AIR QUALITY
(2012, R2025)

Policy Statement

The American Society of Landscape Architects (ASLA) believes the profession plays a key role in improving air quality, which is essential for both the ecosystem and human health on a global scale

ASLA supports improving air quality through:

- Protecting and expanding green spaces that filter pollutants, store carbon, and reduce climate warming.
- Planning and design that improve land use patterns, creating walkable, accessible neighborhoods with integrated multimodal transportation systems that reduce vehicular emissions.
- Land management and mitigation strategies that address harmful impacts from natural disasters.
- Roadway corridor design that minimizes negative impact to natural areas, protects existing green spaces, and integrates natural processes.
- Nature-based design and green infrastructure that naturally filter pollutants in urban and rural environments.
- Construction practices, including equipment, materials, and techniques, that reduce dust and emissions.

Justification

Landscape architects are educated, trained, and practiced in planning and designing projects that improve air quality. Landscape architects provide expertise in land use, site, and transportation planning; green infrastructure, including green roofs and walls; plant selection; and natural micro-climate systems. Landscape architects design solutions to protect community health, safety, and well-being by filtering air, capturing and removing pollutants, dust, and allergens; producing oxygen; and mitigating effects of urban and rural fires.

Issue

Air quality is a local, regional, national, and global issue. Adverse air quality conditions affect human and environmental health, safety, and well-being in a variety of ways. Poor air quality causes and aggravates respiratory conditions such as asthma, allergies, and emphysema, especially for the very young, elderly, and those with compromised respiratory systems or anyone living in highly compromised areas. The “Air Quality Index” provides communities with a simple assessment from green to purple for air quality status (AirNow.gov). “Red alert” days confine schoolchildren indoors and reduce opportunities to play and enjoy the many benefits of being outside. Reduced visibility due to particulate matter or elevated ground-level ozone degrades the visual quality of rural and scenic landscape areas. Impaired visibility from wildfire smoke and dust storms may contribute to vehicular accidents by reducing a driver’s ability to react to and maintain safe stopping or maneuvering distances.

Air quality, including greenhouse gas emissions, is currently regulated through local, state, and federal laws and policies. The EPA and state environmental agencies, through the Clean Air Act, closely regulate the sources of major air pollution, such as power plants and industrial facilities.

Cumulative emissions from transportation modes, especially from vehicles, and the use of inefficient motors in construction, agriculture, maintenance, and other industries significantly affect air quality yet are only moderately regulated. Best management practices, including air quality monitoring and mitigation measures, are applied under the National Environmental Policy Act.

Thoughtful urban planning and design can address the impact of negative air quality from both urban sprawl and high urban density through a combination of strategies, including reducing vehicle dependency, enhancing green spaces, and employing a strategic mix of land uses. Urban sprawl expands a city's footprint, often replacing natural landscapes with car-dependent communities that generate significant environmental costs. While dense, well-planned cities can reduce per-capita emissions, poorly managed high density can create areas of concentrated pollution.

Protecting and promoting green spaces as the lungs of our cities and towns is a critical means of filtering pollutants, storing carbon, improving air quality, and reducing temperatures. Trees within cities remove fine particles from the atmosphere, provide much-needed shade, and improve air quality and human health. Trees and green spaces are important infrastructure for the health and welfare of the community.[1]

Green and sustainable transportation designs reduce emissions by promoting alternatives to single-occupant vehicle travel, such as walking, cycling, public transit, and carpooling. Active transportation infrastructure provides numerous benefits, including an increase in physical activity, a reduction in vehicle emissions, and enhanced health and economic activity.[2] Additionally, incorporating green infrastructure and nature-based design solutions in the design of roadways enhances air quality, supports biodiversity, and increases community well-being.

Sound environmental planning and design mitigate the effects of urban and rural fires through fire-resilient and air-purifying landscapes. Strategies such as creating defensible spaces, selecting fire-resistant plant species, incorporating firebreaks, and managing vegetation prevent and slow the spread of fire. In addition, proper land and vegetation management reduces fuel loads and decreases the risk of fires.

Construction and agriculture activities have a significant impact on global air quality by increasing particulate matter, greenhouse gases, dust, and emissions. Recent research indicates that construction accounts for 23 percent of air pollution. Minimizing the destruction of vegetation saves trees that filter pollutants and limits soil disturbances, thereby reducing dust and particles.[3]

Resources

Particulate Matter Mitigation Through Urban Green Infrastructure: Research on Optimization of Block-scale Green Space | ASLA 2020 Professional Awards

Air Quality, Placemaking and Spatial Equity: The Fontana Urban Greening Master Plan | ASLA 2020 Professional Awards

https://www.epa.gov/clean-air-act-overview/plain-english-guide-clean-air-act
https://www.asla.org/sustainablelandscapes/vid_urbanforests.html

[1] https://research.fs.usda.gov/treesearch/43676
[2] https://jtlu.org/index.php/jtlu/article/view/2468
[3] Ira, Raisa Tabassum. (2021). Effect of Construction on the Environment. 10.5281/zenodo.4770033.

https://www.lafoundation.org/news/2024/08/understanding-roadside-air-pollution
https://www.stateofglobalair.org/

Inter-related Policies

Biodiversity
Open Space
Vegetation and the Built Environment
Visual Character and Scenic Resources
Climate Change and Resilience
Environmental Justice
Environmental Sustainability
Human Health and Welfare
Livable Communities
Transportation Corridors and Facilities
Urban Growth and Development