

An Introduction to Urban Planning

While the changing climate is a hot topic these days, the rapid transformation of the world's cities is an equally dramatic and relevant story. As populations explode and global resources wane, a new set of urban obstacles demands visionary thinking from architects, planners, and policy makers.

By 2050, it's predicted that 70 percent of the world's human population will inhabit cities, with the highest concentrations in Asia and Africa. While the spectacular influx of people into developing world megacities represents the most dramatic and immediate twist in the story of urbanization, smaller North American and European cities have no shortage of challenges when it comes to designing for the future.

In the United States, the cityscape is already shifting under our feet. Drawing from movements like New Urbanism and Smart Growth, stateside planners have begun looking beyond sprawling, car-centric models to denser urban configurations. Even suburbs and outlying areas are beginning to adopt some urban characteristics, such as compact construction and walkability designed around vibrant street life.

Internationally, city centers in industrialized nations are witnessing similar trends. But in developing countries, a variety of historical, political, and economic factors have led to different approaches. Modern cities like Gurgaon and Shenzhen have sprouted

from the ground up over the course of just a few years, while in places like Mexico City and Lagos, low-density sprawl, which better accommodates car travel, remains the standard.

The rapid rise of megacities also increases the urgency of a question that has long vexed planners: How do we ensure that resources and land are parceled out equitably so that these spaces become vibrant urban centers and not an aggregate of slums?

Experts note that successful cities of the future aren't merely those that are responsive to population growth or environmental changes—they must also be flexible enough to adjust to the shifts in demographics, politics, and economics that globalization invites. "Cities that will flourish are those that offer choice and freedom," says Deyan Sudjic, the British design and architecture critic and coauthor of the book *The Endless City*. "Successful cities will also be adaptable to changing circumstances such as how people choose to live and the depletion of resources. If cities aren't built to adapt, then they are in danger."



Cities of the Future

Robert Lang, director of the Metropolitan Institute, Virginia Polytechnic Institute and State University:

The American landscape will continue to be dominated by boomburbs and the growth of megalopolises or the agglomeration of multiple cities over economically interdependent regions. However, urban design will move away from the car-centric model. As a result, boomburbs will thrive, some arising out of infill at the sites of dead malls or business parks, with denser, multi-family homes and open-air retail. "By 2030, there will be a lot of these microdestinations, or places that are decently urban and yet modestly scaled," Robert Lang says. "They may still be auto dependent, but they'll be walkable around the interior of the space."

Margaret Arbanas, Harvard Graduate School of Design, OMA*AMO Architecture PC:

In the early 1800s, urban preservation focused on buildings that were about 200 years old. By the 1960s, that number had decreased to 40 years. "We can theorize that that interval might soon disappear," says Margaret Arbanas, who conducts research on preservation at Harvard GSD with Rem Koolhaas. "By deciding what to preserve before we build, we can plan for certain buildings to last a long time while others could be imagined as having an expiration date." Future preservation sites could be distributed systematically. This would enable what she likes to call "short-term architecture"—buildings designed for a limited life, which could be uniquely experimental, radical, visionary, and speculative. ▮

Story by Bernice Yeung
Illustration by Mario Wagner

Urban Planning in your Daily Life:
A few facts about oft-overlooked aspects of the cities that surround you.

ⓘ The average U.S. resident uses 63,000 kWh of energy per year—50 times as much as residents of Mexico City, who consume an annual average of 1,800 kWh.

Ⓞ In the U.S., sidewalks must be at least five feet wide to meet minimum federal requirements for accommodating people with disabilities.

Urban Outfitted

There's no single prescription for successful city planning, but "dense" and "sustainable" are the buzzwords for forward-looking development. Both of the projects in development shown here have attempted to create communities that promote a convenient, green, walkable, and lively lifestyle.

A. Best in the U.S.: Sonoma Mountain Village in Sonoma, California

From an abandoned 200-acre high-tech campus arises Sonoma Mountain Village, a mixed-use, pedestrian-friendly, suburban-meets-urban planned community located an hour north of San Francisco. Slated for completion in 2020, it will be the first North American development designated as a One Planet Living Community by BioRegional, a United Kingdom-based nonprofit that helps developers and cities reduce their residents' ecological footprints. Naturally, sustainability guides the design, from framing made from locally recycled cars to alternative energy for all 1,900 homes. A "five-minute living" layout makes it easy to walk to the daily farmer's markets in the town center, and a local business incubator encourages residents to cut down on car commutes. In addition to aiming for zero carbon and zero waste, the project's developer, Coding Enterprises, asked architects to avoid designing homes with a homogeneous, cookie-cutter look.



B. Best International: New Songdo City, South Korea

New Songdo City exemplifies the seemingly instantaneous growth of many Asian metropolises. Set for completion in 2014, the city will house 65,000 residents and 300,000 workers.

The 1,500-acre "international business district" is designed for easy access by foot, bike, or public transit (including free shared bicycles and 10,000 electric Smart Cars). The U.S. Green Building Council selected New Songdo as a pilot project aimed at becoming the world's first certified LEED Neighborhood Development.

As a so-called "ubiquitous city," New Songdo's infrastructure fully integrates technology, with built-in computers and smart keys for all homes. Despite the futuristic feel, the development was inspired by classic cities, says master plan architect, James von Klemperer of Kohn Pedersen Fox Associates: "The boulevards of Paris, the row houses of Boston, New York's Central Park, and the shopping streets of Seoul all provided material for us."

THE FUTURE

Margaret Crawford, professor of urban design and planning theory, Harvard Graduate School of Design:

In Asia, entire cities are built from the ground up in the blink of an eye. "The scale and rapidity of construction is impressive," Margaret Crawford says. "But I don't see the innovation. They're mostly following American models." Despite attempts to guide it, urbanization responds to a variety of factors beyond the control of planners. In the Pearl River Delta, for example, the organic growth of desakotas—settlements established around factories and agriculture—results in a unique kind of urbanized countryside. "Desakotas are one model of how things happen as a result of investment rather than planning," Crawford says. "Planners run afterward to guide the process, but development is produced by mostly economic factors."

Nancy Levinson, director of Arizona State University's Phoenix Urban Research Lab:

Just a few decades ago, U.S. cities were regarded as hub-and-spoke configurations, with a center city surrounded by suburbs and an orderly commuting pattern to and from downtown. But cheap oil and rapid development led to multinucleated metropolises like Los Angeles, where a car-free life is nearly impossible and commuters travel in all directions, clogging freeways and smogging the air. Nancy Levinson believes that resource depletion necessitates a shift in urban-planning priorities. As gas prices rise, cities must help citizens consume less by design. "Many argue that the era of cheap oil is over. This needs to be a major factor in urban design," says Levinson. "In Phoenix, we haven't exploited the sun for energy as much as we could. There's a great deal we can do to reduce heating or cooling loads by considering building orientation, materials, landscaping, and form." ▮

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Ⓞ After the 2007 collapse of a major bridge in Minneapolis, transportation officials revealed that nearly 14 percent of bridges in the U.S. are deemed "functionally obsolete."

Ⓞ Manhattan's street grid was first proposed in the Commissioners' Plan of 1811. The design called for 12 widely spaced avenues running approximately parallel to the Hudson

River, cut by 155 narrower cross streets set 200 feet apart. The plan, which laid a regular grid across irregular topography, is now a famous example for planners.

In Need of Repair

Urban spaces are complex microcosms, and even the least successful cities—whether they are unsightly or unsustainable—have their redeeming qualities. Even so, shortsighted planning—particularly in the transportation sector—creates challenges that are difficult to overcome as natural resources dwindle and density rises.



Worst in the U.S.: Exurb developments of Phoenix, Arizona

Developer-driven exurbs such as Anthem and Verado surrounding Phoenix, Arizona, are prime examples of the unchecked low-density sprawl that urban planners around the globe are desperately trying to abandon. These developments are located some 30 miles from the city center, where a majority of jobs are located, and they are usually connected by only one major freeway. Residents thus depend on a long, narrow lifeline to meet their basic needs or fulfill simple tasks. Virginia Tech associate professor Robert Lang believes that in an uncertain future, these types of residential areas are at the greatest disadvantage for long-term livability.

Worst International: Bucharest, Romania

Buoyed by the booming, post-Ceaușescu economy, Romanians have been buying cars at a breakneck rate, and the capital city has rushed to accommodate them by building freeways, interchanges, and underground parking. In fact, authorities in Bucharest famously banned bikes in the city in 2005, claiming that they interfered with the flow of traffic (the law was abandoned after local protests). Attempting to retrofit a medieval-era city for car use has resulted in a near-constant state of gridlock. "Bucharest is on the cusp of making decisions that will either make it a beautiful capital city and a prosperous region of Eastern Europe, or make it go down as a poorly planned, polluted, and dysfunctional city based on the wrong transportation and development assumptions," says Peter Bishop of Design for London.

THE FUTURE

Dowell Myers, professor of urban planning and demography, University of Southern California:

As baby boomers get older, they're likely to sell their homes and move to retirement communities or neighborhoods with more convenient access to services, entertainment, and culture. Planners will need to prepare for an aging society, though there hasn't been much discussion on the topic yet. "Boomers are going to support the new preference for compact development," Dowell Myers says. "Does it mean more senior-citizen centers? Longer lights at crosswalks? It's like rearranging deck chairs on the *Titanic*—we haven't thought about the structural shifts." Meanwhile, he sees an increasingly economically established immigrant population migrating toward the suburbs, filling the void left by the boomers.

Peter Bishop, director of Design for London:

In June, Design for London published its long-term planning strategy whose title, "Open London," encapsulates a key characteristic of thriving future cities. "Successful cities are those that can compete in a global economy for footloose capital and footloose talent and that can persuade dynamic and innovative individuals to live there," says Peter Bishop. "They thrive on the exchange of ideas that results from that openness and are able to translate it into a commodity they can trade on." The Open London plan also includes a number of green projects because "sustainability is now completely part of designing for the functionality of a city or building," Bishop says. Some projects, like one in East London, include a green grid, in which all open space and parks are linked together to support car-free transportation and zero-carbon housing developments. »

Photo by Rich Reid / Getty Images

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Ⓞ In most U.S. states, the travel lanes in streets are 12 feet wide. Bike lanes must be at least five feet wide by federal standards.

Ⓞ In 1980, the city of Shanghai had just 121 buildings higher than eight stories. By 2000, that number jumped to 3,529, and in 2005, the figure leapt to 10,045.

Ⓞ According to a UN Habitat report from 2005, sub-Saharan Africa has over 332 million people living in slums.

Old MacDonald Had a High Rise

With an estimated urban population increase of 3.1 billion by 2050, urban centers will eventually have many more mouths to feed. As space on the ground gets tighter, we're left to find innovative ways of utilizing the air overhead to meet the needs of city dwellers and preserve some pockets of greenery.

Struck by the statistics about population and urbanization, Columbia professor Dickson Despommier did some of his own calculations. He estimated that a chunk of arable land greater than the area of Brazil was needed to meet the world's future food needs. Knowing that no such land would exist, he devised new ways to farm the city.

Though indoor and urban gardening aren't new ideas, Despommier proposes combining them at a much greater scale. In his vertical farming model, multistory buildings in dense cities would grow produce for local consumption, eliminating toxic runoff from pesticides and reducing the carbon footprint of food transport.

Though detractors point out that significant technological advancements need to be made for vertical farming to be viable, it's clear that the creative transformation of existing urban and suburban space into farms or gardens has merit. "Urban agriculture is a huge movement that will only grow," says Margaret Crawford. "Farms and farmers will be redefined." ▶▶



Renderings courtesy SOA Architects

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© The parking meter was invented by Carlton Cole Magee in 1932 to deal with growing parking congestion. The first parking meter was installed in Oklahoma City.

© Of the most densely populated U.S. cities, Washington, DC, has the most acres of parkland per resident, with 13.1 acres per 1,000 residents. San Francisco spends

\$268 per resident per year—the highest in the country—for maintenance, service, and the establishment of new public parks.

Bookshelf

Boomburbs: The Rise of America's Accidental Cities

Robert E. Lang and Jennifer B. Lefurgy
Brookings Institution Press, 2007

An exploration of “boomburbs,” or the massive growth of suburbs into accidental—and the fastest-growing—American cities, the book examines 25 major metropolitan areas in order to illustrate the new challenges that urban planners face.

Planetizen's Contemporary Debates in Urban Planning

Edited by Planetizen
Island Press, 2007

Compiled by editors at Planetizen, the go-to web resource for urban planners, *Contemporary Debates* provides rich and accessible overviews and commentary on the hot-button topics in the field, including gentrification, eminent domain, disaster preparedness, and urban design trends.

Planet of Slums

Mike Davis
Verso, 2006

Mike Davis takes the reader on a tour of the world's most intensely impoverished

slums, shedding light on the grim realities of urbanization on the global south.

Sustainable Urbanism: Urban Design With Nature

Douglas Far
Wiley, 2007

Through a historical overview, case studies, and essays, *Sustainable Urbanism* provides a comprehensive introduction to—and a compelling argument for—“sustainable urbanism,” the design-reform movement that combines walkability with high-performance buildings and structures.

Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century

Peter Hall
Wiley-Blackwell, 2002

An exhaustive history of modern Western urban-planning theory and practice, *Cities of Tomorrow* tackles everything from major figures and events that shaped 20th-century urban life to fundamental topics such as the garden city movement, the origins of regional planning, and contemporary urban redevelopment.

Click on It

Urban Land Institute

A nonprofit interdisciplinary research and educational organization that identifies land-use trends and issues and proposes research-based solutions.

uli.org

Metropolitan Policy Program

A think tank dedicated to research and policy aimed at helping America's cities grow their economies, become more inclusive of diverse populations, and become more sustainable.

brookings.edu/metro.aspx

Lincoln Institute of Land Policy

An international, nonpartisan research institute specializing in land-use and taxation issues.

lincolninst.edu

Big Words

Boomburb: A rapidly growing suburban city with 100,000 or more residents. Coined by Robert E. Lang and Patrick A. Simmons.

Citistate: A metropolitan region that functions as a single zone of commerce, trade, and communication. Coined by Neal Peirce and Curtis Johnson.

Edge node: Rapidly growing commercial real estate sprawl near highways and outside of older downtown areas. Also referred to as an “edge city” or “edgeless city.”

E-topia: A green, pedestrian-scale community shaped by technology, which allows for virtual interactions and decentralized production. Coined by William J. Mitchell.

Global city-region: A new metropolitan form characterized by sprawling urban centers surrounding one or more older urban cores, acting as a global economic node.

Greenfield: A project built on undeveloped, usually agricultural, land.

Greenprint: An environmental plan especially concerned with parks, greenways, open space, and other shared spaces.

Ideopolis: A postindustrial urban area dominated by knowledge-based industry.

LULU: An acronym for “locally unwanted land use,” ranging from a parking lot to a prison to a nuclear facility. Also referred to as NIMBY (“not in my backyard”).

Megacity: A city with more than ten million residents.

Megalopolis: A large urban region that provides a variety of services, such as the original BosNyWash (Boston, New York, and Washington, DC), linked most notably by transportation and economics. Coined by Jean Gottman in 1961.

Micropolitan: An area with a population between 10,000 and 50,000 and an urban center that's surrounded by one or more counties or regions.

New Megalopolis: As defined by Richard Florida, this new formation will be the “real economic organizing unit of the world” where great trade, innovation, and talent take place, consisting of multiple cities and suburbs that may cross national borders.

Privatopia: An elite lifestyle development where residents are legally bound to the rules and regulations—ranging from landscaping and behavior—that are overseen by a homeowners' association. Some take on the role of private governments in their provision of basic services.

Technoburb: An exurb that is home to a large number of technology-based businesses.

Technopole: A high-tech manufacturing center developed publicly and privately.

TOAD: An acronym for “temporarily obsolete abandoned derelict” sites, such as shopping malls or closed industrial sites.

Ubiquitous city: A city in which technology is integrated into both facilities and infrastructure.

Walkable urbanism: In response to traffic congestion and isolated suburban living, a return to pedestrian-friendly urbanized spaces. Coined by Christopher Leinberger.

Walkshed: An area easily traveled on foot. ■■■

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Ⓢ In 1917, William Ghiglieri of San Francisco patented the first automatic traffic signal using red and green lights (previous traffic lights used words like “stop” or “proceed”).

Ⓢ Around 1920, a Detroit policeman named William Potts invented the first traffic signal to use a yellow light.