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**FROM ARCHITECTURE TO LAND PREPARATION (REVIEW OF LAND  
PREPARATION TOOLS IN ARCHITECTURES AND URBANISM)**

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**ABSTRACT**

Architecture and various styles of that have been affected by geography, human effects (culture, population move and theories,...) and urbanization system since many years ago. In spite of scientific and industrial improvement, modern architecture can't play an important role as the ancient one. One of the reasons is lack of concentration on determined subjects which were obvious in the ancient architecture and started from their needs and based on special parameters. Land preparation concept is providing and creating and if it effectively focused on that, architecture will be permanent on the base of architecture. This is the facts that exist in relation to architecture and land preparation. This study is qualitative in nature and descriptive and analysis. One of the land preparation tool was introduced. The purpose of this study was to investigate the strategic instrument of preparation in this country in architecture and urbanization, and it was proposed to recognize this tool to go toward permanent development and finally to land preparation. The findings of this study were consisted of correct position f cities, the establishment of the industry, how to properly stretch of buildings fit the affected parameters...

**Keywords: Modern architecture, AHP, land preparation, sustainable development,  
location**

## INTRODUCTION

Sustainable development and land preparation are being meaningful together. Development, sustainability and land preparation hierarchy are based on facts and they are determined. Unfortunately, some developed and developing countries has not paid enough attention to this fact in industrial dimension. Using land preparation tools is a common and appropriate device among geographical sciences and the result of that has been logical, too. Thus, this study ties to introduce these instruments in architecture and urbanism to go a bit toward permanent developing in architecture.

### Statement of problem

As it mentioned before, in the ancient era sustainable architecture and geographical role are obviously and broadly observed in location and localization and less observed in architecture designs. In spite of science development with various application, technology and knowing lots of science and various international references, less developed countries don't pay attention to sustainable development. It seems either development concept is not understandable or there is not any meaningful relation between these sciences .thus, its believed that if policies in these countries are based on lack of focusing on land preparation, they

will have big problems for policy and politicians in future. According to territorial integrity and humanity, providing humans first needs on the base of architecture design should be toward development to find a logical response for this topic.

In this study some question were proposed which were mentioned in research question part.

### Research question

Questions which were proposed in this study were:

- 1-Is there any logistic relationship between land preparation tools and architecture?
- 2 how much land preparation instruments such as:"hierarchy of analysis system "can be responsible to the first need in the first phase in architecture?

### Hypothesis:

Considering this research (investigating on land preparation instrument in architecture and urbanization) the following hypothesis was proposed, which are going to be accepted or rejected after analyzing data:

H1: It seems that there is a significant and logic

H2: land preparation tools such as hierarchy analyzing system can answer the first needs of the firs face of architecture

### Significant of study

Since all human activities are in one geographical area and land preparation is one of the effective branches in different sciences, thus with deep understanding of this word and its meaning on the base of traditional architecture without any new wrong policy and taste, we believe that architecture and land preparation are not separated from each other but they are completely complementary. Thus, lack of focus on this fact will cause breaking in sustainable activities. Therefore, using determined instruments for land preparation can logically and appropriately answers new architectures is needed.

## **METHODOLOGY**

This research is practical and has descriptive–analysis nature. Research results are: using land preparation tools among other sciences such as architectures and urbanization, and the results can be used in national and international areas.

### **Gathering data**

Since this research is very important, various methods were used to gather and edit this study such as Library study (inside and outside) using related websites, and field studies. And the most important is using various articles from different conferences which we used for the first time.

### **Instruments**

Based on various published articles in field studies, visual perception, this study designed interview's card.

### **Data analysis**

Since this study was a new one, thus comparative method was used for analyzing.

### **Background**

1-Golzar et al (1393) in their study analyzing and locating Bojnord resident complex on the case of geographical scale (civil defense approach) and renewable energies with AHP. They founded that renewable energies such as wind, sun, vegetation, and topography can have important role in location and use of them. Moreover, they were used appropriately with wisdom observation [12].

2-There is lots of research has been done on architecture and climate. On the other hand, applied climatology in construction and urban and rural land use on the base of specialty of Iran's locations with various climates has been studied a lot in the world. Furthermore, the importance of potential climate has been discussed a lot. Thus, a committee has been made to investigate ecology of building in Geneva in 1965. It consisted of meteorologist, environmental and health professionals, Architects, urban designers and engineers to study the effect of urban weathers on final decisions to find out

the best conclusion about urban climate. These theories with two other related topics were studied in the other symposium which was called Symposium on urban climatology livelihoods of building in Brussels in 1965.

3-Varesi et al (1387) studies location of urban green spaces in Khoram babd city with the use of geographical information system, and finally demonstrated that appropriate land zoning map to create green space in Khoram abad city( Varesi et al, 1387).

4- Rahimiyoon (1377:8) in his research studied GIS in analyzing inside urban lands in a case of Baghershahr tehran. He used GIS to evaluate empty places in the city and to evaluate better choices for optimum development in urban.

5- Parsi poor (1392:87) studied housing localization and its effect on urban development patterns, a case study on Bojnord Mehr housing. Studies on Mehr Housing localization and its effects on inside and outside urban development model in Golestan town in Bojnord demonstrated that localization scales, section of land were natural; however there was not enough attention to social and economic scale.

### **Definition**

Land preparation – preparation is decorating and preparing in Moeen dictionaries [15]. Larous dictionary had various definitions: the

best one is geographical distribution of economic activities according to natural humanistic resources [15].It's called preparation in English and means planning with the use of land (the same).

### **Sustainable development**

Sustainable development is a process that consisted of two basic parts: protection: human action limited in the tolerant capacity of the nature and natural resources. 2. Development: urbanism, rural, industrial development and planning to remove human economical –social needs and providing healthy and long social life. Sustainable development is a complicated environmental, economical, and social process that is used for editing a practical and flexible program.

### **Stability**

Sustainable ability or doing sustainable work (oxford dictionary, 2000) .This concept was first proposed by universal committee of environmental and developed in 1987[3].

A location and localization theory of settlement is a seating and the feat on the ground and location, selecting the best place for settling according to public conditions of the land [7]. Location is the activity that analyze the capability of an area on the base of appropriate ad enough place and it is related to other application and facilities for selecting appropriate place for special

application [10]. Location theories were showing off with plain literature. The most ancient location model as belong to Pirdodermer (1600 am).

### The hierarchy of analyzing system

One of the decision support tool device is multi-criteria decision-making methods which is used for different purpose such as :Analysis decision making , production of solution options , evaluate option on the base of decision making ideas[2].

The effect of land preparation on environmental recovery

-using optimal and limited on recycling resources with the use of new technologies.

-environments ability to absorb pollutant an waste

- answering humans needs(various application ) in different fields of housing, agriculture, industry and mine , an providing facilities related to situation to provide human wealth fare and vial systems.

### Climate factors

Factors that affect area s are called climate factor, and effective on Earth climate such as intensity of solar radiation, angle of inclination of the Earth, air flow, and geographical situation (The topography and height) are showing the weather of each area in the world. [9]

Smaller scales factors that determined climate are air temperature, humidity, sun raising, air flow (wind) in each area. Moreover, other effective factor on atmospheric equality or local weather is geographical place, means the topography and height, land cover types and physical studies are such as type of building construction.

### Sun radiation

The Earth gets all its natural energy directly and indirectly from sun. A wide range of radiation is from wave which called sola spectrum. In this wide spectrum , the longest waves ( radio wave ) is about 1021 equal to short waves ( Gama ray) .But , los of energy of radiation is in the narrow range . In warning atmosphere factor such as earth radiation, Garbled transmission, Latent heat, greenhouse phenomena have important roles.

### The temperature

Temperature is measuring the heat in the ground and weather. The entire organisms are affected by this temperature. Studies on energy demonstrated that temperature changes due to energy's changes.

### Humidity

Humidity is the amount of water that exist in the weather and water steam which comes to weather by evaporating from oceans and seas

, wet surface plants and exchanges to other places with wind or air flow. Warmer weather keeps more steam. The amount of humidity can be measured variously with Absolute humidity, private humidity, relative humidity, vapor pressure..

**Wind**

Pressure systems are covering large areas in atmosphere. High pressure system is called anti –silicon and the low pressure one is called silicon. Wind is a flow that moves from less pressure center to the slope of pressure. Whenever the slope of pressure is more between places, air flow will be more. The different pressure between two areas is called the pressure gradient or Barometric gradient.

**Raining**

Raining is happening whenever both of humidity and operating climate exist in one area. In other word, humidity should climb up to determined height and Areia Batik point should be saturated with coldness, then the clouds are created. Lack of each of these will prevented raining. Mechanisms such as convection volubility, thermal convection,

convection Sport, and roughness are effective in raining [16].

**Thermalconductivity**

It’s a physical feature of things that demonstrated leading heat ability with Molecule movement.[1]

**Example of studies**

**1-The Establishment of satellite towns in order to optimize the use of renewable energy**

**Process analysis system hierarch**

1-building hierarchy: have three levels

- 1. Aim
- 2. Criterion
- 3. Choices

Aim: selecting the best choices

Criterion: the main feature of choices

Choices: studied items

2- Calculating weight.

3- System capability

The best location is investigated between determined choices.

First step: creating hierarchy

Second step: the amount of each choice according to ----- table preference

prefer	Nominal scale
Complexly preferred	9
Preferred likely	7
Preferred or better	Preferred or better

Slightly better	3
The same preferred	1
Preferred between intervals	8-6-4-2

B]  $\phi A NB = . A$

Tables

All the criterions in the tables are equal to themselves means that the ratio of A to A is 1.

Pont: the following ratio should be respected in the tables.

Criterions are: 1- wind energy 2- sun energy

Choices consist of A- Golestan Aghmari town B- Farhangian Aghmari town

Table (1) the first criteria: wind

	Choice A	Choice B
Choice A	1	3
Choice B	0.3333	1
sum	1.3333	4

Table (2) second criteria: sun energy

	Choice A	Choice B	Per raw
Choice A	0.7500	0.75	.75
Choice B	0.2499	.25	.2499
sum	.9999	1	.9999

	Choice A	Choice B
Choice A	1	5
Choice B	0.2	1
sum	1.2	6

	Choice A	Choice B	Per raw
Choice A	0.8333	0.8333	.8333
Choice B	0.16666	.16666	.16666
sum	.9999	.9999	.9999

Table (3) comparing choices with criteria

	Wind energy	Sun energy
Choice A	.75	.8333
Choice B	.2499	.16666

Tables (4) comparing criteria with each other's

	Sun energy	Sun energy	Per raw
Wind energy	0.8	0.8	0.8
Sun energy	0.2	0.2	0.2
sum	1	1	1

Calculate final weight

Per column in stage 5\* each raw separately in stage 4

Finally, after finishing all these steps, the item which has the highest grade will be selected as the best.

Choice a  $\longrightarrow$   $0.2*0.8333+0.8*0.75=0.7666$

Choice B  $\longrightarrow$   $0.2*1.6666+0.8*0.2499=0.5333$

## 2 Using analyzing hierarchy system is a new step in architecture studies -

In this study, using analyzing hierarchy system will logically help in the first step in architecture studies.

Criteria s are : favorable wind, radiation , unfavorable wind, the angle of incidence  
 choices are : the volume of the building( north- west, south- east) volume of building ( north- south), volume of building (east- west) , volume of building (north-east, south- west).

Table (1) the first criteria, favorable wind

	Choice A	Choice B	Choice C	Choice D
Choice A	1	3	2	3
Choice B	0.3333	1	4	3
Choice C	0.5	0.25	1	3
Choice D	0.3333	0.3333	0.3333	1
Sum	2.1666	4.58333	7.3333	10

Table (2) the second criteria, radiation

	Choice A	Choice B	Choice C	Choice D
Choice A	1	5	6	7
Choice B	0.2	1	2	3
Choice C	0.1666	0.5	4	4
Choice D	0.1423	0.5	0.25	1
Sum	1.5094	7	9.25	15

	Choice A	Choice B	Choice C	Choice D	Per raw
Choice A	0.6625	0.7142	0.6486	0.4666	0.6229
Choice B	0.1325	0.1428	0.2162	0.2	0.1728
Choice C	0.1103	0.0714	0.1081	0.2666	0.1391
Choice D	0.0946	0.0714	0.0270	0.06666	0.0649
Sum	0.9999	0.9998	0.9999	0.9997	0.9997

Table (3) the third criteria, unfavorable

	Choice B	Choice A	Choice C	Choice D
Choice A	2	1	2	2
Choice B	1	0.5	4	5
Choice C	0.5	0.25	1	3
Choice D	0.5	0.2	0.3333	1
sum	25	3.45	7.3333	11

	Choice A	Choice B	Choice C	Choice D	Per raw
Choice A	0.4	0.597	0.2727	0.1818	0.3585
Choice B	0.2	0.298	0.5454	0.4545	0.3724
Choice C	0.2	0.0724	0.1363	0.2727	0.1704
Choice D	0.2	0.0579	0.0454	0.0909	0.0985
Sum	1	0.9998	0.9998	0.9999	0.9999

Table (4) the fourth criteria, radiation standard

	Choice A	Choice B	Choice C	Choice D
Choice A	1	2	2	2

Choice B	0.5	1	5	5
Choice C	0.5	0.2	1	1
Choice D	0.5	0.3333	0.5	1
Sum	2.5	3.5333	8.5	8

	Choice A	Choice B	Choice C	Choice D	Per raw
Choice A	0.4	0.560	0.2352	0.25	0.3628
Choice B	0.2	0.2830	0.5882	0.375	0.3615
Choice C	0.2	0.0566	0.1176	0.25	0.1560
Choice D	0.2	0.0943	0.0588	0.125	0.1195
Sum	1	0.9999	0.9998	1	0.9999

Table (5) comparing choices with criteria

	Favorable wind	Radiation	Unfavorable wind	radiation
Choice A	0.4221	0.6229	0.3585	0.3628
Choice B	0.3043	0.1728	0.3724	0.3615
Choice C	0.1803	0.1391	0.1704	0.1560
Choice D	0.0929	0.0649	0.0985	0.1195

Table (6) comparing criteria with each other

	Favorable wind	Radiation	Unfavorable wind	radiation
Favorable wind	1	4	5	3
Radiation	0.25	1	7	5
Unfavorable wind	0.3333	0.1428	0.1428	2
Radiation	1.7833	53428	135	11

	Favorable wind	Radiation	Unfavorable wind	radiation	Per raw
Favorable wind	0.5607	0.7486	0.3703	0.2727	
Radiation	0.1401	0.1871	0.5185	0.4545	0.3251
Unfavorable wind	0.1121	0.0267	0.0740	0.1818	0.0986
Radiation	0.1869	0.0374	0.0370	0.0909	0.9999

Calculating the final weight, the average of each column in stage 5\* each row is separately in stage 4

At the end of all these levels, the item which has the biggest grade is selecting as the best choice.

$$\text{Choice A } 0.0880 * 0.3628 + 0.0986 * 0.3585 + 0.3251 * 0.6229 + 0.4880 * 0.42221 = 0.4757$$

$$\text{Choice B } 0.0880 * 0.3615 + 0.0986 * 0.3724 + 0.3251 * 0.1728 + 0.4880 * 0.3043 = 0.2732$$

$$\text{Choice C } 0.00880 * 0.15600 + 0.098600 + 0.17040 + 0.3251 + 0.13910 + 0.4880 * 0.1803 = 0.167$$

$$\text{Choice D } 0.0800 + 0.11950 + 0.0986 + 0.32510 + 0.0649 + 0.48800 + 0.0929 = 0.0866$$

## RESULTS

All the articles which studied land preparation in architecture were demonstrated in this study and the result indicated that it can logically responsible to architecture

common needs, and it is in line with land preparation and sustainable development.

Thanks and greeting to professors and researcher, I hope that this study can help to comprehend land preparation tools and land

preparation, and make sure your loved ones draw

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