

Doors Looking Back and Looking Forward

Ahad Ibrahim*, Raghad Aljuhani, Abdel-Moniem El-Shorbagy

Department of Architecture, College of Architecture and Design, Effat University, Qasr Khuzam St., Kilo. 2, Old Mecca Road.
P.O.BOX 34689, Jeddah 21478, Saudi Arabia

Received September 15, 2021; Revised March 15, 2022; Accepted April 19, 2022

Cite This Paper in the following Citation Styles

(a): [1] Ahad Ibrahim, Raghad Aljuhani, Abdel-Moniem El-Shorbagy, "Doors Looking Back and Looking Forward," *Civil Engineering and Architecture*, Vol. 10, No. 3A, pp. 59 - 66, 2022. DOI: 10.13189/cea.2022.101308.

(b): Ahad Ibrahim, Raghad Aljuhani, Abdel-Moniem El-Shorbagy (2022). *Doors Looking Back and Looking Forward*. *Civil Engineering and Architecture*, 10(3A), 59 - 66. DOI: 10.13189/cea.2022.101308.

Copyright©2022 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

Abstract Door is a simple rectangular opening in a wall that could be a way to the start or the end of any journey. As human, they feel the space through walking around cities and architectural creation, yet there are certain elements which direct their movement and discussions. Doors are everywhere in buildings, rooms, vehicles and aircrafts. They are used to block or allow access and act as a barrier between an internal space and the external world. This paper aims to define the hidden meaning of doors and what doors mean to the human; is it just a rectangular hole or more than that? Moreover, the objectives of this research are to highlight the factors of a door, reasons behind shaping the doors, and analysis the characteristics of doors in Saudi Arabia. A number of themes identified appeared to influence people perception about doors, the used materials in constructing a door, superstitions and door image.

Keywords Door, Architecture, Doorways

1. Introduction

Architecture is the physical appearance of cities, and it is one of the cities elements that can attract visitor's eyes through buildings. However, doors and the doorways are essential features of the buildings that architects barely give conscious thought to what they do, to user as well as for user [1]. Passing inside or outside a building, the first impression users can get is through the doorway; yet usually, no one notices it, or considers it as part of the background. In daily life, user passes through doors probably hundreds of times, and it is hard to ignore them

extremely. The doorways are elements that help us to move in between spaces, and they come in various shapes and materials. Sometimes doors can have an identical appearance, yet each one of us can have a different perception about each door. The objective of this research is to highlight the factors of a door, reasons behind shaping the doors, and analyze the characteristics of doors in Saudi Arabia.

From the beginning of humanization, the nomads started creating shelters to protect themselves, and defined their own property. However, they built doorways from less permanent materials to give them the ability to transfer in between the cave and the surrounding context. Moreover, with the development of architecture in the civilizations, doors perception has been changed from a single hole that has one meaning to a more detailed one that has several meanings according to each civilization. However, after the nomad, doors started to take another path with the appearance of monumental architecture like chambers and tombs. In the Mesopotamian civilization, doors were constructed from a hard material such as stones and bronze.

Therefore, the different beliefs of civilizations played a role in shaping doors meaning, for instance; in religions, doors have always reflected the meaning of passing to the afterlife in many eras. In the Catholic belief, the holy door of St. Peter's represents the deep meaning of crossing this world to the presence of God just as in the old Temple of Jerusalem [2]. Thus, throughout the ages, doors have always meant to be something more than just a hole in a wall.

In addition, doors were also used as city gate acting as a defense to protect the ruler from his enemies, and control the movement from and to the city. Moving from the city gate to houses on the streets, doors are the first point that

controls human's physical movements by creating a clear outline of new zones. By walking through the house, the door plays a role in separating the different spaces in terms of privacy and safety. For example, a door with a strip of glass can work very well for a living room or kitchen that has less privacy than a bedroom. Moreover, user can express the aesthetic value while they are moving around the main door of any building. It can tell many stories behind its design. Nonetheless, the door can control not only the visual appearance of a space but also the smell as for kitchens and services.

This study includes the most relevant researches on doors. In an article by Hendricks, the author indicates that the doorway is the most critical element of a building, and it holds many aspects much more than just the door [3].

2. Characteristics of Door

Each type of door has different challenges and opportunities. The characteristics of the door in this study will be described as door size, door material and door direction. But, the design of the door is not only limited by volume, material and layout. The modern door design will highlight the different characteristics of the door. In addition, advances in mechanical technology and digitization may take the door design to another level.

2.1. Doors and Scale

The transition through the door can be used as an analogy from one world to another. This includes metaphors from unknown areas to known areas, or from dark spaces to bright spaces. Anything that provides this transitional means can recognize as a door. However, among the other architectural elements, which makes the door so valuable is that the door exists in the world. It has a physical size, weight and proportions, allowing us to pass through it. Doors are designed as humbling construction with different shapes, treatments, and materials, starting with one size doors; three feet wide and seven feet tall drawn from the proportions of the golden ratio to doors with monumental scales.



Figure 1. igloo with small door [1]



Figure 2. Small door designed to force the visitors to bow respectfully as they entered the building [1]

The scale of a door can vary, according to the function. Doorways may come much bigger or smaller than an ordinary doorway. Some doors are small for pragmatic reasons: like in an igloo, the doorway size is small too keep the heat inside the space (Figure 1). Alternatively, the doorway may be designed small to make a point. For example, a small door to force the visitors to bow respectfully as they entered the home (Figure 2). Walking through towns, small doors can make us stand for a moment and think about the reason behind its scale or bumping heads [1].

2.2. Doors Material

The first interaction between human and an object is the visible part, and by looking to a well-designed door, the stories and philosophies behind its design can reflect people in many ways. Moreover, the physical appearance and the identity of a door can play a significant effect on understanding how it will reflect on the individual's experience in discovering what is behind it. Back in the history, doors were constructed from pieces of timber. It was the most reliable material to use, in keeping the door in place and allowing it to be opened and closed. [1]

Doors are just like humans; you can see somehow behind their eyes the hidden stories. In doors, the material and the texture of it can tell us the hidden stories. The use of heavy materials with texture can give the reflection of how stable the door is and its ability to stand out. In contrast, doors that made of light material such as glass give us the feeling of transparency and weakness. Here there is a difference in the doors stories, and it clearly shown that it could be felt out from the material used.

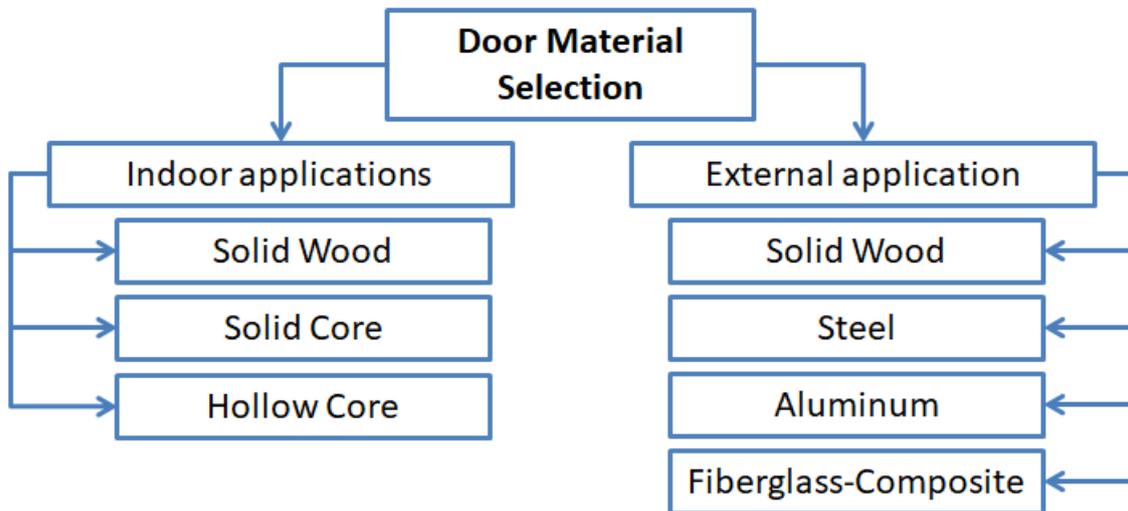


Figure 3. Door material according to its application [5]

In constructing doors there are many materials to choose from, metal, metal-clad wood, wood, steel and glass. Sometimes people tend to use a specific material just to help them to tell a story. Thus, in using glass for doors, the mysterious element is absent; there are no secrets associated with them. The glass door is transparent, so it is easy to see the destination through the screen. Therefore, the glass door will not arouse people's discovery and curiosity to explore the things behind it. [4]

On the other hand, using a solid material can show the presence of the mysterious elements with the feeling of curiosity. Moreover, in using solid material, materials will be more than just a material, because there will be the ability to add decorative factors to the door, like carving and textures. Generally speaking, materials are one more step, for a door to be able to be part of a story. Finally, the choice of door material is based on the application of indoor and outdoor doors. Figure 3 shows the selection of door materials based on internal or external applications.

Solid wood door is the most expensive option because it has a long-lasting composition and is suitable for indoor and outdoor applications [5]. Solid core door provides good sound insulation between rooms, but have poor moisture resistance. Hollow core door can withstand high humidity, but is poor to not durable or fire-resistant. Therefore, solid core doors and hollow core doors can only be used for indoor applications. Steel door is the best choice for safety and durability, while aluminum door will not rust or require less maintenance. Lastly, fiberglass composite door is durable and maintenance-free, and suitable for harsh weather [5].

2.3. Doors Direction

Doors can open in many different directions; some doors can be open inside, outside, upward, downward, left or right. The direction of the door opening is determined according to the purpose, form, layout and location.

For example, the shape and location of the building's gate play a crucial role in the popularity of the building. It can be single, restricting one person to enter, or double panel, inviting more people [4]. The direction of the door movement can also reflect a meaning; it can open toward the inside and be more welcoming, or it can open toward the outside and give the opposite feeling.

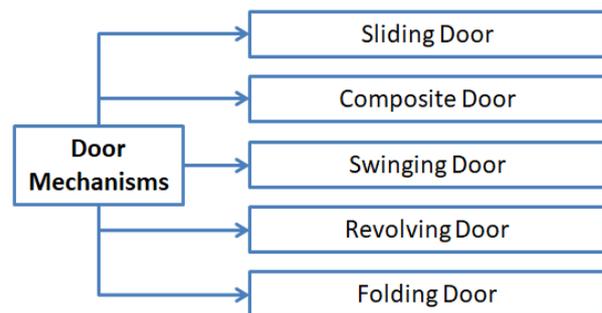


Figure 4. The mechanism of the door

In automatic doors, it eliminates the physical contact between both the individual and the door. A door without knobs or handles and the threshold is in-discriminate and uncertain. Moreover, the revolving door is just a threshold and the door has no open or close action associated with it. They do not give individuals the power to choose whether they can use the door; who is allowed to come in. The first person to enter the rotating door has the ability to switch his movements, and everyone else is behind him. Meanwhile, only one person is allowed per entrance, they cooperate with a row of people facing the building to occupy their entrance, making it a personalized experience. Generally speaking, the need to pass through the revolving door will extend the behavior of crossing the threshold, so that the individual is more familiar with the space entered. In addition, there are different types of mechanical mechanisms used in door design. Figure 4 shows the basic door mechanism, including sliding doors, composite doors,

swing doors, revolving doors and folding doors.

The sliding door has a horizontal mechanism that opens laterally by sliding parallel to the wall as shown in Figure 5. Figure 6 shows the composite door which provides great security, and is a modernist door technology that uses a combination of materials such as PVC, wood, sound-absorbing foam, and glass fiber reinforced plastic (GRP) [6]. Next, the swinging doors use swinging hurdle to close the entrance of a room or building as shown in Figure 7. Recently, it has been combined with automation technology. Figure 8 illustrates that the revolving door is suspended on the central axis by three to four partitions and rotates around the vertical axis and its control one-way traffic in order to restrict entry [6]. Lastly, Figure 9 shows that the folding door is half-opened by folding the part backwards and allows the creation of dream living spaces.



Figure 7. Swinging Door [6]



Figure 5. Sliding Door [6]



Figure 8. Revolving Door [6]



Figure 9. Folding Door [6]



Figure 6. Composite Door [6]

2.4. Contemporary Doors

In all the above examples, one of the mutual physical characteristics that can be distinguished by modern doors is the off-track of physical and psychological dimensions, so the feeling and sensation between the person and the environment is reduced.

Architecture is the art of form, and the symbols for architects to express their thoughts and emotions are lines, forms and spaces. Without symbolic meaning or abstract observation, the physical and psychological dimensions of architecture disappear. This often reflects to a significant decline in the knowledge of architectural elements and

senses, which is an eternal issue of contemporary architecture. Today, except for the most stylized examples, buildings are mainly designed for utilitarian use, so the verse of each architectural element depends on the necessity and practicality of its structure.

The 20th century mythologist and art critic Juan Eduardo Cirlot said: Architectural symbolism is based on the correspondence between various spatial organization modes, and the result is an abstract plane. Building structure is the relationship between organized spatial patterns. At the same time, the basic model of architectural relations provides the main symbolic meaning. The secondary symbol comes from the misappropriation of personal forms, colors and materials. In addition, the relative importance of the various elements (functions, heights, etc.) makes up the entire building [7].

In another example, a window's shape and location vary depending on the experience's intent. It may be so small that a person can only see a person standing directly behind him or her, restricting the field of vision, or it may be a huge panorama that directly brings thoughts and imaginations far away. Metaphorically speaking, without walls, the story of windows would be incomplete.

Through the combination of walls, windows, and doors, the building tells the story of life inside. Doors play an important role in revealing the story among these different architectural elements, as they are always observable at the beginning and end of a journey. They may be open and enthusiastic, or they may be closed and mysterious, covering up the inside story.

More importantly, doors provide the ability to physically pass through them, whereby this unique feature cannot be replaced by elements such as walls and windows. A door is a gateway that can welcome or deny someone.

3. Hidden Meaning of Doors

As long as there are historical records, doors and doorways have always been cross-cultural symbols. The door is both an entrance and an exit, so it has been associated with portals and passages at many levels in history [8]. The doorway is a symbolic structure, which has important meaning in people's daily life. This can be likened to entering new spaces and opportunities, overcoming difficulties or challenges, and leaving behind sad, lost, and broken hearts—doors and openings provide

transition points for change [9]. The diagram in Figure 10 illustrates the hidden meaning of the door, including heavenly glory, false door, well-being, and bad luck.

3.1. Heavenly Glory

Doors have a major significance in human lives, in both literal and metaphorical meaning, which create a transitional feeling. Doors and gates, between all the architectural elements where considered particularly for their symbolic meaning [10]. From the eastern to the western cultures, there are extraordinary examples of rituals, traditions, and myths, connected to doorways and thresholds. The following section discusses the superstitions about doorways and thresholds in the different cultures, to outline the role of myths in creating the doors and gateways configuration [4].

3.2. False Door

Metaphorically speaking, since ancient time, entrance way and thresholds are considered a pathway to the glory of heaven. "False door" is one of the door examples between this world and the netherworld in ancient Egypt [4]. A false door is a curved wall in a door structure, built in the west wall of a tomb chapel. Ancient Egyptians believed that the end of life is just the begging of life and that the soul of the deceased could go to the afterlife through the "false door."

Egyptians believed that by creating a portal inside the tombs of dead, it is the way for the dead souls to continue their life after death. Although false doors made as a curved wall, not a real functional door, it has a specific architectural characteristic in order to build the door. The false door is a replica of a real door; it can be constructed of separated building blocks or hewed directly out of rock in a rock-cut tomb. Usually, the used material in constructing the false door is limestone; pink granite.

Throughout the years, the architectural elements of the false door got affected and went through architectural changes. They kept most of the essential elements such as; central niche framed by two door jambs, and a lintel arranged symmetrically, in the top of the central niche a panel that hewn with a description of the deceased seated at a well-supplied table, with a formula of the deceased name and titles. However, the false door is considered as one of the most characteristic elements of tombs in Ancient Egyptian [11].

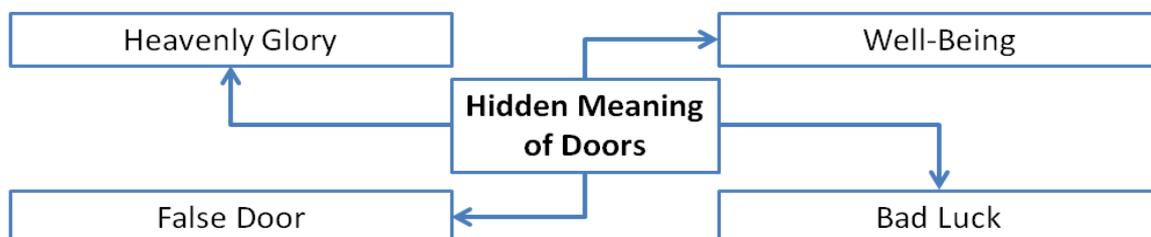


Figure 10. The hidden meaning of the door

3.3. Well-Being

In different areas of the world, there are symbols that human react to according to their perception. The swastika is one of the most common and mysterious symbols in human history. It exists in cultures all over the world. Its use has been noticed in West Africa, the Indian subcontinent, Scandinavian and Germanic cultures, even during the Roman Christian period. However, in all these cultures, the swastika has different meanings, whether it is another symbol of Hinduism or in some Native American cultures, it represents happiness or good luck.

In Hinduism, they believe that swastika is a symbol of defiance and it can protect them from any harm that will happen to them. Moreover, the word swastika in Sanskrit means “that which brings good luck and well-being”: su means “good” and asti means “is” [12]. For Hindu using the symbol of swastika on doors has a huge impact in making themselves secured inside their homes.

3.4. Bad Luck

In Russia, kissing a guest or shaking hands in front of a doorway is not acceptable. The threshold considers as the house spirit in Russian folklore; they believe that handshake across a doorway is hugely bad luck. Instead, when you visit a Russian home, you either shake hands with the person inside the home or outside the home, not in between the doorway to avoid the bad luck.

4. Doors in Saudi Arabia

“Sometimes there can be nothing more pleasant or more arresting than a door” Maha Al-Faisal [13]. Doors can be part of anything, culture, traditions, religions, myths or as a physical element that create a transitional movement between different spaces, according to people perception. This section displays pictures of doors in Saudi Arabia, with an analysis of the architectural perspective of the door.

Najed region, Riyadh is famous for its decoration, engraving and coloring on doors and windows. The decoration in the doors and windows is based on the geometric and vegetal decoration, such as the triangle, the circle and the roses. The colors were as bright as red and yellow. Another example for a painted wooden door and windows decorated with geometric patterns and colorful colors (Figure 11). In Asir, the decoration of doors was also through painting, and it followed the abstracted art, and the colors were also bright as red, yellow, green and blue.

In Hijaz, Jeddah, the doors were made of wood and the decoration depends on drilling more than the color. In the coastal areas doors are often made in India and Pakistan and are called "sea harbors" (Figure 12). They are characterized by precise drilling, different wood that appears to be more solid [14].



Figure 11. Geometric patterns painted wooden door and windows



Figure 12. Residential door of carved wood with overlay of oil paint

In addition, the decorated door is regarded by tourists as a welcome gesture, and also a manifestation of people's taste and a symbol of generosity [15]. The people of Al-Alkhalaf pay special attention to their entrance. Figure 13 and Figure 14 show the decorating wooden door elements at Al-Alkhalaf with carved patterns, metal pins, door knockers, locks and colors has diversified and active functions [15]. The architecture of Al-Alkhalaf village is not only built for beauty, it forms a sharp contrast with the natural environment.



Figure 13. Wooden door decoration with colorful patterns, metal pins, door knockers and locks [15]

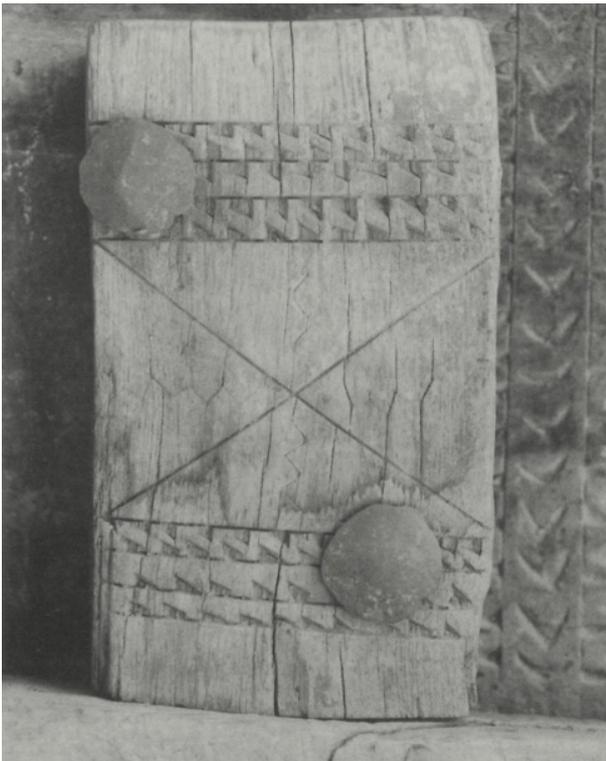


Figure 14. Decorative carved patterns on wooden door [15]

5. The State of Art of World Door Design

The door plays an important role in perceiving space. It also creates space beyond the visible range of the building. A wall with a door greatly enlarges the entire building by connecting the space behind the door.

Recently, pivot doors are very common. It rotates on a vertical axis, determined by the pivot hinge and the top pivot position [16]. The vertical axis creates a freely rotating canvas, adding interesting movement to the door.

In addition, a pivot door with the correct hardware can accommodate almost any door size, and can also bear the weight of a heavy door, which also enhances design freedom [16]. The installation process of the pivot hinge system on the floor is expensive, and it usually takes several days to adjust the design. Early planning and special preventive measures must be considered in the early stage of construction, because the position of the door cannot be adjusted after the installation is completed [16].

Furthermore, considering the performance of doors such as safety and privacy, fire resistance and energy efficiency, the latest door designs are turning to seamless door designs [5]. The "hidden door" is more fashionable and refined in reality. The door material needs to have a similar pattern and texture to the wall and maintain performance. The "hidden door" can easily be mistaken for seamless cabinets or portals to another space.

In this digital age, door designs should be equipped with multifunctional door systems to support the safe and comfortable use of buildings. For example, automatic sliding doors designed for emergency exits can ensure that the rescue route is effective [17]. Moreover, the automatic door system with intelligent control technology allows management department to monitor and control the movement of users and visitors in the building [17]. In addition, the retractable door with the largest opening width helps to achieve optimal pedestrian flow and daylight penetration.

6. Conclusion

When building a house, the door is one of the most important elements that should be considered in terms of robustness, durability, weather resistance, and aesthetics, because it provides security since it is the main entrance to the house. In general, a door represents entrance, beginning, transition, portal, threshold and end. All in all, this study outlines that architecture and doorway are connected to each other, and the doorway function is to separate in between spaces. It is undeniable that the hidden meaning of the door is historically related to the glory of heaven, false door, happiness and bad luck. The door design in Saudi Arabia is associated to the local culture and traditional customs related to the natural environment. In this digital age, door designs are more practical to meet functionality, reliability and safety. Although many designers and architects do not pay much attention to the door, professional designers and architects will consider this. In architecture, doors are part of the buildings stories. Imagine that doorway does not exist, then architecture will be shown either as box of walls or an open space. Without doorway architecture could not exist.

Acknowledgements

Special thanks to the project supervisor and the College

of Architecture and Design, Effat University's resource and support.

REFERENCES

- [1] S. Unwin. *Doorway*. Routledge, 2008.
- [2] R. A. Seely. St. Peter's Basilica as Templum Dei: Continuation of the Ancient Near Eastern Temple Tradition in the Christian Cathedral, *Studia Antiqua*, Vol. 4, No. 1, 2005, Online available from <https://scholarsarchive.byu.edu/studiaantiqua/vol4/iss1/6>
- [3] S. Hendricks. *Point Of Entry: An Overview of Historic Doors*, 1999, Online available from https://historicdoors.com/pdf/hsd_point_of_entry.pdf
- [4] G. Taravati. *PORTA: The Language of Doors*, UWSpace, 2008, Online available from <http://hdl.handle.net/10012/4113>
- [5] An Architect's Guide To: Doors. Online available from <https://architizer.com/blog/product-guides/product-guide/antka-doors/>
- [6] T. Bhuiyan. What is Door? 8 Types of Doors Commonly Used in Building, Online available from <https://civiltoday.com/construction/building/118-door-types-of-doors>
- [7] J. E. Cirlot. *A Dictionary of Symbols: Revised and Expanded Edition*, New York Review of Books, 2020.
- [8] Danichario. *Getting Educated about the Symbolism of Quality Doors*, 2015, Online available from <https://www.sbrusticdoors.com/symbolism-of-doors/>
- [9] The Symbolism of Doors, The Psychology Centre & Ta Moko Services | 2 King Street Kerikeri, Online available from <http://www.psychologycentre.co.nz/the-symbolism-of-doors.html>
- [10] E. B. Smith. *Architectural Symbolism of Imperial Rome and the Middle Ages*, Hacker Art Books, 1978.
- [11] Sekhem. False-door stela of Ankhef. *Predynastic periods, Old Kingdom and Middle Kingdom*, 41-44, Online available from http://www.jacobusvandijk.nl/docs/OfE_41-44.pdf
- [12] D. C. Rao. *Understanding Hinduism: basic questions answered*. The Hindu American Foundation, 2019, Online available from <https://www.hinduamerican.org/wp-content/uploads/2019/12/UnderstandingHinduismBasicQuestionsAnswered-DC-Rao.pdf>
- [13] M. Al-Faisal, and K. Azzam. *Doors of the Kingdom*, 1999, Online available from <https://archive.aramcoworld.com/issue/199901/doors.of.the.kingdom.htm>
- [14] Al-Amoudi. The deep history behind traditional doors and windows, 2020, Online available from <https://www.wafyapp.com/en/article/the-deep-history-behind-traditional-doors-and-windows>
- [15] T. M. Abu-Ghazze. The Art of Architectural Decoration in the Traditional Houses of Al-Alkhalaf, *Journal of Architectural and Planning Research*, Vol. 18, No. 2, 156-177, 2001.
- [16] How to Break the Rules That Limit Your Designs. Online available from <https://www.archdaily.com/955951/how-to-break-the-rules-that-limit-your-designs>
- [17] GEZE door systems: A fresh interior for a Zurich landmark, Online available from <https://www.geze.com/en/discover/casestudies/state-of-the-art-door-systems-for-the-renovated-sihlpost-geze>