

Essential Elements of Sustainable Design

An excerpt from a new APA Planners Press book explains the fundamentals of green urbanism.

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In 1900, about 13 percent of the global population lived in or near cities. By 2050, that number is projected to rise to 70 percent. The implications of this statistic are immense for the planning profession. What are the generally agreed successful precedents of urbanism we can look to that have resonance? What tools do we have to help evaluate and tailor site-specific design solutions? What key principles will help create a more intelligently conceived, more sustainable, and more livable city of the future?



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|  Decorative Paving |  Water Features |
|  Concrete |  Info/Retail/Rental Kiosk |
|  Planting Area |  Tree Canopy |
|  Lawn |  Trellis |
|  Public Art | |

To help us answer these questions, we compiled information on more than 100 notable urban districts from around the U.S. and Canada. We saw a tremendous diversity of design solutions and have documented many distinct differences among them. The most obvious include: the types and mix of uses, the integration of transit, character and types of open spaces, and regional design influences. However, it's also important to note commonalities among these projects — qualities that reoccur

despite differences of location and scope that are too obvious to ignore. These make up what we think are the eight essential elements of sustainable urbanism:

1. Urbanism is a brand

All of our examples were the result of a holistic approach to development that informed all primary decisions. In terms of leadership, these districts are almost always proactively managed, whether by a business improvement district, master developer, redevelopment agency, or the mayor's office. In the most successful examples, project managers clearly know how to position the district in relation to other urban districts in and around the region, state, and nation. The urban "brand" informs all primary design decisions, including buildings, entries, ground-floor uses, sidewalks, and public spaces. There is a vivid understanding of how space is layered from public to private, with strong and logical transitions. Use of materials and design references from a limited lexicon of logical options is also important to success.

2. Historic conservation

Because urban districts are often located within or adjacent to some of the most cherished parts of the city, the incorporation of historical structures is an important element of success. This may mean setting historic structures aside as cultural artifacts, or adaptive reuse as part of a district-wide redevelopment strategy. "Like" uses within the historic structures (modern commercial or cultural uses within historically commercial buildings) are preferable; however, the appropriate reuse of a historic structure that reintegrates the building into the vital working fabric of the city should be encouraged over limiting access or "mummification" of historic structures.

3. Legibility and compactness

Urban districts have a scale and scope that is understandable and defined. Often, the limits of an urban district are defined by walking distance (a five-minute walking radius defines an area of roughly 160 square acres), with the most urban areas of a city forming a series of linked neighborhoods, each with a defined boundary, core, and circulation network. As a rule, a minimum gross floor area ratio (amount of floor area in a building calculated against overall land area) of 0.75 will sustain pedestrian activity, although vital urbanism has been sustained with a gross FAR as high as five. The primary factors that affect FAR are block size, numbers of stories per building, and percentage of open space. Above this density, mitigating factors such as air and water quality, noise, and lack of parking and adequate solar access begin to adversely affect the livability of urban districts.

4. Targeted, complementary partnerships

Strong management is a key factor in the life of the urban district. Effective urban district managers all collaborate with various partners in order to augment the functional and cultural relevance of the district to its constituencies, be they residents, workers, or tourists. Targeted partnerships within sustainable urban districts often focus on "loss leaders" that are amenities for the overall district, and can include service retail, hotels and entertainment, cultural institutions, and improved transit service.

A recently completed project in Los Angeles provided the first grocery store to be built downtown since the 1920s. The city fostered this single use through targeted cash incentives and expedited approvals. The result has been a key attraction that boosts the viable number of residential units for the area. As opposed to the conventional approach where "retail follows the rooftops," in this instance the exact opposite occurred, helping to add residents while making the district more convenient, vital, and integral to the life of the city.

5. Diversity of uses

The sustainable urban district should be a hub of various activities and a forum for the exchange of ideas. Diversity allows for the mixing of functions, cultures, and even economic strata. The composition of land uses within the district is one of the most powerful strategic tools toward achieving diversity. This concept applies both to the types of land uses an urban district contains (most commonly residential, office, and retail, but also, preferably, at least one other use such as hotel, civic, educational, or entertainment). Some of the most vital districts accommodate as many as seven to 10 primary land uses.

Additionally, the variety of product offerings within each land use should be diverse. Residential types in urban districts often include a mix of for-sale and rental units; product offerings could include town houses, live/work units, lofts, flats, luxury towers, and so on. Within all land-use types, diversity adds complexity and interest to the experience of the urban district.

6. Smart infrastructure

The public right-of-way should be designed to be used by the community in a uniquely flexible and social manner. Sidewalks and plazas should accommodate a wide variety of activities depending on location, adjacency, and time of day. Sustainable streets accommodate a variety of modes other than automobiles — buses, light rail, bicycles, pedestrians, and often even subways. Parking lanes may be used as travel lanes during rush hour, then transferred back to on-street parking during off-peak times. Metered parking is a good way to pay for business improvement district initiatives such as street cleaning, periodic events programs, and storefront improvement initiatives.

Sidewalks should accommodate a variety of activities throughout the day. "Zoning" the sidewalks for window shopping and dining, strolling, and street infrastructure is an important step toward sustainability. In most areas, canopy shade is essential to the pedestrian experience. Tree-lined streets help to protect pedestrians from cars, reduce ambient temperature and glare, improve drainage, and generally mitigate the urban realm. WiFi access, seating areas, newsstands, bike racks, public bathrooms, and information kiosks are other important amenities that can be incorporated into sidewalk designs so that sidewalks are not just pedestrian movement areas but a "third place" so essential for the social life of the city.

7. Learning and contemplation

Continuing education contributes to a city's economy. To that end, urban districts should provide the armature that can facilitate education: libraries, satellite college campuses, language and computer classes, and conference convention facilities.

Areas for thought and contemplation are important for maintaining life balance and managing stress. A network of formal and informal areas for rest and worship are also important to the functioning urban district.

8. Events and entertainment

One of the most important elements of the urban district is "spectacle" — unique experiences that only urban districts can provide. Event venues such as ballparks, arenas, or theaters with events programmed throughout the year, nightclubs and bars with live entertainment, formal scheduled outdoor events such as theater and movies in the park, farmers markets and other seasonal events, and, finally, impromptu experiences such as street vendors and performers reinforce the primacy of the street as the public forum and define the urban district as a unique venue in the city.

What is next?

Cities are part of our regional ecosystem. Research will continue to be vital in informing the planning, design, and development of urban areas. Yet we are just beginning to understand the fundamental linkages between our various, often conflicting development aspirations. Our diversity, market-based orientation, and traditionally laissez-faire attitude toward planning have forced American cities to overemphasize competition for markets and resources. What is needed is a more systemic, regional approach where natural, cultivated, semiurban, and urban areas are stewarded as part of a holistic approach to land management.

The results over the last 25 years have been inconsistent: It is time to start thinking about a more systemic approach that can work toward obtaining a more sustainable urbanism.

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Resources

Images: Addison Circle, which was developed in the 1990s, includes three interconnected park spaces with a walking trail surrounding a central green. But, as Cherry notes in his book, 'surrounding development is largely auto-oriented, limiting meaningful connections to North Dallas.' Illustration from *Grid/Street/Place*.