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## **Interaction in coherence of rural paths levels in Iranian architecture and urbanization (Case study: rural architecture of Iran)**

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### **Abstract**

*One of characteristics of urbanization in old Iran has been its ways and paths fabric. This characteristic was generally formed in all climates in regard to available substances and materials. This principle has been creating visual coherence, order, and hierarchy. Framework of rural paths is a distinctive example in this regard. The main objective is to exemplify connective coherence of frameworks, surface, roofs, and physical aspects of Iran's rural architecture as an indication for urbanization in contemporary architecture. So ways and paths of Iran's architecture and urbanization are studied in this paper by means of a descriptive analytical method, and the data is compiled by field, documentary research. The result of present study is the answer to this question: How can revitalize a city within physical, semantic, and connecting aspects using interaction in coherence of paths components in Iran's architecture and urbanization?*

**Keywords:** rural paths, connecting coherence, floor, surface

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# E1 Introduction

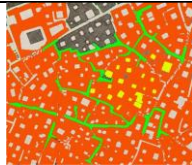

Physical features of residential neighborhoods' space have been dependent on numerous factors such as geographical and climatic conditions, economy and city population, base of city on official organization, socio-economic situation of inhabitants in each neighborhood, construction materials and technics, etc. Old fabrics along with urban elements and spaces inside, e.g. paths network, bazaars and water reservoirs, mosques and caravanserais, etc. have contained special cultural, social, and historical values as well as a significant physical form. Urbanization proceedings and plans launched some decades ago, carelessly led to destroying traditional urban values. Regardless of physical form, every city has had a particular center. City center is a place in which main urban activities like commercial, political, religious, and cultural affairs are concentrated. So their characterized buildings and spaces e.g. bazaar, seat of government, main temple of city and other cultural and service centers are located there. One of the most eminent examples of Iran's city centers is Naqsh-e-Jahan square in Isfahan which possesses the whole related features of this kind of centers (Ghobadian, V. (1385). While each residential neighborhood was connected to bazaar of the city through a main road or the direction leading to bazaar of the city, thus it was kept away from public and crowded spaces of the city. Interior space of each neighborhood was considered semi-public and located regarding public urban spaces in some way that there would be less traffic by foreigners, so a relatively quiet and semi-private space was provided for its inhabitants. In such kind of urbanization, the user always has been feeling itself within the space and supposing to be inside something. In fact, spatial hierarchy and materials (fabric) of this kind of urbanization have been causing coherence among physical elements.

## Coherence of connective paths

Paths can be classified into two groups functionally. First are the ways which pass through neighborhoods and some architectural and urban buildings and spaces, and while they have moving and passing function, these ways

make it possible to access residential units or other buildings. This kind of ways is called path. Of course there are variable names and distinct expressions to call them in different areas and cities. They were known as Kuy, Kucheh, Gozar, etc.<sup>2</sup> that some are common yet (Soltanzadeh, H. (1392). Second group include ways which are important economically and socially as well as possessing moving and passing function, and in fact they are considered as socio-economic centers of the city, because most of socially, economically important buildings were constructed beside them. They are known as bazaar (table 1).

Table 1: Classifying ways functionally- paths to access residential buildings and bazaar as a socio-economic access (authors)

Way types	explanations	analysis	coherence
path	Passing through neighborhoods and some architectural and urban buildings and spaces, moving and passing function	 Connective paths- Birjand	Green paths, creating coherence among architectural and urban buildings
bazaar	Having moving and passing function, socially and economically	 Ganj-Ali-Khan bazaar- Kerman	Bazaar as a socio-economic coherence in city

## Types of the ways

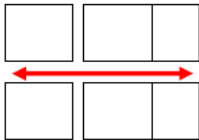

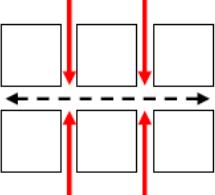

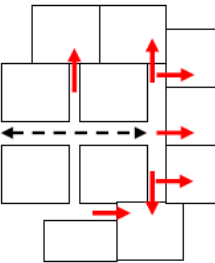

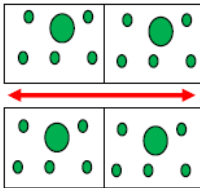

Spaces and elements of road network have had sort of an organized and regulated relation to the other urban spaces and elements, because formation quality of urban spaces and elements near the ways was influenced by people's culture and behavioral patterns in the society. One of characteristics of Iran's architecture and urbanization was the hierarchical access that has

<sup>2</sup> Persian words to call different kinds of paths like alleys, lanes, passages, etc.

been creating a uniform and compact city (table 2). It is better to say that the hierarchy was made based on type of the path. The principle of accessibility coherence is actually created. The hierarchy has caused conducting and controlling current activities and behaviors in different kinds of paths. For example, kids belonged to a residential region of the city were taught directly or indirectly that they were allowed to play only

on their own alleys and lanes, and could not play in bazaar of the city or other neighborhoods' lanes without their inhabitants' implicit permission (Soltanzadeh, H. (1392).

**Table 2:** Analyzing and studying types of paths in Iranian cities, coherence between paths and architectural space has made hierarchy (authors).

Path types	explanations	Coherence diagram	picture	Results of coherence and hierarchy
Primary	These paths were contiguous alleys connecting main neighborhoods and other architectural and urban spaces to each other.			passing through main road Caravanserai, bath, mosque, bazaar,... passing through secondary path, neighborhood, residential space
secondary	All paths connecting primary paths to each other, or the paths which were made to provide access to some parts of a neighborhood or several residential or urban units.			secondary path residential space primary path
Dead end	Creating a road network in cities with consistent and compact fabric as well as a gradual organic development, led to emergence of dead end paths in order to access a few residential units or other architectural units.			secondary path dead end path residential area
Kucheh Bagh <sup>3</sup>	Some paths were usually made to access or pass through some gardens inside the city (outside the city), or to access other urban or suburban spaces.			primary path secondary path Kucheh Bagh suburban space

<sup>3</sup> Persian word that refers to a Kind of narrow path passing through gardens

### Coherence of materials used in floors, surfaces, and roofs of the paths

Using vernacular materials has been another factor to create coherence. Unity and harmony in buildings' exterior surfaces have been causing visual and urban coherence. In table (3) types of materials are considered according to different climates at first. Then they are investigated in regard to their visual coherence of architecture and urbanization.

Table 3: Investigating employed materials in different climates of Iran (authors).

Climatic classification	Types of materials in floors	Types of materials in surfaces
South shore of Caspian sea	Without flooring- earth	wood, adobe, clay, brick
North shore of Persian Gulf and Oman sea	Without flooring- earth	adobe, stone, straw
Mountainous and highland areas of plateaus of Iran	Stone-earth	stone
Plains of plateaus of Iran	Flooring brick-earth	Clay, adobe, brick

In old cities, floors of the most paths were made of earth rammed and compressed by humans and animals walking. Actually, such cities did not have floorings. Of course in desert or mountainous areas, materials of floor and surface had formed an integrated set that was the same as materials coherence in architectural and urban landscape. Floorings are often observed in affluent regions, floor of bazaars, and also inside the citadels and castles. These kinds of buildings are perfect examples of coherence between floor and surface. It is possible to apply this principle in old fabrics in order to lead and guide inhabitants to access neighborhoods, bazaars, and mosques. The data is analyzed in table (4) according to what explained above.

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Table 4: Coherency or incoherency of surface, floor, and roof in traditional architecture and urbanization of Iran (Authors)

Climatic classification	Coherency of materials in floors and surfaces
South shore of Caspian sea	
North shore of Persian Gulf and Oman sea	
Mountainous and highland areas of plateaus of Iran	
Plains of plateaus of Iran	

The legend of table (4) is explained below:




coherency	incoherency


## Coherence of side edges (surfaces)

Employing vernacular materials has been resulting in unity and harmony on exterior surfaces of buildings. In most cities of Iran, particularly cities in central and southern parts of the country, exterior surfaces of walls were covered by adobe, brick, and cob, thus architectural and urban sets would own unity and harmony in color and substance of surfaces, because there is no considerable difference in color and substance of the materials to be an impediment to their unity and coherency (Soltanzadeh, H. (1392).

Integrity and using same materials in side surfaces of many paths passing through Iran's traditional buildings in medium or small towns has resulted in coherence of side surfaces in Iranian cities. In the other hand, vernacular materials were supplied in accordance with Iran's climatic zones of traditional buildings. Side surfaces of Iran's climates are explained below: (table 5)

Table5: Investigating side surfaces in climates of Iran (Authors)

Climatic classification	Type of materials in surfaces	Case study
South shore of Caspian sea	Wood, adobe, clay, brick	
North shore of Persian Gulf and Oman sea	Adobe, stone, straw	
Mountainous and highland areas of plateaus of Iran	Stone, gypsum	

Plains of plateaus of Iran	Clay, adobe, brick	
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## Conclusion

Urban designers and architects' duties include designing streets and public spaces of cities as elements of architecture and Inhabitants' living space regarding to desired physical and visual qualities, and appropriate for human's perception features and abilities. One of the most important aspects of paths and public urban spaces is their coherence and sequence. Variety of orders and sequences within urban elements cause different perceptions for a passing spectator that he obtains them by means of his senses during movement. Environmental information is perceptible and usable for who has the ability to recognize and enough time to understand them. Furthermore, perceiving or designing environment involves understanding principles and orders which the environment follows. Connective and physical coherence among spaces are the characteristic of urban paths in Iran. It seems that connective coherence is achieved by applying the principles of hierarchy. It means that each activity defines a scope. Connecting and physical properties of architecture and urbanization (principle of linking urban elements) is also emerged. Creating such spaces prevents from boringness and monotony inside spaces. According investigations done in this research in Iran's architecture, paths always have had quality of being neighborhoods and had been recognizable in regard to kinds of materials and other aspects. Although paths are categorized in accordance with their width in contemporary architecture, they do not have Iranian characteristic due to dominant materials, that issue is discussed in present research. Lacking physical characteristic is seen in many cities or even villages, while approved facades are proposed in some cities recent years. It seems that each city and region can be provided with a particular basic schema derived from studying Iran's vernacular



architecture and recognizing architectural patterns in townscapes; so the paths can gain an integrated appearance in large scales of neighborhoods. Finally, several examples of constructed designs based on brick patterns in Varamin are presented by the authors (figure 1).



Figure1.: Employing brick patterns, regarding brick as a prevailing material in vernacular architecture of the area (Authors)

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