

***Conquering the Winds (Adeliberation on the Psychological Aspect of the Windcatchers,
Decorative Elements in Loft harbor)***

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Abstract

Wind catcher is one of the historical elements of hot and dry /hot and humid climates in Iran's traditional architecture which is composed of a tower over the house roofs and water reservoirs which is rather higher than the other parts of the house, serving the role of trapping the wind and transmitting it into the house. The existence of various decorative elements used in wind catchers fronts, the necessity of their analysis and also the maintenance and usage of these elements in present have formed this research posing this question: What are the decorative elements used in LAFT wind catchers? In order to answer this question, a field research was done through attending in the context and surveying five existing wind catchers. Four wind catchers were then selected from among the drawn samples and the houses containing them were studied to have a short analysis of the plans along with the main goal which was recognizing the adornments used in wind catchers. Studies on figure recognition are yet to be performed and just a book named "Harbor LAFT Architecture" was published by Tehran University Publications in 2001. The present study was designed in completion of studying Harbor LAFT the first chapter of which named " An Overview on wind catchers in Harbor LAFT" is set to give information about the position of a wind catcher in house plans, its section and climate function. In the second chapter, the wind catchers figures have been divided into two groups of 1. Natural figures and 2. Geometrical ones in order to analyze these figures and colors in wind catchers and finally it was concluded that since this port has been located by the Persian Gulf and has been surrounded by the nature, most of the decorative figures used in wind catchers are some abstract withdrawals of nature and the sea.



Introduction

“GHESHM” is a southern Iranian island considered as the prime island of the Middle East. In north western Gheshm there locates a small island called “LAFT” rooted in the first millennium before Christ (Omat, 1385, p. 45).



Figure 1: shows the exponential fit of “LAFT” in Iran.

LAFT is located in a Geographical area with very hot, humid summer and moderate winters. It is very important to confront severe summer heat and humidity in the region. Getting refuge to the shadow is a must all the yearlong however, the climate necessitates the use of air conditioning systems for 7 to 9 months in a year (Ahmadi, 1392, p. 89). The local inhabitants of the port designed square and rectangular towers with tetragonal partition which caused the air to flow into their habitants as a cooling system (Baharinejad, 1387, p. 94). The towers could be observed in the form of vertical blades on the top of the roofs (pic. 2). Numerous number of the vertical wind catchers on the top of the residential areas catches the eyes when you look at the scene for the first time. Their distinctive feature is the type of decoration used for their construction.



Figure 2: Sky line, LAF T Port, Iran (*Source: authors: 2014*)



Figure 3: Site plan, LAF T, Iran (*Source: book "Harbor LAF T Architecture: 2001*)

Another distinctive characteristic of the neighborhood is closely built houses with very narrow lines separating domiciles. They are constructed, in a way to let the wind flow freely in and around the lines and to the beach, in Introvert or Extrovert formats. The main reason the lines are so narrow is to keep the local inhabitants from the burning heat of the Sun in the shade of the walls. The narrow lines could be observed in the site plan Figure 3.

1. General Recognition of Wind catchers in Harbor LAFT

The schematic categorization of the wind catchers has been made based on the number of their openings and sources and unlike the common method in Iranian architecture in not using even divisions, the wind catchers of LAFT are generally double-sourced with four-sided and two-sided openings. Only two of the surveyed wind catchers had round plans, except for one having a dome roof, those of the others are flat and some water canals have been designed and made on these roofs so as to drain the rain water. According to the figure 4, a wind catcher is generally composed of three parts: 1. Base, 2. Body and 3. Harness.

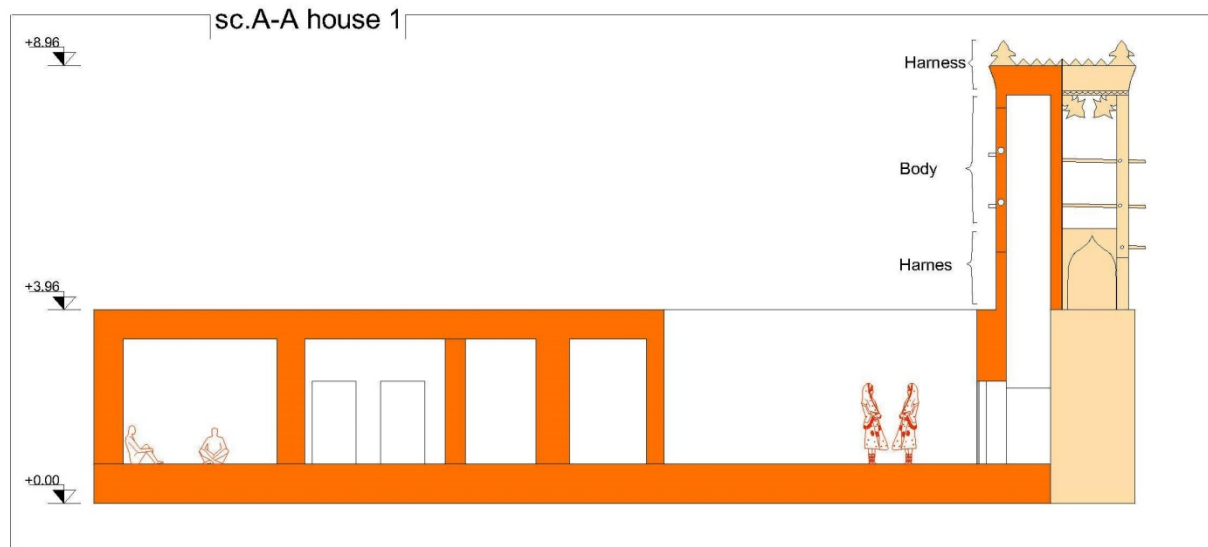


Figure 4: the general parts of a wind catcher in the front and the section of the house No.1,
(*Source: authors: 2014*)

1.1. The place in plan and section

LAFT wind catchers with plan dimensions of nearly 3.3 meters were designed and built over the room used for family resting or gathering or sometimes eating. Such a room exists in every house at the same number of its wind catchers. There are normally two wind catchers in each house and only the small houses were designed with one wind catcher. Due to high ground water level, unlike the houses in hot and dry areas, these houses lack basements and are mostly one-story and in some rare cases two-story. In two-story houses there is a wind catching room at the second floor. The length of this room ranged between 4.5 and 8.6 meters and the wind-catcherilating canals were located only on a part of the room (fig 5) which was so called ' Pipe Room '. This part of the room was distinct from other rooms through different ways like using mats or plinths paintings. This distinction caused in the person under the canal a different physical feeling which was different from any other area in the same room. The wind catching room is considered to be the closed area of the house the height of which is high just like other rooms of the house and does not exceed 4 meters. In figure 6 there is located one wind catcher in the eastern front of the house, over a room used in summer and in fig 7 which is believed to be a big house, two wind catchers have been used in two parts of the house (the lower one is four-sided and the top one, two-sided).

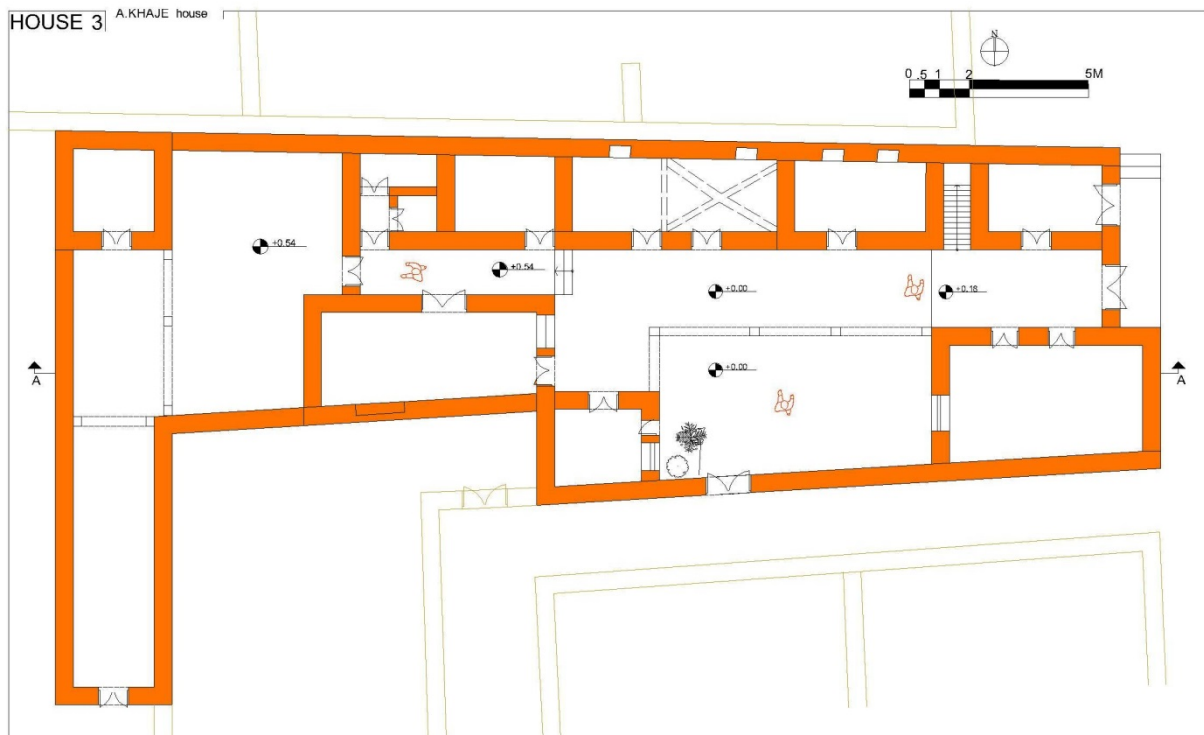


Figure 5 : the plan house no3 (*Source:authors: 2014*)

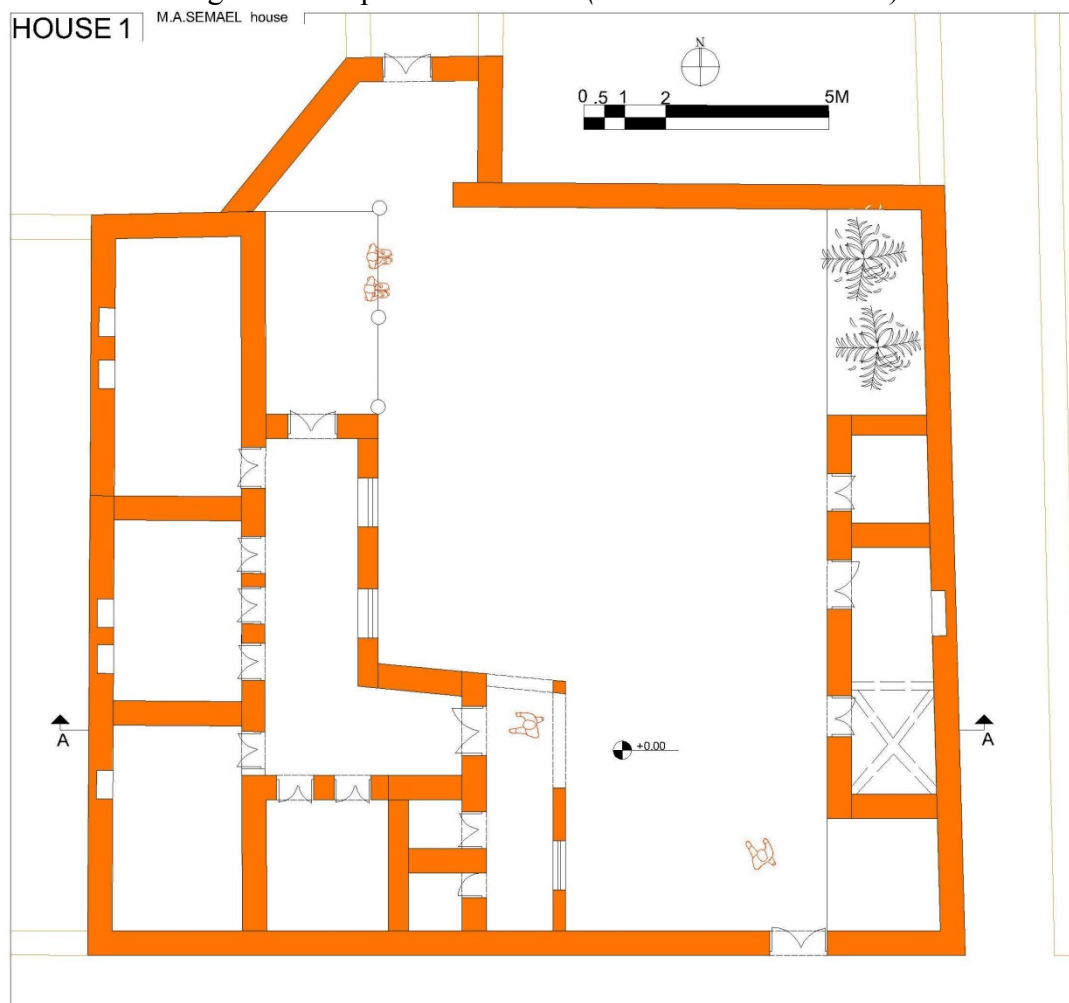


Figure 6 : the plan house no1 (*Source: authors: 2014*)



Figure 7 : the plan house no2 *(Source: authors: 2014)*

Compared to the wind catchers of hot and dry parts of Iran, those of Harbor LAFT are shorter and rather at the same height or at least having minimal height differences. Their height is 4.69meters from the roof to the harness and 7.86 from the floor to the harness.

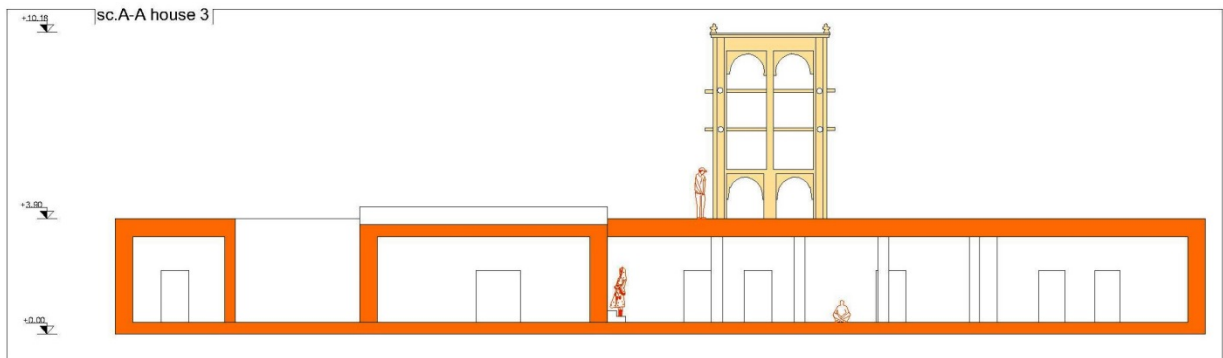


Figure 8: the house no. 3 section view with human size scale beside the wind catcher.
(Source: authors: 2014)

1.2. Climate Adaptive Function

LAFT wind catchers are thick in order to take advantage of local light winds and mild sea breezes. Creating air flow, these wind catchers move the saturated humidity around the body away so as to make the environmental condition relaxing. fig 9. The plan of a house with a 4-sided wind catcher (a wind catcher directing wind into the house from four directions of north, south, west and east) which is located in the western side of the house. LAFT wind catchers feed only one room (fig 9&10) and their main difference with the wind catchers of hot and dry areas serving the task of increasing the air humidity, is creating a fast air flow with the aim of

decreasing the environmental humidity. To serve this task, the wind catchers are placed with a small angle to the dominant air flow and sea air in a way that the air hits the canal through the top pores and move downwards. Since the warm air is heavy, as soon as the cool air enters from one side, the warm air inside the room goes out; this process repeats over and over, making the area under the wind catcher a nicer and more pleasant place compared to outside and any other places.

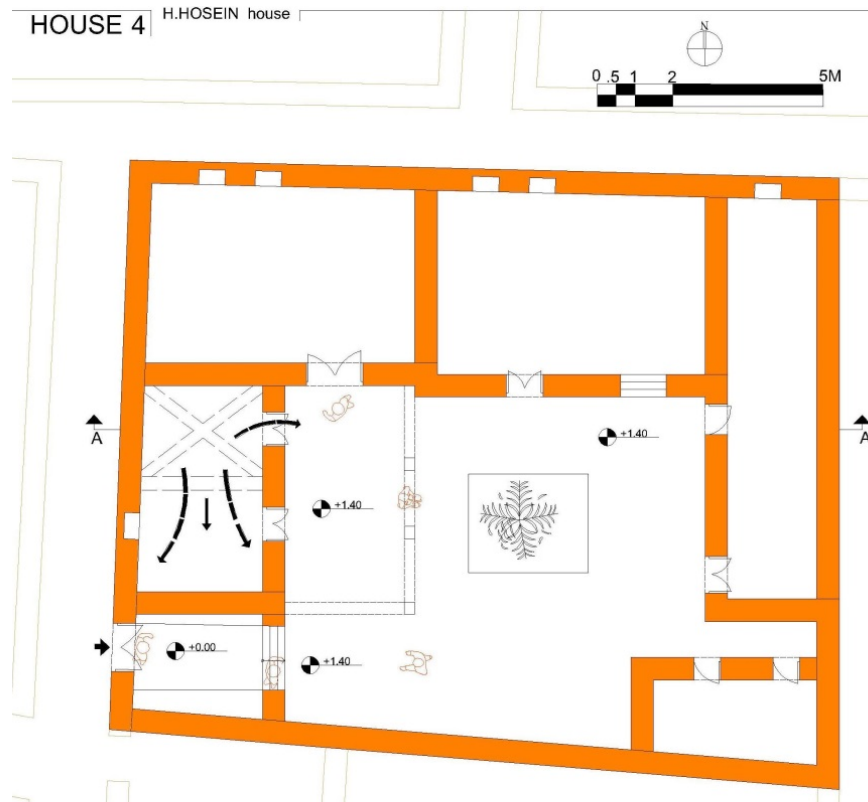


Figure 9 : the plan house no4 (*Source:authors: 2014*)

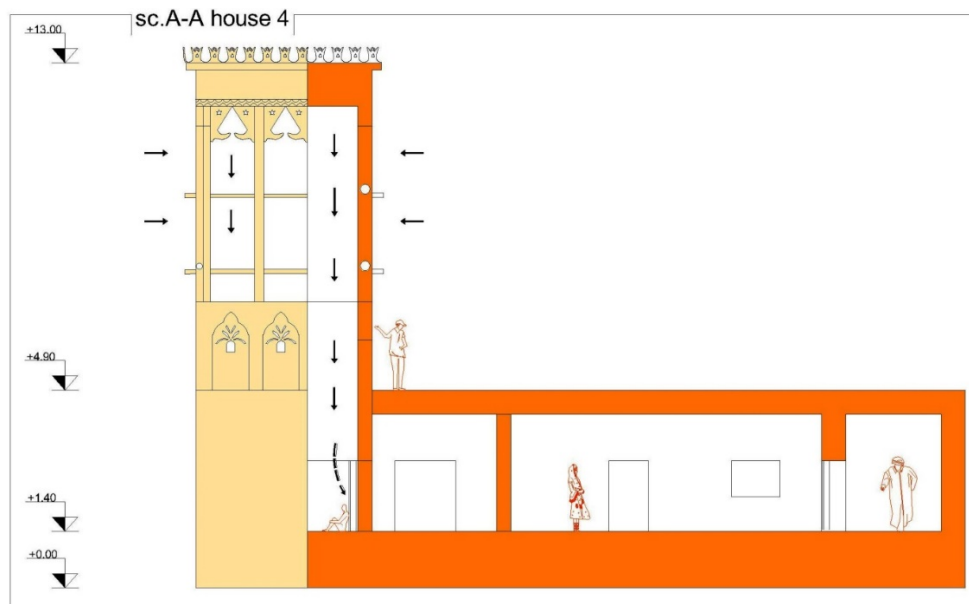


Figure:10 :the sectionse house no 4 (*Source:authors: 2014*)

The sea is considered to be a very important factor in the location and direction of Harbor LAFT wind catchers. Taking advantage of the sea and land breezes; the breeze blowing from sea towards land in daytime and from land towards sea in night time. Furthermore most of the wind catchers have been built in a four-sided shape to benefit from the winds of other directions besides the sea and land breezes. The wind catchers benefit from Kush winds blowing from east in the morning and Kibla and Bahri winds blowing at noon and also the pleasant wind blowing from north at night. (mahmoodi , 2008 : 131). Performing some surveys on most of the houses of this port, it was concluded that there has been at least one four- sided wind catcher over one of the rooms of each house. In some cases there have also been some two-sided wind catchers in north and south directions or some one-sided ones in south direction over the house entries (fig11) and counters which demonstrates the importance of these parts of the house for local people.

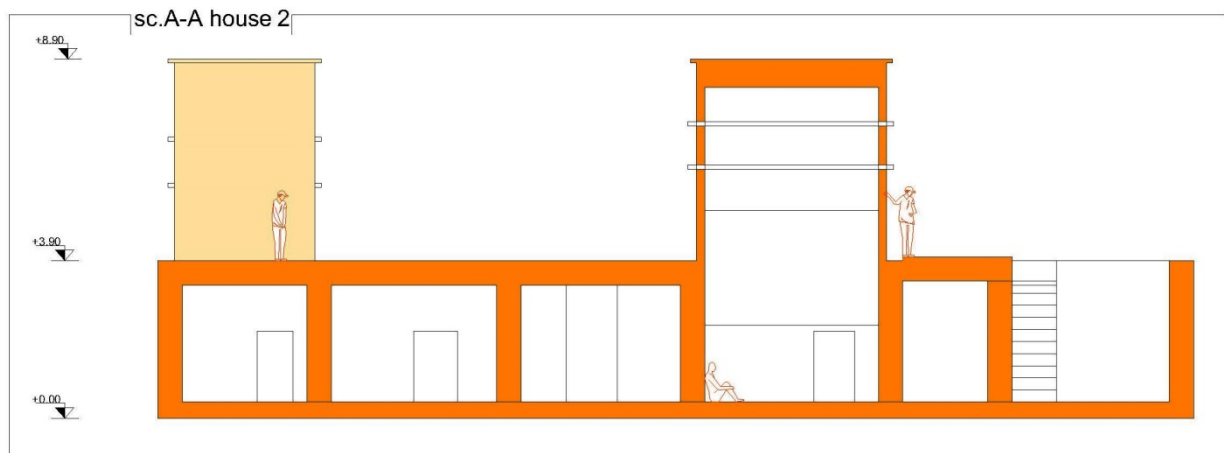


Figure 11: section house 2 (*Source: authors: 2014*)

2. An Overview on the decorative elements and color in LAFT wind catchers

2.1. The Decorative Elements

What is discussed as adornment includes two types of decorative elements: 1.the ones added to the wind catcher body for aesthetic reasons and 2. The ones which are not only of aesthetics and beautifying importance but are also functional. Plaster-moulding can be named as a decoration observed on a wind catcher base, body and harness. The decoration used on wind catchers are mostly of the first type. The stems of Harbor LAFT wind catchers are integrated, lacking any horizontal dividers. The only case a stem is horizontally divided is when a wooden beam is used in the stem for static reasons. (fig12) The vertical dividers are either simple or with round curves having decorative value and lacking any functionality. The shades these vertical dividers create on the stem body of the wind catchers add to their attraction in urban environment. This kind of adornment is mostly used in the wind catchers, the opening of which are also divided with tributary blades. It should be mentioned that lines are of the most prevalent figures used on wind catchers which is shortly defined in this study.



Figure 12: The horizontal dividers (*Source: authors: 2014*)

LAFT wind catchers range from the simplest forms which are merely functional to the ones highly adorned with various figures which are added to the wind catcher stem after framing. Types of arabesques, quarters, clovers, heart, moon, star and sun like figures, pointed and undercut curves and many other abstract figures have been observed in wind catchers, most of which are the result of nature abstraction and in clear and direct connection with nature. (fig12) In some rare cases the wind catchers roofs are adorned with some hoisted and upward figures and some are adorned only partly on the corners. Most of them only have layered simple roofs but more adornments and more various ones are used on the openings and the external bodies of the wind catchers' canals. These decorative elements are generally divided into two groups of natural figures and geometrical ones.

2.1.1. Natural figures(abstracted)

In ancient Iran (Zoroastrian religion)¹, the nature and its elements were believed to be sacred and sometimes had some gods and goddesses. What is emphasized in Zoroaster's² message the most is respecting the nature, earth, water, soil and plants maintenance. The figures used in wind catchers adornments are also mostly natural figures which have been categorized under seven categories: 1-the sun, 2- the moon and stars, 3-mountain, 4-flower, 5-rudder, 6-palm tree and 7-human.

¹Pyambrayany religion, Zarathushtra is Asptntman. Mzdysna adjective and means Prstndh Ahura Mazda. Mazda Yganhast the same God. Mzdysna around 1200 (AH. M) to 1000 (BC. M.) by the Persian prophet, Zrtshtasptntman was founded.

² Zarathustra, or Zoroaster or Zarathushtra, the prophet of ancient Iran was founded Mzdysna. He also singing the Gathas, the oldest part of the Avesta. The exact time and place of his birth is unknown, but speculation and documents, sometime between 6000 BC and 600 years for him to have a guess.

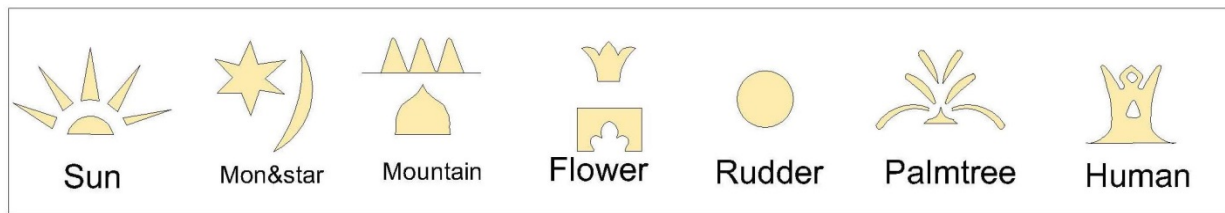


Figure 13 : Natural figures (*Source: authors: 2014*)

2.1.1.1. The sun: the sun has always had a special position in Iranian culture and has attracted human attention because of its illumination and light diffusion reviving the Earth. But the sun has a much higher importance for the inhabitants of hot and desert areas as it shines from dawn to dusk there, without any sparing or any spot of cloud and is one of the main and unforgettable elements of the daily life of islanders and would be the adornment of many of their manufactures.

The sun has been manifested in LAFT in the form of circles, half circles (circle just like globe is the symbol of universe, skies and God the Exalted in east and west), wheel or multi-petalled flowers.

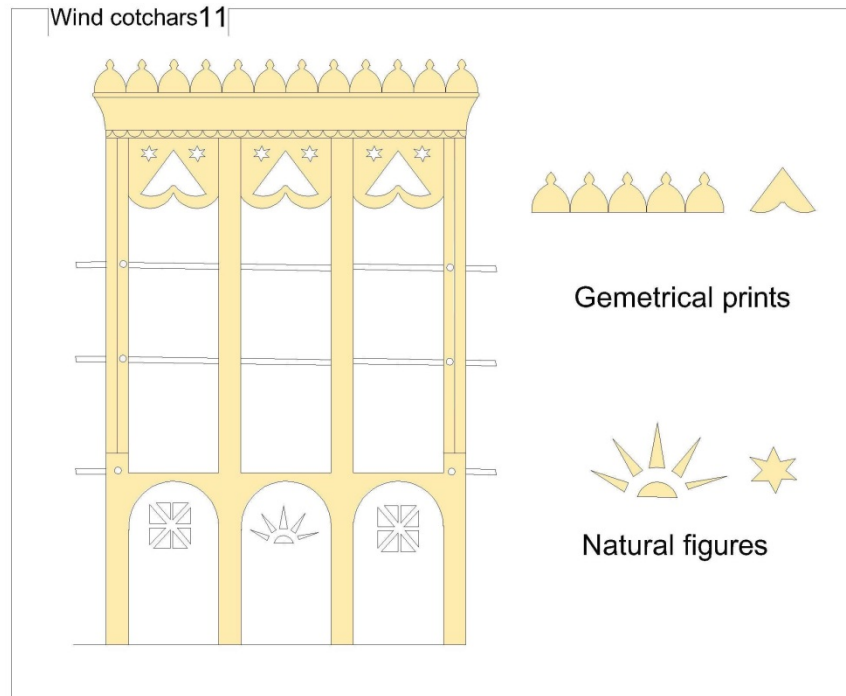


Figure14 : Decorative Elements (*Source: authors: 2014*)

2.1.1.2. The Moon and stars: the Moon and stars are the symbol of celestial bodies and the sky. Since a large number of people are fishermen in islands, ports and the coastal cities, due to the great impact of the Moon on tide, this figure has a great priority. Water and the Moon are connected and this has a direct effect on islanders' lives. Huma plant is another symbol of the Moon which is sacred in Iran and is believed to grow in the Moon. Star figure is mostly four-petalled, five-petalled and six-petalled.

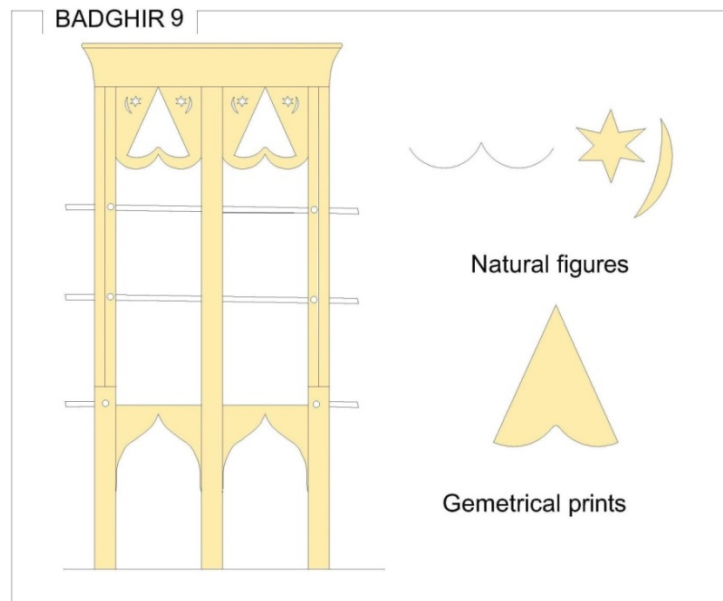


Figure15 : Decorative Elements (*Source:authors: 2014*)

2.1.1.3.Mountain: Mountain is believed to be the first creature in the oldest myths and this figure can be recognized in wind catchers' adornments in the form of single or multiple triangles. Triangle and zigzag lines are some symbols of mountain. This figure has been used as a decorative element in many wind catchers because there existed some mountains in this portal village and the villagers have used this figure in doors and wind catchers' adornments.

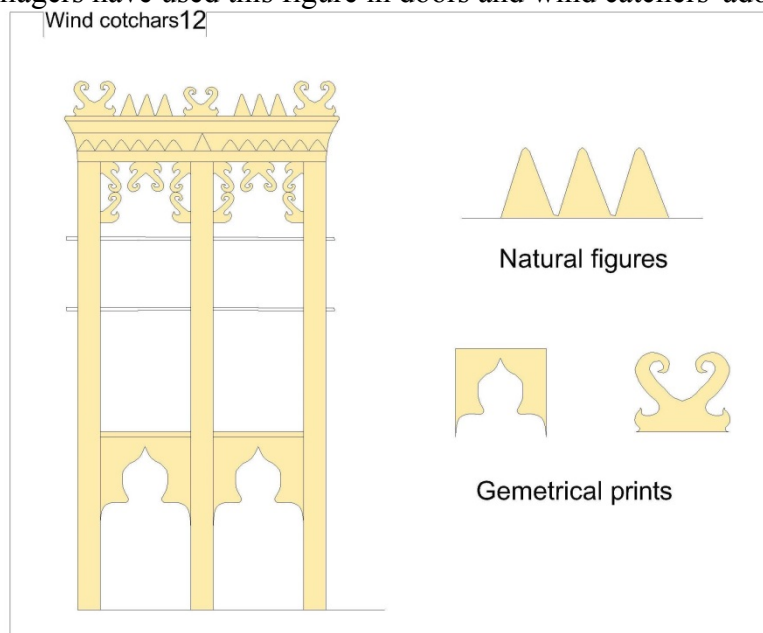


Figure16 : Decorative Elements (*Source:authors: 2014*)

2.1.1.4. Flower: flower figure, rosette, is One of natural figures used on wooden doors. This usage has been so prevalent in Achaemenid era. This figure seems to be a withdrawal of Dahlia(Noruz flower), Rose(the famous flower of Iranian Literature), Chrisanthemum, Aster(with 200 types of blue and white colors) or Jonquil. Other multi-petalled flowers have also been used some of which have formed a circle combining with the Moon and are among Sasanid figures. These flowers are said to work as a compass which are located in a diagonal position and that is due to their directing feature.

The portal of a four-petalled flower with leaves reminding us of the guarding flower, can be seen on some doors.

Hara flower is of high importance for the islanders as it is among the few flowers growing in the island and has an enchanting fragrance. Only the figure of this flower over a triangle or in a vase can be seen on the doors.

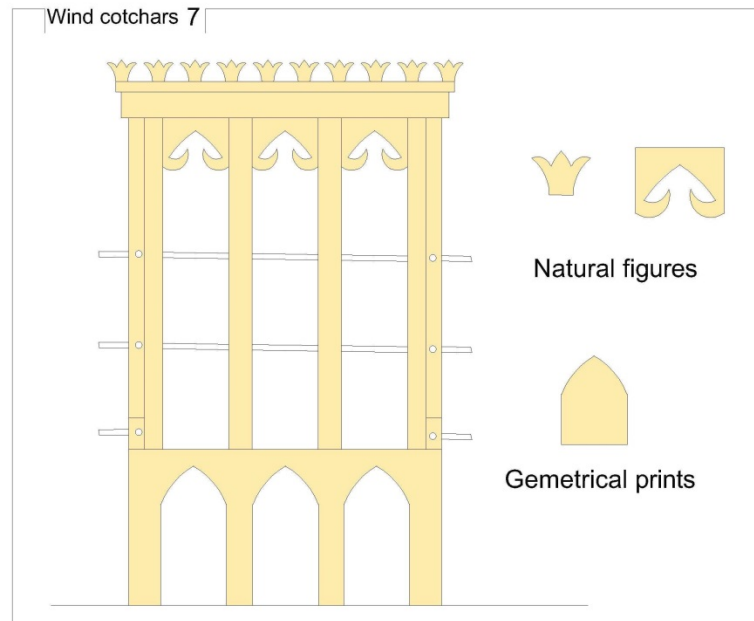


Figure17 : Decorative Elements (*Source:authors: 2014*)

2.1.1.5. Rudder: the figure of a rudder is one of the figures observed on the wind catchers and doors of this port. Rudder is believed to be a very important object as it is a symbol of ship and dhow and reminds the profession of many sailors and fisher men of Gheshm. Rudder also associates the spinning Globe which reminds continuity and repetition and has always been the symbol of the sun and life cycle.

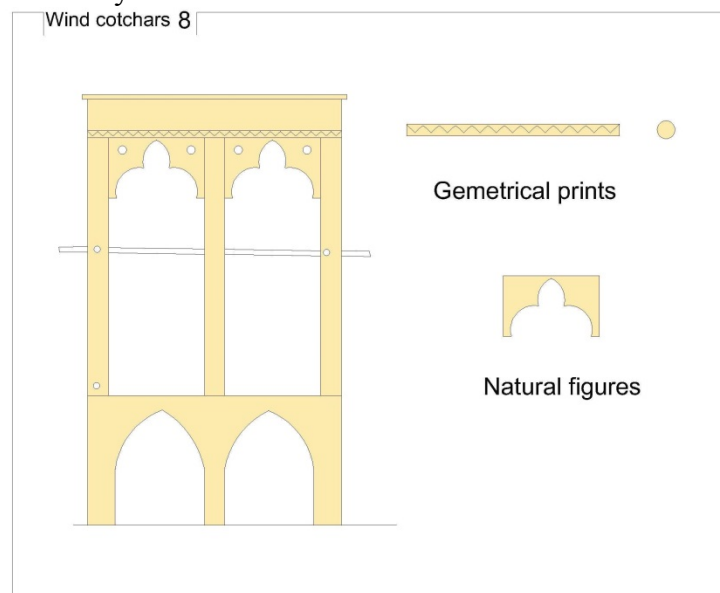


Figure18 : Decorative Elements (*Source:authors: 2014*)

2.1.1.6. Palm tree: the figure of Palm tree confined in an altar framework is another figure used on some of the wind catchers. Palm tree is the symbol of life and religion in Gheshm island and has a great importance in people's living. It overallly means house cultivation and prosperity and it is for keeping the evil forces away.

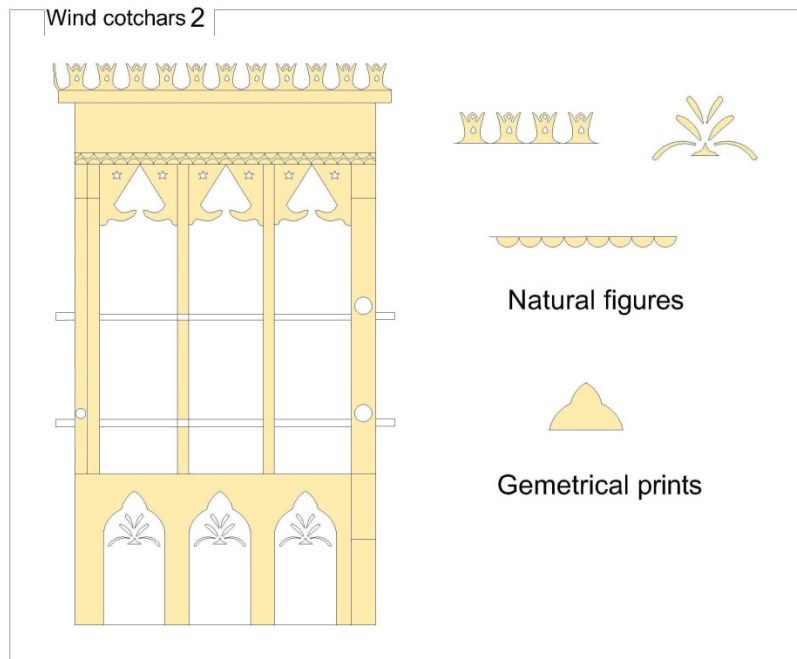


Figure19 : Decorative Elements (*Source:authors: 2014*)

2.1.1.7.Human: human is the symbol of the small universe in cosmology and is believed to be made of the quadruple elements in small scale. Several men hand in hand represent unity in Islam, the oneness code, shaking hands and allegiance.

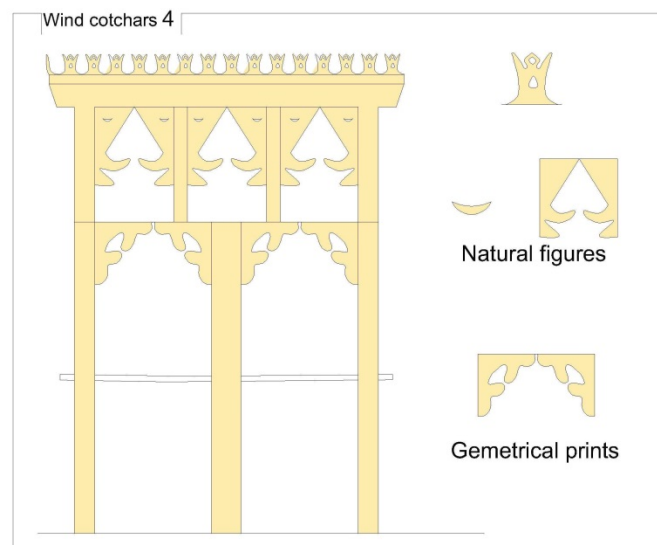


Figure 20: Decorative Elements (*Source:authors: 2014*)

2.1.2.Geometrical prints: these prints are among the traditional figures used in wind catchers' adornments which have been divided into three groups of triangle, tangent circles and lines.

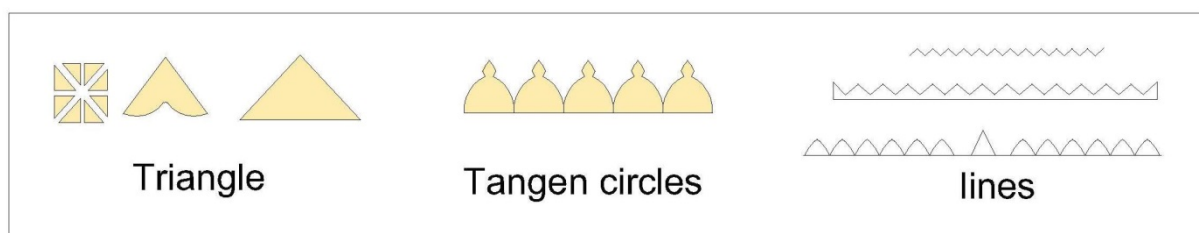


Figure 21 : Geometrical prints (*Source:authors: 2014*)

2.1.2.1. Triangle: triangle is the symbol for mountain. Here triangle in the form of cedar is the symbol of wisdom and immortal afterlife. Equilateral triangle is the symbol of the Earth, isosceles is the symbol of fire, and right angled triangle the symbol of water. Scalene triangle is the symbol of air. Wind also gets the form of the circulating air and it has been used on wind catchers in the form of a symbol of the sky shown with one or two triangles. Triangle is also the symbols of Mercury, Venus and Iranian gods and goddesses and all Cuneiform hand writings are composed of some triangles forming the words. Triangle is also the symbol of triple nature.

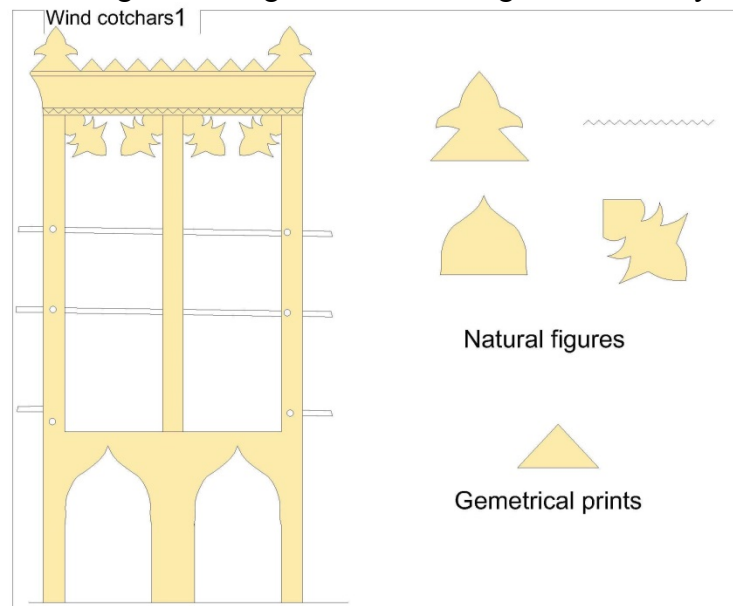


Figure 22: Decorative Elements (*Source:authors: 2014*)

2.1.2.2: tangent circles: the figure of circle is among the symbolic figures on wind catchers which represents the modifications such as perfection, integrity, entirety, time essence, balance, sunlight, the existence world system and life. This figure has a thousands- year background and is sometimes seen as multi-petalled flowers and stars. These circles create four-petalled flowers at their crossing point which are known as Canna or Madonna Lily.

In fact since there is no starting and finishing point in a circle it denotes eternity. A crescent is the symbol of arched roof in architecture and a curve which represents flexibility is a beautiful element in the visual elements. An Altar symbolizes servitude and worship and is rooted in religious beliefs.

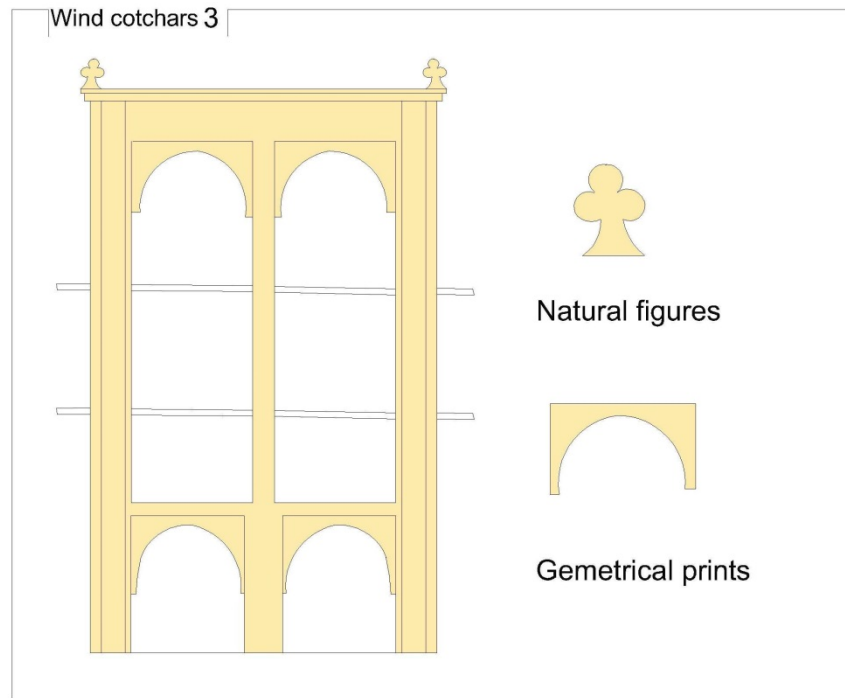


Figure23 : Decorative Elements (*Source:authors: 2014*)

2.1.2.3. Lines: liners considered to be a visual element in drawing. A variety of vertical and horizontal, zigzag and curved lines are used in wind catchers architecture. It associates the bulbous movement, winds or even the sea waves. The sea wave is the symbol of water, fertility and purification. This sea wave has been the first element in different civilization from which every other things are created and symbolizes a cosmic ocean before this world emergence.

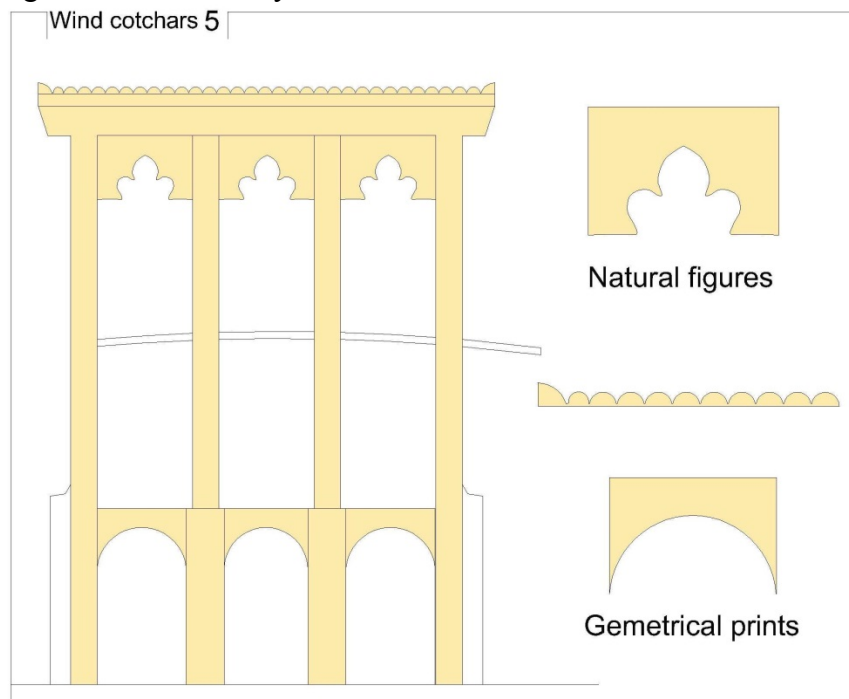


Figure24 : Decorative Elements (*Source:authors: 2014*)

2.2. The Wind catchers color

The table below illustrates the chromatic physiognomy of LAFT. Lenclos' (2004), the couple from France in *Color of the World, the Geography of Color* in 1970s are first creators of this way of illustration. They indicated that the colours of habitat are unique and natural. So, it

seems LAFT's color environment include to those natural collection because LAFT is one of the oldest human habitat. Swirnoff (2003, 5), American colorist, in *The color of the city* also believes that the surface indicates the "sense of space" and it rewards magic to everyday life in cities and towns, especially if it is colored because "it can perform as a signal, focus, marks, or localizing aspect of visual organization". By comparing her state with approximately Cream-Wait -Gray LAFT, it can be clearly seen that there is a sense of secure and coolness in the hot and humid LAFT which it is proper to geographic situation (latitude and attitude). The citizen in LAFT believe that the chromatic situation in LAFT make a balance between the geographical situation and environmental easement.



Figure25 : Common colors the (Source:authors: 2014)

3. Conclusion:

This article was an overview of the architecture of the wind catchers of the historical port of and the adornments used in it. A wind catcher not only has the cooling function in this port, it is also used as a decorative element over the roofs in the village. The wind catchers in are often four- sided and their prominent position in house plans are guest rooms and the rooms used in summer. Since this village is located along the Persian Gulf, most of the adornments used in the village architecture are some abstract derivations of nature and sea which is divided into two groups of the natural figures and the geometrical ones in the present study. Most of these elements are the natural figures such as the moon, stars, elements adapted from mountain, sun and sea waves. Color is considered as the second influencing factor in architecture and is a visual element. The most prevalent colors used in this environment are white, cream, gray and sea blue which suggests a sense of security and coolness. The authors have concluded that due to the importance of the environment and its composing elements in architecture and urban constructions and also considering the peace and serenity resulting from the positive effects of this architecture and local adornments on human, the extraction and analysis of these traditional figures and it's usage in modern architecture and art can assist the designers and architecture and urban construction specialists in propagation and maintenance of local culture and civilization. Negligence and delayed observation and analysis of many cultural elements may lead to losing them.

Research Question	What are the decorative elements used in wind catchers?
Research Hypothesis	due to the location of this village by the Persian Gulf, most of the adornments used in village architecture are some abstract derivations of the nature and sea and are divided into two groups of natural and geometrical figures in the present study, most of which are natural figures such as the Moon and stars and the sun and the elements adapted from them.

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