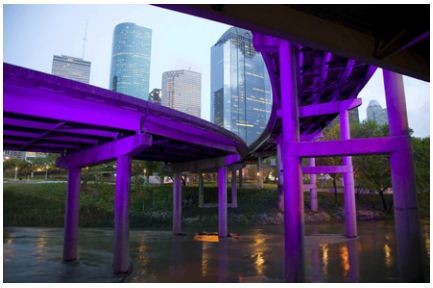
SWA

Design Briefing:

Landscape Infrastructure–
A Tool for Making our Cities Better

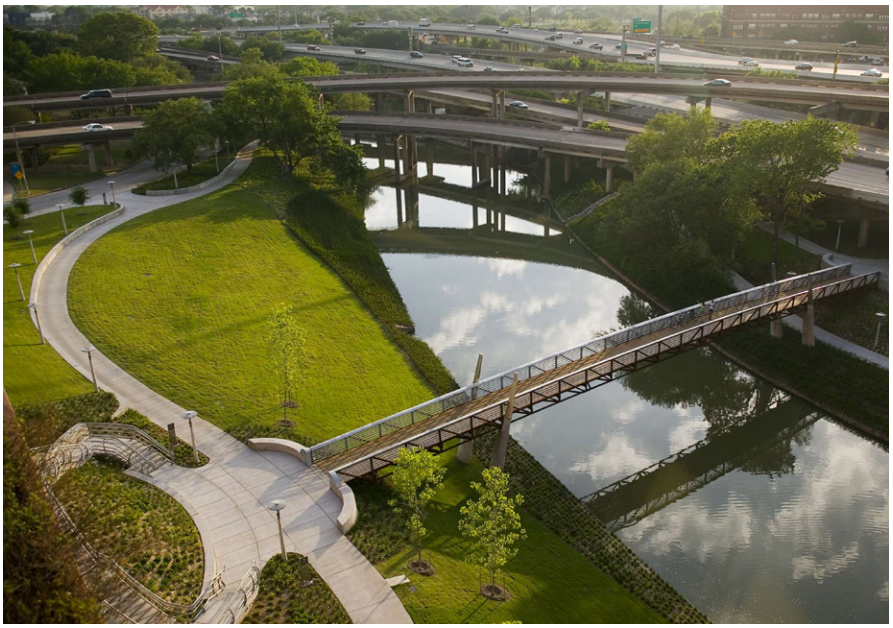
Landscape Infrastructure. (land-skāp' infra-struk'cher) n. a methodology that expands the performance parameters of a designed landscape to a multi-functional, high performance system, including those systems originally ascribed to traditional infrastructure.



Traditional city infrastructure generally incorporates transportation and communications systems, as well as water and power lines, and other utilities and structures. It often places a premium on through-put and efficiency. Landscape Infrastructure is a methodology that expands the performance parameters of a designed landscape to a multi-functional, high performance system, including those systems originally ascribed to traditional infrastructure. Similarly, traditional urban design is oriented towards building massing and grids. Urban design based on principles of Landscape Infrastructure is focused on landscape-based integration of the built and natural environments—seeking out innovative opportunities for building nature and public amenities into the infrastructure of a city.

Thinking in terms of Landscape Infrastructure adds multiple additional benefits to traditional infrastructure: city beautification and re-vegetation/forestation; water and energy conservation; natural systems restoration; storm water management; energy farming; wildlife habitat expansion; favored pedestrian use; and expanded park land and open space built in neglected segments of existing urban infrastructure. Landscape Infrastructure can transform urban blight into urban destination. It can help to create an iconic identity for a city based on the city's latent natural and cultural features.

Buffalo Bayou Promenade: Entangled Ecological Infrastructure: an 84-kilometer long river and the principal drainage system for much of Houston, Texas.



Above: Existing conditions of the downtown section of Buffalo Bayou in the mid-to-late 1990s. This photo documents the impact of seasonal storm flows within the bayou's fluvial and coastal mud flat marsh origins. Visually, the eroding clay, silt, and fine-sand banks are devoid of riparian plant growth that would have normally protected the banks. Left: A new pedestrian and bicycle bridge links the northern greenway (Allen Parkway) with Houston's central business district. People had previously avoided going from one to the other because of concerns over safety. The new pedestrian bridge is expected to help catalyze a future growth area for the Arts District while creating an iconic destination in which to experience and view the bayou.

Jeffrey Open Space Spine: A three mile long, multipurpose corridor connects around 96 acres of parks and trails. This passive network serves as an open-space connection between residential neighborhoods in Irvine, California.

Below: The trail uses a previously underutilized tunnel for contiguous pedestrian and bicycle circulation. Other grade separators occur throughout the park, providing key points of access between residential developments. Right: A Regional map showing connecting trails. According to the National Association of Homebuilders, the most desired amenity of prospective buyers is walking and jogging trails. This nationwide survey found that trails were preferred 57 percent of the time (parks came in at 54 percent), and it was predicted to increase. Trails were also the highest preference in every ethnic group.

Landscape Infrastructure can transform urban blight into urban destination. It can help create an iconic identity for a city by utilizing latent natural and cultural characteristics.

	Traditional Infrastructure	Landscape Infrastructure	
Streets	Engineering and maintaining city streets based solely on the needs of automobiles.	❶ 	Re-designing streets, streetscapes and pedestrian connections in ways that beautify and revitalize. Incorporating paving materials that offset heat island effect and help with storm water management.
Highways	Engineering and maintaining highways for peak-traffic efficiency	❷ 	Using highway corridors as opportunities for restoration of native habitat, re-vegetation, civic art, and storm water management
Waterways	Channelizing or altering waterways for storm water management or roadway development.	❸ 	Naturalizing disturbed, neglected creeks, rivers, bayous and other waterways for storm water management, public spaces, and urban wildlife habitat.
Alleyways	Identifying and using land on a utilitarian basis.	❹ 	Creating usable parks and open space as part of a larger urban plan from opportunities presented by alleyways, power line corridors, waterways and other traditional infrastructure venues.
Railways	Maintaining or converting established rail lines.	❺ 	Repurposing railway corridors for hiking and biking trails. Creating additional opportunities for parks, open space and habitat.
Parks and Open Space	Generally not considered as part of infrastructure.	❻ 	Utilizing parks and open space to nurture a respect for nature, provide recreational venues and link communities.
Urban Design	Focusing on location of structures and connections.	❼ 	Synthesizing buildings, streets, corridors and natural systems. Integrating public spaces and nature into the city.

Projects: ❶ Gubei Pedestrian Promenade: A mixed-use pedestrian-oriented open space in the midst of the densely built city. Spanning four city blocks, approximately 800 meters long and 40-80 meters wide, and is flanked by 20-story residential towers; ❷ Anaheim Regional Transportation Intermodal Center: A 16-acre, LEED-Platinum transit facility that forms a seamless gateway from Anaheim to all of Orange County, spurring economic growth and community redevelopment throughout the region; ❸ Buffalo Bayou Promenade: Converted a space intimidating to pedestrians and detrimental to flood control efforts into 3,000 linear feet of urban park that provides a prominent gateway to downtown Houston, Texas; ❹ Lewis Avenue Corridor: The resulting 'found' space was given back to the pedestrian, which resulted in 20-foot wide sidewalk zones in downtown Las Vegas, Nevada; ❺ Katy Trail: A Rails-to Trails project of a linear 4.5-mile landscaped pedestrian and bicycle trail system that runs through the most densely developed section of Dallas, Texas; ❻ Milton Street Park: A 1.2 acre urban park along the Ballona Creek Bike Trail, stretching over 1,000 feet in length (45 feet wide) in Marina del Rey, California; ❼ Ningbo Eco-Corridor: Incorporates ecological approaches such as benefits of breezes from the water, storm water treatment, reduction of urban heat island effect, sun shading by trees, restoration of ecological habitats, and improving the water quality of adjacent water bodies.

At SWA we're sensitive to the needs of communities around the world. We look closely at the delicate relationship between urban density and access to open space as a starting point for transformation and change in the urban fabric.

Thinking in terms of Landscape Infrastructure adds multiple additional benefits to traditional infrastructure:

- City beautification and re-vegetation/forestation
- Water and energy conservation
- Natural systems restoration
- Storm water management
- Energy farming
- Wildlife habitat expansion
- Expanded parkland and open space built in neglected segments of existing urban infrastructure
- Recreational opportunities
- Health and wellness
- Increased pedestrian activity
- Community programming

Right: Lewis Avenue Corridor, Las Vegas, Nevada

Getting Started With Landscape Infrastructure

- Initiate a strategic charrette process to develop "big ideas" regarding the overall landscape infrastructure opportunities for your city as a whole, or for unique or neglected city districts of interest. Before going through an involved, costly process, do a "back-of-the envelope" first pass on major opportunities.
- As early as possible, begin to discuss your vision for major opportunities with potential corporate, foundation, and non-profit stakeholders and sponsors, who have a vested interest in your city. This needs to be done early on in the process in order to assess feasibility from a financial partnering perspective
- As a starting point, look at specific small opportunities that can be used as exemplary catalysts for bigger change.

For more in-depth information on the topic of Landscape Infrastructure, see SWA's book *Landscape Infrastructure: Case Studies of SWA* at Amazon.com. Or visit www.swagroup.com/advocacytopic/landscape-infrastructure.

For additional copies of this briefing, or requests for additional information, please contact us at: 415-332-5100 or business@swagroup.com.

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