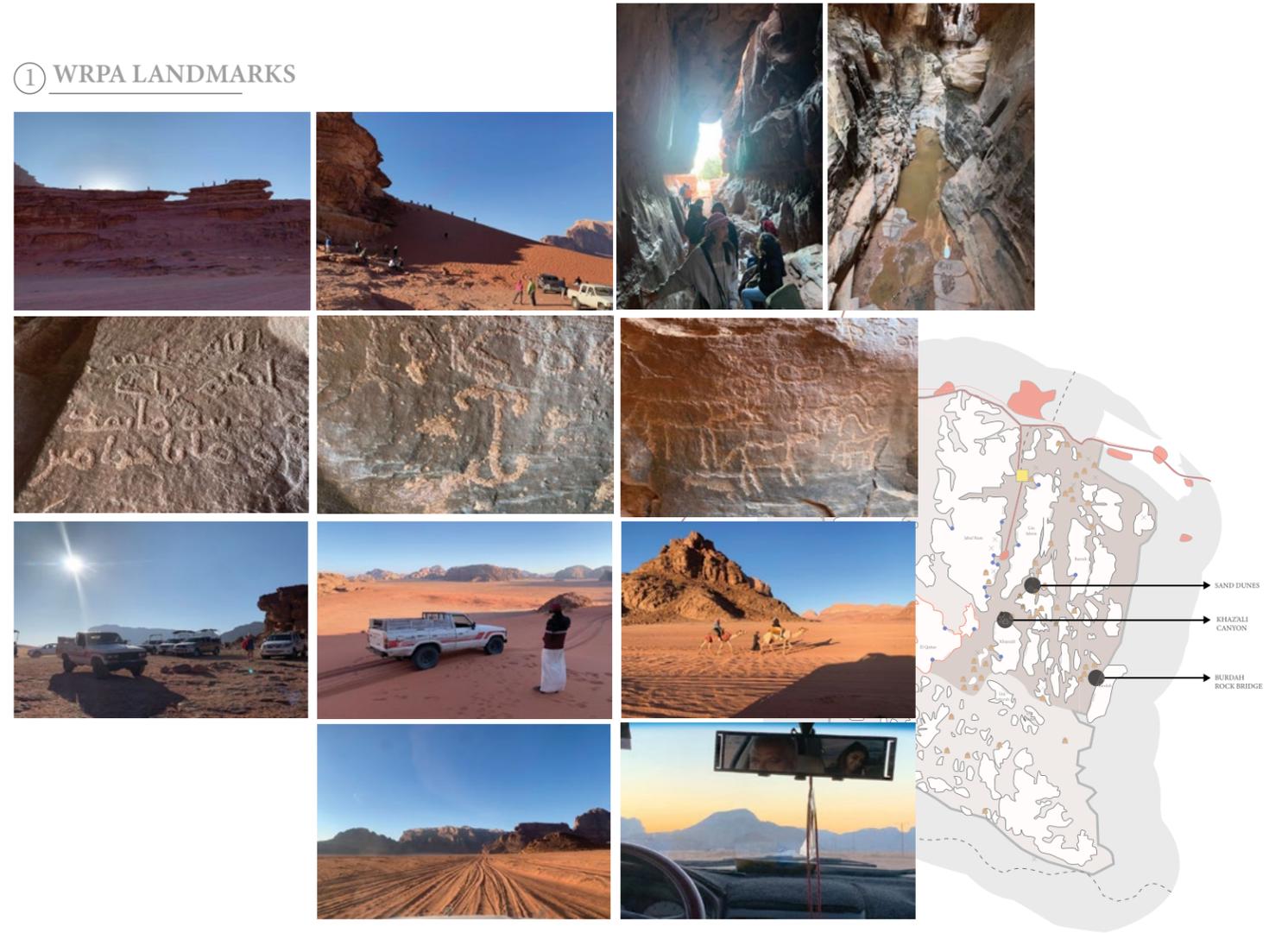
### ② DISEH VILLAGE



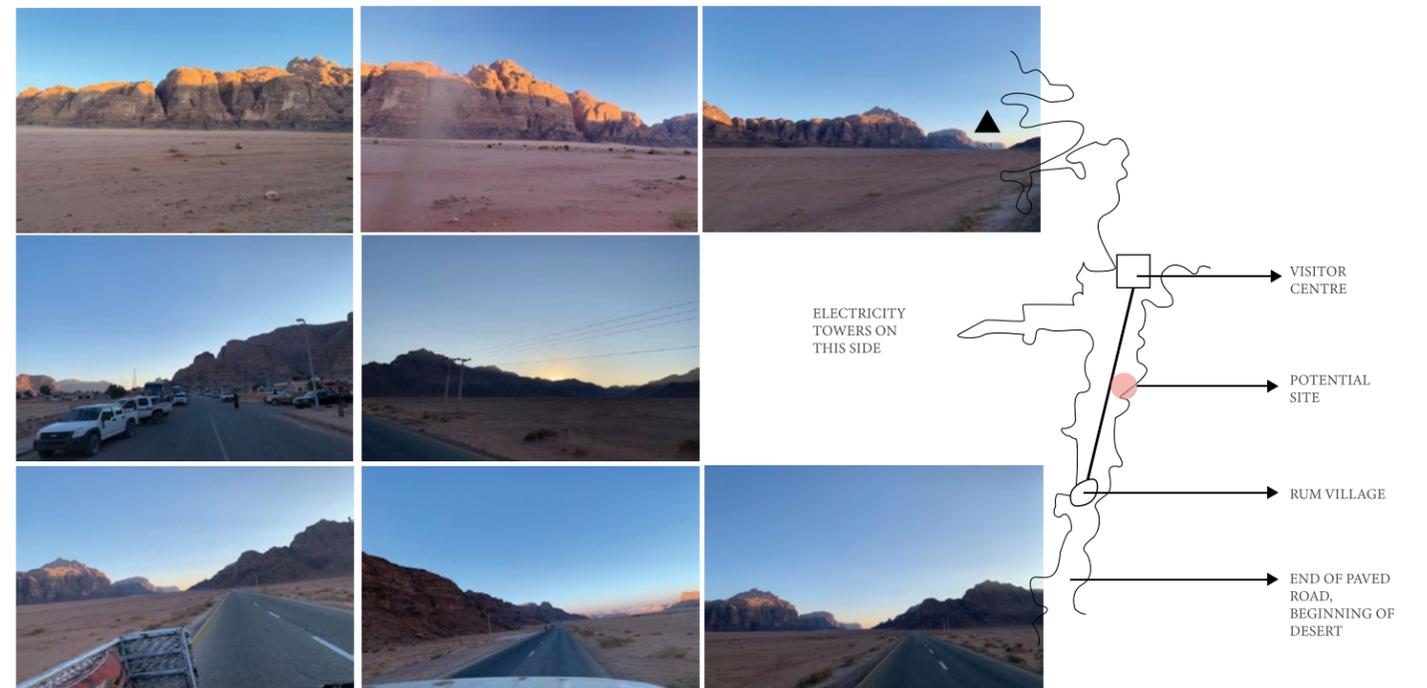
## DAY 03

On the third day, I was focused on the landscape. I had decided to take a 3-hour tour across some of the landmarks in the hopes of finding a site for the proposal. At the end of the trip, we got back on the Wadi Rum Rd. as we were driving away from the Village and towards the Visitor Center (North), I felt inspired by the landscape and all the ways in which human activity has managed to take place in this canyon surrounding this road. As the sun was setting on the west, I could imagine the possibility of a design proposal that would sit somewhere around this Wadi Rum Rd. and right between the village and the center.

### ① WRPA LANDMARKS



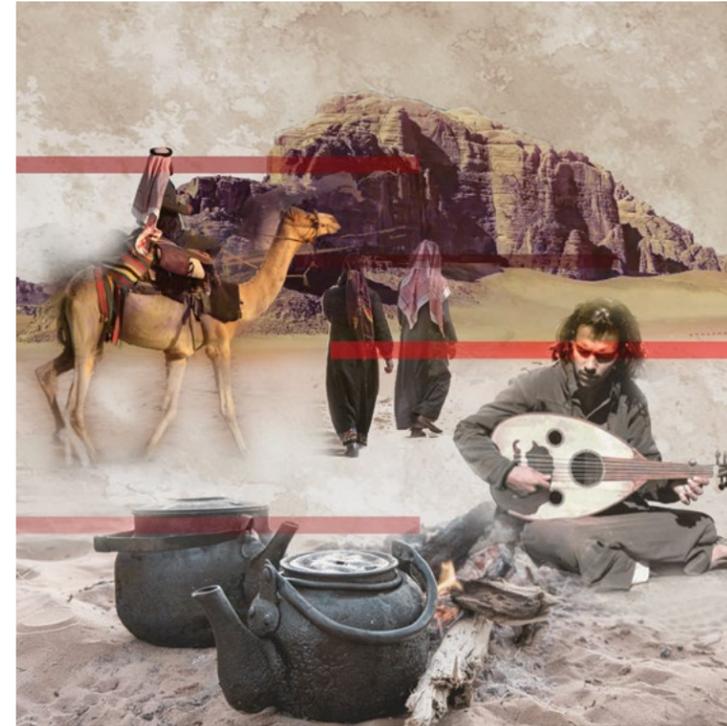
### ② WADI RUM RD.



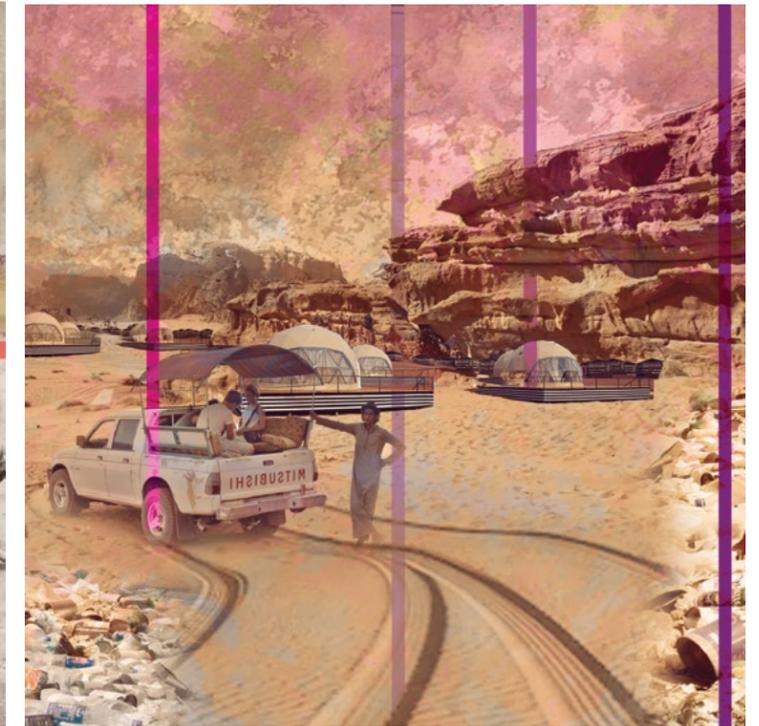
## SITE VISIT: CONCLUSIONS

At the end of my trip, I came to the conclusion that the reality of the experience was actually much more chaotic than the expectations that arise from visiting this site. The increase in tourists was interfering with the interests of the Bedouins in many ways:

1. There was an evident lack of interaction between the local and the tourist. The lodges were bringing outside hires from different places, which was reducing necessary interaction between Bedouins and visitors.
2. There is a lack of educational opportunities for the Bedouins. Locals aren't being trained properly in the hospitality sector. It is difficult for them to converse with tourists and tell stories and facts appropriately.
3. There are no educational opportunities for the visitors to learn more about the site and its people. There is no appropriate interaction between tourists and locals and no access to a guide meant that locals weren't receiving the full experience.



EXPECTATION  
Tranquility



REALITY  
Chaos



**PART III**  
**A Cultural Center**

~~WHY HAS TOURISM INCREASED OVER THE PAST FEW YEARS IN WADI RUM?~~

~~WHAT IS THERE TO DO IN WADI RUM THAT IS MAKING IT SO ATTRACTIVE?~~

~~WHAT ARE SOME ISSUES ASSOCIATED WITH THE INCREASE IN TOURISM?~~

**HOW CAN ARCHITECTURE PROVIDE SOLUTIONS TO EMERGING AND  
EXISTING ISSUES THAT ARE ASSOCIATED WITH THE RISE IN TOURISM?** | PART III

## FINAL PROPOSAL

Through the conversations with people and the issues that emerged, the answer to the final question was slowly beginning to unfold. The conclusions in Part II emphasized the lack of opportunities for learning on the site and the demand for such opportunities by the local and tourist. There was a need for space to provide educational opportunities to the local and the tourist.

The design proposal focuses on providing these spaces for learning and for interaction between the two types of visitors: The Bedouin and The Tourist. Part III will outline the design development process and its final results.



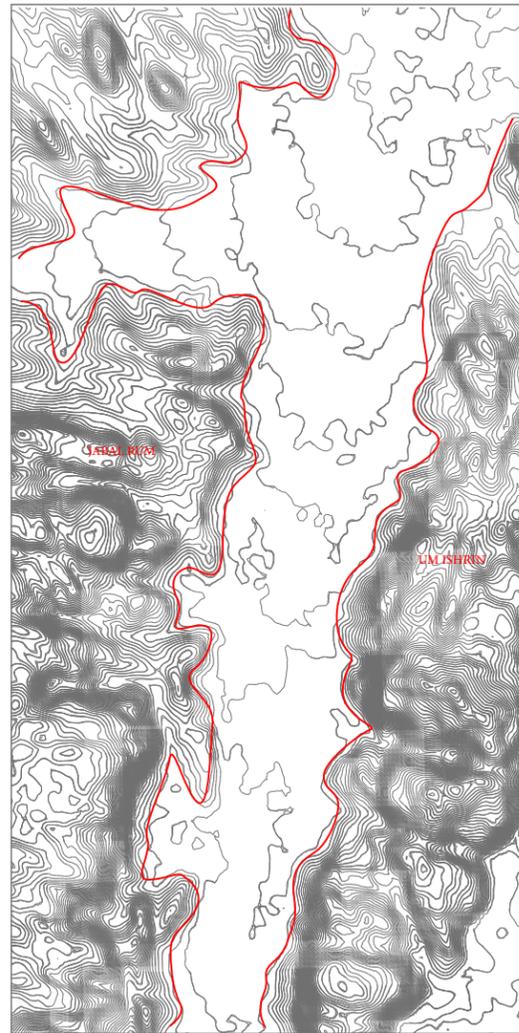
## SITE SELECTION

The proposed site for the building sits in the canyon because it is more flat than the rest of the landscape, which allows for more accessibility to humans. The canyon is the most active part of the landscape; it is home to the main existing road, the visitor center and Rum Village and is the official entry point to the protected area. This means that both the tourist and the local are constantly going through this canyon.

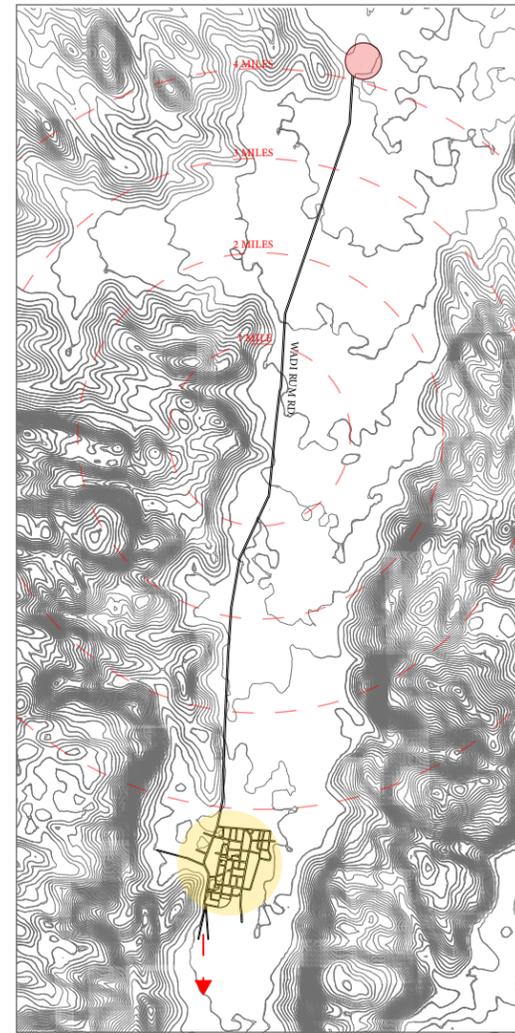
The proposed building would sit just off the main Wadi Rum Rd. close to the village. There is a trail that begins at the north edge of the village and takes the user all the way to the entry of the building. The trail is a five minute walk and is meant to encourage the visitor to explore the desert by foot, even if it is just for a short period of time.

The proposed building is accessible by car from the Visitor Center, as people will almost never walk from the visitor center, but would be approaching the building with a designated tour truck or a tour bus/ personal vehicle. As the user approaches the site from the visitor center, they would arrive at a parking lot and park their car or get dropped off, then get on a short trail that would eventually converge with the village's trail into one major trail that approaches the building.

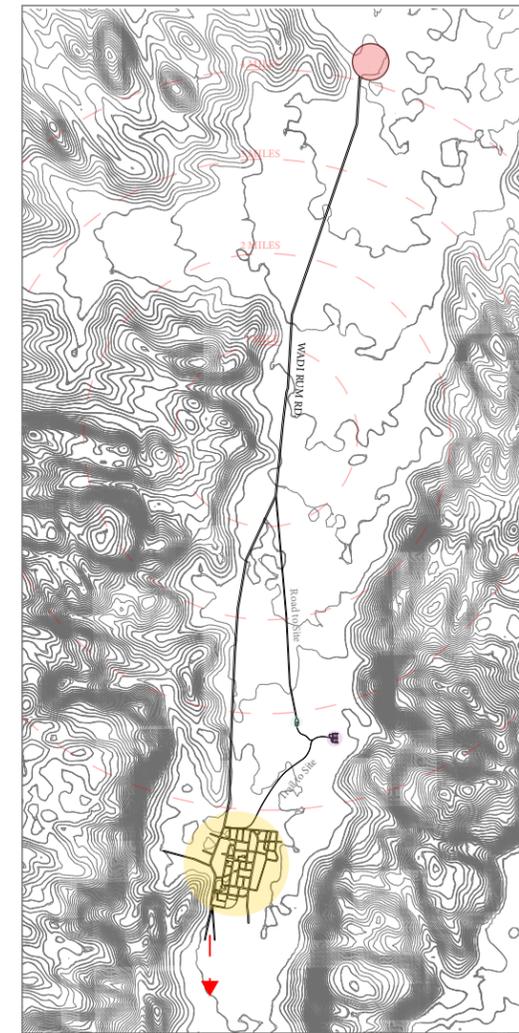
The building is approachable by foot only to allow the user to experience the landscape as the immense, dramatic landscape before experiencing the building that was inspired by it.



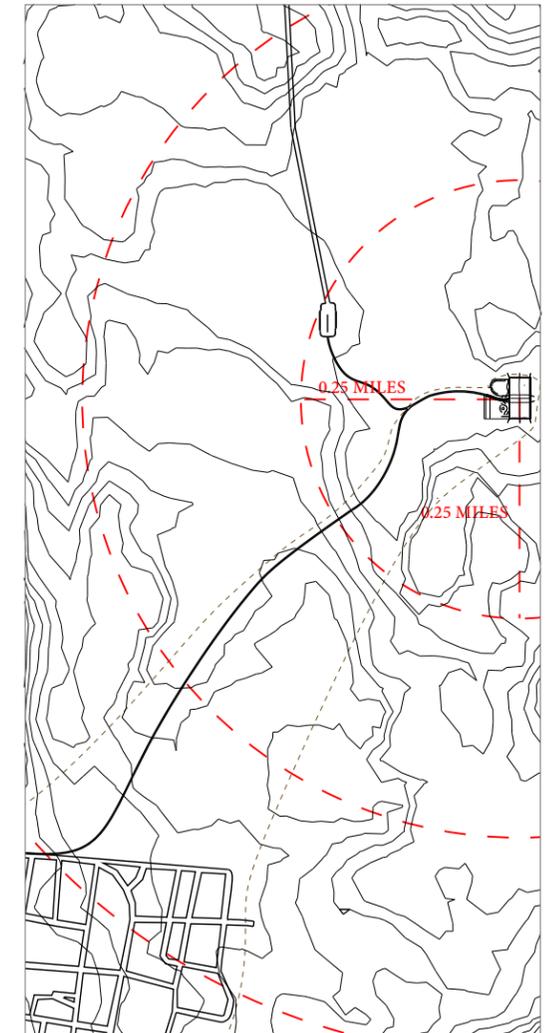
The Canyon



The Site as it Exists



The Proposed Addition



Site Context Plan



↓ Official Entry into Protected Area



Proposed Parking



Proposed Site



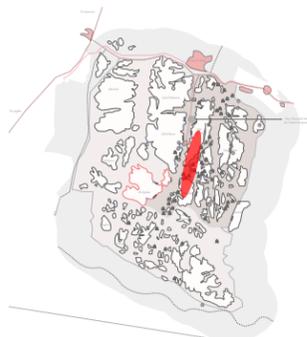
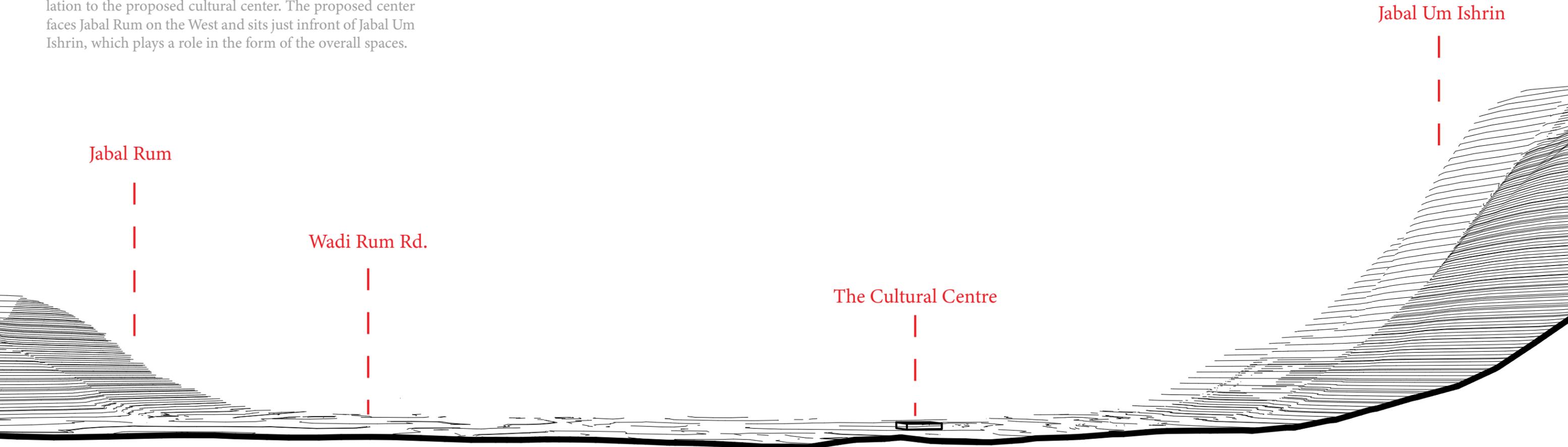
The Visitor Centre



Wadi Rum Village

## SITE SECTION

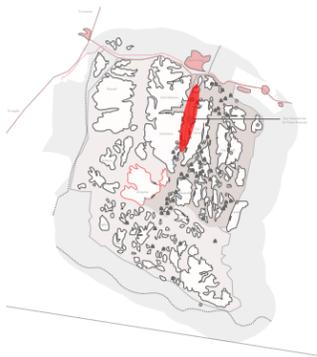
The site section reflects the scale of the landscape and its relation to the proposed cultural center. The proposed center faces Jabal Rum on the West and sits just in front of Jabal Um Ishrin, which plays a role in the form of the overall spaces.



0 FT. 500 FT. 1000 FT.

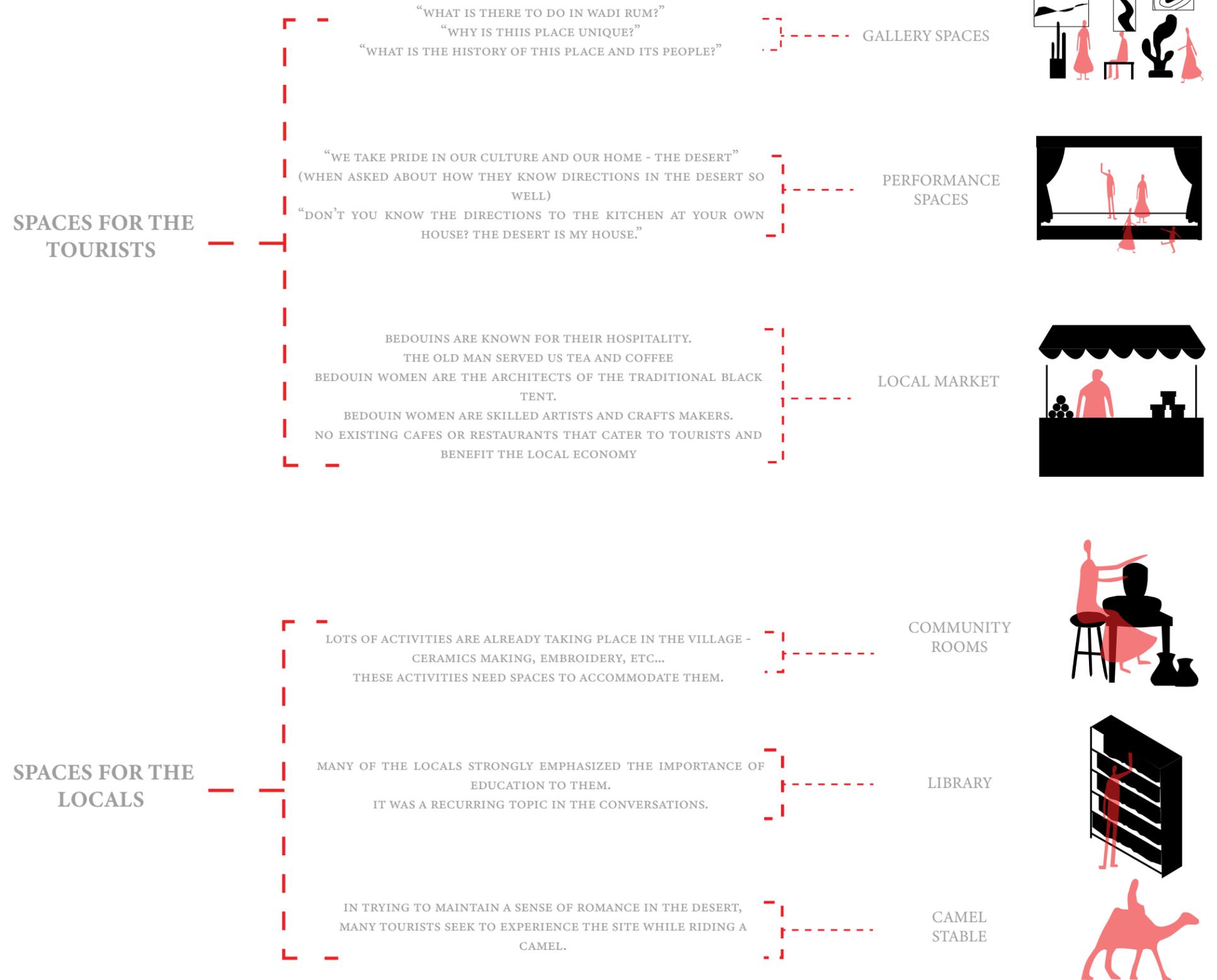
## SITE PHOTOS

The site photos show the main Wadi Rum Rd. that cuts through the landscape in north-south direction. The rest of the photos show the landscape that the proposed center will sit on. The landscape is more flat than the cliffs that scatter across the Protected Area. The proposed building sits in-front of the Um Ishrin Cliff which heavily influenced the direction of the design process.



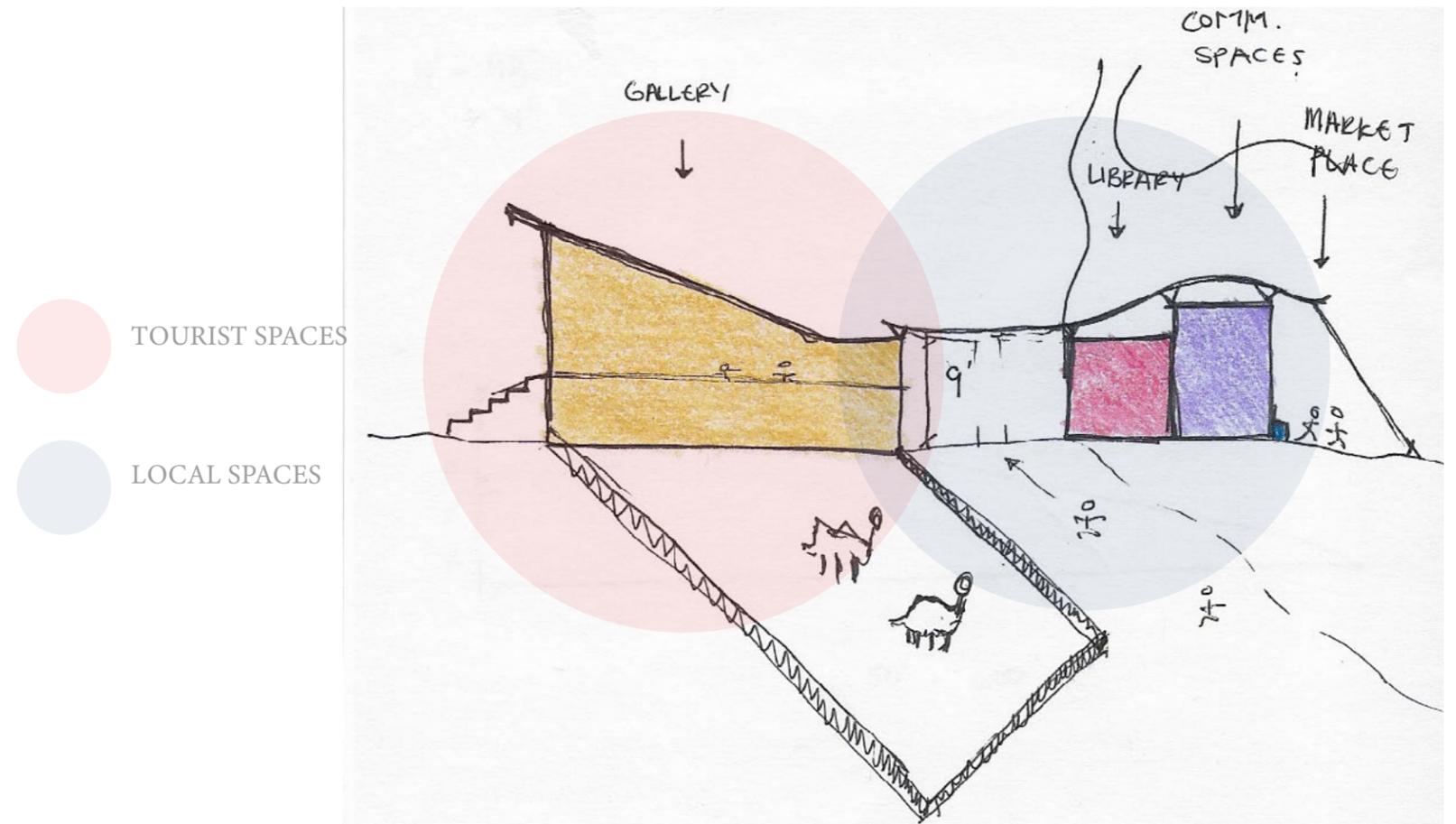
# PROGRAM DERIVATION

The program for a cultural center was strictly derived based on conversations with the Bedouins and the tourists. There seemed to be a general lack of opportunities to expand the knowledge of the local and the tourist. By providing spaces for the tourist to learn about the site and the cultural heritage, the experience becomes more enhanced, unique and memorable. Simultaneously, providing bedouins with spaces for learning will give them the confidence to take charge of their personal learning processes.



## PROGRAM ARRANGEMENT

The programmatic spaces are split into two categories: the local spaces and the tourist spaces. These categories are arranged separately because they encourage different patterns of behaviour. A tourist visiting the gallery spaces might spend much less time in the space than a Bedouin who is going to study in the library. The tourists will most likely circulate these spaces much faster and would go through all of them while the Bedouin might come to the center to visit one specific space.

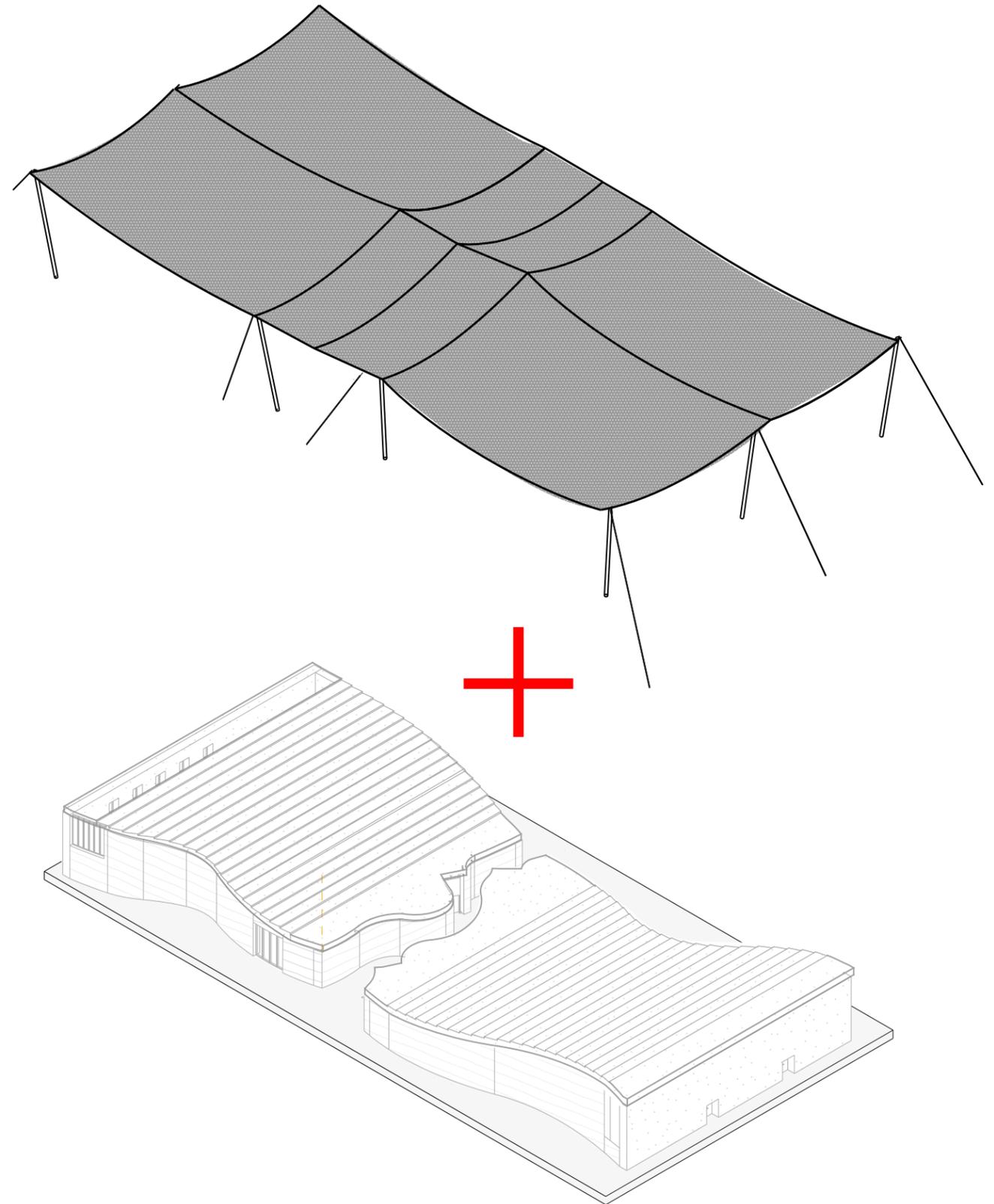


## FORM DEVELOPMENT

The building's form uses a combinations of elements from the landscape and the cultural heritage of the Bedouins. The form is meant to shed light on the site and its people, as they both play an equally significant role in defining the narrative.

The black tent is the traditional, vernacular shelter for the Bedouins and it is symbolic of the heritage and traditions that constitute their culture.

The building's walls are formed through the same processes that helped shape Wadi Rum - erosion.



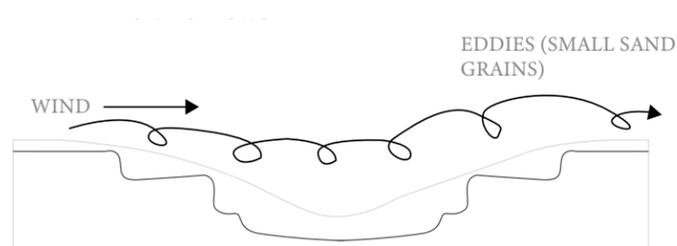
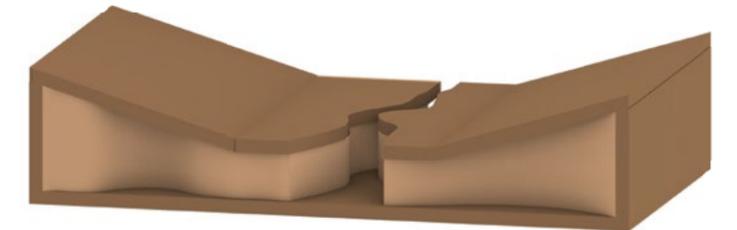
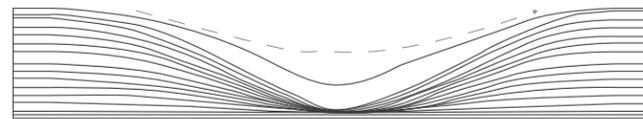
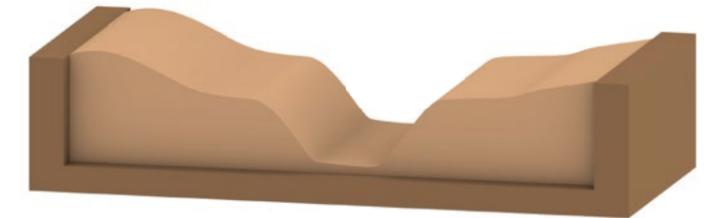
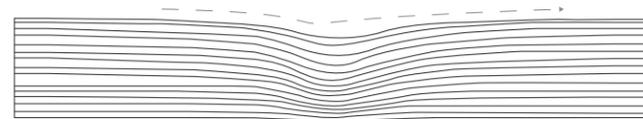
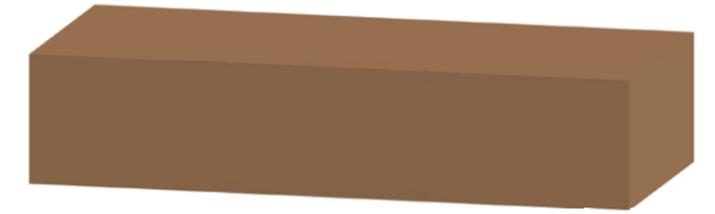
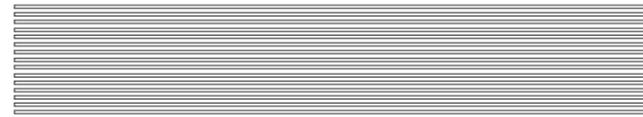
## FORM: LANDSCAPE ELEMENTS

Through various design methods, the proposed center provides an experiential equivalence of some of the natural phenomena that exist in Wadi Rum Protected Area: The Canyon and the Process of Erosion.

Initially, I began by studying and understanding the process of erosion, and how the cliffs are formed through the movement of wind and water.

These same elements were then 3d modelled on a block. The block was carved out as it would be through these processes.

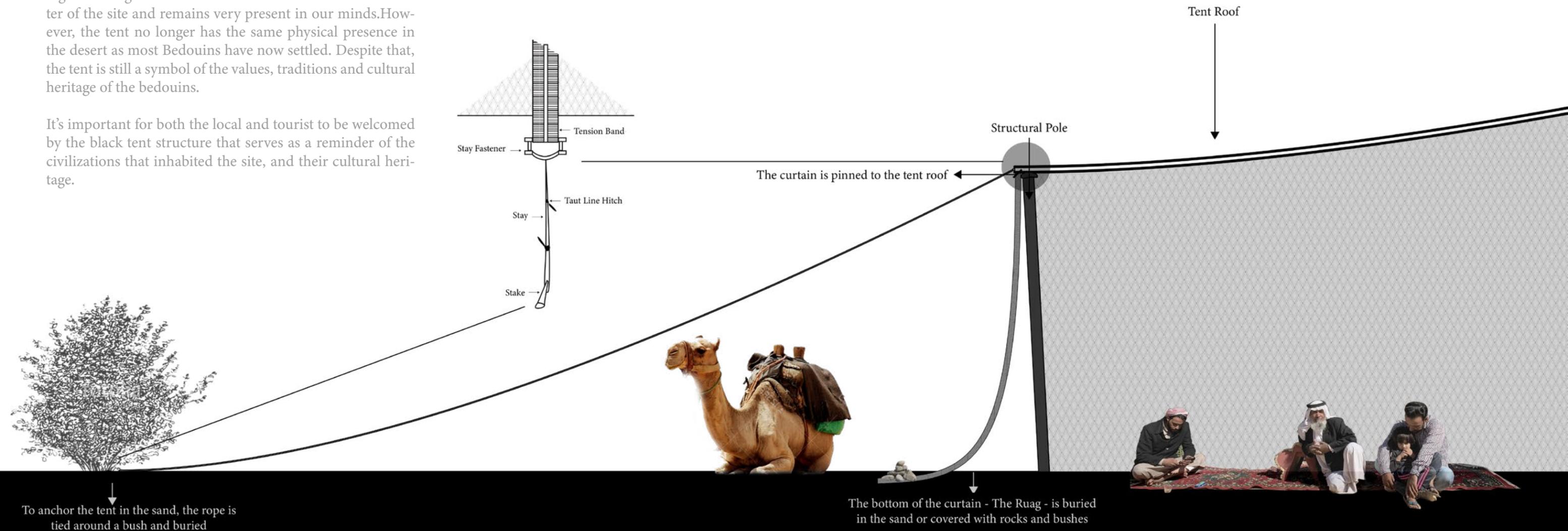
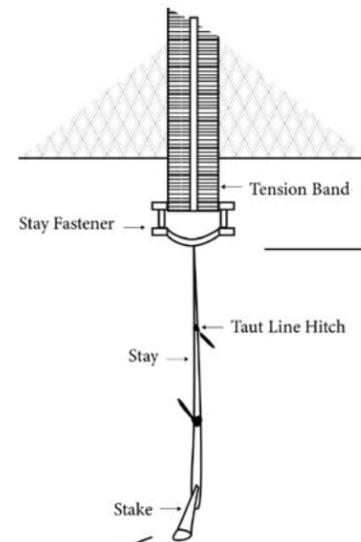
Finally, the massing was developed: A canyon that is formed in the centre with two cliffs that constitute either side of the proposed building.



## FORM: CULTURAL ELEMENTS

The black tent, although minute in comparison with the wadis and the cliffs, has really marked its territory in this desert region throughout the centuries. It was the vernacular shelter of the site and remains very present in our minds. However, the tent no longer has the same physical presence in the desert as most Bedouins have now settled. Despite that, the tent is still a symbol of the values, traditions and cultural heritage of the Bedouins.

It's important for both the local and tourist to be welcomed by the black tent structure that serves as a reminder of the civilizations that inhabited the site, and their cultural heritage.



## FINAL PROPOSAL

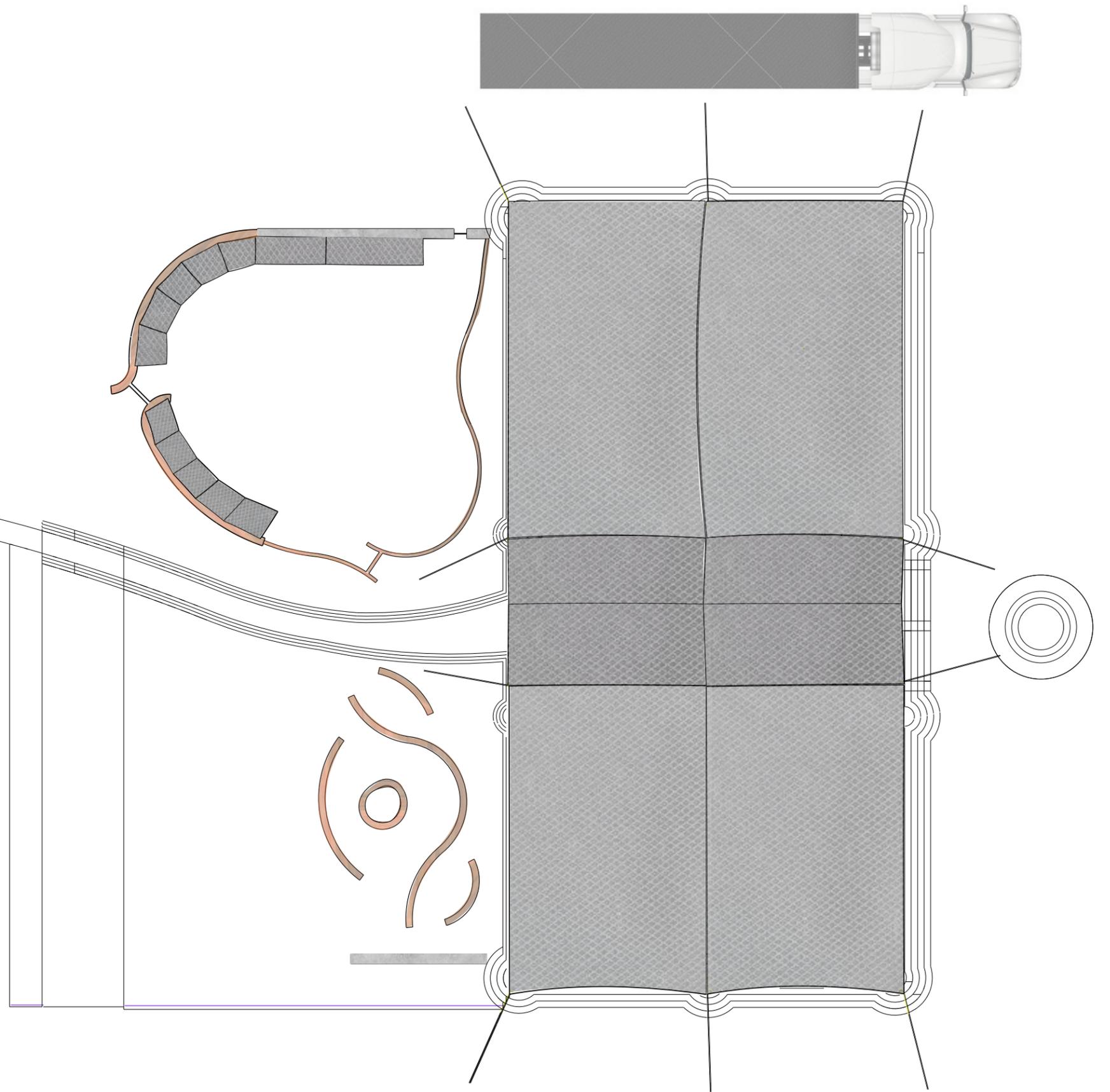
The final outcome of the process is a building that reasserts the significance of the site as well as its vibrant cultural heritage through elements inspired by the landscape and its people.



## APPROACHING THE BUILDING

The building is approachable by foot through a trail. As you get closer to the building, the trail slopes upward and terraced steps emerge on either side of the trail.

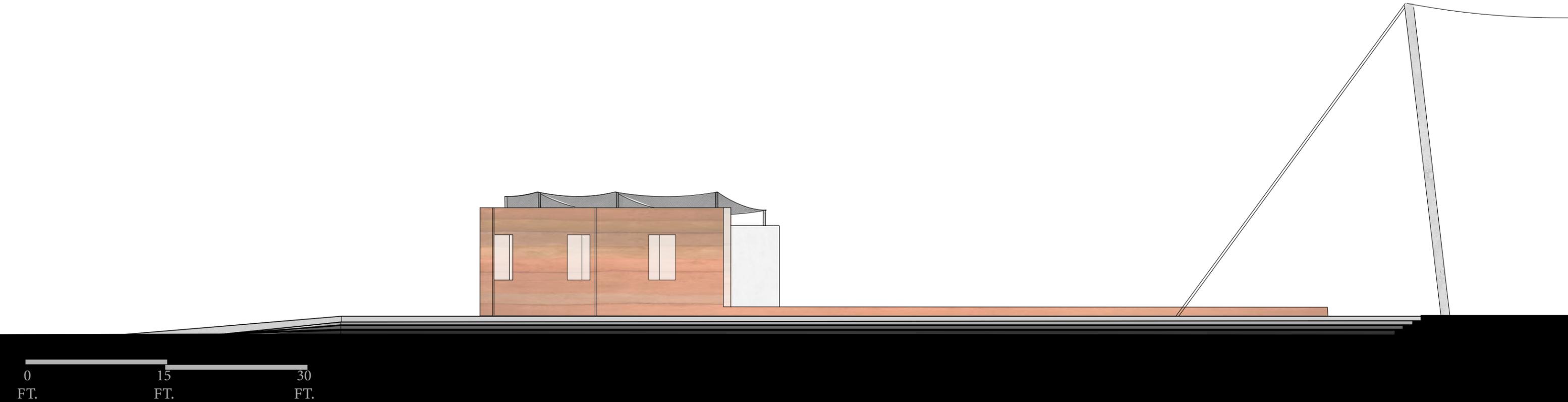
The building is elevated on a stepped terrace. The concrete columns that hold the black tent settle into the terrace, and when these columns meet the ground, the steps curve around the column like a ripple effect. This allows the visitor to walk around these columns comfortably. It is also meant to give the column its place and significance, because although it appears to be delicate and thin, it is extremely strong.



0 25 50 75 100  
FT. FT. FT. FT.

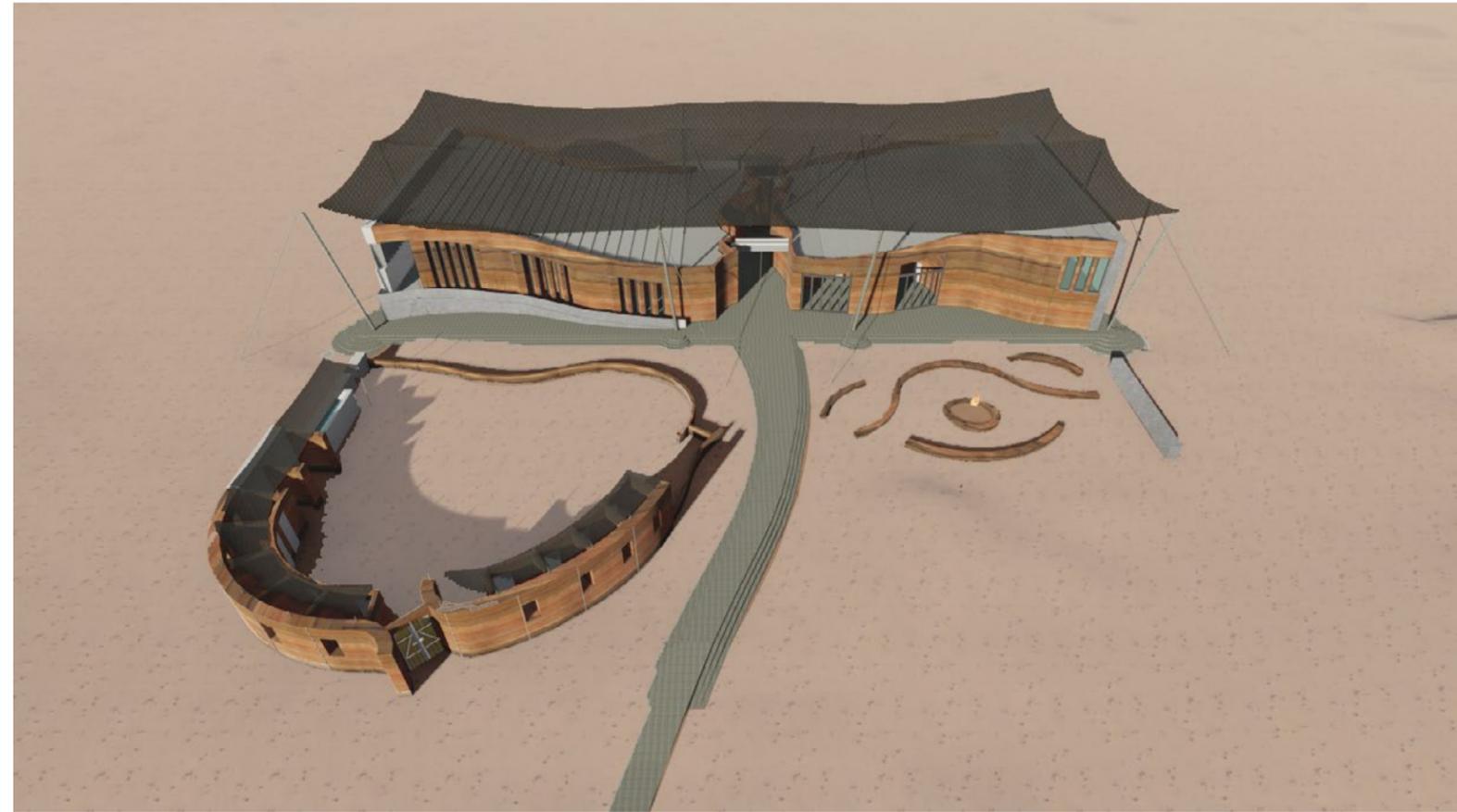
# APPROACHING THE BUILDING

The building is approachable by foot through a trail. The proposed building is lifted 1' off the earth to reduce the amount of sand that would pile up at the entry. As the trail gets closer to the building, it slopes upward, with terraced steps emerging from the earth and sloping up to 6".



## FINAL PROPOSAL

As you walk towards the building, the camel stable is on your left side, and the outdoor seating area is on the right side.



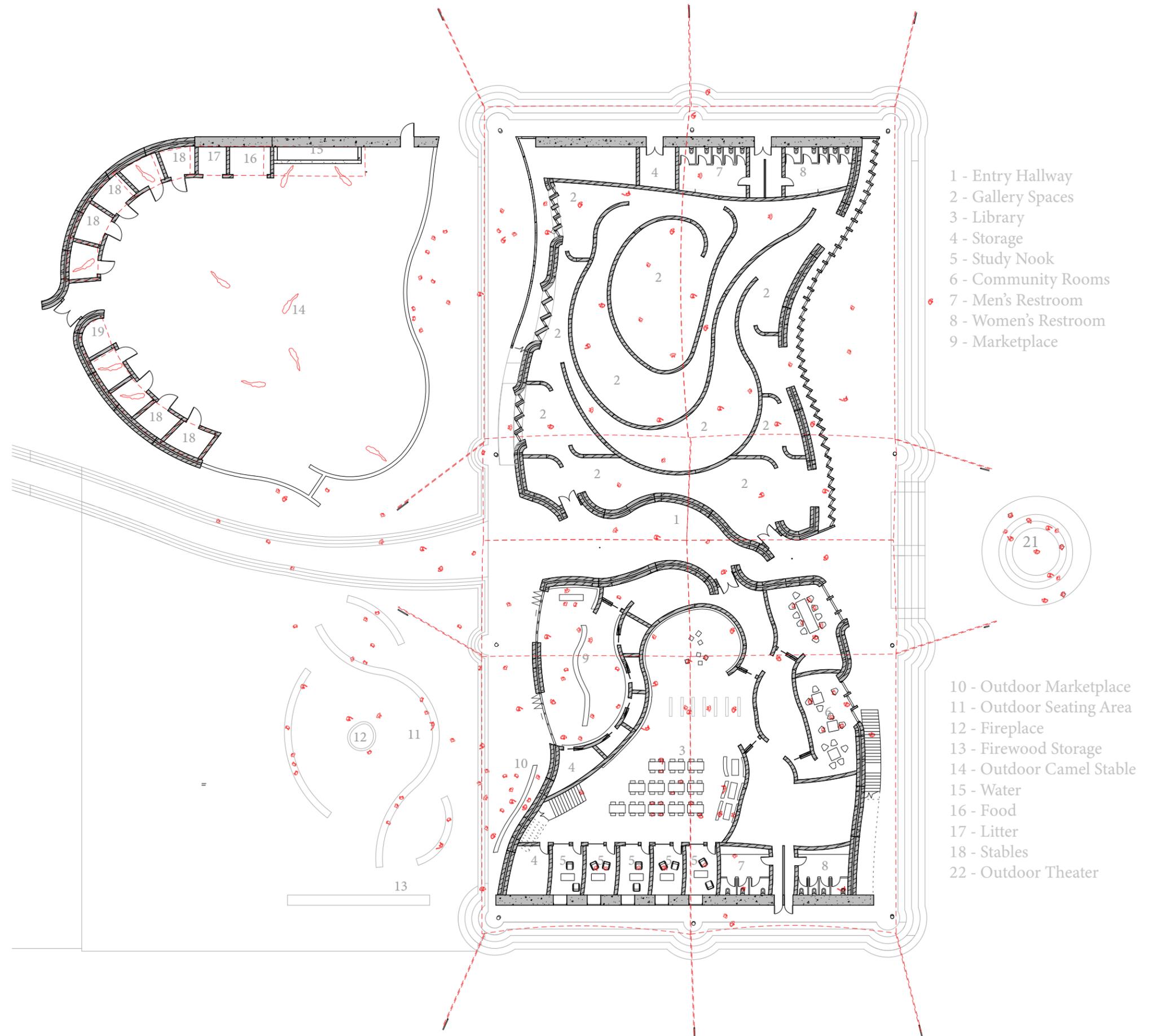
## FLOOR PLAN 01

The main floor of the Cultural Center includes the camel stable, galleries, library, community spaces, marketplace and place for performances. The interior spaces of the building are split into two sides: North and South.

The North side houses programs that cater to tourists - these programs include the gallery spaces in the main building, restrooms and services on the exterior edge and a ramp that loops around the exterior of the north side. The ramp begins on the west side and slopes upward to take the user to the habitable roof.

The South side is home to programs that cater to the local bedouins in the village. The programs include a main library with private study nooks, formal and casual study spaces and book stacks on the main floor. It also includes flexible community spaces and a marketplace that faces the entry to the cultural center. It allows the bedouins to sell their crafts and food to the tourists.

The two sides are separated by a main circulation passageway - The Canyon. The passageway is meant to recreate a similar experience that a canyon would provide, but on a much smaller scale. It welcomes the visitor at the entry with wide spaces, and begins to narrow as you go through it. Finally, at the end of the canyon on the east end, the visitor is welcomed by an amphitheater that sits between the building and the *um ishrin* cliff.

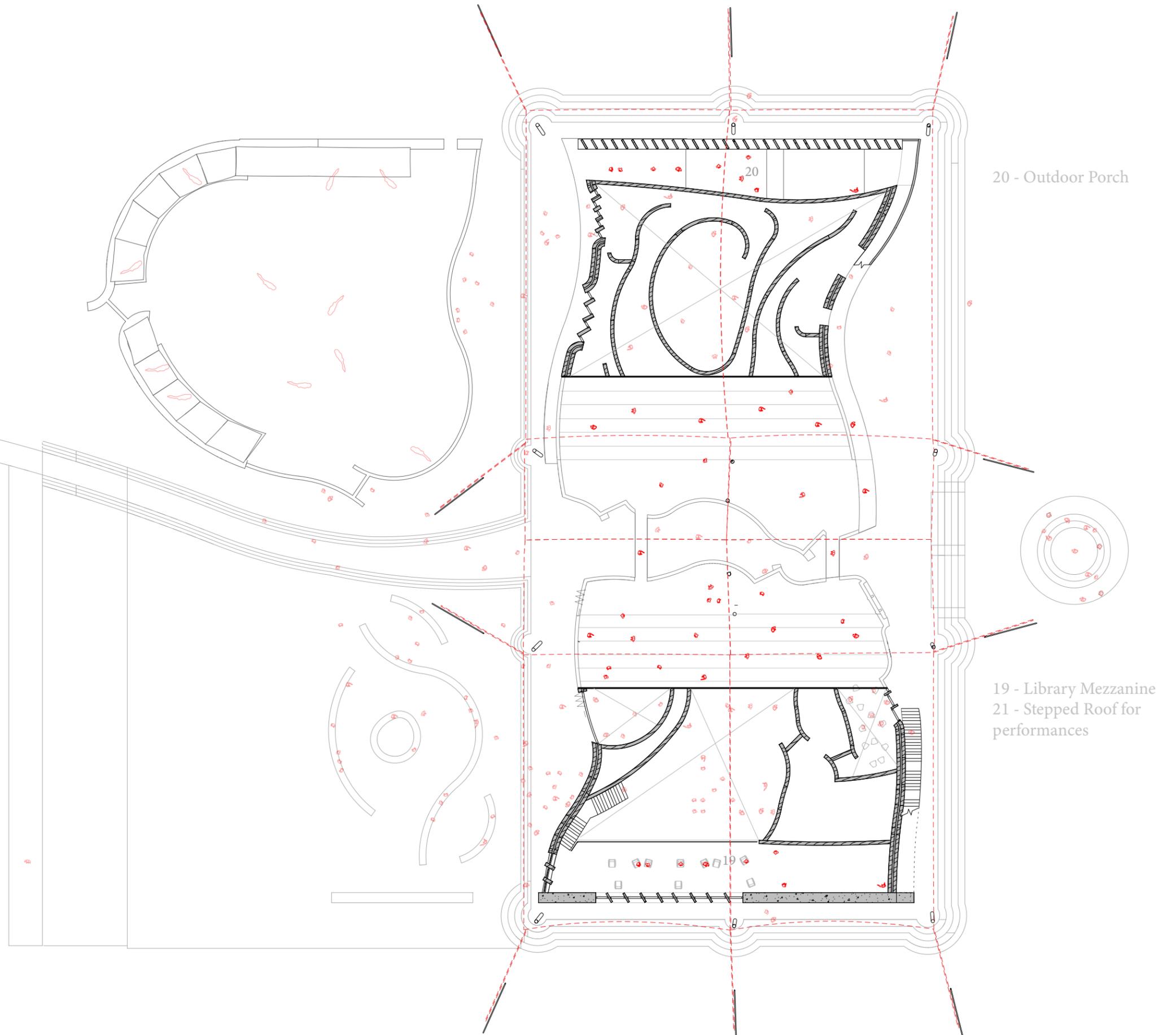


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FT. FT. FT. FT.

## FLOOR PLAN 02

The second floor of the Cultural Center houses the outdoor porch on the north end, a mezzanine floor in the library on the south end and the lower part of the accessible rooftop.

The porch is part of the ramp system that loops around the building and takes the visitor to the roof. The mezzanine floor in the library houses informal seating for visitors wishing to relax and read a book while looking outside.

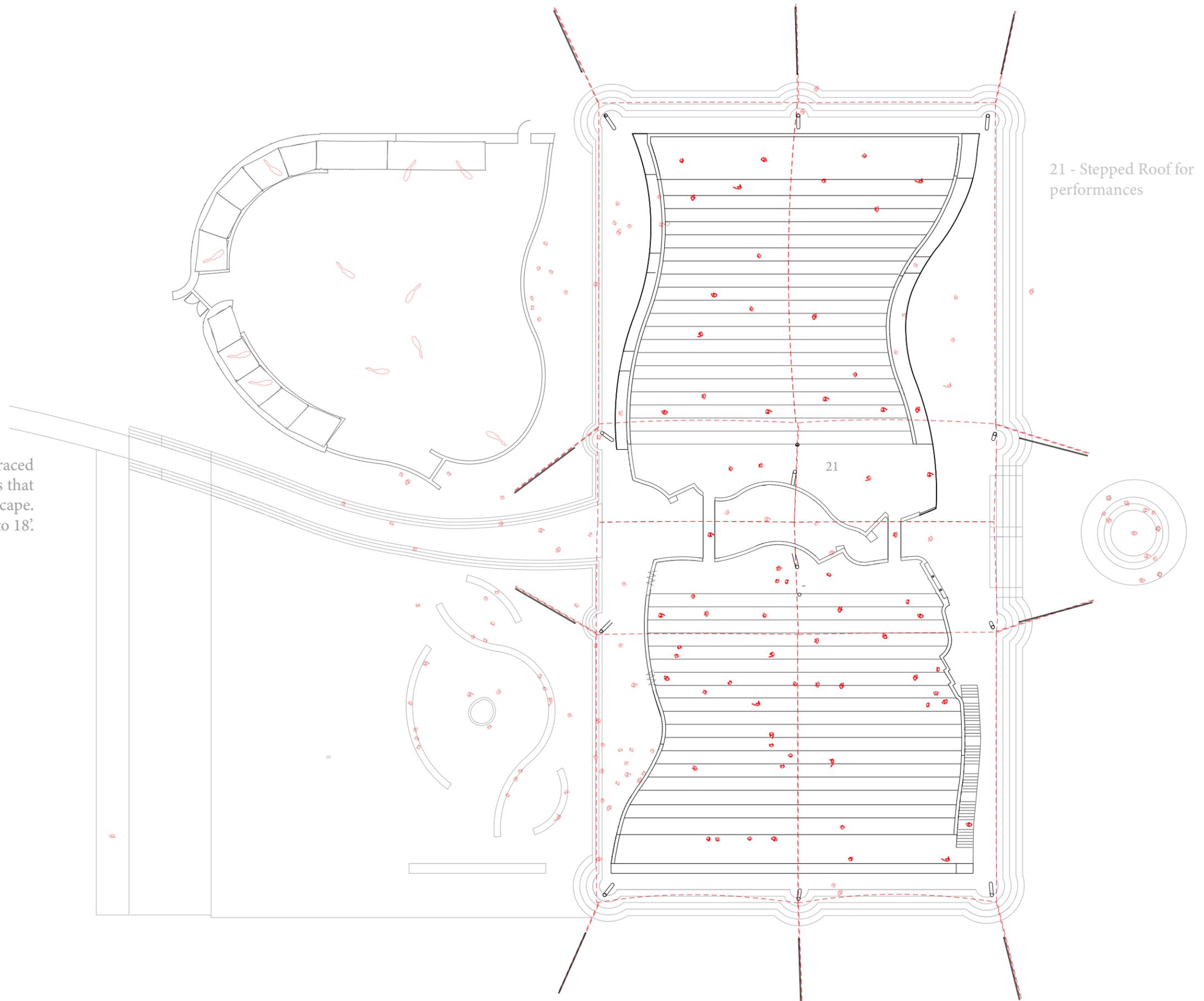


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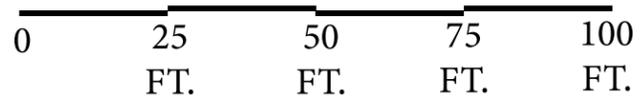
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# FLOOR PLAN 03

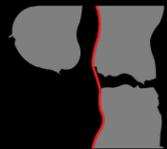
The top floor or roof level of the cultural center is a terraced roof theater that is meant to house large performances that are meant to shed light on the culture and the landscape. The roof begins at 9' where the stage sits and steps up to 18'.



21 - Stepped Roof for performances

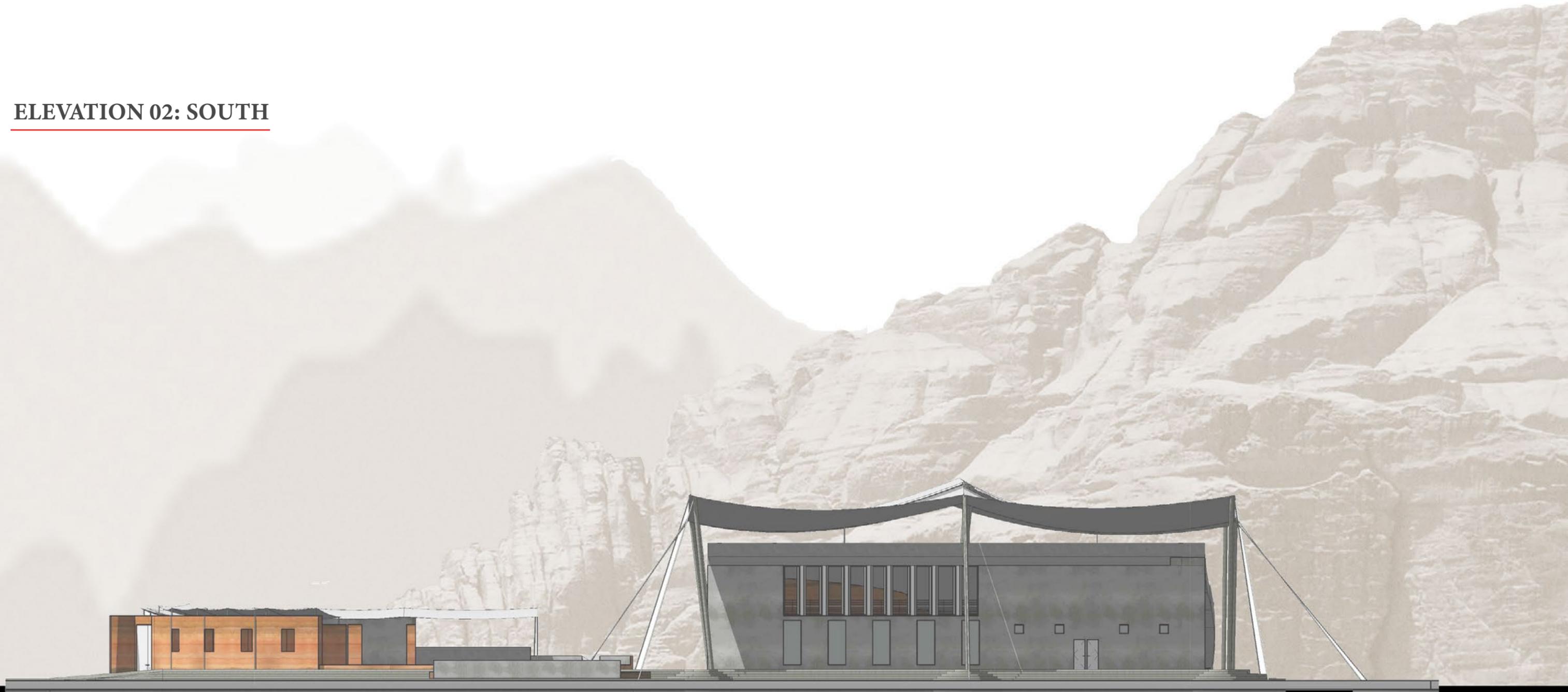


ELEVATION 01: WEST

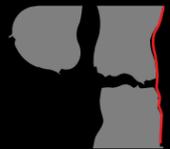
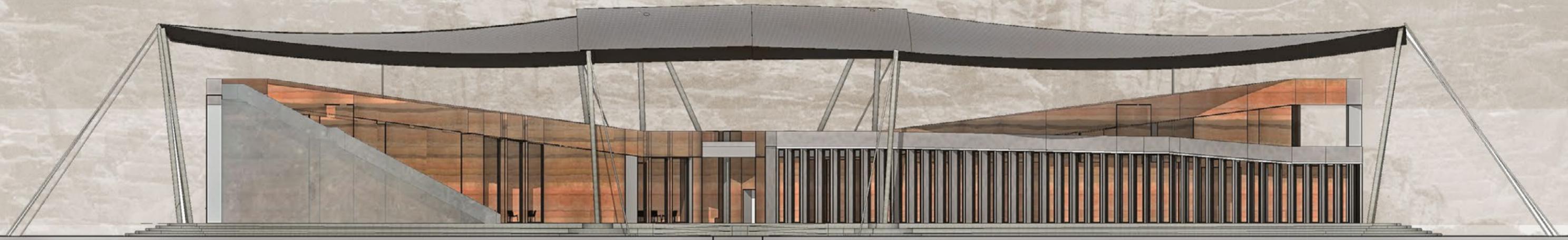


**ELEVATION 02: SOUTH**

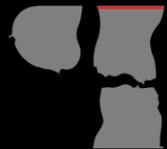
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ELEVATION 03: EAST



ELEVATION 04: NORTH



SECTION 01: N-S



Floor 01 - Study Nook  
Floor 02 - Library Mezzanine

Library

Corridor

Floor 01 - Canyon  
Floor 02 - Connection Bridge

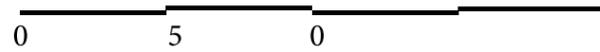
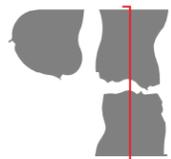
Gallery

Gallery

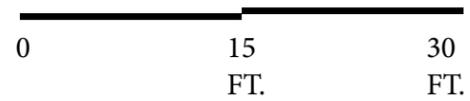
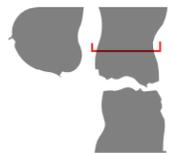
Gallery

Corridor

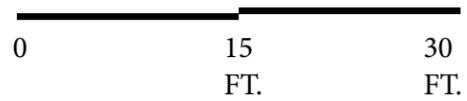
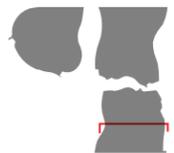
Floor 01 - Restrooms  
Floor 02 - Porch



## SECTION 02: TOURIST SPACES

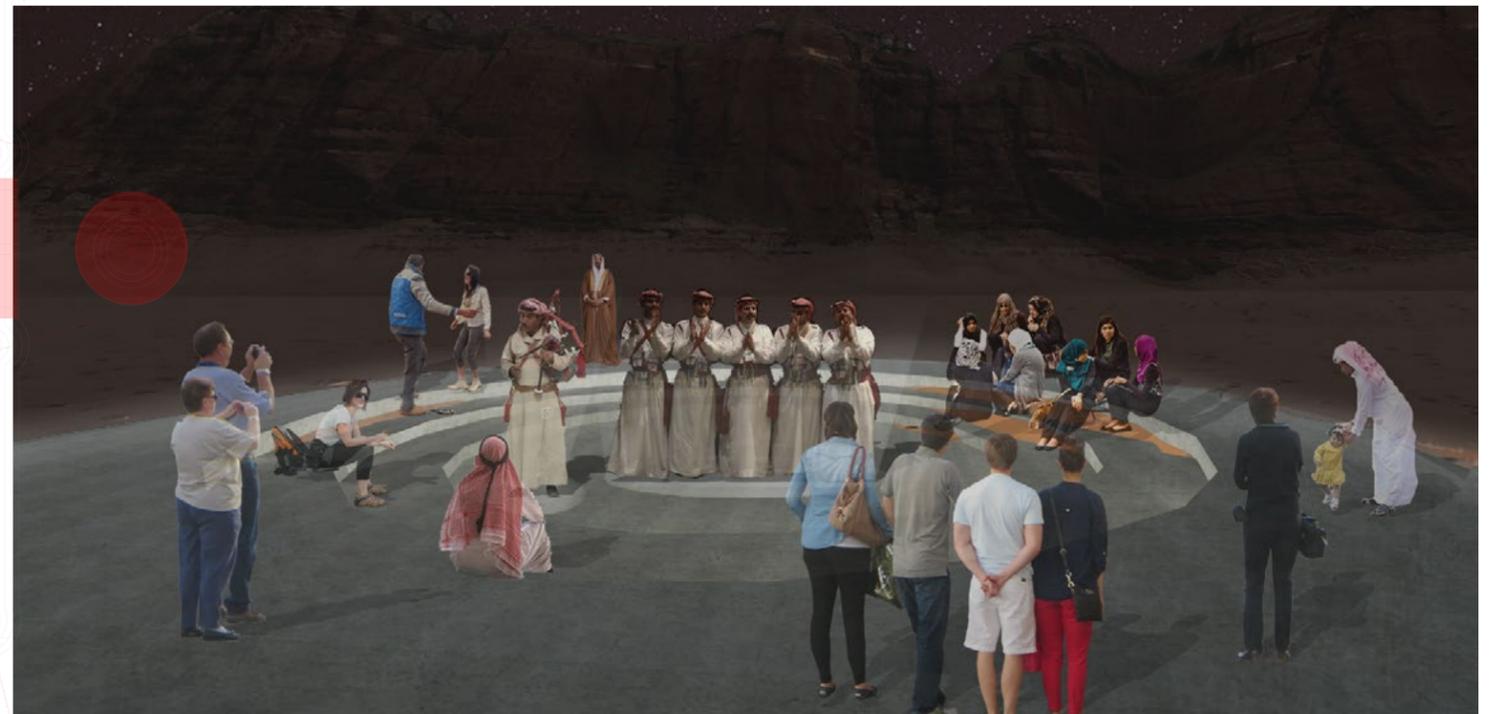
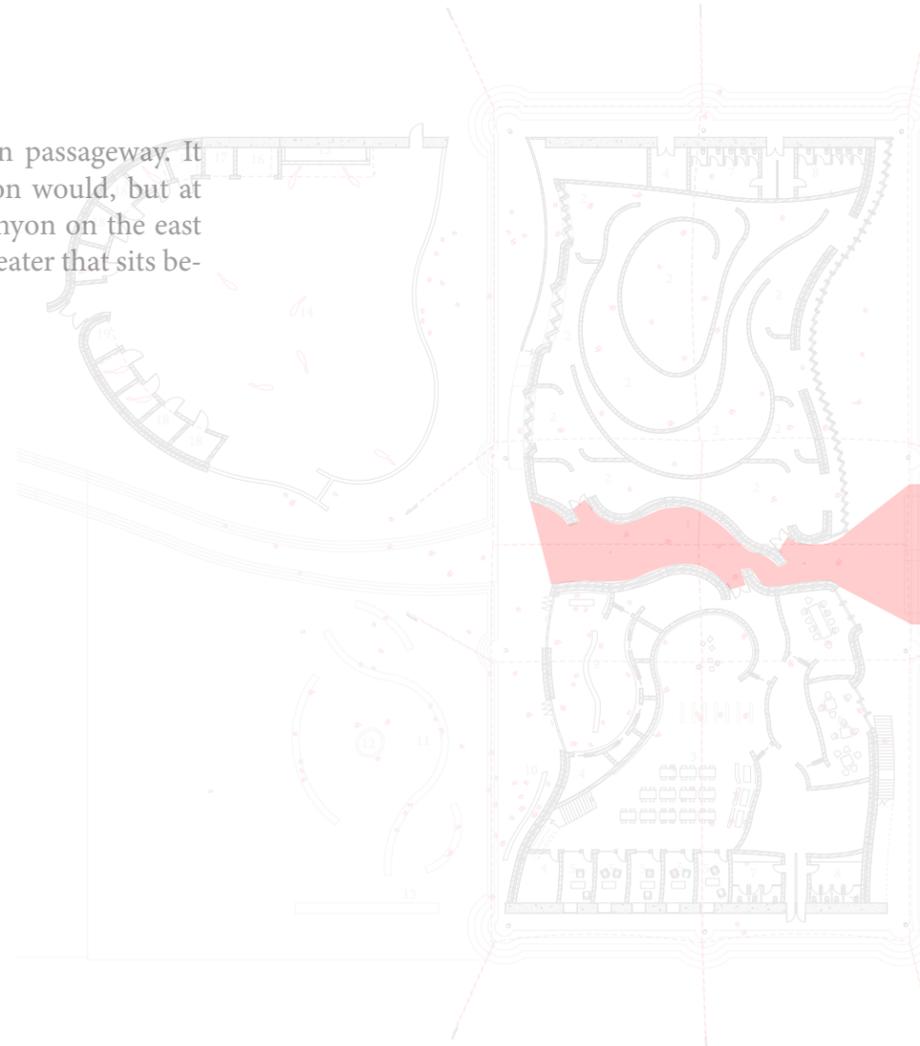


## SECTION 03: LOCAL SPACES



## COLLAGE: THE CANYON

The canyon serves as the main circulation passageway. It provides a similar experience that a canyon would, but at a much smaller scale. At the end of the canyon on the east end, the visitor is welcomed by an amphitheater that sits between the building and the *um ishrin* cliff.



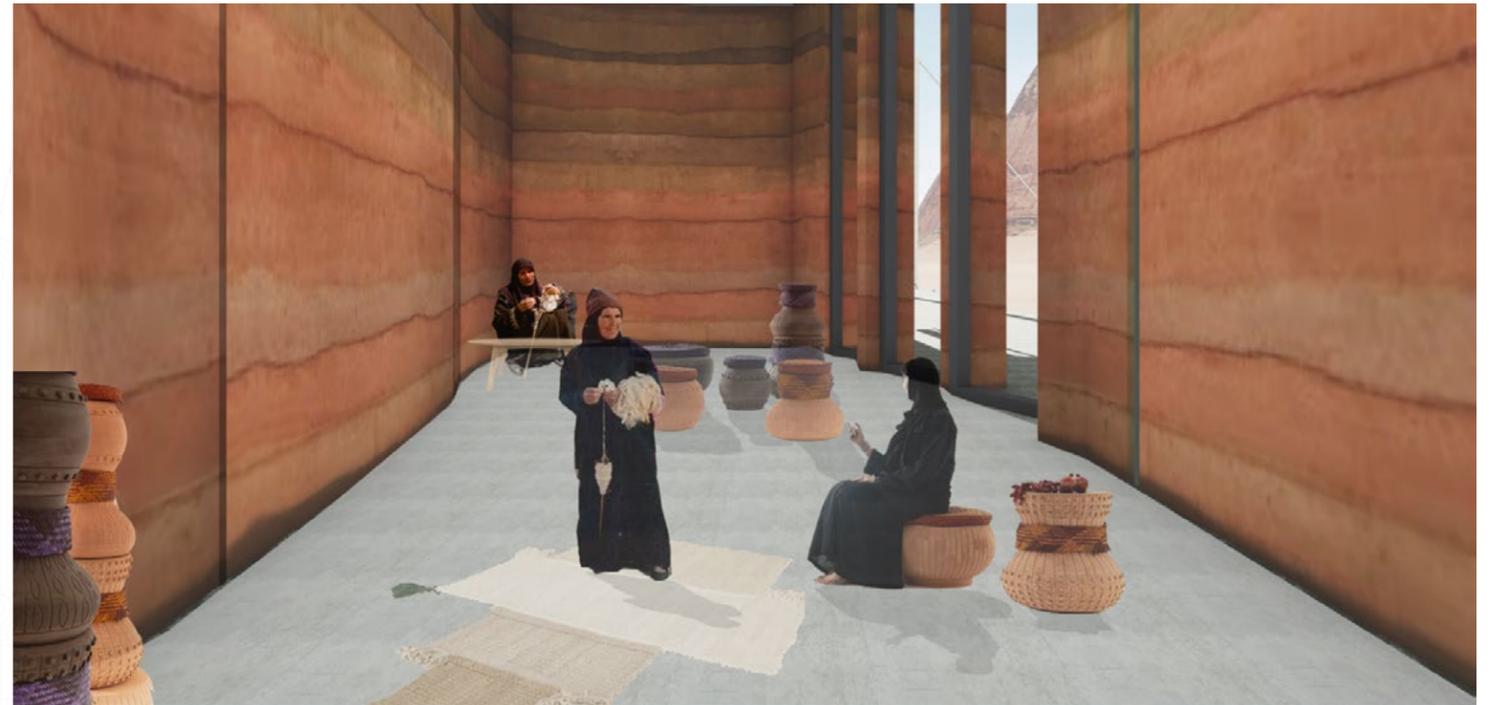
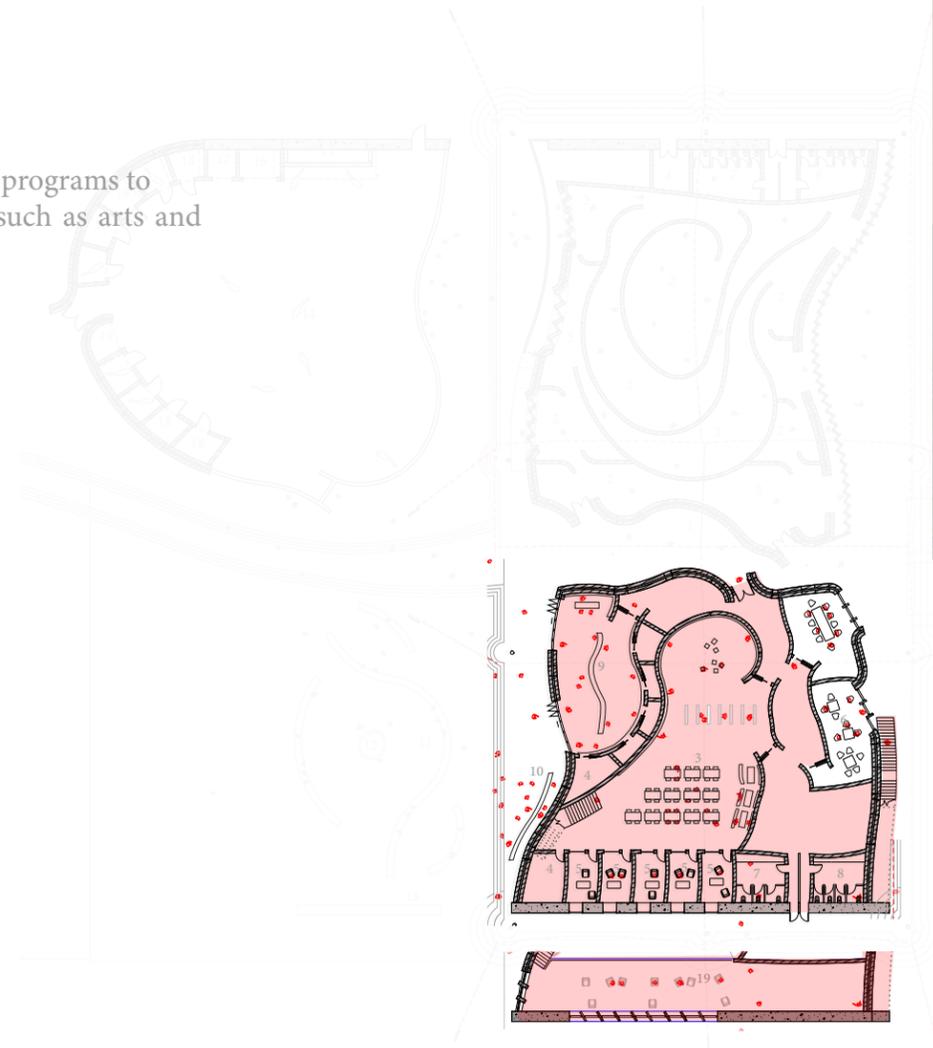
## COLLAGE: THE LIBRARY

The library houses private study nooks, formal and casual study spaces and book stacks on the main floor. Its mezzanine floor has more casual seating areas for people looking to read a book or just relax.



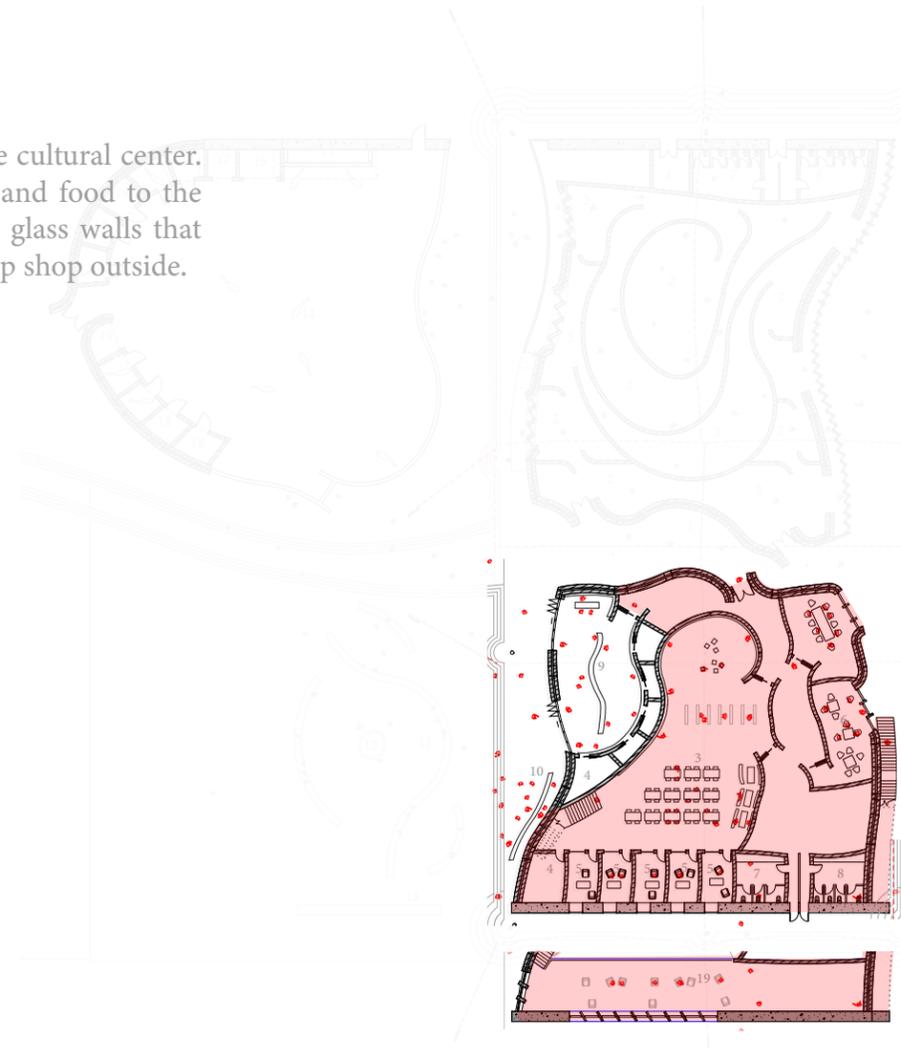
## COLLAGE: COMMUNITY SPACES

The community spaces are flexible in their programs to allow the locals to host various activities such as arts and crafts sessions or business meetings.



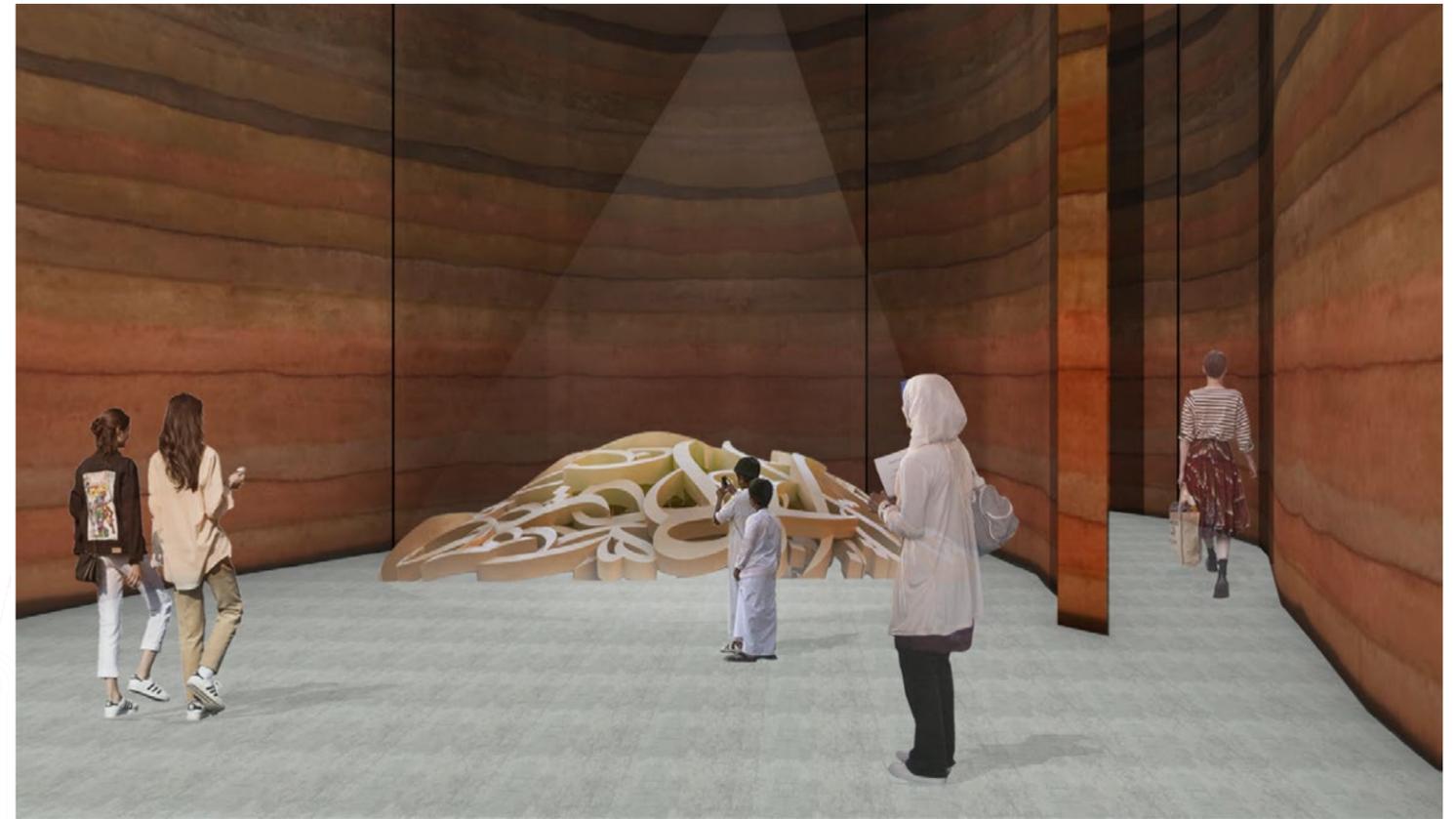
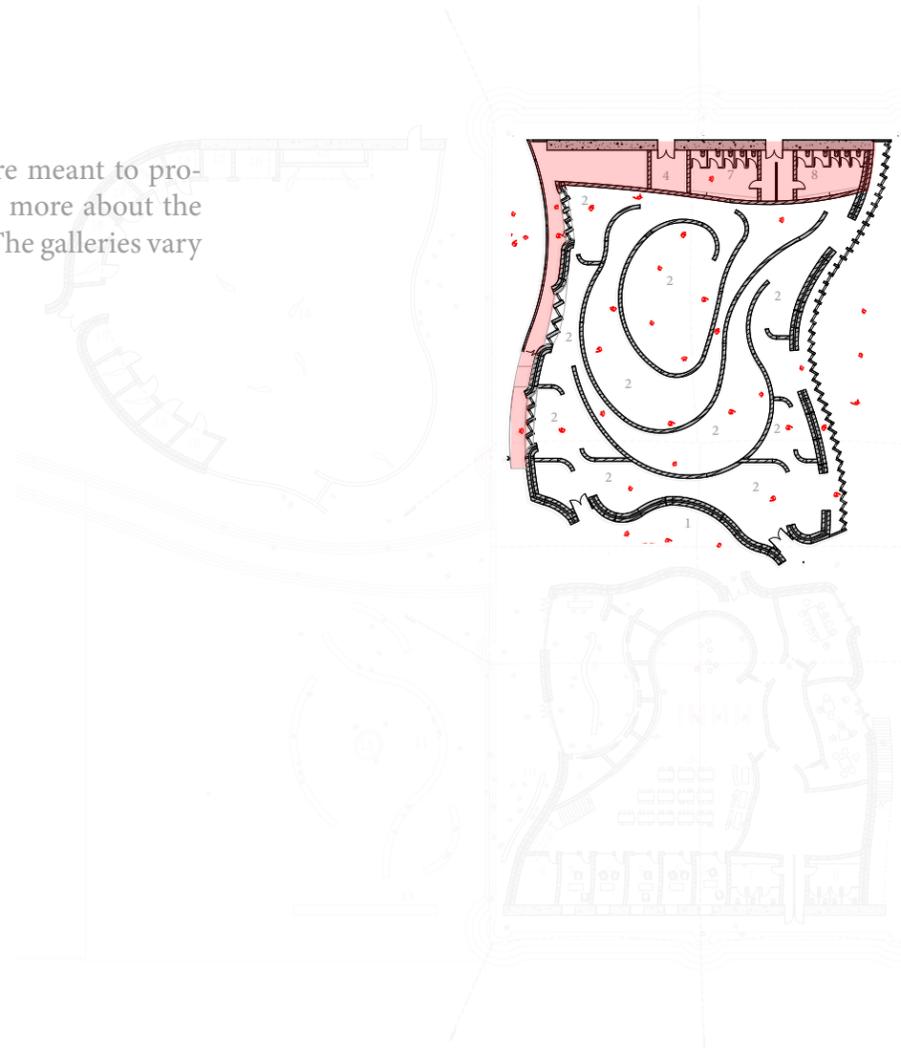
## COLLAGE: MARKETPLACE

The marketplace that faces the entry to the cultural center. It allows the bedouins to sell their crafts and food to the tourists. The marketplace has two folding glass walls that can open up to allow more vendors to set up shop outside.



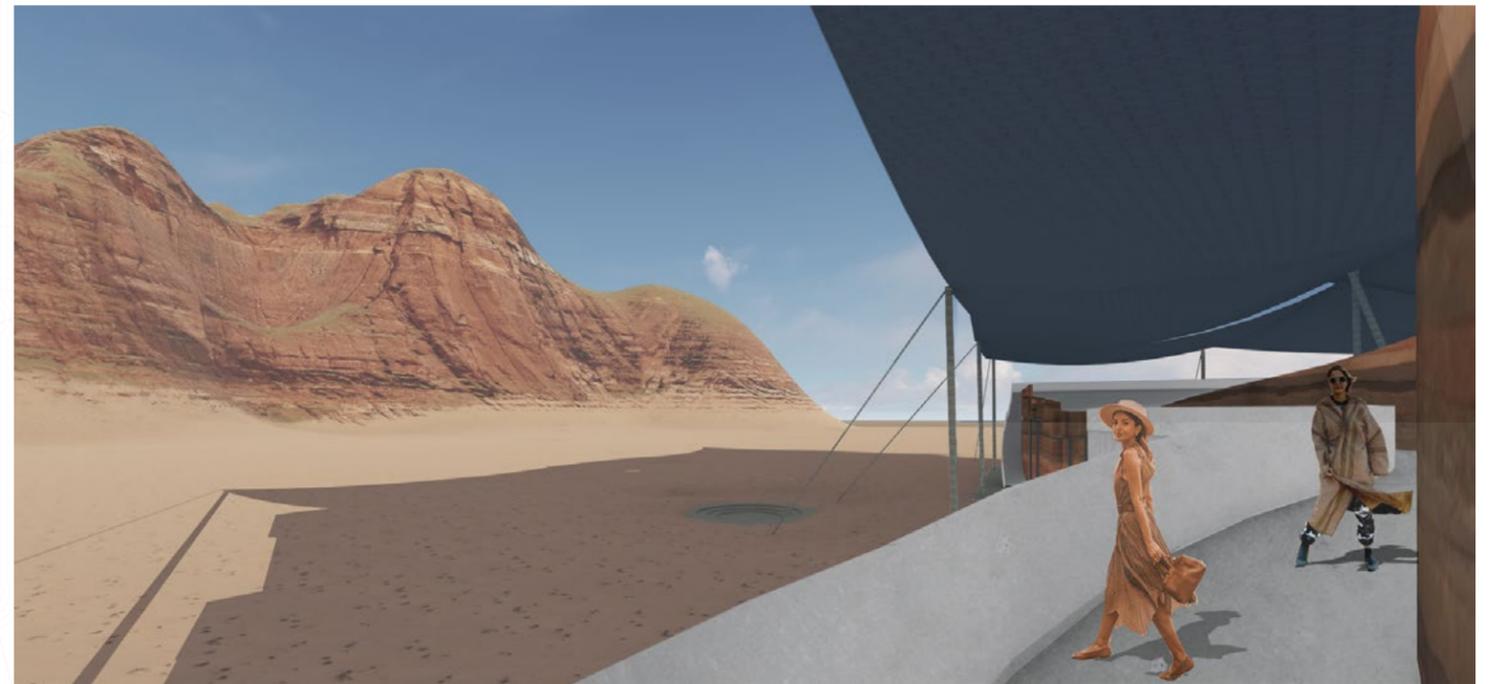
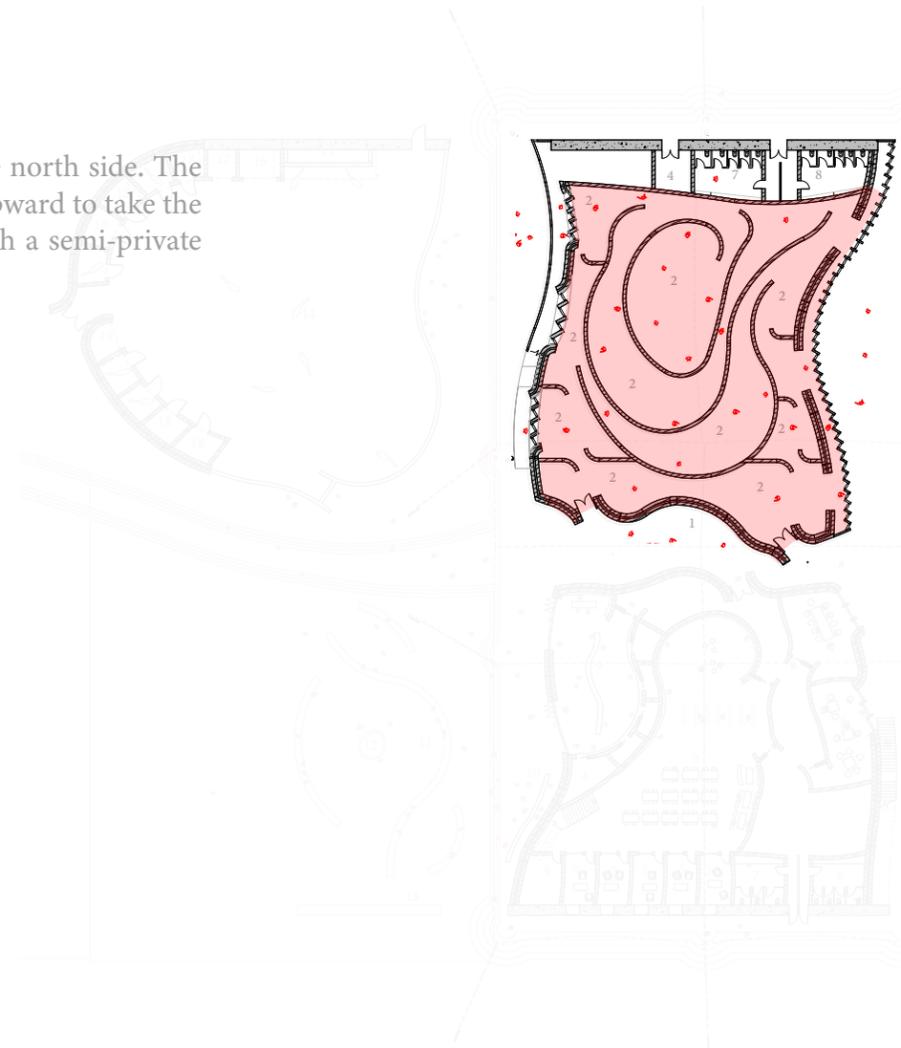
## COLLAGE: GALLERY

The gallery spaces in the main building are meant to provide opportunities for the tourists to learn more about the history of the site and its cultural heritage. The galleries vary from smaller spaces to larger galleries.



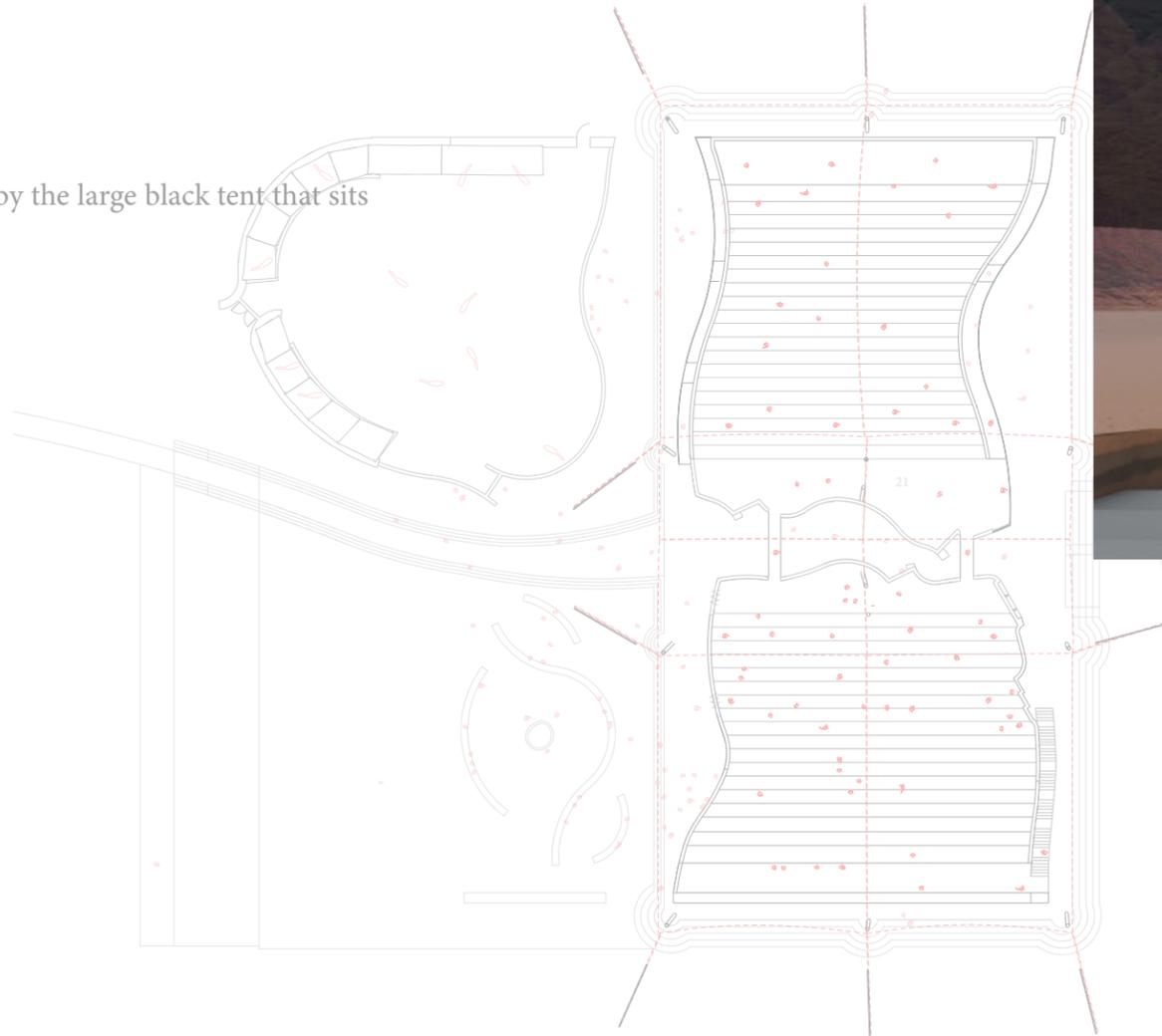
## COLLAGE: PORCH + RAMP

The ramp loops around the exterior of the north side. The ramp begins on the west side and slopes upward to take the user to the habitable roof. It passes through a semi-private elevated porch with framed views.



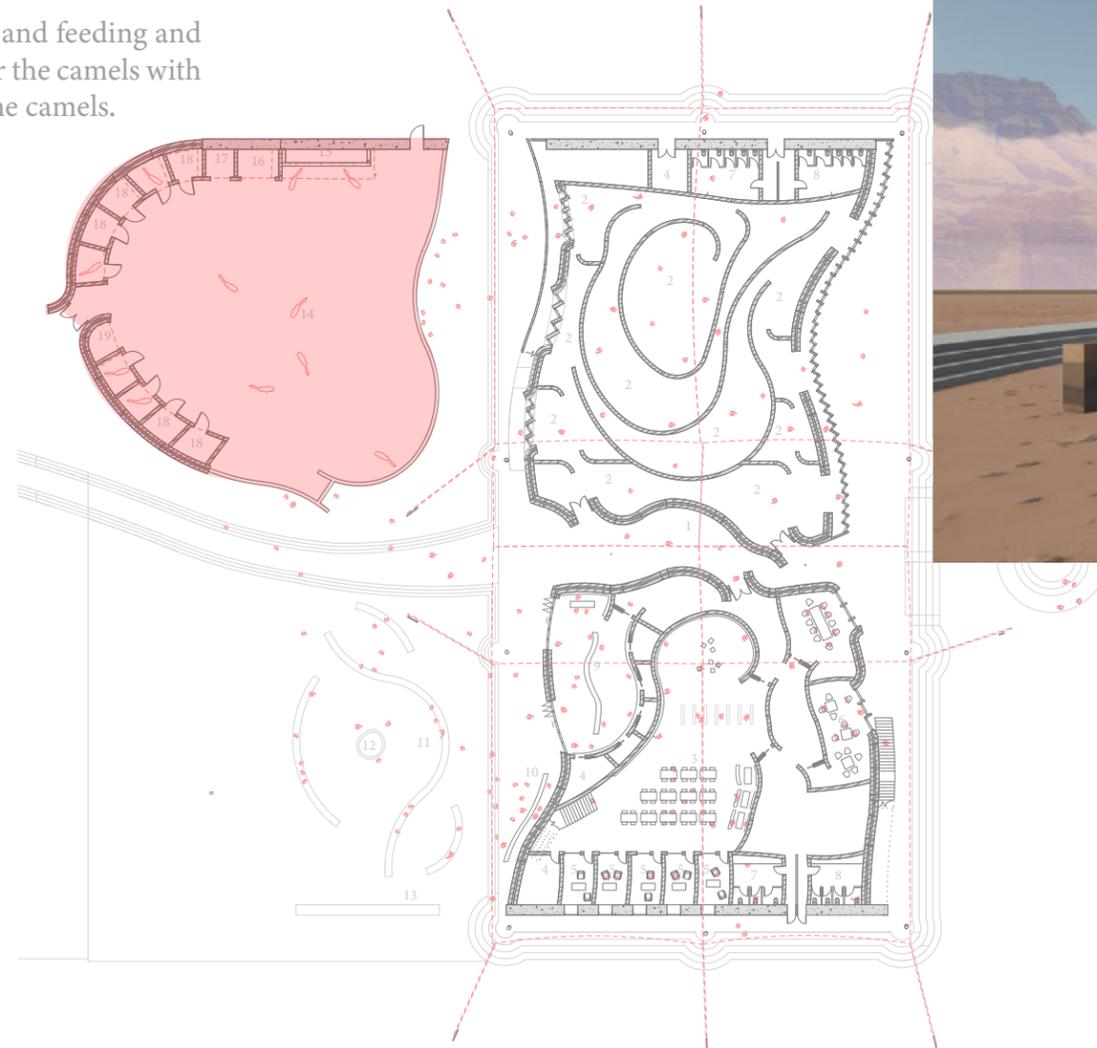
## COLLAGE: ROOF THEATRE

The roof theater is sheltered by the large black tent that sits over the whole building.



## COLLAGE: CAMEL STABLE

The camel stable houses individual stables and feeding and water areas. It also hosts an outdoor area for the camels with railing to allow the visitors to get close to the camels.

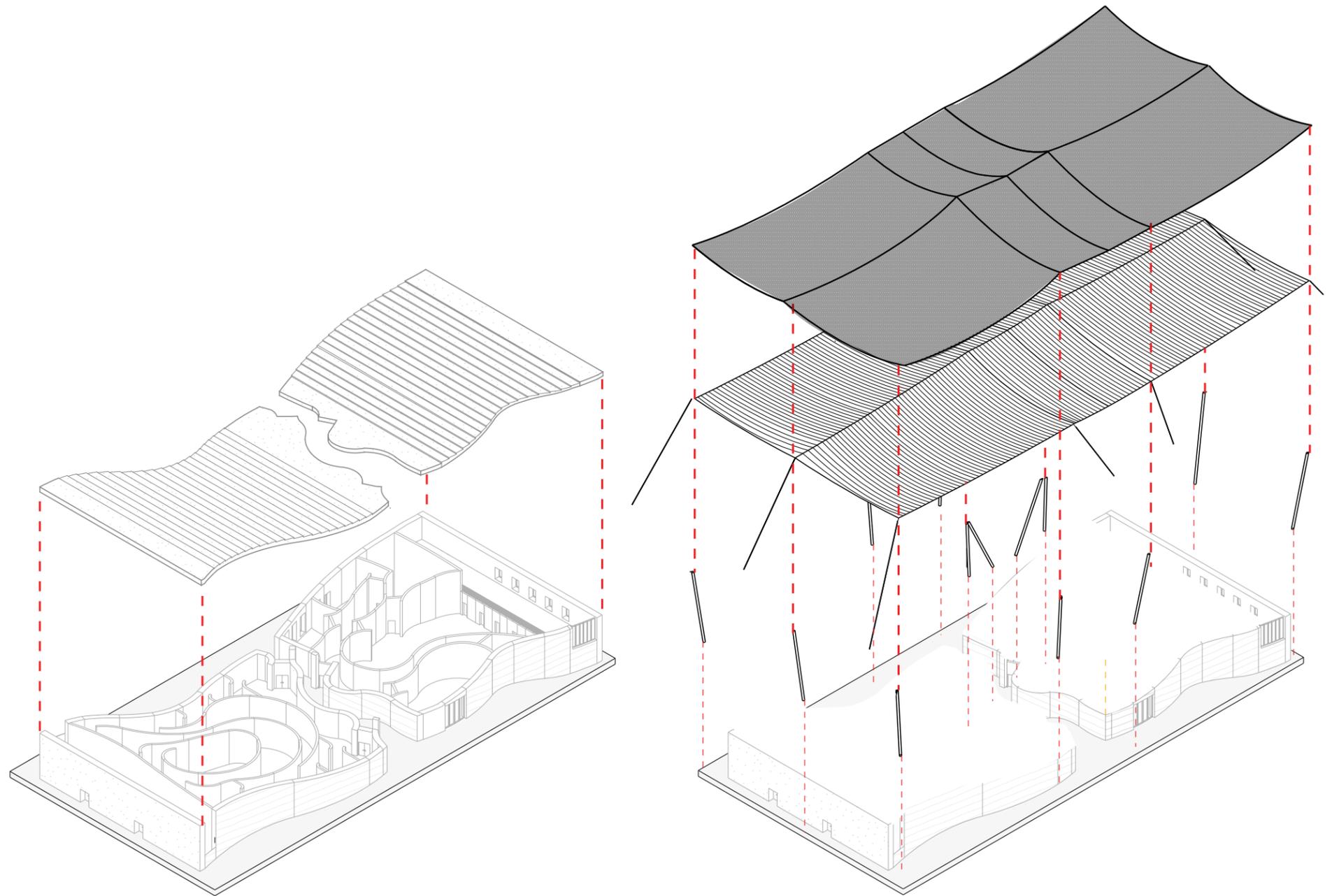


## STRUCTURAL CONSIDERATIONS

There are two structures that play different roles in the overall building:

The first structure consists of rammed earth walls, which are load bearing in compression. They bear the weight of the upper floors and the roof.

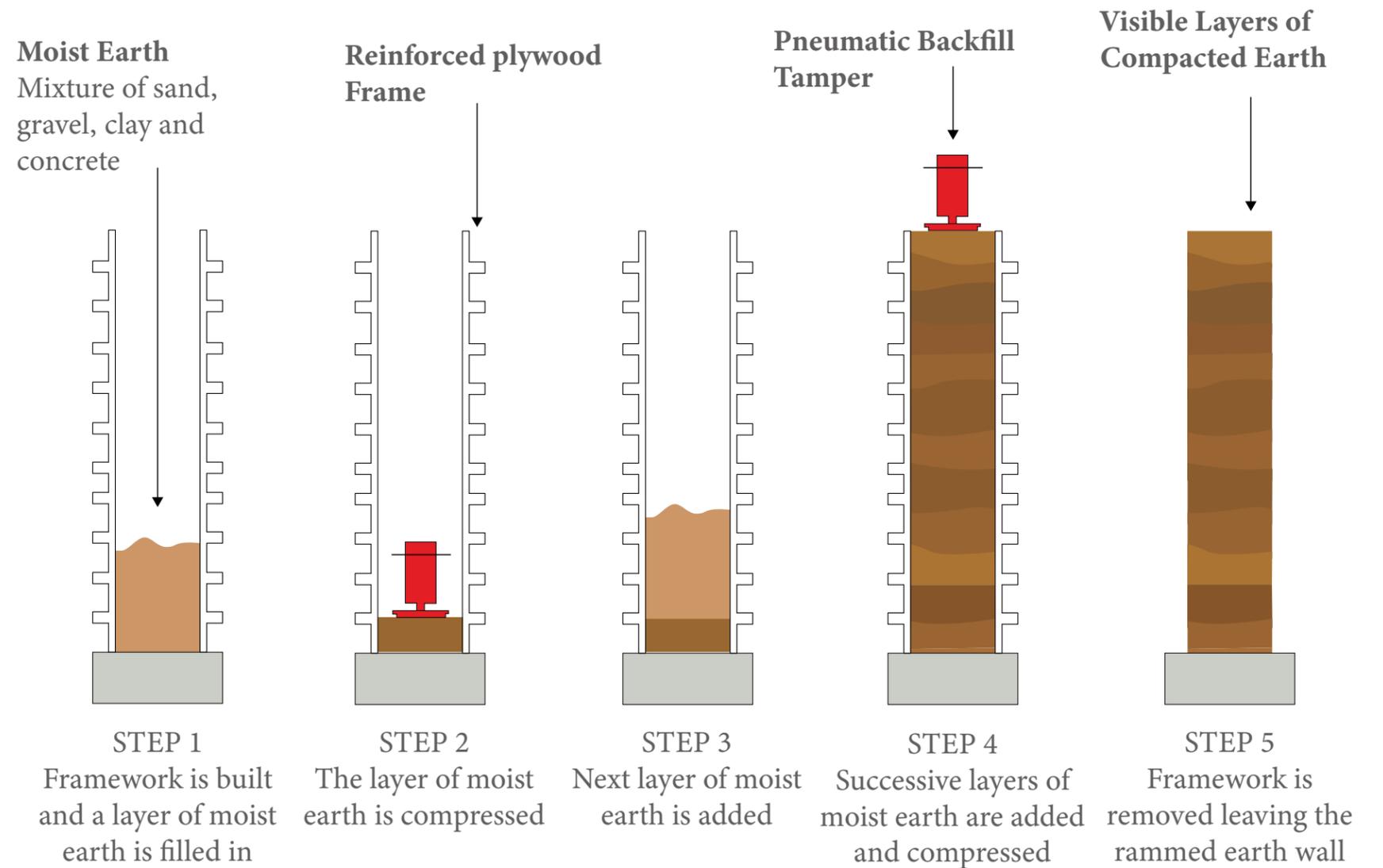
The second structure consists of a series of concrete columns that bear the weight of the canopy structure. Cable wires wrap around the column to hold up the tent. The wires also allow the tent to move with the wind with some flexibility.



## ENVIRONMENTAL CONSIDERATIONS: MATERIAL

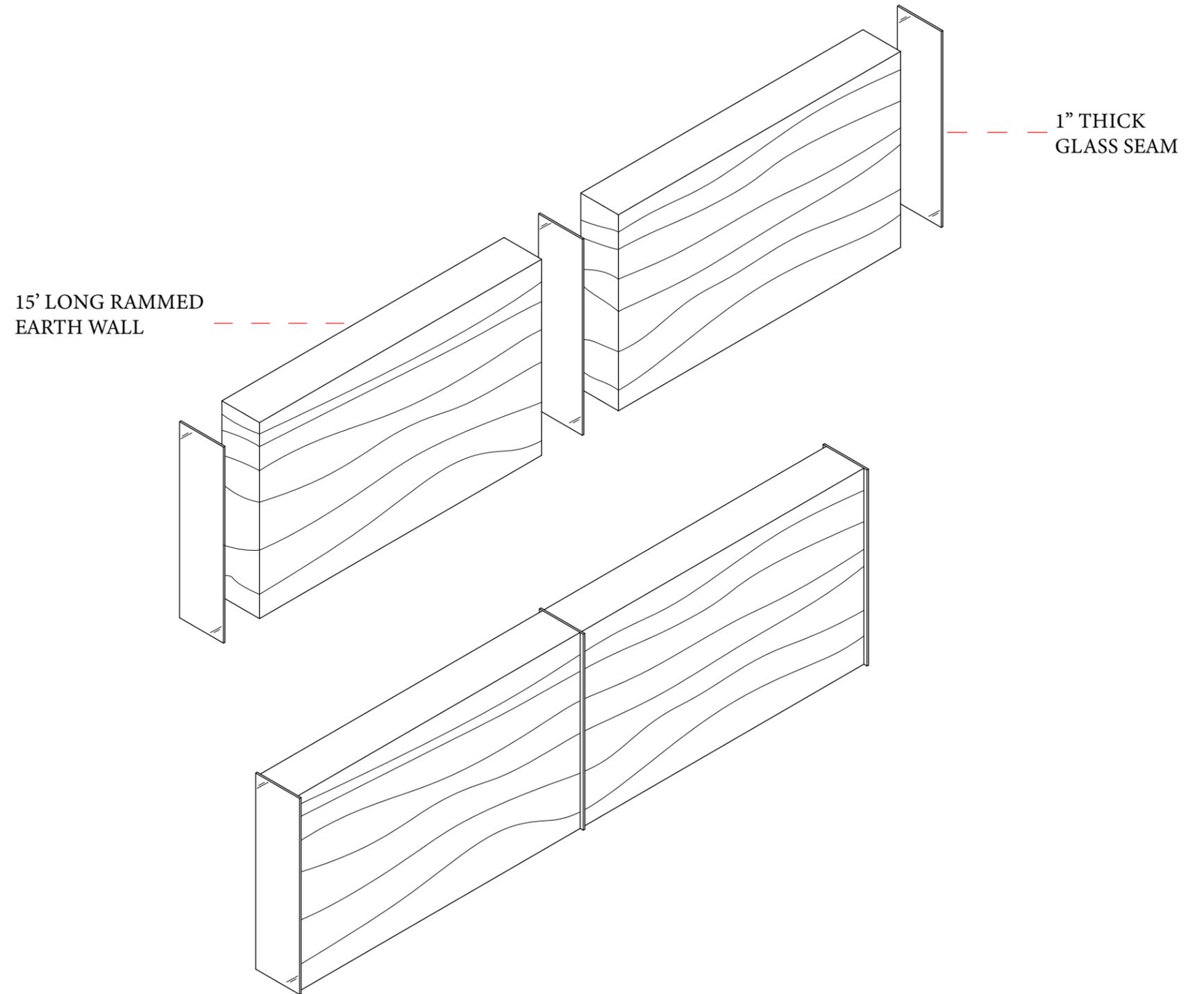
Rammed earth walls use locally sourced materials and can easily be constructed by locals, which benefits the local economy and gives the Bedouins some ownership of the building.

Rammed earth walls consist of sand, gravel, clay and concrete that is compressed in layers in formwork. This allows for curved rammed earth walls and it gives them the layered hues look that is very closely resembles Wadi Rum's chromatic hues.



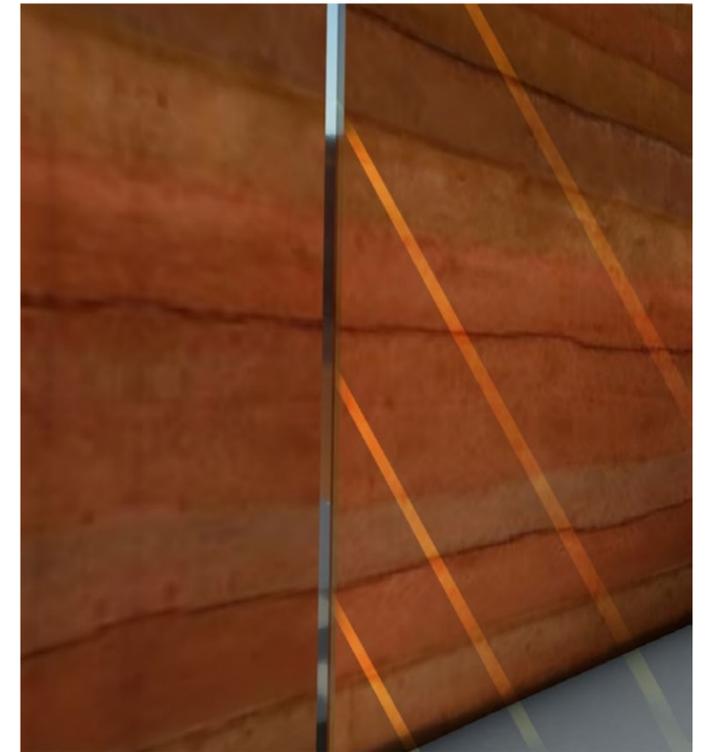
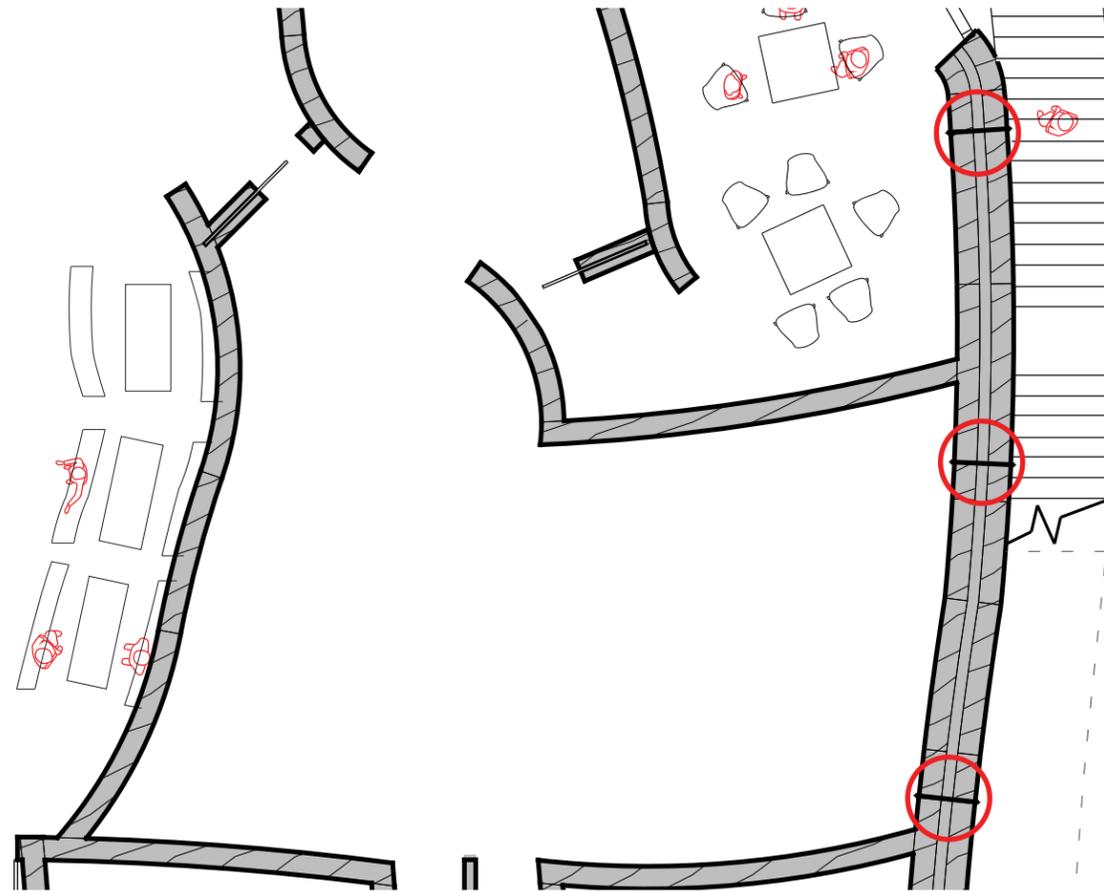
## ENVIRONMENTAL CONSIDERATIONS: WALLS

All the walls in the building are 15' long because that's the average length of a rammed earth wall formwork. These walls are joined together on site. Between each joint is a 1" glass seam that will provide a sliver of light to the interior spaces to dramatize the experience of the spaces.



## ENVIRONMENTAL CONSIDERATIONS: GLASS SEAMS

The 1" glass seams are meant to dramatize the interior spaces by providing a sliver of light depending on the time of the day.

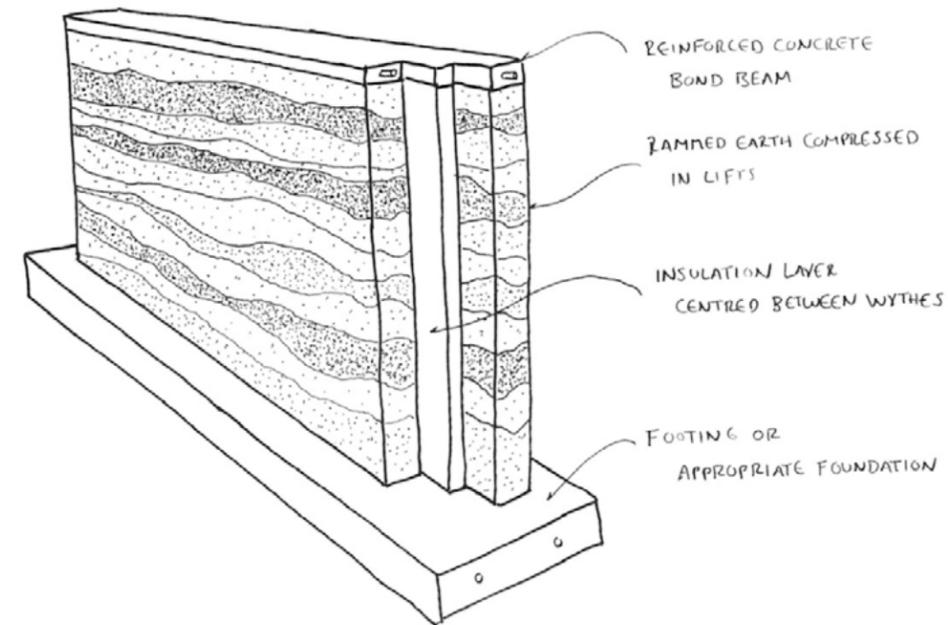


## ENVIRONMENTAL CONSIDERATIONS: INSULATION

A traditional construction method in the Middle East is to build a double exterior wall with insulation in the middle. The insulation (usually polystyrene) will act as a heat insulator.

In this case, the exterior walls are made up of two rammed earth walls with a layer of natural wool insulation sandwiched between them. Natural wool is available in abundance across the Wadi Rum village and can also be sourced locally.

External rammed earth walls provide natural protection from extremes in climate; However, wool insulation will help maintain average temperatures on days where the heat is too strong or the weather is too cold. This will reduce the need for heating and cooling technologies.



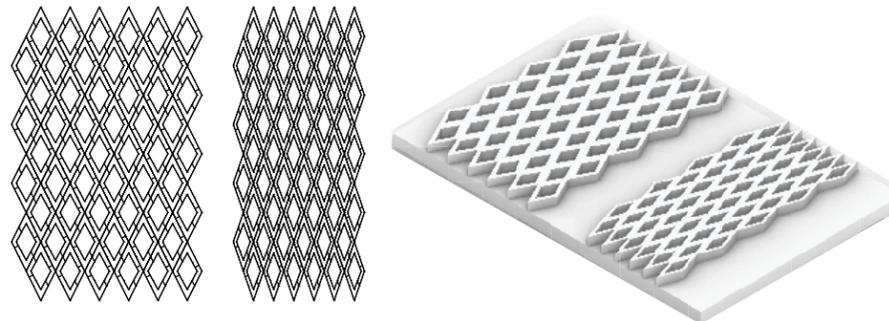
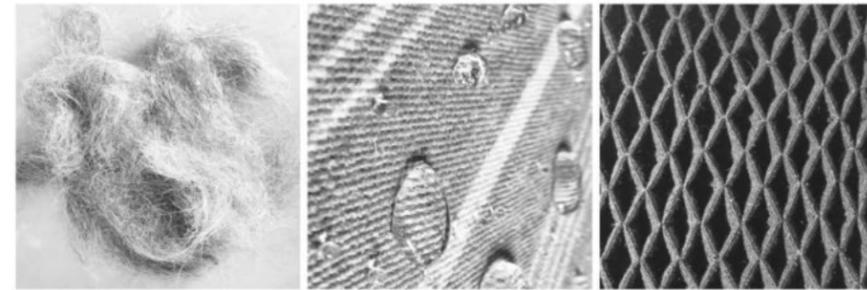
EXTERIOR WALL SECTIONAL DIAGRAM



NATURAL WOOL INSULATION IS SANDWICHED BETWEEN THE EXTERIOR WALLS

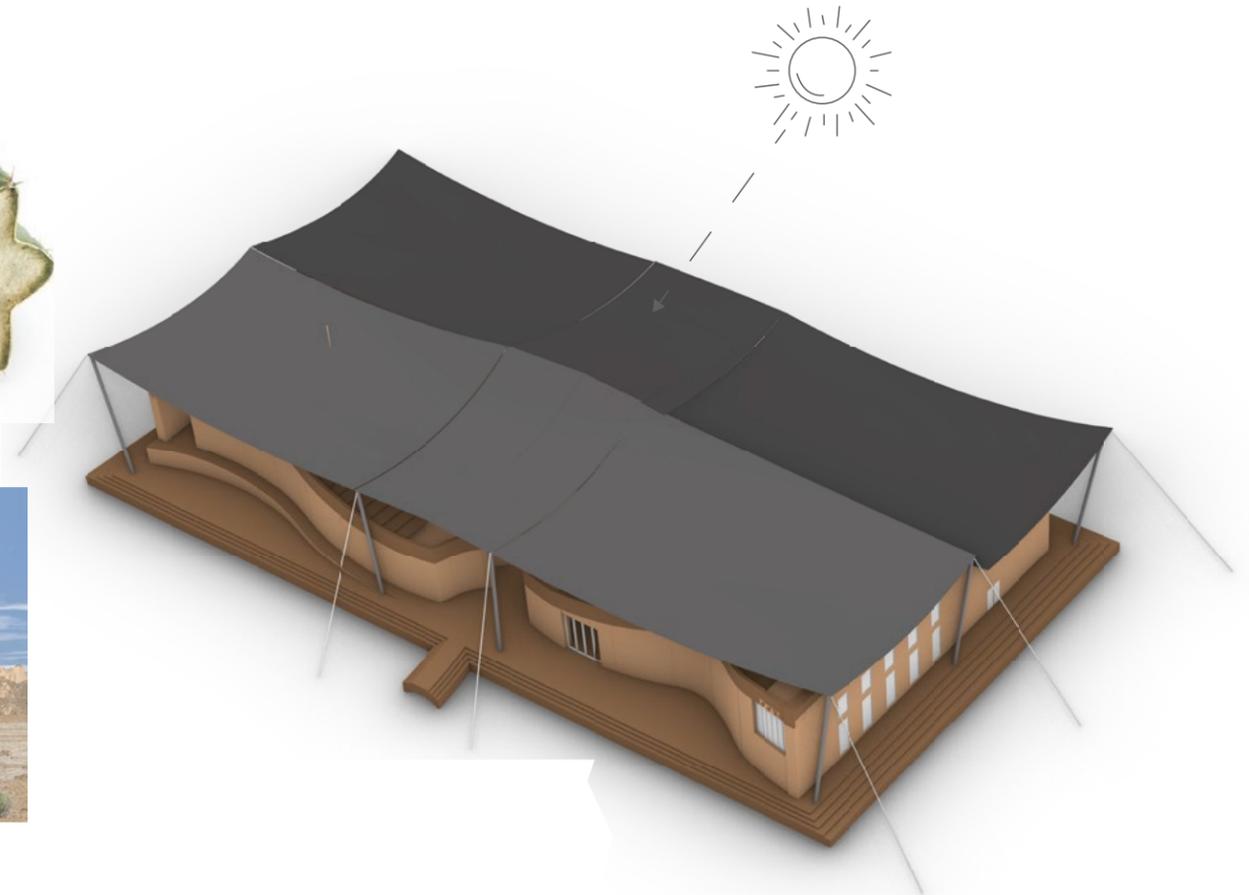
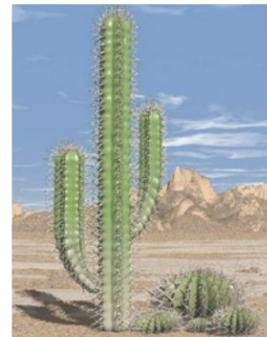
## ENVIRONMENTAL CONSIDERATIONS: MATERIAL

Material and fabrication of the black canopy can be locally sourced since the Bedouin women are famously known for their skills in spindling, sewing and constructing the black tent. The material for the black canopy is woven goat hair, which is the vernacular material of the black tent. The material allows for passive heating and cooling, and shading of the roof spaces.



## ENVIRONMENTAL CONSIDERATIONS: SHADING

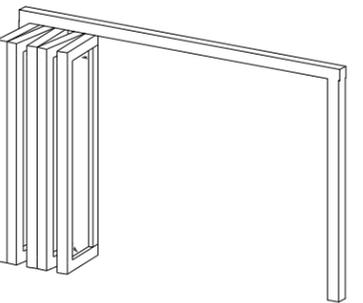
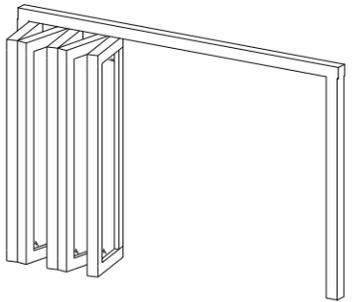
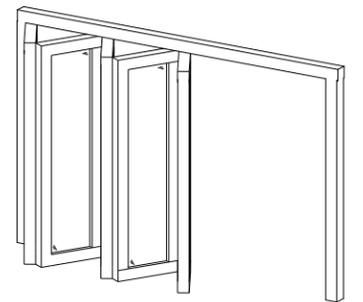
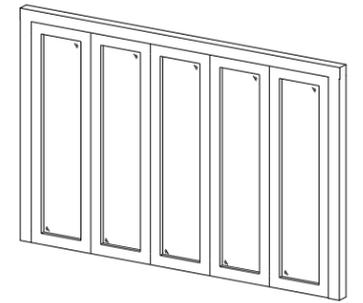
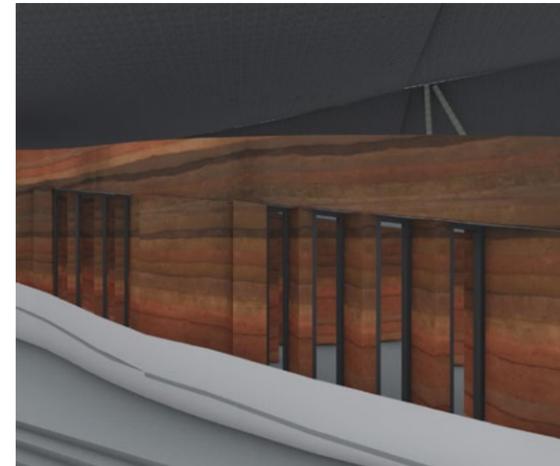
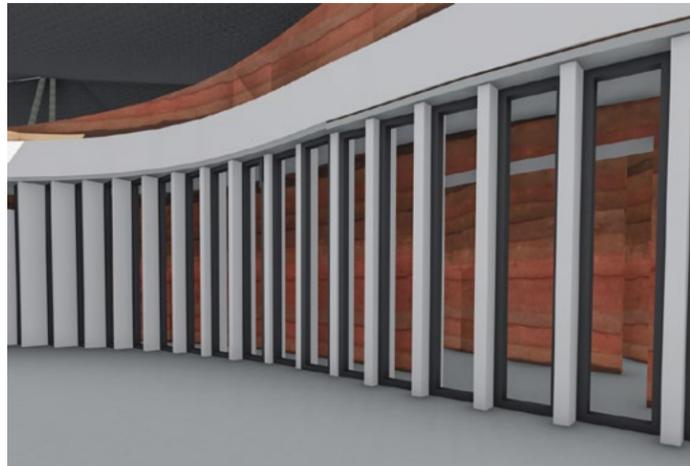
The canopy shape uses the same technique of a self shading cactus. The cactus is shaped in a way that allows the sun to shine on one side while the other side remains shaded. The black tent canopy is formed in a similar manner to allow for the same process of shading.



## ENVIRONMENTAL CONSIDERATIONS: OPENINGS

Because of the strength and heat of the desert sun, all the openings across the building are angled to reduce direct lighting but allow for natural lighting in interior spaces.

The folding glass wall in the marketplace is meant to encourage the blurring of a defined boundary between interior and exterior when the weather permits for it. It also provides unhindered views to the entry side.



~~WHY HAS TOURISM INCREASED OVER THE PAST FEW YEARS IN WADI RUM?~~

~~WHAT IS THERE TO DO IN WADI RUM THAT IS MAKING IT SO ATTRACTIVE?~~

~~WHAT ARE SOME ISSUES ASSOCIATED WITH THE INCREASE IN TOURISM?~~

~~HOW CAN ARCHITECTURE PROVIDE SOLUTIONS TO EMERGING AND EXISTING ISSUES THAT ARE ASSOCIATED WITH THE RISE IN TOURISM?~~





## CONCLUSION

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The intent of this thesis was to provide a responsible architectural proposal that would respond to existing issues that require careful attention. The final proposal was derived based on the comprehensive site analysis and mindful conversations with bedouins and tourists, the final proposal seeks to provide a place that caters to the needs of the local and the tourist and adds value to the site and its breathtaking views through careful design strategies. In an essay titled *Desert Blues: Historical Riffs on the Moroccan Periphery*, Susan Gilson Miller writes on her experience as a study leader for a tour of Morocco's imperial cities;

My stories seemed to hold their attention, generate new questions and broaden their understanding. Soon I realized that I was inadvertently engaging in practices associate with the “spatial turn” - that is, taking the landscape beyond the merely pictorial and contextualizing it, giving history equal time with an appreciation of “the view”. Their response was enthusiastic. And so I came to see at first hand the power of narrative history in shaping the tourist experience<sup>7</sup>.

## **END NOTES**

1. *Wadi Rum Protected Area*. UNESCO World Heritage Centre. Accessed 25 September 2019. <https://whc.unesco.org/en/list/1377/>

2. *Wadi Rum Protected Area*. UNESCO World Heritage Centre. Accessed 25 September 2019. <https://whc.unesco.org/en/list/1377/>

3. *Wadi Rum Protected Area*. UNESCO World Heritage Centre. Accessed 25 September 2019. <https://whc.unesco.org/en/list/1377/>

4. USAID/ Jordan. *Proposal for Inclusion of Wadi Rum Protected Area in the World Heritage List/ The United Nations Educational, Scientific and Cultural Organization*. USAID Jordan. 2009.

5. USAID/ Jordan. *Proposal for Inclusion of Wadi Rum Protected Area in the World Heritage List/ The United Nations Educational, Scientific and Cultural Organization*. USAID Jordan. 2009.

6. USAID/ Jordan. *Proposal for Inclusion of Wadi Rum Protected Area in the World Heritage List/ The United Nations Educational, Scientific and Cultural Organization*. USAID Jordan. 2009.

7. Gilson Miller, Susan. *Desert Blues: Historical Riffs on the Moroccan Periphery*. *Desert Tourism: Tracing the Fragile Edges of Development*, Edited by Virginia Picon-Lefebvre with Aziza Chaouni. Harvard University Press, 2011, p. 09.

## IMAGE CREDITS

PAGE II Image of Wadi Rum. Taken by Author.

PAGE III Image of Wadi Rum. Taken by Author.

PAGE IV Image of Wadi Rum. Taken by Author.

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PAGE 01 Image of Wadi Rum. Taken by Author.

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PAGE 09 Bathing in the Dead Sea. Our Travel Passport.  
<https://ourtravelpassport.com/blog/8-tips-for-visiting-the-dead-sea-jordan>

The Treasury in Petra. National Geographic Staff.  
<https://www.nationalgeographic.com/travel/world-heritage/petra-jordan/#close>

Ayla Oasis in Aqaba. Taken by Author.

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PAGE 10 WRPA Visitor Centre Parking Lot.  
<https://www.classicwadirumtours.com/products/if-you-want-to-book-wadi-rum-tour-only-how-to-pay/>

Visitor Centre in Wadi Rum.  
<https://www.classicwadirumtours.com/products/if-you-want-to-book-wadi-rum-tour-only-how-to-pay/>

Sightseeing tour in Wadi Rum. Unknown.

PAGE 11 Image of a Bedouin Man. Taken by Author.

PAGE 12 Wadi Rum Cliffs. Unknown.

Wadi Rum Sand dunes. Wadi Rum Adventures.  
[https://www.tripadvisor.com.ph/LocationPhotoDirectLink-g12908257-d13732457-i306575519-Wadirum\\_Adventure-Wadi\\_Rum\\_Village\\_Wadi\\_Rum\\_Al\\_Aqabah\\_Governorate.html](https://www.tripadvisor.com.ph/LocationPhotoDirectLink-g12908257-d13732457-i306575519-Wadirum_Adventure-Wadi_Rum_Village_Wadi_Rum_Al_Aqabah_Governorate.html)

Lawrence's Spring. Desert Melody.  
<http://desertmelody.com/about-wadi-rum/>

Wadi Rum narrow gorge. Desert Melody.  
<http://desertmelody.com/about-wadi-rum/>

Wadi Rum Khaz'ali Canyon. Unknown.

PAGE 13 Bedouin man leading camels. Unknown.

Bedouin man making zarb. Unknown.

Bedouin woman herding sheep. Unknown.

Bedouin man and tourist lighting a bonfire. Unknown

Bedouin man pouring tea. Unknown.

Bedouin woman drinking tea. Monika Ettin.  
<https://nl.pinterest.com/pin/145522631683498881/>

Bedouin man sitting by the fire. Unknown.

Bedouin woman standing in front of camels. Unknown.

Jeep driving through Wadi Rum. Unknown.

Bedouin woman posing. World Photo Tour.  
[http://www.worldphotostour.com/gallery\\_view.php?nmer=1172&k=0&s=26&page=1&en=1](http://www.worldphotostour.com/gallery_view.php?nmer=1172&k=0&s=26&page=1&en=1)

Bedouin men playing music. Unknown.

PAGE 14 Image of Wadi Rum Village. Hiking in Jordan.  
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A boy in uniform in Wadi Rum Village. Taken by Author.
- PAGE 15 Image of Wadi Rum Camp. Taken by Author.
- PAGE 16 UNESCO World Heritage Logo.  
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- PAGE 65 Cactus cross section. Desert Plants of Avalon.  
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PAGE 68 Driving through Wadi Rum. Taken by Author.

## **BIBLIOGRAPHY**

Picon-Lefebvre, Virginie, and Aziza Chaouni. *Desert Tourism: Tracing the Fragile Edges of Development*. Harvard University Press, 2011.

Block, India. *Nomad pavilion designed to double as shelter and water- collecting tower for Jordanian desert*. Dezeen. Accessed 01 November 2019. <https://www.dezeen.com/2018/05/10/nomad-pavilion-architecture-dina-haddadin-rasen-kamal-shelter-water-tower-jordan/>

Chaouni, Aziza. *Ecotourism, Nature Conservation and Development: Re-imagining Jordan's Shobak Arid Region*. Birkhauser, 2014.

*Conserving Desert Ecosystems - Exploring Sustainable Tourism Impacts in Siwa, Egypt*. Ecoclub.com. Accessed 01 November 2019. <https://ecoclub.com/education/articles/883-desert-ecosystems-tourism-siwa-egypt>

Corner, James and Alex McLean. *Taking Measures Across the American Landscape*. Yale University Press, 2000. 77

Crook, Lizzie. *Oppenheim Architecture's sinuous concrete golf clubhouse mimics Jordan's desert landscape*. Dezeen. Accessed 11 May 2020. <https://www.dezeen.com/2019/06/11/oppenheim-architecture-ayla-oasis-aqaba-golf-clubhouse-jordan/>

*Ecotourism Revives Jordan's Wadi Rum*. The GED Small Grants Programme. Accessed 05 November 2019. <https://sgp.undp.org/resources-155/our-stories/230-ecotourism-revives-jordans-wadi-rum.html>

Faegre, Torvald. *Tents: Architecture of the Nomads*. Anchor Press/Doubleday, 1979.

Freaeson, Amy. *Iyad Alsaka on OMA and tourism in the Libyan desert*. Dezeen. Accessed 01 November 2019. <https://www.dezeen.com/2011/10/28/dezeen-screen-iyad-alsaka-on-oma-and-tourism-in-the-libyan-desert/>

Frearson, Amy. *Wadi Resort by Oppenheim Architecture + Design*. Dezeen. Accessed 05 October 2019. <https://www.dezeen.com/2011/05/01/wadi-rum-by-oppenheim-architecture-design/>

Halprin, Lawrence. *The Shape of Erosion in Landscape Architecture*. January 1962.

Johnson, Frankel. *Ira's Fountain*.

Mairs, Jessica. *Rasem Kamal proposes warren of subterranean services for Jordan's Wadi Rum*. Dezeen. Accessed 25 September 2019. <https://www.dezeen.com/2016/11/04/rasem-kamal-oppenheim-architecture-conceptual-subterranean-housing-wadi-rum-excavated-sanctuaries-jordan/>

Mehta, Hitesh. *Planning, Design and Construction Guidelines for Desert Ecolodges: Kingdom of Saudi Arabia*, The Supreme Commission of Tourism (SCT). August 2005.

*Monthly Number of Visitors to Wadi Rum*. Ministry of Tourism and Antiquities Statistics.

Outdoor Research. *Wadi Rum (Official Film)*. Youtube, 2018.

## **BIBLIOGRAPHY**

*State of Conservation at Wadi Rum Protected Area.* UNESCO World Heritage.  
<https://whc.unesco.org/en/soc/3441>

USAID/ Chemonics. *Badia Fort & Camel Holding Areas: Phase I Preliminary Design Phase Report.*

USAID/ Chemonics. *Badia Fort Demolition Plan.* U.S AID/ Chemonics.

USAID/ Jordan. *Proposal for Inclusion of Wadi Rum Protected Area in the World Heritage List/ The United Nations Educational, Scientific and Cultural Organization.* USAID Jordan. 2009.

*Wadi Rum Protected Area.* UNESCO World Heritage Centre. Accessed 25 September 2019.  
<https://whc.unesco.org/en/list/1377/>

END (For Now.)

