

***The Method of Plants Selection in Planning and Architecturing of
urban Green Spaces in Iran
(Represented by Using Mathematic Base and Totality Theory)***

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Extended Abstract

Introduction

Unlike wrong Conceptions that Green space may be inducing to public, Green space is not only a space with trees, but it is symbol of social and cultural thoughts of a Society and its domain not include only parks. Selection of plants in architecture of green space not is done only based on Aesthetics Visual items but a set of factors like ecological, natural requirement and Functional properties must be regarded. At recent years in Iran, selection of plants species was not scientific. They select plants by chaotic methods or by one dimensional viewpoint. Today in domain of green space most of Iran's cities confront with problem, as following items:

1. Being one seasonal of green spaces and their function;
2. Non concurrence of space with function;
3. Incomprehension and lack of feeling of Aesthetics of plants.

Intolerance of cold and heat and ecological condition by plants cause them deteriorate and make an inappropriate landscape

Methodology

Due to expression of problem and proving of existence of problems in selecting the proper plants for Iran's green space, it be needed to field survey and use of statistical data related to responsible persons that involved in selecting green space plants, which in this case statistical data of some parks plant selector have been examined and interviews with those responsible

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person had been done. And results have been shown in analytical-descriptive method. in other hand making of systematic idea for selection of plants requires to mathematical and theory of set that these are inevitable .in which case with library research and combination of subjective idea, theory of sets in math have been used which hierarchical property, cover scientifically this method. Totally, research method is combination of analytical-descriptive methods (combination of planting design) with field survey (examination of at least 10 park and observation of its plan) have been done.

Results and Discussion

With adaptation of visual element to plants body it can be discern that plants not only have an ecological and operation value but also have strong potential to satisfy human spiritual needs. So it must be avoid of selecting the plants by one dimensional method for planning the green space and selected plants must be study from aesthetic and visual aspects. in this paper a simple method for selecting a plants in a site is introduced by using of set theory and concepts in math that result in extracting of table 1,2,3,4 and finally gain key table which this table would be the smallest subset from four steps:

$$((a_1, a_2, a_3, \dots a_n) \wedge (b_1, b_2, b_3, \dots b_n) \wedge (c_1, c_2, c_3, \dots c_n)) \geq 1$$

Or

$$\text{Aesthetic specification} \wedge \text{functional specification} \wedge \text{ecological specification}$$

Or

$$\text{d}(a_i) \left(\sum b_i \right) \left(\sum c_i \right) \geq 1$$

And requisite for above formula is: $A = \text{d}(a_i) = 1$ and $\sum b_i \geq 1, \sum c_i \geq 1$.

It is obvious that the answer for equation must be one or larger than one. To understand how generalize formula to the problem it's better to introduce this hypothesis:

$$\text{d}(a_i) = a_1 \wedge a_2 \wedge a_3 \wedge \dots \wedge a_m = 1: \text{Production of scores that gained by regarding the natural specification}$$

$$\sum b_i = b_1 \vee b_2 \vee b_3 \vee \dots \vee b_n \geq 1: \text{Sum of scores by regarding the functional specification}$$

$$\sum c_i = c_1 \vee c_2 \vee c_3 \vee \dots \vee c_n \geq 1: \text{Sum of scores by regarding the visual specification}$$

Conclusion

Selecting the proper plant for green space is a specialized work and everyone is not allowed for plant selection. Up to now, often in Iran the ecological specification of plants had been criterion for selecting the plants which it was because of interference of unskilled person in this region. On the other hand attention to aesthetic principals in green space is subject to examination of plants from view point of visual communication. In Iran above mentioned principal had been at least level and mostly ecological specification had been considered. Selecting of plants for green

space application at view point of systematical, plurality, and multi-dimensional (natural, functional and visual) must be done. Offering methods and models for selecting the plants would help the specialized in selecting the plant.

Albeit these methods do not mean offering of stereotype methods but it can be used as a relative application. Utilization of offered method in plant selection finally results in production of key table of planet selection that for ease and completeness of selection for each project it can be prepared. by using final table as a one of sheets of green space design project, for any aims in designer mind, a proper plant would be in access.

Desired method would had hierarchy specification, screening and systematical specification that cause the attained key have been used in formatted final table as guidance with least error. Plants have been selected for green space which firstly are compatible with ecological condition of region and secondly had a one or several proper function, thirdly had a expected visual specification of project (aesthetic specification).which these three condition must be applied with each other and respectively

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