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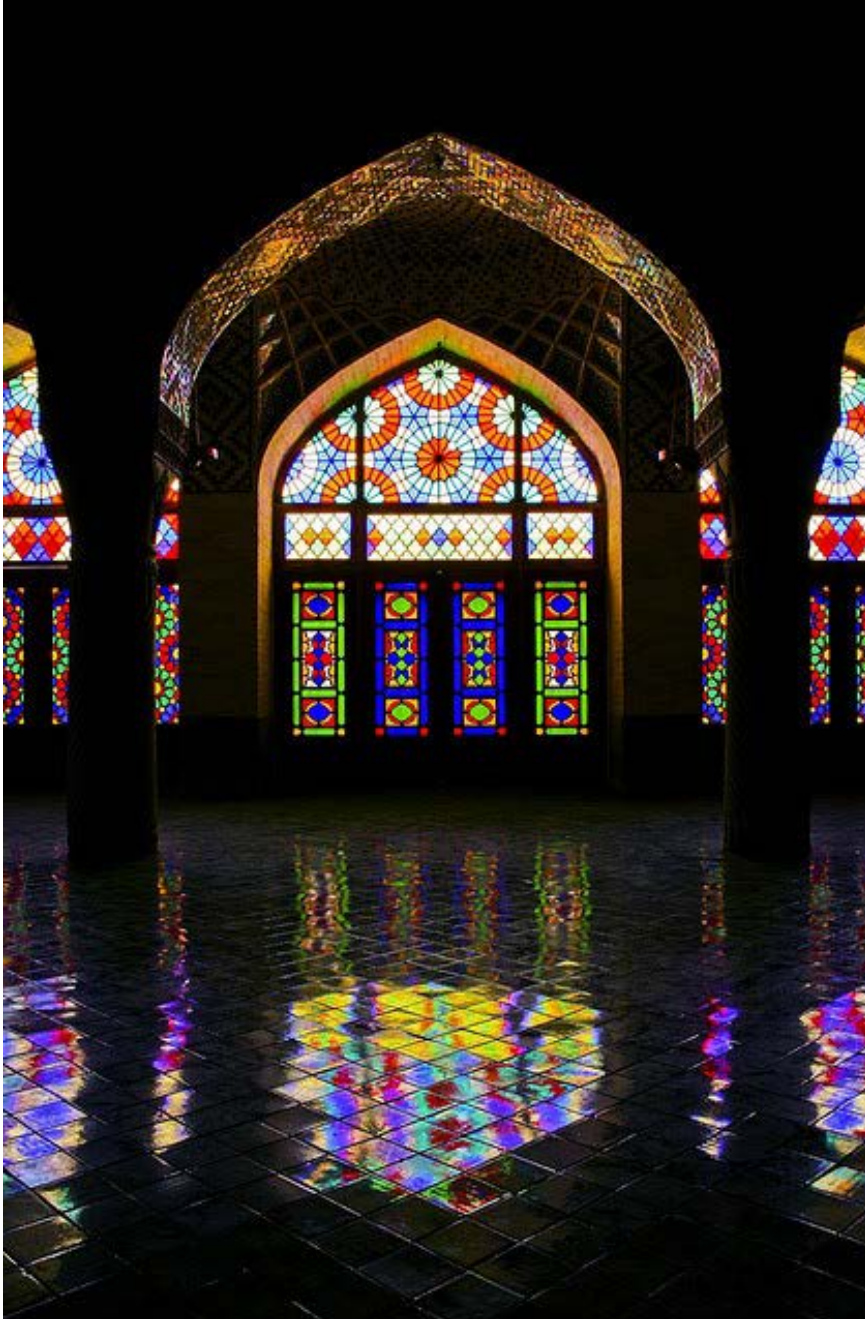
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Iranian architecture or Persian architecture is the architecture of contemporary Iran and the Iranian Cultural Continent. It has a continuous history from at least 5000 BCE to the present, with characteristic examples distributed over a vast area from Turkey and Iraq to Northern India and Tajikistan, and from the Caucasus to Zanzibar. Persian buildings vary from peasant huts to tea houses and garden, pavilions to "some of the most majestic structures the world has ever seen".[1]

Iranian architecture generally displays great variety, both structural and aesthetic, developing gradually and coherently out of earlier traditions and experience. Without sudden innovations, and despite the repeated trauma of invasions and cultural shocks, it has achieved "an



The Taq Kasra, meaning Iwan of Khosrau, is a Sassanid-era Persian monument in Al-Mada'in which is the only visible remaining structure of the ancient city of Ctesiphon. It is the largest brick built arch in the world and located near the modern town of Salman Pak, Iraq. Construction began DURING the reign of Khosrau I in 540 AD. The arched iwan hall, open on the facade side, was about 37 meters high 26 meters across and 50 meters long.

individuality distinct from that of other Muslim countries".[2] Its paramount virtues are several: "a marked feeling for form and scale; structural inventiveness, especially in vault and dome construction; a genius for decoration with a freedom and success not rivaled in any other architecture".[3]

Traditionally, the guiding formative *motif* of Iranian architecture has been its cosmic symbolism "by which is brought into communication and participation with the powers of heaven".[4] This theme has not only given UNITY and CONTINUITY to the architecture of Persia, but has been a primary source of its EMOTIONAL character as well.

According to Persian historian and archaeologist Arthur Pope, the SUPREME IRANIAN ART, in the proper meaning of the word, has always been its ARCHITECTURE. The supremacy of architecture applies to both pre-and post-Islamic periods.

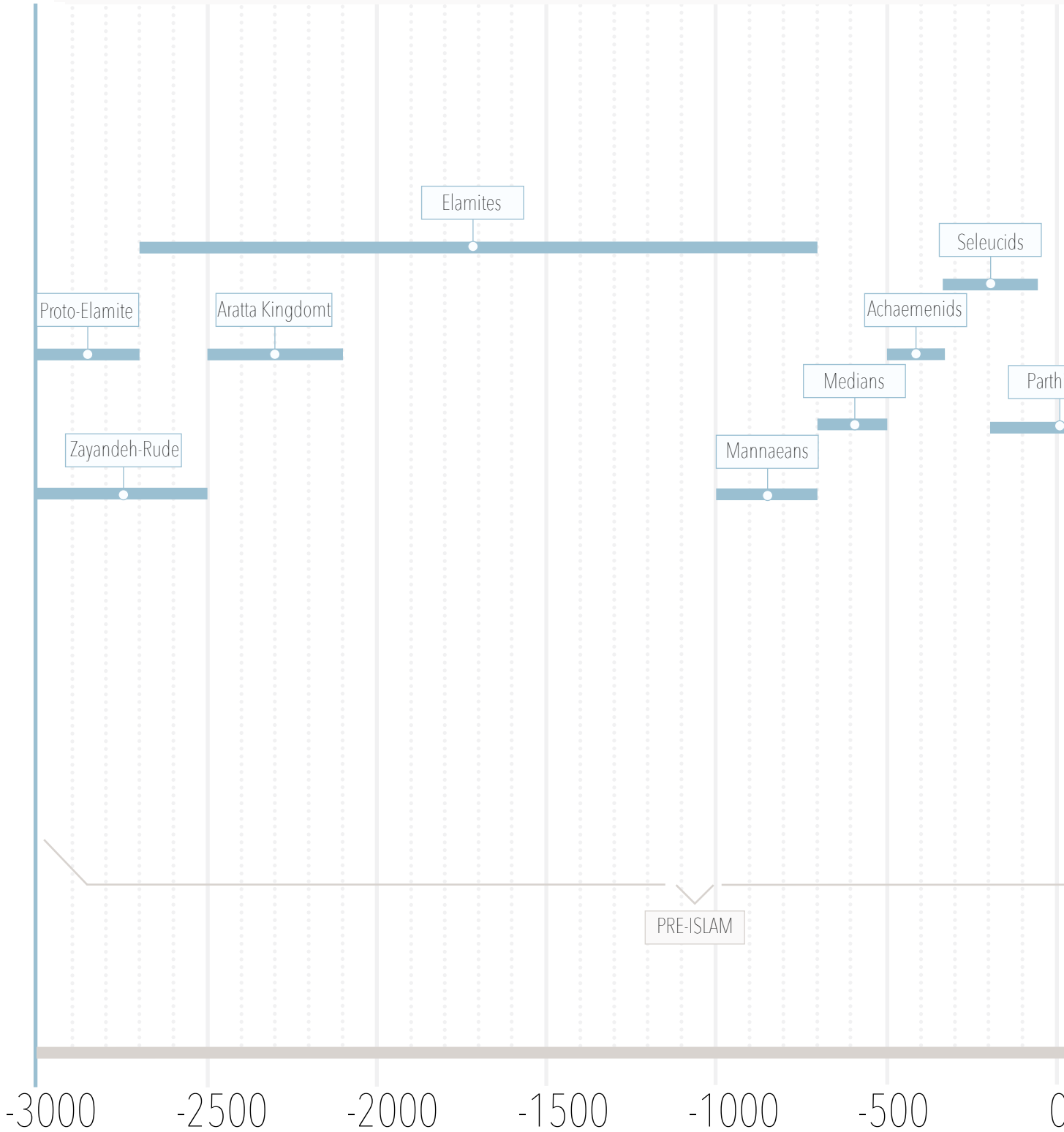
The history of Iranian architecture has traditionally been approached as an archaeological subject, examining

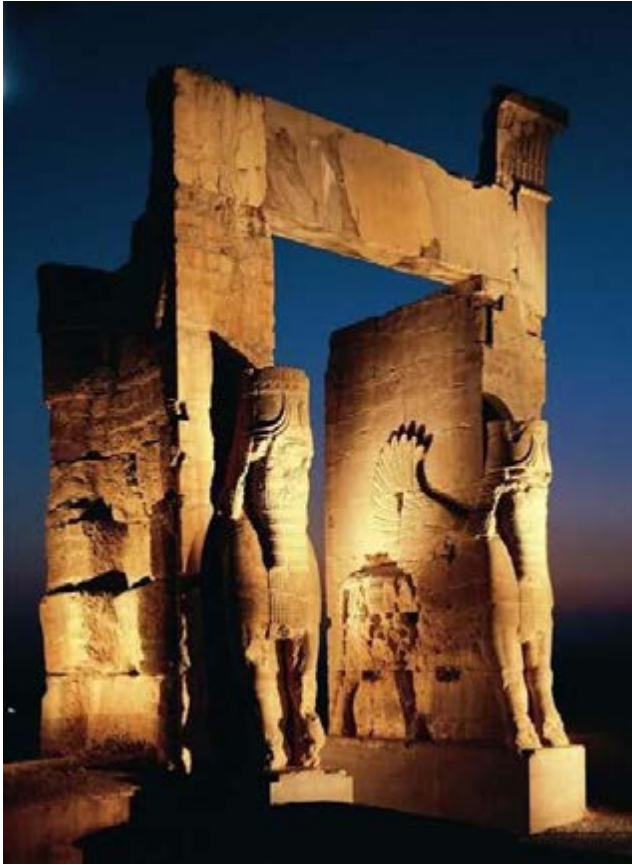
architectural characteristics associated with particular dynasties, regional historical trends or cultural watersheds such as the pre- and post-Islamic periods.1

The long- path architecture of Iran can be organized into four distinct periods:

- \_ Ancient period 728 Bc to 650 Ad
  - \_ The Middle ages from 650 to 1487
  - \_ Renaissance from 1487 to 1875
  - \_ Modern era from 1875 to today
- alongside with the COHERENT AND CONTINUOUS ARCHITECTURAL CHARACTERISTICS which have been evolved through the path of history there are other particular characteristics which are associated with different dynasties.

dynasties of Iran





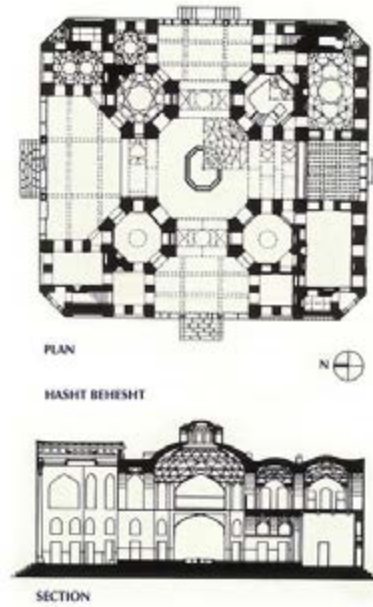
The Gate of the Nations, Persepolis, Shiraz, Far Province, Achaemenid period (550–330 bc) Persepolis is a transliteration of the Greek name, perses-polis, for 'Persian City'. Persepolis was the ceremonial capital of the Achaemenid Empire and is located 113 kilometres (70 miles) northeast of Shiraz in the Fars province of contemporary Iran. The present Persian name of Persepolis is Takht-e Jamshid, which refers to the extensive platform (Takht) of the Persepolis site. UNESCO declared Persepolis a World Heritage site in 1979.

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### The Ancient and Medieval Periods

The *classical architecture* of Persia began during the Ancient period with the *ACHAEMENID* (550–330 BC) dynasty and continued until the *SASSANID* dynasty (224–651). Its maturation set the stage for the emergence and development of *Iranian Middle Ages architecture*, which began with the appearance of *Islam* in Iran. Throughout its development, *Persian classical architecture maintained a gradually evolving continuity that eventually formed one of the most important schools of Islamic art and architecture – the school of Iranian Islamic art and architecture*.<sup>3</sup> It was a period of resurgence and glamour, resulting in masterpieces of figurative art and sculptural architecture. The morphology and *the SUBJECTS of Middle Ages architecture are chiefly related to religious belief and DIVINE GRACE*.





Hasht Behesht Persian: meaning "Eight Paradises" is a Safavid era palace in Isfahan. It was built in 1669 and is today protected by Iran's Cultural Heritage Organization. Of more than forty mansions which existed in Isfahan during the rule of Safavids, this is the only one left today.

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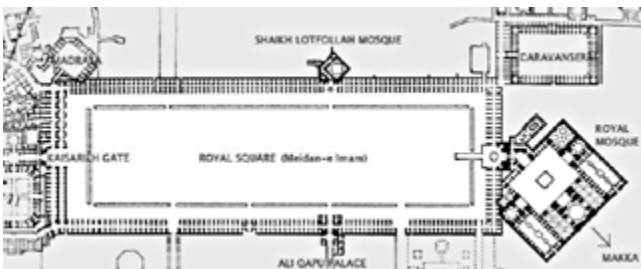
### The architecture of renaissance(1501-1736)

presented a new appearance that improved on the ancient classical subject matter, with values that made it in many ways true Renaissance architecture. Although the themes taken up during this period were a continuation of the themes and trends of the Ancient period, *SAFAVID architecture fundamentally changed the relationship between functionality and artistic design. Use of pure form and dramatic structures that dominated the urban landscape communicated transcendent design born from imagination and free of structural constraints.*



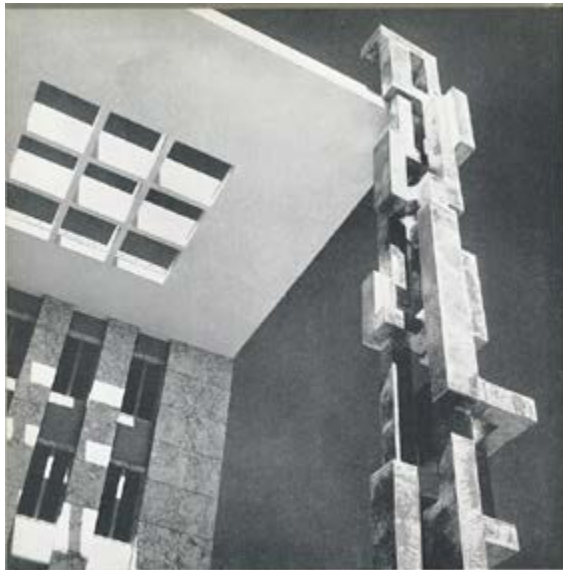
Naqsh-e Jahan Square, Isfahan, Safavid, period (1501–1736) View of the square from the roof of the Imam (Shah) Mosque. The spatial organisation of the square is based on a cross axis. The short axis connects Ali Qapu Palace to the Sheikh Lotf-o Allah Mosque, and previously belonged to the royal family. The longitudinal axis between the Bazar and the Imam Mosque belonged to the public. Naqsh-e Jahan Square is the centre of historical Safavid Isfahan. Its morphology uses the 'Four Porches' (chahar eyvane) central courtyard archetype in a new way on an urban scale.

ISFAHAN, the relocated and rebuilt capital of the Safavid dynasty, with a population of more than half a million citizens,<sup>4</sup> contains some of the most remarkable examples of Renaissance urban architecture and spaces, including the grandiose Naqsh-e Jahan Square, the largest historic square in the world and the sixth largest overall. The qualitative value of Safavid architecture can be seen in the integration of theory (philosophy) and technique (mathematics) practised in its purest form by master Sheikh Bahai (1547–1621), philosopher, mathematician and architect. The architectural themes taken up in this period constitute a sophisticated elaboration of the Ancient period, mostly concerned with the mundane, human endeavour and various aspects of life. The later development of this school of architecture is the Qajar period (1795–1925).



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## The Modern and Contemporary Periods



The Modern period in Iran was founded upon the development of Modernism and its profound influences. The process of Iran's modernisation during the *Pahlavi period* (1925–79) resulted in rapid urbanisation and cultural-economic changes ushered in by the appearance of new urban social classes. This has generated a false discourse of 'tradition versus modernity' that has become a challenge for Iranian contemporary art and architecture.

*Contemporary Iranian architecture began in 1878 with the construction of the National Parliament building designed by Mehdi Khan Shagagi.* The structure helped introduce *Neoclassicism*, which became a new revival style towards the end of the Qajar period. During this period and after, different Western revival styles continued to dominate Iranian architecture for more than a century.

Under Reza Shah's reign (1925–41), foreign and European-trained Iranian architects introduced early modern architecture to Iran. Among these, *Gabriel Guevrekian was an internationally recognised master of the modern architectural movement and one of the companions of Le Corbusier in the Congrès Internationaux d'Architecture Moderne (CIAM).*<sup>6</sup> Guevrekian practised in Iran for a few years, designing a number of villas and public buildings. Although his presence may have provided an opportunity for Iranians to establish an intelligent and mature modern architecture, as for example Lucio Costa, Oscar Niemeyer and others did in Brazil, the dominance of revivalists prevented this from materialising.



Monument to Persian philosopher, poet, astronomer Omar Khayyam (1048-1131) is beautiful example of Islamic art, completed 1963 in Nishapur, Iran



*The architecture of Mohammad Reza Shah's reign (1941-79) can be classified into three categories:*

*first, early works focused on national symbols and monumental tombs of elites, including the Mausoleum of Omar Khayyam (completed 1963), designed by Hoshang Seyhoun, represented the continuation of the Middle Ages architecture with modern improvements;*

*second, the international style, which began in the early 1960s, focused on urban architecture, mainly located in the capital and a few other big cities; although its building technology became trend-setting and is still in vogue, designs followed Western architecture without concern for regional design;*



Hossein Amanat, Azadi Monument, Tehran, 1971 Previously known as the Shahyad Tower but today renamed the Azadi Monument, Amanat's creation is the symbol of Tehran and the gateway to Iran's modern capital city. Located in the Azadi Square, today it functions as an urban space for national and political events and demonstrations.



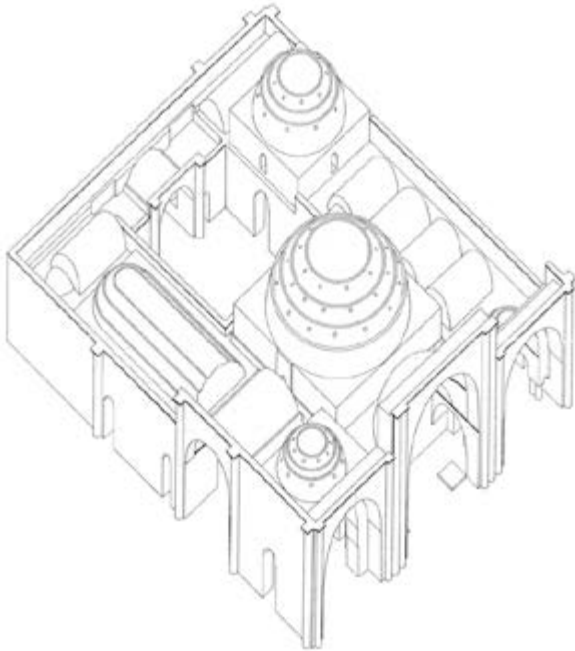
Kamran Diba, Tehran Museum of Contemporary Art, Tehran, 1977 The museum is one of the masterpieces of 1970s Iranian architecture and constituted progress in developing a distinguished Iranian regional architecture.

and third, *Iranian regional architecture* began to take shape towards the end of Mohammad Reza Shah's reign, at which time a few thoughtful projects were created, including the *Tehran Museum of Contemporary Art* (1977), designed by Kamran Diba, *the Azadi Monument* (Tehran, 1971), designed by Hossein Amanat, and Nader Ardalan's Iranian Center for Management Studies (Tehran, 1975). Although these projects constituted progress in developing an Iranian regional architecture, this process was cut short and failed to develop.

In the early 1980s, the Postmodern architecture movement coincided with the Islamic revolution of Iran and its motto of *'return to the root'* that was prevalent in Iranian architecture for more than a decade. Although the social-political situation created a unique opportunity for Iranian architecture to present a *new 'world of similitude'* to the global architectural arena.

Throughout history, interactions between space and form have been used to transform architecture in a particular era. This transformation is itself made possible with theory and technique – the tools that serve to create form and space in order to obtain an architectural language. To date, modern Iranian architecture has failed to genuinely establish and use its own theory and technique. Although it has created an impressive body of work, it has not developed the conditions that could lead to a dynamic architectural movement. Different national

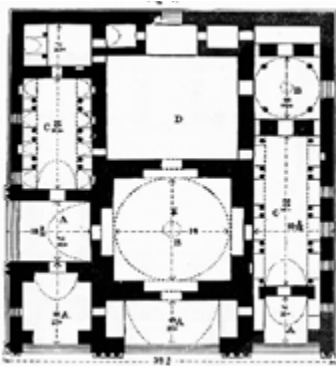
and international values have posed a difficulty for evaluating genuine properties of Iranian modern architecture. Indeed, having embraced Western modern architecture, modern Iranian architecture seems to have lost the *'world of similitude'* that characterised Iranian architecture for thousands of years.



## Features of Iranian Architecture

**Spirituality | Sacred Places From Fire Temples to Mosques | the centripetal archetype | Dome Element**

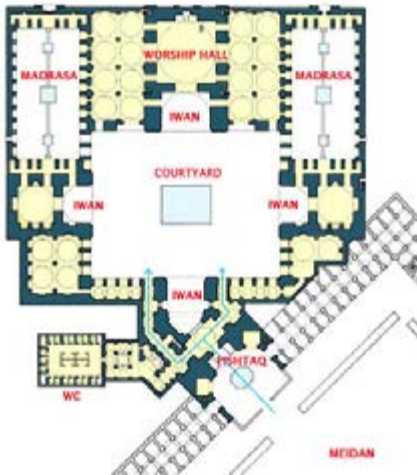
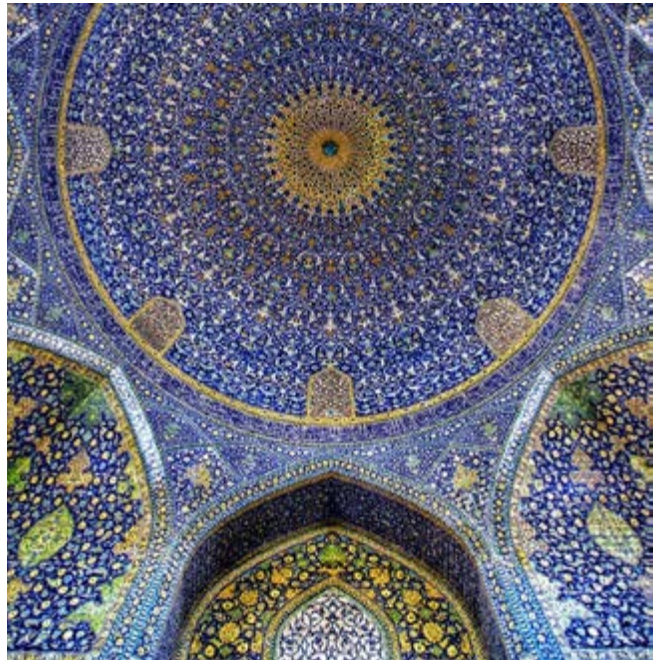
*The evolutionary architecture of these continuous eras spans a 2,600-year period during which spatial organisation and essential design concepts were sustained and gradually transfigured in various building types. For example, the geometrical shape of the 'Four Arches' (CHAHR TAGH), consisting of a dome sitting on a square of four arches, was commonly used throughout the Sassanid period (224–651) in Zoroastrian fire temples, in the centre of which the symbolic fire burned and represented the first spiritual images of a sacred centre. It was subsequently used during the Middle Ages in the centre of 'Four Porches' (chahar eyvane) central courtyard architecture. There, man-made ponds covered the sacred centre with water as a symbol of the sky's mirror. In short, through time, this centre became a symbolic sacred place which man was not permitted to enter.*



Ground Plan of The Sarvestan Palace.  
A A Porches ; B B Domed Halls ; C C Pillared Halls D Court



The Sassanid Palace at Sarvestan, is a Sassanid-era building in the Iranian province of Sarvestan, some 90 km southeast from the city of Shiraz. The palace was built in the 5th century AD, and was either a gubernatorial residence or a Zoroastrian fire temple.



The "Shah Mosque" also known as "Emam Mosque" [named after the 1979 Islamic revolution in Iran] and "Jaame' Abbasi Mosque", is a mosque in Isfahan, Iran, standing in south side of Naghsh-e Jahan Square. Built during the Safavid period, ordered by the first Shah Abbas of Persia.



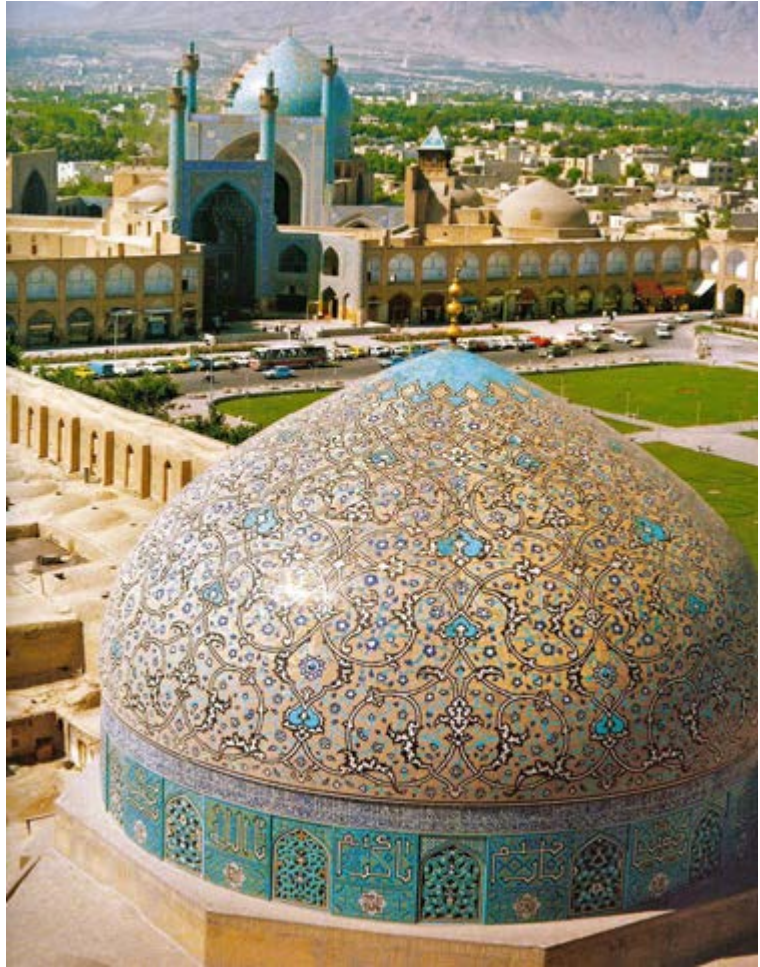
## Dome Element

The Sassanid Empire initiated the construction of the first large-scale domes in Persia Iran, with such royal buildings as the Palace of Ardashir. After the Muslim conquest of the Sassanid Empire, the Persian architectural style became a major influence on Muslim societies and the dome also became a feature of Muslim architecture.

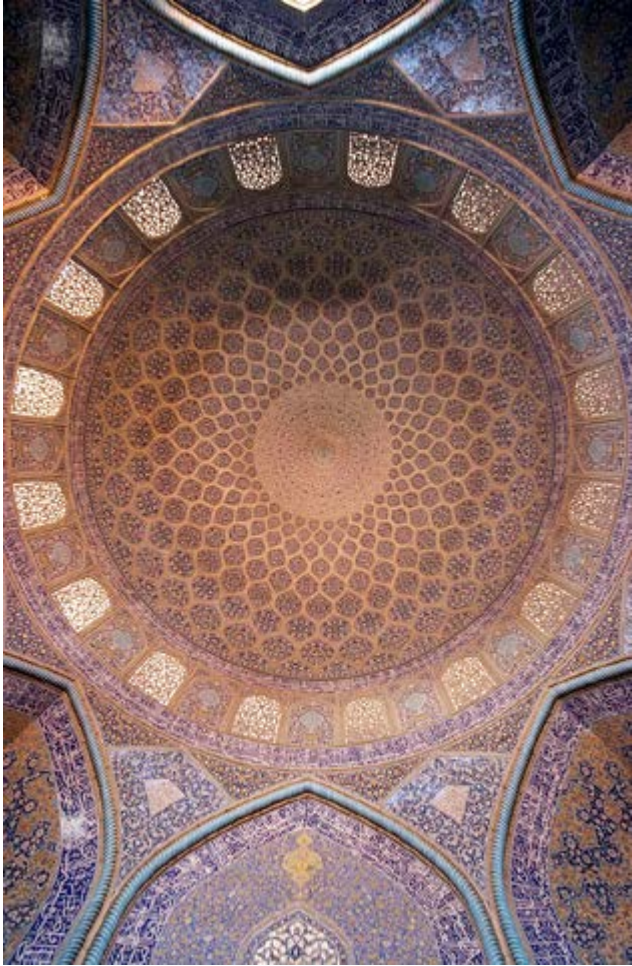
The Il-Khanate period provided several innovations to dome-building that eventually enabled the Persians to construct much taller structures. These changes later paved the way for Safavid architecture. The Il-Khanate architecture was reached with the construction of the Soltaniyeh Dome (1302-1312) in Zanjan, Iran, which measures 50 m in height and 25 m in diameter, making it the 3rd largest and the tallest masonry dome ever erected. The thin, double-shelled dome was reinforced by arches between the layers.

The renaissance in Persian mosque and dome building came during the Safavid dynasty. Architecturally they borrowed heavily from Il-Khanate designs, but artistically they elevated the designs to a new level. The distinct feature of Persian domes, which separates them from those domes created in the Christian world or the Ottoman and Mughal empires, was the use of colourful tiles, with which the exterior of domes are covered much like the interior. These domes soon numbered dozens in Isfahan and the distinct blue shape would dominate the skyline of the city. Reflecting the light of the sun, these domes appeared like glittering turquoise gems and could be seen from miles away by travelers following the Silk road through Persia.

Reaching 53 meters in height, the dome of Masjed-e Shah (Shah Mosque) would become the tallest in the city when it was finished in 1629. It was built as a double-shelled dome, spanning 14 m between the two layers and resting on an octagonal dome chamber.







Under the Dome of the Mosque | Sheikh Lutf Allah Mosque, Esfahan, Iran



Sheikh Lutfollah Mosque (Persian: Masjed-e Sheikh Lutf-ollāh) is one of the architectural masterpieces of Safavid Iranian architecture, standing on the eastern side of Naghsh-i Jahan Square, Isfahan, Iran



Iran, Yazd. The 17th Century Masjed-e-Jameh (a mosque) dominates Yazd's old quarter.



The dome of the Grand Mosque of Yazd province

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## Interaction of light and Color

Light and color are the elements that have been playing an important role in traditional architecture of Iran. Application of shadow and light with each other has been from the works that gives the mystical sense to the space, especially in religious

spaces such as mosques. In view of light, as a major space component, the overall composition, with adjacent servant spaces, find a particular form of organization, which is centralized and where hierarchies define the general pattern. The

order of structure, in which light comes as a containing discovering geometry, commands subsidiary openings, which imposes a disciplined regularity of spaces whilst offering greater complex layers of perception. In Iranian architecture, the study of light and color, in accordance with volumes and structure, has always been considered as an essential part of the different stages of the building and its realization. Giving the sensation of unity, this remains at the center of some conceived worlds *spirituality*. Unfortunately false imitations from western architecture have given beautiful features but senseless spaces to the contemporary architecture of Iran. The proper teaching and tutoring the Islamic architecture with its principles, especially with suitable light and color applied, not only can describe a suitable feature of architecture, but also defines it in a word that revives the identity of Iranian architecture.

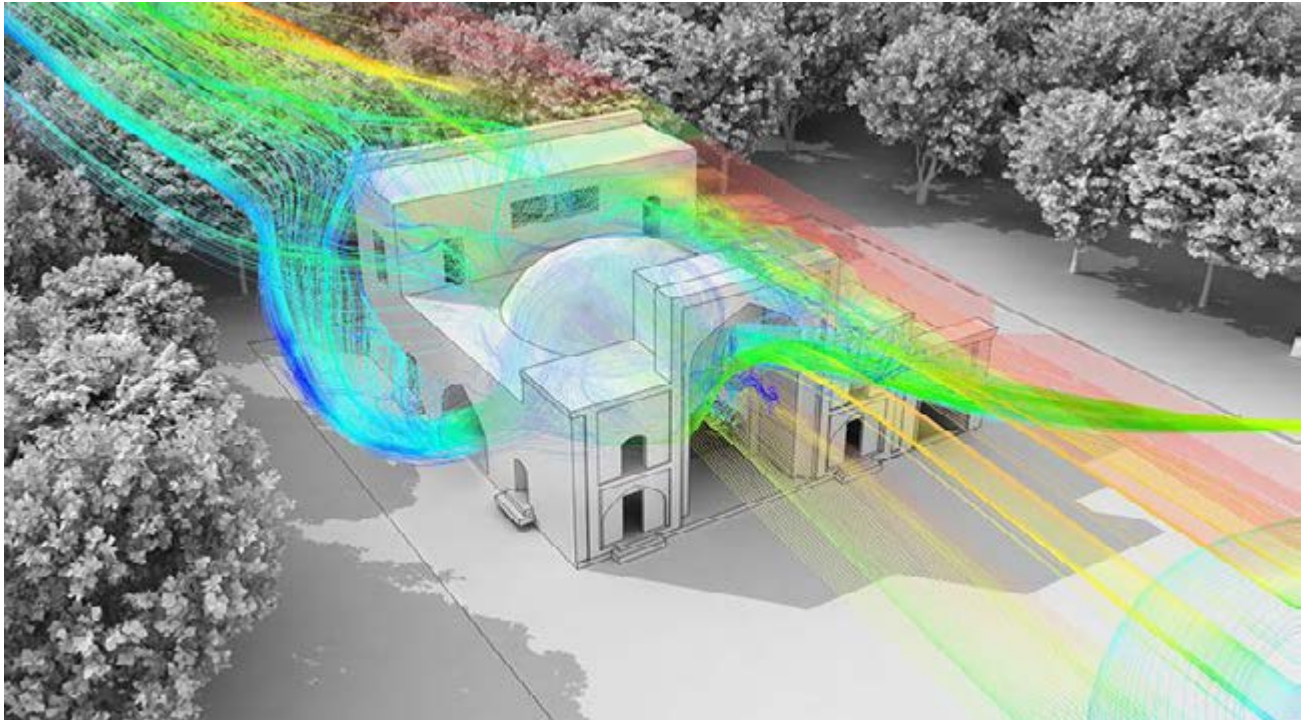


Nasir-ol-Molk Mosque in Shiraz, Iran.



The "four-season" Borujerdi House is a historic house in Kashan, Iran. The house was built in 1857 by architect Ustad Ali Maryam





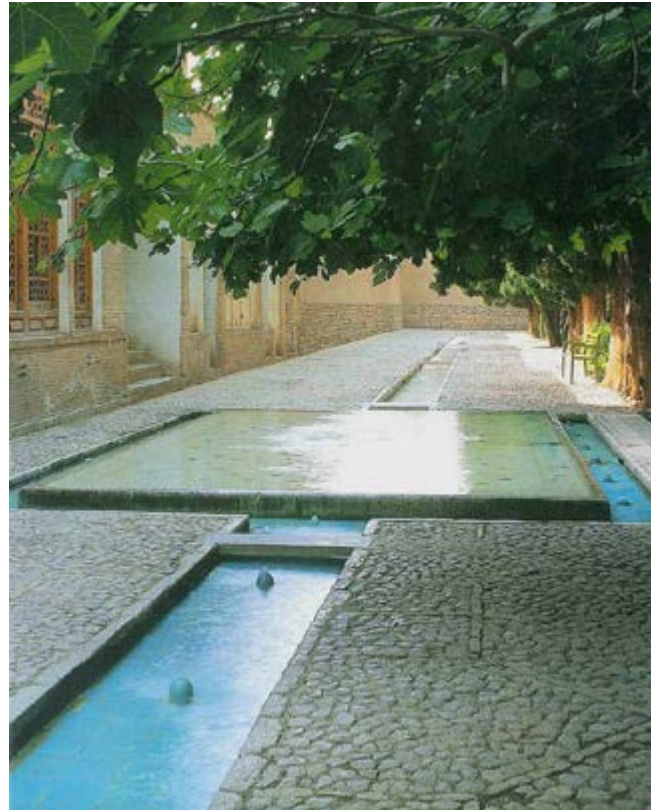
vernacular architecture being specifically designed to act in accordance to climatic conditions as well as provide other necessary functions. The design of the subterranean water cistern in the Ahmad Jam Water Reservoir not only provides a water collection system, but also acts as a climatic regulator.

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### **Sustainability | Vernacular Architecture | Palaces and Four-season Houses**

Through the ages, the *centripetal archetype* was applied to other prototypes, such as *Persian gardens (chahar bagh)*, *pavilions* and *'four-season' houses* (an ecological prototype house with components oriented based on seasonal direction and heat radiation of the sun) as well as in arts and crafts, such as in carpet designs. In each use it created an exceptional spatial organisation and coordination system that defined shapes in space, with two more dimensions oriented below (life after death) and above (symbol of entity) the centre.

The architecture of these classical periods is rooted in a theory



pictures of Fin Garden- located in Kashan, Iran, is a historical Persian garden. It contains Kashan's Fin Bath, Completed in 1590, the Fin Garden is the oldest extant garden in Iran.

## Purity and Serenity | Palaces and Persian Gardens

distinguished by its belief in the existence of an independent *imaginary world that intervenes between the rational and the sensory world*. On one hand, this 'in between' realm takes sensory forms out of the material world, gives them an abstract and virtual determination, and 'de-materialises' them. On the other hand it gives shape, dimension and direction to the intellect and, at this level, *unifies the spirit and th body*.

*Delicate and transparent bodies such as water, mirrors and the sky are symbols of this imaginary world.*<sup>5</sup>

This is a hermeneutic, abstract, virtual and mystical description of the imaginary world and a valuable realm of creativity, rooted in the original meaning of what ancient Persians called the 'world of similitude' (alam-e-mesal), which permeated Iranian architecture through the ages.









Shazdeh Garden (Bagh-e Shazdeh), Mehan, Kerman Province, Qajar period (1795–1925), The summer pavilion viewed from the garden (1850–60). With two storeys, the pavilion is located at the main entrance south of the garden. This is a characteristic example of a Persian garden.





The Si-o-Se Pol Bridge, translated as the bridge of 33 arches, is one of the most famous bridges in the world, renowned for its beauty and for the remarkable architecture. Located in the city of Isfahan



Amir Chakhmaq Complex and square

The prominent structure has a three-storey elaborate façade of symmetrical sunken arched alcoves. It is the largest structure in Iran. In the centre are two very tall minarets. The spiral staircase in one of the two minarets is said to create a feeling of claustrophobia, while it provides views of Yazd. At night, the building is lit up with orange lighting in the alcoves which makes it a spectacle.

## Geometry

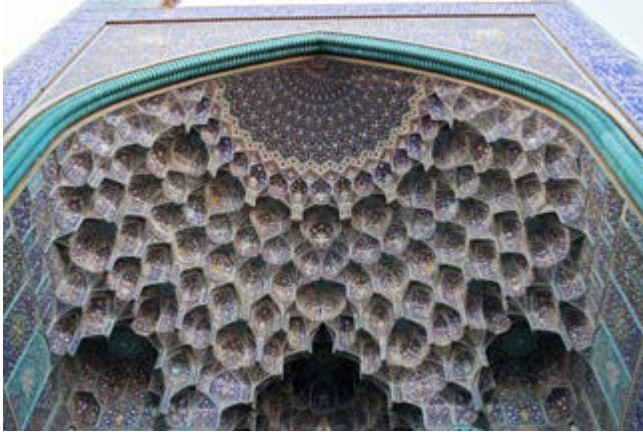
### Scale (Human Scale), Peymaneh(Module) | More than Scenographic Episodes or Sentimental Historicism

According to Keneth Frampton the need for architecture that is understood as a "*tectonic fact*" rather than simply a series of scenographic episodes. He argues that the tectonic "is more than the simple revelation of for the expression of skeletal framework". He recalls Stanford Anderson's definition of the tectonic which "referred not just to the activity of making the materially requisite construction...but rather to the activity that rises this construction to an art form".

*Frampton views the tectonic as "the presentation of a structural poetic"*. He criticises the scenographic episodes which is "the re-presentation of a façade"(Frampton, 2002). In his sixth point, Frampton argues *the use of sentimental imitations of local vernacular and seeking instead reinterprets those forms and blends them with outside influences*. His position does not simply speaks for a nostalgic historicism but rather architecture that is treated as a whole.

These two points are the aspects of critical regionalism concerned with forms and aesthetics. Because the avoidance of sentimental simulation and the avoidance of creating scenographic episodes are poorly associated with the architecture as a whole are closely related.

Misuse of forms comes from trying to apply them only because



The complex geometry and tilings of the Lotf Allah mosque, Isfahan



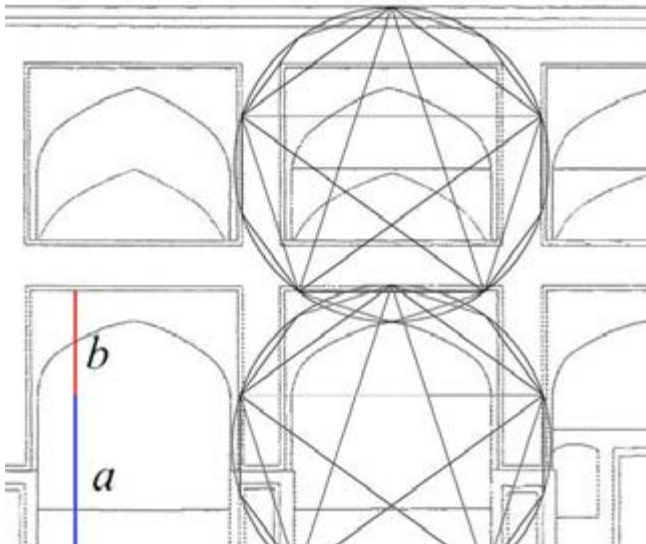
is one of the architectural masterpieces of Safavid Iranian architecture, standing on the eastern side of Naghsh-e Jahan Square, Isfahan, Iran.

of the form, not because of other reasons.

The other type of misusing comes when forms are the product of imitation rather than derived from all the relevant important concerns, concerns like structure, function, as well as tradition or other social or cultural issues. Regarding these aspects, Persian architecture does not copy vernacular forms only for their appearance and one of its specifications is use of *geometry* in design process to avoid imitations. *Based on geometrical aspects, use of proportions and measurements helped architect to develop a modular design style. The precise understanding of geometry and its relevant terms enabled Persian architecture to present more various, durable and stable forms. This specification could help architects to provide multiple spaces and forms with changing building's basic unit (which is called Peymoon in Persian) in modular design which is called one Gaz where needed in accordance with inhabitants' needs.*

Also it supports them in structure regarding forces dealt in a building construction. The precise understanding of geometry and its relevant terms enabled Persian architecture to present more durable and stable forms without any similarity to previous ones. Avoiding un-necessities (Parhiz Az Bihoudegy) is another pattern of Iranian traditional architecture that attempts to address all practical efforts made to achieve the tectonic fact. This pattern of Iranian traditional architecture is strong advocate for the simplicity in construction progress and presents the avoidance of sentimental simulation as opposed to imitation of previous works without any changing (Pirnia, 2009).

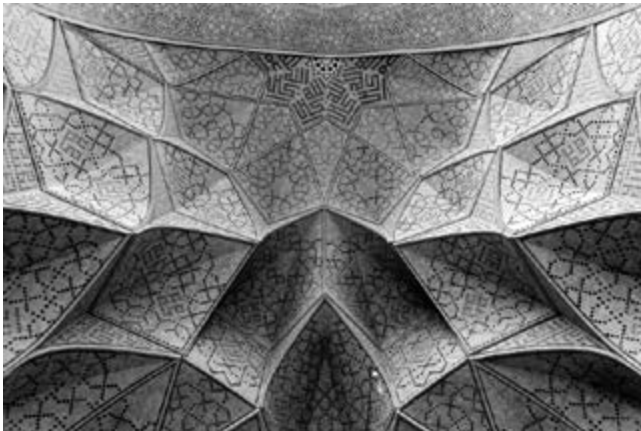
There are many other examples in Iranian architecture to demonstrate the proficiency of using construction methods without any imitation of past forms. These methods in Persian architecture notice the tectonics, as discussed by Frampton and also help to consider the poetic side of structures as well as the materiality aspects and aesthetics of construction. All parts and details are conceived to make a whole which works together for one reason, improving the building's performance.



Golden ratio of facades and vaulted porticos, Jami Mosque in Isfahan, Iran

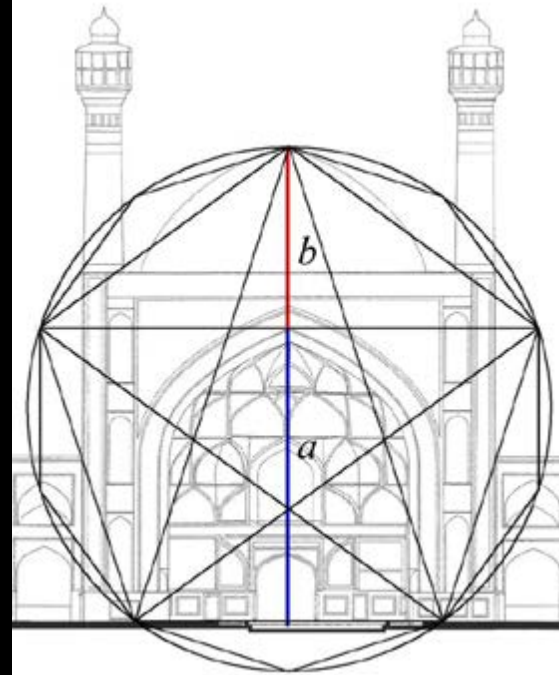


Pictures of Jami Mosque in Isfahan, Iran



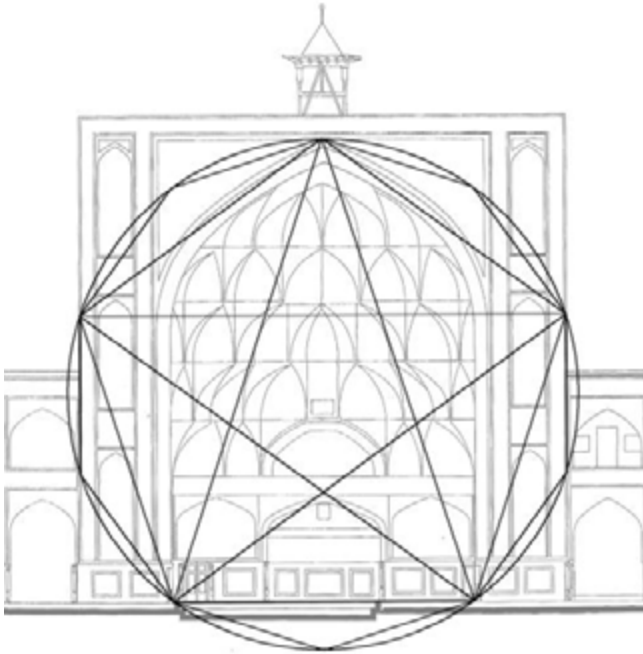
### The Application of Golden Proportion in the Façades & Ornaments of Quadruple Vaulted Porticos of Jami Mosque in Isfahan, Iran

Golden proportions have many different aspects and functions in science and different courses, mainly the courses related to building and architecture have vastly benefitted from this ratio. This ratio has had different names including the sacred geometry, modular, Persian Peymoon, etc. in different times.



Golden ratio of Southern porch

Proportions in Iranian Architecture  
Throughout Islamic period, using ratios in art and architecture of monuments, especially the monuments constructed for religious functions meant combination of science and art with natural, heavenly and divine origin. By means of combining this art to heavenly origin another world is created to

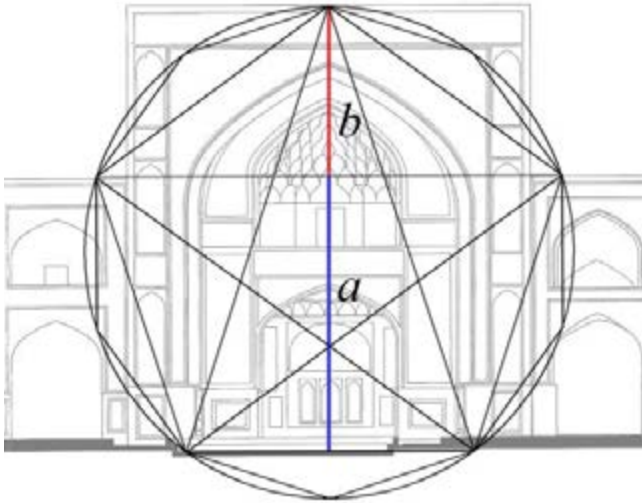


Golden ratio of Western porch

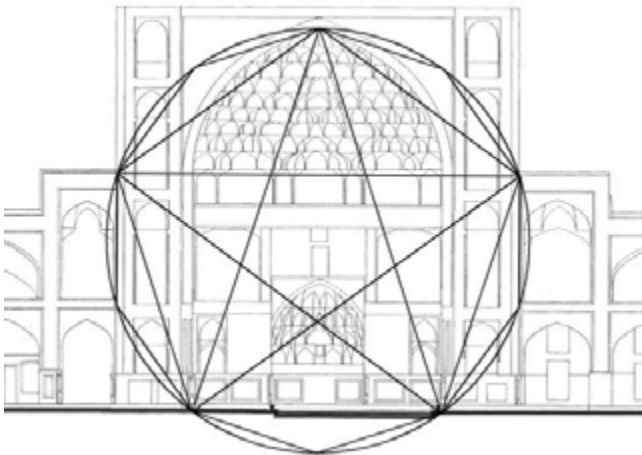


the artist: a world full of secrets and mystery; in harmony and under the rule of a creator. This heavenly connection introduce most of the subjects as the goal of semantic art; which in case of architecture its materialistic base is the architect's technique and the science which deals with it is geometry (Memarian, 2008). In addition, in Islamic period, it is believed that order and ratio are the natural and universal laws and human being has to understand their process by calculation, geometry and harmony.

Traditional architecture can be considered as an element of expanding the basic principal of deforming a circle into a square using triangle. Square is the most embodied shape of creation in earthly level resembling quantity, while circle in heavenly level resembles quality and these two merge



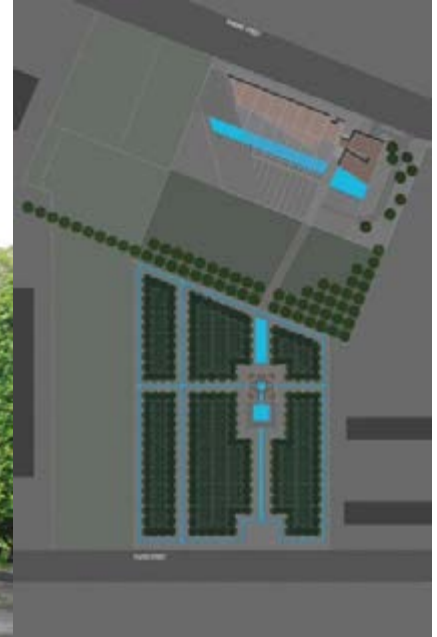
Golden ratio of Northern porch



Golden ratio of Eastern porch

into one via triangle which guarantees both aspects. Mojabi's 2008 study advocates: The shape and form of traditional buildings of Iran follow geometries of both physics and mathematics and in fact it is a combination and modulation of two kinds of spatial understanding. The balance and static of the shapes in this architecture is derived from these two bases. Form, in this architecture, is the result of materialistic and physical structures (p. 56).

Iranian architecture always paid most attention to positive aspects of architecture, human scale, ratios, etc. and "calculations and geometry were so important that only first-class architects were called scientists and engineers" (Pirnia, 2006, 46). Mardomvari or People-like in this concept means considering the analogy between buildings' body and human body and considering his needs in building construction. One of the instruments used and considered to make a monument "people-like", in Iranian architecture, is called Peymoon. Peymoon is a basic size which sizes of all sections, building body and every space is calculated based on that and it does not only affect the place of columns, width and length of rooms and corridors but also clarifies the façade shape, door and windows and their ratio and above all it is well utilized in covering doorways, porches, vaults and dome houses (Pirnia, 2009). In Iranian architecture, Peymoon had small and identical sizes which had to be used in suitable places. Utilizing Peymoon, removed any anxiety from the architect about ugliness and unstableness of the monument.



The main building facade from the VIP entrance. The water line, mirrors and glazed surfaces evoke traditional elements of Iranian architecture, yet are placeless in terms of their application, arrangement and execution.

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## Assimilating the authentic with the contemporary | Hadi Mirmiran (1945-2006)

*Hadi Mirmiran* formulated a third way for Iranian architecture. During the 1980s he created an influential shift in thinking and practice by developing an alternative approach, which neither directly imitated Western Modernism nor copied traditional building forms. As Saman Sayar explains, Mirmiran developed a uniquely Iranian treatment that owed as much to the *Geometrical Purity and Simplicity* of the 17th-century Bridge of 33 Arches in Isfahan as to Mies van der Rohe. Hadi Mirmiran was one of a new generation of Iranian archi-

itects who came to prominence at the end of the 1980s, after the eight years of stagnation caused by the Iran-Iraq war. Influenced by international architectural movements, he criticised Iran's modern architectural approaches, rejecting international Modernism as placeless and traditional Iranian architecture as outdated.

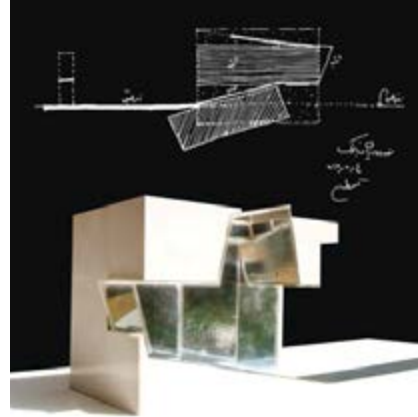
Instead he sought to reconcile the two, linking contemporary design with Iran's rich heritage.

To Mirmiran, the lessons of history and the slow evolution of form through time were being misunderstood and un-utilised.





Hadi Mirmiran, Embassy of Iran in Bangkok, Bangkok, 2006 below: View of the garden from the central hall. The combination of water surrounded by trees is derived from traditional Iranian architecture.



Sketch of the longitudinal section and preliminary model illustrating the continuing line of water through the Embassy building.

And whenever they were indeed utilised, it was done in a superficial manner. The contemporary modern movement has 'de-territorialised'<sup>2</sup> architecture with a self-imposed ignorance of historic achievement, and with that there has been a new *desire to create architecture with reference to its time and place*. Mirmiran saw himself as concurrently part of a movement and part of a lineage of architectural achievement. *The goal was not to reinvent architecture, but to improve upon the space history has presented us with.*

Mirmiran observed two general tendencies in Iran's contemporary architecture: one that follows international movements and the other one that follows traditional

Iranian architecture. He concluded that these tendencies on their own were unable to create a compelling piece of contemporary architecture. Architects who had been following international movements, because of a lack of direct contact with the context or because of a time delay in transferring the principles, had mostly tried to imitate appearance with no mastery of the underlying concepts or ideas; while architects who followed traditional Iranian architecture mostly disregarded modern lifestyles and did not move beyond superficial imitation.<sup>3</sup> With this in mind, Mirmiran founded NJP with the aim of studying Iranian culture and integrating its concepts within the modern architectural movement.

In the National Academies of the Islamic Republic, *historical Iranian architectural elements such as the Platform, Central Courtyard and Dome are composed gracefully*. Consideration of the *natural environment, an important aspect of traditional Iranian architecture*, is evident in how the building conforms to its landscape, and in assuring views over Mount Damavand. Mirmiran was playful and confident with the *use of these traditional elements, but translates them as a pure and modern aesthetic*.

*Landscaping* is introduced in a very light and contemporary way, as opposed to the more *geometric treatment* of landscaping in historic palaces.



Hadi Mirmiran, General Consulate of Iran in Frankfurt, Frankfurt, 2004 View from the side of the building showing the rough volume suspended within a glazed case.

In the General Consulate of Iran in Frankfurt (2004), Mirmiran used a suspended mass covered in a glazed case. The rough lifted volume contains the private programme, and a transparent axis – the Gallery of Iran – connects the street and park through the building. This connection allows people to move about freely and to get acquainted with different aspects of Iranian history and culture, and functionally divides the project into two distinct parts. Daily bureaucratic activities are separated from formal

diplomatic ones, which are covered with a semi-transparent glazed surface. The rough volume is raised on pilotis and provides a pleasant space on the ground floor for special ceremonies.

*Similar to traditional Iranian palaces and gardens, there is a fine and pure connection between interior and exterior space.*

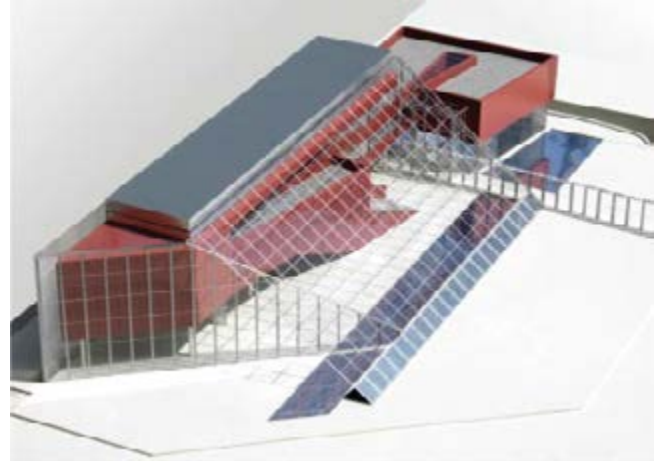
A glazed space with trees and a broad, shallow band of *water* reflecting the elements of the building passes through the project. Both embassy projects

call upon the *traditional garden* to inform their formal and programmatic arrangement, *demonstrating again that dramatic evocation of traditional elements can be achieved in a contemporary way.* Even though Mirmiran's projects display a variety of forms, all have a very particular and similar process of design and development. He called this 'design's turning point, and elaborated that:

For me, in the beginning of the design process the most important thing is



View of the multifunctional hall and glazed roof. The tree and line of water – elements borrowed from traditional Iranian architecture – create this transitional space between inside and outside.



Final model. The transparent gallery divides the two main parts of the building.

finding the 'design's turning point' of the project. It means, knowing what the origin of the design is, and the main Idea of the project should be based on which factors ... the design's turning point in each project can be very different, sometimes it is a form, or a concept, a poem, or a memory, sometimes it is a dream, a myth, or an idea, and sometimes it is a combination of some of them, although I believe that the idea of a project should only be one, and even if it needs a combination of different ideas, we should always have a major one ... Eventually, the project's shape gets clear in your mind and at some point, you will have the final form and it's ready to develop by plans and models.<sup>7</sup>

Mirmiran argued that Modernism was developed at a certain time and a certain place and so it carries with it certain design gestures associated with that development.

To transfer a movement that was essentially a reflection of the industrialised West wholesale to Iran would be wrong. Mirmiran was modern, but wanted to have a Modernism that was Iranian, that was developed in Iran, and that took into consideration all that came before it in that particular place. He considered Modernism a design process and did not feel the need to associate it with form.

*His designs created spaces with a minimum of lines, surfaces and volumes. Even when expressing the most sophisticated ideas he insisted on applying the most pure and simple forms and materials: a simplicity that was inspired by the purity of ancient Iranian architecture like Isfahan's Bridge of 33 Arches (si-o-se pol); the same simplicity in lines and surfaces that we see in modern Minimalist projects like Mies van der Rohe's Crown Hall (Chicago, 1956).*

Mirmiran understood space as a means of expression for an idea, and as such he sought to design not the space but the idea. If traditional architecture developed spaces with certain meanings, he wanted to use those precepts symbolically and not literally. He designed his spaces to evoke the same principles of drama, *transparency and lightness using the tools and techniques of the contemporary era. His work thus links the past with the present, and provides a template for the future, embracing history not as kitsch, but as a guiding source for a process that can create an authentic Iranian architecture:*

*an architecture that is Iranian in spirit, but placeless and timeless in form.*

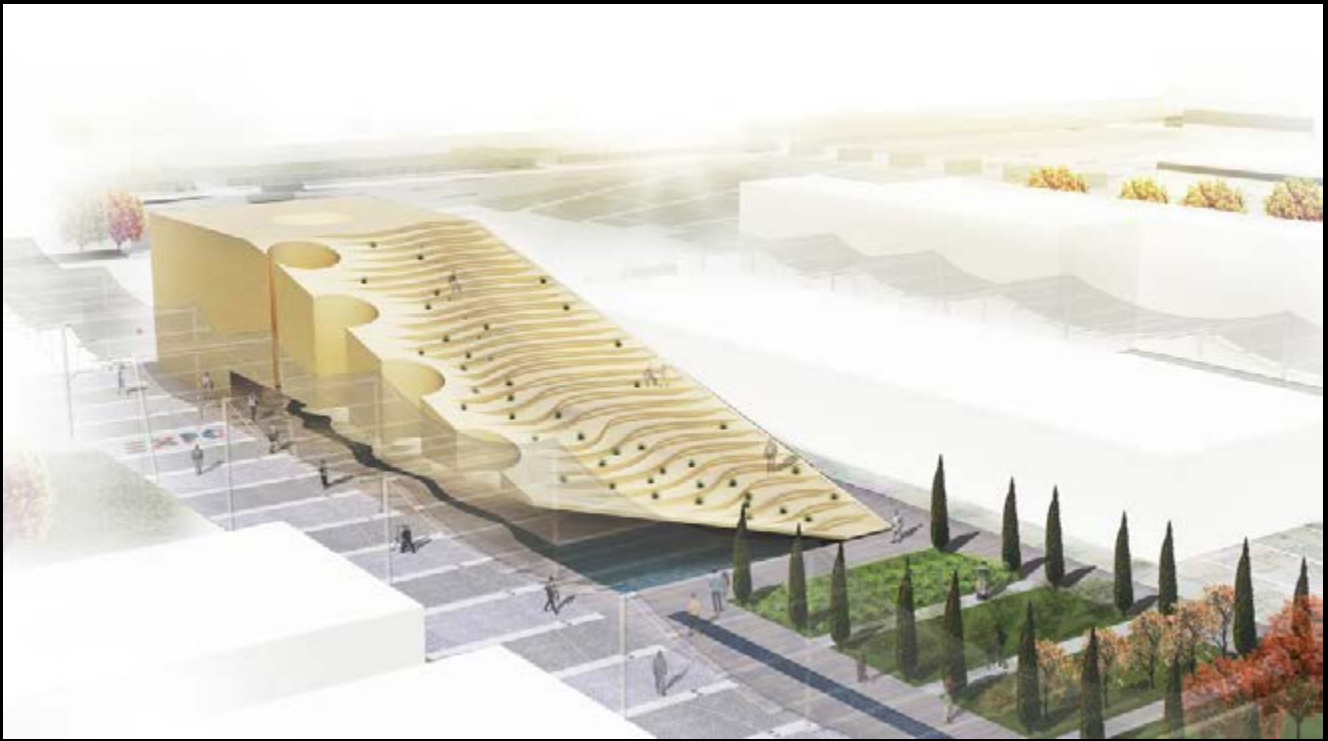


## The New World of Similitude

Information technology and its developments have created socioeconomic dynamics similar to those of the Industrial Revolution, in that they have opened a great gap between the highly industrially developed countries and the rest of the world. In this context the values of the architectural heritage of different countries can now either become an active part of new movements and viewpoints of global architecture, or lose their durability and relevance and become mere followers. To deal with the complexity and pluralism of the latter is not only a challenge, but also an opportunity to offer a view and a vision that does not belong to any specific culture or civilisation, but that could be utilised by all societies. Since architecture deals with new spaces configured by new forms, creative architecture can take any matter and proceed through imagination to arrive at an abstract view bearing no apparent resemblance to the starting point. In fact, anything could be an incentive

to animate the creative functioning of an active mind going beyond the boundaries of tangible and visible objects in an abstract manner. Having such a vision, one cannot prescribe a single method of designing and a unique solution for each specific design.

The wealth of today's Iranian architecture consists of two groups of practitioners: on one hand, outstanding internationally recognised Iranians with a considerable theoretical background and knowledge of contemporary architecture; on the other, a wide range of national architects with diverse regional experience. Daryush Shayegan, the great Iranian philosopher, stated that the hypertextual dialogue 'has one foot in prehistory's culture and the other in the metamorphosis of the future'.<sup>11</sup> At no other point in Iranian or Persian history have the practitioners of Iranian architecture had the opportunity to engage in the level of hypertextual dialogue necessary to



spawn an architectural movement with the potential for a truly global impact.

Iranian architecture, enabled by information technology and global communication, has created an environment where different layers of meaning formed through the architectural metamorphosis from ancient times until today can finally coalesce into a world of different meaning and imagination beyond the limited insights of contemporary Iranian architecture. With focused vision and effective communication, the Iranian architectural community will be able to impact global architecture, and relative proportional abilities will transfigure themselves as a hermeneutic area of insight, opening up the possibility for a hypertextual dialogue between different world-views and creating a 'new world of similitude'.



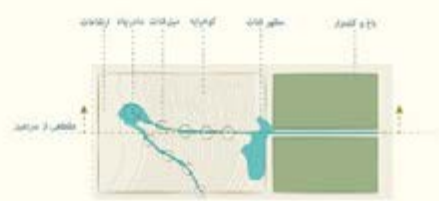
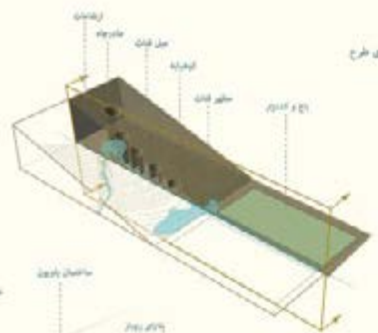
Naqsh,E,Jahan-Pars (NJP), in collaboration with the Laboratorio di Architettura e Design (LAD), has been named winner of an international competition for the Iranian Pavilion at the 2015 Milan Expo. Based on "a living process narrative in the central plateau of Iran," the winning scheme responds to the Expo's "Feeding the Planet" theme by exposing the underground channels of water that give life to Iran's many desert cities.

The winning design highlights the two important elements of modern Iranian architecture and city planning: the garden and "qanats," underground water channels that use gravity to transfer water from higher elevations to cities. In form, the pavilion represents a section of land in which guides visitors through a qanat and ultimately to the crop it feeds. This garden will then provide the food that will be used to serve local Iranian

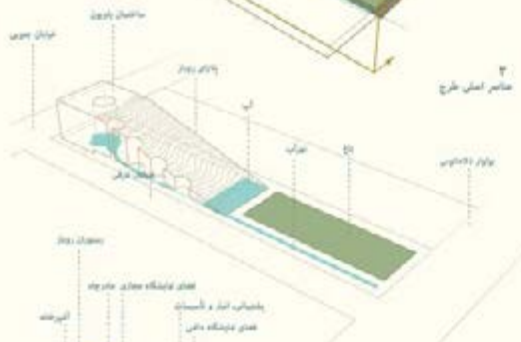
cuisine to Expo visitors.

It is important to note that although this proposal won the competition, it is unclear whether or not the Iranian government will move forward with its development.

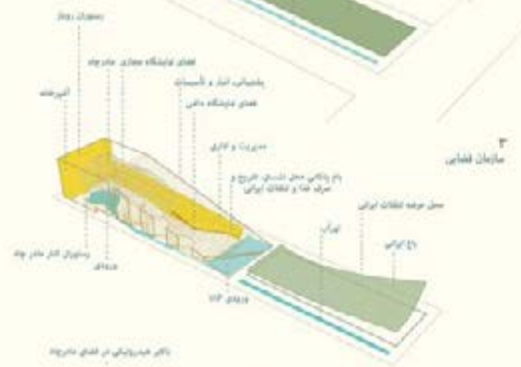
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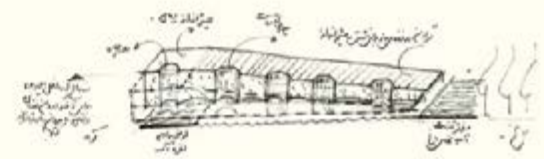
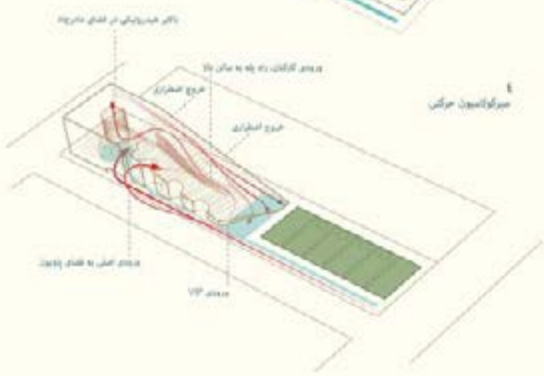
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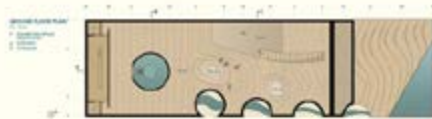


3 سازمان فضایی

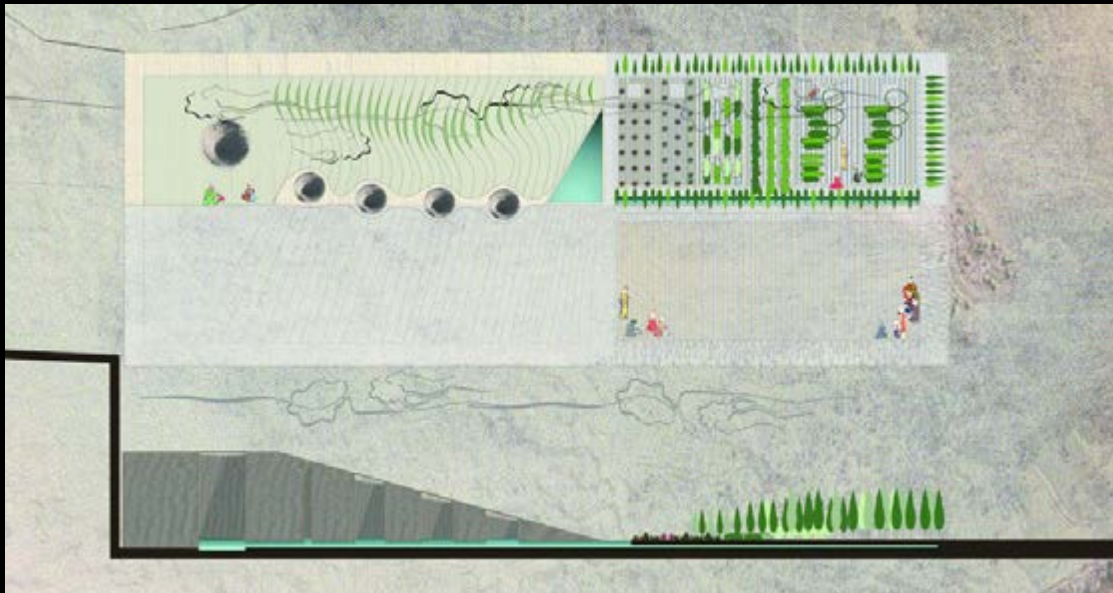
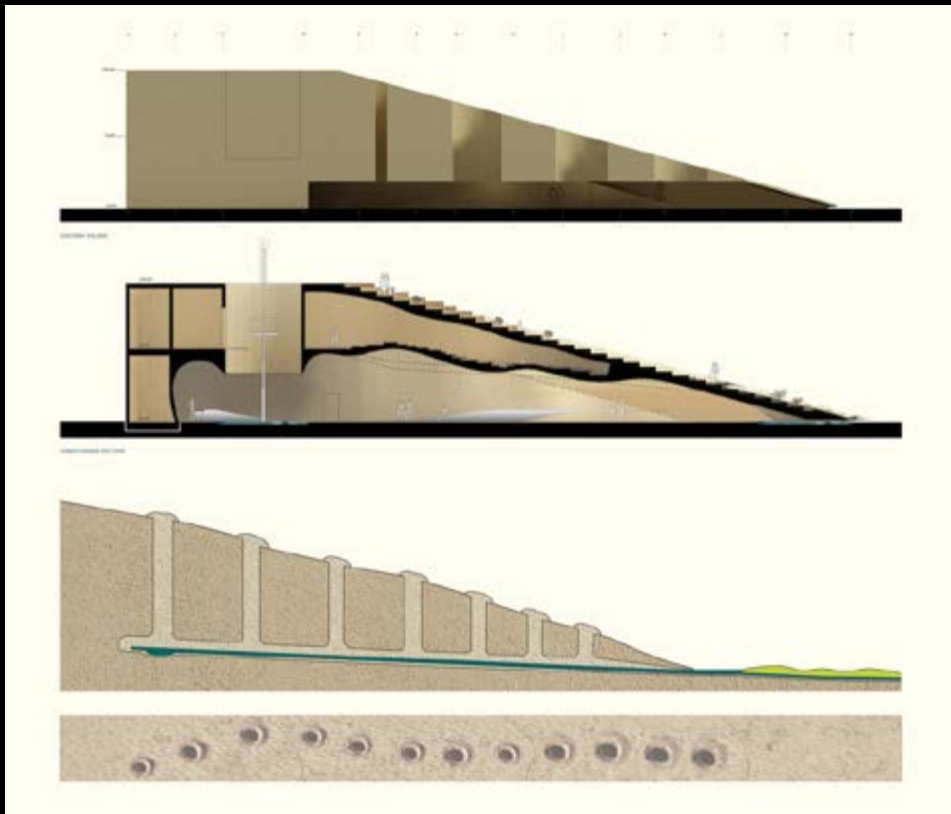


4 سیرکات و مسیر حرکت





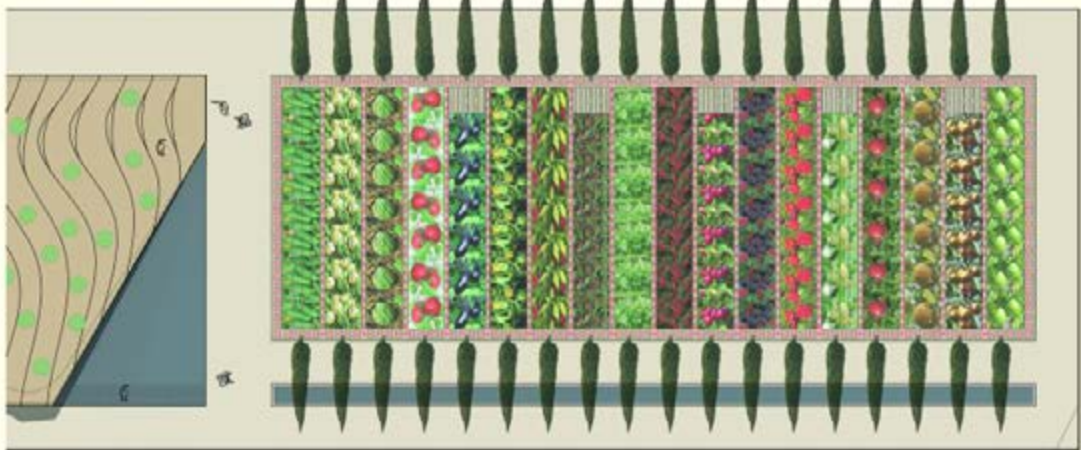




CALENDAR OF PLANTING



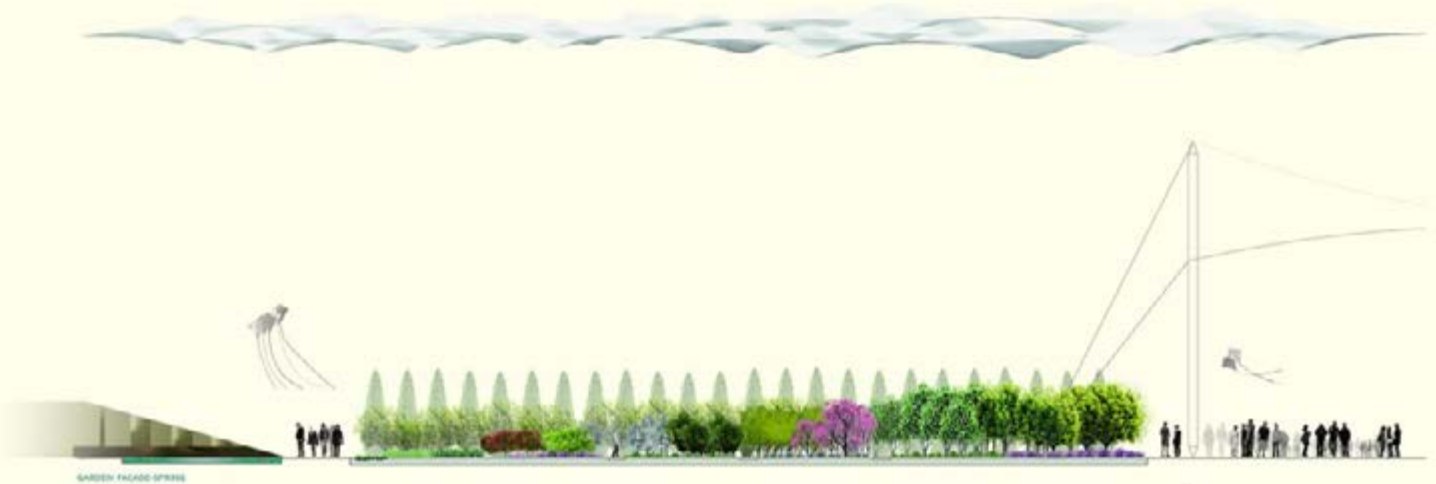
- Сортмент излучина (Самобережье)
- Сортмент Лаванды (Ивановское)
- Сортмент Каштана (Каштановый)
- Сортмент Магнолии (Магнолиевый)
- Сортмент Сирени (Сиреньевый)
- Сортмент Фиалки (Фиалковый)
- Сортмент Розы (Розовый)
- Сортмент Гортензии (Гортензиевый)
- Сортмент Астры (Астровый)
- Сортмент Хризантемы (Хризантемовый)
- Сортмент Календулы (Календуловый)
- Сортмент Барбариса (Барбарисовый)
- Сортмент Лаванды (Лавандовый)
- Сортмент Розы (Розовый)
- Сортмент Гортензии (Гортензиевый)
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- Сортмент Календулы (Календуловый)
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GARDEN PLAN



GARDEN SECTION



GARDEN FACADE - SPRING

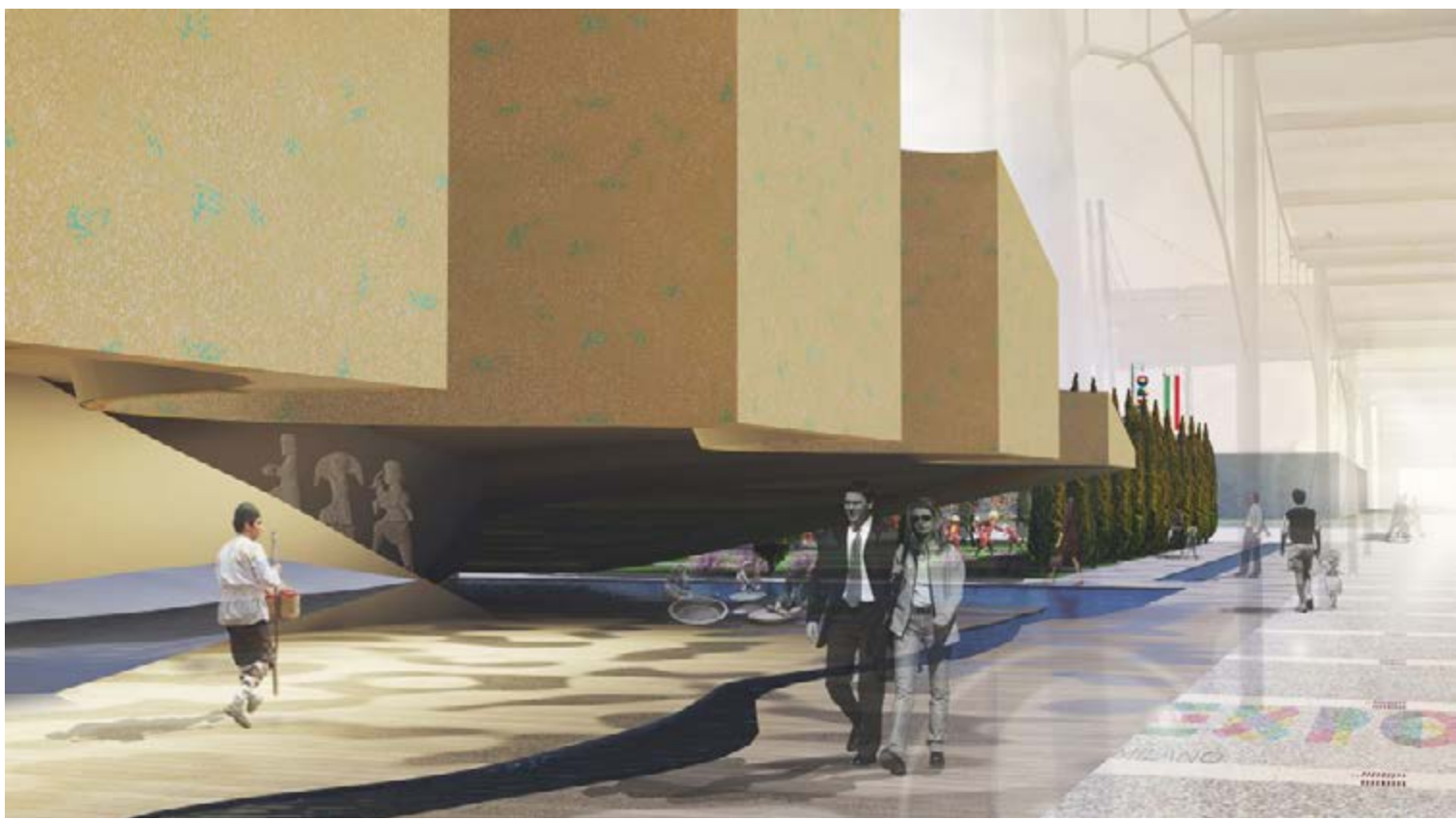
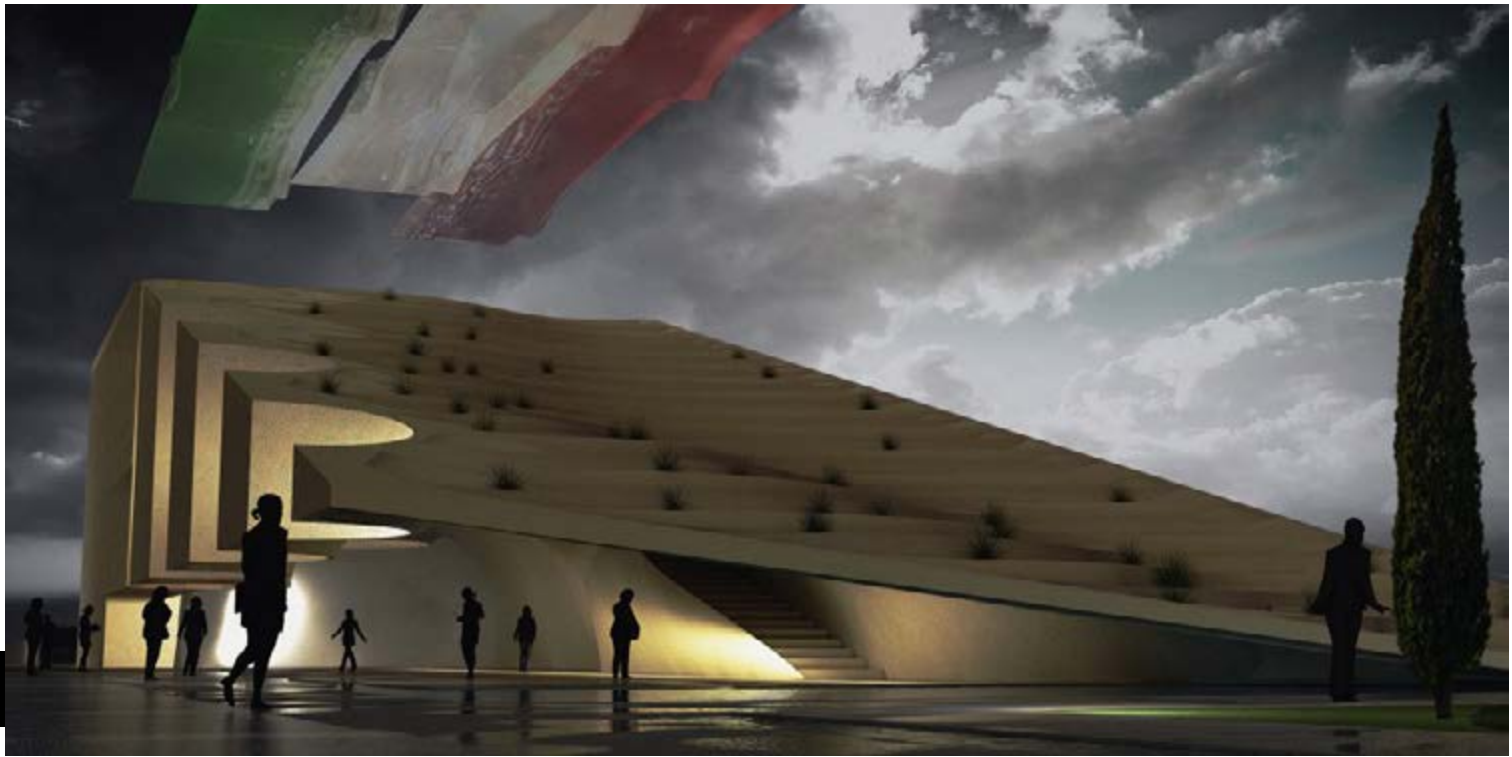


GARDEN FACADE - SUMMER

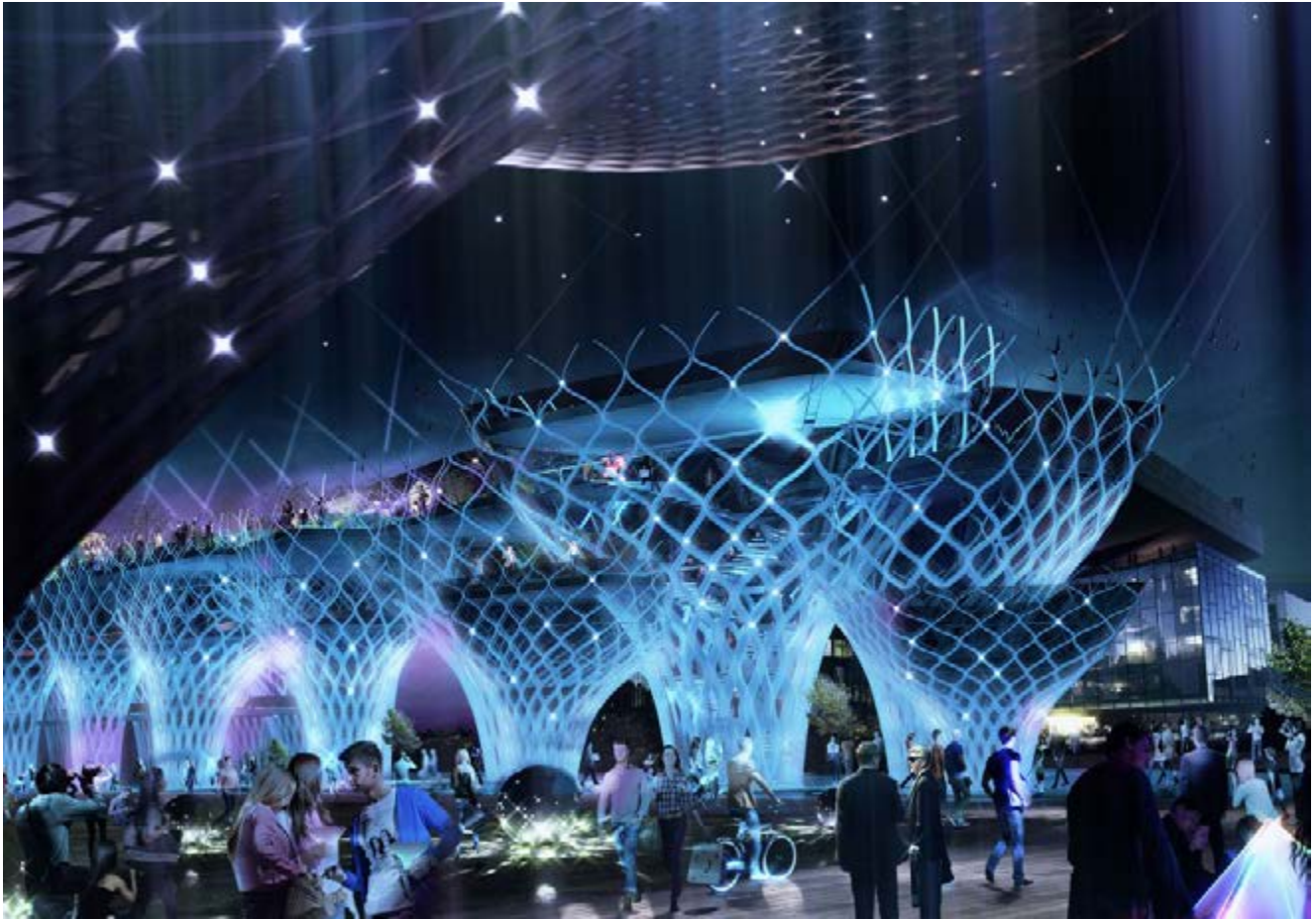


GARDEN FACADE - AUTUMN

0 1 2 3 4m





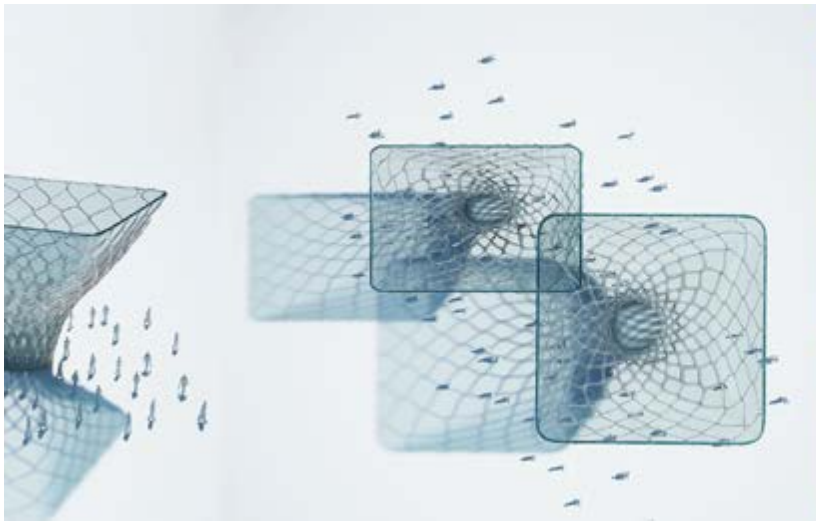


New Wave Architecture's proposal (one of eight) for the 2015 Milan Expo demonstrates an essence of Iran brought together in a series of organic forms. The expo's theme, Feeding the Planet, Energy for Life, is encapsulated the designer's exploration of the trace of cookery in culture, literature and Iranian art. The conceptual idea behind New Wave's proposal, The Persian Garden, reflects the cycle of a tree: the organism is fed by the soil, grows and blossoms, before nourishing people and spreading throughout the earth "to asset its support."

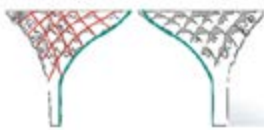
According to the architects, "the tree offers a pleasant space on its shadow, carries natural ventilation and becomes a rain shelter in the rainy days of Milan." "Iran's pavilion should be

an alluring depiction of its long-time civilization, art, historical characteristics and cultural events with having close connection with agronomics, food and technology."





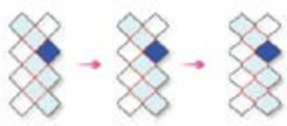
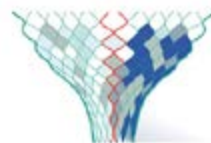
NEGATIVE MASS



KAR-BANDI STRUCTURE IN IRANIAN ARCHES



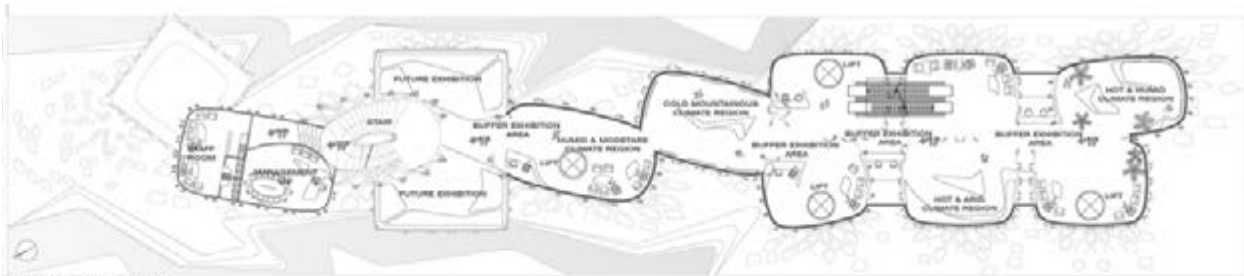
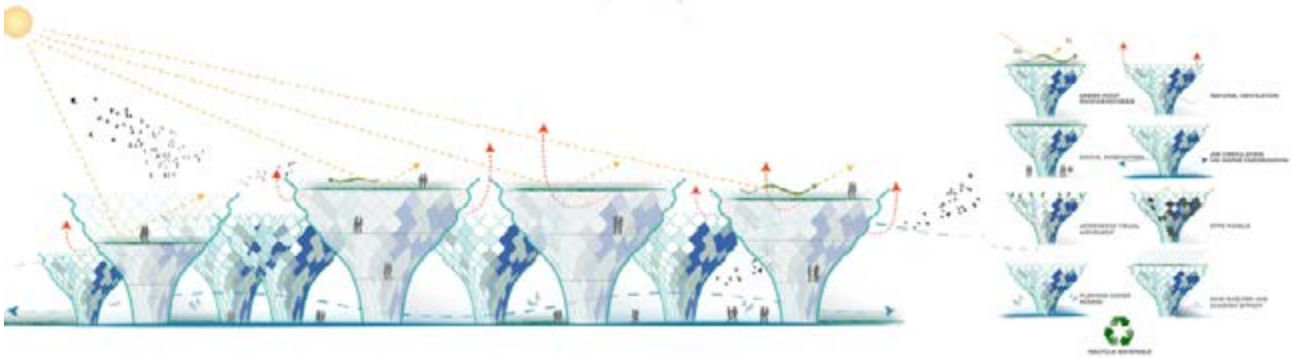
SHEKH LOTFO-ALLAH MOSQUE DOME ORNAMENT



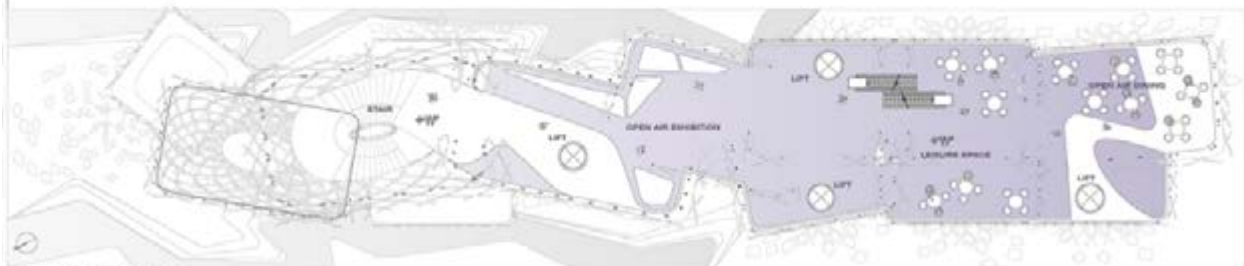
PARAMETRIC TRANSFORMATION

"Reminding the structure of the dome and various transition techniques in historical Persian monuments, from polygonal shapes to circular forms in the Persian architecture we impel to extract the parametric pattern of the Sheikh Lotfo-Allah dome in Isfahan seamlessly whilst interplaying with light and shade and integrating the architecture with its structure."





PLAN LEVEL 8.00



PLAN LEVEL 12.00

"As a consequence of the continuous arches and open areas alongside the water stream, natural ventilation is deduced throughout the pavilion. Meanwhile the rain water is re-collected, stored in a tank, filtered and distributed to the lower parts of the area for re-use, lavation etc. Solar panels are efficiently angled on the roof to receive an important amount of sunlight for providing a high percentage of energy required for the pavilion."



Exhibition ran October 2006 - March 2007

A double height, occupiable rotating drum was the focal point of Going Public: Case Studies of the Mayor's Design and Construction Excellence Initiative. This exhibition at New York's Center for Architecture highlighted the efforts of Mayor Bloomberg and the NYC Department of Design and Construction to enhance the city's built environment. RMA and sister firm TRUCK Product Architecture designed and helped curate the exhibition and all its graphic elements. The drum's exterior - visible from the street and from the galleries - showed renderings of each of the seven featured projects. The drum's interior offered visitors a behind the scenes look at the design process - artifacts, models, sketches, and early schemes were pinned up as they would be at an in-house review.





Exhibition at the German Centre of Architecture DAZ,  
Berlin: 12th September 2007

Designing the allestimento using the suspending  
objects as a displaying method.



the simple pure form of the cubes in zaha Hadid Architectur exhibition, each Cube one different concept. The organic shapes and advanced geometry are merged in a unique language.



## Project

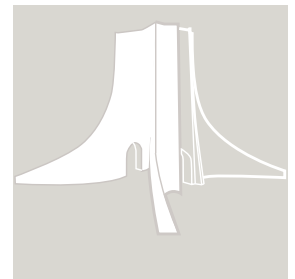
### Experiene Tehran City through ten developed public buildings of Iranian Architects

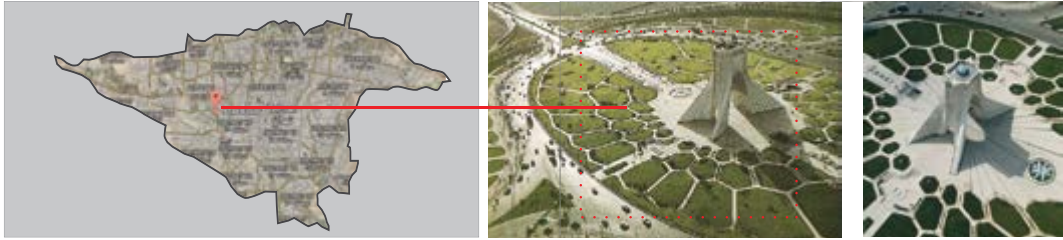
#### The Liberty Tower Concept

The Azadi Tower (Freedom Tower) is the gateway to Tehran. This 50m tall tower is located in the heart of the 15,000 sqm Azadi Square (Freedom Square) and has been the center of many cultural and political revolutions since its completion in 1971. The architecture of the tower is influenced by both pre-Islamic Persian architecture of materiality and Islamic architecture of geometry. The significance of the Azadi tower is not only in its sociopolitical presence, but also lies in the balance of the mystical and mathematical dimension of the design coupled with its process of materialization. From 1966-1971 the monument was built with 25,000 unique white marble pieces, each shape customized using a structural computer program and carved using a combination of manual and machinic operations.

Every culture and religion has their own particular understanding of the relationship between the divine and the world. This implies a certain manner of unfolding, which informs theology, art and architecture.

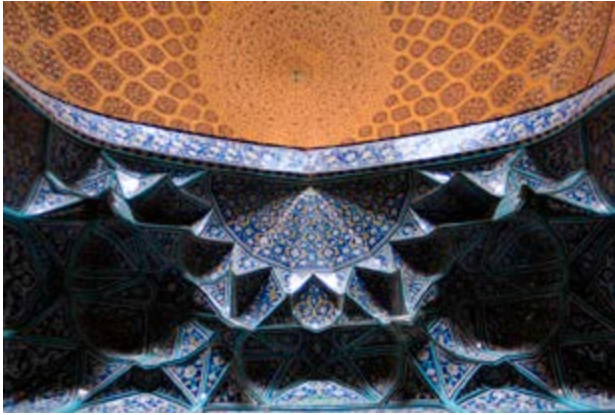
The term fold in ancient Persian culture and language is often synonymous with the definition for sides of a polygon. For Instance, an octogon is referred to as an eight-folded geometry and the interior of the polygon is called its body. Translation of this definition in architecture brings great importance to the folds or the edges of space dividing geometry. The main trait of traditional Persian architecture is based on the notion of creating an earthly paradise through series of subdivided gardens, water canals, and indoor and outdoor rooms. Thus, the geometric folds become the defining borders for enfolding





material differentiation. This garden design philosophy called Chahar Bagh (four gardens) has influenced the design of gardens from Taj-Mahal to Alhambra and beyond. However, after the 8th century the notion of material articulation was overshadowed with the introduction of Islamic architecture to the Persian culture which reinforced the use of more complex geometric forms in order to create elaborate tile patterns often referred to as quasicrystals. A quasicrystal formation is based on arrangement of a set of polygons (often five to twelve sided) to create complex tiling patterns. This application of pattern intensity is rooted in the Islamic believe of transfiguration and transformation as an essential part of material life. The application of quasicrystal patterns, whether as an architectural style, textile design or calligraphy, becomes a way of representing the

world around less substantial and articulated. In this notion the pattern becomes a tool for de-materialization of architecture. The scale differentiation of monocentric quasicrystal patterns on dome ceilings introduces a forced perceptual trajectory for the visitors. This focal point of pattern deformation creates a sensation of lightness in the ceiling of the space and creates the idea of arriving from geometric multiplicity to formal unity and reinforces the notion of infinity in the space. A Deleuzian might object that Islamic art and architecture cannot be a playing field for real creativity because its purpose is to direct the worshipper toward God. But, one can argue that Deleuze's notion of the folds in the soul inspired by Gottfried Leibniz's theories of Monads as centers of force, are based on the idea that a fold is always influenced by a force and is constantly



imposing force on to its adjacent fold. Deleuze states that, "the world must be placed in the subject in order that the subject can be for the world. This is the torsion that constitutes the fold of the world and of the soul." [p.26] Therefore, one can argue that the same force interplay between a subject and the world could also be applied to analyzing the relationship between an elaborate quasicrystal pattern on a ceiling and an observer. This force interchange allows great deal of individual interpretation, encourages endless curiosity, and creates a perceptual and contemplative venture into the infinite for the person experiencing the space.

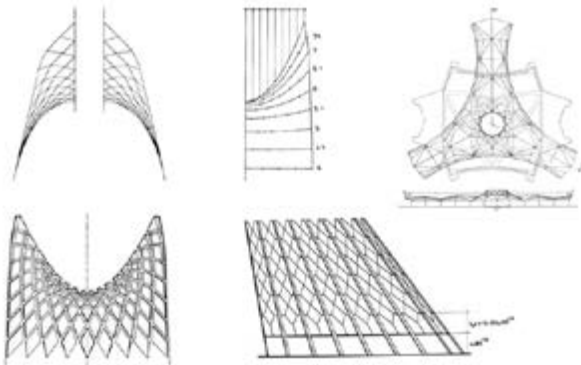


The main pattern inspiration for the Azadi Tower complex was the ceiling of a 17th century mosque, called Sheikh Lotf Allah Mosque, in Isfahan region of Iran. The architect of the complex, Hossein Amanat, was a 24-year-old graduate from Tehran University when he won the competition for designing a monumental tower complex in commemoration of the 2,500th anniversary of the Persian Empire.



Amanat much like many other architects in 1960-s, was very much interested in structural performance of geometric modules. He combined the organizational logic of a monocentric Islamic Patterns with the long forgotten traditional Persian architecture of substantial stone mass, as well as articulated landscaping divisions. The architecture of Azadi tower complex was as much about its heritage as it was about its modern influences and the future vision of the city.





Deleuze in talking about the fold in matter states that, "A body has a degree of hardness as well as a degree of fluidity, or that it is essentially elastic, the elastic force of bodies being the expression of the active compressive force exerted on matter." [p.6]

Amanat utilized surrounding circulation arteries of the existing urban context as directional forceful vectors for influencing the monocentric landscaping pattern of the tower Complex. The trajectories of the circulation, much like a ripple effect, influenced the scale differentiation and articulation of marble blocks in the body of the Azadi tower.

Even though, 8,000 blocks of 6m long white marbles were utilized in the construction process, the continuity achieved by careful computation of each individual marble piece, has given the tower the nickname of 'the tower of a draped silk' among civilians.

The Azadi tower complex as Tehran's main landmark, houses a national heritage museum, multiple galleries, libraries and souvenir shops that are embedded in multiple levels throughout the tower. However, all main entrances are sunken underground to enhance the circulation flow of the complex. The articulation of customized marble units then translates to fluid concrete forms that create the interior shell of the tower's body. The transition of the Azadi tower's exterior folds to the interior folds are much like Deleuze's description of a Baroque costume, in which he states that, "fold in matter is broad, in distending waves, billowing and flaring, surrounding the body with its independent folds, ever-multiplying, never betraying those of the body beneath."



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