

Islamic Heritage as a Framework for Creating Sustainable Art work

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Abstract

The major part of Islamic art is famous for its decorative patterns, which are particularly known in Egypt. The Islamic heritage also contains many indicators of the concepts of sustainability and environmental conservation, which are integrated with the social values and human behaviors of the Muslim community. The ancient view of Islamic heritage has evolved from a limited subject of archaeology and museums, to a new interpretation that results from a comprehensive scientific perspective. This development was helped by a comprehensive functional approach, based on multidisciplinary cognitive integration of philosophical, aesthetic, creative and critical theories of Islamic art. This development in the interpretation of Islamic heritage is in lines with the Egyptian artist's challenge, that represents one of his main tasks, namely, the creation of an effective artwork as a landmark for the development of artistic awareness in society.

This research aims to present a model for creating Egyptian art work within the concepts of sustainability of Islamic art as aesthetic knowledge, a knowledge consisting of many theories that can be described as founding and structural theories in the formation of Islamic art. The study concludes with a proposal for a sustainable functional virtual artwork to be located in an Egyptian square.

This research aims to highlight the importance of the concept of sustainability in references to traditional Islamic heritage in relation to Islamic art in general and Islamic art in Egypt in particular, by reviewing and preserving the relationship between man and the environment from an Islamic perspective to extract the principles of sustainability in the creation of art.

The research also concludes that the use of the Islamic geometric pattern in creating a sustainable work of art contributes to highlighting the aesthetics of Islamic art. The sustainable functional artistic work can also play an important role in cultural and civilizational exchange, due to the similarity of modern art work in many of its characteristics, including its ability to Expressing a specific civilization.

The wide possibilities of design solution inspired by the use of Islamic geometric patterns in creating functional artwork to emphasize the role it plays in highlighting our civilization. and the consider the role of art in highlighting environmental issues, expressing criticism towards unsustainable factors in society, and offering imaginative ideas for how to achieve sustainability.

Keywords:

Islamic, Heritage, Egypt, Sustainability, Art.

الملخص

أشتهر الفن الإسلامي بأنماط الزينة والتي عرفت بشكل خاص في مصر. كما يحتوي التراث الإسلامي على العديد من المؤشرات لمفاهيم الاستدامة والمحافظة على البيئية، التي تتكامل مع القيم الاجتماعية والسلوكيات الإنسانية للمجتمع الإسلامي. تطورت النظرة القديمة للتراث الإسلامي من موضوع محدود لعلم الآثار والمتاحف، إلى تفسير جديد ينتج من منظور علمي شامل. وساعد على هذا التطور اتباع نهج وظيفي شامل، قائم على التكامل المعرفي متعدد التخصصات للنظريات الفلسفية والجمالية والإبداعية والنقدية للفن الإسلامي. يتوازى هذا التطور في تفسير التراث الإسلامي مع مواجهة الفنان المصري لتحدي يمثل إحدى مهامه الرئيسية، وهو خلق عمل فني فعال كمعالم من أجل تنمية الوعي الفني في المجتمع.

يهدف هذا البحث لعمل دراسة لكيفية تحقيق عمل فني مصري في إطار مفاهيم الاستدامة للفن الإسلامي كعرفة جمالية، معرفة تتكون من العديد من النظريات التي يمكن وصفها بالنظريات التأسيسية والهيكلية في تكوين الفن الإسلامي. وتختتم الدراسة بعمل فني افتراضي مستدام لتجميل إحدى الساحات المصرية.

يهدف هذا البحث إلى تسليط الضوء على أهمية مفهوم الاستدامة في مراجع التراث الإسلامي التقليدي فيما يتعلق، بالفن الإسلامي عامة والفن الإسلامي في مصر بشكل خاص، من خلال مراجعة العلاقة بين الإنسان والبيئة والحفاظ عليها من المنظور الإسلامي لاستخراج مبادئ الاستدامة في خلق الفن.

كما يخلص البحث إلى أن استخدام النمط الهندسي الإسلامي في خلق عمل فني مستدام يساهم في إبراز جماليات الفن الإسلامي. كما يمكن أن يلعب العمل الفني الوظيفي المستدام دوراً مهماً في التبادل الثقافي والحضاري، وذلك لنشابه العمل الفني الحديث في كثير من خصائصه، ومن بينها قدرته على التعبير عن حضارة بعينها.

كما يوصى البحث بالاستفادة من الإحتمالات الواسعة للحلول التصميمية المستوحاة من استخدام الأنماط الهندسية الإسلامية في إنشاء عمل فني وظيفي، للتأكيد على الدور الذي تلعبه في إبراز حضارتنا. والنظر في أهمية دور الفن في إبراز القضايا البيئية، والتعبير النقدي تجاه العوامل غير المستدامة في المجتمع، وتقديم أفكار إبداعية لكيفية تحقيق الاستدامة.

الكلمات المفتاحية:

إسلامي، تراث، مصر، استدامة، فن.

Introduction:

Essentially, this research clarify why Islamic heritage can be a framework for sustainable art? Also, defines the concept of sustainability and its roots in order to demonstrate its connection to the Islamic concepts and the need for Sustainable Art. spotlighting the sustainable nature of Islamic art in Egypt and the effectiveness of artwork in presenting creative ideas for how to achieve sustainability in our society.

The Research problem:

- why Islamic Heritage can be a framework for sustainable art?
- How effective is the individuality of Egyptian Islamic art in creating creative designs for art work?

The Research objectives:

- The development of artistic awareness in Egyptian society through the creation of an effective functional artwork as a landmark.
- Giving creative design solutions inspired by the Islamic geometric patterns to produce sustainable art work.
- Linking among different concepts through using Islamic geometric patterns in modern way.
- Highlighting aesthetics of the Islamic geometric patterns and its role in developing sustainable art work.

The Research hypotheses:

- The Islamic Heritatge generally and in Egypt specifcly as a source of inspiration for creating modern functional artwork.
- The use of geometric Islamic patterns to create a sustainable functional artwork can play an effective role in cultural exchange between different societies.

The Research Methodology:

The research follows the analytical approach through the Clarification of the terms of the research as:

1. The sustainbalty concept and its roots.
2. Islamic concepts that present a framework for sustainable principals.
3. The study for chronological periods in the Islamic world specifcly in Egypt.
4. Presenting a proposal for the use of geometric Islamic patterns in creating a functional sustainable modern art work.

Sustainability in Islam:

The roots of sustainability stem from major reports and international meeting documents to bring together the environment and development themes of IUCN (1980) [6] and the World Conservation Strategy, followed by the 1987 Bruntland Report that produced the Earth Summit in Rio de Janeiro (1992) [7].

Sustainability is a concept called the biological environment, the variety of living organisms, and the natural factors that maintain their existence for the longest possible period of time. And sustainability is also defined as preserving the quality of life by adapting to the environment by exploiting natural resources for the longest possible period of time leading to conservation on the continuation of life. Other definitions of the concept of sustainability is that it is a set of vital processes that provide means of life for living organisms of all kinds, which helps them to preserve the succession of their generations, and to develop the means of their growth over time.

With the high rates of pollution and the scarcity of food resources in many countries and the limited energy sources in the long term, which are the factors that ensure the continuity of the development of human life, the concepts of sustainable development have emerged as a necessity to save the situation and develop appropriate strategies and mechanisms at the level of international cooperation to achieve sustainable development goals at all levels.

Although these concepts appeared in Western society in the second half of the twentieth century as a result of the inevitability necessary to protect life and its development, but since the seventh century, Islam has introduced concepts and a way of life that could have saved humanity from the environmental and societal deterioration that it suffers from.

Islamic concepts which constitute the nucleus of the conceptual framework for sustainability could be defiend in several aspect as follows:

- **Istikhlaf in the land:** Istikhlaf in the Qur'an as described by d. Ahmed Khairy Al-Omari, in his book "Biography of a Coming Khalifa," contributes to laying down the foundations of the institution of Islamic civilization. It is a general concept in which personalities are formed. Man, according to Islam, is a vicegerent on earth entrusted with the honorable task of inhabiting it in accordance with the divine guidance given to him.
- **Rationalization of consumption:** Islam urges rationalization in consumption, economics and moderation in all matters. Worship is not limited to religious rituals. Rather, it includes preserving the environment and taking care of what is in it.
- **Development:** The Islamic view of development and urbanization is a comprehensive view of all aspects of the material, spiritual and moral life, as Islam focused on the human being as the focus of the development process. Because He is the only being able to reform, change, build, and develop, because of the features that God has bestowed upon him.
- **Preservation of life:** the right to preserve life is the basis on which the rest of the rights are built in Islam, and it should be noted that Islamic law has guaranteed the right to life for all who are on the face of the planet Human beings or otherwise, it is not necessary to attack any of the creatures except in a legitimate manner.
- **The importance of aesthetic values:** Sensing aesthetic values is an integral part of Islam. It is emanated from the belief in the power of God Almighty in creating the universe with all its wonders, which is indicated by the verses of the Qur'an.

Islamic art directly reflects the cultural value of Islam, but it also shows the unique Islamic view of life and all spiritual things, for Muslims, God is the greatest focus in their lives, so with these beliefs Muslims strongly believe in balance and harmony, because everything is created and planned by God. Therefore, Islamic art has developed a unique character of geometric, arabesque, botanical and calligraphic patterns that reflect aspects of its balance.

Islamic art periods

Throughout the Islamic art in different periods we can here out loud this statement: Islamic art is always non-individual. By observing the features of each and every period, obviously Islamic art is not there for the expression of individualism. Islamic art Principles transcend individuals and that is what transforms the artist. Art in the Islamic world was a way of spiritual realization.

In the following paragraphs, some of the features of Islamic art in different periods in order to digest the sustainable principals in the Islamic art.

chronological periods in the Islamic world

One of the most astonishing things about Islamic art is the way in which a completely definite style, a whole repertory of motifs, and a distinct architectural system became, quite early in the era of the hegira, associated with an idea and a faith.

Therefore, Studying the Art of the Islamic world is challenging, partially because of the large geographic and chronological scope of Islam [4]. Islam has been a major religion and cultural force for over fourteen centuries and continues to be so today. At present the Arts of the Islamic World Section is organized into three chronological periods: Early, Medieval and Late. These chronological divisions are modern creations that help scholars to organize information and works of art to interpret them better. It also helps students to understand how works of art and architecture relate to each other in time and space. There were dynasties and empires that controlled different lands and whose periods of rule stretched across these chronological divisions.

Pre-dynastic:

This period can be called the period of rapid expansion of the Islamic heritage. Early geographical boundaries of the Islamic heritage were in present-day Syria. the similarity between Islamic objects and their predecessors in Persian or Sasanian and Byzantine art were quite identical, even Muslims artists, took a significant period of time to distinguish their art from ancestral influence. Plant motifs were the most important in these early productions. Islamic artists from early periods till the late ones seem to have had an endless and inventive urge for exploring the mass range of design possibilities offered by the natural variety in plant life.

The artist, as a result of the spiritual discipline, never tried to simply represent his ego or try to be individualistic, to be different. He tried to participate in the Divine reality and creativity always came from this. Islamic art at that stage was characterized by asceticism. The decorations were stucco and non-colored, as shown in Figure (1).

Influences from the Sassanian artistic tradition includes the image of the king as a warrior and the lion as a symbol of nobility and virility. Bedouin tribal traditions mixed with the more sophisticated styles of the conquered territories. For an initial period, coins had human figures in the Byzantine and Sassanian style, perhaps to reassure users of their continued value, before the Islamic style with lettering only took over.



Figure (1) - Palace facade from Mshatta in Jordan - now in the Pergamon Museum Berlin. -

Umayyad:

Islamic art is not serving the idea of terrestrial art, even it seems so. It is serving more universal ideas. the idea of reciprocal relationship between the individual and it's to the universe; throughout the simple daily life actions. Religious and civic architecture were developed under the umbrella of this idea in the Umayyad Caliphates (661–750), when new concepts and new plans were put into practice [4].

The Dome of the Rock in Jerusalem is one of the most important buildings in all of Islamic architecture, as shown in Figure (2), marked by a strong Byzantine influence (mosaic against a gold background, and a central plan that recalls that of the Church of the Holy Sepulchers), but already bearing purely Islamic elements, such as the great epigraphic frieze. The desert palaces in Jordan and Syria (for example, Mshatta, Qusayr 'Amra, and Hisham's Palace) served the caliphs as living quarters, reception halls, and baths, and were decorated, including some wall-paintings, to promote an image of royal luxury.

Work in ceramics was still somewhat primitive and unglazed during this period. Some metal objects have survived from this time, but it remains rather difficult to distinguish these objects from those of the pre-Islamic period.

Abd al-Malik introduced standard coinage that featured Arabic inscriptions, instead of images of the monarch. The quick development of a localized coinage around the time of the Dome of the Rock's construction demonstrates the reorientation of Umayyad acculturation. This period saw the genesis of a particularly Islamic art.



Figure (2)- the wall of the dome of the rock, Jerusalem

Abbasid

The Abbasid Caliphate (750–1258) witnessed the movement of the capital from Damascus to Baghdad, and then from Baghdad to Samarra. The shift to Baghdad influenced politics, culture, and art. Art historian Robert Hillenbrand (1999) likens the movement to the foundation of an "Islamic Rome", because the convention of Eastern influences from Iranian, Eurasian steppe, Chinese, and Indian sources created a new model for Islamic art.

Classical forms inherited from Byzantine Europe and Greco-Roman sources were abandoned in favor of those evoke from the new Islamic hub. Even the design of the city of Baghdad placed it in the "navel of the world", as 9th-century historian al-Ya'qubi wrote. in the first place the artists did not seek the new and unfamiliar in the way the renaissance artists did, but rather remained attached to the model whose merit had been sanctioned by time and conventions, seeking renew its appeal , rejuvenate its character , by subtle variations of detail.[2]

The ancient city of Baghdad cannot be excavated well, as it lies beneath the modern city. However, Abbasid Samarra, which was largely abandoned, has been well studied, and is known for its surviving examples of stucco reliefs, in which the prehistory of the arabesque can be traced. Motifs known from the stucco at Samarra permit the dating of structures built elsewhere, and are furthermore found on portable objects, particular in wood, from Egypt through to Iran.

Samarra witnessed the "coming of age" of Islamic art. Polychrome painted stucco allowed for experimentation in new styles of molding and carving. The Abbasid period also coincided with two major innovations in the ceramic arts: the invention of faience, and of metallic lusterware. Hadithic prohibition of the use of golden or silver vessels led to the development of metallic lusterware in pottery, which was made by mixing sulphur and metallic oxides to ochre and vinegar, painted onto an already glazed vessel and then fired a second time. It was expensive, and difficult to manage the second round through the kiln, but the wish to exceed fine Chinese porcelain led to the development of this technique. as shown in Figure (3), the ornaments of the Great Mosque of Samarra characterized by precision and simplicity, which serve the concept of asceticism and aid in the process of worship and harmony in a spiritual state that transcends the human soul.[4]

Though the common perception of Abbasid artistic production focuses largely on pottery, the greatest development of the Abbasid period was in textiles. Government-run workshops known as tiraz produced silks bearing the name of the monarch, allowing for aristocrats to demonstrate their loyalty to the ruler. Other silks were pictorial. The utility of silk-ware in wall decor, entrance adornment, and room separation was not as important as its cash value along the Silk Road.

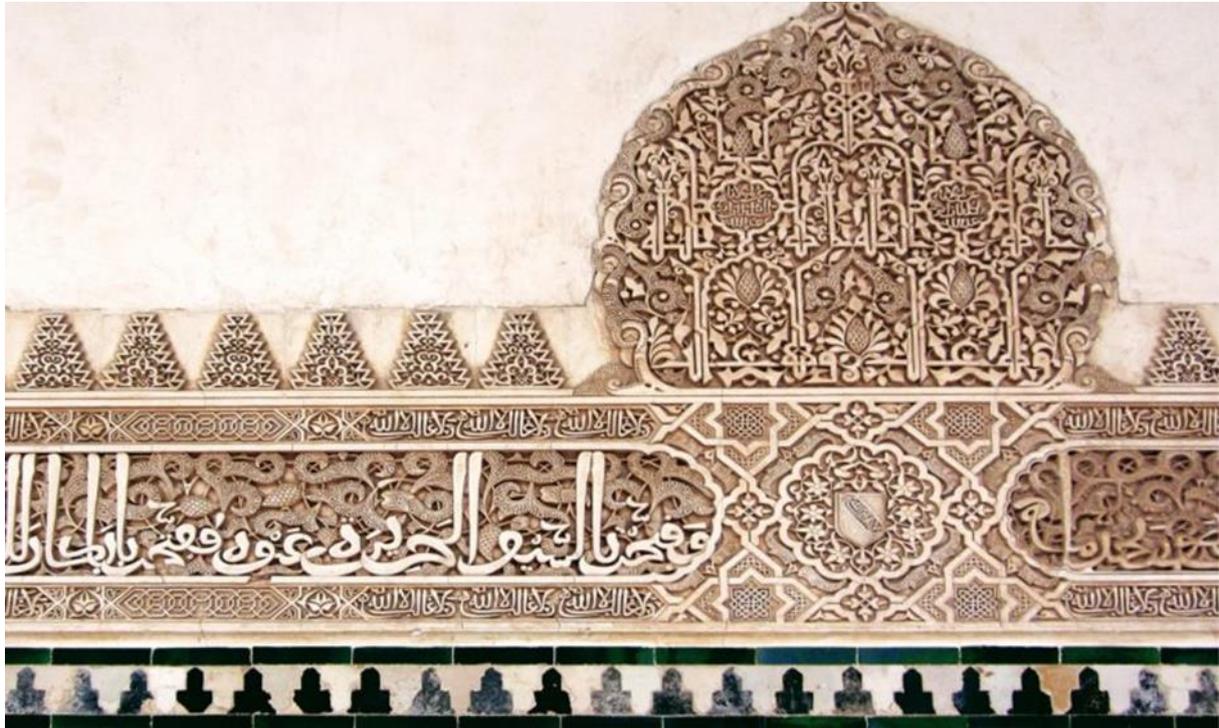


Figure (3) -The Great Mosque of Samarra - Malwiya Mosque - designed by Al-Mutawakkil - Iraq -848 to 851 CE.

The characteristic of Islamic art in Egypt

Though Egypt was one of the first areas to be conquered by Islam, and though there are records that mosques and other building were founded by the governors who represented the Umayyad caliphs there, nothing now survives from those early years.

Islamic art is royal art by nature, as it is an art that owes everything to the Sultan, so idealists, photographers, engineers, and other art men were only working in response to the Sultan's request and in fulfillment of his desire. But the Sultan's desires were related to community service and the spiritual Islamic thought based on serving Islam [2].

Islamic beliefs, traditions and values have provided effective and comprehensive solutions to address many of the current environmental challenges facing humankind, heralding the idea of sustainability. Islam has emphasized the importance of preserving the environment and protecting natural resources. According to Islamic law teachings, the basic elements of nature - land, water, fire, forests and light - belong to all living things, not just the human race. these sustinabil ideas were clear in the isalmic art in Egypt, where art was serving the society and the religion more than the idea of praging with the luxurious nature of the Islamic ornaments.

The original Islamic art is always realistic. It tries to remain faithful to the subject with which it deals and to understand the nature of the material with which it works. It was the same

principle, which prevented Islam, and to understand the nature of the material with which it works. It was the same principle that prevented Islam from developing naturalism

The Tulunid dynasty (868–905) in Egypt:

And what Islamic archaeologists note is that Tulunid art is independent in the artistic history of Egypt, it has its own qualities and characteristics, if Fatimid art was imbued with Persian influences, Syrian and Tulunian factors, with few quotations on Berber art in North Africa. Although the art of the Mamluks preserved Fatimid, Seljuk and Mughal memories, with some Moroccan and European influences; The Tulunian art has taken almost all of its origins from the Iraqi art, which was brought up in Samra, the capital of the Abbasid Caliphate.

Ahmad Ibn Tulun spent his youth in the Samra region, where he was affected by its buildings full of artistic motifs, and the memory of this Abbasid capital remained in the mind of Ibn Tulun, who was keen to advance his court and his capital in Egypt. To be a competitor to the capital of the caliphate and what is in it.



Figure (4) - Mosque of Ahmed Ibn Tulun- year 879 ADS

The Mamluk Sultanate (1250–1517) in Egypt:

In Islamic art if the artist draws a realistic horse which is exactly like the horse, what does it add to reality? realistic drawing and paintings were banned in Islam, not for the common reasons known already, but for serving more higher ideas related to spirituality and worship god. This is the type of Islamic art which was founded in Egypt.

The Mamluk Sultanate was a medieval realm spanning Egypt, the Levant and Hejaz that established itself as a caliphate. It lasted from the overthrow of the Ayyubid dynasty until the Ottoman conquest of Egypt in 1517. Historians have traditionally divided the era of Mamlūk rule into two periods—one covering 1250–1382, the other, 1382–1517. Western historians call the former the "Baḥrī" period and the latter the "Burjī".[3]

The Mamluk state came to its height under Turkic rule with Arabic culture and then fell into a lengthened period of deterioration phase under the Circassians. The sultanate's ruling caste was composed of Mamluks, soldiers of Circassian. While Mamluks were purchased, their status was above that of ordinary slaves, who were not allowed to carry weapons or perform

certain tasks. Mamluks were considered to be "true lords", with social status above citizens of Egypt. Though it declined towards the end of its existence, at its height the sultanate represented the zenith of medieval Egyptian and Levantine political, economic, and cultural glory in the Islamic Golden Age.[4]

Two of the most famous architectural complexes related to islamic art in cairo, which are by the way related to the Mamluk Sultanate. Are Qalawun complex in 1284–1285, and Mosque-school of Sultan Barquq. These two architectural complexes are serving the core of sasinibility idea.



Figure (5) - Mosque- school of Sultan Barquq - Al-Muizz Li Din Allah -Fatimid Street– 1386 CE

The polygonal, branching Islamic star, and the various units and divisions that resulted around it in space, all of this originally depends on simple geometric lines and shapes that the Muslim artist with a knowledge of geometry becomes clear from. Geometric motifs depend on precise measurements of lengths and angles. Despite the complexity of the geometric motifs, in reality they are simple.[1] It was built on different engineering principles and rules, which indicates the interest of Muslims in engineering in both theoretical and practical terms. We can say that all decorations in Islamic art underwent a construction based on geometric shapes such as the square, triangle and circle in order to be the basis for those decorations. And all of these decorations create the shape and concept of arabesque, Arabesque symbolizes the unity of belief and the perception of the traditional Islamic culture. For many Muslims, arabesque reflects the absolute power of Allah (the one God). Moreover, the Islamic arabesque artist conveys a sense of spirituality in humans.[5]



Figure (6) ten-point Star pattern in door - Mosque- school of Sultan Barquq (Left) Qalawun complex - 6 and 8 point geometrical patterns over entrance door (Right)

Sustainable art:

Sustainable art has gained a lot of prominence. The use of eco-friendly ideas and materials to create artwork that does not pose any harm to the environment sounds lucrative for many who are inspired by a green lifestyle. These principles are compatible with the Islamic concepts that were previously presented. The global trend of sustainable artwork can be illustrated by the following several models



Figure (7)- Whole Flow - Buster Simpson - 2009 • Whole Foods, Pasadena, CA
Stainless steel, water, plants. 18' x 6' dia

“Whole Flow, located at the Whole Foods Store in Pasadena, California, is a sustainable fountain of utilitarian function with sculptural proportions. The fountain receives gray water generated within the store, aerates this reclaimed water through a series of cascading flow

bowls, and then distributes the water to a landscape. At the base of the fountain, a small portion of reclaimed water irrigates a bowl of horsetail, an ancient plant” [8].



Figure (8) - King Street Garden by Buster Simpson 1997 • Alexandria, Virginia
Collaboration with Laura Sindell, Mark Spitzer, and Becca Hanson
Stainless steel pipe and wire, granite, brick, and plants. 35' x 250' x 140'

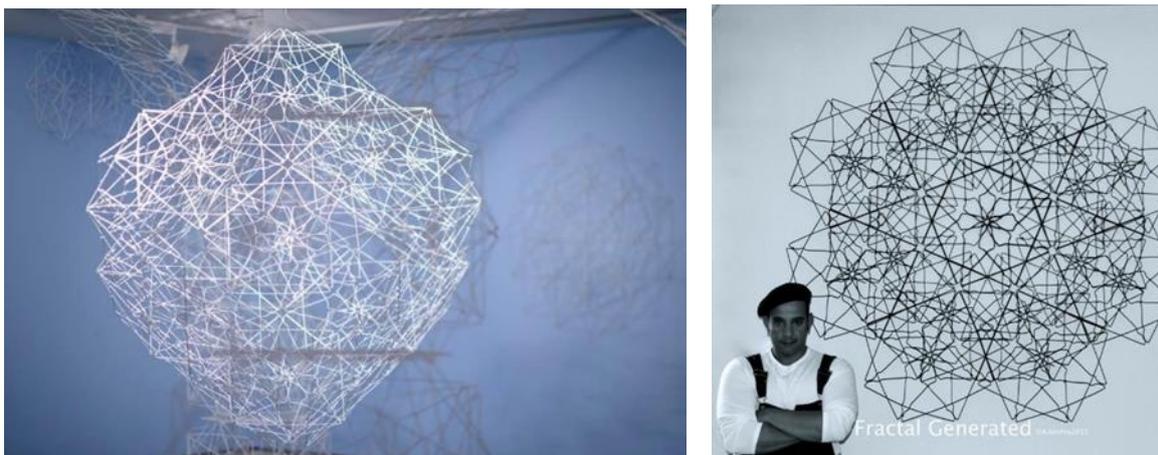
“A garden park with three points of view: the tricorn Topiary Hat, a Hanging Garden gathering place among aromatic vines, and the Sunken Garden, a reclaimed marsh which returns area rain runoff into an adjacent stream. Each view point features a cast iron plaque and poem referencing the site. Prior to the establishment of Alexandria, Hooff's Run flowed through the center of the site which is now the park. The history of that stream and its adjacent wetland, from floodplain to drainage creek to storm sewer, reflects the way in which these area's culture has looked at and developed low lying areas. The re-creation of the sunken marsh, as a visible reminder of Hooff's Run, tells part of the hidden story of the site. It also reintroduces a small amount of native habitat as a green contrast to the developed property on all sides of the site” [6].

Despite the compatibility of the concepts and principles that formed the impetus for designing previous artistic works, the inspiration from the Islamic heritage and the geometric patterns in particular added another dimension to the sustainable artistic work on the practical and intellectual level, which will be clarified through the proposal presented for creating a functional art work.

Contemporary Islamic art works based on geometrical patterns:

In the following section of the research, three Islamic contemporary art works will be represented. The first art work by artist Ahmed Nabih Keshta, who participated in SHARJA ISLAMIC ARTS FESTIVAL in 2017 by a geometric Islamic art, using dress hangers. He made out of Recycling a sustainable Islamic art work.

He used white hangers as the main structural material. The artists think that hangers representing the individual within the community. It is through the solidarity between the small parts, and the order and harmony established among its components, we can construct a large and powerful force within.



**Figure (9) - the platonic solid by Ahmed Nabih Keshta 2017 • Sharja, Emarat
dress hangers without modification**

The second art work for artist Ahmed Karaly who made an art work called Qalawun's arch, which made of stainless steel and colored artilon. The artist said: this art work is part of bigger sculptural project that I complete progressively with each presentation. From my point of view as a sculptor. I am trying to develop the architectural blocks which were produced by Islamic civilization and give them a touch of modernity. The architectural heritage of the Islamic civilization is sufficiently adaptable to accept additions or to amend and change its forms in accordance with the shifting trends of different eras.

This art work is the artist vision for a reimagined Qalamn's arch. By reconfiguring the ornamentation and dismantling the bricks, the artist gives the impression that the arch is suspended in space through different materials not used by our ancestors. While the form or style may change, however, the spirit is maintained to create a sense of continuity- an embrace even – between the old arch and the modern one.



**Figure (10) - Qalawun's arch, by Ahmed Karaly, stainless steel and colored artilon
2019 , Cairo, Egypt. 600 x 500 x 300 cm.**

The last art work is an interactive kinetic statue by artist Sherine Gerges, called qasr alshuwq and alsakaria. These two large kinetic statues are part of a series of three works that were exhibited in the third line, in Dubai in 2013, on the occasion of the first solo exhibition of Sherine Gerges in the region entitled (Roads). These works are inspired by the Nobel Prize winner Naguib Mahfouz trilogy, which illustrates Map of the cultural / political development of Egypt in its rise and decline, and then the reconstruction of Egypt in the post-colonial era.

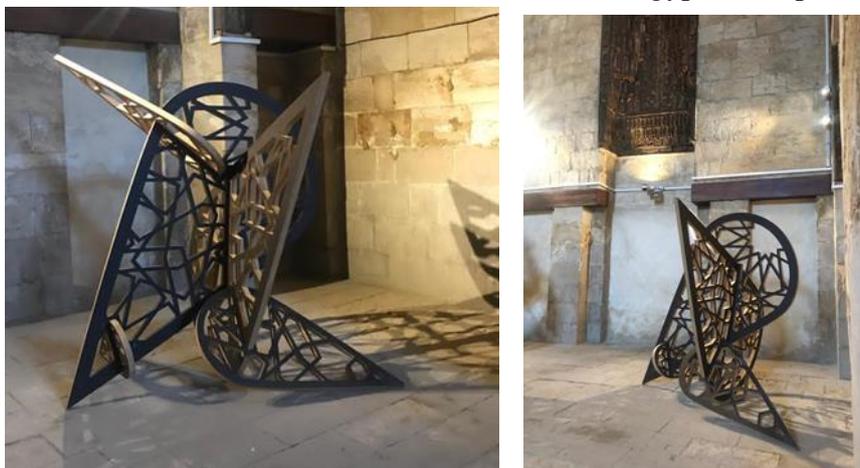


Figure (11) - interactive kinetic statues by artist Sherine Gerges, called qasr alshuwq and alsakaria. Plywood, aluminum, and lead, 2010, Cairo, Egypt

It was made in the form of traditional Arab jewelery from materials similar to harem mashrabiya. These decorative units and their vibrating movements refer to the woman's body while she is walking on a public street. However, the statues move when one of the spectators interacts with them. Referring to the role that everyone plays by contributing to the establishment of sexual values.

Proposal for a sustainable functional artwork:

The Enlightened Crescent Flow

At the beginning the motif to design the artwork was purely aesthetic and sustainable, after choosing the place, which is a square located in one of the ancient Egyptian neighborhoods, the Ataba Square near Al-Azhar Street with its rich Islamic monuments.

The idea then developed, by the inspiration of the Islamic Concepts and Heritage spread in the region to be an aesthetic design with a double function, which are lightning source and water stand pipe or "Al-Sabilah" in the Arabic term.

Al-Sabilah is one of the most important features of the different Islamic eras, and the Sabilah are architectural facilities that had an important role in the Islamic community, whether from a religious, health, political or economic point of view. And drinking, especially for pedestrians on the streets, who may be exposed to disease as a result of thirst in the heat of the sun. Throughout the ages, the Muslims appreciate water, from which God made every living thing. {And we made from water every living thing, would they not believe} {Al-Anbiya` : 30} a belief which is in line with the goals of sustainable development.

The design of the water stanced pipe “Al-Sabilah” was inspired by Islamic geometric patterns Fig. (12,13,14,15) to present a sustainable functional artwork titeled **The Enlightened Crescent Flow** in the middle of Ataba Square as follows:

- The design consists of several geometric shapes that have been carefully distributed in a virtual space in the form of a crescent. Fig.(16)
- Each of these shapes is extruded by ascending heights, the shortest 80cm. and the the highest 180 cm. while preserving the characteristics of the specified line of the shape. Fig.(16 to 23)
- The surface of some of these extruded geometric shapes with heights till 90cm. is covered with a ceramic layer, showing the aesthetics of Islamic patterns.
- Internal piping is extended to previous mentioned extruded shapes, with potable water and a faucet port on the surface.
- The rest of the extruded shapes made of wrought insulated iron on top of a layer of glass to allow insidelight to pass through.
- Proposed materiel to execut the design is treated wood, isolated iron, and ceramic.
- The design floor is prepared with natural stones and thin streams are made for the flow of any wasted water, to be poured into plant ponds distributed at the edges of the virtual crescent area, which represents the general shape of the design.
- Figure (24), which shows the proposed location for the artwork, shows the presence of an upper bridge and the tall structures surrounding the square, allowing the design to be viewed from a high angle that highlights the aesthetics of the design. Fig.(18)

The possibilities of geometric patterns are not infinite, with the idea of extruding these patterns that allowed the process of creating designs for other artistic works to be sustainable.



Figure (12) Punched and engraved design on metalwork

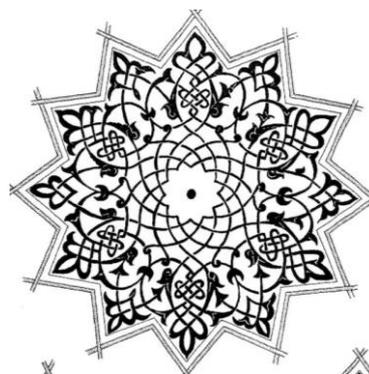


Figure (13) Detail from a Koran, the disciplined structure of the interlace combines with leaves, based on the palmette motif, to produce a versatile ornament with fills the different shapes created by the rigid geometric framework.



Figure (14) Detail from a Koran, the disciplined structure of the interlace combines with leaves, based on the palmette motif, to produce a versatile ornament which fills the different shapes created by the rigid geometric framework.



Figure (15) Detail from a Koran, the disciplined structure of the interlace combines with leaves, based on the palmette motif, to produce a versatile ornament which fills the different shapes created by the rigid geometric framework.



Figure (16)

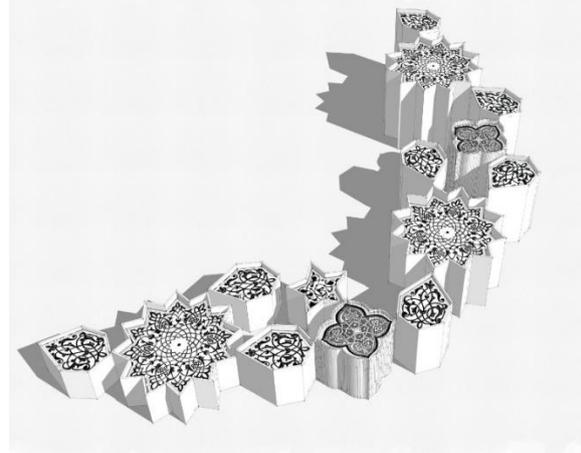


Figure (17)

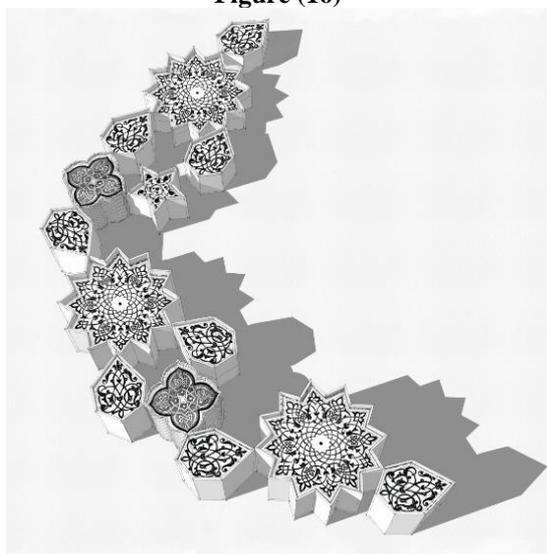


Figure (18)



Figure (19)

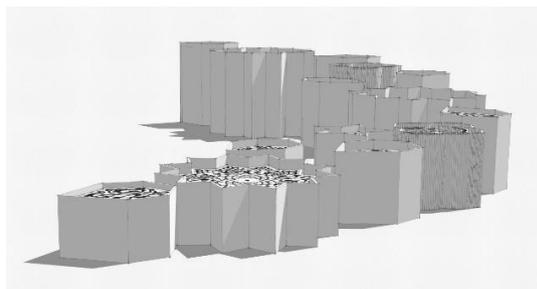


Figure (20)

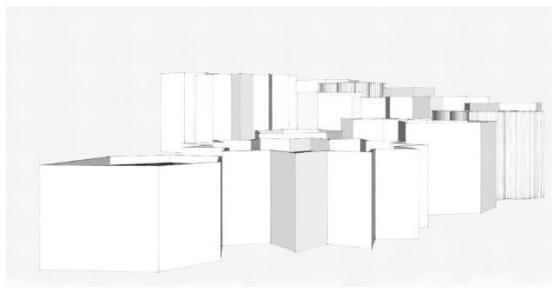


Figure (21)

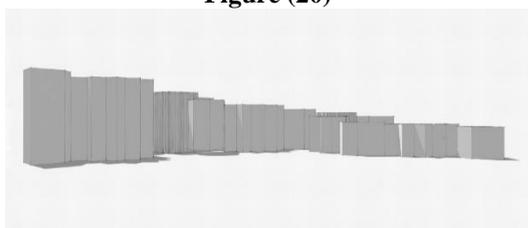


Figure (22)



Figure (23)



Figure (24) Suggested location for The Enlightened Crescent Flow at Ataba Square

conclusion:

- Using Islamic geometric pattern in creating sustainable art work contributes in highlighting the aesthetics of the Islamic art.
- The modern art work is similar in many of its properties, one of which is its capability of expressing certain civilization.
- The sustainable functional art work can play an important role in the cultural and civilization exchange.

Recommendations:

- In line with SDGs and Egypt's Sustainable Development Strategy, Egypt Vision 2030, it is time for Egypt to have a specialized entity concerned with the functioning of sustainability concepts in art, and heritage preservation. An entity whose role is tangible and effective, not just events or exhibitions, but a defined responsible entity for synergizing visions and efforts between the various Artistic bodies and the concerned state authorities, from the Ministries of Planning and Environment, as well as The National Organization for Urban Harmony and the localities.
- The wide possibilities of design solution inspired by the use of Islamic geometric patterns in creating functional artwork to emphasize the role it plays in highlighting our civilization.
- we may consider the role of art in highlighting environmental issues, expressing criticism towards unsustainable factors in society, and offering imaginative ideas for how to achieve sustainability.

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