

# Vernacular Architecture Examine- How Effective Traditional House Architectural Plan in Natural Ventilation Mazandaran (Sample Porch of the Old House in Amol)

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## ABSTRACT

Architecture livelihoods, the tie more to the relationship between the baby and left arms, or of any plant or the safety of the soil and grow bed. The evolution depends on entrepreneurs and inspire, not the cause. In this sense, the arms, the soil and climate: the interface of life and the absence of damping. Iran's indigenous architectural practices, evidence underscore the idea of creating uniform climate considerations to factor the constraints of architecture or the architect captivity. Different rates and different combination of climatic factors caused by the difference geographically different regions, different climate zones, each of which has special features is created. Environment, towns and even buildings in the areas of climate obtain special characteristics appropriate to your climate. One of the last elements of vernacular architecture and traditional atmosphere that province and in terms of performance, form and quality very important role architecture plays in enhancing the value space, porticos. Due to the climatic conditions of the area, porch in vernacular architecture and traditional Caspian features as seen in different forms plays an important role in performance; this element is known as a ventilation system is the air conditioning at home using renewable energy will provide the wind. In this article we are considering the morphology of the native architecture houses city complete with an emphasis on case studies to examine the porch that the air conditioning in the architecture.

## Keywords

Traditional Architecture; Porch; Morphology; Ventilation; Including Homes.

## 1. INTRODUCTION

1. The mild climate and abundant rainfall shores of the Caspian Sea, including areas is moderate. The area where the humidity strip between the Alborz Mountains and surrounded by the Caspian Sea, the mailing is made plain that whatever progress towards the East, humidity and reduced air moderation. In fact, the Alborz Mountains between two opposing weather e-Caspian steppes of central plateau separated. Among the features of this climate: high humidity and moderate air temperature. The temperature is usually between 25 and 30 ° C on summer days and nights between 20 to 22 ° C below zero in winter is usually very high rainfall in this area, in summer and in winter for the snow

storm. The Northern Territory's most wet and warm with high humidity in summer. Therefore, continuous rain and high relative humidity the main cause of formation of architecture in the territory. Despite favorable rainfall conditions, rapid growth and large-scale plants in all parts of the region, which in turn has had a significant impact on the type of traditional building materials. For human comfort, features that the humid and rainy in summer requires that, in all spaces of the wind and in the buildings of draft bilateral air must be used. During this season, the air flow and shadows provide the best conditions for human comfort. In winter, to prevent cold wind and rain at bay with the wind. Another point is that in all season's torrential rains and humidity in the building must be protected from it.

In all the buildings in these areas, without exception, blind and used natural ventilation. In general, plans to open wide and they are a more physical form of geometric shapes, long and narrow. In order to take advantage of natural wind ventilation in the room, orientation of buildings according to the direction set by the sea breeze. In places where the wind is blowing severe and prolonged, the windward buildings completely are closed. [1]

One of the elements of Iranian architecture is a porch. Porch the Parthian used, and it has continued in different ways and for that within it and its replacement in the building, there are various forms of the features change significantly. The main reason for people's basic needs and response can be due to a space by providing pause and stop during the passage of indoor and outdoor or vice versa imagine. However, Avon also responds to some peripheral functions. Especially with regard to climatic conditions, prevents the rapid exchange of heat from the inside to the outside (in winter) and from outside (in summer) is. Ivan in various applications takes a different shape and size. [2]

## 2. NATURAL VENTILATION

In all the buildings in these areas, without exception, of draft air and natural ventilation is used. Plans to open wide and they are a more physical form of geometric shapes, long and narrow in order to take advantage of natural wind ventilation in the room, orientation of buildings according to the direction set by the sea breeze. In areas where strong winds blow long, parts of buildings to be completely closed. Create the most current and maximum natural ventilation and shading of the most important factors is that residents are demanding to be taken to help these factors in terms of peace and comfort. Because of the temperate climate and

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wet climate conditions in the building in all directions is usually the pop-up window to make the air flow in a different direction to take. (This is to achieve a range of comfort in the interior spaces of great importance). [1]

Amol position in the division's climate:

Amol several divisions were mild and humid climate in this region are major features include:

Despite the relatively large currents between the sea and the mountains and plains between them, notably air humidity is relatively strong winds from the west and northwest side in some seasons - Continuous rains and severe considerable amount of sun exposure in the winter gram limited number of frost days in the cold season temperature fluctuations between warm and cold seasons.

Wind

The city of Amol, including the westerly winds and northwest winds that cause rain and storms in winter and autumn and spring, and the winds of the north and northwest of the Mediterranean origin, affected by cold dry polar air masses in Siberia from the front northwest winds caused raining vast coastal area and also due to transfer water from the sea to the northern slopes of the Alborz. Coastal and northwestern wind intensity in all directions - West, Northeast and intensity of the monsoon in May from the western side of speeds between 12 to 16 kilometers per hour were recorded.

### 3. TYPES OF PRECIPITATION

The winds affecting the sphere of influence of the Caspian as follows:

#### 3.1 Westerly Winds:

The wind was under the influence of Mediterranean air masses from the rainy winds that blow at the southern Caspian Sea, which is winter rains.

Northwest winds:

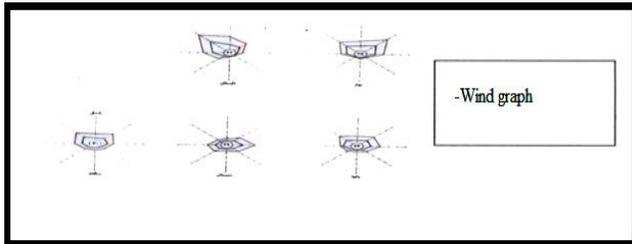


Figure 1: Diagram of Wind Speed (Source: Book climate and architecture) (M. Kasmaee)

These winds affected the North Atlantic and the North West air masses into the country and sharp showers of autumn and spring as a result of the winds of change. Siberian polar air masses have happened under the influence of winds from mid-autumn to late spring in the region can be seen. The winds are cold and dry in the Mediterranean air masses in the region are extensive raining. Ranging from sea level to the plains and steppes of North Alborz is transferred. [3]

### 4. DEFINITION OF SYMBOLIC MEANING PORCH

Ivan dictionaries Dehhoda in the general sense, vault, long time sitting upon the roof, as well as the port is open.

Amid the general sense of the culture, front room, the front part of the building is open and no windows. The origin of this word is Persian.

Ivan is the most important architectural spaces and more traditional houses could be seen as, in terms of form, size and position of many diverse functions. Many spaces are synonymous porch. For example, type it sometimes without a roof terrace and terrace in some cities say. Another species with multiple columns and cross in front of the low height of the roof, porch called. Porch also closed from three sides and open on one side. In the sense of unity on the porch and the porch reads:

The concept involves the porch and the porch throughout the history of Islam has profound implications. Ivan display determination and delimitation of space and facilities is the "way" or transitional space between the earthly and temporal realms. In our view, metaphysical, your porch can be considered as the soul between gardens or yard in the soul and body in the room is full. [4]

Ivan, which usually consists of a ceiling track, is closed on three sides of the house opens. Ivan made for input and output spaces and air flow are open for a while, the sun and prevent as one of the components of great importance to the building, give prominence and glory. Ivan Focuses is to decorate the porch of the building, including the establishment of Mogharnas by means of brickwork, plaster and tiling. [5]

Ivan importance in architectural house

In the past half-open spaces in general and Ivan particularly important element houses Iran. The outdoor spaces in the organization of the next two have closed and your role as an independent space that would accept a variety of functions, are discussed. Of these, perhaps the most important is the porch, because both form and function, and also has its own architectural structure.

The traditional architecture of half-open spaces as a transition space and connecting two indoor or outdoor and indoor play through the half-open spaces with open space related. These spaces, especially Ivan, the properties of both open and closed spaces. And then of both function and form are functioning. The architecture of traditional houses three open space, closed and half are not made in isolation but each other along their meaning. This means that the "aliens gradually lose their degree of open and closed so as to be converted to another one. This continuity in the composition of spaces makes the consecutive spaces as an extension of each other to extend the five-door and five-door, for example porch veranda extension. The interference layer composition of the group of open, closed. Indoor space obstruction destroyed and historic houses with fluidity and buoyancy in the face. [6]

Since different parts of the country, the life patterns of similar shaped porch of the unity of this particular space. One of the factors that makes a difference in the number, placement, and the shape and decoration of the porch in different parts of the country, Climate and natural environment are one and the other in culture, of which the first two are most important.

### 5. THE BUILDING IS AN EXTROVERT

As mentioned, in wet areas, the best way to regulate climate conditions, the use of wind and air conditioning. Unlike the introvert buildings arid regions that are trying to put part of the building in the ground and surrounded the entire building from all four sides in the region to provide comfort, building as much as

possible at long and two or four sides open and are constructed as eccentric. [7]  
 According definitions it is necessary to describe morphology and architecture of the old houses are some examples of factors to consider case by case basis.

### 5.1 Malek House

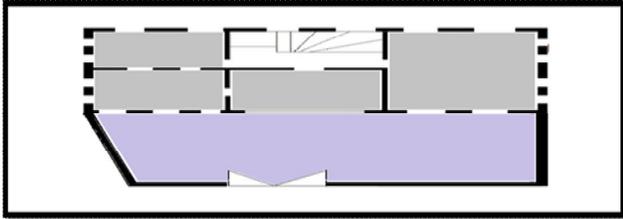


Fig. 2: Ground Floor Plan of the Malek House

According to the given image morphology and describe it as follows:

- a) Interstitial space
- b) The entrance porch
- c) Stairs
- d) Room
- e) The three-door room
- f) Room

The ground floor plan, first into a hallway or an enclosed porch and from there we are going to divide the space from the West using the stairs to reach the top floor and from the north and from the south room to room and three-door split.

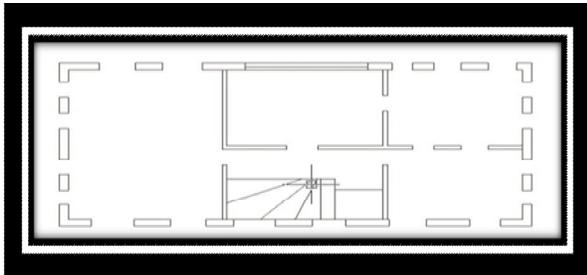


Fig. 3: Plan First Floor of the House Property

According to the given image morphology and describe it as follows:

- a) Staircase
- b) Room split
- c) Room sash
- d) Room three-door
- e) The two-room door
- f) Room alcove

First Floor Plan property at home, when we came up the stairs again to get into a space from which to room sash and three in the throne room on the north side split.

### 5.2 Shafahi House

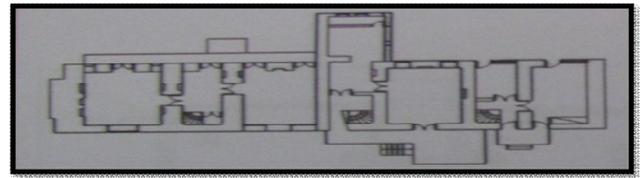


Figure 4: Plan the Ground Floor Shafahi House

According to the given image morphology and describe it as follows:

- a) The northern entrance porch space.
- b) The two-door room.
- c) Divide the space.
- d) Room.
- e) Other rooms.

Ground floor plan divided into several categories, each of which are divided into sections and space for your porch with stairs to the first floor goes round.

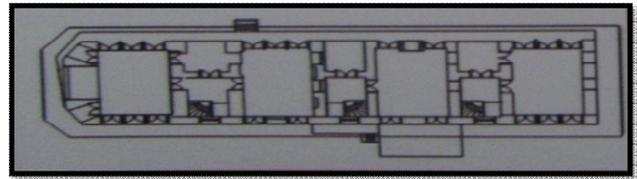


Figure 5: The Shafahi Home (First Floor)

According to the given image morphology and describe it as follows:

- 1. Staircase
- 2. Room split
- 3. Room alcove
- 4. Room sash
- 5. Two-door
- 6. South porch

According to the map, the ground these spaces independently come to the first floor through the porch of the southern division of space, room alcove, room sash in the north and the room divided into two spaces next door connected.

### 5.3 Manouchehri House

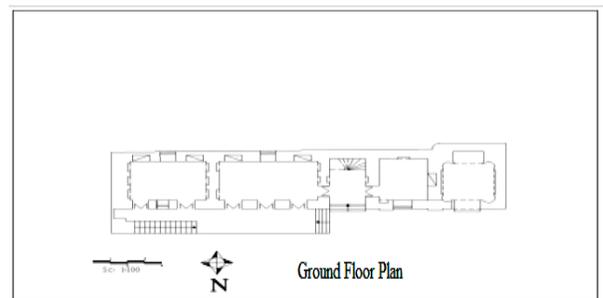


Figure 6: The Ground Floor Manouchehri

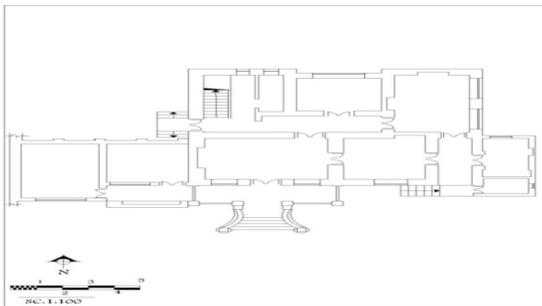
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According to the given image morphology and describe it as follows:

- North entrance porch
- Three-door
- Double Door
- Divide space (porch)
- Rooms
- Room three-door

Plans have two spaces on the ground floor manouchehri a part of the North Portico of the two-door and three-door and porch to the room upstairs is divided by stairs. And the other side in the division (Ivan) and three-door that goes into the room and on the southern end of goes to the first floor.

### 5.4 Moqimi House

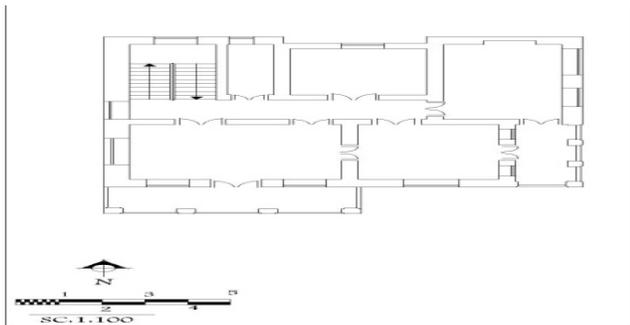


**Figure 7: The Ground Floor Moqimi**

According to the given image morphology and describe it as follows:

- South Ivan
- Room-porch
- Three-door
- Room 2
- South entrance porch
- Divide space (porch)
- Room
- The room has two doors (2)

Home Moqimi are two different ways of Ivan and space are divided into the ground floor. From the south porch we enter the three-door and two rooms. South split from the space between the door and the rooms are divided into rooms.



**Figure 8: The First Floor of the House Moqimi**

According to the given image morphology and describe it as follows:

- Staircase
- Room split
- Room alcove
- Room three-door
- Room two-door
- Room
- South porch

The staircase divides the space into which it enters room and 2 three-door room and two-room door to the south porch that way. [8]

## 6. REVIEWS AND COMPARISON

With regards to describe the planning and architectural morphology Amol is necessary to examine and compare the role of Ivan examine the items listed.

Given these reasons, it should be noted that the house property, entrance porch is open from 3 sides closed one side of the divide at home is connected to the space so that the first floor of this space, we moved to the room. Home or property on the ground floor and first floor, natural ventilation through windows in the center, north and south through the doors to be connected, by (wind) may be conducted.

Ivan also closed on three sides and one side is open. Manouchehri a large veranda at the northern entrance is at home. Which extends along the building has open sides and both sides are closed. And the division of space is also closed on three sides and one side is open at the northern entrance porch as well as can be. Natural draft air (wind) from the north and south is going on. House ground floor porch Moqimi north and a south porch on three sides, one open and one closed and one open and one hand is closed on three sides and a natural draft through the doors and windows north and south is underway.

North porch on the first floor, open on three sides and one side of the package and Ivan northern and eastern sides of the open and closed sides and a natural draft through windows and doors to the north and south.

As a result, the old house in Amol, natural draft air (wind) with respect to body building in north-south direction has a lot of windows and doors is going on. All buildings have been building the porch, and in order to stretch and shape as the three sides closed, open on one side or both sides of the package, open sides or three sides open and a closed hand. The porch of rectangles and half of them are outward-oriented and extroverted in this area is updated. Ivan was also in place such that it is possible to connect to several rooms. Turn the heat exchange from the inside out and from the outside in to create. Due to her old home body naturally receptive to natural draft air is humid and moderate climates.

## 7. RESULT

Different rates and different combinations of climate factors caused by the difference in geographically different areas, can lead to different climate zones, each of which has specific features. Environment, buildings and even cities in the areas of climate obtain special characteristics appropriate to your climate. Iran's experience in the architectural vernacular architecture, evidence underscores the idea of creating form-factor considerations to the limitations of climate architecture or the architect captivity. Iranian architects Ivan as a space that has been

enriched and the concept of open space to create structure along with valuable leads. Ivan is one of the most important architectural spaces in more traditional houses and historic buildings with different functions, including places of worship, palaces, residential buildings etc. can be seen. In terms of form, size and position is diverse and has many functions. Large spaces are also synonymous porch, type it without a roof terrace and sometimes moonlight, sometimes called. Other species with multiple columns at the front and height and width of the ceiling low, the porch is called. Ivan concept as "transitional space between the earth and time factors" From the side porch also referred to as one of the spaces left by the ancient Iranian architecture but with many changes, still visible footprint on Iranian contemporary architecture, to see the view of the element at a higher altitude with a view to the perspective and experience level is very significant.

## 8. CONCLUSION

The Iran in connection with architecture, as non-detachable element of it and as an element associated with a view that can be studied there in front of him. Ivan in Amol, according to its climatic conditions, different forms has been found that morphological features plays an important role in performance, this element has been designed with climate approach, known as a ventilation system in the local architecture Mazandaran and air conditioning in homes using renewable wind energy provides.

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