the transport function. However, for Ukrainian cities, the situation is different - the development of public spaces is a trend in itself, and bicycle infrastructure acts as a catalyst and an element of development of urban areas. In turn, a developed public space raises the general cultural level of the city, creates and strengthens social ties in the society, attracts market services, serve as drivers of social and economic development of the city districts.

Equally important is traffic safety. A city that is convenient for cyclists is a comfortable city for all categories of people, because it is primarily a barrier-free city. In addition, convenient conditions for cyclists' movement involve reducing the speed of vehicles.

Necessary qualitative conditions for the cycling structure is its informational richness, artistic unity and engagement with the person, where the elements interact, complementing each other and creating a coherent idea of a large urban system.

UDC 712.3

VERTICAL GARDENING

Iryna Panteleimonova, student
Svitlana Nikiforova, Associate Professor, PhD (Linguistics), Language Consultant
Kharkiv National University of Civil Engineering and Architecture

Green Facades are a type of green wall technology whereby climbing plants (vines and shrubs) are trained and maintained to cover specially designed supporting trellis structures. Plants are rooted at the base of these structures, in the ground, in intermediate planters or even on rooftops. Green Facades can be anchored to new construction, existing walls or built as freestanding structures, such as fences or columns.

Green facades attract and lose less heat. The plants also cause evaporation, that helps to keep the town or city’s climate cooler. Vertical vegetation is currently of interest. For centuries certain climbing plants such as wisteria and virginia creeper have been used to adorn building facades. In Germany the greening of walls is called Architektentrost, as many failed designs have been hidden from sight using vertical vegetation. Recently in the larger cities this vegetation is used for many more purposes, such as capturing fine particulate matter and contributing to the cooling of a city. The advantage is that it takes up little space in an already intensively used urban area, while providing many vertical metres of green. One should not forget that a climbing plant that can cover a five story building in the span of a few years requires sufficient space for its roots to remain healthy. The plant does not need much space on the ground, but some space is required underground.

Considerations for Green Facade technology

Design, installation and maintenance considerations for green facades vary by system type selected and are influenced by the conditions in the built and natural environment.

- Attachment to building envelope – how the system will be secured to the building or freestanding structure.
- Calculation of structural loads for larger systems, resulting from loads such as snow, ice, plants, and wind.
- Plant selection for wind and light exposure, hardiness zones, and amenity context.
- Realistic expectations related to plant aesthetics and growth – some systems require 2 to 4 years to become fully established.
- Plant maintenance and/or long term maintenance plan to secure the health of these living systems, including proper soil and irrigation considerations.
- Check with manufacturers who may have certified or specially trained installers that will be able to complete the project successfully.
- Appropriate plant selection for the geographic region, correct plant spacing for desired coverage, and release from the temporary support structure used by the nursery.

Living Walls

Living wall systems are composed of pre-vegetated panels, vertical modules or planted mats that are mounted vertically to a structural wall or frame. These panels can be made of stainless steel, plastic, expanded polystyrene, synthetic fabric, clay, metal, and concrete, and support a great diversity and density of plant species (e.g. a lush mixture of groundcovers, ferns, low shrubs, perennials and edible plants).

Considerations for Living Wall technology

Design, installation and maintenance considerations for Living Walls vary by system type selected and are influenced by the conditions in the built and natural environment.

- Irrigation (establishing appropriate levels of watering and appropriate levels of nutrients).
- Plants correctly specified by landscape architects, landscape designers and horticulturalists for hardiness zone and geographic location.
- Growing medium must be designed to sustain chosen plants and to provide the correct nutritional needs.
- Interior applications need to determine correct light for plant survival.
- Maintenance programs are required to maintain plant health and long term management of plant growth.