THE LASTING EFFECTS OF THE ARAMCO COMPOUND ON THE BUILT ENVIRONMENT OF SAUDI ARABIA

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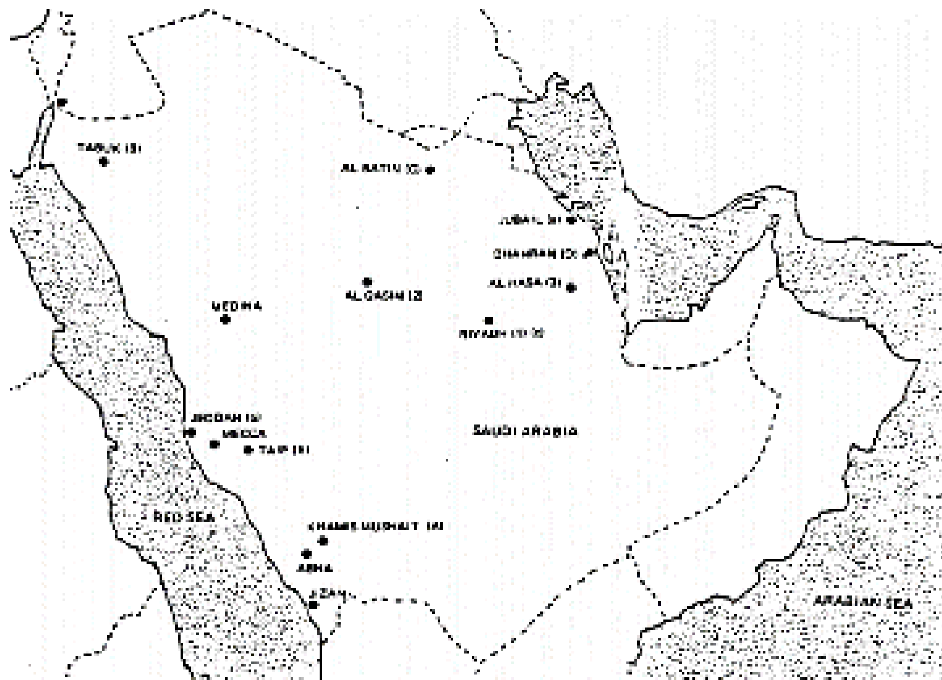

Modern American Architecture
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"The question is often asked whether the oil companies or the U.S. government control U.S. policy in the Middle East – although another way of phrasing it could be that what is good for the U.S. oil companies in the Middle East is good for the U.S."[1]

In the desert of the eastern region of Saudi Arabia lies a neighborhood of prefabricated, ranch-style homes. Perhaps a jarring scene for the unsuspecting eye, this equivalent to a California suburb replete with an 18-hole golf course provides a visual entry point into a pivotal moment of world history and its relationship to crude oil. It also marks the beginning of Saudi Arabia's shift in building technologies and the modernization of its built environment. The introduction of new architectural forms tailored to a community of ex-patriots from the U.S. showcases how new technologies can instrumentalize a comprehension of class consciousness. In the case of the Dhahran camp in Saudi Arabia this reckoning of class facilitated widespread ramifications within the built environment which in turn led to the erasure of vernacular architecture. The Dhahran camp was intentionally constructed to operate as an American enclave; however, evaluating the ways in which other company housing projects were concurrently functioning in the United States helps to demonstrate that these projects were lined with segregationist ideals. This paper argues that while modern architectural forms instrumentalized racial bias in the United States, these self-same forms operationalized class-consciousness abroad, but their implementation resulted in the loss of other regional forms.

The United States' interest in Saudi Arabia dates to the inception of the Middle Eastern country's formation. After leading a thirty-five-year war, King Abdul Aziz Al-Saud declared unification of all the regions of Arabia in 1932, known today as Saudi Arabia. Abdul Aziz believed it was his duty to eradicate what he called "the three enemies of our country…poverty,

[1] Morden Lazarus, "What Next in the Middle East?," *Socialist Call*, March 1, 1957, Readex: America's Historical Newspapers.

ignorance, and disease."[2] To achieve these goals Saudi Arabia needed to establish its own export to afford them a source of reliable income since at present they were reliant on imported goods and a volatile revenue derived from the annual Muslim pilgrimage (known as the Hajj) to Mecca located in the heart of Saudi Arabia. Neighboring countries with similar geological landscapes such as Iraq and Bahrain were the sites of newly discovered oil fields; thus, Abdul Aziz believed his country's land would provide his people a similar fortune. Initially, the Abdul Aziz granted concession rights to a team of New Zealand and Swiss geologists to survey the land for potential oil. The team quickly reported that there was none to be found and canceled the concession.[3] As a second option, Abdul Aziz looked to the state-owned, Standard Oil of California Company (SOCAL) to undertake the task. Turning to the U.S. seemed like a safe tactic having witnessed the imperialist actions of both France and Great Britain. Not only was Saudi Arabia now ruled by a monarchy, but it was also governed along Islamist lines. Brokering any deals with countries known to enforce imperialist control would be antithetical to the new nation's objectives. Having encountered the behavior of American doctors who were on a medical mission in nearby Bahrain, the Saudis were impressed by the U.S. professionals' expertise and their seeming disinterest in converting anyone to Christianity.[4] Granting this concession to SOCAL appeared to be a mutually beneficial and safe venture in 1933 during a time when both countries were experiencing economic hardship and the U.S. had yet to flex its muscle as an imperialist power.

While the deal proved unfruitful during the first five years, SOCAL successfully discovered oil in 1938 in Dammam to much fanfare on both sides. Families began arriving from

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[2] George Ibrahim Kheirallah, *Arabia Reborn /* (Albuquerque, New Mexico: The University of New Mexico Press, 1952), http://hdl.handle.net/2027/mdp.39015036718073.
[3] Abdulaziz Alshabib and Sam Ridgway, "Oil + Architecture," *Fabrications* 29, no. 2 (May 4, 2019): 131–53, https://doi.org/10.1080/10331867.2019.1576491.
[4] "The U.S. and Saudi Arabia Since the 1930s - Foreign Policy Research Institute," accessed February 27, 2021, https://www.fpri.org/article/2009/08/the-u-s-and-saudi-arabia-since-the-1930s/.

the U.S. as the SOCAL employees intended to settle down and get to work mining the fields and surveying for more commercial-grade oil. With these families came the first orders for prefabricated homes which were constructed hastily to accommodate the Western employees and their families who were growing accustomed to such amenities as indoor plumbing and air conditioning. [Fig's 1.2-1.3] However, with the onset of WWII, prospecting for crude oil in Saudi Arabia came to a standstill. This is not to say that oil was not important – it was in fact crucial – but the move to halt surveying was a strategy used for multiple reasons. For instance, the United States had allied themselves with Great Britain and led strategic attacks on known German oil sources.[5] Since Great Britain was still an imperialist force in the Middle East, keeping any new discoveries of oil in the territory would keep the two countries in good graces.

This rendered many Americans unemployed in the camp and most of the men enlisted to serve with their families sent back to the U.S. Suddenly, a company of 371 American employees had dwindled to less than 100.[6] As Saudi Arabia felt the effects of war, one of the abandoned air-conditioned homes was repurposed into a chicken farm, housing home-made incubators, and helped produce food for the region. The American engineers who remained effectively drilled and installed water wells throughout the barren land between Oqair and Riyadh (the nation's capital) and facilitated the transportation of food throughout the nation.

In 1943, under the direction of President Franklin D. Roosevelt, the necessity to have access to oil overseas crystallized as a means for the future of the U.S. in the geopolitical landscape. While war tactics such as Operation Tidal Wave targeted known oil fields Roosevelt decided that the U.S. must provide both military and economic aid to Saudi Arabia declaring that

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[5] "Over the Cauldron of Ploesti: The American Air War in Romania," The National WWII Museum | New Orleans, accessed April 22, 2021, https://www.nationalww2museum.org/war/articles/over-cauldron-ploesti-american-air-war-romania.

[6] Kheirallah, *Arabia Reborn /.*

"the defense of Saudi Arabia is vital to the defense of the United States."[7] The U.S. government's interest took off and the first official meeting between the nation's leaders strategically took place in 1945. It is said that their discussion revolved not around oil but rather the current situation of Palestine. Abdul Aziz was concerned about the establishment of a Jewish state, whether the Palestinians would have a state, and exactly what role the U.S. would have in this development.[8] Despite their differing views, the two leaders decided it was ultimately in each other's best interests to forge an amiable relationship where in return for oil and political support the U.S. would provide military training to Abdul Aziz's vulnerable country which was surrounded by stronger nations.[9] This conversation is critical to note because the question of land rights and Palestine continues to this day, historically factoring into the U.S. relationship with Saudi Arabia.

The 1933 agreement between SOCAL and Saudi Arabia suddenly became a touchstone for realizing Roosevelt's new declaration. To better manage the task at hand, SOCAL brought in three other oil companies: Mobil, Exxon, and Texaco and renamed itself the Arabian American Oil Company, widely known as Aramco. Through this agreement, Saudi Arabia took out loans from the company while Aramco employees continued to survey and excavate the land for more oil. In 1948 Aramco came upon the Ghawar oil field marking a turning point in Saudi Arabia's history. The field, 170 miles long and 20 miles wide was said to hold 170 billion barrels of proven oil reserves. It was with this discovery that the western modernization of Saudi Arabia began to take hold.

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[7] "The U.S. and Saudi Arabia Since the 1930s - Foreign Policy Research Institute."
[8] "The U.S. and Saudi Arabia Since the 1930s - Foreign Policy Research Institute."
[9] Adam Taylor, "The First Time a U.S. President Met a Saudi King," *Washington Post*, accessed March 3, 2021, https://www.washingtonpost.com/news/worldviews/wp/2015/01/27/the-first-time-a-u-s-president-met-a-saudi-king/.

The introduction of the prefabricated home within the Saudi Arabian landscape functioned as a physical and cultural shelter for the Americans. The gated community of the Dhahran Camp, also known as the American Camp, aimed to provide a feeling of a 'home away from home' for the employees. The gate and walls seemed to represent the mutual understanding of the nations' cultural differences yet the need for one another's resources (the American's knowledge of the oil industry and the Saudi's fields of oil). However, according to Wallace Stegner, the Americans were disinterested in familiarizing themselves with the Saudi Arabian culture as evidenced in their constant import of American goods including their prefabricated homes.[10] It is not by chance that the prefabricated homes built in the 1950s resembled a California suburb. During this era, kit homes were taking hold in the U.S., promising high efficiency at low costs to White Americans recently returning from war.[11] Thanks to the standardization of construction methods within the housing industry, the San Francisco-based Aramco company imported and built these homes in orderly rows along tree-lined streets within the new, gated community. [Fig 1.4] In an effort to contextualize this venture, it is important to look at the establishment of similar working communities built in the United States. Under a construction program facilitated by President Franklin D. Roosevelt's New Deal initiative the Tennessee Valley Authority (TVA) was created to bring jobs to the region experiencing extreme poverty due to the Great Depression. TVA's headquarters in Norris, Tennessee built a camp of 500 homes they leased to their workers but only if they were White. Any African American workers were housed in barracks farther away because, according to a TVA official, "Negroes do

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[10] T.W. Lippman and W. Stegner, *Discovery!: The Search for Arabian Oil* (Selwa Press, 2007), https://books.google.com/books?id=0bvOAAAACAAJ.
[11] Irene Cheng, Charles L. Davis, and Mabel O. Wilson, *Race and Modern Architecture: A Critical History from the Enlightenment to the Present* (Pittsburgh, UNITED STATES: University of Pittsburgh Press, 2020), http://ebookcentral.proquest.com/lib/columbia/detail.action?docID=6195148.

not fit into the program."[12] Similarly another federally funded New Deal venture, the Civilian Conservation Corps (CCC), created work camps throughout the nation for youth and young adults seeking employment. These camps were also segregated and in the case of Gettysburg, Pennsylvania, the African American workers were housed twenty miles away from the historic battleground site they were helping to restore.[13] Thus we begin to understand that at this time, it was seen as customary to live in segregated neighborhoods and this mentality was bolstered by the U.S. government.

Segregation among the Aramco employees operated along similar lines however in the case of the American Aramco employees they were not living in territory they could call America – they were foreigners importing their Western technology including these prefabricated homes. While many researchers have focused on these homes symbolizing the birth of modernism within Saudi Arabia it is necessary to place them in relationship to the homes constructed for the other Aramco workers to better understand their instrumentalization of segregation and class consciousness.

In 1942 Aramco consisted of 1,825 employees of which 1,654 were Saudi and 87 American. By 1951 the company had grown to a staggering number of 22,395 employees – 13,786 were Saudi, 3,230 American, and 6,379 were from other nations.[14] Clearly, the need for homes had skyrocketed in a relatively short period of time. While the American camp of Dhahran displayed neat rows of kit homes boasting gardens, lawns, and street lighting, the Saudis and those from other nations were separated into camps where they were given empty lots

[12] Richard Rothstein, *The Color of Law: A Forgotten History of How Our Government Segregated America* (New York, N.Y., United States: Liveright Publishing Corporation, 2017).
[13] Rothstein.
[14] Yousef M. Fadan, "The Development of Contemporary Housing in Saudi Arabia (1950-1983): A Study in Cross-Cultural Influence Under Conditions of Rapid Change" (Massachusetts Institute of Technology, Architecture, Art and Environmental Studies, 1983).

to build their shelters commonly referred to as '*barraistis*,' an arabicized word for barracks (barracks being the same term used by TVA officials to categorize the dwellings for their African American workers). The Saudi workers not only built their own homes but constructed the homes of the Americans as well.[15] The *barraisti* structures they built consisted of wooden frames and pitched roofs of which woven palm leaves were attached. Aramco did not supply these employees with piped water, paved roads, or gates. [Fig's 1.5-1.8] Initially this discrimination in housing was seen as cultures wanting to remain separate from each other – a mutual segregation due to cultural differences. However, as the Saudi workers built these Western homes, they became enamored of certain technologies not previously available in their building typologies. Furthermore, the Saudis built an auditorium for the Dhahran camp that included a bowling alley, library, ballroom, movie theater, snack bar, lounge, and dining room – all amenities which the Saudi workers were denied access.[16] When the researcher Helen Lackner studied the reasonings for this discrimination she discovered that the resentment the Saudi workers held toward the Americans had been growing since the early stages of the company in the 1930s and it was exacerbated specifically by the building technology the company had the Saudis construct for the Americans. While Aramco notably provided training for the Saudi employees in the U.S. it was when these Saudi workers returned home to the same living conditions but at a higher grade of employment that they felt "the Aramco policy [of] segregation [was] based on race rather than on employment status."[17] This resentment resulted in the workers choosing to withhold their valuable labor until their demands for access to housing were met. The result of subsequent worker's strikes ushered in a new era of building

[15] Alshabib and Ridgway, "Oil + Architecture."
[16] Fadan, "The Development of Contemporary Housing in Saudi Arabia (1950-1983)."
[17] H. Lackner, *A House Built on Sand: A Political Economy of Saudi Arabia* (Ithaca Press, 1978), https://books.google.com/books?id=KWgKAQAAIAAJ.

modernization throughout the landscape. Not only did Aramco increase the wages of the Saudi workers to better equate their skill but the Saudi government worked in conjunction with Aramco to implement a home ownership program for the Saudi employees.

The program stipulated that the employee must pay for the new home and Aramco would provide interest-free loans. These new homes had to meet certain Aramco standards and the company provided licensed architects and contractors. Since the U.S. did not recognize the skilled master builders of Saudi Arabia as professional architects, Aramco provided architects with western training.[18] The term professional should be called into question here since the structures they were approved to build were in fact not considerate of the environment or the region's customs.

A brief understanding of regional architecture must be addressed at this juncture. Prior to Saudi Arabia's embrace of modern architecture, the land was home to building techniques which employed local materials specific to each region. Both geographic region and religion dictated where and how structures were built. Extended family is important in the Muslim faith thus the concept of compounds or villas was commonplace to accommodate multiple families. There were two typologies present in the vernacular architecture: courtyard houses and multi-story houses.[19] Since multi-story houses were not common to the eastern region which the Dhahran camp comprises this paper will focus on the courtyard house. These houses were characteristically private and secluded thus large windows facing out to the street or neighbors were not employed. The courtyard houses were built in clusters around a central courtyard with each structure housing members of the extended family. The houses typically had flat roofs with high parapets and were usually no more than two stories high. Windows opened out onto the

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[18] Alshabib and Ridgway, "Oil + Architecture."
[19] Fadan, "The Development of Contemporary Housing in Saudi Arabia (1950-1983)."

inner courtyard with semi-open corridors running along the four sides of the second story interior. [Fig 1.9] This provided a partially open shaded area allowing air to be filtered and cooled before entering a room. The thick, load-bearing walls were constructed of sun-dried mud brick composed of a mixture of straw and mud specific to the region. Houses along the Persian Gulf employed coral stone which was abundantly available and had a high capacity to absorb air moisture, critical for structures built along a humid coastline. Wood from palm trees and tamarisk trees was also used in construction, although this material was scarce. If a family were wealthy, they would import teak or other hardwoods from India for construction.[20]

The layout of these traditional structures represented common customs dictated by the regions' strict adherence to Islam. Muslim women are not to occupy the same space as a man they are eligible to marry. Thus, when a male guest visits there must be a receiving room and a means by which they can access their quarters while women can still move about the house. This can be seen in the layout for a traditional courtyard house in which the male guest is welcomed in a small entry hall and then lead upstairs to a reception area via a narrow staircase next to the entrance. The first floor of the house was comprised of rooms typically occupied by women such as the pantry and the kitchen thus it was necessary to have an intentional space which moved the male guest out of any potential interaction with the women of the household. The second story was often cooler than the first floor as well thus ensuring a comfortable resting place for the visitor.[21] It is not known whether any of these building methods or layouts were understood by the imported architects and engineers, but they were generally not adhered to.

Examining a typical California ranch style layout demonstrates a similar plan to what the American architects designed for the Aramco structures. The front door typically opened out into

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[20] Fadan.
[21] Alshabib and Ridgway, "Oil + Architecture."

an open space composed of the reception hall and the living area functioning as one large space with a dining nook within sight of the entry way. The kitchen was closed off and the bedrooms were located off to the left wing accessible by a hallway. The main difference between this ranch style layout and the Aramco authorized plans is the number of fixed rooms upon entry. The Aramco plans designed a large reception space in the entryway instead of following the Saudi cultural custom of locating the room sufficiently away from the entrance and typically on a second floor. The reception hall was joined by an immovable dining room which functioned to separate the guest areas from other family spaces of the house. Some plans included doors to close off the dining room while others left this space open. This layout continues to present day. [Fig's 1.10-1.12] Similarly, the building materials the American architects and contractors chose to use were not local and imported by boat. Aside from the frame building technique which created non-loadbearing structures, they introduced the use of reinforced concrete and large, outward facing windows – again antithetical to cultural custom. Some of the first homes they built for the Saudi Aramco employees consisted of the home placed on the center of the lot surrounded by a large yard rather than constructing the home around an inner courtyard. [Fig 1.13] Not only were these building methods insensitive to the Saudi's custom but they were taught in construction training school to locals interested in pursuing careers in building. [Fig 1.14] This valorization of Western modes of building overtook the local master builder's techniques and the courtyard building typologies were steadily replaced by the homogenized prefabricated home.

Noting that this adoption of Western technologies was facilitated not only by Aramco but truly operationalized via the Saudi government in response to the Saudi worker's strikes demonstrates the ability of architectural forms to visualize differences in class. Had these

prefabricated homes not been introduced to the landscape to maintain cultural differences and effectively segregate the publics as was a common American practice at the time, the landscape of Saudi Arabia would likely look very different today. A company concerned with revenue is ultimately concerned with solutions that are economical and efficient – thus the shipment of prefabricated homes packaged as a California suburb. But if the Saudi Aramco employees were also given the ability to employ the expertise of their local master builders instead of being subjected to American standards in order to have a home the local customs and regional forms would have been able to evolve instead of erased.

Figure 1.2: Timber frame construction at the Dhahran camp, 1936. Photographer unknown. Courtesy of UC Santa Barbara Library, Saudi Arabia Oil Photograph collection, Bernath Mss 366 as located in “Oil + Architecture,” Alshabib and Ridgway.

Figure 1.3: Prefabricated homes in Dhahran camp, 1937. Photograph by M. Steineke, courtesy of Saudi Aramco as located in “Oil + Architecture,” Alshabib and Ridgway.

Figure 1.4: Aerial view of the Dhahran camp headquarters with prefabricated homes in the foreground ca. 1950s. Courtesy of Getty Images.

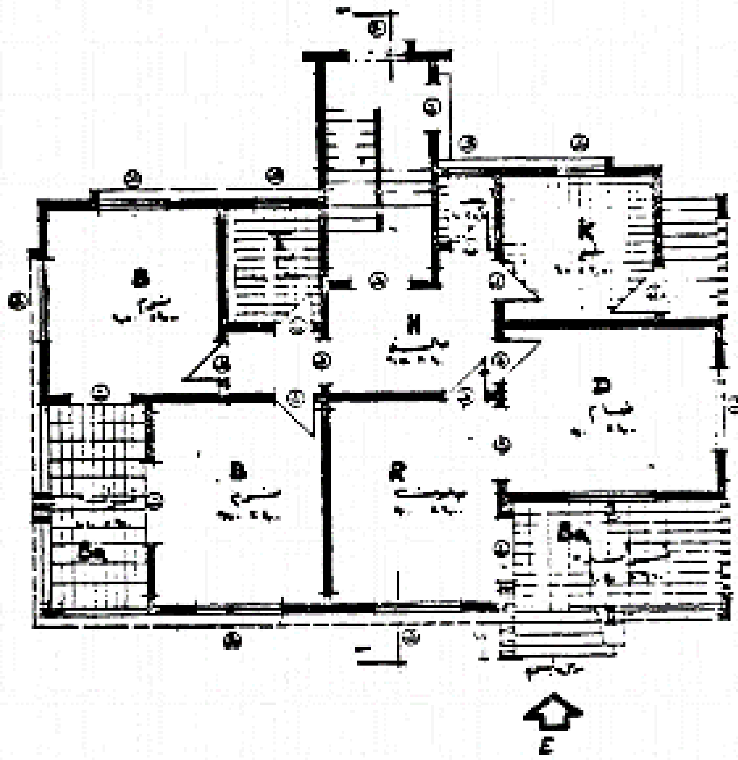
Figure 1.5: Example of a Barraistis located in the Saudi Aramco employee camp, ca. 1940s. Courtesy of AramcoWorld.

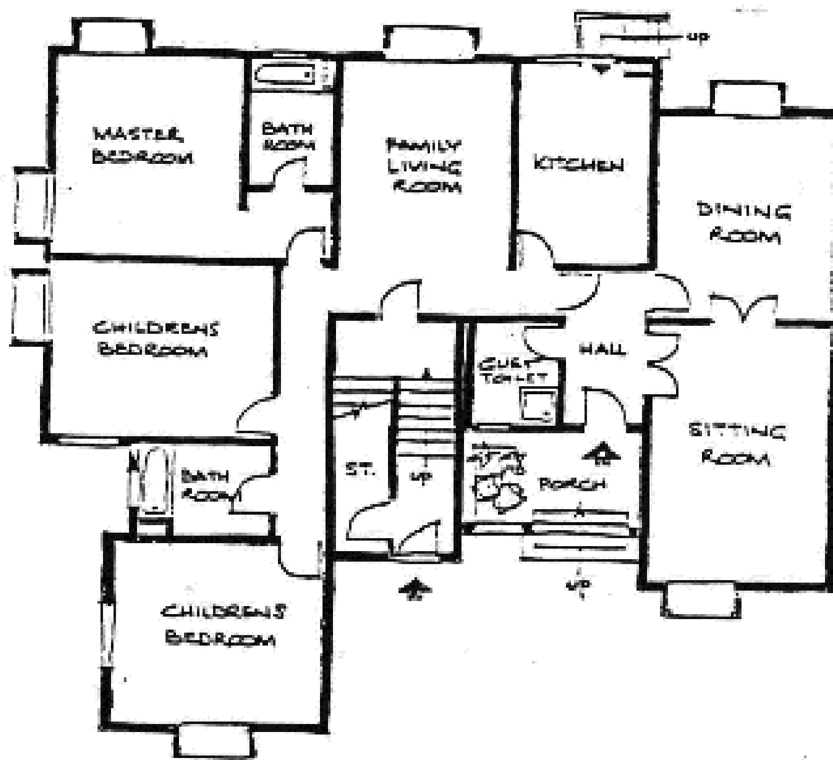
Figure 1.6: Group of Barraistis located in the Saudi Aramco employee camp, ca. 1940s. Courtesy of AramcoWorld.

Figure 1.7: Typical construction method of Barraistis in the Saudi Aramco employee camp, ca. 1940s. Courtesy of AramcoWorld.

Figure 1.8: Detail of construction, using native palms and reeds for Barraistis construction in the Saudi Aramco employee camp, ca. 1940s. Courtesy of AramcoWorld.

Figure 1.9: Drawing of typical inner courtyard found in the eastern region of Saudi Arabia. Note the semi-open corridor and openings. Courtesy of Yousef M. Fadan.





Figures 1.10-1.11: Examples of layouts for a General Public Housing Plan in Riyadh. Designed by western architects. Courtesy of Yousef M. Fadan.

Figure 1.12: Example of a typical California ranch-style layout. Designed by Cliff May, 1955. Courtesy of Post and Beam Living.

Figure 1.13: Housing for Saudi Aramco employees. Note the homes positioned in the center of the lots with no inner courtyard, ca. 1979. Courtesy of AramcoWorld.

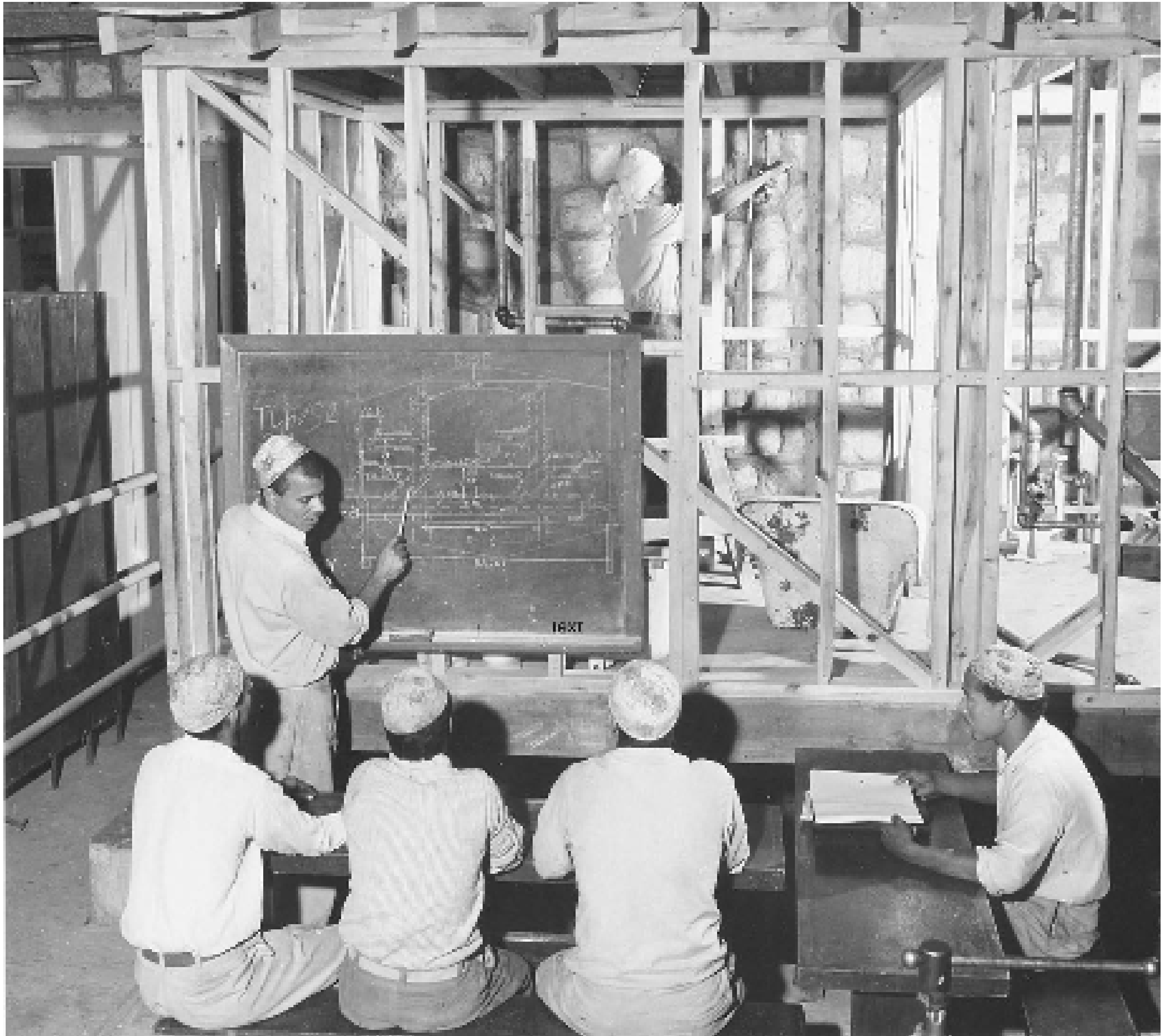


Figure 1.14: Aramco construction training program, 1950s. Photographer unknown. Courtesy of Saudi Aramco.

Figure 1.15: Image of Dhahran camp city center, 1952. Courtesy of ExpatAramco.

Figure 1.16: Backyard with images of other prefabricated homes in the American camp, 1950s. Courtesy of the Stanaland family, AramcoWorld.

Figure 1.17: Image of a modern villa in Madinatal-Ummal, Dammam, ca. 1977. Note the large, outward facing windows. Courtesy of Yousef Fadan.

Figure 1.18: View of the Dhahran camp, 2017. Courtesy of Ayesha Malik.

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