American Journal of Science and Learning for Development

ISSN 2835-2157
Volume 2 | No 4 | April -2023

Plants used in Green Public Park Landscape and Principles of their Selection

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Abstract: *In the article, the plants used in the landscape of a green public park and the principles of their selection, i.e., the goals and tasks of scientific research, the types of woody plants, their biological properties, scenic effect, natural forms, the scenic qualities of plant leaves, in green public parks the principles of plant selection are scientifically and theoretically researched and a brief conclusion is presented.*

Keywords: *urban, complex, recreational, demographic, boulevard, relief, contrast, shape, attraction, dendrology, sidewalk, decorative, biological.*

Goals and objectives of scientific research. The population is increasing day by day, and as a result of this, urbanization of residential areas, artificialization of our environment, and distance from nature are being observed. That is why it is becoming an urgent goal and task of today to introduce plants, which are considered a part of nature, as necessary for us as air, into the composition of cities and residential complexes, and even into our interiors.

The landscape design system, i.e. recreational areas such as parks, promenades, boulevards, parks are an integral part of cities and residential areas. Design and planning norms designed for different demographic, climatic and relief conditions have been developed [5].

Today, the creation of parks and parks with comfortable recreation conditions for residents of urban and district centers with dry and hot climatic conditions of Uzbekistan, that is, "Green public park", is one of the urgent issues before landscape architects and designers.

According to the results of the scientific research, the plants used in the "Green Public Park" and the principles of their selection were scientifically and theoretically researched as follows.

Types of woody plants. It is known that in the practice of landscape design (architecture) mainly ornamental plants are used. They include trees (coniferous and deciduous), shrubs (young trees), lianas (crowded), flowers (annual and perennial), grasses and terrestrial plants. Woody plants mainly include trees and shrubs.

Trees consist of 3 parts: roots, a single trunk (trunk) growing from the ground, and the main part above - leafy branches. Shrubs do not have a single body like trees, they mainly consist of 2 parts: underground roots and numerous thin bodies growing out of the ground and leafy branches attached to them. Trees grow taller, live longer, and are stronger than shrubs. However, it is difficult to draw a clear line between trees and shrubs, because some tall shrubs, such as safflower or oak, grow like low trees, while some low trees are as tall as tall shrubs.

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All trees and shrubs are considered perennial plants and are divided into evergreen and deciduous groups. Evergreen trees and shrubs, in turn, are divided into coniferous and deciduous. Those of the Hvoy type are always needle-leaved and are distinguished from deciduous trees and shrubs by having buds instead of flowers during the flowering period.

Coniferous trees of the khvoy type growing in Uzbekistan include oriental biota, thorny spruce, blue spruce, Arizona cypress (cypress), common swamp cypress, vergin fir (mojjevelnik), zarafshon fir, Crimean pine (sona), common pine, elder pine, Austrian black pine, evergreen ornamental trees can include magnolia and ginkgo.

Evergreen shrubs that grow in Uzbekistan include Kazakh spruce, Turkestan spruce, Japanese normushki, shamshad and tree-like Western camellia. Deciduous ornamental trees and shrubs are numerous and diverse[4].

The natural biological characteristics of trees and shrubs include their height, appearance, shape and color, density of branches, flowering period, color of flowers, resistance to dehydration, period of viability.

Trees are divided into trees of 1st, 2nd and 3rd sizes depending on their height:

Trees of the 1st size are 20 m tall and above. They usually include thorny spruce, common pine, Crimean pine, white willow, alderak, eastern cypress, banded oak, broad-leaved maple, common aspen, large-leaved linden, etc.;

Trees of the 2nd size range from 10 to 20 m in height: eldar pine, field maple, juniper, false chestnut, western camellia, American hemlock and others are examples of such trees;

Trees of the 3rd size range from 5 to 10 m in height. They include Canadian spruce, silk acacia, ginnal maple, purple, willow, hawthorn, Japanese hemlock, common juniper and others.

Trees less than 5 m tall can be included in the group of shrubs with a height of 0.5 m to 5 m, depending on their decorative characteristics.

Shrubs can be divided into three groups according to their height:

- ***tall shrubs*** (2-5 m): common juniper, common bodrezak, common nastarin, amorphous, oriental biota, yellow acacia, etc.;
- ***medium-sized bushes*** (1-2 m): decorative sallagul (peony), biryuchina, siren, narmushk, tobulgi (spirea Ven-Gutta) and others;
- ***small shrubs*** (0.5-1 m): Kazakh spruce, magonia, tobulg`I (spirea bumalda), Japanese spirea, Japanese quince, daisia, gormevachi (snejnoyagodnik) and others.

Among the trees, there are sun-loving, i.e., those that do not grow well in the shade (birch, oak, maple, maple, poplar, common pine, hemlock, etc.) and those that grow in the shade, i.e., shade-tolerant (false chestnut, Tatar spruce, linden, maple, hawthorn, sylvi-uchkat (jhimolost), bodrezak (viburnum), etc.) are also available.

A quick way to achieve a scenic effect in a green public park is to plant fast-growing trees and shrubs in the design area. Eucalyptus, pyramidal black poplar, mountain ash (asina), ailant (Chinese sycamore, sassi tree), thorn tree (gledichia), elm, maple, willow, green maple, common pine, white acacia, birch, coral (buzina), sylvi-uchkat (jhimolost), zhida (lox), golden currant (currant zolotistaya) and others are such fast-growing plants.

On the sloping areas of the green public park, there are plants that help to keep the soil strong, with wide roots and spreading plants, such as field maple, yellow acacia, ordinary forest nut (leshina), irgay (kizilnik), do It is effective to use `lana (boyarishnik), coniferous tree (lox uzkolistniy), tykondarakht (gledichiya) and others [8].

In the conditions of Uzbekistan, it is very important to take into account the moisture (water) needs of trees and shrubs. In this respect, they can be divided into 3 groups:

1. ***moisture-demanding plants*** (swamp cypress, willows, beech, etc.);
2. ***plants with an average demand for moisture*** (Amur velvet, birch, smooth birch, maple, maple, linden, magnolia, Idi shumtol, thorny spruce, silver spruce, berry zarnob (tis yagodniy);
3. ***plants with a low demand for moisture*** (Japanese quince, ailant, largach, white acacia, amorphous, common birch, hawthorn (boyarishnik), thorn tree (glidichia), biota, thorny spruce, virgin fir, Kazakh fir, Crimean pine, common pine).

There are trees and shrubs that are resistant to saline soils, and it is useful to know them. Plants such as solyankas (the name of plants that grow in saline soil), gingle, yulgun (grebenik), saxaul, soap tree have the ability to grow in saline soil with chlorine.

Ash trees, linden trees, laurel trees, European olive trees, etc. are demanding even on calcareous soil. Aylant (Chinese ash) can also grow in oil-contaminated soil. Therefore, if it is not possible to improve the soil when transplanting plants, the most correct way is to choose a plant suitable for this soil.

Trees and shrubs growing in salty soils include ash, linden, laurel, European olive, etc.

It is known that trees and bushes also protect the green public park from external environmental influences. At such times:

For protection against noise, maple, common alder, small-leaved linden (lipa), common spruce, Siberian tilogoch (listvennitsa), Tatar sylvi-three-tree (jhimolost), yellow acacia, Siberian hawthorn (bayarshnik))s;

For protection against gases, use Pennsylvania maple, false chestnut, three-cornered tykondarakht, gray and black poplar, Canadian poplar, white acacia, biota, white willow, virgin-Kazakh fir, common birch, linden, etc.;

For protection against dusts, feather-leaved larch, white willow, false chestnut, gray maple, tartar maple, Canadian poplar, bolle poplar, white willow, green and common sycamore, yellow acacia, common burdock, thin-leaved sycamore, spirea (Spiraea Van- It is recommended to choose gutta).

In order to block the wind and shade the area, it is recommended to choose densely branched common oak, false chestnut, field and black maple, common spruce, banded oak, thorn tree, magnolia, small-leaved linden, etc. .

When choosing plants for group planting, their architectural-artistic features: height, external shape, color, leaf characteristics, especially the height and appearance of the trees in the group are in contrast or nuance relationships. it is necessary to focus.

When forming groups, it is necessary to take into account the growth and viability of the plants selected for the group, that is, fast-growing types of trees should not be planted next to slow-growing ones, and sun-loving ones should not be planted under shade trees.

It is of great importance to use trees and shrubs in the "Green Public Park" project, to create and plant green compositions from them, to study and know their decorative qualities. One of these characteristics is their natural shape - windy and dense branches [6].

Natural forms of trees and shrubs. Landscape trees can be generally divided into two groups according to their natural appearance: geometric and non-geometric trees. The first group includes pyramidal, columnar (carrot-shaped), ovoid, spherical, oval and spherical trees, and the second includes branched, umbel-shaped, umbrella-shaped, tent-shaped, double and scattered trees (Fig. 1).

Bushes also have the following shapes according to their natural appearance: oblong-oval (spirea), spherical (barbaris tunberga), oval (roses), spread to the sides (Kazakh fir), spread flat to the sides (horizontal), conical (g `Arabian camel).

The shapes of trees and shrubs change depending on the seasons and their age. They can be given various artificial shapes by molding, i.e. cutting their branches. However, all trees and shrubs can be divided into the following distinct forms based on their natural forms at middle age (Figure 2):

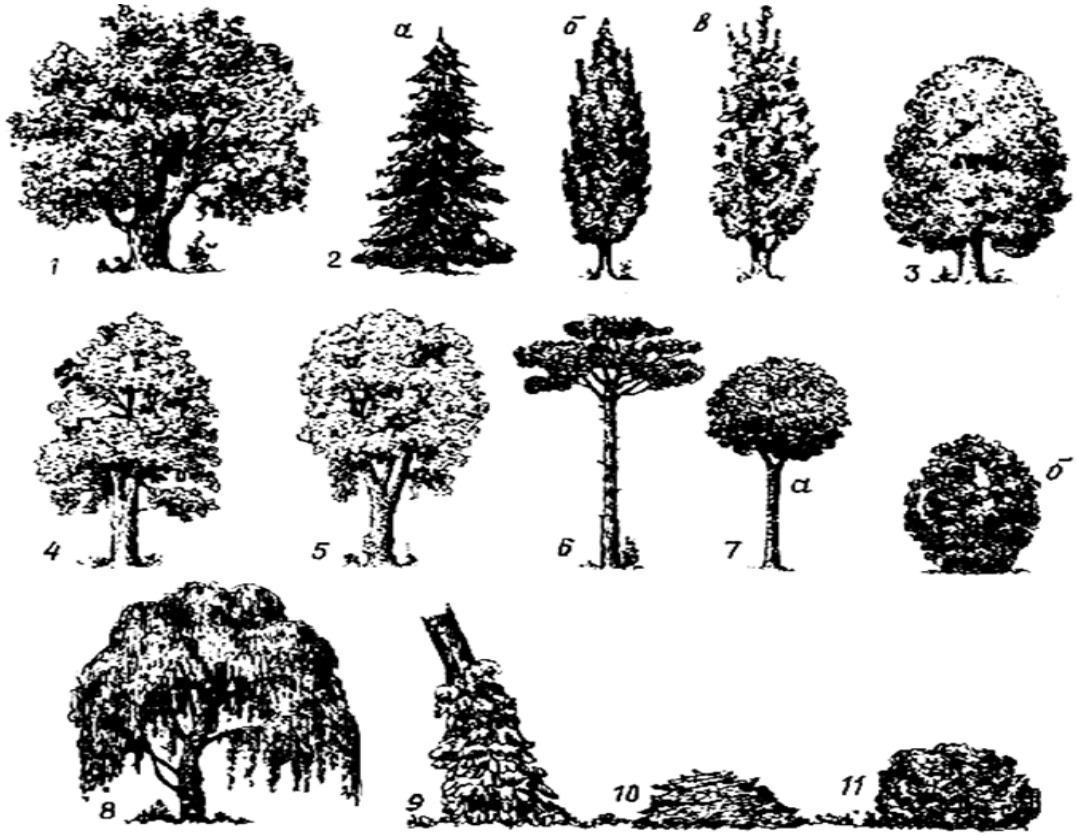

Figure 1 ***Natural forms of trees*****: 1-spread form, 2-pyramidal: a-conical, b-carrot-shaped, v-columnar, 3-oval, 4-ovoid, 5-inverted ovoid, 6-umbrella, 7-spherical: a-body ball, b-bush ball, 8-willow, 9-cress, 10-ground, 11-cushion.**

1***) spreading*** (spreading): from trees - pine, ordinary and dense oak, willow, white poplar; from bushes - white mulberry and others;

2) ***pyramidal*** (conical, columnar): from trees - pyramidal maple, pyramidal poplar; from bushes - western camel, biota, etc.;

3) ***oval (elliptical) and its variants***: from trees - false chestnut, maple, etc.;

4) ***ovoid***: from trees - linden, Veymutov pine;

5) ***inverted ovoid***: Syrian buritarak (hibiscus) bush;

6) ***umbrella-shaped***: from trees - ailant, albitia, Italian pine; from bushes - Cyperea Van Guta;

7) ***globular*** (there are corporeal and bushy types): from trees - alder, perestovetvistli, ovum (sophora), Siberian apple;

8) ***from bushes*** - bodrezak (kalina), normushk (beresklet), nastarin (siren) and others;

9) ***crooked, i.e. crooked***: birch, white and Babylon willow trees;

10) ***shriveled and shriveled***: vine, sylvi (jhimolost), ivy (wisteria), tekoma or campsis, etc.;

11) ***ground cover plants***: Kazakh spruce, cypress bushes

Some trees, for example, the banded oak, have different shapes: pyramidal, spherical and oblique.

In addition to the natural shapes and height of plants, the density of branches and leaves, the size and shape of leaves, pattern and color are also important in creating green compositions of the garden and park.

1 2 3 4 5

Figure 2.1. ***Natural forms of deciduous trees (according to L.A. Adilova).***
1-Forest oak; 2- Poplar black; 3- Oak pyramidal; 4- Turkestan poplar; 5- Linden.

1 2 3 4 5

Figure 2.2. ***Natural forms of deciduous trees (according to L.A. Adilova).***
1- Ash; 2- Birch; 3- Maple; 4- Bunduk; 5- Elm.

According to the thickness of the branches, i.e. massiveness, the trees and shrubs have a dense, moderately dense or not dense (sparse) appearance. Dense-looking woody plants serve as a good scenic background for architectural buildings, statues, and flowering bushes, protect against strong winds and dust, and help in creating shady and cool environments[7].

Pine, false chestnut, maple; for medium-sized ones, aylant, Amur velvet, white-Babylonian willow and willow, silver maple, Lebanese cedar, walnut; sparse trees include white acacia, albitia, amorpha, gledichia, droke, Japanese sofara, common shumtals.

Knowing the decorative qualities of the leaves of woody plants (leaf shape, size, color, seasonal color change and location on the branches) is also important for their use, i.e., for effective use in the greening of public parks. For example, one of the main tasks is to know the decorative qualities of trees and shrubs when choosing plants for separately planted green compositions-soliters.

The structure of the leaves of trees and shrubs is simple and complex, and they, in turn, are divided into giant, large, medium, small and small leaves.

Large leaves include catalpa, ailant, bunduk, magonia, etc., large-leaved sycamore, linden, black-gray and walnut, common mulberry, albitia, false chestnuts, small-leaved spirea, buxus, grebenschik, Spanish droki. , Japanese and summer-leaved Normushk and others.

In addition, it is desirable to know whether the leaves are shiny or textured. For example, the leaves of magnolia, boxwood, pear, walnut, etc. are shiny, while the leaves of larch species are textured.

In addition to leaves, it is also important to pay attention to the decorative qualities of flowers when choosing woody plants used in landscaping green public parks. From trees magnolia, false chestnut, acacia, from shrubs Japanese quince, roses, siren, forsythia and others have the ability to bloom very beautifully and efficiently.

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Depending on the color of their flowers, trees and shrubs can be divided into the following groups:

a. ***bright-colored flowers with different tones***: pear, desia, catalpa, false chestnut, lemongrass, magnolia, flowering shumtol, garden viburnum, etc.;

b. ***yellow and orange-colored flowers***: barbaris, gorse, gerbera, linden, magnolia, soap tree, yellow rose, etc.;

c. ***red, purple and purple flowers***: apricot, Japanese quince, hawthorn, small almond, etc.;

d. ***purple, bluish or purple flowers (lianas)***: buddleia, Chinese ivy, Syrian buritaroq, Jakman ilonchaki, pueraria, etc.;

e. ***green flowers***: bunduk, tikondaracht, aylant, etc.

Knowing the flowering time and flowering period of woody plants also greatly helps to choose and use them appropriately: from early spring to the end of February-March, forsythia, Canadian bagrenia; in spring (April-May)-roses; in summer (June-August) – albitsia, glitter, hibiscus, catalpa, hydrangea, sophora, etc.; in autumn (September-November) – rose marchinist, cyperea, colored siren, hibiscus; camellia in winter.

For woody plants that bloom for more than one month: hydrangea hydrangea - 1.5-2; garden hydrangea-1; Indian legestremia–2; Japanese camellia-6; roses–4-5; for mid-term flowering: Japanese quince 0.5-1 month, tree hydrangea - up to 1 month, long-horned rocket plant - 3-4 weeks, multi-colored roses - up to 3 weeks.

In order to use one or another species in landscaping green public parks, it is necessary to know the negative situations that are characteristic of them in addition to their positive possibilities. These include plants polluting the area with their fruits (poplar, mulberry), needles or leaves (sycamore, thorn tree, yucca) and poisonous fruits and leaves (Kazakh juniper), urine (this). It is forbidden to plant these species in the regional landscape of children's playgrounds and attractions of green public parks [2].

Principles of selection of plants in green public parks. The main drawback of most urban and rural greening practices is non-observance of the established general rules and principles in the selection of planted plants. In some cases, the same or several plants are planted in a random manner, without taking into account their ecological and biological characteristics and scenic qualities, which causes a decrease in the quality of landscaping works. Therefore, the formation of any green environment depends first of all on the function of this environment, where it is located and on what kind of soil, based on local natural climatic conditions, how to choose the composition of plants (trees, bushes, flowers, etc.) planted in this environment.

There is a special science that studies trees and their scenic and biological properties, it is called "Dendrology". Landscape architects, designers and gardeners need to be familiar with and apply their knowledge of dendrology in order to choose the right plants and design and shape green spaces. Designers in the design of landscape objects and greenery, based on the function of these objects and certain natural and climatic conditions, choose which trees and bushes to form greenery and how many of them, where and how to plant them in the designed object, that is, what is the plan for planting them it is necessary to know and design the need to choose landscape style and composition [3].

In order to fully and effectively use all the possibilities of planted plants, it is necessary to observe the following basic principles when choosing them:

- ***compliance of the selected plants with the functional goals of the open environment-place being greened***. For example, the plants planted on the main street sidewalk (sidewalk) of the green public park must first of all provide shade and cool and attractive scenery along the sidewalk. At the same time, they need to be resistant to gases, dust and noise from cars.

Therefore, for the sidewalk, it is necessary to choose trees with a broad appearance, leaves and dense branches, resistant to gas, dust and noise;

- ***on the other hand, for greening*** the surroundings of any volume-spatial composition or memorial monument, the main green material can be selected, parterre-type decorative lawn or flower plants combined with some low bushes;
- ***compatibility of the ecological characteristics of plants with the conditions of the environment where they are planted***. Compatibility of newly selected plants with pre-existing fruit and decorative trees (if they are left) on the planting site, or biological compatibility of the selected trees and shrubs with each other, that is, issues of not harming the growth of one another must be looked at. It is necessary to take into account whether the chosen plant (tree or shrub) is compatible with the natural and climatic conditions of the region [1].

Conclusion: In the purposeful organization of landscaping of a green public park, first of all, climatic conditions (ground relief, weather, territorial location, climatic season, etc.) and existing plants (ornamental and fruit trees, bushes) and its landscape study of the recommended plants, the principles of their selection, that is, the compositional, artistic-aesthetic, bio-ecological correct planning of the exterior and interior of architectural objects, buildings and structures in green public parks is the most important aspect in project planning is counted.

According to the results of the research, it should be noted at the end of the conclusion that the purposeful zoning of green public parks, the plants used in the architectural-planning organization and the principles of their selection are among the main design requirements.

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