

Biodiversity landscaping at Chengde Pianling project

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Project applies biodiversity design measures

Background

To most urban dwellers, biodiversity is only remotely related to their lives. However urban land should ideally allow people and nature to coexist in harmony. Biodiversity topics have been increasingly discussed after the COVID-19 outbreak, and spread from the academic circles into the public spheres during the 2020 UN Biodiversity Conference (CBD COP15), which was held in Kunming, China.



Why We Do It

Practicing biodiversity in urban areas has not been thought of as conventional by industry practitioners, and references are scarce. White Peak would like to lead the way, as one of the first batch of developers implementing biodiversity measures in urban landscaping on its developments. Based on the learnings from an initial pilot project, it plans to extend biodiversity improvement efforts to more projects in the future.




Why Chengde Pianling Project

With a natural mountainous park to the east within project scope and the mother river of Chengde, Wu Lie River, to its west, Chengde Pianling project offered excellent characteristics. The objective was to 1) improve the richness and stability of plant community, 2) build habitats and migration paths for neighboring wild animals, and 3) create an ecological microclimate environment.

What to Expect

The habitats built for birds, small mammals and insects are mainly located within the reserve zone of the mountain park, and include feeding and drinking points, placing rocks and setting artificial nests. The buffer zone is set between the reserve zone and the human activity area to protect the natural continuity and reduce human impact to the reserve zone. Its mountain-top viewing platform and mountain forest reception hall allow for nature observation and enjoying the view. However recreational activities can only be held in the human activity area.

This operation will have measurable positive impacts on biodiversity


 <h4 style="margin: 0;">Animals</h4> <p style="font-size: 24px; font-weight: bold; margin: 5px 0;">10%</p> <p style="font-size: 12px; margin: 0;">Increase in habitat area</p> <p style="font-size: 24px; font-weight: bold; margin: 5px 0;">30%</p> <p style="font-size: 12px; margin: 0;">Decrease in resistance for animal movement</p>	<p>Habitat building measures for birds, small mammals and insects:</p> <ul style="list-style-type: none"> • Feeding/drinking points • Artificial bird nests and ground nests • Rocks placement • Wider ecological corridor 	 <h4 style="margin: 0;">Plants</h4> <p style="font-size: 24px; font-weight: bold; margin: 5px 0;">16%</p> <p style="font-size: 12px; margin: 0;">Increase in the biodiversity index</p>	<p>Enhancement measures for plant diversity and stability:</p> <ul style="list-style-type: none"> • 4 categories and 55 species of plants for diversity, complementarity, coverage and human appreciation • 100% local or adaptive plants
			

4.5 Biodiversity

In our previous Sustainability Report, we featured Chengde Pianling as the inaugural White Peak project integrating a biodiversity strategy. With the ongoing development of the Qingdao Nandao project, another case is underway, with both projects targeting SITES certification. While it is premature to discuss the latter in detail, we will provide an update on the progress of the former.


Landscape design based on site assessment and key considerations

In the early project phase, we conducted a site assessment to understand the local climate, terrain, resources and species. In addition, a survey was conducted among stakeholders to understand their needs and concerns. Finally with advice from biodiversity experts, we developed our landscape design.



Animals

By carefully choosing plant varieties, we effectively mitigate noise and visual disturbances originating from the urban environment. This approach allows us to cultivate a delightful seasonal landscape while simultaneously providing habitats for insects, birds, and small mammals. Additionally, the inclusion of vertical climbing plants rapidly enhances the ecological performance of the site.



Plants

Animals find shelter and food in the variety of plants available. We also created low-disturbance zones where they can feel safe. Once the proper environment is set, animals will come in. During site inspection, chipmunks, magpies and sparrows could easily be observed. The chirping of birds is always a delight for homeowners.

Three effective measures to enhance site biodiversity

1. Supporting animal habitat

We set up artificial nests, insect houses and feeding and drinking points to create a favourable habitat for animals and plants.



2. Enhancing ground permeability

Outdoor parking areas are covered in permeable bricks, to allow for rain water to go into the soil and feed the plants, and reduce peak runoff. The more versatile the site, playing a full role, the more tough and resilient it will be.



3. Educating the public

In our urban societies, we tend to lose touch with nature. One of the key selling points of Chengde Pianling is its mountain park, where families can enjoy a natural environment at their doorstep. However they often lack the knowledge to deeply appreciate and protect those resources, are afraid it might attract insects, and sometimes take home the nests or drinking points that dot the park.

We have designed a series of educational panels, to explain how biodiversity is integrated in the residential area, how it serves to create a resilient microclimate on site, the purpose of the bird shelters and insect houses, and introduce some species present in the mountain park.



Measuring the performance

We calculated that 12.37% of the terrain is a suitable habitat area for small animals and that the biomass diversity index was 3.03 (up 2.27 compared to the estimated BDI¹ before the project started). As the suitability of animal and plant habitats increases, ecological corridors are strengthened and the quality of life is improved, for both animals and humans.

1. According to The Sustainable SITES Initiative, the biomass density index (BDI) calculations include all vegetation or land cover zones (including roof area), as well as all other horizontal and vertical surfaces covered with vegetation (e.g.green walls, trellises, pergolas) on the site. Biomass is measured to assess the ecological status of a site