

Aesthetics of Sustainability

The Relation of Aesthetics and Environmental Sustainability

Abstract | One of the challenges against sustainable development is to attain the patterns for interacting between man-made environment and nature. Sustainability tries to provide a series of concepts and instructions which leads to better interaction between abovementioned factors. Sustainable landscape design is generally understood in relation to three principles: ecological, social and economic sustainability. Rarely do aesthetics factor into sustainability discourse and it is considered as insignificant value. However, it seems that landscape as a cultural phenomenon requires concepts further than merely ecological needs for obtaining sustainability. More over, aesthetics aspect of a landscape helps to increase knowledge of environmental sustainability by affecting human consciousness and individual emotions. This article is going to evaluate the aesthetic aspects of sustainability and its role in sustainable landscape. In this article four principles of aesthetics in sustainability is introduced which are followed by practical instances.

Morteza Hemmati
Master of Landscape Architecture
hemmatiarchitect@yahoo.com

Keywords | Sustainability, Sustainable landscape, Ecological landscape, Aesthetics, Ecology.

Introduction | Sustainable development is an important change in understanding the relation between human and nature. This issue is opposed with the previous concepts which were based on separating the social, economic and environmental issues. In last two centuries, according to the old hypothesis, environment was considered as an external object which was there for human exploitation. In recent century, due to technical improvement, domination of human on nature caused disruption in natural processes and biological systems. Following the inference of human in ecosystems, a new science emerged which was able to modify the relation between human and environment (Shape 1). A review on recent studies which were done in last two decades indicates that what we consider as sustainable concept is mainly focused on ecological aspects of sustainability rather than aesthetic aspects. However, landscape as a cultural issue is always under the aesthetic evaluation of the viewer and can be not separated from its ecological aspects. Therefore, it seems to be necessary to define aesthetic patterns which lead to attain sustainable landscape.

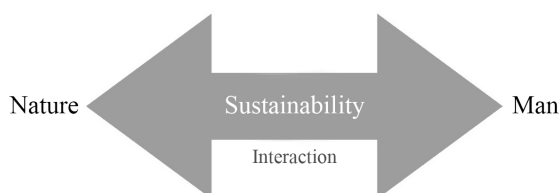
Sustainability and Sustainable Development

Sustainable development is an attempt to combine environmental concepts with socio-economic issues. It is a process for meeting human development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the

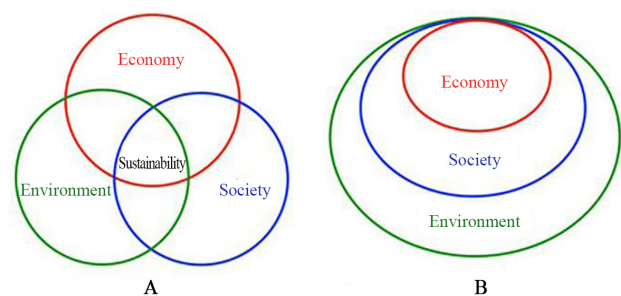
economy and society depends. World Commission on Environment and Development defined the sustainable development as dynamic process of consumption in a guided investment and directing development which is compatible with the needs of present and future (Abbaspur, 2007). In order to attain this goal, three major factors of society, economy and environment should have an intractable relation. Before, in previous models these three were considered as separated factors with same values but in recent models environment plays a more effective role in obtaining sustainability (Shape 2); (Wu, 2013).

Lack of Aesthetics Literature in Sustainability

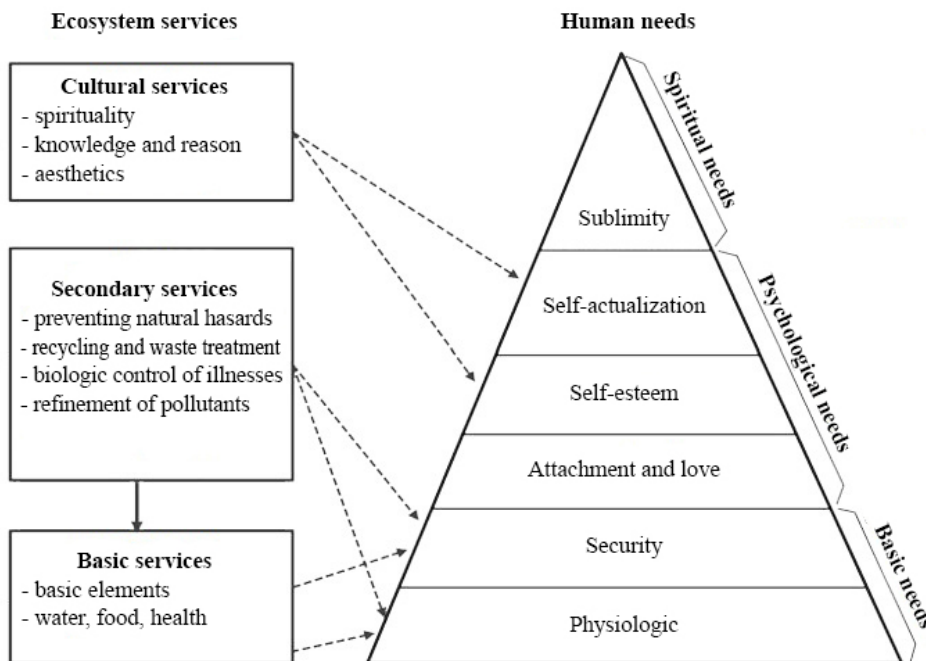
Today sustainable development is composed of three major principles of economic development, social justice and maintenance of ecological conformity. Experiences have shown that what is usually provided as sustainable cities or architecture is focused on sustainable ecology. In such plans aesthetics aspects are either ignored or have a little impact. Furthermore, commonly aesthetic aspects are disregarded due to environmental disasters which threats human lives. However, such idea can be explained by Maslow's hierarchy of needs (Wu, 2013). Wu compares services provided by ecosystem for each human need and gives a classification which reveals aesthetics is ranked in higher position similar to "survival needs" of human like security and physiological requirements (Shape 3).



Shape 1: Sustainability is an interactive relationship between human and nature. Source: Author.



Shape 2: Two patterns depicting sustainable development issues. (Earlier pattern) illustrating equal role of each factor [left]. (Latest pattern), environments contain economy and society [right]. Source: Wu, 2013.



Shape 3: By comparing human needs (Maslow's pyramid) and environmental services, Wu suggests that basic needs have priority on aesthetics. Source: Wu, 2013.

Aesthetics

Aesthetics is a branch of philosophy dealing with the nature of art, beauty, and taste, with the creation and appreciation of beauty. It is a pleasant involvement which gives meaning to life. This experience is on a contemplation which helps to percept the environment properly. One of the profound questions in aesthetic is why something seems beautiful? Or in other word, what is art and what is artwork? Does beauty have form and shape or is it associated with personal emotional responses? Before 19th century, Western aesthetics usually refers to Greek philosophers as the earliest source of formal aesthetic considerations. Plato believed in beauty as a “form” in which beautiful objects partake and which causes them to be beautiful. He felt that beautiful objects incorporated proportion, harmony, and unity among their parts. In Plato's theory, aesthetics was something external which could be classified in two kinds of “natural beauty” and “geometrical beauty” (Hollingdale, 1994). Since 19th century, by advances in psychology, new concepts in aesthetics emerged. The idea of beauty transformed into more subjective concepts in which it is considered that beauty is related to human perception. Since psychological and social factors

impact human's perception, they are also able to form his ideas about beauty. Therefor many believe that beauty is not merely a visual issue, but it is a quality or combination of qualities which affords keen pleasure to other senses or which charms the intellectual or moral faculties (Daniel, 2001). Scarry suggests that when we experience beauty, it changes our relationship to that object or scene. “At the moment, we see something beautiful, we undergo a radical decentering. Beauty requires us to give up our former imaginary relations to form a new one (Meyer, 2008).

A Review of Landscape Architecture Aesthetics
Reviewing the history of human habitation indicates that early humans from the very beginning as they were trying to find a place for settlement, they had to deal with aesthetics. Through different periods of history, with different aesthetics human have emerged different landscapes which are based on the way they were interacting with nature. Before modern era, aesthetics was generally based on archetypes which were passed from one generation to another and formed primary layers of aesthetic of human kind. According to these archetypes, in a period he was in favor of the nature and in another



Pic 1: The sewage canal, which was believed to be in the same location as the Old Emscher River, has converted into a canal which continues environmental aquatic cycle. Source: <http://cgconcept.be/wp-content/uploads/sites/10/2016/09/03-Overall-Concept-Steinhallenplatz.jpg>; https://www.flickr.com/photos/cclr_sf/3821520000/in/album-72157621915134653.

time, he considered it as an enemy. In modern era, in a humanism atmosphere, the concepts of traditional aesthetics which were holistic, mysterious and sacred entered into a new phase which resulted in emerging numerous thesis and antithesis. Modern philosophy is based on audience. As Martin Heidegger suggests that the world we see is a consequence of the process of our perception of the exterior world which is basically independent from us. In other words, we try to transform the timeless world outside into a timely realm of our own which is understandable for us (Ahmadi, 2010). This attitude led to banish the decorative beauty as Adolf Loos and

Le Corbusier criticize it harshly. After that modern aesthetic lost its holistic attitude which became more formal. Then, to compensate nature-loving desire of modern human different trends emerged in which regards metaphysical aspect of living. One of the trends was landscape architecture. For instance, Frederick Olmsted tended to create spaces which were inspired by organic and naturalistic features of English gardening (Partar, 2011). Central Park was designed in order to provide pure nature in heart of the mechanized city of New York. In recent decades, by development in sustainability we are witnessing a new stream of landscaping which normally emphasizes on ecological aspects of design.

Aesthetics of Sustainability

In earlier definitions of aesthetics, some criterions such as balance, identity, sense, sense of place, coordination, stretching and unity was expressed as main values which can be translated into landscape as symbolism, centralization, hierarchy, symmetry, continuity, diversity and flexibility (Daneshpur & Parivar, 2013). As it was mentioned, aesthetic aspects are beyond merely physical and visual characteristics but it also is the matter of human perception and experience of multi-layer environment. Therefore, the definition of aesthetic patterns must be determined in the context and its audience. In this case, values of aesthetics and ecology become one and inseparable from each other. Howett believes “Every work of landscape architecture, whatever its scale, ought first of all to be responsive to the whole range of its interactive systems -soils and geology, climate and hydrology, vegetation and wildlife, and the human community- that will come into play on a given site and will be affected by its design. In the measure that the forms of the designed landscape artfully express and celebrate their very own beauty (Howett, 1987). Spirn adds, “This is an aesthetic that celebrates motion and change that encompasses dynamic process, rather than static objects. This is not a timeless aesthetic, but one that recognizes both



Pic 2: The bridge connecting two sides of the river was designed by inspiration of Chinese new year's festival dragon, which has a certain meaning for people living in that region. Source: <http://www.landezine.com/wp-content/uploads/2015/03/yanweizhou-terrace.jpg>.

the flow of passing time and the singularity of the moment in time, that demands both continuity and revolution (Spirn, 1988). In other word, what is represented as aesthetic of sustainability refers to more than pictorial landscapes and pleasant, idealized pastoral scenes? Instead, here is calling for somatic, sensory experiences of places that lead to new awareness of the rhythms and cycles necessary to sustain and regenerate life.

Such approach to sustainability is trying to benefit sensory aesthetic experiences as a tool for sustainable design. This attitude is already there, but generally it's potential as an influential factor in the sustainability has not been independently investigated. For example, in Bell's conceptual classification for criteria such as balance, surroundedness, variety and so on is introduced as aesthetic principles which are presented in three categories: structural, spatial patterns and visual target. It is witnessed that these classifications are based on visual features of the objects (Daneshpur & Parivar, 2013). For the first time, Elizabeth Meyer in an article entitled "Sustaining beauty" proposed a manifest for aesthetic aspects of the sustainability which are based on ten principles. Later, Terry Daniel amended her classification by introducing three conceptual categories in which other principles of ecological aesthetics are included: representing ecosystem, geo-spatial variation, bio-social context.

In Daniel's classification, it seems that principles are too general and impractical. Therefore, based on principles presented by Meyer and Daniel this article introduces four major principles which are comprehensive and practical.

Natural Process Instead of Natural Form

Ecological mimicry is one of the conventional methods in sustainable landscape which is tried to regenerate to natural form. However, these natural-looking landscapes can be not truly called sustainable because they require constant maintenance and if they are neglected they easily lost their stability and become abandoned landscape. Therefore, the mimicry of natural process is more important than the mimicry of natural forms. One of the distinguished examples in the use of natural processes, rather than the mimicry of natural forms, is Duisburg-Nord Park project which is designed in 1991 by Peter Latz in Duisburg, Germany. The site was abandoned for nearly two decades due to industrial pollution caused by waste coal and steel factory. The architect regenerated natural processes instead of natural forms. What is remarkable in this project is that the ecological functions of the project unified with the new aesthetic attitude of it. For instance, the sewage canal, which was believed to be in the same location as the Old Emscher River, could not remain as it existed on the site, and was

placed underground. A new canal has taken the place of the sewage canal, but is now flowing with fresh rainwater (Pic. 1). Instead of creating a more “naturally” shaped waterway, this new canal, the Emscher River, was kept as straight as the canal before. The canal aids in one’s understanding of water processes and changes in time. Here visitors are able to understand on a seasonal basis the process of the site and mark their experience of the park by how high the water was.

Beyond Ecological Performance

Sustainable landscape design must do more than function or perform ecologically; it must perform socially and culturally. Basically, design is a cultural product of the involvement of mind in nature that leads to the formation of spaces and applications. Sustainable landscape design can verify natural cycles such as seasonal floods, and regenerate natural processes. It also can represent socio-cultural events - like ceremonies and festivals- of a society.

Yanweizhou Park in Jinhua, China, which was unveiled in 2014, is a prominent example of socio-ecological attitude in a project. The park designed by Studio Turenscape aimed to revive the ecosystem of the river which had been disturbed by the urban structure and at the same time provide a way to coexist with seasonal floods of the river. Before the Yanweizhou Park project was implemented, a long protecting wall was built between the city and the river which prevented inhabitants to interact with the river. Project designers defined a model based on calculation of water flows at different seasons so that it can be safe against water hazards. However, the architect, Konjian Wu, went beyond the ecological requirements of the project by defining social and cultural objectivities: “It provides essential supplies; it carries lives, culture, aesthetics, and enlightenments for people throughout the watershed. It is a social infrastructure and rebuilding society, as rebuilding ecology, should start with the rehabilitation

and construction of these essential ecological infrastructures” (Tharp, 2014). He wrote for Turenscape shortly after completion of the park. This ultra-ecological approached park is also used in aesthetics of design and famously it has become one of the most important collective spaces of Jinhua city. For example, a bridge that connects the two sides of the river was inspired by local legends of dragons - also used in Chinese new year’s festivals- which has a certain meaning for the people of the region (Pic. 2).

Dynamic Instead of Static

Landscape architecture’s medium shares many characteristics with architecture, that “space” is the most significant of them. However, they have fundamental differences that it is in compliance with the time. Landscape architecture features are changeable and temporal which should be noticed in design (Meyer, 2008). This changes are multiple and overlapping, operating in numerous scales and tempos. In other word, not only do we move through landscape, the landscape moves, changes, declines then its aesthetic is variable and dynamic. Bass River Park which was designed in 2010 by Stoss group is one of the notable examples utilizing dynamics of landscape as the main concept of the project. This coastal site was previously unused due to flooding, the designer was asked to offer strategies that respond harsh environmental changes in the region. Stoss by classified the environmental variations into long-term and short-term changes and provided seven environmental patterns which are based on different weather conditions (wet, dry, wind, etc.). In these patterns, common functions are designed based on environmental changes. This project, instead of overcoming the forces of nature, is compatible with them. What is important about this project is that attitude towards the interacting nature and city has changed and flooding which previously was considered as a threat, here has become the main feature of the project and a

potential for using environmental variations. Loose planting plan, choosing native plants and designing flexible paths are some of the strategies taken to adapt environmental changes (Stoss Landscape Urbanism, n.d.); (Pic. 3).

Increasing Sensory Experiences

Activities that stimulate the senses and emotions of the audiences are as important as designed forms. Sensory experiences reduce the distances between the individuals and the environment and challenge their consciousness and force them to react. These experiences are able to convey plenty sensory data to viewer's mind which affects his aesthetic judgment in his environmental evaluation. In 2009, a competition was held with the aim of creating a sustainable urban environment for one of the districts of Dallas in which a proposal from David Baker and Fletcher Studio was chosen (Pic. 4). The purposed design was based on people's participation in the planting, management and harvesting process of the green areas in the city (David Baker Architects, n.d.). These activities directly enhance ecological sustainability of the environment and also by creating direct contact between the individuals and the nature, can create a sensory experience that would have a profound touch on her affections. Studies have proved that physical activities can increase sensory reactions of the individuals and boost their awareness of the environment. In addition, this type of ecological sensory experiences can create a sense of belonging



Pic 3: Bass River Park, Loose plantation, choosing native plants, welcoming the growth of wild plants and considering flexible and dynamic paths are among the efforts which have been done in order to embrace environmental changes. Source: <http://www.stoss.net/projects/9/bass-river-park>.

to the surrounding environment which can also be effective on educating environmental values to the society.

Conclusion | In recent years, sustainability as attitude which concerns modifying the relation between human and nature is propounded. This attitude is based on three principles of economic, social and ecological. A review on what has been done in last two decades can witness that the lack of determined aesthetic patterns has tended the sustainable landscapes to merely ecological designs in which the aesthetic aspects are ignored. Whereas, neglecting of cultural aspects of landscape has led to defection

in communication with the audiences. Hence, determining specific aesthetic patterns for attaining sustainability seems to be critical. In this article four general aesthetic principles are introduced which can enhance sustainability in designed landscapes. Such principles are: 1. Natural process instead of natural form; 2. Beyond ecological performance; 3. Dynamic instead of static; 4. Increasing sensory experiences. Using the above principles to design the landscape may help us to get a sustainable city.



Pic 4: Xero project is based on participation of citizens in the creation, management and exploitation of public green spaces in the city. Source: http://www.dbarchitect.com/images/dynamic/article_slideshow_images/image//production_consumption_flat_sm.jpg.

Reference list

- Abbaspur, M. (2007). *Energy, Mohit-e zist va tose'e-ye pāydār [Energy, environment and sustainable development]*. Tehran: Industrial University of Sharif Publications. [in Persian].
- Ahmadi, B. (2010). *Az neshānehā-ye tasviri tā mantn, be sou-ye neshāne-shenāsi-ye ertebāti-e didāri [From visual signs to the text, towards the semiotics of visual communication]*. Tehran: Markaz Publications. [in Persian].
- Hollingdale, R. (1994). *Western Philosophy: An Introduction*. Translated by Azarang, A. (2014). Tehran: Qoqnus Publications. [in Persian].
- Howett, C. (1987). Systems, signs, sensibilities: sources for new landscape aesthetics, *Landscape Journal*, 6(1): 1-12.
- Meyer, E. (2008). Sustaining beauty: the performance of appearance. A manifesto in three parts, *Journal of Landscape Architecture*, 3(1): 6-23.
- Partar, M. (2011). Aesthetical analysis of Duisburg- Nord Park. *Journal of Manzar*, 3(16): 34-41. [in Persian].
- Spirn, A. (1988). The poetics of city and nature: towards a new aesthetic for urban design, *Landscape Journal*, 7(2): 108-126.
- Wu, J. (2013). Landscape sustainability science: ecosystem services and human well-being in changing landscapes, *Landscape Ecology*, 28(6): 999-1023.
- Tharp, E. (2014). An exclusive review of Yanweizhou Park by Turenscape. In *Landscape Architects Network*. Available from: <http://landarchs.com/stunning-yanweizhou-park-recaptures-lost-ecology> (Accessed 20 August 2016).
- Stoss Landscape Urbanism. (n.d.). *Bass River Park*. Available from: <http://www.stoss.net/projects/9/bass-river-park> (Accessed 20 August 2016).
- David Baker Architects. (n.d.). *XERO Project*. Available from: http://www.dbarchitect.com/project_detail/151/XERO%20Project.html (Accessed 20 August 2016).