

Journal of Engineering Research

Volume 6

Issue 4 (*This is a Special Issue from Visions for Future Cities Innovations & Environmental Technologies Conference, (VFC2022), Cairo, Egypt, 24-25 September, 2022*)

Article 12

2022

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Mariam Ebeid, Mariam (2022) "Transformation of Architectural Qualities in Old Cities in Oman over a Decade," *Journal of Engineering Research*: Vol. 6: Iss. 4, Article 12.

Available at: <https://digitalcommons.aaru.edu.jo/erjeng/vol6/iss4/12>

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Transformation of Architectural Qualities in Old Cities in Oman over a Decade

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Abstract- Cities have been expanding over the years, transforming and evolving with all the new technologies being introduced, and this has affected the layout of the city physically, culturally, and environmentally. In certain regions, such as the Sultanate of Oman, this has resulted in the creation of urban sprawl, abandoning some buildings, neighborhoods, and villages, and losing the urban and architectural qualities that represent the original identity of the place. Research has shown that multiple initiatives by the community have been made to rehabilitate some of those structures. This study aims to examine two case studies in the Sultanate of Oman and show the transformation in the urban and architectural context of the existing structures over the past decade. A combination of qualitative data collection methodology was used, including on-site observations, analysis of primary and secondary data, and interviews with locals experiencing the changes over the years. The results showed that there was a strong interrelation between the desire of living in a high-tech environment and rooting for their origins. Also, the built structures and their uses reflected the awareness of the different generations about the quality of space. Further research would help identify the factors that could create the right balance between a contemporary living quality and the original character of the place.

Keywords: Architecture, Urban Heritage, Sustainability, Rehabilitation, Ecotourism

I. INTRODUCTION

Over the years, the old villages of Oman have transformed, becoming less occupied by people and with many abandoned houses. Especially with the modern technologies being mainly available in the capital, some generations started moving out to the big city, and newer generations have been born and raised there. But the strong connection with their original lands and villages has been maintained by regular visits during holidays and long weekends. This change had left an impact on the villages and their people. Another study has represented some of the Community-led initiatives for the rehabilitation and management of vernacular settlements in Oman [1]. This paper analyzes the transformation that occurred over a decade in two case study villages in terms of architectural context, function, and materiality and showcases examples of how conservation and rehabilitation have been implemented in some of the existing buildings. The two case studies are Al Hamra village and Misfat Al Abriyeen village.

Villages and cities in Oman have been formulated by their landscape, climate, and tribal culture. The urban layout of a city reflects these elements as we see the mountains, deserts, and water bodies defining the edges of growth of some cities [2]. Also, the tribal-rooted family chains have resulted in the creation of clusters of buildings and houses where the members of one family lived side by side creating a neighborhood for the tribe. In addition, the warm climate has influenced the density of the buildings, as well as the building construction materials

and what was available at the time. But with the lack of modern lifestyle and technologies in the villages, the young Omanis have been seeking opportunities in Muscat, leaving behind gems of heritage and architecture.

The following graph “Fig. 1” represents the population of Omani citizens between the ages of 20 to 40 living in Al Hamra province from 2011 to 2021. As the graph shows, there is a slight fluctuation in the population number over the years, but in 2016 the population from the mentioned age group started increasing. Also, it is noticeable that from 2019 onwards, there is a clear escalation in the population number. This data was collected from the National Centre for Statistics & Information, which is an online free data portal that provides many datasets from different entities relating to the Sultanate of Oman [3]. This data was published on 15 June 2022.

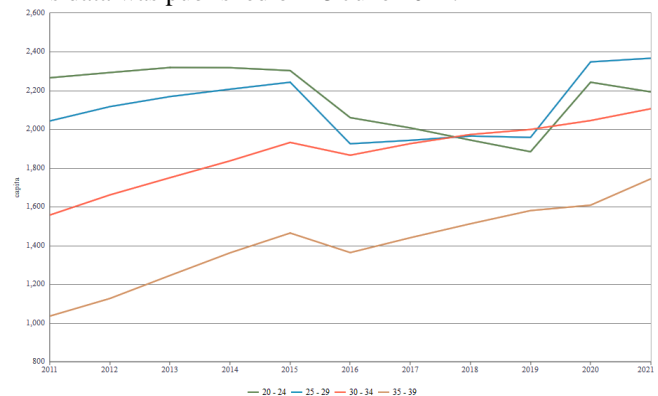


Figure 1. Omani population in Al Hamra province from 2011 – 2021 between the ages of 20 to 40 (Source: NCSI website, 2022)

II. METHODOLOGY

To examine the transformations that occurred in the urban and architectural qualities over the past decade in Al Hamra, and Misfat Al Abriyeen, a combination of qualitative data collection was used, including (A) on-site observations and documentation, (B) analysis of primary and secondary data related to the case studies (C) gathered information about the examples presented from a hotel booking website which is www.booking.com. This website is legitimate and reliable for booking hotels worldwide and provides information and pictures of the property as well as guest reviews which gives an insight and a feeling for the space with some additional information.

III. CASE STUDIES

The case studies are in Ad Dakhiliyah Governorate “Fig. 2”, Al Hamra village, and Misfat Al Abriyeen village are located in Al Hamra province. “Al-Hamra extends to slightly higher on the

slope, and Misfat al-Abriyin is nestled in a mountainous valley at an altitude of 950 m (above sea level)” [1].



Figure 2. Location of Ad Dakhiliyah governorate in the Sultanate of Oman (Source: by TUBS -)
<https://commons.wikimedia.org/w/index.php?curid=16721831>



Figure 3. Al Hamra village, Ad Dhakhiliya Governorate, May 2009 (Source: Google Earth satellite image, enhanced by author)

A. Al Hamra Village

In this study, the old settlement of Al Hamra village was analyzed. As the below satellite images “Fig. 3 & Fig. 4” show, the original form of the city with the linear row of houses along the palm trees and the regular urban pattern with the rows of mud houses hasn’t changed since they were built hundreds of years ago. Also, the connection between the houses and the agricultural lands and the irrigation system (falaj) remains unchanged as one of the iconic features in the village. Thus, over the span of 10 years, there were barely any changes in the urban structure.

Zooming into the architectural scale, according to Naima [1], as cited by Al-Abri “After the 1970s, native families started leaving their traditional houses in Al-Hamra to inhabit modern, concrete and air-conditioned houses. In the beginning of the 21st century, Harat Al-Hamra was almost completely deserted by its inhabitants”.

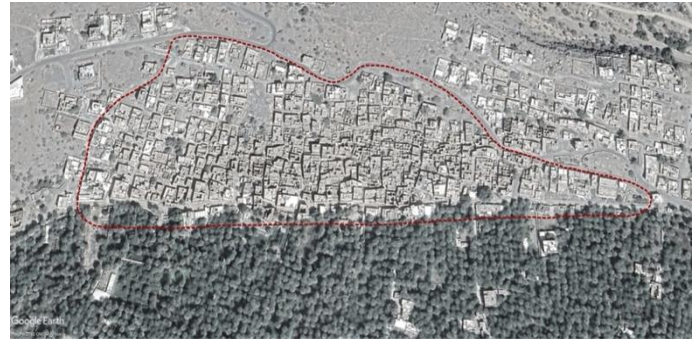


Figure 4. Al Hamra village, Al Hamra, Ad Dhakhiliya Governorate, February 2022 (Source: Google Earth satellite image, enhanced by author)



Figure 5. Selected conserved and rehabilitated houses in Al Hamra village (Source: Apple Maps, enhanced by author)

But in the past 10 years, a lot of changes have occurred. In 2016, a local initiative to preserve the settlement and protect its buildings started to take shape. It was officially launched in 2017 as ‘The initiative of Al-Hamra’. The leaders of this initiative had a more inclusive vision about built heritage, using a holistic approach to preserve the settlement by raising awareness among local populations. Not only do they continue to renovate some houses and make them into small heritage hotels, but they regularly organize religious and civic celebrations, social gatherings and competitions for children [1].

The map “Fig. 5” highlights the selected renovated houses studied and showcased as examples of how the conservation and rehabilitation in Al Hamra were done. This data was collected from site visits and from www.booking.com website. One of the first renovated and rehabilitated houses was Bait Al Safah, which transformed from an old family house to a museum showcasing the traditional Omani life with a different experience in each room, and they demonstrate the local daily activities such as the making of Omani coffee and bread. The owners first attempted to renovate their house in 2005. Then Bait Al Safah was restored for a second time with the help of ‘The initiative of Al-Hamra’ (1, p. 12, 13). The house maintained its traditional look by using earthen materials while renovating. For the interior, mud plaster was used for the walls, and the wooden roof construction remained the same “Fig. 6”. It has a very authentic feeling, especially with the implementation of all the handmade crafts and furniture and keeping the reliefs on the walls.



Figure 6. Exterior and interior views of Bait Al Safah, Al Hamra village, January 2021 (Source: The author)



Figure 7. Roof top view of Bait Al Jabal, Al Hamra village, (Source: The author)

Figure 8. Room View of Bait Al Jabal (Source: booking.com)

Next comes Bait Al Jabal Hospitality Inn, which consists of multiple renovated old houses transformed into guest houses. It joined booking.com in March 2018. The guest house uses all the open living rooms as common areas, and the roof is used as a restaurant where breakfast and dinner are served to the guests “Fig. 7 & Fig. 8”. After the publicity of the mentioned conserved and rehabilitated houses and the increase of tourists visiting Al Hamra to experience its traditional life, other houses have been renovated and rehabilitated as guest houses, such as Al Hamra Old House, which is a single-family house and joined booking in March 2020 and Al Qalah Inn, which joined booking in March 2022.

All the renovated houses in Al Hamra have maintained the authentic feeling of the place and respected the traditional architecture while incorporating minimal additions in the rooms and common areas. All the exterior walls are made from mud bricks with a stone base to protect them from the water, as it was built hundreds of years ago. Also, they kept the old small windows and doors to add to the richness of the place. The roof construction is made of wood from locally available trees, which is visible from the inside and they kept the same heights of the buildings with an average of two to three stories. The furniture was kept to a minimum, with some guest houses keeping only mattresses on the ground or adding simple wooden beds. In addition, since the houses are rehabilitated, not all guest rooms have their own private bathrooms, but they are renovated, and new tiles and cladding have been added to the floor and walls to ensure all the technical systems are running smoothly without any disruption to the house. All the properties are run and taken care of by their owners.

B. Misfat Al Abriyeen Village

The old village of Misfat Al Abriyeen holds exquisite value with its special location over the mountains and landscape. Over the past ten years, the village didn't go through any extensive changes in the urban setting and its connectivity, but there has been a lot of transformation in the functions of the buildings with the publicity of the village for its attraction to tourists from all around the world “Fig. 9 & Fig. 10”. Initiatives by the community started in the early 2000s and Misfat Old House was the first house that was renovated and transformed into a guest house in 2008 [1]. The community started an initiative to conserve Misfat Al Abriyeen village, and the government supported it by creating a tourism development plan in 2016. This plan, aimed at the sustainable development of the settlement, was elaborated with the participation of the local community, represented by the ‘Al-Misfat development cooperative’. It was executed in 2018, with funding from Bank Muscat [4] as cited by Naima [1]. On the 2nd of December 2021, the World Tourism Organization (UNWTO) added Misfat Al Abriyeen to the list of one of the best tourist villages around the world [5].



Figure 9. Misfat Al Abriyeen village, Ad Dhakhiliya Governorate, November 2010 (Source: Google Earth satellite image, enhanced by author)



Figure 10. Misfat Al Abriyeen village, Ad Dhakhiliya Governorate, February 2022 (Source: Google Earth satellite image, enhanced by author)

The examined houses in this research are Misfat Old House, and Rogan Café highlighted on the map “Fig. 11”. Misfat Old House has been running for a long time and joined booking in January 2013. Most of the renovated buildings in Misfat Al

Abriyeen have kept the traditional outlook of it with a notable upgrade in the materials used in renovating the interiors. The interior flooring material has changed to modern tiles or concrete finish, and additional constructive elements have been added to support the new additions to the building. Also, some examples such as Rogan Café have incorporated new modern elements, such as the use of large openings for the windows and the use of concrete as complementary material to the original one making an outstanding contrast between the old and new “Fig. 12, Fig. 13 & Fig. 14”. Other renovated and transformed houses into Guest houses are Al Misfah Hospitality Inn, which joined booking in September 2017, Misfah Heritage House which joined booking in August 2020 and Harit Al Misfah Inn which joined booking in February 2022.

IV. EVALUATION

The presented examples have shown different qualities of spaces after the renovation of the houses, the following table evaluates the interventions made in the houses and their effectiveness, and how closely related they are to the vernacular architectural style and construction materials.

Bait Al Safah and Bait Al Jabal in Al Hamra village have maintained the authentic look of the old houses by using a natural stone base and mud bricks plastered with mud which is the vernacular construction material and technique for the exterior walls and for the interior walls mud bricks plastered with mud was used. Whereas in Rogan Café in Misfat Al Abriyeen the renovation was done differently. Newly constructed concrete walls with stone cladding were made plastered with a thin layer of mud to recreate the original look of the walls but not the actual construction method.



Figure 11. Selected conserved and rehabilitated houses Misfat Al Abriyeen village (Source: Google satellite image, enhanced by author)

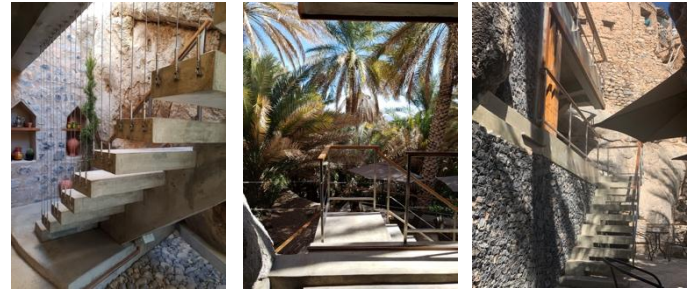


Figure 12. Different views of Rogan Café in Misfat Al Abriyeen village, January 2021 (Source: The author)



Figure 13. Exterior View of Misfat Old House, Jan 2021 (Source, The author)

Figure 14. Room view of Misfat Old House (Source: booking.com)

And from the other façade, a layer of arranged stones held by a metal net was used in harmony with the existing mountain stones, and the concrete slabs were exposed. For the interior walls, concrete walls with a concrete finish were used. Also, in Misfat Old House concrete blocks were used to construct the walls, and stones plastered with mud were used to give the feeling of the old walls. And for the interior walls paint plaster was used for the new ones.

The roofs renovated in Bait Al Safah and Bait Al Jabal were made of main load-bearing beams from palm tree trunks layered with palm tree stems followed by a layer of palm ribs then a leveling layer of earth covered with sarooj or with some stone floor tiles which is like the construction technique used in the past. While in Rogan Café concrete slabs were used with a concrete finish and organic stone flooring was used in some parts.

TABLE I. Comparison between the interventions implemented in the examples from Al Hamra and Misfat Al Abriyeen (Source: The author)

Intervention	Al Hamra Village		Misfat Al Abriyeen Village	
	Bait Al Safah	Bait Al Jabal	Rogan Café	Misfat Old House
Exterior Façade	Mud bricks plastered with mud on a natural stone base	Mud bricks plastered with mud on a natural stone base	Concrete wall with stone cladding plastered with mud and stones held by a metal net	Concrete blocks and stones plastered with mud
Interior Façade	Mud plastered walls	Mud plastered walls	Natural mountain stones and concrete walls	Paint Plaster
Roof	Wooden structure	Wooden structure	Concrete slab	Concrete slab
Stairs	Refined stones	Refined stones	Concrete	Concrete
Windows	Small wooden windows	Small wooden windows	Large foldable wooden windows	Small and medium sized wooden windows
Doors	Wooden doors	Wooden doors	Wooden doors	Wooden doors
Shading Elements	Wooden structure and palm ribs	Wooden structure	Metal frames and fabric	Fabric

Similarly, in Misfat Old House, concrete slabs were used with organic stone tiles or a sarooj finish. In addition, the stairs in Bait Al Safah and Bait Al Jabal were kept the same with refined stones but, in Rogan Café and Misfat Old House, the stairs were constructed from concrete.

Furthermore, the openings in Bait Al Safah and Bait Al Jabal were kept the same as they were originally created, the windows small with simple wooden frames, and the doors made of wood with traditional decorative elements on them and painted in different colors. In Rogan Café, large windows were integrated with wooden foldable doors to connect the outdoor and indoor spaces seamlessly, and they used some sliding wooden doors along with some wooden doors in the traditional style. In Misfat Old House, some openings were created following the genuine style and size of the traditional houses, and additional new openings were created larger in size in the newly constructed walls. For the doors, simple wooden designs were used.

The last intervention that was examined was the shading elements, in Bait Al Safah basic wooden structure was used with palm ribs laying on top of it to provide extra shading for the roof. And in Bait Al Jabal a wooden shading element fixed to the wall and supported by simple columns was used as well to shade part of the roof terrace. On the other hand, contemporary flexible shading elements were used in Rogan café made of metal frames and fabric to shade the terraces and upper roof terrace. While in Misfat Old House, fabric pieces were mounted to the upper part of the walls to provide shading to the terraces.

Omani traditional architecture has a wonderfully sensitive appreciation of the materials and colors of the natural physical environment, demonstrated in the use of local material technology (stone, mud brick, wood, lime and mud plaster) with restricted height of a maximum of three stories as cited by Damluji in [6]. The mentioned interventions in Bait Al Safah and Bait Al Jabal were made in an original way and form following the vernacular construction materials and techniques to conserve the house and added the bare minimum additions required to accommodate the transformed function while maintaining the authentic design of the house. While on the contrary, in Misfat Old House the authentic look and feel of the space were recreated but not the original methods of vernacular construction. The vernacular architecture style was used as a role model and a similar appearance of the forms and elements were used to restore the house in a way to just keep its traditional identity in the old village. Whereas in Rogan Café, new modern materials and techniques were used not following the vernacular architecture style or materials which contrasts the traditional feeling of the old village of Misfat Al Abriyeen and its original fabric.

V. CONCLUSION

This study analyzed the transformation that occurred in the urban and architectural qualities of old cities and villages in Oman over a decade. Two case studies were examined, and examples of the conserved and rehabilitated houses were presented. The data was collected from several site visits in 2021 and 2022, online information from a trusted website, and relevant studies discussing similar topics in the area.

The present research showed that the attempts made for conservation and renovation over the past decade in Al Hamra

and Misfat Al Abriyeen are remarkably different. One of the essential factors in the conservation and renovation of vernacular architecture is to integrate the minimum intervention required to restore the building and use the same construction methods and local natural materials in the original structure. Also, to maintain the original fabric and identity of the village and to create harmony with the surrounding environment. It is important to learn and document the traditional construction techniques, architecture, and material culture from old Omani craftsmen, the only holders of the knowledge related to these traditional mudbrick-making techniques before this wisdom fades away without any new apprentices following in their wake. Without doubt, oral history has to be considered a primary source for historical information [7]. Furthermore, the addition of any new modern element should be in a minimalistic way relating to the historical village in terms of color, material, and design.

In addition, it was clear that the awareness of the community and the interrelation of the people with their homelands have been maintained throughout the years, and this has been reflected in all the local community initiatives that have been made to conserve and restore the old villages. They understand the values and importance of the traditional architecture and heritage that exists, and they aim to protect and maintain the authentic design of the structures and the feeling of the buildings. Also, the younger generations are conscious of this identity, and they have attempted to revive the character and use of the spaces by integrating new functions that would attract different groups to the villages to showcase the diversity that can take place. It is important to revive the old cities and villages to accommodate the future demands of the people instead of creating new cities with modern technologies to fantasize the idea of contemporary life only exists in the big city while redeveloping the old cities would be more sustainable.

Finally, this paper focuses on the relation of the urban structure and the conservation of vernacular architecture, and the ambiance created shows that the minimal changes in the variables get reflected in the atmosphere of the spaces. Further study of old villages in different geographic locations in Oman would help to observe and understand the levels of the process of conservation and rehabilitation from the local initiatives supported by the government.

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