

## 5 Urban Greenspace



### WHAT ARE THE MAIN ISSUES

Cities are artificial landscapes consisting of horizontal and vertical surfaces that are heat absorbent and reflective causing the temperature within the city to rise. In addition, a dense city landscape of tall buildings lowers the air circulation “trapping” the generated heat. Depending on the structure, cities can be up to 10 degrees Celsius warmer than its surrounding rural areas, hereby adding to the energy demand required to cool the city. The structure of a city can not only increase the energy usage of a city it can also prevent local air pollution, from traffic, from being flushed out of the city and the city’s many smooth surfaces, for instance, increases the flood risk due to unhindered water runoff during heavy rains.

### POSSIBLE SOLUTIONS

Cities are manmade structures which often do not incorporate the natural landscape into their design. However, incorporating natural aspects such as vegetation can have a positive effect on city development, such as reducing their carbon footprint, coping with extreme weather events and air pollution. Integration of vegetation into the city landscape can help absorb carbon and decrease particulate matter by 10-20%, decrease urban noise by as much as 10 decibels and decrease energy needs for heating and cooling by up to 25% - all the while providing amenities and recreational opportunities as well as increasing public health and people’s wellbeing. The below outline three broad areas of solutions which has been shown to be beneficial:

- Vertical green-spacing such as green roofs and facades where plants grow on the side or tops of buildings. Vertical green-spacing can be incorporated into the design of new buildings (and neighborhoods) but can equally well be integrated into existing buildings and areas through structurally sound retrofitting.
- Horizontal green-spacing such as small and large parks, community gardens, plantings in open spaces such as plazas, schoolyards and seating areas.
- Greening city interconnectivity combines horizontal green-spacing with networks of non-motorized transportation such as walking and biking.

### UNDP PAST EXPERIENCE AND SUCCESSFUL CASES

UNDP has been involved in green-spacing projects both in China such as Beijing, as well as internationally in countries such as Lebanon, Kurdistan, Turkey and the Republic of Macedonia to name a few.



## 5 城市绿色空间



### 主要问题

城市是由水平和垂直的表面构成的人工地标，这些表面通常会吸收和反射热量，造成城市内的气温上升。此外，高层建筑较密集的城市会减少空气在城市内的循环，使得城市产生热量被“困住”。城市可以比周边郊区高10摄氏度，具体度数通常由城市结构决定。因此，一个城市所需用于冷却的能源将会增加。城市的结构不仅能增加能源用量，还能使得由于当地交通造成污染的空气不能被带出城市。同时，城市的平整表面将会使得洪水的可能性增加，尤其是当暴雨给城市带来大量降水不受任何阻挡地在城市中流淌的时候。

### UNDP的过往经验和成功案例

联合国开发计划署曾与中国北京等城市，以及黎巴嫩、库尔德斯坦、土耳其以及马其顿共和国等诸多国家合作过绿色空间项目。



### 可行措施

城市的结构是人工设计的，这就导致这种结构的设计通常不适应当地自然地特点。然而，不适应的自然部分，比如植被，可能会给城市发展带来积极影响，例如减少碳排放，适应极端天气事件和空气污染。在城市建筑中整合植被可以帮助吸收碳排放，减少10%到20%的颗粒物，减少最多10分贝的城市噪音和减少最多25%的用于供热及制冷的城市能源需求。在实现以上好处的同时，还能提供便利和娱乐机会，以及改善公共健康和人们的综合生活水平。以下的概述提供了3个有效的整体方案：

- 垂直绿色空间，例如绿色屋顶和建筑顶端或侧面的绿色表面。垂直绿色空间可以适应新建筑（或者社区）的设计，但同时也能同等适用于现有建筑和结构坚固的加装区域
- 水平绿色空间，例如大小停车场的空间，社区花园，广场和学校操场等开阔空间的植被
- 绿色城市将水平绿色空间和步行、自行车等非机动车交通网络相互连接在一起

