

# The City of the Not-Too-Distant Future

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<show slide1- Intro>

What will the city of the future be like? Vast changes are about to occur — as populations grow — or are forced to migrate from previously livable locations. Why does this already sound negative? Actually, it's simply a reflection on what has already begun. Sea levels are already rising, on a timetable that was underestimated by the so-called experts. There were also miscalculations as to just how high those seas would rise. Based on information that was available at the time, they really can't be blamed for this shortsightedness.

Now that the anthropocene is fully underway, mankind does not always act in the best interests of its fellow inhabitants — human or otherwise. Greed and politics—or should those two words be interchangeable? — continues to dictate human behavior.

When environmentalists strongly urge our leaders to take action to prevent the next disaster, they are accused of panic mongering. The question, "Where will the money come from to pay for these interventions?" might better read, "Where will the money come from if we don't?"

It has been estimated that those changes might cost the U.S., alone, many trillions of dollars. But what if businesses like New York's banking industry were to be suddenly deluged by a rise in sea level for which it was totally unprepared?

The city of the future can incorporate the necessary changes that will solve many of the problems that some of us — albeit, not enough of us — have predicted. Besides the previously mentioned rising seas, there will also be challenges to the food and potable water supply.

This is where vertical agriculture comes in. Buildings of the future will need to attain skyscraper status, because ground space is limited, but vertical growth — not so much.

That's just one example of the myriad of forms this concept can take.

What if the island of Manhattan (or myriads of other large metropolises) had hundreds of high-rise buildings equaling or exceeding the height of the Empire State Building?

Every high floor's perimeters could include grow rooms, and that would bring the total number of arable spaces into the thousands. And with photovoltaic glass replacing conventional windows, there would be virtually no electricity costs associated with that agriculture. That energy, absorbed from the sun, could be used to power grow rooms in the center of the building, including lower floors. Vertical agriculture would require less ground space, less water, and no insecticide use. The time and distances

between the food source and the feeding populations would shrink dramatically. There are literally dozens of articles on the web that deal with this agriculture of the future. And we could go one step further: What about an entire skyscraper that was a vertical farm?

<show slide2 Architecture & Agriculture>

You may have noticed that I didn't leave room for raising cattle. There's a reason for that: Consuming animal products is relatively unhealthy for humans and the planet, and actually unaffordable from the point of view of sustainability. I cover that subject in great detail on my website, which I encourage you to visit. <https://ourneighborhoodearth.org/Sustainability.html>

<show slide 3 -O.N.E. Home page>

As early as the mid 1920s Swiss-French architect and pioneer of modernism, Le Corbusier suggested razing the homes, statues, and streets of much of Paris's Right Bank. In their place, he proposed erecting 18 identical glass towers some 650 feet high, a quarter of a mile apart, divided by lawns for pedestrians and elevated highways for cars. Our question today, given the increased levels of CO2 and auto emissions, "Should we live in dense urban areas with public transit and walkable amenities, and the agriculture architecture described earlier, or in sprawling suburbs created by our infatuation with the car? **That is so yester-year!**

High-rises similar to those envisioned by Le Corbusier, are beginning to dot urban districts across China. National Geographic, where much of this material comes from, has spent the past year exploring those questions for their April 2019 special coverage of cities. Photographers and writers were sent across the globe to document how some cities work — or don't. These range from Tokyo — the planet's largest metropolis with more than 37 million inhabitants — to Bidibidi, Uganda. The latter is an instant city of more than a quarter million people, formed by refugees who've arrived very recently. And who wouldn't want to live in a city with such a cute name?

NatGeo has partnered with architectural firm, Skidmore, Owings and Merrill (SOM) to create a detailed representation of the city of the future. According to them, the plan allows ecology to guide development. Precious water sources are protected, and systems are designed to capture, treat and re-use it. Energy will be renewable, making for a more livable city, despite the dense population. All waste becomes a resource. In fact, the entire infrastructure is carbon-neutral, enhancing sustainability. And finally, the economy is largely automated and on line.

<Show Slide 4 -Opening Scene>

What does the future hold for cities and for the two-thirds of our offspring who'll live in them by 2050? At that time (less than thirty years in the future), the Earth's population is expected to reach close to ten billion, about 70% of which are projected to live in urban areas. This compares to the estimated 50% that do so currently.

In “Rethinking Cities,” writer Robert Kunzig spent time with Copenhagen urban designer, Jan Gehl, revered for his simple insights, including being thoughtful about shaping cities, because, in his words, “We’re building a legacy.”

“Waking up every morning and knowing that the city is a little bit better than it was yesterday — that’s very nice when you have children,” Gehl continues. “Think about that your children have a better place to live, and your grandchildren have a better place to grow up than you could when you were young. I think that’s what it should be like.”

Can we curb our devotion to cars? That was difficult to attain over the decades following WWII, when returning troops had to deal with overcrowded, run-down cities. People felt the need to escape the urban sprawl that so many of our cities had become. To them the suburbs felt liberating and modern.

But that was then. The reason we can some day give up our automobile love affair is because the city of tomorrow will require much less of that kind of travel. Everything we will need will be either within a walkable distance or available with convenient and efficient mass transit.

In short, to build the cities of the future, we must, eventually, get rid of our cars.

And we will no longer need the countryside to appreciate nature. As one architect put it, “If you really want to affect environmental outcomes and social outcomes, it’s not shaping a single building that matters, it’s shaping a community.”

Singapore, an island city-state with limited space, sets an example by offering tropical flora that can be appreciated from the terraces surrounding the area. This requires careful planning, but it is definitely worth it.

According to the April, 2019 Cities of the Future edition of National Geographic (I’ll pass it around), an article describes a city’s purpose, if we don’t already know what that is. Peter Calthorpe is an architect, who built the first energy-efficient state office buildings in Sacramento in the late 1970s. He extols cities for having brought people together.

Unfortunately, the low cost of cars soon began to undo that togetherness, and encouraged the suburban sprawl, to which many of us have fallen victim.

Today, Calthorpe heads the Congress for the New Urbanism, which publishes a free brochure entitled, “25 Great Ideas of New Urbanism.” I do have a link to that brochure which I will be happy to make available to this audience:

<https://www.cnu.org/sites/default/files/25-great-ideas-book.pdf>

The brochure runs over two hundred pages, which we have neither the time, space nor patience to describe it all here. But you’re encouraged to peruse at home.

After the list that runs over three pages, the introduction begins, and goes something like this:

"The New Urbanism is a design movement toward complete, compact, connected communities — but it is also a generator of ideas that transform the landscape. Communities are shaped by the movement and flow of ideas, and it has been a rich — maybe the richest — source of innovative thoughts that have directed planning and development in recent decades."

To Summarize:

Not all of the 25 ideas were invented by New Urbanists, but that group has contributed significantly to them all.

It talks about what makes a great idea. The first criterion is how ambitious it is, and how it seeks to make broad-scale changes in the built environment and the process around which cities and towns are created. Obviously, the idea must be practical, and have a substantial impact, and how it should transform those environments.

These ideas are necessary owing to the shortcomings of many aspects of a built environment that are a legacy of 20th Century land-use trends and decisions. They involve streets and their networks, transit, the public realm and public spaces, architecture, housing, land development, the separation of uses, the design of urban centers, neighborhoods, cities and regions, public processes, affordability, equity, and more.

New urban ideas were created to re-imagine and transform the way that we build our cities and towns and navigate our daily lives.

No single idea can accomplish such a complex, ambitious, and important task. The Great Ideas focus on implementation and solving problems. They are about walk ability, mixed-use, and much more. They ultimately reach to the heart of our communities, and therefore our lives.

Each idea is one chapter, categorized into six groups: Planning, transportation, implementation, architecture, housing, and development.

It starts with an aerial diagram of what a perfect urban center might resemble.

[<Show Slide 5 Planning a Community>](#)

## Planning

Walk ability: Neighborhoods should be compact, pedestrian-friendly, and mixed-use, and with many activities of daily living be within walking distance. A quarter century ago this idea was not common planning practice, and new urbanists needed a way to measure a compact neighborhood to organize plans and communicate to the public. The answer was the “pedestrian shed,” a distance that can be covered in five minutes at a normal walking pace — typically shown on a plan as a circle with a quarter-mile radius. This is shown in the "Planning a Community" image.

If the built environment is appealing and human scale, many people will walk at least five minutes rather than get in a car. The idea is now widely

embedded in new urban plans and incorporated into zoning codes. Although the quality of the built environment can expand or shrink the distance people will walk, the quarter-mile pedestrian shed is a useful measurement for community design, based on the human body (dimensions may vary).

Another set of diagrams show three aerial neighborhood diagrams comparing 1930, 1980 and 2008 views. There are obviously significant differences between them with the most dramatic occurring in the latest of those views.

<Show Slide 6 -Comparing Three Distinct Eras>

The next graphic, known as a Rural-to-Urban Transect, is a rectangle with six sections, depicting the following zones:

<Show Slide 7 -Rural to Urban Transect>

It goes on to demonstrate, with photos, what those street zones might resemble.

<Show Slide 8 Visual Description of the previous slide>

**1. Natural:** Featuring natural diversity (probably preferred by environmentalists).

**2. Rural:** Nature slightly urbanized

**3. Suburban:** These zones consist of low-density residential areas, walkable to higher T-zones that have some mixed use. Home occupations and outbuildings are permitted. Planting is naturalistic and setbacks are relatively deep. Blocks may be large and the roads irregular to accommodate natural conditions.

**4. General Urban:** They consist of a mixed use but primarily residential urban fabric. It may have a wide range of building types: single, sideyard, and rowhouses. Setbacks and landscaping are variable. Streets with curbs and sidewalks define medium-sized blocks.

**5. Urban Center:** These feature higher density mixed-use buildings that accommodate retail, offices, live-works and apartments. It has a tight network of streets, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.

**6. Urban Core:** Featuring cultural diversity (obviously the favorite of urbanists)

The article explains the differences in detail. But it's the next set of graphics that brings the transect concept into reality. It's a 4x4 box showing how those subdivisions actually look in aerial views of four major cities. It shows the stark differences between what is described in that original transect.

A more detailed discussion with hundreds of photographs can be found at <https://transect-collection.org/>

<Show Slide 9 -Aerial views of those 4 cities>

The four cities pictured in this slide are New Orleans, Washington, San Francisco and Miami. Let's hope they don't get washed away by the time your grandchildren are ready to visit them.

Another chapter is devoted to Sustainable Urbanism, and how the trend toward complete communities is shaping environmentalism. It discusses "LEED" certification, where LEED, or Leadership in Energy and Environmental Design, is an internationally-recognized green building certification system. Developed by the U.S. Green Building Council ([USGBC](http://www.usgbc.org)) in March 2000, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

<Show Slide 10 -LEED Public Projects>

As featured in this article from the Green Building Council:  
<https://www.usgbc.org/articles/10-super-rad-leed-public-projects>

LEED Certified Structures can take many forms. Some examples are:

### **1. King St. Station, Seattle, WA:**

It may not be King's Cross where the Hogwarts Express picks up wizards, but King St. Station in Seattle is still pretty magical. Platinum-certified last December, the station went through a massive renovation that increased its size four fold, yet it is projected to use 68% less energy. They restored original design elements from its construction in 1906, including a gorgeous ornamental ceiling. Seattle requires that any new construction or major renovation of a city building over 5,000 square feet achieve LEED Gold or better certification.

### **2. Toyota Elephant Passage, Denver, CO:**

You might think that the coolest part of the LEED Platinum-certified Toyota Elephant Passage at the Denver Zoo is the elephants. Nope. Excuse me, but what this project is doing with poop is fascinating. Yes, poop. The site has a gasification system, which will convert more than 90 percent of the zoo's animal waste and human trash into energy to power the exhibit. This will eliminate 1.5 million pounds of trash going to landfills annually. Denver has a policy that requires that any new construction or major renovation of a city building achieve LEED Gold or better certification.

### **3. Taft Information Technology High School, Cincinnati, OH:**

It would be wrong for this list to not include a LEED-certified school, as an incredible part of this movement is the public sector recognizing that *where kids learn matters*. The leader in green schools is the state of Ohio, clocking in at 158 LEED-certified public schools. For an example of the amazing work being done in that state, check out the LEED Platinum Taft Information Technology High School in Cincinnati, which is sporting one of the region's largest green vegetated roofs. Cincinnati also runs a tax abatement program for LEED homes that has been hugely successful.



#### **4.5.4.7 Arts Center, Greensburg, KS:**

Natural disasters can require towns to undertake massive rebuilding projects, which creates opportunities to re-imagine their identity. In Greensburg, Kansas, after the town was toppled by a devastating tornado, they took this chance to become one of the greenest places in America. The city council passed a resolution requiring that all new city-owned buildings greater than 4,000 square feet must be LEED Platinum, which was a pioneer policy at the time.

#### **5. Cedar Rapids Public Library, Cedar Rapids, IA:**

In 2008, Cedar Rapids, Iowa was severely damaged by a major flood. As the city sought to rebuild their damaged public structures, a race ensued between the Central Fire Station and the Cedar Rapids Public Library, both heading for LEED Platinum.

Then there is Context-Based Street Design. Just what is it? Glad you asked. First and foremost, streets should be responding to what the land use is, what the needs are for the neighborhood, the commercial district, or the rural area. Too many times we have designed streets based on one-format-fits-all. We need to take into consideration many things—including place-making, whether people will walk or bicycle, the target speed, the climate region, shade and greening—before we even think about designing a street. And if we modify a street that already exists, then we have to understand what this urban area wants to become and then design the street so that it enhances and serves as a catalyst—knowing that we often end up destroying neighborhoods if the speeds and the support for regional traffic are too high.

In the past, streets were designed for efficiency, maximizing movement, which often would induce speed. But streets of the future will need to bring speed down to what is appropriate for their space, as appropriate to context. We will also need homes and other buildings that watch over the street to provide security. Only if we do that are people going to feel comfortable walking again.

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In conclusion, I can't emphasize, strongly enough, the importance of developing cities that will be equipped to handle the climate crisis and all it will bring. This includes sea level rise that, if left unchecked, could inundate some of the most populous residential and commercial communities on the planet. In addition to the financial burden of repairing the damage, the handling of vast populations that will be forced to migrate to higher ground could add up to an incalculable cost.

Again, the cost of preventive medicine would be far out-weighed by the price of doing nothing.

The End