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THE FACTORS CONTRIBUTING IN SPIRITUALITY DEFINITION OF IRANIAN MOSQUES

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ABSTRACT

Islamic mosques in Iran, similar to other Islamic nations, are reflections of visual beauties and typical examples of symbolic integration and relationship with strong beliefs and geometry. Scrutiny of these relationships provides a broader and profound perception of the design paradigm of these sacred masterpieces, which not only have been responding to the functional aspect of holy places but also represent an aesthetic model of architectural geometric perfection. This paper aims to survey this paradigm with a focus on its basic concepts and geometric origins; in this regard, it seeks to address the ensuing questions: what are the fundamental ideas in the design of mosques? How and which methods were used have been reflected in the architecture of mosques? How has the geometry assisted the architecture of mosques? What is the geometry role in the accomplishment of those basic concepts? To this end, after stating the fundamental concepts and dominant ideology in the design of mosques and the progress factors of Islamic architecture, their architectural features, spatial organization, and relations with geometry had been examined. The research hypothesis is that monotheism and divine unity are the original concepts of the architecture of mosques and this type of architectural design tries with the help of a range of abstract arts, symbolic materials, various methods, and science of geometry symbolize these ideas to create a sacred atmosphere and place which could be an intermediate spot for the human to achieve that divinity and unity.

KEYWORDS:

Mosque; Islamic ideology; geometry; meaning; form

INTRODUCTION

Depending on the definition of a belief in a belief system and its effect on the culture within this phenomenon is established, the emergent signs will be reflected differently. Cultural symbols will be reflected in different areas as grounds for behaviors, needs, and human activities. Undoubtedly, architecture is a typical symbol of civilization in every nation and is considered as the best reflection of nations facing issues related to life and human insights about the world. The climax of meanings, values, concepts, and evidence and wishes can be found in architecture, what William O. Meyer calls "Establishment of the human spirit in the material world." Sacred architecture, which exists upon the realm of meaning is doubtlessly a spiritual art and Research on Islamic-Iranian arts is stepping into an infinite world since, in our culture art is rooted in metaphor, symbol, sign, belief, mysticism, land, rituals and traditions, mathematics, geometry, and astronomy [1]. Perhaps the most important expression of Islamic art is architecture, particularly in the mosques (four- Iwan and hypostyle) [2]. Elegant architecture of mosques are artistic and very wise in their top examples, a crystalline reflection of the factor could be said that they are the only works softly and wisely leading the audience from multiplicity of phenomena and creatures to the creator, and this is the final point of human perfection.

A short glance at several Islamic architectural works in Iran during different periods suggests the fact that Muslim architects were seeking for a particular and geometrical discipline in constructions. In the Islamic era, one of the qualifications required in entering into the career of architecture was the knowledge of mathematics and specifically of geometry; Muslim architects were familiar with the geometric principles employed in the structures and depending on environmental conditions, how to use ratios of scientific geometry artistically [3]. What is more, reflected in all their works, is their ethereal designs to submerge the audience into their perfect and decorated geometry and a world of brightness and pure softness. Geometry expresses inner sensations to make you understand the secrets of truth, beauty, balance, and congruence and is considered an accurate reflection of facts and is

a litter for its induction.

Principles of geometry and religious beliefs caused specific patterns to take shape in Islamic architecture that was used in designing buildings, including mosques [4]. Quranic themes of mosques have concretely strengthened the importance of unity and servitude in art and architectural works in various Islamic monuments. [5]. Mosques as the best example for expressing pure Islamic concepts of the supreme geometry and specific Islamic components of the architecture benefit from their essential elements to reveal perfect truth and sublime their sacred architecture, which can be observed in the whole building of the mosque and even in every component of them. Raising this issue for understanding the existentialist basics of Islamic architecture is a step toward a deeper understanding of desirable and logical architecture.

The present survey tries to decode these symbolisms and describe how they have been applied to refer to supreme ideas and outline their used successful methods, such as the application of descriptive geometry, decoration, calligraphy, carving to form a medium between the mundane world and spiritual world which human being could ascend and relate to God within and get unity with him. What comes next is a brief reference to some issues which clarify essential aspects of this confusing discussion.

METHODS

The research methodology of this study is descriptive, and the required data were gathered from library sources and documents. Due to objectives of this paper, which were highlighting the theoretical principles applied in the design of mosques and describing how they have emerged in the form of architecture, it is subsequently presenting these principles and their definitions, their emergence in the mosque architecture via applied features, methods, geometry were investigated. Throughout the history, the surveyed Islamic architecture Islamic have aimed to survive the test of time and convey those precious meaning to the users of all times; precisely the same purpose of its holy guide-book "Quran", and the architects aimed to assist the establishment of the Islamic culture and to peruse the Islam's orders forever.

DISCUSSION

THE IMPACT OF RELIGION ON ARCHITECTURE

Religion is a set of stable principles, mythologies, emotions, and collective movements that are profoundly influencing people [6]. Therefore, when an artistic work emerges, this mysterious life is reflected in practice [7]. It is why King went to the jungle for the revelation before carving the wood, or Jioto, the painter, prayed before painting. Every religion has its source of inspiration to rely on Nirvana or the secrets of the cross based on worshiping ancestors or natural symbols. This variety is reflected in the range of artistic techniques. The Existence of religious groups results from the difference between the holy and non-holy worlds, due to the challenge of which this difference becomes clearer; therefore, two kinds of arts appear in society: religious art and non-religious art.

GOD-CENTRISM IN ISLAMIC ARCHITECTURE, PARTICULARLY IN MOSQUES

Islam has influenced all aspects of human life; everything in Islam is affected by this holy religion. It means that there is no difference between the sacred and unholy. There is just a hierarchy of existence stemming from divine unity. The underlying unity in everything is most visible in the Islamic world [8] in which there is no difference between fine arts and practical industries; technique and beauty supplement artistic creativity. In Islam, art is not distinct from craftsmanship, or the work of the craftsman is not different from other aspects of life, particularly from spiritual growth. Islamic architecture means the glory of desires and consequences of a specific civilization, not meaning magnificent like Renaissance or Modern architecture. It says excellent when a culture raises its historical structures for praying and worshipping God, and every aspect reminds His magnificence. Islamic architecture creates an ideal and attractive form of a unique existence and visualizes a typical example of life by seeing the presence in its inner world. This superior pattern beyond time and space boundaries is reflected in the "plan" blowing a spirit into the work to create a specific. Islamic architecture only observes one sun and is delighted from the freshness of existence due to compassionate consideration and attempts to express this mercy so that everyone attains such a delight. In the cultural range after Islam, Muslim artists have applied architecture to regulate their work and tried to construct places where the Word of God is reflected. Being in such holy places consistent and congruent with human needs and dimensions sublimates man from the material world to the metaphysical world. Islam came after Christianity, whose most crucial principle is monotheism and starts with "there is no God but Him." It's perceivable from its superficial to metaphysical interpretation that there is no truth but God [9]. The fact means divinity. Deep meanings are inferred from this word. Everything is deposed from the divine status to prove the existence of God (God is beyond all those things known as truth or fact by the mind and natural sense).

This principle may be seen in the term "God is greater than everything," which is not mentioned in a detailed description, and this shows that God is greater than whatever imaginable.

Or in the Quran it says:

"Pure is God, the powerful and unique God free from ignorant descriptions of creatures."

Regarding this image of God created by Islam, this question is raised that in what form and shape can such a God, pure of everything, be referred to in architecture? Indeed, God cannot be visualized with material types [10]. Therefore, Muslim artist seeks for something beyond the material to create a spiritual space. The artist chooses an art reflecting God, and it is here that his art takes the form of another technique, a holy or sacred way. Yes, divine art can be found everywhere in mosques architecture. The sacred dance is an inclusive and full framework, including other structures, each one keeping its integrity. Artistically, "there is no God but Him" means getting devoid of the truth of everything except God, and every fact returns to God [11]. Monotheism is the basic and first principle in sacred art. A Muslim architect's skill reaches its highest point where it is a reflection of truth while maintaining its sacred goal and observes other architectural principles and doesn't sacrifice them for his objective. In other words, the purpose serves for all architectural principles and covers them. It indicates that the sacred art of Islamic architecture is multidimensional and demonstrates the richness of such architecture [12]. The plan [13, Fig. 1], of mosques, frameworks [13, Fig. 2], and practical patterns [13, Fig. 3] and designs in their architecture all are a reflection of sacred art including ethereal and religious contents.

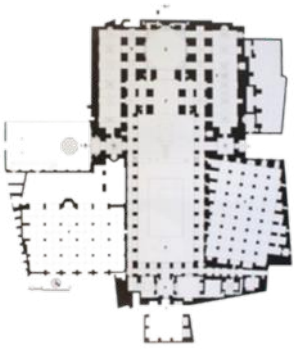

Figure 1. Yazd Masque – Floor plan [13]

Figure 2. Yazd Masque – Colonnade on the western side of the courtyard [13]

Figure 3. Yazd Mosque – Decoration of the entrance portico [13]

The perspective of minarets and domes has a special reflection in terms of appearance, height, patterns, and colors bearing invitation [13, Fig. 4], [13, Fig. 5].

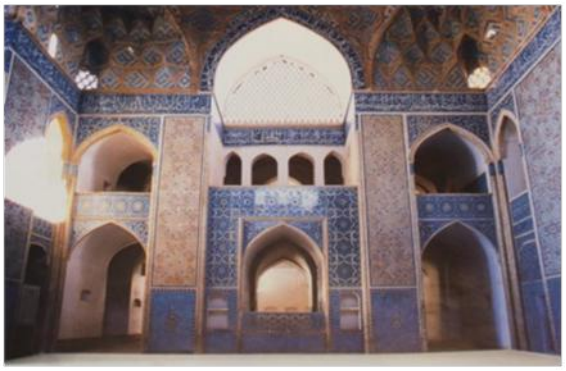

Figure 4. Yazd Masque – Gonbad Khaneh [13]

Figure 5. Yazd Masque – Entrance portico [13]

Observing spatial hierarchy in mosques, which is the entrance or mud-brick corridors and the floor of the porch joining Shabestan (a part of a mosque) and the dome house, all are directed to the altar. As some belief, the altar is the place of fight between man and devil [13, Fig. 6], [13, Fig. 7].

Figure 6. Yazd Mosque – Dome and part of the southern Eivan [13]

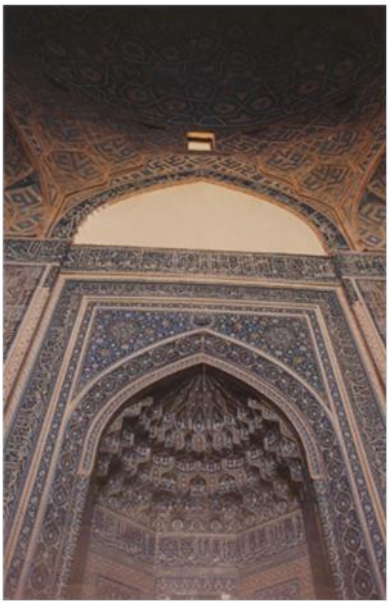

Figure 7. Yazd Mosque – Part of the Gonbad-Khaneh and prayer niche [13]

THE FACTORS CONTRIBUTING IN DEVELOPMENT OF ISLAMIC ARCHITECTURE

A traditional Islamic city lacks street or broad perspective, next to which the most critical structures to be made by residents as cultural symbols. However, the sacred architecture in Islam is a mosque that has never been separate from urban areas. As aforementioned, Islam does not divide its people into sacred and non-sacred regions. Sacred affairs can be seen in all urban symbols. The same behaviors and actions being performed in mosques are performed at homes, too. Islamic mosques could not be observed from outside because the structure of the dense urban environment surrounds them. This architecture can be experienced from inside; therefore, this kind of architecture takes a man from the multiplicity of the outside world into deep thinking and spiritual domain. Architecture is the art of ordering the pace. That architecture stemming from the sacred tradition may develop this order from the material world into a supernatural order. So it integrates man with God through making the environment holy. Avoiding iconolatry in Islamic art and architecture (which rejects the visualization of God's presence in icons and forms) is an essential factor emphasizing the spiritual significance of the space in Muslims' minds and self. Space has been transformed into a sacred element through monotheism [14]. From this point of view, God and His beautiful reflection are not considered integrated with any place, time, or a specific object. His presence is inclusive. "East and West both belong to God. Everywhere you turn to, you have turned to God. God knows everything". Everywhere you turn to, you have turned to God. God knows everything. He dominates all the universe and knows every secret.

In Islam, man is not a critical factor for comparison. A Muslim architecture, with his religion that is obedience to what God wants, confirms that God is the superior architect. Therefore, the relationship between the architect and his surroundings is based on compliance, not pride. Hence, its effect on the material world must be with humility, not with ignoring the existing natural order. Traditional Islamic architecture reflects this awareness. There has been no sign suggesting conflict or ignorance or dominance on the surrounding. It can be seen over the arches of domes and the shape of rooms, horizontal turrets, and reliefs of walls making the building balanced in beauty with its surroundings. Even the interior space and the yard are open to the sky as a symbol of heart salvation toward the upper world. A traditional Islamic architecture's redemption towards the upper world is reflected in brightening the material mass. This material mass takes beauty with decorating techniques and directs attention to color and geometrical design and shapes. This decoration must be considered a reflection of a higher order in existence. Changing the material mass by decoration indicates the negative aspect of "there is no God..." while the focus on monotheism suggests and proves "but God".

DECORATION

However, the architectural decoration is not the only way to reflect monotheism [15]; the form of a building also represents this monotheism. It is obvious in different mosques. For example, a single-dome mosque directs attention toward the geometry and the mysterious meaning of dome, contact of heaven and earth while a multi-column mosque emphasizes the consistent repetition of columns and arches to coordinate thought with prayer. If domes are considered as a sacred structure and symbol of a whole spirit

of the high heaven, the octagonal stem of dome located underneath is a symbol of eight angels carrying the sky. The cubic part of the building is a symbol of the ordinary and popular world whose four principles are considered as spiritual and physical principles of the world. The whole building expresses a balance and unity, reflecting monotheism in the world. However, monotheism at each level is monotheism. Therefore, the shape of the building is a typical symbol of divinity so that the multidimensional part of the building is the same as carved parts, a symbol of divine characteristics, and the dome reminds the unity of the whole [16].

ORDER OF SPACE

The order of space in the architecture of mosques has two dimensions: horizontal dimension joining it Mecca and vertical dimension merging it with the upper world. The parallel dimension is toward the Kiblah, indicating the importance of Mecca as a central altar for all Muslims around the world, and this direction shows the position of the platform on which the general form of mosque emphasizes. Shabestan for performing collective prayers is rectangular, whose high side is directed towards Mecca. Mecca is not just a center and focal point for Muslims, but it is a place where earth and heaven connect. The vertical dimension indicates the dome. Dome is one of the most symbolic elements in Islamic architecture. The prophet, Mohammad, said, "in his ascension, he saw a dome of shells consisting pearls placed on four sides of a square on which "in the name of God, the merciful and compassionate" was written. He also talked about four streams flowing over four sides of the square: a water stream, a honey stream, a mill stream, and a wine stream. This revelation not only is representative of the divine nature of every building with a dome but also shows the mysterious meaning of architectural form as the order of the world.

Every dome requires four pillars. The square pillar making the building stable contains a mysterious meaning; that is, the geometrical form of a square is indicative of the stability of the earth. Between the square pillar and the semicircle of the dome, there are a series of geometrical shapes based on different states of the hexagon. They represent those areas of existence located between the material and spiritual areas. The semicircle of the dome indicates the indefinite space, the existent world, and the spirit area. The visual of the existence is shown best by geometry. Geometry is both qualitative and quantitative. Its quantitative dimension regulates the form and structure in architecture, and its qualitative dimension regulates architectural proportions and expresses the order of this world. Transferring the world from spirit to material is reflected in the mysterious geometrical meaning, and the domain of the earth with the cube, circle, and cube can be indicated with circle and square having the same symbolic value in two-dimensional geometry as a circle and cube in three-dimensional geometry. Not only are circles and cube related to heaven and earth, respectively, but also tools applied for drawing them have the same importance. The craftsman working with traditional tools contributes to the worshiping manner, which is the symbol of contact of the earth and heaven. The circle is a symbol of the initial shape and the infinite space. The circle is the most inclusive shape bearing all other shapes, which develops later to create the manifestation cycle. These patterns, as Geneon says, come out of a circle with gradual changes in specific directions. In practical geometry, like what has been applied in the Islamic art and architecture, proportions of the building result from dividing the circle into regular shapes and forms. Therefore, proportions stem from the symbol of origin, circle, bearing all creation possibilities [17, Fig. 8], [17, Fig. 9].

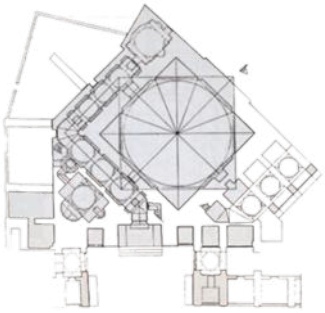

Figure 8. Sheykh Lotf ALLAH Masque- Isfahan – proportions of the plan [17]

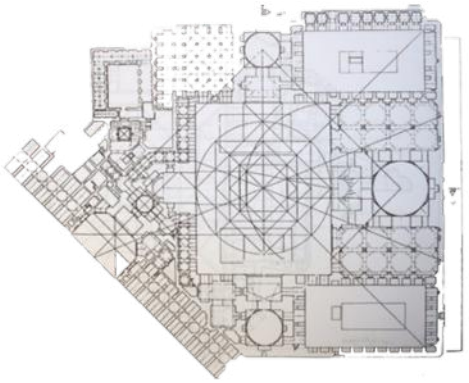

Figure 9. Imam Masque- Isfahan – proportions of the plan [17]

A cube indicates the other end of manifestation and is a symbol of the end of a cycle resulted from the infinite circle. The most stable form is something that can be described most specifically: cube, the symbol of the earth, and stability. Its physical shape is permanent. A hub is the base of the form in architecture. Considering the circle and cube as the indicators of both ends of the creation cycle, it could be claimed that the sphere and cube should be confirmed. At the end of the manifestation cycle, the circle turns to a hub. It is expressed with the term "circle quadrature." The symbolism of this term is evident in turning around

Ka'abeh, dome and its square pillar, application of traditional building tools, compass, and Set Square. However, the real quadrature of a circle realizes at the end of the manifestation cycle showing the end of the world when the earth and heaven join. Islamic architecture reached a pinnacle from the beginning that extended to our time. The traditional architectural style is not the creation of the false current God in our time but results from facing a religious clergyman with the taste and talent of the followers of that religion. While that religion and its followers exist, this style lasts. Persian Islamic architecture is a typical example of this fact; contemporary mosques have changed compared to Damghan Mosque due to changes in the context of stability. Traditional Iranian people were not caught in their time to create a temporary and local style and suffice to it; such a manner could not survive long. They created a timeless art connected with eternity taking a permanent value and credit.

SPECIFIC COMPONENTS OF ISLAMIC ARCHITECTURE (BEING COSMOPOLITAN AND FLEXIBLE)

Of high components of this kind of architecture are being cosmopolitan and flexible in applying valuable elements of architecture from different people and nations. This flexibility and rejection of rigidity are significant characteristics and orders of Islam. Since this art is deeply connected with the divine world, light is considered a symbol of definite existence, called by Sohrevardi, "the light of all lights" and from which he believes the earth and heaven take light. From this point of view, light is scattered as a symbol of existence in the area of Islamic architecture. Mirror work and using mosaics or shiny gold and turquoise for domes and decorating patterns all express the reflection of light; this is similar to elixir work in which the architect reflects the stone as light creating brightness from its dark and cold heart.

Islamic architecture has enjoyed the most prominent elements of different cultures and has collected their inheritance and has selected and kept some of them changing them so that they cannot be recognized anymore. There has passed about 100 years to stabilize itself with the works it creates so that its arts couldn't be attributed to old techniques. Islamic architecture is a diffusion of a new divine form on a material taken from Bizana, Persian, and Indian arts. It contains four concepts and thought systems: intimacy, beauty, well-being, and elevation. Due to rejecting iconography by Islamic art, that part of art and architecture belonging to different nations is used that is abstract such as symmetric patterns [18] and Arabesque designs, the origin of which tracks back to Sassanid dynasty.

Lack of interest in iconography does not disqualify it. In contrast, hereby rejecting every form which distracts the mind toward an external object and directs the self to a single style, it creates a unique space. Decoration with abstract shapes adds to the qualitative richness of this space by continuous intonation and endless diffusion.

UNITY OF MULTIPLICITIES

Islamic ideology has the most beautiful and comprehensive view toward existence; monotheism in Islam is unchangeable, and Muslims consider only one creator for the world. They believe that the want of pure God created all creatures, and ultimately everything returns to God. It is why the architect's monotheistic view dominates all his taste movements and thoughts. Unity is the secret of existence and is regarded as the central rule of life. In light of this view, all forms have a given center so that if this center is removed from the building, the whole system ruins, and its components lose their identity. This is the reason why the yard is located at the center of the building, and the palace is in the middle of the garden, the porch in the middle of the facade, dome in the middle of the volume, the pool at the center of yard and the fountain in the middle of the lake. Everything begins from a single point and intends to the same location. In Islamic architecture, the artistic course is from God's aspect, not self's aspect. Therefore, the name and signature of the architect do not exist, and everything is submerged into the memory of eternal beloved. In this area, the real Muslim architect's mind and his senses and inner powers have disappeared into God; a light dominates all his skills inviting him to obey the one God. He connects to his higher existence to meet his God and enters the world of truth. It is precisely in contrast to the spirit of western architecture in which creative individuality is essential. It is clear that all their works were connected to the origin of the world and existence and sincerely demanded a higher dignity form the upper world moving from multiplicity to unity. Islamic teachings affected on all artistic styles and state common in Islamic civilization. Also, mutual religion has left ethnic differences and ancient traditions less critical than religious and spiritual interests and belongings. A common religious language enforces this issue.

UNIQUE DECORATIONS

Unity of multiple patterns is a symbol of an infinite existence reflected in the endless world, not in the cosmos. This advice and observation of unity in multiplicity unite all artistic works in the world of Islam. Decorative patterns and designs, geometrical designs, small palm patterns, lilies, acanthus leaves, and many other patterns in paintings around the globe are objective-oriented based on deep monotheist beliefs in Islamic art. Muslim artists and architects had their views about decoration. Three common elements in decorations of buildings could be mentioned:

CARVING, PLASTER WORK, AND TILE WORK

Muslim artists used less precious stones and metals such as gold and silver in decorations, which seems to result from their rigid belief in abstaining from worldly luxury. It is why shiny earthen wares replaced golden and silver wares. Decoration does not cover the truth here and is not a trick to make the heart of inner self beautiful. Therefore, it is different from worldly honor, which is for covering the deficient inner self and deceiving the audience. Vaulted work or Stalactite is a part of the arch making a decorative and three-dimensional effect. Arched work is an attractive set of several surfaces and volumes, the goal of which is to create a spatial image to slowly connect the square of the pillar to the circle of the dome. This symbolic connection is appraised; hence, its components are few, and this crystalline work consists of some given and limited elements. After all, compound innovations of the architect are so attractive that they get the eyes and imagination excited and agitated. Historically, Islamic architecture has enjoyed three kinds of decorations, including brickwork, plasterwork, and tile work. Brick is the most demanding material available for the architect. They have tried not to use mud-bricks to create patterns in facades and arranging them side by side or as a tablet and to use shadows. The use of bricks for construction and their decorative applications in the world of Islam has been more compared to stones, and this may be due to unique visual aspects of rocks that never can give a visual softness as bricks. The manner of arranging blocks converted the curved domes to continuous lateral surfaces.

TILE WORK

The tile contains earthenware pieces shaped in a particular style to be suitable for some unusual places.

GIVING A DECORATIVE ASPECT TO STRUCTURAL ELEMENTS

An admirable characteristic of Muslim architects is that a significant number of construction materials were converted to decorative elements and adopted different uses of one article. This results from the relational revelation and the architect's unstable and floating view who was looking for new applications of materials, such as giving a decorative aspect to capital of columns, pillars (Khajeh Abu Nasr Parse's shrine in Balkh) and multidimensional columns in some constructions (the entrance of Ghaffarieh dome in Maragheh).

Color is the most crucial aspect of Islamic art; in our Islamic culture, colors are signs of the existence of supreme God for those who remind His blessings and signs and think about them. When work is built with homogenous colors, it expresses unity and monotheism. Muslim artists did not pretend to be scientific or practical chronologists. Still, they were close to colors and used those colors in their sacred environment that conformed to the spirit of Islamic architecture, among which blue and green more attracted them because blue is a calm and introverted color drawing the viewer and integrates him with its calmness. Blue is a spatial color for relieving disasters and removing tiredness and routine problems. Blue attracts the eyes, and this is why the blue sky strengthens the eyes and penetrates his thought.

Blue is suitable for human eyes having an introvert movement so that it is consistent with circles, among other geometrical shapes. While yellow motivates and alleviates optical power and in some cases, induces sensual behavior, blue calms down every sensation and saves forces. Focusing on blue focuses on the mind. Green is a moderate color. It is the color of thinking, wise calmness, and quietness. It is neither as cold and calming as blue nor exciting and motivating as yellow.

PURE GEOMETRY
WHAT IS GEOMETRY?

To the aesthetic and functional description of mosques' architecture, the definition of geometry as the math basis of architectural design and its history and different types are crucial.

Moarrab geometry [19] refers to a knowledge that determines the mathematical relationship among points, lengths, surfaces, and volumes and represents their proportions, derivatives, and functions [20]. The basics of geometry did not change over centuries, particularly until the 17th century, when Rene Decorate founded analytical geometry by combining geometry and algebra. In the 19th century, the non-Euclid geometry of Riemann geometry changed the principles of geometry.

HISTORY OF GEOMETRY

The intellectual history of architecture well indicates the proportionate division of volumes in architectural forms and shapes. Symbolic concepts for these basic shapes and sizes are abundant in different cultures. The basis of these geometrical shapes is a circle, which is a picture of perfection leading to regular polygons if divided equally, taking the form of ordinary stars. From the Islamic philosophy point of view, this manner of conforming, displacement, or transference of proportions is consistent with monotheism where unity is the origin, and the final score is joining all multiplicities. The circle is a universal symbol, endless and timeless without no beginning or end [21]. In Islamic culture, it indicates the dome of heaven.

In contrast, the square is the earth, finite and ending. Circle states the original form. It is the heaven and life of the world. Spirit and light are initials. Cube is a symbol of stability and firmness and expresses perfection. From ancient times, geometry in east and west, from glorious historical buildings to typical and straightforward houses, from royal gardens to small yards, from divine concepts to understanding human shape and body, geometry has been reflected mysteri-

ously to express the beauty of mosques and shrines [22].

PRACTICAL GEOMETRY

The term geometry in architecture refers to the practical geometry [17]. Practical geometry is a set of techniques and principles helping designers in the establishment of designs. The practical part of geometry, including drawing operations, has different titles, some of which are:

- It is sometimes called drawing geometry based on its drawing nature for producing regular drawings
- It is called based on the subject and kind of application, such as the geometry of patterns, the geometry of arches.
- Sometimes it was called based on the tool used for drawing such as compass geometry
- Sometimes it is called based on a measurement system such as the geometry of proportion systems
- Sometimes it is called based on the culture or society where it is applied such as Islamic geometry

Practical geometry can be summarized as follows:

1. Drawing geometry
2. Geometry of combination
3. geometry of stability [23]

DESCRIPTIVE GEOMETRY

It refers to a set of techniques and principles applied in the following grounds leading to the creation of these fields:

1. creating measurement system (proportions)
2. drawing aids and steps of drawing
3. Establishment of guiding drawings [17]

Several applications of geometry: picture, combination, stability

GEOMETRY OF COMBINATION

With no doubt, the primary aspect of geometry is its application in the combination of shapes and volumes. Only in this way, it's possible to differentiate the geometrical structure of architectural plans and perceive the designer's creativity and dominance. A combination in imaginary arts is a background that requires free action and ignoring any quantitative discipline and mathematics. To make a plan practical requires its commitment to disciplines and quantitative rules. The contrast between action and the thought makes designers and artists find several solutions for solving this contrast and coordinating thought and action. No doubt, practical geometry has produced the majority of solutions. Any design is valuable when it can be repeated in another form and Content.

GEOMETRY OF STABILITY

Undoubtedly, gravity is one of the most important factors for forming architecture. Discovering the course of falling the objects down was the first architectural consequence, and geometrically, it led to producing the right angle [17].

APPLICATION OF GEOMETRY IN DESIGNING OF MOSQUES

One technique in designing mosques is the use of strong geometrical proportions in their plan so that the plan and facade of mosques could be correspondingly designed, particularly in terms of proportion where golden proportions are often used. Therefore, architectural components in every form and size are not boring for the viewer because they have no irregularity. Golden proportions in other countries are not able to compete with Islamic architecture. During the Gothic time, golden proportions were called divine proportions. A brief look at the architecture of mosques indicates that designing a mosque in all steps intends to use a higher and top geometry in all aspects, from the initial idea and general plan to choosing the original forms and lacks any fault and defect. In other words, the perfection of the work in all aspects is the most significant principle in architects' and designers' minds, a perfection observable in the whole and every component [24].

Therefore, the Muslim architect is committed to the application of geometry in all aspects. The more precise and superior this geometry is, the product will be more acceptable. The favorite perfection is a design based on pure geometry and can be imagined as carved jewelry with no defect reflected supernatural and divine. Islamic architecture enjoys a purifying aspect. With this purification and spiritual focus on a unique existence, the established building with all components takes a shiny and characteristic form while the architect pays attention to the original hierarchy: in cathedrals, long and rectangular Shabestan (a part of a mosque) is a path directing human to the outside world towards the special altar within the church. Christian domes ascend to heaven or descend to prayer altar. The general architecture of a church for the Christian believer conveys this concept that the Lord's presence only benefits from the Lord's Supper ceremony as a light shining in the darkness. Muslim architect attempts to create a space within which man recalls the memories of the divine garden and pays attention to the upper world, free of worldly restrictions to have a mystical revelation in search of his lost truth: the world of goodness, beauties, free from idols and objects. Here the architect enjoys the images about heaven presented by Quran and designs his favorite place on its foundation: the garden is a glorious visualization about the permanent heaven[25]: flowing streams, intermingled trees without autumn, the central palace and so on, remind heaven images in Quran and quotations. However, the architect does not direct his artistic view only to the garden, but he tries to ascend from the earth to achieve more meaningful and superior

spaces: a higher, timeless, and motivating space. In order to visualize this environment, he applies unique principles and techniques based on the disciplinary order of the reasonable world. The world from which he ascended. It is no wonder if he tries to promote his results to the purest and the most superior state and to remove earthly characteristics- defects and conflicts. In his view, geometry is between material and meaning, earth, and heaven. He resorts to regular geometrical shapes and forms to create an attractive picture of the discipline governing the world and humans. Since architects' view to existence is not a low or agitated look, yards, rooms, porches, minarets, domes, open and closed spaces, and even the gardens are not in irregular or non-geometrical shapes and forms [13]. Constant attention to use full shapes and selecting a superior geometry promotes the building to a clear and crystalline stage so that it seems that everything is carved and polished skillfully as jewelry. There is no redundancy, and proportion is specifically reflected.

It should be noted that the proportion of components is different from care for sizes and dimensions. The proportion in architecture stems from a pentagon. However, other proportions may be realized from integers [26].

SENSITIVITY TO DIRECTIONS

The direction is motivating and meaningful for the muslin architect. Islamic wise men considered an object terrible and imaginary. In any location, Muslims pray in the direction of Kaaba, if their directions won't be correct, their pray is null and void. It is valid on the pilgrimage of Innocent Imams' shrines. Four main directions are emphasized in architecture leading to stability and balance. Considering climatic guidelines has always been important for the architect. The importance of Kiblah's direction and emphasis on lack of movement and direction and balance is important. The balance observed in Mosques does not bears a special force and does not attract a man to a corner or direction but prepares man to travel in his inner worlds, making him ponder and remember his God beyond the material. God is not realized and visualized in the mosque, but everywhere is his presence. In Imam Mosque in Isfahan, the architect creates a quiet and balanced environment and has located the whole building towards Kiblah praying for his God. On entrance, the entire building turns to the most sacred direction of Kiblah, but this does not prevent breaking inner spaces and from confusion in the balance of mosque directions.

SYMMETRY

Although symmetry and its efficiencies did not begin with Islamic architecture and were common in the architecture of Mesopotamia in Egypt and Greece, a Muslim architect promotes and elaborates it to penetrate objects and things and to give a supernatural beauty to images in the viewer's mind. Every simple pattern on the walls and every component is committed to observing symmetry.

CREATING CONTRAST IN OUTSIDE AND INSIDE ENVIRONMENT

Islamic architecture considers a clear difference between outside and inside spaces. It reaches its highest point in mosque architecture so that man travels through inner self and appearance or unity and multiplicity. Every inside area is a place for spiritual relaxation, and body settlement and outside spaces are places for presentation. Islamic architecture is the contrast of worldly and material architecture and does not violate movement within the inner self.

GOD-CENTRISM AND RELIGIOUS INVITATION

Man is the symbol of divine names bearing the essence of divine spirit and enjoys the creation power, the best example of which is architecture. Islamic architecture has a religious spirit and form, and here is a symbolic form of the truth of Islam because the secret is reflected in the form, and secrets are recognized in symbols. Islamic architecture is the result of a human approach to the sun and the typical heaven of his existence. The architect's interest in proximity and the relationship of every phenomenon to divine craftsmanship have attributed this great area to the whole truth. It is why stubborn human desires disappear in the light of mystical revelations. There is no place for a human being in this shiny and bright assembly. Not only Content and meaning originate from the superior truth, but the superficial language of architecture saturates from there.

CONCLUSION

Man in Islam is not a measure of everything. Muslim architects, by obedience to the divine, would admit that God is the highest and superior architect. Therefore, the relationship between the architect and his surroundings is based on obedience and humility, not on ignorance about the natural order of existence; Traditional Islamic architecture reflects this knowledge very well, this could be observed along the curves of domes and arches; Even inside of spaces and the yards are open to heaven suggesting the ascension of the soul towards the upper world. Ascension of the architect is reflected through brightening the material mass, and decorations cover this mass. This decoration must be considered a reflection of a higher order of existence, not merely the application of patterns. Islamic architecture is a useful school for studies of Muslim architects, owing to this fact that its components have been considered by their creators whose ideologies have been reflected in inapprehensible ways. These are architects who did not act based on their interests and skills, and their original intention was creating elegant symbols, to engender architecture as bright flames or a mystical movement. Therefore, our wise scientists believed that not a single artist attempt to create ancient artworks, and they could not be

called artworks; they are artifacts in which the excellence and value of truth have been actualized.

So far, this effective school has presented works via its creative power and combining the basic cultural and belief indicators of Islam in the designing of the buildings to develop a new combination of sensation and wisdom. Not only is this a technology or application of the powerful nature of architectural elements and their wise processing that has attracted attention to Islamic architecture, but also having human virtues and inner characteristics resulting from approaching God and the truth of world have been consistent with technical aspects and necessary teachings. The severe point in facing religious art is that religious art should not be the stopping point for the man in the material world, but it should be as an intermediate to convey him from the mundane world to the supermundane world of meanings and concepts. In other words, in religious contemplation, art is a powerful implement in recognizing and releasing from multiplicity and ascending towards unity and drawing close to God. Artworks should not be considered as principles or idols. A typical characteristic of various religious arts is their symbolic aspect, in light of this fact that religions are reflections of a superior truth and the proper way of expressing spiritual concepts is the use of symbols. In sum, the basis of religious arts is spiritual wisdom, which benefits from knowledge and industry to express itself and manifest the profound meanings. However, Artistic revolutions in the modern world were the result of neglecting God and replacing him with the human being; this approach has developed an ideology that denies unseen existence, spirituality, and divinity; this ideology couldn't be a container of religious art. A huge mistake that has been made by many believers is that they could create any unprincipled kinds of works in order to present religious values and attract people in the era of individuality. This view has derived out of some issues: from mania against non-religious arts or from lack of knowledge about religious values or being unaware of the necessity of coordination between the container and its Content or extreme responsibility to lead human beings towards salvation.

The spirituality of religious art originates from the religious ideology, which defines theoretical and practical wisdom believed by its followers. Since religion testifies for unseen, it is a typical characteristic of religious art. Religious art reminds principles and values stemming from the unseen. Since principles are not material, symbolism develops. Correcting arts of there is typical of religious art. Religious art makes its corrections by adopting human inheritance and removing its redundant parts. Sacred art should be able to remind divine existence, and this purpose is impossible in every Content and framework or style. The fashion of this reminding is related to the definition and visualization of God in every religion. For instance, a Christian artist may choose iconography to depict this presence. However, a Muslim artist should take a different container and art, for example, and he chooses calligraphy of divine words, which creates spiritual shaking in every corner of a city. Original artwork, directing man to his essence and perfection, and beauty areas are definite with a permanent relationship with spirituality leading man to his origin.

Furthermore, another essential spiritual aspect of the human being is his demand for calmness and relaxation. An original art directs man to genuine unity and peace. By awakening human nature in societies and establishing dynamic communities, man would have a chance to meditate and remove vestiges of material life from his essence. It is not possible unless by building a life based on religious traditions. The major role of arts could be the salvation of human beings from loneliness in this world. In other words, the basic role of art is reminding the origin of man to him and preventing his ignorance.

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