

# Urban Street Corner Space Design Combined with Lighting and Greening

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## Abstract

Cities are essentially the product of economic development and human social settlement instinct, but after satisfying these two needs, we can go further by making cities better and improving people's happiness. Putting effort into the rapid development of urbanization, people have somehow ignored the rational use of urban space and the combination of green plants. Thus, many neglected edges and corners in urban space are generated. With the continuous improvement of the level of urban construction in various countries, is time for this subject, which can greatly improve the degree of urban beauty and humanistic feelings, to fully enter the scope of our vision. This paper mainly introduces the greening design and lighting combination in the corner space of the city.

## Keywords

Lighting; Greening; City; Corner Spaces.

## 1. Definition of Urban Street Corner Space

Street space is a part of urban space, but it does not independently become one of the elements of urban space. Instead, it is more like the rational use of the remaining space in the middle after the completion of infrastructure construction. The existence of street space usually comes from a redundant and relatively independent area between two different buildings. Some urban corner Spaces have a certain public nature, which can provide space for people to gather and play games. In a developed modern city, urban space should include streets, buildings, fences, green Spaces, lights, and, most importantly, pedestrians.

## 2. Design of Green Space in the Street

### 2.1. Green Space Benefits Humans and Animals and Enhances the Interest of Life

With the continuous expansion of cities, a series of problems caused by rapid urbanization also come one after another. Taking New York as an example, the United States completed urbanization in the 1920s, but too dense building planning resulted in severe congestion. Although today, many years later, the architectural layout problem in New York has been alleviated to a certain extent, the scene still exists where the limited green space is submerged by concrete forest. The distance between buildings is small and such areas are often empty and not properly used. And in the street reasonable, scientific arrangement of plants, not only can maintain and improve the natural environment, fully meet the needs of residents to watch the landscape but also can beautify the natural environment. Green space is not limited to plants on the ground, plants on the green walls and roofs of buildings can also provide a good resting environment for residents. Green space plays an important role in the urban "ecosystem", providing places for sports, leisure, social and social activities. It can provide living space and place for local wildlife and play an important role in the urban street landscape. For New York, its local squirrels, wild cats, birds, and so on can be protected by the street green space and provide ornamental value for citizens. Buildings decorated with greenery and living things feel

closer to nature. Privacy demands and daily activities can be found in the relative seclusion of urban street corner greenbelts and pocket parks. No matter where they are, city dwellers crave contact with nature and attractive environments, as well as places to play. Landscapes containing greenery can play a key role in promoting social interaction within hospital grounds, urban parks, and green-way trails.

## 2.2. Street Green Space Improve the Environment

In addition to providing important habitat for wildlife in urban areas, the introduction of the green wall and roof greening has many other benefits for the urban environment, including but not limited to; Reduce energy consumption, reducing the urban heat island effect, filtering particles, and pollutants from the air, and improve the air quality of the atmosphere. In addition, in densely populated urban areas, or areas with high concentrations of traffic, greenery can provide a place that is relatively less affected by noise pollution.

## 2.3. Sense of Boundary and Surround

Due to the small footprint of urban street space, boundaries must be designed wisely Choosing pure land to plant lawn not only reduces the sense of segmentation but also meets the requirements of urban simplicity. In the past, well-designed green Spaces often failed to be implemented due to a lack of planning and design. A good urban street space should have a warm, open portal that invites passers-by to stop for a while. For example, benches can be placed to encourage visitors to rest their feet. At the same time, this space should also ensure that there is a sense of "surround" and people feel safe and intimate. These are the design elements to ensure that the green space truly achieves its goals. It aims to bring comfort to people, to help relieve the burden of living today, and to promote a more humane and happier city.

## 2.4. Aesthetic Configuration

Plant configuration should use the natural form of plants for matters, by the different color and height of different kinds of plants to shape a level, from the lawn to flowers, shrubs, trees, combined with the terrain, to build a beautiful plant ladder. An important part of the urban street corner space is these plants, because of their presence, people can find a good place to walk and spend time in the hot summer. Considering that the shade of plants is also one of its important values, the street space should also be shaded by small patches of trees arranged neatly. In addition to the placement of plants, aesthetics and other decorations are also essential. It is also a good choice to add visual interest to the oasis by placing aesthetic elements in prominent areas, such as fountains, whose sound of water can add to urban life. A beautiful, exotic sculpture, for example, would be eye-catching and easy to maintain, and enclosing it with small stones would create a gap between the sculpture and the lawn.



**Figure 1.** The embodiment of plant layers and the addition of fountains  
<https://www.buildhouse.biz/roof-gardens-pictures.html>

### 3. The Influence of Lighting on Street Pedestrians

#### 3.1. Influence of Lighting Color

The choice of color can produce no small influence on the person's psychology normally, the visual impact that the collocation of different lamplight color belts gives a person is different also. Red light has a somewhat calming effect, but research into its direct effect on human mood states is still in progress. There may be a relationship between the shorter wavelengths of red light and the relative insensitivity of the human body to this red light. According to the theory, because our eyes are sensitive to higher wavelengths of light, we are less stimulated by red light, and our minds are calmer when we are in red light. Compared with blue or red light, yellow light exposure can make people more likely to engage in vigorous activities and is one of the most exciting light colors. Yellow lighting is not only tonal like natural light, but is the primary interior lighting color for homes, stores, offices, and countless other Spaces. In addition, a 2012 study showed that white light has a negative effect on the physiology of birds' brains. Given the size of cities, the negative impact of street-lighting and lighting in street Spaces on birds is likely to increase dramatically, so abandoning traditional white lighting and choosing other novel colors can have a beneficial effect while protecting birds. Experiments have proved that pink light can reduce people's adrenaline and calm their angry emotions, and it will not have obvious effects on the human body, animals, and plants. Therefore, it is also a feasible plan to use pink streetlamps to decorate the space in the street space of New York. The traditional shape and number of streetlamps are ok, but they can be arranged close to the green position. Brightness can a few taller, because pink light does not have white light so dazzling, but chimney must choose scattering sex is good, it is the result that the light turns into the whole one.



**Figure 2.** An ideal relationship between the location of streetlights and greenery  
<https://www.visithoustontexas.com/travel-planning/weather/>

#### 3.2. Color Temperature and Matching

Lighting not only has color differences, but color temperature is also a core variable. When the color temperature is high, it feels warm and cozy, while when the color temperature is low, it feels the opposite. At constant brightness, light-colored objects look much brighter than dark ones. When designing a space, it is important to ensure that all elements that can be placed there mesh well to create harmony. Otherwise, the visuals clash and are not pleasing to the eye. Consider the hue and choose a complementary lighting tone, to get a better answer. By constantly trying to match different color lights with the overall color of street space and the color of plants, the future street corner will no longer be completely limited to white or yellow.

### 3.3. Blue Light and its Harm

While all types of visible light affect circadian rhythms, blue light has the biggest impact. We maximize our exposure to blue light from the sun. Blue light stimulates the brain and raises our body temperature and heart rate. Blue light suppresses the body's production of melatonin, a hormone that promotes sleep. Lighting and streetlamps typically work in the late afternoon and late at night, when exposure to blue light is associated with a disruption in circadian rhythms that can lead to several serious health problems, including metabolic disorders and mental health conditions. Researchers at Harvard University conducted an experiment to compare the effects of exposure to blue light for 6.5 hours with exposure to green light of comparable brightness. Blue light inhibits melatonin approximately twice if green light and negatively affects circadian rhythm changes twice as much as the green light, which strongly supports that blue light is an effective inhibitor of melatonin secretion.

## 4. Epilogue

Modern urban street space must not leave the greening, and the greening should also maintain the local characteristics of the ecological balance under the condition of doing what one can, do not introducing non-local plants and animals. As an important part of the street landscape, lighting should be organically combined with the surrounding environment. Only in this way can the street green space with regional characteristics, which can improve the quality of people's life, beautify the city, and regulate the ecology become a reality.

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