Evaluate the Theory of Urban Villages and the Adaptation Rate of it with Alexander's Pattern Language

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Abstract: In recent decades, extensive studies in order to achieve sustainable patterns of cities and settlements have done in the global arena. That two of the most important theory is urban village in the 80's and timeless patterns of Christopher Alexander in the late 70s. Jane Jacobs and Christopher Alexander's ideas, in many aspects provide the context for the idea of an urban village. Urban village theory is looking for a place to create a sustainable place for solving the problems of modern urbanization, through the integration of city advantages including progress, speed, specialization, facility, with advantages of village such as, coexistence with nature, peace, quiet and clean air. Alexander's pattern language followings the creation of language without the time and place, to build up the city and building, and provide guidelines for achieving sustainable settlements. Concept of sustainable development have various dimensions of economic, social and environmental and can analyzed as different levels of global, national and local. The theory of urban sustainable development, analyze the sustainability of the city, sustainable pattern of settlements, and effective pattern of the transportation in fuel consumption optimization and city in the hierarchy of the urban area. The purpose of this article is the comparative study of the characteristics of the urban village, with urban patterns of Christopher Alexander, in relation with the theory of sustainable development. Method used in this article is Analysis – Comparative, and Studies have been done in a Library and documents. In following, two theories have been compared in thematic tables, and the amount of their overlap has been evaluated. Via this comparison, adaptation of some characteristics of Alexander Patterns with the characteristics of the urban village has clearly presented, and this adaptation, confirm the Universality of Alexander's pattern language. Also, our conclusions indicate that the applying the urban village approach than the ideas discussed in the context of sustainable development, more comprehensively include the principles of sustainable settlements, and the realization of these principles with regard to all aspects of biological society, will consider more clearly. This approach with present guidelines for proper design principles of sustainable settlements can seriously prevent uncontrolled development of suburbs and rural areas.

Key Words: Urban Village, Alexander's Pattern, Sustainable Development, Sustainable Settlements.

INTRODUCTION

Living in sustainable settlements, attractive and unique place, especially the fact that the effects of the Industrial Revolution, it was clearly understood, always been the ideal for people. So far, several theories have proposed about shaping a Sustainable settlement. Some theories, such as Raymond Unwin and Ebenezer Howard's in Garden City movement and then Clarence Perry's neighborhood unit, despite efforts to establish a balanced and ecological relationship between the city and rural in terms of construction and a new physical form for the city, were not able to stop the growth of urban and

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suburban. Although these ideas in practice partially had not been successful, but they were the basis for all the ideas and attitudes in favor of sustainable settlements in the years after 1980, such as the idea of urban villages.

The idea of an urban village is in the framework of the empiricist movement and has used in a world - wide scale as a new solution for urban and rural development and the achievement of sustainable development. Applying this idea in many countries has demonstrated the universality of the idea. The design of Urban Villages bring attention to sustainable communities with given the centrality of the human dimension compatible with the environment resulted attention to sustainable communities and leading to more efficient human and environmental trends related to sustainability and sustainable development of human settlements.

Christopher Alexander suggests the same general rule for urban development. This rule based on the principle that the construction should be such that can be improved city. The concept of "sustainable development" means offering some solutions against traditional patterns of physical, social and economic development which can prevent problems such as the destruction of natural resources, degradation of ecosystems, pollution, excessive increase in population, widespread injustice and low quality life (Bahrainy, 2008). Based on this definition, the main direction of sustainability should be in the following areas: Intensive land use and efficiency, less cars and more accessible, efficient use of resources and waste, less pollution and restoring natural systems, housing and good living environment, ecology, healthy communities, sustainable economy, public participation, preserve local culture and identity. Alexander has presented a model (pattern language) to create a sustainable settlement with the characteristics. These patterns are not easy to design or construction, but patiently growing in a way that is designed each individual act of helps to create an inclusive and universal patterns. Slowly - and certainly over the years - will make community that there are universal patterns.

SUSTAINABLE URBAN DEVELOPMENT

In the idea of urban villages, the concept of sustainable development defined as sustainability, the move towards urban sustainable development. Sustainable urban development in recent years has been a large part of urban literature. Urban development is a definition of "promoting the quality of life in city as the factors of the ecological, cultural, political, institutional, social and economic, without creating a bottleneck for future generations." The bottleneck caused by loss of natural capital and local debt is excessive. The aim of the course based on material and energy balance, and data / output-based funding that play determinant role in all future decisions regarding the development of urban areas. Sustainable development in urban communities, are the ability to choose the kind of development with regard to the relationship between components of the economy, ecology and equality (Brehany, 1994, p. 46).

INTRODUCE THE THEORY OF URBAN VILLAGE

Word Urban Village

For many the term 'urban village' appeared at first perplexing, a near-perfect oxymoron that although innately familiar, projected a potentially ambiguous and even schizophrenic identity. Is it possible, yet alone sensible, to try to place the idealized charm of the village within a large and at times hostile urban environment? 'How can you have a place that feels like a village and a big city at the same time?' asks David Sucher. The village is small, intimate, quiet; one knows the other villagers and may even relate to them. The city is big, busy, diverse and filled with strangers. Life can be lonely in the big city (Neal, 2003, p. 2).

First time this term used by Herbert Ganz. In his book that is about the result of his studies related to Boston, he used two words Urban Village and Urban Jungle to distinguish two types of urban environments. He knows "Urban Village" as a compatible place that its immigrant communities, compatible their urban culture, with environment urban culture to which they have migrated, While the "urban jungle" where incompatible and unbalanced, a worn out neighborhood with residents that often are included mentally ill criminals, offenders and people such as these (Franklin, 2002). Almost three decades after Ganz, for the first time the term "urban village" in England is otherwise used. Prince of Wales used this term as a vision for Great Britain, and announced «I hope encouraging urban village development based on human scale, social interactions and collective dynamics of life" (Ibid).

The idea of urban villages began in the disagreement of a modern urbanism one-dimensional. Because in modern urbanism, work, leisure and living spaces are separated, the cold and soulless environment was prevailing and overuse of car reduce human relationships and also causes environmental pollution, and thus lead to a steady decrease in the settlements. In the past, the

term urban village was used for the settlements were on the periphery of cities. Urban village been considered in order to create a self-contained community that reduce long trips to metropolitan and continuous need to the car. Also, to reduce the problems of the industry and the necessity economic services, mixed use is permitted, And confronting with single-function areas, which increases the excessive expansion of the region, especially in industrial areas.

Characteristics of the Urban Village Pattern

Because the this article urban village concept as a strategy to achieve sustainability have been investigated, the main characteristics of the of this idea in different aspects of sustainability, including social, environmental and economic, physical, usage, activities and view and visibility will classified and analyzed.

Ecological Characteristics

1. Urban Village located in green or built areas should help to sustainable urban development. (Aldous, 1992)
2. Integration of Manmade environments with the natural environment can be seen in the most Urban Village areas.
3. The use of bicycles and walking has priority toward the personal vehicle and thus less environmental pollution.
4. The construction of new technologies and the usage of new, clean and renewable energy been used.
5. Creating a healthy environment by decreasing the need for long trips and reducing a personal vehicle supported.
6. Existence of plenty of open and green spaces have an enormous effect on micro - climates and causes the reduce air pollution.
7. Reducing fuel consumption and recycling and reuse of is important and of attention in the urban village. (Bahrainy, 2006, p. 276) (Fig. 1)
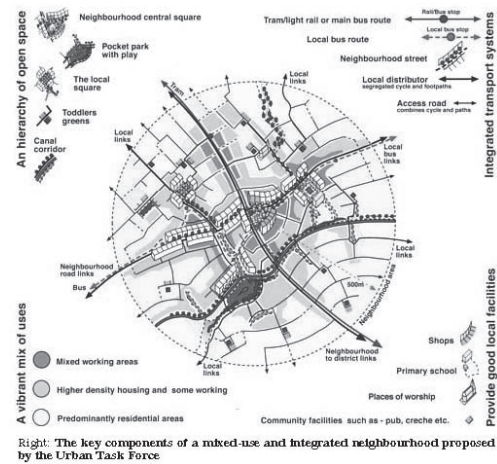

Fig. 1. An Example of the Key Elements of the Urban Village
(Urban Villages and the Making of Communities, Spon Press, 2003)

SOCIAL CHARACTERISTICS

1. Strong ties of social, and establishing social interactions of many residents, are the characteristics of an urban village.
2. Creation and protection of the active human environment and public alive spaces are considered.
3. An urban village at the same relationship with surrounding neighborhoods is a community of endogenous characteristics and its own identity (Fig. 2).
4. There is a sense of place for all residents.
5. Participation of residents can see in various activities and processes.
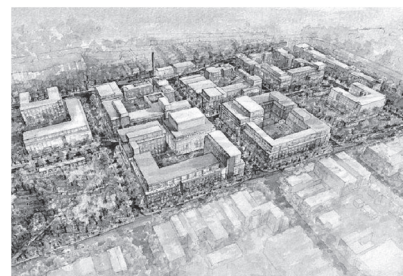6. Quality of life and ultimately social sustainability is the main goal of an urban village (Bahrainy, 2006, p. 290).

Fig. 2. An Example of an Urban Village Neighborhood
(www.camh.net)

Economical Characteristics

1. Urban villages are relatively self-sufficient places (Neal, 2003, p. 10). This means that the majority of residents work in the distance near their location, and to meet the needs of their daily and weekly often do not require long trips to other neighborhoods and villages. Of course is important to note that this independence is relative. Considering an urban village or a neighborhood as the unit that is completely independent is not logical. Jane Jacobs knows the lack of social and economic independence natural and essential and emphasizes to consider neighborhoods or urban villages, as a whole in a city (Jacobs, 1007, p. 123).
2. Residents engage in economic various activities, including agriculture, industrial micro activities, tourism, etc.
3. There are different types of ownership in lands.
4. Necessary infrastructures have provided for employment in various fields such as agriculture, handicrafts, animal husbandry, etc.
5. New technologies and the use of renewable energy used in buildings as much as possible (Neal, 2003, p. 8).

Physical Characteristics

A. Dimensions and Size

1. Half a century of single-user experience has inflicted the boring and lifeless and dislikes environment, Also create a soulless industrial areas, confined shopping centers and the distribution of property and buildings an urban edge (Aldous, 1992).
2. The dimensions of an urban village is small enough that it can be felt in the neighborhood and strengthen a sense of place and enhance social interactions and encounters face to face, And while is large enough that has the ability to provide a range of facilities properly and reasonably (Tabibian, 2008).
3. Urban Village as a compact pattern with high density, for establishing and maintaining an acceptable level of social facilities in the distances that are easily walking, require sufficient population (Noorian, Rezaei & AliPoor Kouhi, 2000).
4. 3000 to 5000 population
5. Empowering people to recognize and encourage

each other to coexist in a neighborhood
6. The ability to walk is the main operating criterion in achieving important daily and weekly uses. Based on the available radius of 300 to 600 meters based on adjusted with available radii of crossings and the existing indicator uses, as the maximum desirable distance is considered. This criterion is also effective in define of the centers of urban villages and determine the size of them.
7. Its width up to 900 meters (The possibilities to walk the whole range of it in less than 10 minutes).
8. An area is approximately 40 hectares and anticipated environment for walking and pedestrian (Neal, 2003).

B. Communication Network

1. Environments with the ability of walking that has close relationship with Mixed use users, leading to reduce the use of cars and encourage new ways of movement such as walking and cycling (Taylor, 2003).
2. Design of access and appropriate and sustainable communication networks in an urban village is the most important success factors of it. A sustainable communication networks and human-centered not only cause the type of inevitable partnerships and contributions, but also promote the social and economic vitality and protect environmental sustainability (Neal, 2003, p. 104). Over the time where places have been able to flourish that have good relationships, and strong and variety infrastructure of social. Therefore creating the ideal patterns of movement and displacement should consider as a critical part of the design process of an urban village, and seen as a matter beyond a basic system for displacement and transportation.

User space and Activities

1. The incorporation aim in occupy the estate, Creating more housing opportunities for large segments of society such as student housing, retirement housing and corporate housing. This strategy integrates with mixed use and can grow a small business in society and give various topics to residents (Aldous, 1992).
2. Mixed use and variety of activities in order less need for long trips and settlements vitality, is one of the urban village characteristics (Sucher, 2003, p. 8).

3. There are active users at different times of day, in many places of the urban village. As Jacobs writes, a user whatever is, as the creation of urban variety alone is ineffective, If this user combine with another user that cause movement of people to the streets, at the same time, will not have results. When one user effectively combine with another user that cause movement of people to the streets at different times, will have an important effect (Jacobs, 2007, p. 173).

4. Username communal and public spaces that encourage social and optional activities in collective open spaces are very important in an urban village. Optional activities are not vital aspect and perform in conditions that desirable context provide for them. Social activities are also dependent on the presence of other people in the space and out of collective mode are not possible (Pakzad, 2006, p. 42).

Vision and Landscape

1. Develop a lively place with a general sense of society and neighborhood, design high quality of physical elements such as the design of buildings and public spaces and landscaping (Noorian, Rezaei and AliPoor Kouhi, 2000).

2. Various sequences in walking path will attract and encourage pedestrian to walk.

3. The existence of green and open spaces will cause liveliness.

4. Integration of natural and artificial environments causes space variation.

5. The existence of open and semi-open spaces will cause space contrast.

6. In the design of details such as furniture and flooring, etc., aesthetic principles will be observe (Bahrainy et al., 2000, p. 7).

INTRODUCING THE ALEXANDER'S PATTERN LANGUAGE

Christopher Alexander introduces the pattern language as a solution to a practical experience and in it categorizes patterns from the large-scale to of micro-scale. He also believes that any language formed of a set of words and rules and every one of native language can only use the same thousands of words and sentences to create rules that others can understand them, architecture and urbanism has language that now forgotten.

If people remember that language, can with language, in their own cultures, build their house that satisfies their needs and be beautiful, and coordinates with other houses in another way, others using the same language that have made (Newman & Kenworthy, 1999).

Language of Architecture and urbanism - Which he calls a pattern language- forms from a set of event patterns like grammar. The event pattern is a design and pattern that any of the events of human life repeated on the base of it. Apart from internal validity of the Patterns that can find in the ability of patterns in composition with it, what it proves impossible to refuse the patterns is their relationship with the fundamental patterns of human behavior and movement. Many of the human interactions and functions will facilitate by urban geometry that patterns suggest. In fact, we can graphically relate behavior patterns into architectural patterns directly. In most cases, these relationships seem intuitively right on Alexander patterns. He has established the credibility much of pattern language based on intuition (Alexander, 1977, p. 167).

A pattern is a solution that has already discovered and tested in different conditions. Framework application time to urban and architectural patterns can also be a few thousand years. In his Opinion, the laws governing of the development of neighborhoods and cities arises from the rules of nature. The growth process of the favorable city is similar with the growth in living and non-living nature. This law arises from the process rather than the shape or map. The global rules were prevailing not only on traditional cities, but also on the cities in every age and in every culture and have improved human activities (West and Deering, 1995).

Like Kenneth Frampton, Alexander believes that we have confined ourselves to the rules and concepts that cause the city build alive and have convinced ourselves that work in a system to remain safe from falling in the method that disturbance the environment; but these methods are invalid (Frampton, 422).

Then, once this discipline has done its work, and pricked the bubbles of illusion that we cling to now, we will be ready to give up the discipline, and act as nature does. This is the timeless way of building: Learning the discipline and shedding it (Alexander, 1979, p. 16).

ALEXANDER'S PATTERN RELATED TO THE URBAN VAILLAGE

Pattern Number 1: Independent Regions

Metropolitan regions will not come to balance until each one is small and autonomous enough to be an independent sphere of culture. Therefore, Wherever

possible, work toward the evolution of independent regions in the world; each with a population between 2 and 10 million; each with its own natural and geographic boundaries; each with its own economy; each one autonomous and self-governing; each with a seat in a world government, without the intervening power of larger states or countries (Alexander, 1977, p. 11).

Pattern Number 2: The Distribution of Towns

The region as a set of social and ecological whole will not properly maintained unless the people of the region are fairly scattered across it. The towns in any size category should uniformly distribute across the region (Alexander, 1977, p. 17).

Pattern Number 3: City Country Fingers

People feel comfortable when they have access to the countryside, experience of open fields, and agriculture; access to wild plants and birds and animals. For this access, cities must have boundaries with the countryside near every point. At the same time, a city becomes good for life only when it contains a great density of interactions among people and work, and different ways of life. For the sake of this interaction, the city must be continuous—not broken up. In this pattern, we shall try to bring these two facts to balance (Alexander, 1977, p. 22) (Fig. 3).
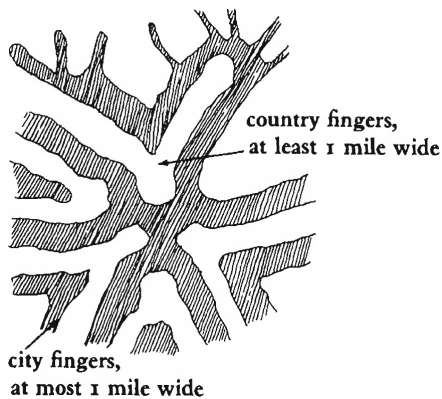

Fig. 3. City Country Fingers
(Alexander, 1977, p. 25)

Pattern Number 4: Agricultural Valleys

Preserve all agricultural valleys as farmland and protect this land from any development that would destroy or lock up the unique fertility of the soil. Even when valleys are not cultivated now, protect them: keep them for farms, and parks and wilds (Alexander, 1977, p. 28) (Fig. 4).
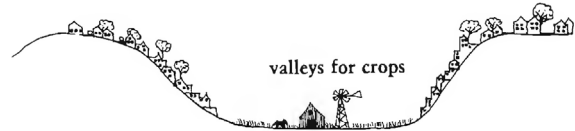

Fig. 4. Agricultural Valleys
(Alexander, 1977, p. 28)

Pattern Number 5: Lace of Country Streets

In the zone where city and country meet, place country roads at least a mile apart, so that they enclose squares of countryside and farmland at least one square mile in area. Build homesteads along these roads, one lot deep, on lots of at least half an acre, with the square mile of open countryside or farmland behind the houses (Alexander, 1977, p. 31) (Fig. 5).
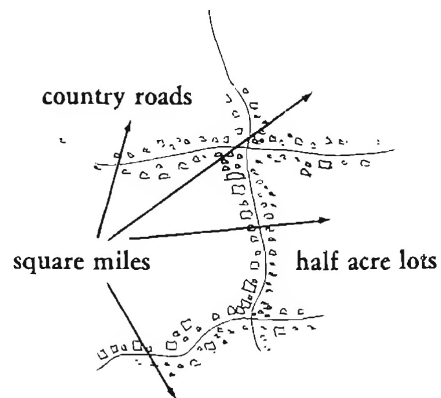

Fig. 5. Lace of Country Streets
(Alexander, 1977, p. 31)

Pattern Number 6: Country Towns

The big city is a magnet. It is terribly hard for small towns to stay alive and healthy in the face of central urban growth. Preserve country towns where they exist; and encourage the growth of new self-contained towns, with populations between 500 and 10,000, entirely surrounded by open countryside and at least 10 miles from neighboring towns. Make it the region's collective concern to give each town the wherewithal it needs to build a base of local industry, so that these towns are not dormitories for people who work in other places, but real towns—able to sustain the whole of life (Alexander, 1977, p. 35) (Fig. 6).
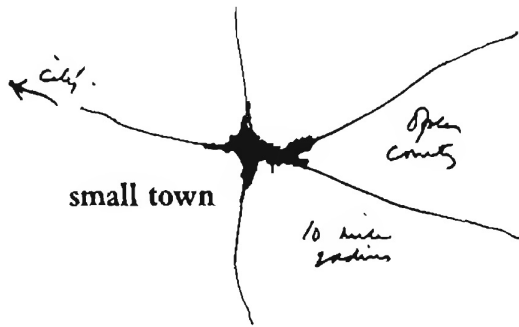
Fig. 6. Country Towns
(Alexander, 1977, p. 35)

Pattern number 7: The Countryside

Define all farms as parks, where the public has a right to be; and make all regional parks into working farms. Create stewardships among groups of people, families and cooperatives, with stewardship responsible for one part of the countryside (Alexander, 1977, p. 39) (Fig. 7).
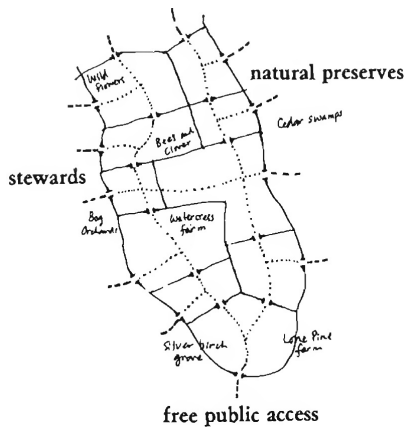

Fig. 7. The Countryside
(Alexander, 1977, p. 40)

Pattern Number 8: Mosaic of Subcultures

The homogeneous and undifferentiated character of modern cities kills all variety of life styles and arrests the growth of individual character. The solution is this. The metropolis must contain a large number of different subcultures, each one strongly articulatedy with its own values sharply delineated, and sharply distinguished from the others. But although these subcultures must be sharp and distinct and separate, they must not be closed; they must be readily accessible to one another, so that a person

can move easily from one to another, and can settle in the one which suits him best (Alexander, 1977, p. 43-48) (Fig. 8).
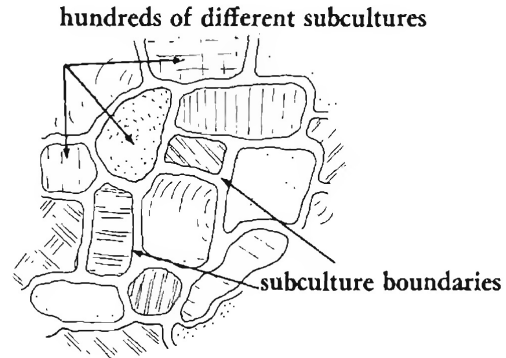

Fig. 8. Mosaic of Subcultures
(Alexander, 1977, p. 50)

Pattern Number 9: Scattered Work

The artificial separation of houses and work creates intolerable

Rifts in people's inner lives. But this separation creates enormous rifts in people's emotional lives. Use zoning laws, neighborhood planning tax incentives, and any other means available to scatter workplaces throughout the city. Prohibit large concentrations of work, without family life around them. Prohibit large concentrations of family life, without workplaces around them (Alexander, 1977, p. 52ᶜ56) (Fig. 9).
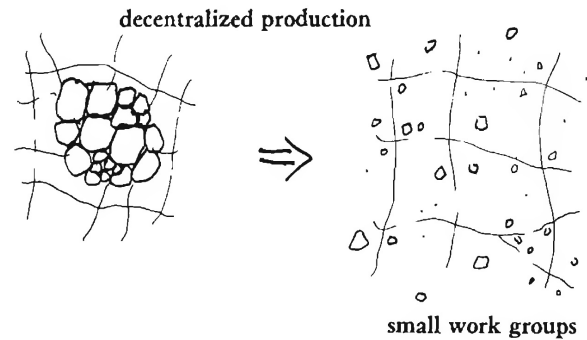

Fig. 9. Scattered Work
(Alexander, 1977, p. 56)

Pattern Number 11: Local Transport Areas

Break the urban area down into local transport areas, each one between 1 and 2 miles (Nearly: 1/6 to 3/2 Kilometers) across, surrounded by a ring road. Within the

local transport area, build minor local roads and paths for internal movements on foot, by bike, on horseback, and in local vehicles; build major roads that make it easy for cars and trucks to get to and from the ring roads, but place them to make internal local trips slow and inconvenient (Alexander, 1977, p. 68) (Fig. 10).
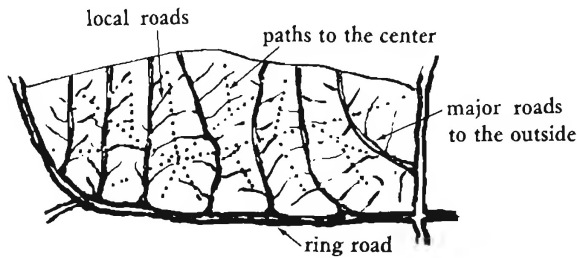

Fig. 10. Local Transport Areas
(Alexander, 1977, p. 68)

Pattern Number 14: Indentifiable Neighborhood

People need an identifiable spatial unit to belong it. The neighborhood inhabitants should be able to look after their own interests. Neighborhood in the physical domain must be identified for people. A neighborhood can only have a strong identity if is protected from heavy traffic. Help people to define the neighborhoods they live in, not more than 300 yards across, with no more than 400 or 500 inhabitants (Alexander, 1977, p. 81-84) (Fig. 11).
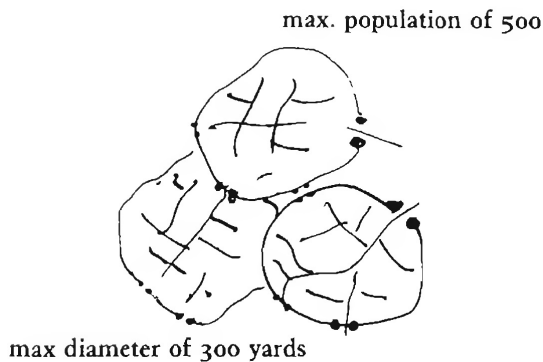

Fig. 11. Indentifiable Neighborhood
(Alexander, 1977, p. 85)

Pattern Number 15: Neighborhood Boundry

The strength of the boundary is essential to a neighborhood. If the boundary is too weak, the neighborhood will not be able to maintain its own identifiable character. Encourage the formation of a boundary around each neighborhood, to separate it from the next door neighborhoods. Form this boundary by closing down streets and limiting access to the neighborhood—cut the normal number of streets at least in half (Alexander, 1977, p. 89) (Fig. 12).
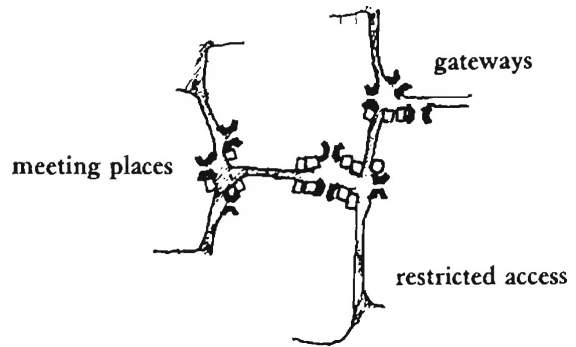

Fig. 12. Neighborhood Boundry
(Alexander, 1977, p. 90)

Pattern Number 16: Web of Public Transportation

Create incentives so that all the different modes of public transportation plan their lines to connect the interchanges. Give the local communities control over their interchanges so that they can implement the pattern by giving contracts only to those transportation companies which are willing to serve these interchanges (Alexander, 1977, p. 94) (Fig. 13).
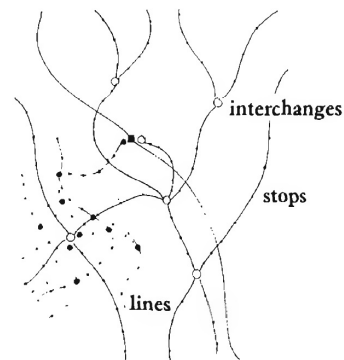

Fig. 13. Web of Public Transportation
(Alexander, 1977, p. 95)

Pattern Number 19: Web of Shopping

In present cities, shops of similar types tend to

clustered in shopping centers. They are forced to cluster, in part because of zoning ordinances, which forbid them to locate in so-called residential areas; and they are encouraged to cluster by their mistaken notion that competition with other shops will serve them better than roughly equal sharing of the available customers. In the "peoples" web we are proposing, shops are far more evenly spread out, with less emphasis on competition and greater emphasis on service (Alexander, 1977, p. 106) (Fig. 14).
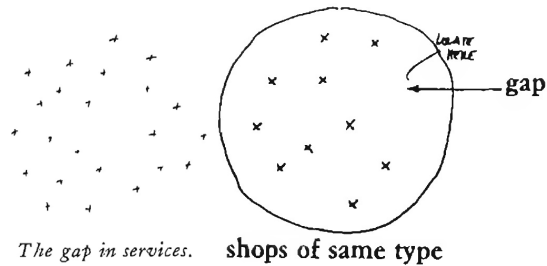

The gap in services. **shops of same type**

Fig. 14. Web of Shopping (Alexander, 1977, p. 107)

Pattern Number 21: Four – Story Limit

There is abundant evidence to show that high buildings make people crazy. In any urban area, no matter how dense, keep the majority of buildings four stories high or less. It is possible that certain buildings should exceed this limit, but they should never be buildings for human habitation. (Alexander, 1977, p. 119) (Fig. 15).

four storys

Fig. 15. Four Story Limit Streets (Alexander, 1977, p. 119)

Pattern Number 30: Activity Nodes

Community facilities scattered individually through the city do nothing for the life of the city. Studies of pedestrian behavior make it clear that people seek out concentrations of other people, whenever they are available.1 To create these concentrations of people in a community, facilities must be grouped densely round very small public squares which can function as nodes (Alexander, 1977, p. 164) (Fig. 16).
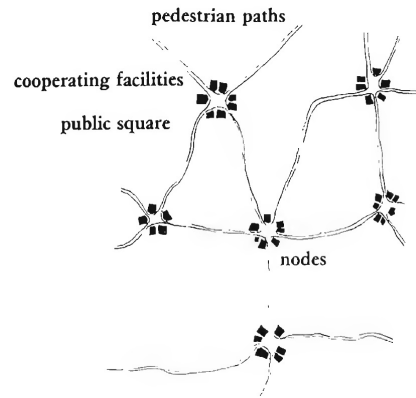

pedestrian paths

cooperating facilities

public square

nodes

Fig. 16. Activity Nodes (Alexander, 1977, p. 167)

Pattern Number 32: Shopping Street

Shopping centers depend on access: they need locations near major traffic arteries. Encourage local shopping centers to grow in the form of short pedestrian streets, at right angles to major roads and opening off these roads—with parking behind the shops, so that the cars can pull directly off the road, and yet not harm the shopping street. (Alexander, 1977, p. 177) (Fig. 17)

major road
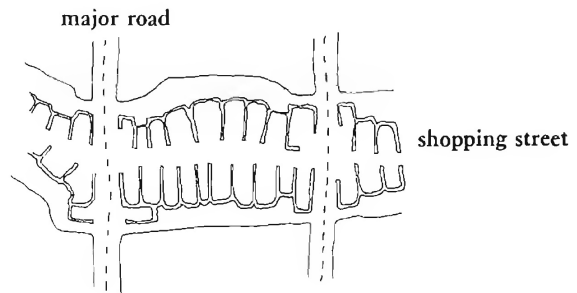
shopping street

Fig. 17. Shopping Street (Alexander, 1977, p. 177)

Pattern Number 33: Night Life

Most of the city's activities close down at night; those which stay open won't do much for the night life of the city unless they are together. Knit together shops, amusements, and services which are open at night, along with hotels, bars, and all-night diners to form centers of night life: well-lit, safe, and lively places that increase the intensity of pedestrian activity at night by drawing all the people who are out at night to the same few spots in the town. Encourage these evening centers to distribute themselves evenly across the town (Alexander, 1977, p. 182) (Fig. 18).

Fig. 18. Night Life (Alexander, 1977, p. 182)

**Fig. 20. Network of Paths and Cars
(Alexander, 1977, p. 274)**

Pattern Number 51: Green Streets

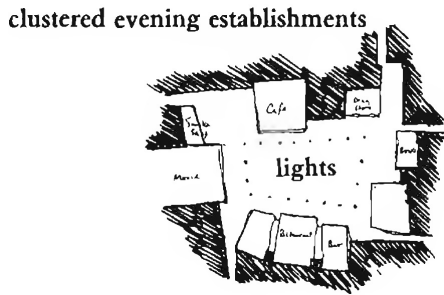A local road, which only gives access to buildings, needs a few stones for the wheels of the cars; nothing more. Most of it can still be green. On local roads, closed to through traffic, plant grass all over the road and set occasional paving stones into the grass to form a surface for the wheels of those cars that need access to the street (Alexander, 1977, p. 269) (Fig. 19).
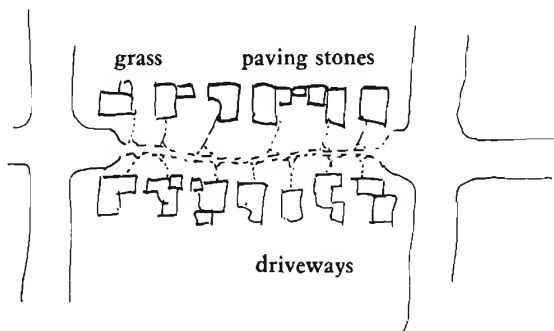
Pattern Number 56: Bike Paths and Racks

Biking on roads are threatened by cars: bikes on paths threaten pedestrians. It will almost certainly be violated by people that taking shortcuts across the other networks. Wherever possible, then, bike paths should coincide with roads and major pedestrian paths. It helps put the bike rider in a safer position with respect to the cars if the bike path is raised a few inches from the road; or separated by a row of trees (Alexander, 1977, p. 291) (Fig. 21).

**Fig. 19. Green Streets
(Alexander, 1977, p. 269)**
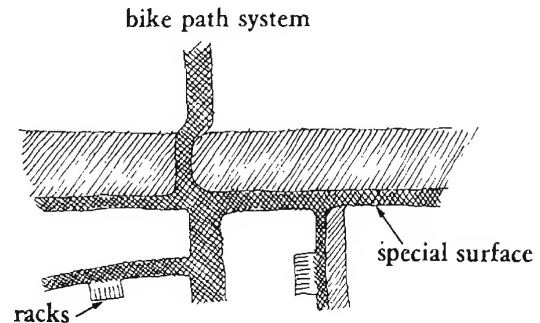
**Fig. 21.Bike Paths and Racks
(Alexander, 1977, p. 292)**

Pattern Number 52: Network of Paths and Cars

Cars are dangerous to pedestrians; yet activities occur just where cars and pedestrians meet. To resolve the conflict, it is necessary to find an arrangement of pedestrian paths and roads, o that the two are separate, but meet frequently, with the points where they meet recognized as focal points. Except where traffic densities are very high or very low, lay out pedestrian paths at right angles to roads, not along them (Alexander, 1977, p. 271-274) (Fig. 20).

Pattern Number 59: Quiet Backs

Anyone who has to work in noise, in offices with people all around, needs to be able to pause and refresh himself with quiet in a more natural situation, all buildings as having a front and a back. If the front is given over the street life cars, shopping paths, deliverythen the back can be reserved for quiet (Alexander, 1977, p. 302) (Fig. 22).
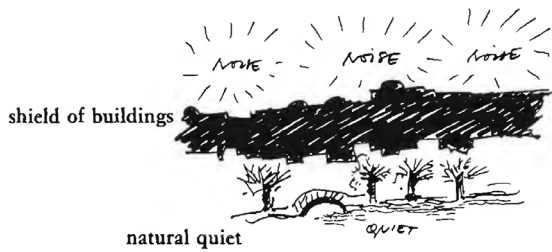
Fig. 22. Quiet Backs (Alexander, 1977, p. 303)

Pattern Number 60: Accessible Green

People need green open places to go to; when they are close to they use them, but if the greens are more than three minutes away, the distance overwhelms the need. Build one open public green within three minutes' walk about 750 feet (230 Meter) of every house and workplace. This means that the greens need to be uniformly scattered at 1500-foot (457 Meter) intervals, throughout the city (Alexander, 1977, p. 308) (Fig. 23).
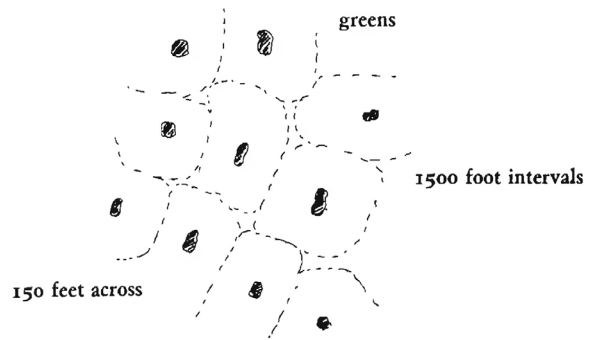
Fig. 23. Accessible Green (Alexander, 1977, p. 309)

A COMPARATIVE STUDY OF THE THEORY OF URBAN VILLAGES AND THE ALEXANDER'S URBAN PATTERN

After reviewing the above, in this section of the article will attempt to compare pattern with the theory of urban villages in each of its characteristics.

From the View of Environmental Characteristics

From the view of this characteristic, that described above. The item, Reduce pollution by encouraging people to use bicycles, corresponded to patterns number 11, 52, 56. Also two items; Combine manmade environments with the natural environment and Create enough open and green spaces corresponded to pattern number 60 (Table1).

Table 1. Comparison of Environmental Characteristics of Urban Villages with Some of Alexander's Patterns

Environmental Characteristics						Characteristics Of Urban Village / Alexander Pattern
Create Enough Open and Green Spaces	Minimal Interference in the Natural Environment	Combine Manmade Environments with the Natural Environment	The Use of Clean and Renewable Energy through New Technologies Making	Reduce Pollution by Encouraging People to Use Bicycles	Reduce the Use of Private Vehicles	
✔	✔					Pattern Number 4: Agricultural Valleys
					✔	Pattern Number 6: Country Towns
				✔		Pattern Number 11: Local Transport Areas
✔		✔				Pattern Number 51: Green Streets
				✔		Pattern Number 52: Network of Paths And Cars
				✔		Pattern Number 56: Bike Paths and Racks
✔		✔				Pattern Number 60: Accessible Green

From the View of Social Characteristics

From the view of this characteristic, the item, Limit Population between 3 to 5 thousands corresponded to pattern number 2, also, Participate residents in various local activities and promote quality of life and Participation of people in all phases of the design process with pattern number 8,

Create endogenous neighborhoods with features and own identity while communicating with surrounding neighborhoods with patterns number 14 and 15, and create alive and active collective spaces and enhance the sense of belonging to living place corresponded to pattern number 30 (Table 2).

Table 2. Comparison of Social Characteristics of Urban Villages with Some of Alexander's Patterns

Social Characteristics								Characteristics of Urban Village / Alexander Pattern
Participation Of People in All Phases of the Design Process	Promote Quality of Life	Participate Residents in Various Local Activities	Enhance the Sense of Belonging to Living Place	Create Endogenous Neighborhoods with Features and Own Identity while Communicating with Surrounding Neighborhoods	Create Alive and Active Collective Spaces	Increase Social Interaction Among Residents	Limit Population Between 3 to 5 Thousands	
							✔	Pattern Number 2: The Distribution of Towns
✔	✔	✔						Pattern Number 8: Mosaic of Subcultures
						✔		Pattern Number 11: Local Transport Areas
				✔				Pattern Number 14: Identifiable Neighborhood
				✔				Pattern Number 15: Neighborhood Boundary
			✔		✔			Pattern Number 30: Activity Nodes

From the View of Economical Characteristics

From the view of this characteristic, the item, Different types of ownership in lands corresponded to pattern number 7, Create the infrastructure for various fields of employment to pattern number 9. (Table 3)

Table 3. Comparison of Economical Characteristics of Urban Villages with Some of Alexander's Patterns

Economical Characteristics					Characteristics of Urban Village / Alexander Pattern
Different Types of Ownership in Lands	Use of New Technologies to Create Building Self-Sufficient	Create the Infrastructure for Various Fields of Employment	Encourage Residents to Participate in Various Economic Activities	Create An Urban Villages Relatively Self-Sufficient	
✔					Pattern Number 7: The Countryside
		✔			Pattern Number 9: Scattered Work

From the View of Physical Characteristics (Size and Dimension and Architectural Characteristics)

From the view of this characteristic, in the item of size and dimension, the item, limiting the size of an urban village to upgrade the concept of neighborhood and strengthen a sense of place corresponded to pattern number 2, and Attention to human scale in the design of settlements to pattern number 21. Also in the item of architectural characteristics, the item, Design walk absorbing with urban furniture and appropriate pauses spaces to patterns number 52 and 56, and the characteristics: The development of appropriate spaces and adequate mass and medium density to pattern number 21.

Placement of parking spaces in the behind of building and access of them from alley corresponded to pattern number 32, and also have a playgrounds and small backyard for every house to pattern number 59 (Table 4).

Table 4. Comparison of Physical Characteristics of Urban Villages with Some of Alexander's Patterns

Physical Characteristics							Characteristics of Urban Village
Architectural Characteristics					Size and Dimension		Alexander Pattern
Having A Playgrounds and Small Backyard for Every House	Medium Density	Placement of Parking Spaces in the Behind of Building and Access of Them From Alley	The Development of Appropriate Spaces and Adequate Mass	to Design Walk Absorbing with Urban Furniture and Appropriate Pauses Spaces	Attention to Human Scale in the Design of Settlements	Limiting the Size of an Urban Village to Upgrade the Concept of Neighborhood and Strengthen a Sense of Place	
						✔	Pattern Number 2: The Distribution of Towns
✔			✔		✔		Pattern Number 21: Four – Story Limit
		✔					Pattern Number 32: Shopping Street
				✔			Pattern Number 52: Network of Paths and Cars
				✔			Pattern Number 56: Bike Paths and Racks
✔							Pattern Number 59: Quiet Backs

From the View of Physical Characteristics (Communication Network)

From the view of this characteristic, the item, Develop finger plan based on growing quintuple corridors according to Copenhagen corresponded to pattern number 3, Giving priority to special walking paths and special bike paths to patterns number 11, 52 and 56. And the characteristics: considering the radius of proper access (maximum 600 m) to improve walking ability to access the use Daily and Weekly corresponded to pattern number 19, the item, Creating Pathways roadway network to facilitate communication between urban villages with villages and surrounding neighborhoods to pattern number 5.

And the items, Control the speed of the roadway through establish measures in the direction of the roadway and an efficient public transport system corresponded to patterns number 11 and 52, Attention to cars and pedestrians simultaneously to regulate access network to pattern number 11. And at the end, the item, Stations with the mixed performance around the stations of public transportation corresponded to pattern number 16 (Table 5).

Table 5. Comparison of Physical Characteristics (Communication Network) of Urban Villages with Some of Alexander's Patterns

Physical Characteristics								Characteristics of Urban Village
Communication Network								
Stations with the Mixed Performance Around the Stations of Public Transportation	Attention to Cars and Pedestrians Simultaneously to Regulate Access Network	An Efficient Public Transport System	Control The Speed of The Roadway Through Establish Measures in The Direction of The Roadway	Creating Pathways Roadway Network to Facilitate Communication Between Urban Villages with Villages and Surrounding Neighborhoods	Considering the Radius Of Proper Access to Improve Walking Ability to Access the Use Daily And Weekly	Giving Priority to Special Walking Paths and Special Bike Paths	Develop Finger Plan Based on Growing Quintuple Corridors According to Copenhagen	Alexander Pattern
							✔	Pattern Number 3: City Country Fingers
				✔				Pattern Number 5: Lace of Country Streets
	✔	✔				✔		Pattern Number 11: Local Transport Areas
✔								Pattern Number 16: Web of Public Transportation
					✔			Pattern Number 19: Web of Shopping
		✔	✔			✔		Pattern Number 52: Network of Paths And Cars
						✔		Pattern Number 56: Bike Paths And Racks

From the View of User Space and Activities Characteristics

From the view of this characteristic, items, create a mixed use and diverse activities in order to reduce the need for long trips and encourage social and optional activity in open spaces and enough Shopping centers proportional to population size corresponded to patterns number 9, 19, 30. and, the item, Create use active at different times of day to pattern number 33. And items, mixed use and multicentre to patterns number 9 (Table 6).

Table 6. Comparison of User Space and Activities Characteristics of Urban Villages with Some of Alexander's Patterns

User space and Activities						Characteristics of Urban Village / Alexander Pattern
Enough Shopping Centers Proportional to Population Size	Multicentre	Mixed Use	Encourage Social And Optional Activity in Open Spaces	Create Use Active at Different Times of Day	Create a Mixed Use and Diverse Activities in Order to Reduce the Need for Long Trips	
	✔	✔			✔	Pattern Number 9: Scattered Work
✔					✔	Pattern Number 19: Web of Shopping
			✔		✔	Pattern Number 30: Activity Nodes
				✔		Pattern Number 33: Night Life

From the View of Vision and Landscape Characteristics

From the view of this characteristic, items, Vitality through green spaces and open spaces and Observance of the principles of aesthetics in the design of details of space, such as furniture and flooring, and, ... and the item, Space contrast through the creation of open and semi-open spaces corresponded to patterns number 51 and 60 (Table 7).

Table 7. Comparison of Vision and Landscape Characteristics of Urban Villages with Some of Alexander's Patterns

Vision and Landscape					Characteristics of Urban Village / Alexander Pattern
Observance of the Principles of Aesthetics in the Design of Details of Space, such as Furniture and Flooring, and, ...	Space Variety through the Combining Natural and Artificial Environments	Space Contrast through the Creation of Open and Semi-Open Spaces	Vitality Through Green Spaces and Open Spaces	Create Sequences in Walking Paths to Attract Pedestrians to Walk	
✔				✔	Pattern Number 51: Green Streets
		✔		✔	Pattern Number 60: Accessible Green

CONCLUSION

Theory of the urban village and Alexander urban patterns can be a support in order to achieve the appropriate strategies and solutions of a sustainable settlement to meet the needs of residents, with an emphasis on preserving rural value in improving the manmade environment. In urban field, the urban village approach, offers specific design principles for neighborhoods with smaller scale of the city and most of the Ecological context. Therefore with regard to specific population and determining the optimal size of the settlements, actually defined and limited the specific scale of development, which prevents the scattered development of future settlements. Also, notice to the dimensions of community participation in the design process and realization of the design in this pattern have emphasized much. This approach would be a base on implementation of the goals of this approach to close the concept or idea into a practical scale. Therefore urban village approach introduced as a tool for sustainable development. Therefore can say that, this approach compared to the ideas raised in the context of sustainable development more comprehensively encompasses all the principles of sustainable settlements and considered the realization of these principles with regard to all aspects of the biological community. Therefore the key principles of the proposed approach, for introduce a model of urban and development control and proper interaction between urban and rural in terms of create diversification of activities is recommended.

On the other hand, the information that Christopher Alexander and his colleagues in compilation of a "pattern language" are gathered depicts a very relevant urban context that the subsidiary sections connected by a complex boundaries. Some critics are calling for the overthrow and remove the existing patterns, because believe that these patterns as walking cities, and in their viewpoint the time of them passed. Of course the opposite of it is also true. Since the main form of human transportation in terms of anatomy is walking, these patterns are timeless appropriate to human and this article attempts to clarify this. Although that the territory of this patterns of the existing urban context have been the area commuting cars is surrounded by fields of transport vehicles, but again, these patterns will be remain. Still, these models are usable wherever we are going. Even though are walking area, car parking, front counter of shops, sidewalks of suburban and or sidewalks in inner city markets. In recent decades, that is the superiority of network patterns of cars the dominant patterns walking are destroyed. However, whenever an opportunity for architecture (meaning correct) to come, Again spontaneous these patterns to shape the urban living spaces used.

As in this article was presented, Patterns are one of essential principles for connect the design solutions with human. Denial of patterns stop of the relationship of built forms with people. This conclusion has an impact on the architectural implications and the role of pattern language in contemporary architecture will completely change. Therefore, a pattern language from a marginal and a

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secondary position that was over two decades will become the center of contemporary architecture. Pattern language is the "main root" for all types of Architecture. All of the projects gain their living by satisfying human needs through this language. Even if a person disagree with one or more Alexander patterns, again, this conclusion is correct. Our conclusion indicate that the design styles are for those who have to separate themselves from the source of life of these pattern language will remain ineffective and those who know it should follow these style must accept the fact that follow this goal. And according to Alexander's theory, any building or city will survive only if it complies with these timeless patterns.

By using the successful experience of countries, Such as Poundbury Urban village in Dorchester of England and Kelvin Grove Urban Village and Queensland of Australia, in the field of the successful application of this concept and its review, and characteristics of urban villages and using Alexander patterns associated with it and explain their,

In order to achieve the local conditions of our country, for achieving the realization strategies of sustainable settlements in our country, the strategies recommended in below:

People Participation (According to the Social and Economic Characteristics of Urban Villages and Alexander Patterns Associated with it):

The most important principles that associated with the development in this approach is emphasized, people's participation in presenting a model of development project and most importantly, the relationship between development providers and residents of the area. Believing that the realization of development plans to achieve sustainable development is collective and public thing through the planning and implementation of it is participative, So that must be managed continuously by people and residents. Through consistent application of this principle, reduced resistance to change and discussion of strategic planning can developed on open lines. The emphasis on local factors, especially in terms of social customs and cultural characteristics are the recommended strengthening of the identity of settlements in today's conditions of Iran.

Compact Urban form with the Development of Appropriate Space and Sufficient Mass (According the Economic and Environmental Characteristics of Urban Villages and Alexander Patterns Associated with it):

According to efficient use of land development pressures on agricultural and natural lands and open spaces around the city declined, and energy spent in travel and in buildings also reduce, and also by reducing travel by private cars help the air quality in the region. In these conditions the efficient use of land and energy resources to the places where these resources have spread more effectively reduce development pressures on farmland and open spaces. Moreover, there is sustainable and diverse architecture with different types of ownership in land, and new technologies in the construction and use of clean and renewable energy as possible be used in buildings.

Application of Mixed Land uses (According the Characteristics of User Space and Activities of Urban Villages and Alexander Patterns Associated with it):

To reach a level of self-sufficiency in rural and suburban settlements, One of the ways to achieve a comprehensive approach to the current situation in Iran, Application of mixed land uses and defining new functions is on basis of Rurals in the area. Accordingly, these new functions and compatible with each other, depending on the role of touristic, historical, and tourism and cultural zone define. Also in the coordinated balance between industry and agriculture, the same is in the concept of the integration of urban and rural settlements, the industrial spirit combine with the spirit of village farm, and somewhat self-sufficient settlement achieve.

The Principle of Diversity and Variety (According the Characteristics of Physical and User Space and Activities of Urban Villages and Alexander Patterns Associated with it):

The principle of diversity and variety is such an important principle that especially in the architectural pattern and density of buildings, should consider. It also, organizing local access based on the principles of urban villages, with pedestrian priority and emphasis on local elements in terms of the physical form, recommend in the organization of neighborhood units. The usage of patterns of urban villages in each area requires technical knowledge, a comprehensive understanding of local characteristics of each case, accommodating patterns design principles for the region require. Undoubtedly, in a successful urban and rural development, one of the goals of planners and designers is create a balance between development and conservation. Application of the principles of the urban village pattern, (Including the principles: the design of neighborhood units with pedestrian movement pattern, appropriate densities to support public transportation, diversity of land uses and buildings, streets hierarchy and activity centers, based

on environmental design with participation of citizen), it has the ability to establish a balance. Seems to achieve a comprehensive understanding of the method, and more comprehensive study can be appropriate and efficient method in the control of rural and urban development.

Therefore it seems that the application of the urban village strategy and patterns Alexander,

Able to guide and control the construction of new settlements in harmony with context characteristics, by defining clear principles and regulations, has an important role in preserving the natural environment and promoting the quality of life in rural and marginal urban settlements in our country. Also could be effective and useful as a Strategy, Especially, in the control and guide of the rurals development of marginal urban, are at risk of developing

pressure in the neighboring cities, to be in the urban and regional planning and design agenda for urban planners.

In the following model, has shown the amount of overlap between the two approaches and strategies associated with it. The idea of urban villages due to the relatively high flexibility, And the ability to harmonize with the context, can use in the types of sites. On the other hand, for the definition of an urban context that can work as a coherent, Alexander's pattern language is a way to achieve this purpose. The Overlap of Urban Village characteristics with patterns of Christopher Alexander indicate the creating the timeless and no place language for build and building the city and providing guidelines to achieve a sustainable settlement.
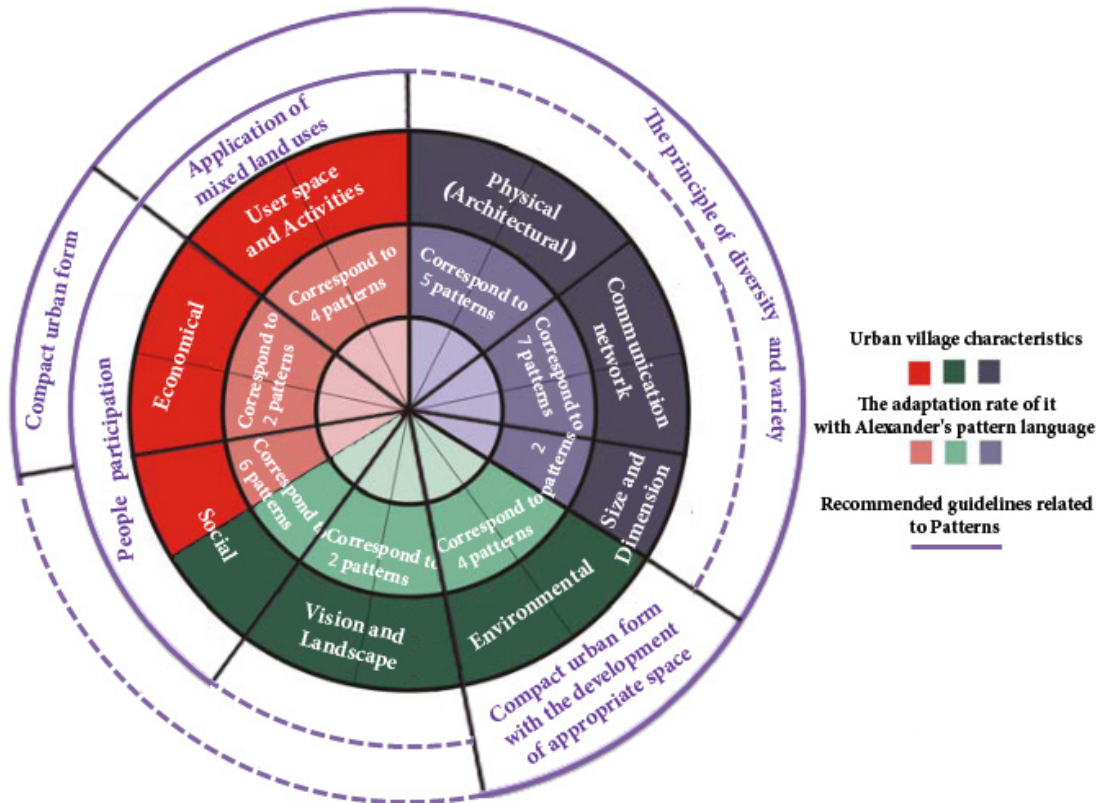
ENDNOTES

1. For instance, Jan Gehl, "Mennesker til Fods (Pedestrians) "Arkitekten, No. 20, 1968.

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