

# Zendevari (Lifelikeness) a New Framework Derived from Sustainability for Development in the Built Environment

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## Abstract

**Background/Objectives:** Codification of development indicators is considered as one of the basic necessities for the evaluation of sustainability in various fields of sustainable development, including architecture, in today's world. The need to access the relevant frameworks is entangled with the need to be close to sustainability in all scientific and artistic areas and numerous conferences with the subject of sustainability are indicative of its significance. **Methods/Statistical Analysis:** In the present study, first, common frameworks of sustainable development are analyzed and selected in terms of the amount of closeness and alignment with agenda 21 as a guideline resulting from a universal and collective wisdom and, among these frameworks, the MMF multi-criteria framework is identified as the closest and most comprehensive. The said framework is assigned to the evaluation of sustainability through fifteen indicators. This framework was selected among other frameworks and due to both its proximity to the objectives of agenda 21 and also its alignment with Iranian philosophies including Mollasadra's Transcendent Wisdom and Sohrevardi's Philosophy of Illumination, ten indicators were added to it. **Results:** The philosophical model and framework of the research, in the next stage, is ascertained through a scientific verification as a scientific model. For this purpose, the architectural comparison of two cities with relatively similar climatic conditions and different social, historical and cultural conditions has been utilized, one Zavareh in Iran and the other Santa Fe in America. The relative similarity of climatic layers of architecture in the two cities is a vindicator of relative similarities between the sub-climatic layers in the two cities' architectures and these similarities has the most effect in the physical layer of the building; however, the distribution and connection of internal spaces is more influenced by the social layer which contains considerable difference in the two cities thus it will be a vindicator of the discrepancy in functional distribution of internal spaces. **Conclusion/Application:** Finally, it is concluded a local-Iranian evaluation framework and its more general notion, Zendevari (lifelikeness), the ultimate result of the research in philosophical and scientific features. And thus, an Iranian pattern is presented for development that can be localized and used in different parts of the world.

**Keywords:** Lifelike Architecture, Sustainable Development, Zendevari Architecture, Zendevari Development, Zendevari Framework

## 1. Introduction

The subject of sustainable development has been in the forefront of international discussions in the last few years. In the year 1987 in the international development and environment conference, the prime minister of Norway, Gro Harlem Brundtland,

introduced the first official definition of sustainable development as follows: "sustainable development is a development which, in addition to considering and realizing contemporary need, does not sacrifice and endanger the ability and possibility of future generations in obtaining their own needs"<sup>1</sup>.

The main origins of the term sustainable development

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can be followed in the apprehensions related to the use of non-renewable resources, energy, ecological pollutions, and eradication of social correlations and lack of balance in nature which lead to the destruction of living organisms, including humans. Today, the significance and sensitivity of this issue has reached a point predicted by scientists, namely that humans, at most, must restore and modify conditions until the time and opportunity of the next three generations, otherwise, planet earth will face a serious problem regarding the life of creatures including humans<sup>2</sup>. Therefore, numerous conferences have been held at the universal level every year. One of the most essential and effective of these conventions is the 1992 development and environment conference in Rio de Janeiro which was arranged by the United Nations. This conference became very substantial in two aspects. First, in it, 179 countries signed an agreement and, second, a further definition in relation to the environment, the axis of sustainable development was proposed to the effect that the origins of environmental problems must be sought in human behaviors. Therefore, social, economic and cultural domains significantly found a prominent role in the definition of sustainable development. The abstract of principles agreed at the said conference can be summarized in four categories: justice, future, environment and public participation<sup>2</sup>. Furthermore, a commission called the Commission of Sustainable Development (CSD) consisting of 53 members took the task of compiling sustainable indicators and adjusts some indicators a few years after the Rio Conference which include quantitative and qualitative indicators in which surely the social and cultural cases have considerably been taken into account. Subsequent to that, conferences and conventions are held yearly throughout the world in which the goal is that sustainability indicators are properly defined and universal experiences of different countries of the world in this area assist to obtain frameworks for the assessment of sustainability. And in the meantime, the UN sustainable development council has been very active in the compilation of universal indicators of sustainable development. Consequently, the significance of compiling frameworks to evaluate sustainability and adjusting its indicators has become doubly important with respect to time limit and the need to rush in it at the present time.

In the present research, the main objective is to obtain a framework of evaluating sustainable development with emphasis on sustainable architecture as a multifaceted reality. As has been pointed out in the statement of agenda 21

and Sustainable Development Council, many of indicators laid down in sustainability, particularly social and cultural indicators must be locally defined and adjusted. Therefore, in this research, the attempt to localize a framework of evaluating sustainable architecture and present an Iranian model and framework for the first time has also been one of the important purposes. In other words, the research has taken a step in the provision of a universal framework and completes it at a local level as a practical framework. Generally, it can be said that the intended framework must be able to be recognized at a universal level; therefore, one of the criteria for compiling it will be agenda 21 and alignment with it and the internationally agreed principled beliefs so that the said model and framework has this capacity to be locally defined and complemented in different countries with different attributes and become operational at a local level. Consequently, in the present study, a whole to component process has been used and this process is categorized in two stages: philosophical and scientific. In each of these categories, a framework is presented which is the main axis of assessing sustainable architecture. As was mentioned, what has been proposed by the sustainable development commission as a framework and evaluation indicators has generally been about sustainable development and has been introduced in a macro scale. The current research, besides attempting to provide an overall and novel model (lifelike model) as a model for the evaluation of sustainable development in all areas, places sustainable architecture as the main axis of assessment and the said model is tested in a scientific process. This model and framework surpasses all other available frameworks in terms of alignment with agenda 21 and the amount of learning.

## 2. Research Background

As stated in the beginning, the basis of the theory of sustainable development is the world's environmental problems, and the definition of Brundtland, although an overall and illustrative definition is based on environmental problems. It was, furthermore, mentioned that the turning point of the definition of sustainable development and the subsequent formulation of sustainability indicators occurred in the Rio conference and meeting the result of which was the compilation of agenda 21. In this conference, the most essential conclusion was that the roots of environmental problems and their subsequent sustainable development are in human behaviors<sup>2</sup>.

Therefore, indicators enacted by sustainable development universal commission include the important social and economic cases as well. Consequently, obtaining sustainable development requires the creation of balance between three general domains: economic, social and environmental. These three domains affect each other and alteration in each for sustainability needs change and coordination in the other two domains<sup>2</sup>. This framework and model was proposed by Campbell in the year 1996 as a triangle of three indicators: social justice, ecology and economy. In this model, to achieve a sustainable state, contradictions among these three indicators must be balanced and, in other words, being put in the center of the triangle is the condition of reaching sustainability state. Campbell viewed sustainability as a fully social phenomenon involving the three said variables<sup>3</sup>.

The indicators and recommendations stated in agenda 21 as the conclusion of Rio Conference oversee the obtaining of balance among the three above-mentioned domains and observing the suggested cases was enacted with the aim of achieving sustainable development in horizon and perspective in the twenty first century. Surely, since variables effective in sustainability contain clear social aspects and human role is significant in that, it can be said that sustainable development is introduced not as an objective and purpose but as a process and procedure, and in other words, sustainable development has a procedural and formulaic nature<sup>2</sup>. With this outlook, it is inferred that observing the indicatory principles and suggestions of agenda 21 will move humans and the world closer to the process of sustainable development. In Table 1, the indicators and variables proposed by the United Nations and Sustainable Development Council are briefly depicted. In this Table, the institutional subject is also added to the three environmental, economic and social cases.

## 2.1 The Most Popular Frameworks of Sustainable Evaluation

In this part, the most common frameworks and models of sustainable development evaluation are investigated. In this analysis, based on the book sustainable development evaluation, popular models are categorized into two groups: before Brundtland and after Brundtland. After a general assessment, the proximity of each of these models is measured by the universal indicators of the Sustainable Development Commission. And this is due to the necessity

of paying attention to different aspects which play a role in sustainable development and are universally accepted.

### 2.1.1 Before Brundtland

- ▶ **Framework for Cost - Benefit Analysis (CBA):** In the cost-benefit analysis framework, the feasibility of implementing the project in terms of economy is taken into consideration. The working method is that costs include construction and operation costs of the project, the first being considered at the time of construction and the second after completion of the construction and at the time of operation. The ratio of benefit and return on investment of the project to costs will be indicative of economic justification of the project. As is evident from the calculation process, in this framework, not all the different aspects proposed in sustainable development, especially in the three environmental, social and basic categories, are paid the necessary attention.
- ▶ **Public Cooperation Valuation Method (CVM):** In this method, people's amount of enthusiasm and tendency to spend money in order to enhance environmental quality is estimated. For example, to what extent people are enthusiastic about spending money for the expansion of green space, enhancement of water quality and so on without being forced. In this regard, questionnaire is normally used.
- ▶ **Travelling Cost Evaluation Method (TCM):** In this method, the cost of travelling to a location is the assessment criteria of its environmental quality, thereby the tendency of individuals to travel to a place indicates the quality of that place and this can be detected by evaluating the trip cost to that location.
- ▶ **Multi-Criteria Assessment (MCA):** The multi-criteria method is one the most comprehensive frameworks in which various indicators and aspects prominent in sustainable development are discussed. This model is regarded as one of the closest examples to universal indicators of the Sustainable Development commission.

### 2.1.2 After Brundtland

- ▶ **Ecological Footprint (EF) Domain:** The framework of ecological footprint domain means measuring space occupied by a building and or an artificial environment in nature yet not in the sense of occupancy level but in the sense of a spatial domain needed by the required activities in a building. As an example, the residents of a building provide their food demands in the spatial radius and or from what distance fossil fuels are

transported for heating and or installations. For sustainability it is necessary that ecological footprint domain has an equal and or less area than the area of building occupancy.

- **Community Impact Evaluation (CIE):** This framework is the developed evaluation of the framework for cost-benefit analysis. In the framework for community impact, in addition to evaluating cost and benefit, the impacts of justice and social justice are also considered.
- **Building Research Establishment Environmental Assessment Methodology (BREEAM):** The BREEAM method is one of the most popular frameworks for the evaluation of sustainability in England which was first formulated in the year 1990. Buildings in England are evaluated and ranked by companies which are approved by England's Building Research and Establishment. This framework has numerous similarities with the framework for Leadership in Energy and Environment Design (Leed) in America and Canada and consists of 9 sectors. The intended sectors involve: management, health and happiness, energy, transportation, water, materials, waste and sewage, land use and ecology and pollution of which the highest rank is assigned to water, health and happiness and energy sectors, respectively<sup>4</sup>.
- **Framework for Leadership in Energy and Environment Design (LEED):** Perhaps, it can be said that the most substantial and popular functional frameworks in the field of energy and sustainability in building is the framework for leadership in energy and environment design which has been very applicable in the United States of America and Canada in recent years and engineers have been required to obtain its degree. This plan has been conducted in line with the objectives of these countries to achieve sustainability especially in the field of energy in the coming decade. The framework for leadership in energy and environment design comprises the following seven sectors: sustainable sites, water efficiency, energy and atmosphere, materials and resources, internal environment quality, innovation in design and regional arrangements<sup>6</sup>.
- **Santa Fe Green Building Criteria (SGBC):** One of the most thriving and active cities of the world in the field of sustainable development and sustainable architecture is Santa Fe in the United States of America, in which the framework for leadership in energy and environment design, Leed, has inspired the planning and formulation of urban and building criteria. Both frameworks share a number of editors and surely for Santa Fe, the rules have been set locally. The designed framework is named as the subtitle of Santa

Fe Green Building Criteria and comprises seven sectors. These sectors include: the justification plan and site development with source efficiency, energy efficiency, water efficiency, internal environmental quality, implementation, support and architectural trainings and the last part of the subtitle is designed as you are free to choose other items<sup>7</sup>.

- **Multi-Criteria Measurement Framework (MMF):** In the year 2005, a book titled Sustainable Development Evaluation in Built Environment was published. In this book, a multi-criteria framework to measure sustainable development was presented which covers various social, economic and environmental aspects. The proposed aspects are fifteen and consist of the following cases: credal, aesthetics, legal, ethical, economic, social, media, historical, formative, sensitive, biological, physical, kinetic, spatial and numeral.

The philosophical and primary roots of multi-criteria measurement framework can be traced in the cosmological philosophy. This philosophy became widespread by someone called Dooyeweerd, a Dutch philosopher, in the middle of the twentieth century. This philosophy has been established based on the foundations of Christian Thinking and attempts to distance itself from the dominant systematic thinking in the democratic West<sup>2</sup>. It seems what differentiates this philosophy from Western thinking is the very reductionism of early modernism and this is somewhat very different from the view of cosmological philosophy which introduces a view similar to fuzzy theory. In this philosophy, reality contains fifteen dimensions and through these dimensions, the activity of complex systems such as the built environment and architecture can be defined and analyzed. In other words, all the systems and phenomena, in the aforementioned fifteen dimensions, grow and act and manifest their existential reality based on their existential degree. For example, a tree, according to cosmological philosophy, contains the numeral, spatial, physical and biological dimensions and, in comparison, a human being and or a built environment have all the fifteen existential dimensions and their activities occur in all of the dimensions. In addition, an inconvertible law and or laws govern each of these reality aspects and dimensions. Survival and stability and or phenomenon in each of reality dimensions depend on how much that reality dimension acts in harmony with the governing law. The kind of performance of each phenomenon and or system in each dimension alters and affects all other reality and existential dimensions of the

phenomenon and this impact is more tangible on closer dimensions and less on farther dimensions. Overall, reality dimensions and aspects of phenomena are not separable as absolute and sole but contain a joined correlation. According to the above-mentioned philosophy, the more quantitative dimensions underlie the real activity of more qualitative dimensions and the second depends on the first on the one hand and the more qualitative dimensions involve more quantitative dimensions. In summary, there are three types of correlation between reality aspects:

1. Dependence: namely that the laws of more qualitative aspect are dependent and requisite on the more quantitative aspect. As an example, biological laws need physical laws.
2. Performance: each phenomenon, according to whether it has a reality aspect or not, plays a subject role and object role, respectively.
3. Similarity - Inductive: The details forming each aspect have equivalents and parallels in other aspects and between these two categories there is a symbolic and metaphorical correlation, i.e. the manifestation of one implies the other in alternate aspects and is indicative of it. As an instance, the rate of high inflation in the counting dimension indicates a difficult situation in the economic dimension<sup>2</sup>.

It must be said that the dependence rule between aspects and the priority relation seen in this philosophy is partly in alignment with the transposition claimed by Auguste Comte to be present among sciences. Furthermore, the trace of such hierarchical relationships among sciences is also visible in the ideas of MollaSadra and Farabi, two Iranian philosophers, as well.

## 2.2 Analysis and Selection of Frameworks

From what has been said, it can be concluded that consult on issues like sustainable development is very important, having a global context and due to the fact that all humans and living and inanimate beings of the universe have a key role in it, and the contradictions existing in its definitions and directions can only be resolved in the light of reason and council.

Therefore, we have considered the International Commission of Sustainable Development, with 53 members and the approval of the United Nations, as an acceptable reference. Only in the light of clashing ideas and reasons of different individuals and countries in a suitable and defined system can

sustainable development objectives and sustainable development as a process and procedure be obtained.

On the other hand, since sustainable development and sustainable architecture comprise social dimensions<sup>8</sup>, the indicators must be enacted locally and approved by local councils and, on the other hand, it can be concluded that local indicators only reach their rightful place by interacting with global indicators. And this is just like the universe is working and acting similar to a living entity with an independent identity. In this respect, it can be said that the cohesion of the world's components is deeper than the cohesion of a machine components and is like the cohesion and continuity of body members, i.e. a single life and a single characteristic rules the world. The whole world is a specific unit. As an individual human have one trait and one soul with other members, and not traits or lives or souls. Theologians have long expressed the idea that the whole world is a single person<sup>9</sup>.

The above theory will guarantee peace and sustainability in the world and, thereby, the member states of the United Nations respect and value the poem written on the lintel of the UN building: "Children of Adam are each other's members/That in creation are of one essence" (Saadi, Iranian poet) Editing councils and institutions of sustainability indicators must be placed with people and consumers in a feedback control system and, on the other hand, must reach equilibrium in a global system. And in this regard, a framework and model similar to what is considered in Cybernetics achieves equilibrium in a feedback control system. In this case, due to feedback control, system patterns and systems find the necessary evolution and lead to development in different dimensions (Figure 1).

As presented in Figure 1, the evolutionary patterns which are the main factors of development have been placed in a feedback control system. This framework is similar to what exists in the living nature and according to this similarity; the researcher has named the above framework the global Zendevari (lifelikeness) outer pulse framework. And this is led by the same view of the world as a living body. Now at a deductive glance, it must be seen how the components of this framework are located in their suitable place in order to effectively and appropriately perform their duties in the path of this framework's general objective. Each of the development stages is accompanied by a patterned interpretation and this patterned interpretation will be sustainable if done in an evolutionary process.

**Table 1.** Key issues of sustainability indicators in the global commission of Sustainable Development (CSD)<sup>5</sup>

<b>Environmental</b>	<b>Social</b>
Fresh water/ground water	Education
Agriculture/production of healthy food	Occupation
Urban	Health/water production
Coastal areas	Accommodation
Marine environment/conservation of marine corals	Welfare and quality of life
Fishing	Cultural Heritage
Biological Diversity/Bio-technology	Poverty distribution/income
Sustainable forest management	Crime
Air pollution and ozone depletion	Population
Global climate change/sea level rise	Moral and social values
Sustainable use of natural resources	Role of Women
Sustainable Tourism	Access to land and resources
Limited carrying capacity	Structure of Society
Land use change	Justice/social participation
<b>Institutional</b>	<b>Economic</b>
Correlated decision-making	Economic dependence
Building Capacity	Energy
Science and Technology	Production and consumption patterns
Public awareness	Waste Management
Contracts and International Cooperation	Transport
The role of urban Society/local government	Mining
Basic and legal frameworks	Economic structure and development
Preparation of accidents and disasters	Trade and Commerce
Public Cooperation	Production

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where living patterns are viewed as sustainable patterns<sup>10</sup> and being alive is due to an unnamed quality appearing when the pattern is in alignment with its governing laws and its forces obtain balance. According to Alexander, when architecture consists of living and sustainable patterns, it will become part of nature. The intended quality cannot be built in buildings and cities but can only be generated indirectly by the activity of ordinary people, as a flower that cannot be made by humans but can be developed from seeds<sup>10</sup>.

So far, it can be concluded that since sustainable development contains local and global dimensions, namely that its presence assists the world's appropriate and sustainable performance as a single body and is necessary for that and also despite social and cultural aspects proposed in it which seek local dimensions, frameworks, when in harmony and alignment with the Zendevari (lifelike) outer pulse framework, can be effective for sustainable development; in addition, these frameworks must be aligned with sustainable development global council indicators formulated at a global scale. Based on this criterion, the best framework can be obtained among the frameworks mentioned in the previous section. One of the attributes present in the sustainable development indicators by

global council is the dimensional comprehensiveness of these indicators, i.e. they cover social, economic, institutional and environmental dimensions. Among the said frameworks, only the multi-criteria framework has the necessary comprehensiveness to become ever closer to global indicators. On the other hand, questions which determine sustainability in each of the proposed fifteen aspects in the said model are in line with the objectives and results of agenda 21 and the global council indicators. Moreover, the multi-criteria framework can cover other sustainability frameworks since, in other frameworks, environmental, economic and occasionally social problems are not comprehensively and pervasively dealt with and only a few cases have been considered in depth. Consequently, in the mentioned aspects, the multi-criteria framework can use the above frameworks for the evaluation of sustainability from that aspect.

### 3. Research Methodology

In the current study, the main purpose of the research is to obtain a framework for sustainability assessment in which sustainability indicators are formulated with emphasis on sustainable architecture. The said objective has been realized in two phases and stages in the form of two evaluation frameworks: philosophical and scientific. The research procedure is conducted this way: firstly, the research has reviewed and investigated similar study records after determining intellectual bases both of which have been delineated in previous parts. In the evaluation of study records, as mentioned, the best pattern and framework closest to the selection criterion was chosen as the multi-criteria assessment framework. And in this stage, analytical and comparative method was used and the pattern and framework for the global sustainable development council, as the selection criterion, induced the said result in a qualitative comparison. It seems obvious that the framework for global sustainable development council consists of universal and very general indicators and its generality has problematized the possibility of its fast, easy and practical application in the field of architecture and built environment and it is required for the frameworks to be more practically introduced in this field. Universal acceptability of the framework indicators for the global sustainable development council has been considered as criterion for the evaluation of sustainable assessment frameworks in the built environment and architecture which was expansively expressed in previous section.

The comprehensiveness and universality of the multi-criteria assessment framework and its alignment with the results of agenda 21 and the fact that it also encompasses other frameworks under study are the reasons for the selection of the above framework in order to conduct the research. Of the strengths of the mentioned criteria framework is the remoteness from subjectivism and reductionism, namely that the aspects under investigation contain common and non-deterministic borders and overlap; moreover, it attempts to advance the research independently of personal ideas. The researcher compared and analyzed philosophical theories and logical correlations available in the above framework with all the advantages and strengths seen in the above framework. The above analysis put the research in another path from the collision of ideas and philosophical and logical relations existing in the multi-criteria assessment framework and cosmological philosophy and the researcher's Iranian-Islamic subjective patterns.

Khosravani wisdom philosophy of ancient Iran, at its peak in the Islamic-Iranian illuminative mystic philosophy and Transcendent Philosophy of MollaSadra, and its analogy with the cosmological philosophy, led the researcher to this conclusion that the said (Iranian) philosophies can respond to the description of the universe and its dimensions far more pervasive and powerful than the cosmological philosophy and with their help a framework can be provided for the evaluation of sustainable development in all dimensions. The consequent framework will not only be a local and Iranian pattern but can also be generalized on a global scale at a philosophical and scientific stage. Therefore, at this stage, through contextual study and the study of multi-criteria framework this hypothesis is proposed namely that a more pervasive and developed framework than the multi-criteria framework can be obtained by comparing the multi-criteria assessment framework and cosmological philosophy with Iranian philosophies, especially the illumination philosophy and transcendent philosophy. The above hypothesis is approved in the first part of the research by the mentioned comparison and is provided based on and compared with the principles and inferences led by developed Iranian philosophies and as a framework for the evaluation of Iranian sustainable development. The resultant framework has been called Zendevari (lifelikeness) assessment framework due its similarity with the living being models and the existential systems of the world.

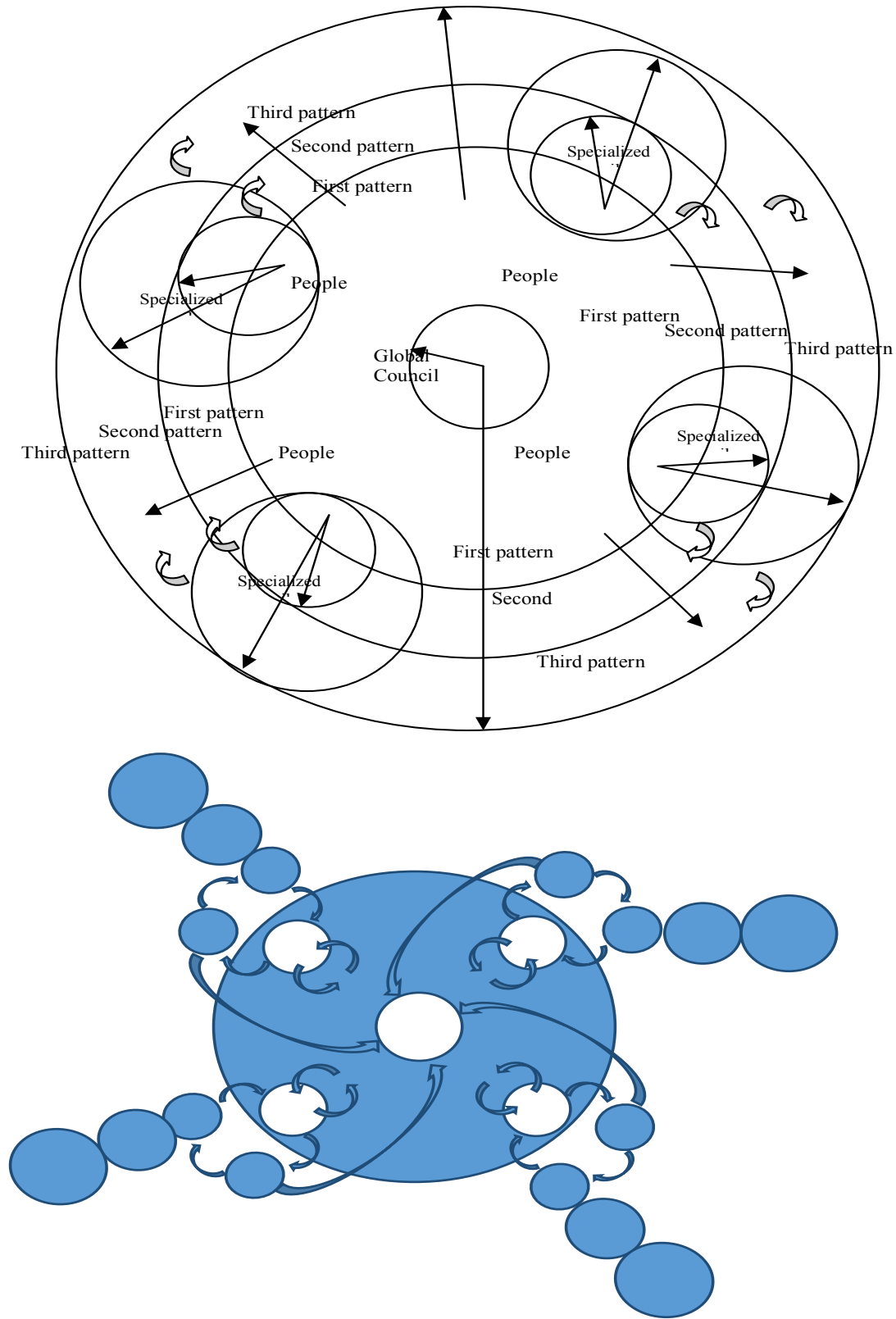


Figure 1. Framework for global lifelike outer pulse in equilibrium.



In the second stage, the hypothesis of how the above philosophical framework can be scientifically presented is proposed. In this section, scientific verification is conducted in three ways and the hypothesis is proved. First, the framework is tested in the geographical domain of North America at the activity time of cities and villages of Native American Indians with similar belief and social patterns and, at the same time, different climate layered patterns and, through comparative method, the performance and layered relations of Zendevari assessment framework is confirmed. Afterwards, the framework for Zendevari evaluation is analyzed by the comparative method in two similar climates at two points far from each other, one Santa Fe in America and the other Zavareh in Iran. In these two cities, the belief layered patterns are different and the climate layer is the same. What is concluded is indicative of the fact that performance and layered relations of the framework is formulated and the framework will have the ability to justify and explain the events and dimensions of development. In the third stage, in an interpretative-historical method, the change of controlling and essential layers of the framework is investigated in a long interval of time and the impacts of layers on each other and their correlation are examined in each of the two cities under study and the result testifies the proof of the structure and the performance of the framework. In these three methods and processes of the research, the researcher tries to have an objective direction with research process as much as possible such that other researchers also obtain similar results in case of implementing the methods. Consequently, in this section of the research, the researcher has adopted a post positivism approach to be able to scientifically prove the proposed philosophical framework in terms of internal validity, external validity, reliability and objectivity<sup>11</sup>.

In the end, the Zendevari assessment framework is presented as an Islamic-Iranian pattern applicable and localizable elsewhere in the world and its indicators are formulated. The above framework has made a step in the completion and development of a framework for construction regulations of Santa Fe and, subsequently, models such as LEED and BREEAM in an inductive process.

## 4. Research Findings

### 4.1 The Structure of Zendevari Framework

As stated, phenomena in the Zendevari (lifelikeness) development framework consist of 25 existential layers (Table 2). Between these existential layers, two logical relations can be found. On the one hand, a natural relationship can be considered longitudinally and, on the opposite side, a universal relationship can be observed. Natural relationship means the precedence of an imperfect cause over its effect and universal relationship is like the primacy of the world of abstraction over the material world where the first surrounds the second<sup>9</sup>.

In the natural relationship, the imperfect causes, involving more material layers, underlie the emergence and necessitate more spiritual layers. This is especially true with regard to the laws and traditions governing each layer as well, namely for the reception and formulation of the laws for more spiritual layers, there exists a need for the knowledge of material laws. In Table 2, the layer relationships are depicted; this Figure has analogies to what multi-criteria model contains in terms of appearance yet is different philosophically and has been adjusted based on Iranian philosophy and, particularly, Transcendent Wisdom.

In each of these universes, the layer on top is closer to the belief layer and, as the head-layer and the sovereign, has the main role. This layer has the closest connection, control and guidance on layers underneath that existential class and is the indicator of the relevant universe. As an example, the belief layer is the head layer of the world of meaning and is the indicator of other layers since they are surrounded based on universal relation. The next layer, called the ethical layer, is in the subsequent level and, this way, other layers also have universal priority. Therefore, climatic, uncanny (vahmi) semantic and belief layers are introduced as the head layers of the three universes. In Table 2, the Zendevari (lifelikeness) assessment framework has been demonstrated. The placement of layers is observable in the three temporal universes and the orders of being in that. The more the inter-layer relations are aligned and seen in the development plan, the closer that development will be to Zendevari development. In the Figure of Zendevari framework, 25 black houses are seen which are indicative of the relation between every layer with the same existential layer. This house has been considered as indicator of the outer pulse rate and the proximity degree of this pulse to its ideal state, i.e. similar to Figure 1. The more analogous the outer pulse of each layer to this Figure, the closer it will be to Zendevari. The substantial noteworthy point in this case is that in under sensory layers and the natural world, the role of people and

**Table 2.** Zendevari (lifelikeness) assessment framework in adjustment with existential layers based on Iranian wisdoms

Existence classification	world of meaning (reason)										world of imagination				world of nature (sense)											
	human existential layers (human)																									
	hidden layers										animal existential layers															
	hidden layers										plant existential layers (plant)															
	hidden layers										entity existential layers (entity)															
Inner and outer pulse among layers	belief	ethical	legal	aesthetic	economic	social	media	creative	historical	formative	analytical	uncanny	imaginary	emotional	climatic	environmental	biological	self-control	control	Simple mechanical	chemical	physical	kinetic	spatial	numeral	
belief	■																									
ethical		■																								
legal			■																							
aesthetic				■																						
economic					■																					
social						■																				
media							■																			
creative								■																		
historical									■																	
formative										■																
analytical											■															
uncanny												■														
imaginary													■													
emotional														■												
climatic															■											
environmental																■										
biological																	■									
self-control																		■								
control																			■							
Simple mechanical																				■						
chemical																					■					
physical																						■				
kinetic																							■			
spatial																								■		
numeral																									■	

Professional Councils elected is to have positive supervision and involvement on the continuity and creation of existing balances in nature and surely scientific-physical laws contain centrality in this domain and, in sensory and extrasensory layers, people more directly have an effective role in the creation of balance and more importantly equity through their professional councils elected. Observing two points in this regard is vital and necessary. One is that the elected councils must constantly be proved by people so as to prevent monopolist and mafia gangs and these councils are fully independent of the government and the government has a legal supervision on the process of election and their work; nevertheless, their appointments and dismissals are performed only by people. The second point is that closing to the model of Figure 1 is very essential since, due to the fact that significant differences are seen in various parts of the world in the domains of social sciences and extrasensory and sensory layers and this is because in these domains, values and indicators are different depending on conditions of time and place and people; it is necessary that these differences are balanced in a logical system analogous to Figure 1 and by specialized representatives of different civilizations and cultures in different countries and are adjusted and developed in logical and peaceful feedback controls. This will be the very accurate outer pulse. In the subsequent section, this pattern is verified.

## 4.2 Zendevari Philosophical Framework Verification in the Vernacular Architecture of North America

### 4.2.1 *The Verification of Framework for Belief Layers and its Sub-layers*

To evaluate whether existential layers have the said impacts in the philosophical framework and interact and correlate with each other or not, an expansive geographical area is selected with different climates yet with similar to belief patterns. The domain of North America under study is at the boom time and life of Indian American tribes in the above region and includes different tribes of the same race. These tribes have been scattered in different parts of North America and the remains of their towns and villages indicate their belief, economic, social, uncanny, emotional, climate, physical, spatial and numeral patterns and, to a great extent,

based on these historical documents in a comparative method, the relations of these different regions' existential layers can be evaluated concerning their architecture. The intended study takes place in the active time frame of North American tribes from approximately 2000 years ago until the arrival of the Spanish. Generally speaking, in this time frame, the dispersion of important Indian American dispersion in North America is seen in 9 main regions. In most of these tribes, the same and or similar beliefs are observed in terms of worldview. At a general glance, it can be said that, prior to the arrival of the Spanish colonizers, the North American Indians believed that existence comprises three main universes. The world of sky is above and the nether world exists under the ground and the third world resided by the human and is called the ground. Consequently, the world of nature is the connecting loop between the two worlds above and below. Indian Americans believed that humans are born in the underground world and their souls come to the world of the ground and after their life in this world, they go to the world of the sky.



**Figure 2.** Symbolization in the aesthetic layer of Native Americans<sup>12</sup>.

The above symbolism and beliefs are clearly seen in the most basic pattern of North American Indians. This architectural pattern which is the basis of evolution and the formation of other types of architecture native to North America and is called pit house, can be found in numerous focus areas of Indian tribes and other species are derived from this type. In this basic type, the reflection of

indigenous beliefs of that era is evidently observable. First, a pit with the depth of approximately 30 to 180 cm was dug, which referred to the source of creation within the ground. Subsequently, four vertical poles were attached to a square-shaped frame above, on which diagonal poles were leaned and secured. This square played the role of chimney hole in the middle and of course simultaneously the entrance. The surrounding soil and materials were shed and created a hill shape. A ladder was placed in the hole from above, the symbol of the Cosmic Tree and attached the universes together. In addition, through this moving ladder, it became possible to enter the house floor. Squarely beneath the chimney hole, the hearth and house lighting existed which were built slightly in the depth of the ground. Alongside this hearth, a hole had been made in a linear path towards outdoors to enable air suction and provide necessary air for full and accurate burning in the hearth. Surely, this hole and duct was occasionally enough to allow human passage half-crouched also and their exit or entry. In some types such as Eskimo igloos, this path was altered as the main path of entry.

The various media-communicative patterns of Indian houses have given each a particular identity and each is known under a particular name. The creative layer can be observed in the structural innovations and construction methods. Although these methods seem different, in the end, comply with the symbolic and belief pattern mentioned before and, in addition to that, are viewed as unique methods. In a pit house, the four columns and four poles are symbolic of the world's coordinates and the ladder is the factor linking the three universes. In the construction method, a Hogan, which is a five-sided house in Navajo tribes, each side is a sacred symbol and refers to dawn, evening, dusk, dark, argonite and heat wave. Each housing operation had a mythical and fictional equivalent stemming from those people's belief. Hogan houses played the role of churches more and acted like Kiva. These houses were placed next to wigwam or wikipup houses. In a wigwam, the construction method is different. The flexible diagonal poles shaped the bearing structure and are linked and secured. A wigwam can be regarded as a pit house (Figure 3).

In each of these types of construction, a creative layer is shaped and coordinated based on the symbolic and belief layers. In an Indian house, the poles can be symbols of the sacred trout ribs and the smoke emitting from inside the house, helps the solidification of the house residents and the house soul. Native Americans treat

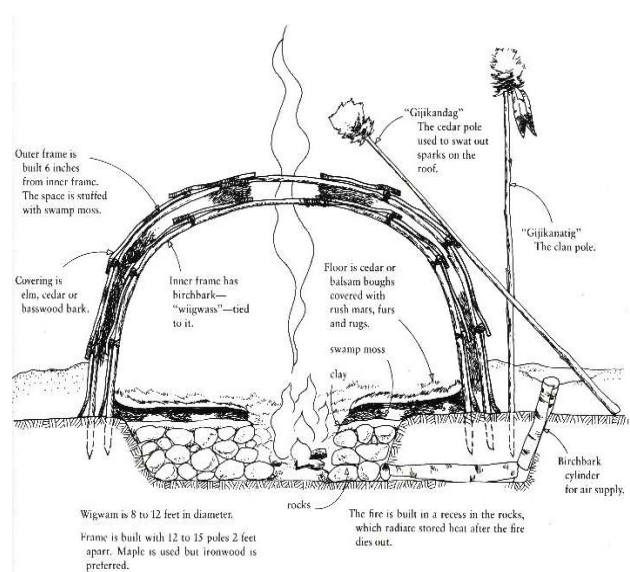


Figure 3. Wigwam<sup>12</sup>.

their home as a living creature and their social and creative patterns and alternate patterns have a sacred side<sup>12</sup>.

#### 4.2.2 Framework Verification, the Uncannysemantic Layer and its Sub-layers, the World of Ideas

The uncanny semantic layer is indicative of perceptions which are based upon sensory perceptions yet unlike the emotional and imaginary layer does not refer to a special object and, due to its more inclusiveness, can be abstractly generalized. The most obvious uncanny perception relevant to the Native American architecture can be called the sense of security and equanimity, prevalent among indigenous tribes before the arrival of the Spanish and previous droughts.

This sense of tranquility and safety has been the context of the balanced social, economic and belief layers. With regard to the imaginary and emotional layers, it can only be said that these layers have also existed and the natives, with their notion of each of the existential layers and their approval by the analytical layer, would balance their architecture in a trial and error process to the patterns of different layers. And with regard to the emotional layer, the environmental comfort sense can be pointed out. The houses of Native Americans, although built in alignment with the climate, it seems that the conditions of environmental comfort for Indian Americans were different from modern humans and the old Native Americans have had more capability to tolerate difficult environmental conditions and their emotional layer has been somewhat different (ibid.). To sum up, it can be said that all uncanny layers exist in Native American architecture and the order and precedence between them is logical. In addition, the significance of the imaginary layer underlying the symbolic and belief perception should not be ignored.

#### ***4.2.3 Verification of the Framework, Climate and Sub-climate Layers, World of Nature***

The climate layers (macro-climate) of the nine districts of North America are different from one another, yet, with this climatic difference, the generation of similar aesthetic, belief, economic, social and imaginary patterns has not been prevented. Among the sub-belief layers, the creative layer which is indicative of the construction method representing the best correlation by varying the climate layer in the nine regions. Therefore, this conclusion is reached that in the vernacular architecture of North America; the creative layer has the highest pulse with change in climate and geographical area to obtain balance for the inner pulse of architecture. These changes of the creative layer in each region are also observable with the winter and summer migrations, each one with different type of houses. This layer pulse is while the belief layers do not change significantly; whereas, the other layers, namely economic and social, are alternate essential factors for changing and balancing in the inner pulse of architecture layers. In clearer terms, with migration of Native Americans, for example from ground houses to Tipis, the belief, ethical and legal layers remain relatively stable and the economic, social and creative layers contain the highest change to balance architecture layers. The change in economic and social layers means

seasonal change in the method of livelihood involving hunting behaviors and supply and storage of food.

Concerning the environmental layer, it can be said that the natural ventilation patterns and energy saving is similar in most architectural forms of American Natives. The central fire results in house heating and its cone and dome shape impedes heat waste and maximum availability of heat. In main patterns, there is always an opening on top of the fire for smoke emission and an opening in the subsidiary path to outside, which provides the necessary suction of fresh air. In some patterns, the house entrance and exit are integrated in one of these two openings. The double glazing bodies are among the technical achievements of the environmental layer of such houses. Consequently, similar environmental patterns can be seen in various regions. In the south east with its hot and humid weather, a different type is seen, in which by enhancing the house and the possibility of high ventilation, environmental comfort is provided. And this is accomplished by assisting change and outer pulse of the creative layer. The biological layer in Native North American architecture contains suitable conditions and in which biological diversity is balanced. The Indian house does not hamper the biological layers of nature and contains sufficient space itself. Domestic animals find the opportunity to live nearby the Indians. The self-control and control layers are not seen in the Native North American architecture and, in the technical layer, the mid-house ladder, a symbol of the cosmic tree, can be named. This layer is not seen in some types of architecture including Tipis and it seems that it correlates with changing the economic layer, which is accompanied by change in livelihood method in Tipis. Regarding the chemical layer, which depends on the employed materials, it must be said that all materials are renewable and do not hamper with nature. As an example, eskimos utilize ice blocks in winter and animal skin in summer to build their houses; hence, the chemical layer has the highest correlation with the climate layer.

The physical layer is also aligned with nature. The indigenous Indian houses has the least possible occupancy level and do not generate a dent in the environment heat and the like. This layer has the most correlation with the climate, creative and imaginary layer and by changing these layers in the creation of balance to architectural layers in the inner pulse and environment layers in the outer pulse, contains changes in correlated way. Concerning the motion layer, it must be said that types of Native North American

houses are transportable including Tipis. In other types, the motion layer appears by separating the components of building and using them in the house of the migration location. Consequently, this layer contains the highest correlation with the physical layer.

In the spatial layer, Indian houses, with physical, imaginary, social and economic layers, have the most correlation. These changes are correlated with the method and composition of social and economic relations, namely that these are the relations who determine the shape and plan of spaces in the imaginary layer. Although the climate layer is the most effective layers in determining the size of spaces and may also seem substantial in spatial proportions, which is surely the case; nevertheless, determining the inner form of spaces and spatial relations of economic, social and belief layer patterns have the highest effect. As an example, wigwams and Tipis are viewed in different climate regions of North America and the inner space social relations of them all are similar. In the counting layer, it can be said that, in the nine climates and regions of North America, the highest house patterns are in the form of Tipi, wigwam and ground house, which have been obtained from the evolution of the pit house and kiva pattern.

#### 4.2.4 Zendevari Framework Verification through Comparing Indigenous Architectures of Santa Fe and Zavareh

In the previous section, this conclusion was obtained that the climate layer has correlation with and mutual impact on the physical, chemical and creative layers; so that in various climates, with change in the climate layer, necessary changes also take place to create balance in the set of architectural layers in the said layers in alignment with



Figure 4. Vista of Zavareh<sup>13</sup>.

the climate. And difference in these layers is tangible in different regions. Such layers are effective in the building shell, materials used, shell shape and the technical structure used for the construction. Generally speaking, the outer facade and building shell, which can be called phenotype, is more defined under the impact of climate and sub-climate layers. And the spatial layer is more influenced by the belief and sub-belief layers, especially the two economic and social layers and it can be said that the genotype of architecture is more affected by the belief and sub-belief layers. The stability of the belief and sub-belief and imaginary layers in different climate regions prove the close affinity of this part of layers with one another and prove their gist in the lifelike assessment framework. On the other hand, the change of alignment of most of sub-climate layers also indicates the accuracy of placement for the climate and sub-climate layers in the lifelike assessment framework model. In this part, the existential layers of architecture in two distant cities of Santa Fe, USA and Zavareh, Iran are compared. In these two cities, despite the distance which is itself a desirable factor for the accuracy of the comparison, similar climate layers can be observed. In other words, both of these cities contain similar climatic traits, due to being on the geographic latitudes close to each other. Both are located in the hot and arid region. Surely, Zavareh has a desert climate and Santa Fe a semi-desert climate. However, in the hot and arid area, the climate layer is the same and closes to each other. On the other hand, these two cities contain very different layers and the belief, sub-belief and uncanny layers utterly and clearly differ. Now, the question is how different and similar layers manifest in the lifelike assessment framework in the architecture of these two regions and how they indicate the accuracy of the above framework.

#### 4.2.5 Framework Verification in Belief and Sub-belief Layers

##### 4.2.5.1 Zavareh

Zavareh is an ancient city located in the central plateau of Iran and contains a considerable vernacular architecture. In this part of the research, the vernacular architecture of this city, shaped in the Seljuk, Safavid and Qajar periods, is investigated. The most popular architectural pattern of this city is known as Soffe.

In Zavareh, the house patterns follow the platform-based design, most commonly four platform-based design. The history of this pattern is not clearly known; nonetheless, it can be dated to over 1000 years ago. The oldest house in Zavareh has a plan consisting of four platforms and two floors shaped like a castle and, based on the materials applied in it, its construction dates back to the Seljuk era and earlier and there are some changes in the next periods (Figure 5). The four platform pattern exists as one of the highest statistics among the remaining native patterns in Zavareh and the rest of the houses have numerous affinities with each other. In this part of the research, Sang-Bast house and a number of four platform-based houses are chosen, which, as the vernacular architecture of Zavareh, are compared with the approximately contemporary examples of Santa Fe's vernacular architecture.

#### 4.2.5.2 Santa Fe

Today, a great number of houses in Santa Fe have an appearance similar to the Pueblo Indian architectural style; however, only a few buildings of this city are historical and old. The De Vargas Street House, the oldest house of the United States of America, is in this city. This house was built by Mexicans in the year 1646 (Figure 6) and at the time of the arrival of the Spanish. The building across this house was a church in the Spanish style, named Church of San Miguel, which was established by Mexicans in the year 1610 and is the oldest church in the United States. This church was demolished by Pueblo Indians in the struggles of the year 1680, which led to the ousting of the Spanish by 1692, and only its thick adobe walls and some parts of it remained. This church was reconstructed in 1710 and the stone fastenings and tower were added to it and the entry front was renewed. These two buildings, in addition to the Palace of Governors, are in the Spanish style, which later inspired the Santa Fe style by combining it with the Pueblo Indians' architectural style. Therefore, these three very substantial buildings, although, began the bases of the Santa Fe style in architecture, they cannot be considered as the exact representatives of vernacular architecture at that time since they entered Santa Fe from other regions. Meanwhile, surrounding the city of Santa Fe can be found examples of vernacular architecture of Pueblo Indians. As mentioned in previous sections, the vernacular architecture of the second south west region, according to Nabokov's classification, is Pueblo and Kiva styles and these architectural styles have been originated from primary patterns of basic architecture<sup>12</sup>.

### 4.2.6 Framework Verification in Climate and Sub-climate Layers

#### 4.2.6.1 Zavareh

Zavareh, in the latitude of 33.027 North with the altitude of 905 meters above sea level, has a hot and desert arid climate and is located in the BS region based on coupon climatic divisions. This city is extended to Iran's central desert and DeqSorkh local desert from east and north east. The city slope is mild and approximately one per cent towards North East and haloxylons are planted in the north and east to inhibit soil erosion and prevent the production of local adverse winds. No considerable rivers or water bodies or vegetation exists but in previous eras until around one hundred years ago, pomegranate orchards and cotton and wheat fields were irrigated by subterranean water and the abundance of this city has been noted in history. Consequently, the architectural climate layer of the buildings under study is considered as micro-climate aligned with hot and arid climate. This hot and arid layer evidently used to enter inside houses since the platforms of the native houses of Zavareh were integrated with outer environment and no glass and or separating environmental element existed in it. In the environmental layer of houses in all types, natural and cross ventilation is observed, which helped to cool the air in three ways. In the biological layer, it can be said that domestic animals and biological diversity existed in houses of Zavareh and along the four platforms, there was a yard which acquired green space and fountain. The chemical layer of Zavareh's houses consisted of clay, brick, thatch, stone, wood and glass materials and the amount of stone used in these buildings was not considerable. The physical layer of these houses was shaped by wind energy in a cross pattern. In some parts, the basement was used to reduce environment heat.

#### 4.2.6.2 Santa Fe

Santa Fe is a city in the latitude of 35 degrees 68 minutes north and the altitude of 2098 meters above sea level and has a semi-desert hot and arid climate. A seasonal river flowed through this city, which somewhat fulfilled the people's water needs. Vegetation is seen in the east of the city at a distance. The city is located on a surface with low slope. In the environmental layer, rooms with more ventilation and hearth and as the main living spaces for Native Americans were placed towards the south and shade and a buffer environmental space was utilized in the

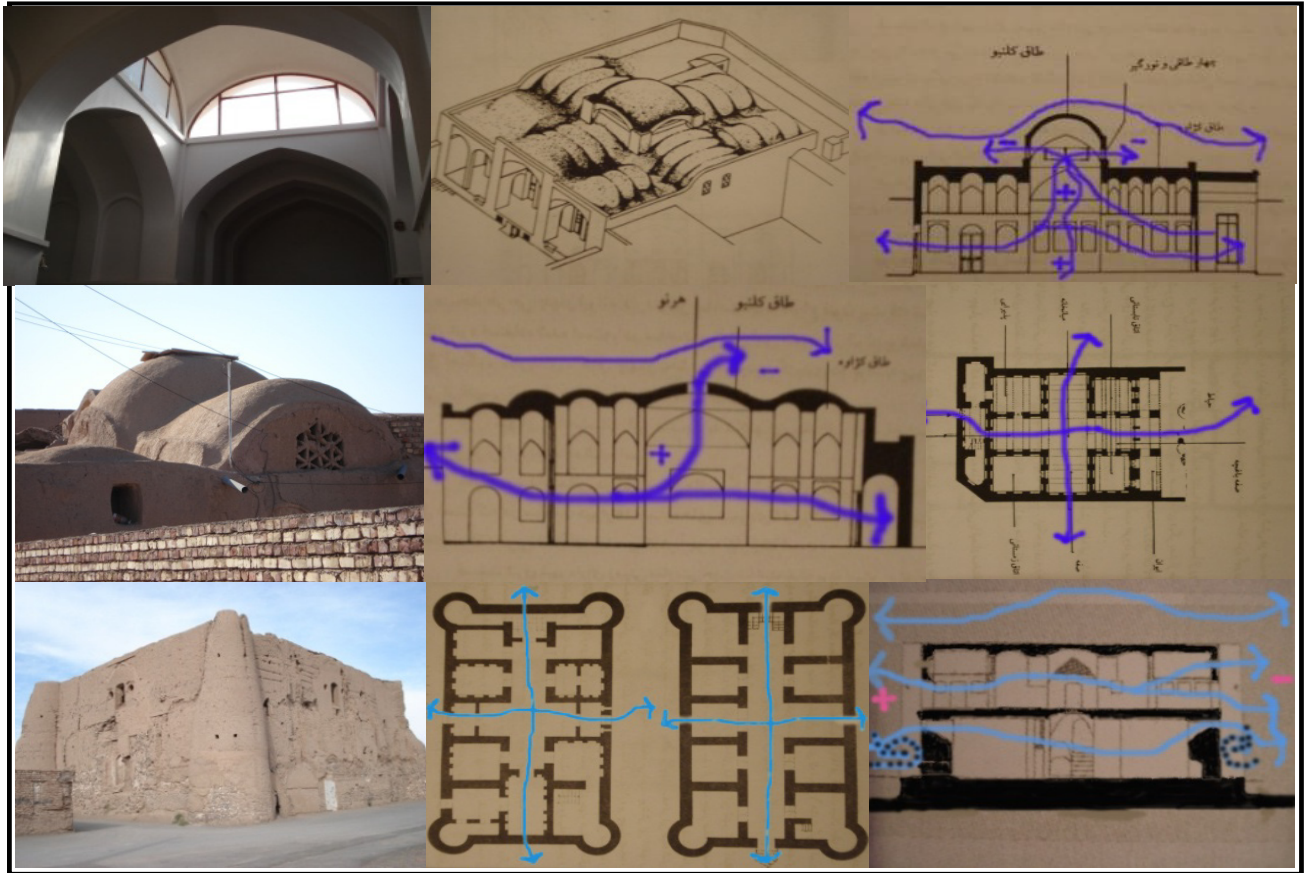


Figure 5. Four platform types and Sang-e Bast house below<sup>13</sup>.



Figure 6. De Vargas Street House, 1646<sup>14</sup>.



north and underneath these rooms and as a storage area. In the summer, cooking was done outside houses due to the inner heat<sup>12</sup>. The biological layer contained variety and animals lived in the surrounding environment. The chemical layer consisted of clay, mud, wood, animal skin and occasionally stone materials. In the physical layer, there was heat transfer from the ceiling outwards and the hearths in the rooms towards the south and higher floors. In the motion layer, the storage spaces were buffer and movement was more vertical and entry and exit was done from the roof. In the spatial layer, the roof was flat and the building included staircases and, in Kivas, a single space.

#### 4.2.7 Verification of Outer Pulse of Zendevari Framework in Santa Fe and Zavareh

In previous sections, it was pointed out that every phenomenon and system, including architecture, came into existence from 25 existential layers. Some and/or all of these layers are active, depending on its existential order and, based on clear and constant laws, act to achieve balance with outside and inside. Nevertheless, these balances are not constant and the phenomenon is in evolutionary movement from this stage of balance to the next. Therefore, architecture is influenced by inner forces and interactions among layers forming each phenomenon, which is called the inner pulse and, in the previous section, the presence of layers and the interactions among them was scientifically proved in the lifelike assessment framework. On the other hand, architecture, as a semi closed system, interacts with its outside environment and encounters feedback control; such that each of these existential layers develop and alter in these environmental interactions and has outer pulse. The outer pulse of the layers generates modifications in each layer, and it is necessary that each new change inside that phenomenon including architecture regains balance in all layers, which is, as mentioned, created through the inner pulse. In this section, the presence of the outer pulse of layers and its effect in architectural development and layers' evolution in the outer pulse and its connection to the inner pulse is proved in an interpretative-historical strategy.

The samples under study, like the previous section, have been chosen from the vernacular architecture of the two cities of Santa Fe and Zavareh. In this section of the research, the historical process of changes in existential layers and their interactions are investigated. And it is proved and observed how change in one layer by

the outer pulse and balance with the environment affects inner layers and leads to architectural development by creating new balance. Vernacular architecture has constantly had endogenous and natural development and the outer pulse of the layers results in phase change of the system and leads architecture from one balance stage and condition to the next more developed condition. This change in the existential stage is accompanied by the balancing of the internal layers, inner pulse.

##### 4.2.7.1 Zavareh

One of the most sustainable and lifelike periods in human history is considered the mythical time of King Fereydoun of ancient Iran. Periods when justice and equity was ubiquitous in Iran and the king, having the divine blessing and people's support, had stepped in the path of sustainable and lifelike development. In Shahnameh, it reads:

“Fereydoun was not an angel/he was not molded by musk and amber/ he found that righteousness by justice and generosity/ if you are just and giving, you will become like Fereydoun”. Although the said periods are dated back to the prehistory and there is no written and clear document from that period, since Zavareh was named as one of the cities of Leylaj in the Kiani period and the geography and climate at that time slightly matches the myths<sup>13</sup>. It can be concluded that Zavareh, at that time, desirably consisted of the belief and climate layers and their sub-layers in architecture. Therefore, in the historical study process of the existential layers of architecture in Zavareh, the starting point is assumed in an optimal condition. Since attention to details and a complete explanation of the process of evolution and change in existential layers of the architecture of Zavareh is difficult and very expansive and because the purpose of this section of the research is to prove the impact of internal factors as outer pulse on the internal layers and their impact in the existential inner layers of architecture, in consequence, the detailed description and explanation of every part of this process in layers have been avoided and only the significant milestones led by these kinds of impacts on the vernacular architecture of Zavareh, are evaluated. One of the historical turning points in the vernacular architecture of Zavareh can be regarded the Seljuk period. In this period, Seljuk dynasty ruled over Zavareh around the year 1136. With the rule of Seljuk dynasty, accompanied by the protests of Ismaili sect, the people of Zavareh, in this period, unlike the first three centuries of the arrival of Islam in the year 928,

convert to Islam yet retain their Iranian traditions in their beliefs; so that the Ismaili Shiite began in this city and the city of Ardestan and Zavareh and Ardestan became the second Ismaili base in Iran. Such belief returns, emerging in the form of Islamic sects, manifest their reflection and vibration in the aesthetic, creative, spatial, chemical and physical layers. The best example which can be named is Zavareh's Great Mosque. This mosque first had a Shabestan (=chamber) design, which was destroyed in this period and the mosque plan is altered as four-porch and domed, similar to the patterns of Iranian fire temples<sup>15</sup>. Therefore, change in the belief patterns of the Great Mosque exert force on this architecture until, due to this outer pulse and change in the belief pattern in the mosque, the only way to create balance among internal layers is a major change in the said layers. Consequently, in a clear and determined inner pulse, alternate layers alter in line with creating new balance so that this period can be considered as the return period in Iranian architecture<sup>15</sup>. So far, it can be proved that existential layers interact with each other and a change in one can produce obvious changes in other layers. Therefore, it can be concluded that every outer pulse is accompanied by an inner pulse in order to generate the necessary balance.

#### 4.2.7.2 Santa Fe

Anasazi Indians migrated to Santa Fe in 1050. They believed that the architectural buildings of their houses provide link between the underworld and the world of the sky and even the components of their houses symbolically represented the ground components of a mythical creature whose spirit offered identity and life to their houses<sup>12</sup>. The pattern of these houses were derived from the pit houses and, as one to two floor buildings, were similar to what has remained from Pueblo Bonito. Another type of architecture which had a more religious aspect was Kiva, which later was gradually used as their houses. One of the historical milestones considered in this research is from 1680 to 1692; during these years, American Indians whose city had been occupied by the Spanish in the year 1515, were, once more, able to govern their belief layer in contrast with the Christian belief layer for 12 years and drive the Spanish away from the city. The change in the belief layer, in buildings such as Church of San Miguel, led to an obvious change in the aesthetic, creative, chemical, physical and spatial layers and this building was demolished and a Kiva with religious application was

made in the Plaza. Consequently, change in the belief layer causes change in other layers. However, this process of belief and sub-belief layer change altered by the return of the Spanish in the year 1692. This process of change in the belief and sub-belief layers of Santa Fe houses went so far that in 1919, most Indian race, in this city, tended to live in houses with neoclassic style imported by the American army. Therefore, the interaction of the Spanish belief layers and later American English army with the belief layers of Native American Indian created many effects and changes on other layers of architecture. The diversity of the belief layers in Santa Fe led to diversity of residential types with various styles so that in recent introduced time period, the Spanish, colonial and neoclassic styles were also added to the vernacular style. The important point is that the vernacular style was more considered by the English immigrants and the natives, contrary to expectation, were inclined towards the classic style<sup>16</sup>.

## 5. Discussion and Conclusion

In the present study, a novel definition of architecture, development and architectural development is proposed and Zendevari (lifelikeness) architecture and Zendevari (lifelikeness) development are regarded as the main findings of the research. In this new outlook, called Zendevari, the world's creatures consist of 25 layers. These layers are either active or inactive, depending on the evolutionary level. As an example, a human is eligible to have all the 25 layers actively and, in plants, 12 layers are active. Each of these existential layers reflect some part of existential attributes and dimensions in creatures and in order for existential phenomena to be sustainable, i.e. have a developmental process and guarantee today and future needs, a number of existential layers of that phenomenon must be placed together in an internal balance. On the other hand, development is the result of interaction with the environment, namely that the information and forces applied to each phenomenon, leading to development in each layer, create the conditions of lack of balance in the phenomenon, which must reach balance in an internal interaction among layers so that the whole phenomenon is placed in new conditions of development. These two processes are called the inner pulse and the outer pulse, which in case of alignment produce Zendevari (lifelikeness). And this is the basis of Zendevari (lifelikeness) development process.

The Zendevari development in the sense of the inner and outer pulses leads to balance in all 25 layers. And this result is obtained that architecture has 25 aspects and dimensions and creating balance in these dimensions, internally and externally, is caused by the two notions of inner and outer pulses. Due to inner and outer pulses, balance surges architecture to a higher place, called Zendevari. Zendevari means balance in all existential dimensions and their evolutionary development. From this perspective, the Zendevari development is a development beyond sustainable development. Consequently, sustainable development is considered a subcategory of Zendevari development. And the Zendevar (lifelike) architecture and Zendevar (lifelike) development is the main synthesis and inductive conclusion of this research. Although these two terms are obtained from Iranian philosophies, in the current study, it was proved that they can also be manifested in scientific and scientific-functional formats so as to have efficiency independent of supporting philosophies and this is because the indicators are formulated based on collective wisdom and innate and natural human indicators.

Zendevari (Lifelikeness) will be, like a golden thread between all genuine religions and perfectionist philosophies, which were established based on innate human conscience, a linking factor and unifying relation. Therefore, the theoretical framework of Zendevari is the first result and the most essential finding of the present study. Another principle existing in the Zendevar development framework concerns the relation among the 25 existential layers. The 25 existential layers have, on the one hand, a universal relation with each other and, on the contrary, the relation is natural. Meanwhile, layers lack clear and inevitable borders and are in clash with each other and a kind of fuzzy relational logic can be proposed. The more qualitative and softer layers include the more quantitative and harder layers and this is the very universal precedence seen in the Iranian mystic philosophy of Mir Damad. On the other hand, the more quantitative and harder layers are the existential prerequisite and underlying the softer layers and are introduced as the imperfect cause of the softer and more qualitative layers and this is the very natural priority seen in the ideas of Molla Sadra and Aristotle. Consequently, according to Zendevari (lifelikeness), a logical relation can be considered between existential layers in two contrasting directions. People's cooperation through professional councils is a substantial

principle which guarantees the survival of Zendevar development. Namely, since the universe is subservient to the human, people are responsible for all beings and must assist in the alignment of the world and the monitoring of the elite and the common and lifelikeness of the world by consensus and collective wisdom. Thus, international opinions are vital in the creation of Zendevar development. Overall, it can be said that in the Zendevar development framework, the world and its beings consist of 25 layers which are in interaction with each other in an unpredictable way, yet a universal and natural relation can be found between layers in two directions. This musical piece is placed based on the external forces and effects on it in new conditions, which reaches alignment and new balance by the inner and outer pulse and finds Zendevar development. Each of these layers can contain sub-layers and particular dimensions.

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