

# ARCHITECTURE AND PRIVACY IN ISLAM: AN ANALYTICAL REVIEW

HANA ALJAWDER<sup>1</sup> & HALA A. EL-WAKEEL<sup>2</sup>

<sup>1</sup>Department of Architecture and Interior Design, College of Engineering, University of Bahrain, Bahrain

<sup>2</sup>Interior Design Department, College of Design, Imam Abdulrahman Bin Faisal University, Saudi Arabia

## ABSTRACT

The visual privacy and levels of daylight have been a great concern for traditional Islamic architecture; therefore the design of *mashrabiya* was an efficient solution in previous times. However, changes occurring in contemporary Islamic architecture because of socio-economic changes and with the introduction of new building systems and new materials nowadays has resulted in the disappearance of this design element from the façades of current houses. This study aims to discuss different conceptions and meanings of privacy throughout literature, emphasising privacy in architecture. The study follows an analytical review design, where information is collected through different literary studies. The review of Islamic literature has indicated the importance of visual privacy for the occupants of homes and addressed a religious dimension that should be considered. This factor has an influence on the appearance of the home façade in traditional Islamic architecture. The *mashrabiya/rawshan* was a façade treatment for a house of traditional Islamic architecture to achieve visual privacy and daylight. This indicated that the Muslim architects of these houses were aware of the importance of both visual privacy and daylight. The study is useful in providing different aspects of the architecture designs in Muslim houses.

*Keywords: architecture, Islam, mashrabiya, visual privacy.*

## 1 INTRODUCTION

Privacy is a broad concept and is used across various disciplines, such as; law, politics, sociology, psychology, information technology and architecture [1]–[3]. The concept of privacy has been discussed from various perspectives; for instance, Altman [1] defined privacy as a selective control of access to the self or to one's group. For Irwin, the definition is useful since it covers a variety of social units, such as the relationship of individual to individual, individual to group, group to individual, and group to group. It also applies to bi-directional processes, which are the input of others to one person and the output of one person to others. Irwin further asserted two important measures of privacy that include; desired privacy and achieved privacy. Desired privacy is the level of privacy needed for a certain situation or activity; while, achieved privacy is the level of privacy existing for certain situations or activities. When achieved privacy is equal to desired privacy, people are satisfied that is considered as the optimum level of privacy. When the two are unequal, however, the situation is imbalanced and people feel dissatisfied with their level of privacy. An individual privacy is influenced through different factors, such as personal, religious, cultural, and psychological factors [1], [4]–[8]. Personal factors are associated to individual's need for privacy. For instance, some people are very concerned that outsiders may not see their personal belongings or routine-based activities.

Culture, which may also have an influence on forming a strong desire for visual privacy may relate to religious factors [4]. Al-Kodmany [4] stated that cultural factors play a very important role regarding the need for privacy in a Muslim community. The family's *suma'* (reputation/image) is critical for different residential where people are more concerned about neighbours' reactions to their behaviour [4]. Other cultural factors include, *sharaf* (honour), *karramah* (dignity), *haya* (bashfulness) and *irdh* (protection of the family's women) which



are assumed to influence the need for visual privacy within their homes. The psychological factor that affects privacy could vary from one person to another according to the situation and circumstances [4], [6], [7].

Alhmim [10] stated that privacy in the Muslim community means creating a balance between the privacy of the individual and the group, as privacy does not prevent social networking or mean total isolation and separation from society. Thus, privacy could be used to organise people and their lifestyles, which is enlightened by religion and control people's behaviour in the society where they live. Moreover, balance between the relationship of the individual and society provides freedom for the individual to live his/her own life away from the public and have the opportunity to be alone and enjoy calm. However, this may not affect an individual's responsibility towards society and his/her duties in its development [10]. A number of studies concerned the utilisation of daylight in buildings including houses; other studies are also concerned with the privacy of people at home in Islamic society [11], [12]. However, a survey of the literature shows a gap in the existing knowledge with regard to the association between the need for daylight and visual privacy in homes. In many countries, such as Bahrain, Saudi Arabia, Egypt, and other Arab and Muslim nations, daylighting is not well utilised because of the required visual privacy [13] while it is not uncommon for occupants of a house to modify the dwelling in ways that influence the level of daylight inside to achieve the desired privacy. Therefore, this study aims to discuss different conceptions and meanings of privacy throughout literature, emphasising privacy in architecture. It further provides deeper understanding of the Mashrabiya's properties and performance. The findings of this research will inform modern efforts to provide daylight and privacy in architectural spaces. Contributions of this study are meaningful as it provides a descriptive analysis of Islamic architecture while outlining the differences in the architectural structure of different houses. It further identifies the value of Mashrabiya in the current architectural designs of Muslim residencies while providing guidelines for current and future architectures regarding the development, design and infrastructure of different houses.

## 2 PRIVACY IN LITERATURE

Privacy in architectural spaces is related to human senses such as sight, sound, touch, and smell [14]. Visual privacy is associated with the sense of sight, which is considered to be one of the most important means of observing the actions of others. Visual privacy is divided into two types within architectural spaces; between the occupants within a building and between the occupants and people outside a building. The present study has focused on how occupants of an architectural space, in particular a residential dwelling, maintain visual privacy from people outside the home. In an Islamic society, the levels of privacy required in human life are with different intensities based on gender and space. However, at home, visual privacy from outsiders is same throughout the house, especially for women [15]. This is because the *Qur'an* (the Muslims' holy book) and Islamic instructions for Muslims' lives say that women should conceal their hair and body from strangers. However, women at home should feel free not to be covered, when they cannot be seen by the outsiders. Therefore, the design of houses for Muslims centres on women's requirements and comfort. This may vary in other religions where feelings of physical and psychological comfort vary with regard to the visual privacy needed in a residential space.

### 2.1 Privacy' as a right in Islam

The Islamic religion identified all the rights and needs of every individual for survival, well-being, freedom, religious beliefs, privacy, etc.[16]–[18]. Between [17] listed ten basic rights



recognised in the Islamic religion; among which, some are associated to the acceptance and respect for individual privacy which includes:

Individual right to live in dignity: The idea of human dignity in terms of Islamic perspective is concrete and absolute regardless of the intervention of race, gender, age, social status, wealth and ethnicity. As explicitly stated in the following verse of *Qur'an*:

“We have honoured the son of Adam; provided them with transport on land and sea; given them for sustenance things good and pure; and conferred on them special favours; they are above a great part of our creation” (17:70).

Individual right to equal protection in the law: This means that human beings are equal in terms of status and values in the eyes of law. Islam strictly forbids Muslim to deprive any person from their fundamental rights, be it rich or poor. The quality in individual rights is not restricted to a certain category of individuals only, rather it is implied on people be it rich or poor, male and female, and other obligations such as; race, religion, age or nationality that represents them. The idea has been elaborated by the following verse:

“God doth command you to render back your trusts to those to whom they are due; and when ye judge between man and man, that he judges with justice: verily how excellent is the teaching which He giveth you” (49:13).

“And we set you up as nations and tribes so that you may be able to recognize each other” (4:58).

Right to choose: In Islam, the human beings are free to choose in accordance to their wants and needs. Islam provides every individual the right to live, relocate, travel, choice of religion, etc. Besides, every individual is provided with the right to work and live their lives in accordance to their choice.

Individual right to privacy: This in broader aspect, is associated to the following aspects, (a) individual right to live their life in accordance to their will, while maintaining their personal privacy; (b) the right of every individual to have protection in their personal spaces be it residence or any other place; (c) the privacy of knowledge and information about one's personal life, etc. Islamic Shariah places great emphasis on people's private lives and the right to privacy is one of the most important rights mentioned in the *Qur'an* [18]. The following discussion refers to the fundamental sources of Islamic instruction and legislation: the *Qur'an*, (the Holy Book) and the *Sunnah* (the sayings of the Prophet). Both sources encourage people to respect and preserve the privacy of others and maintain one's own personal privacy [17].

From above discussion, it is possible to conclude that the structure of the house under Islamic *Shareeah* must consider the privacy of both the home and the family members, especially women. The origin of the word “Harem” (women) in the Arabic language is derived from the word “Harm”, which means the sanctity that should be protected. This shows that a woman in Islam should not be approached carelessly.

## 2.2 Islamic architecture and the concept of privacy

Privacy is of great importance in the lives of majority of the people and this human need is influenced by culture, religion, and other lifestyle variables [19], [20]. The Islamic religion sets out principles and guidelines for the life style of Muslims, giving details of the



responsibilities and rights of its followers [21] Islamic architecture and Islamic cities were built on the Islamic principles and guidelines inspired by the *Qur'an* and the *Sunnah* since the beginning of Islam (611 AD) [22], [23]. The architecture in this period was very simple and without detail; although, this type of architecture emerged with the beginning of Islam. However, it gradually incorporated more detail with the beginning of the Umayyad period (661 AD) [24].

Nu'Man [25] in his study provided an important knowledge regarding the concept of privacy in Islamic architecture. The study mentioned about both direct and indirect guidance about construction of Muslims' houses. These guidelines serve as an inspiration to design Muslim houses referring towards the interior courtyards as well as the bent entrance. Major benefit of the interior courtyard is that it allows the entrance of sunlight and air circulation in Muslim houses without providing insights about the internal happenings of the house. However, in cases where it is unavoidable to design windows facing towards the public streets, it is preferred to have mashrabiyas or latticed screens over the window.

Another important solution to this problem is to raise the windows above the eye level. The bent entrance on the other hand allows individual entrance, without providing a clear vision of what is happening inside the house. These examples of houses allow Muslims to design their houses with respect to the Islamic architecture. This further implies on the statement of Prophet Muhammad (SAWW), which indicates that there must be no reciprocating or physical harm. In the given context of Islamic architecture, harm is when one observes or interference the private happenings of the inside home [26]. This indicates that special consideration must be provided to the architecture of doors and windows of the Muslim houses. Yusof [27] provided important information in this regard, according to which Islamic architecture must be based on three fundamental principles which include; harmony, balance and unity. These values are related to the individual environment, level of comfort and interaction along with the influence of culture. Another focus within Islamic architecture is regarded to the hidden architecture, which is associated to the symbols or monuments placed inside the building and are only visible when one enters the place. Babangida and Katsina [28] added that Islamic legal system i.e. Sharia provides useful guidelines that are helpful in managing the current architectural system of Muslim community. The study provided special focus to the Islamic Design Principles which focuses on designing floor plans while providing significant focus towards the essential needs of family privacy. Findings of the study indicated that architectural designs following the Islamic principle are not evident in the current architectural design of Muslim houses.

### 2.3 Global concept of Islamic architecture

The concept of privacy is not limited to a certain only as for instance; in most of the Arab gulf homes. Sobh and Belk [11] outlined that the architecture of their homes usually has spaces that are specifically designed to meet the privacy expectations of both male and female individuals of the family. Separate rooms are designed for both male and female gatherings, which are referred as *Majlis*. However, the architecture of Arab gulf homes specifically demands security and privacy of women, since they have the charge of their houses.

Erdoğan et al. [29] provided an in-depth analysis of Muslim houses and the Islamic concept of architecture in Turkey. The study indicated that the architecture of Turkish houses is largely based on separate places for Muslim men and women. A single entrance is designated for every individual from where, all i.e. male and female members of the family enter in the house. Besides, the cultural heritage of Turkish society believes on individual privacy these houses are designed for the flexible usage. Malik and Mujahid [30], on the

other hand underlined the concept of Islamic architectural heritage properties specifically in Iraq.

Most of the buildings in Iraq consisted of an open yard specifically in buildings constructed with metaphors and arcades. Stalactites were regarded as the most prominent feature of the Islamic architecture in Iraq. Mashrabiya and wooden decorations were the additional features of the Islamic architecture which progressed from the historic periods. Next include, the traditional houses of Malay which consisted of following essential parts in their traditional houses and were defined into two parts. First included the *rumahibu* referring to the core part of the house. Whereas the backyard part included kitchen. They further consisted of special room dedicated to outside guests or unfamiliar guests, referred as *Anjungen*. Another space was called *Rumah* which was specifically dedicated for the everyday activities. Other important parts included; transition space or *selang* and back space.

#### 2.4 Islamic architecture and visual privacy

In Muslim society, however, achieving visual privacy in homes does not mean completely separate or isolate humans from their surroundings as this would be counterproductive and have negative psychological and social consequences resulting in human isolation [31]. Therefore, there is a difficulty in achieving a balance in terms of architecture, which is how to achieve the required level of visual privacy while remaining in contact with the external environment. Architects in traditional Islamic architecture solved this problem by using a number of techniques and managed to protect occupants' visual privacy using horizontal and vertical means. Horizontal techniques refer to the distribution of functions and spaces of the home, such as by separating male and female areas and dividing the guest area from the family area. This division creates a sequence of areas of the house, transferring from the public space to the semi-private space, ending with the private space (Fig. 1) [32]. Additionally, a central/inner courtyard with inward wall openings and windows is a basic element in most traditional houses in Islamic architecture (Figs 1 and 2) [33]. People accepted this technique because it provides them with physical contact with the outdoors without them being exposed to outsiders.

As a result, these techniques show that the Muslim architecture of the house was shaped by Islamic *Shari'ah* [34]. The *mashrabiya*, *mashrafiya* or *rawshan* can be considered to function as an architectural equivalent of veil as shown in Figs 3 and 4 [36]. The word "mashrabiya" originated from "shrab" (drink), and "ma" in the Arabic language can usually be added to the verb to convert it to mean a place that accommodates the function of verb. This is linked to a place, which usually projected from the façade and was covered with a wooden latticed screen. People used to place clay water jars there to be cooled by evaporation occurring due to the movement of air around the jars [23], [37]. *Mashrabiya* were also used as shields to screen occupants of the interior from outsiders' eyes [38].

The term *mashrabiya* is mainly used in Egypt and North Africa. However, *mashrabiya* is identified as *roshan* in Hijaz (the western region of Saudi Arabia), as it was an essential element of the architecture of the traditional houses in Makkah. *Mashrabiya* is also known as a *shanashil* in Iraq. This technique works as a one-way method that occupants can see outside while outsiders cannot see inside. This works because of the level of outside daylight in comparison with the level of light inside. While, the outside has lighter, it does not allow an outsider to see inside. As a result, one or more of these elements of Islamic architecture, such as the courtyard and the *mashrabiya* give such buildings a sense of Islamic style, despite of differences in terms of the regions, climatic conditions and cultures of a country [37], [39].





Figure 1: The floor plan of Al-Suhaimi House (old Cairo, Egypt) showing the transition of the spaces within the house from the public space to a semi-private space ending with private space [26].



Figure 2: A central courtyard used in traditional houses, which allows people to have physical access to outdoors without being exposed to outsiders, Al-Suhaimi House, old Cairo, Egypt [35].



Figure 3: Mashrabiya used in traditional houses in Bahrain – Alzayed house.

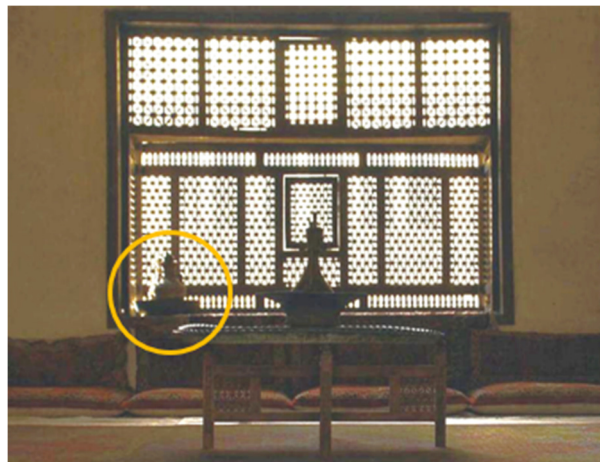


Figure 4: The location of a clay water jar within the mashrabiya [39].

In contemporary Muslim houses, the separation between the public space (guest area) and the private space (family area) is still present but with a less gradual transition between the areas [32]. The central courtyard has almost disappeared in contemporary Muslim houses; the alternative of a front and/or back yard has replaced it. Houses have now started to have the entrance connected to a foyer. This creates a distribution zone for people who enter, allowing them to go to the area they wish to reach. The guests can go directly to the guest area without entering other parts of the house. Moreover, houses are now designed with more open spaces in which families can socialise and enjoy their time. The male guest area has become completely detached, or attached but with a separate door, to allow male strangers to enter the house without seeing the house's occupants to ensure the privacy of the house's occupants.

Bedrooms are located on the upper floor to provide complete privacy for the occupants. Louvres and shutters were introduced after the mashrabiya and served as an alternative option for houses' façades in some regions, such as North Africa. However, the façades of modern houses have changed drastically as compared to traditional Muslim houses. The mashrabiya has disappeared from the façade and a large glass window has replaced it; while curtains are now used to provide the visual privacy needed by women occupying the house. Another method used to achieve the necessary visual privacy is a high fence and high trees located in both the front and backyards. People still respect the need for privacy in their lives and the availability of new building technologies have helped them to fulfil this need. Although, the dramatic changes have recently been made to the architecture of houses in Arab Muslim countries. The reason for these changes is due to changes in people's interests, globalisation, and significant social developments.

## 2.5 Lighting in Islam

Light in Islam is of great importance as it symbolises and represents God, knowledge, and faith. One of God's names is *Al-Noor* meaning light. Moreover, the sun, sky, and moon are all terms, which are clearly mentioned in *Qur'an* as sources of light;

“It is He Who made the sun a shining thing and the moon as a light and measured out for it stages that you might know the number of years and the reckoning...” (10:5).

Light, furthermore, is mentioned in the *Qur'an* 24 times with different meanings and in different contexts. In addition to this, one of the chapters of the *Qur'an* is entitled Al-Noor. God clearly linked himself to the light when he said; Although, light in the *Qur'an* has different meanings, it is always and only mentioned when good and happy things are being talked about and to indicate positive meanings. The word “light” is always used in the *Qur'an* to express physical, moral, and spiritual visions [20]. In some verses, light is mentioned to indicate the truth and the right path of life, as when it says;

“Allah is the *Walî* (Protector or Guardian) of those who believe. He brings them out from darkness into light (2:257). Light also means justice as when it says: And the earth will shine with the light of its Lord” (39:96).

Many verses of the holy *Qur'an* describe light in different contexts. As a result, it can be seen that light plays a very important role in people's lives as people use daylight to carry out their life's duties. Moreover, light is always linked to good and positive things such [41] as God, the right path, honesty, transparency, good manners, and virtues such as justice. Spahic [20] claimed that there is no notion better than light to symbolise these virtues and positive values, as nothing good can be symbolised by negative notions like darkness.

Al-Ghazali [42] associated light with the eye and defined it as what can itself be seen and as what renders things visible. Considering further the light of the eye, it indicated that while the eye can see others it cannot see itself and it can only see the surface of things. However, it was contended that human beings have another eye, which is the brain or the spirit that can see both itself and others. Therefore, the brain or the spirit deserves to be called the light (*Alnoor*). Ibn al-Qayyim linked light with obedience and darkness with sin. Thus, according to how much sin humans committed, so the darkness increased and was reflected on their appearance. This affected the insight of human beings that increased uncertainty [43].





### 3 CONCLUSION

The concept of privacy has been acknowledged and promoted by Islam to an extent that Muslims are instructed to develop houses that may protect individual privacy. Certain factors such as; the concept of Mashrabiya, visual privacy, individual meeting spaces and family privacy are specifically considerable. Daylight has a major influence on the arrangement, the thermal, and visual comfort of occupants, structural design, and energy used in buildings. When daylight is considered in any building, it affects the entire design and construction process, from its location and orientation to the finishing materials applied in the interior space. Daylight can also add meaning, richness, and beauty to architectural buildings. For all these reasons, it is important to enhance the utilisation of daylighting to obtain better interiors. However, building façades with large, glazed areas are common, often without regard for whether this kind of treatment is suitable for the culture and the climatic conditions. In these situations, daylighting strategies are often ineffective because occupants need to modify the space to achieve psychological and physical comfort. Windows are the most commonly used daylighting devices as they are very important for admitting daylight into buildings and provide connection with the outside environment. There is increase in the daylight fenestration as window size increases. However, large windows decrease visual privacy for the occupants. Consequently, the relationship between daylighting and privacy is frequently antagonistic. This creates a major challenge for architects and lighting designers in designing residential façades that maximise daylight utilisation while maintaining the desired level of visual privacy. Unfortunately, nowadays, privacy is frequently ignored at this stage of a design; while, the appearance of the external façade and the availability of daylight in the structure are prioritised. If privacy is considered, it is often only as an assumption that occupants will find a way to achieve visual privacy by using interior curtains or blinds.

### ACKNOWLEDGEMENT

The author is very thankful to all the associated personnel in any reference that contributed in/for the purpose of this research. Further, this research holds no conflict of interest and is not funded through any source.

### REFERENCES

- [1] Altman, I., *The Environment and Social Behavior: Privacy, Personal Space, Territory, and Crowding*, 1975.
- [2] Georgiou, M., *Architectural privacy: A topological approach to relational design problems*. Doctoral dissertation, UCL (University College London), 2006.
- [3] Leino-Kilpi, H., Välimäki, M., Dassen, T., Gasull, M., Lemonidou, C., Scott, A. & Arndt, M., Privacy: A review of the literature. *International Journal of Nursing Studies*, **38**(6), pp. 663–671, 2001. DOI: 10.1016/s0020-7489(00)00111-5.
- [4] Al-Kodmany, K., Residential visual privacy: Traditional and modern architecture and urban design. *Journal of Urban Design*, **4**(3), pp. 283–311, 1999. DOI: 10.1080/13574809908724452.
- [5] Newell, P.B., Perspectives on privacy. *Journal of Environmental Psychology*, **15**(2), pp. 87–104, 1995. DOI: 10.1016/0272-49449590018-7.
- [6] Pedersen, D.M., Psychological functions of privacy. *Journal of Environmental Psychology*, **17**(2), pp. 147–156, 1997. DOI: 10.1006/jevp.1997.0049.
- [7] Pedersen, D.M., Dimensions of privacy. *Perceptual and Motor Skills*, **48**(3), pp. 1291–1297, 1979. DOI: 10.2466/pms.1979.48.3c.1291.
- [8] Smith, J.M., *Personal Privacy: Cultural Concerns*, 2001.



- [9] Sundstrom, E., Burt, R.E. & Kamp, D., Privacy at work: Architectural correlates of job satisfaction and job performance. *Academy of Management Journal*, **23**(1), pp. 101–117, 1980. DOI: 10.2307/255498.
- [10] Alhmim, *Respect of Private Life Privacy in Islamic Law and Comparative Law*, 1st ed., Dar Amar for Publishing and Distribution: Jordan, 2004.
- [11] Sobh, R. & Belk, R.W., Privacy and gendered spaces in Arab Gulf homes. *Home Cultures*, **8**(3), pp. 317–340, 2011. DOI: 10.2752/175174211x13099693358870.
- [12] Man, S.N., A unified architectural theory for Islamic architecture. *ArchNet-IJAR*, **10**(3), 2016. DOI: 10.26687/archnet-ijar.v10i3.973.
- [13] Marshall, N.J., Privacy and environment. *Human Ecology*, **1**(2), pp. 93–110, 1972. DOI: 10.1007/bf01531349.
- [14] Sherif, A., Sabry, H. & Rakha, T., Daylighting for privacy: Evaluating external perforated solar screens in desert clear sky conditions. *Proceedings of Renewable Energy 2010 Conference*, Yokohama, Japan, 2010.
- [15] Hakim, B.S., *Arabic-Islamic Cities: Building and Planning Principles*, KPI Limited: London, 1986.
- [16] Rapoport, M., Arabic-Islamic cities (building and planning principles). *Journal of Architectural Education*, **41**(2), pp. 60–61, 1988. DOI: 10.4324/9780203037874.
- [17] Berween, M., The fundamental human rights: an islamic perspective. *The International Journal of Human Rights*, **6**(1), pp. 61–79, 2002. DOI: 10.1080/714003742.
- [18] A'La Maududi, S.A., *The Islamic Law and Constitution*, Islamic Books.
- [19] Cmiel, K., Review essay: The recent history of human rights. *American Historical Review*, **109**, 1980. DOI: 10.1086/530153.
- [20] Spahic, O., Light as a decorative medium in Islamic art and architecture. *Islamic City, Last Modified*, 2011.
- [21] Saleh, M.A.E., The impact of Islamic and customary laws on urban form development in southwestern Saudi Arabia. *Habitat International*, **22**(4), pp. 537–556, 1998. DOI: 10.1016/s0197-39759800015-0.
- [22] Abu-Ghazze, T.M., Vernacular architecture education in the Islamic society of Saudi Arabia: Towards the development of an authentic contemporary built environment. *Habitat International*, **21**(2), pp. 229–253, 1997. DOI: 10.1016/s0197-3975(96)00056-2.
- [23] Jamalinezhad, M., Talakesh, S.M. & Soltani, S.H.K., Islamic principles and culture applied to improve life quality in Islamic cities. *Procedia-Social and Behavioral Sciences*, **35**, pp. 330–334, 2012. DOI: 10.1016/j.sbspro.2012.02.095.
- [24] Hoag, J., *Islamic Architecture*, Harry N. Abrams: New York, 1975.
- [25] Nu'Man, S., A unified architectural theory for Islamic architecture. *ArchNet-IJAR: International Journal of Architectural Research*, **10**(3), p. 100, 2016.
- [26] Fathy, H., *Architecture for the Poor: An Experiment in Rural Egypt*, University of Chicago Press, 2010. DOI: 10.7208/chicago/9780226239149.001.0001.
- [27] Yusof, Z.B., Islam and architecture: Architectural interpretation from the values of the al Qur'an and sunnah. **1**, 2011.
- [28] Babangida, H. & Katsina, H.S., Integrating Islamic design principles for achieving family privacy in residential architecture. *Journal of Islamic Architecture*, **5**(1), pp. 9–19, 2018. DOI: 10.18860/jia.v5i1.4407.
- [29] Erdoğan, N., Müştak, S. & Kaplan, S., Social value and norms in architecture of Turkish House. *International Journal of Contemporary Architecture: The New ARCH*, **3**(2), pp. 1–7, 2016.



- [30] Malik, S. & Mujahid, B., Perception of house design in Islam. *Journal of Islamic Thought and Civilization (JITC)*, **6**(2), pp. 52–76, 2016. DOI: 10.32350/jitc.62.04.
- [31] House, J.S., Social isolation kills, but how and why? *Psychosomatic Medicine*, **63**(2), pp. 273–274, 2001.
- [32] Germeraad, P.W., Islamic traditions and contemporary open space design in Arab-Muslim settlements in the Middle East. *Landscape and Urban Planning*, **23**(2), pp. 97–106, 1993. DOI: 10.1016/0169-20469390110-y.
- [33] Belakehal, A., Aoul, K.T. & Bennadji, A., Sunlighting and daylighting strategies in the traditional urban spaces and buildings of the hot arid regions. *Renewable Energy*, **29**(5), pp. 687–702, 2004. DOI: 10.1016/j.renene.2003.09.001.
- [34] Al-Hathloul, S., *Legacies for the Future: Contemporary Architecture in Islamic Societies*, ed. C.C. Davidson, Thames and Hudson: New York, 1999.
- [35] Kamel, Al-Suhaimi House, 2011. <http://holidaysea.com/?p=6958>.
- [36] Kenzari, B. & Elsheshtawy, Y., The ambiguous veil: On transparency, the Mashrabiya, and architecture. *Journal of Architectural Education*, **56**(4), pp. 17–25, 2003. DOI: 10.1162/104648803321672924.
- [37] El-Shorbagy, A.M., Traditional Islamic-Arab house: Vocabulary and syntax. *International Journal of Civil and Environmental Engineering IJCEE-IJENS*, **10**(4), pp. 15–20, 2010.
- [38] Omer, S., Towards understanding Islamic architecture. *Islamic Studies*, pp. 483–510, 2008.
- [39] Alashqar, Mashrabiya one of the elements of traditional architecture in the hot Arabian desert, 2013.
- [40] Sidawi, B., A conceptual analytic model of the vocabulary of the Islamic architectural heritage. *The Emirates Journal for Engineering Research*, **17**, pp. 47–56, 2012.
- [41] Scott, T., Weaving the symbolism of light. *Vincit Omnia Veritas II*, **1**, pp. 64–74.
- [42] Al-Ghazali, H., *The Mishkat Al-Anwar: The Niche for Lights*, Dodo Press, 2010.
- [43] Al-Juziyyah, I.S., Al-Jawab Al-Kafi M.A. Al-khateeb, 4th ed., Dar Almatba'a Alsafiah, 1987.

