

An Elementary Introduction on Parks and Green Space Planning that Keep in Step with Urban Development

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Abstract

Confronting with series of environmental problems caused by urbanization and the constantly improving consciousness of the entire society towards environmental protection, it has become an inevitable trend to develop parks and green space planning that guided by the principle of “respecting nature, preferring ecology” and integrate function, arts and culture of landscape design. Aiming at specific project, humanized design should be laid stress on. With fundamental functional construction serving as the base, the reflection of cultural content and regional landscape as the characters, using various landscape gardening elements reasonably to enrich space design as well as highlighting leisure and sport function and following the concept “human-centered”, parks and green space filled with natural vitality and cultural spirit can be constructed, people, city and the nature could develop together in harmony.

Key Words : Parks and Green Space, Synchronous Development, Ecology Preference, Human-Centered, Characteristic Landscape

China is being placed in the stage that the unprecedented urbanization development. At the time of carrying out the high-speed development of economy and culture, the negative influence that urbanization can't be neglected. The environment is increasingly worsening, the natural resources are consumed excessively, affecting biological varieties seriously, breaking the ecological balance, and leading to estrangement between the mankind and nature increasingly. In order to alleviate the gradually rigorous ecological environment problem, guarantee the healthy development of the city ecological system, and satisfy the urgent need that public become intimate with the nature and return the nature, it has become the urgent matter that plan actively and availably, construct and enlarge the urban parks and

green space, and guarantee it keep on the sustained development. Hereby, the design of urban parks and green space, except satisfying the basic function, should exert utmost comprehensive benefits in many ways including ecological, landscaping, culture, leisure, recreation etc. And, the design should make people the center to satisfy the public to the urban parks and green space in dual need of the material and spirit. Parks and green space of the high-quality and lasting vitality will be created and promote the sustained development of mankind, city and nature together.

I. PRIORITY OF ECOLOGICAL, HARMONIOUS COEXISTENCE OF THE MAN AND NATURE

1. Protecting and Utilizing the Current Resources to Construct Artificial Landscape

During park and green space's design, take conditions in existence as the premise of design. The idea that re-carrying out landscaping on the "artificial desert" ground tidied up to be flat is not advisable. Design should combine the spot landforms, vivid layout, such as: The artificial landform will be shaped when the spot landform is higher than other places; The pond or the bottom sink of square will be made when the spot landform is lower than other places. For some natural resources and the humanities sights that have the special features and meanings, should protect and refurbish, such as the original hill, woodland, wetland, water system, cultural object and historic monument etc. By scientific reasonable design, protect these resources with maximum limit, and attain ideal ecological mode of blending natural beautiful scenery and the artificial landscape in the integral whole. For example, the Xi Lin Yin She of the Gu mountain of Hangzhou is the mesa park of the Chinese typical model. Although, from foothill, halfway of mountain to summit of mountain, arrange a great many buildings, roads and squares, do not pare the natural mountain body one built-up artificial terrace. And, let them become subsidiary parts of natural mountain; merge these artificial sights and the natural mountain body into an integral whole.

Economize the resources, make use of the old facilities and constructions inside the place possibly, and give the new function; Carry on the reborn exploitation towards abandoned material possibly. According to the characteristic of some materials, process again by the artistic measures to construct the creative things. For instance, waste fragmentized glass may be used to build art wall, a waste chimney can be turned into an art clock tower. Promote a park

design of economizing water. Plants of consuming little water that can heighten water-use efficiency are especially advisable in the park.

Germany is a nation that has the strong ecological consciousness in the world. Its landscape design pursues the function, economy and ecological benefits mostly. Such as: the Landschaftspark Duisburg Nord is constructed on which factory area that made the steel and iron has been abandoned. The designer reserves the waste constructions and industry facilities in the factory, and gives it the new usage function. For instance, the very high furnace is used to let visitor climb, look beyond; the waste overhead railway is changed into the park way of walking and visiting; the high concrete wall become the climb training place ... The waste materials in existence also are utilized as soon as possible in the factory. For example, the burnt carbon and the mineral that was piled up in the factory in the past has become the medium now that is necessary for some plants growth, and is the material of grass roots under the ground; the large steel plates of leaving behind turn into the square's the paving material in the park; the water can circulate, making use of the dirty water that was filtered and the rain water that was collected to irrigate each garden in the park.

2. Imitation of Natural Plant Community and Landform, Protection of Biological Varieties

During the design of urban parks and green space, the plants arrangement should imitate natural plant community; the landform processing can accord the mountain form of natural landform. Both are combined to form the artificial climate within the small scope. Realize biological varieties, and create an artificial ecological environment with good stability.

Plant community that has the high stability is an arrangement of plants that harmonize to coexist

mutually during hundred million years, and is the result that the species is the evolution over a long period of time. The "plants community" idea is the basic unit of constituting the plants landscape. Avoid plant one or few species plant, avoid plant same specification tree in great quantities, and eradicate blindly in the big area to plant lawn. Regard the native plants as principal choice: arrange with reason the tall arbor, shrub, liane, lawn and flowers to become the steady plant community. Attend to arrange hardwood with evergreen, and arrange pleased light plant with pleased shady plant etc. Following the plant nature growth regulation, avoid be eager to attain the result. For example, while constructing park, for taking effect in short time, consume the huge funds from the suburb even southern region to transplant big tree, even ancient tree. Not only result in the lower survival rate and weaker growth appearance, but also break the ecological environment of the tree's original growth region.

Imitating the natural landform, mold the flowing free landform variety of rise and fall to create a various environment types. Then, by means of the science measures of planting plants and disposing water, produce the dry and wet difference between different districts, and construct the environment space that various animals, microorganisms can exist and breed. In addition, according to the concrete circumstance, also create some small living conditions, such as the wall that is tied up to round with the steel wire at the exterior, and is filled with the stones at the inner. Not only the wall has the natural interesting aspect, but also its gaps provide the places to dwell goodly for the insect, spider, and small reptile. The small animals such as birds and squirrels should also be taken into account, offering them food and habitat, such as bird's nest on the main stem of tree. Thus, effectively rich and keep biological

varieties to attain in the park the internal ecological system ego circulation and regulation. For example, in the national parks of the United States, a large number of mixed forests are growing naturally, where seedlings grow under the mature forest and countless birds and squirrels live a happy life.

3. Richness and Variety of Plants Landscape

Green plants, key element in garden making, are able to adjust dull and plane artificial sights such as construction, revealing lively nature. The planning and design of urban parks and green space should be dominated by plants landscaping while the quantity of artificial ones such as garden structure, square and path be rigidly controlled. Thus space three-dimensional plants arrangement of multi-species, multi-colors and multi-layers is formed, an artificial landscape of plant community that originates from but prior to the nature created. Such a landscape has predominant ecological benefits and landscaping effects.

When design plants landscape for parks and green space, plants deploy should be taken into account except for the rational collocation of arbor, shrub and vegetation, involving logically arranging different plants according to their corona shape, height, leave color, bosom color and blooming period as well as seasonal aspect. By doing so, plants landscape takes on various appearances and characters in each of the four seasons. For instance, the design of planting evergreen as the fundamental elements that allocating with autumn scenery species and ornamental shrub and flower has a high color contrast and strong vitality that enables a quite long duration for people to admire it. Apart from that, making full advantage of modern scientific approaches to introduce or popularize foreign quality species that adapt to local area may add color sand varieties to plants landscape.

Regarding plants formation, sense of three dimensions is focused on. Based on clump planting and group planting, arranging lawns, ground cover plants, shrubs and arbores in turn considering their heights and the alteration of landform, plants community landscape of fluctuation and rhythm is created. By imitating natural configuration, the junction of plants community and lawns present as a gentle and pleasant curve. In material selecting, plants could be chosen according to the content reflects by each park scenery. The selection of plants with various shapes, colors and species will result in artificial plants communities of distinct characteristics. Moreover, in order to strengthen the sense of integrity, trees of same species can be used as a background to keep harmony and vividness with other species in the park.

II. MAKE PEOPLE THE CENTER, HIGHLIGHT HUMAN-CENTERED DESIGN FOR LANDSCAPE

1. Space Layout

According to space configuration principle and under the precondition of satisfying fundamental functions, green space should be rationally arranged, space orderly divided and various fields organically organized by making use of paths so as to form a landscape series as well as present different concepts. Paths in the park, which is different from the roads in city, shoulder important responsibilities of connecting every scenic space besides traffic function. The way of path design should be impressive, guiding tourists' steps and attention towards scenic spots at different locations and beautiful scenery at various directions. Take Beijing Yuan Da Du Site Park as an example: the park centers around Little Moon River, along with green belts on both sides, dotted by scenic spots

distributing along the river: a series of paths slanting towards the opposite bank of the river successfully lead people cast their eyes at the scenic spots on the opposite side; sceneries at distance and near mingle with each other, creating a concordant and beautiful picture; taking a bird view of the park, most paths take shapes as curves, running freely and vividly while vertically the paths go up and down along with land modification: wandering in the park, tourists enjoy constantly changing sceneries of the park by wriggling their sightline with the paths-----rise and fall, left and right, up and down.

Since over seeking plane making and pattern effects might result in over complicated layout, merely emphasizing two-dimensional plane should be prevented while design space. The sensation of space is to be experienced by people. Therefore, at the initial planning stage, the preliminary task is to fully consider the demand of people, study the behavior psychology of people, grasp human rules of using space, simplify landscape organization and make people contact with landscapes more easily and directly. For environment and scenic spots transition, space division could be done through approaches like separation or enclosure. By making use of landform alteration, landscape effects of open and closed view as well as gathering and spreading view will be formed; while the enclosure formed by plants may lead to various space configurations: open and spacious, closed and enclosed, outwards and inwards, etc; and the green space in parks would be natural, vivid and rich in vitality; winding paths could be also adopted to expand landscape space, enrich landscape layers and produce meandering space effects; furthermore, making advantage of hard-material sceneries as garden structures and small ornaments may also help guiding tourists attention and enriching landscape contents.

On the basis of persons dimensions, combine the

landscape factors of the park with the surroundings to construct a human-centered park. Not only the square and landscape construction, but also chairs, steps and so on, all should combine the space measures and the definitive function of the space to carry on the design. For instance, constructing a private space used for the exchanges, its dimensions should control inside the square of 20~25 meters. Oppositely, while constructing a capacious plaza, its dimensions should surpass 110 meters.

2. Detail Sights

After the detail sights are considered carefully and processed delicately, the parks style will be accomplished finally. By elaborating the landscape elements such as sculpture, fountain, paving, flowerbed etc., design them properly on shape, color, measure, quality of material, and integrate them into the space. And, these landscape elements are situated in the space should express the profound connotation by succinct methods. For example, the square in the park is usually designed to become the focus of sight line through uniting the landscape elements. Stress the new meanings on the shape, and embody the characteristic space by the new content of landscape elements. For another example, the parks facilities such as indicating sign, refuse bin and so on should be arranged at passageways and the districts that the streams of people gather round to facilitate the visitors.

3. Emphasize the Function of Leisure and Sport

Nowadays, the city dwellers spend on most of time indoors. As time passes, people are tired of this living way. People expect to seek for open, comfortable and free green space, and take part in various leisure and

sport to be close to the nature and relax ego.

Consequently, the planning and design of the urban parks and green space should emphatically satisfy the demands of leisure and sport to the citizen. To lay stress on the space design of leisure and sport, consider its function from these aspects such as space layout, site position, measure, paving materials, plants and so on. In order to create the ambiance of leisure and sport, the position should be putted up in a independent and quiet space relatively, should be with a southern exposure and avert from the directions of the winter predominance direction of wind, in order to provide the outdoor space that is full of ample sunlight for the citizen in the winter. Its dimension should be fitting according as the dimensions of the surrounding green spaces. Around space, plants strengthen to encircle the opening space, combine with artificial quality landscape interiorly to enhance the effect of shielding sunshine. Design corresponding sports content, according to the requirements of the different ages. Moreover, on the basis of the site dimensions, it is very necessary that constructing some auxiliary facilities for people including pavilion and corridor that shielding from rain or sunshine, and enough chairs. The leisure and sport landscape will become more human-centered, and the utilization ratio will be raised effectively.

III. NEIGHBORING THE NATURE AND BLENDING CULTURE TO PRESENT THE CHARACTERISTICS OF PARK AND GREEN SPACE SCENERY

Every region has something different and special. As far as natural resources is concerned, forms of mountain and water, quality of soil and rocks as well

as plants species are the embodiment of local scenic characteristics; while in the aspect of cultural resources, each place has its own history, culture and custom that sometimes need to be understood and transformed. For example, certain traditional garden making approaches involving "directing scenery" such as names of garden buildings and sculptures, hanging of horizontal inscribed board and names of scenic spots could be utilized to incarnate cultural artistic conception, generalize and foil garden themes as well as to arouse tourists' interests and lead them into infinite imagination. At the beginning of designing a park or green space, designers should integrate local natural resources and cultural resources under the precondition of profound understanding; besides, designers should also incorporate the demands and tastes of modern life, reasonably applying various landscape elements to reflect the understanding towards natural landscape and customs and cultures into the design for park and green space landscape, to give predominance to time spirits and to create garden scenery of profound cultural interior and rich local characteristics.

Traditional Chinese classical garden, British scenic garden and French Baroque Garden have demonstrated distinct style and features respectively. At modern times with frequent communication and prosperous culture, countries around the world or even different regions of the same country have presented garden sceneries of widely diversities and incarnated various interior meanings that worthy to be learned and referred. What does so-called "learning makes skillful while extracting finds excellence" mean? Instead of simple imitation, learning and borrowing ideas for reference is to learn the designing concept and unique approaches that make it successful, digesting and corpora ting them with concrete projects. It means learning how to seek and catch new cultural implication and artistic characteristics so

as to abstract and mix them with garden scenery symbolically but not specifically. A group of squares and green space in US Portland, including Lovejoy Plaza, Pettigrove Park and Ira C.Keller Fountain is a perfect example learned from the nature. At the same time it pursuing natural scenery, the design of the groups also paid emphasis on the harmony with surrounding artificial environment and the natural factors it introduced have showed urban style and features. The designer planned sceneries on his unique understanding of natural landscape instead of a simple copy from the nature. Among these plazas and parks, the irregular broken line platform of Lovejoy Square is an abstract reproduction of natural contour line while water flow of spring imitate the moving tracks of mountain streams; ridgy landforms and winding paths in Pettigrove Park have composed a natural landscape surrounded and shadowed by trees; the design of waterfall in Ira C.Keller Fountain tells the creative and adventurous association of the designer to connect American western cliff with tableland: Precipice is constructed by laying concrete units that with vertical or horizontal stripes, representing natural rocks, water flow pours down straight forward vigorously and powerfully.

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