

Academy Meetings



An aerial view of Macau, China. Image © Richard Baker/Corbis.

Sustainable Cities

Joel E. Cohen, Daniel L. Doctoroff, and Martin Filler

Welcome by Frank A. Bennack, Jr.

This presentation was given at the 1921st Stated Meeting, held at the Hearst Tower in New York City on December 3, 2007.



Frank A. Bennack, Jr.

Frank A. Bennack, Jr. is Vice Chairman of the Board, Chairman of the Executive Committee, and immediate past President and Chief Executive Officer of Hearst Corporation. He has been a Fellow of the American Academy of Arts and Sciences since 2007.

Welcome

Let me warmly welcome all of you. I am privileged to be a new inductee into the Academy, but tonight I am representing the Hearst Corporation and this facility. Besides its beauty and the fact that it is the first LEED Gold Medal building in New York City, this structure has an interesting story behind it. In 2001, as Chief Executive Officer of the Hearst Corporation, I scheduled a board meeting for September 12 to consider the Norman Foster design and to get the go-ahead to begin construction of a high-rise building in New York.

Needless to say, that meeting did not take place: our out-of-state directors were unable to get to New York. But more importantly, it was impossible to find anyone interested in building a high-rise building in New York on

September 12, 2001. However, by the end of October, our board of directors had the courage to say we are staying in New York, and we are building this building.

So began the process of transforming a landmark William Randolph Hearst building. The architect for Mr. Hearst was Joseph Urban; thus we call this theater the Urban Theater. Joseph Urban had been the graphic eyes and ears of Hearst in the movies, and he was more a set designer than he was an architect. But he designed this six-story building with its eight allegorical statues representing comedy, tragedy, music, art, industry, sport, the sciences, and printing. Hearst believed that this neighborhood was going to become the theatrical, literary, and media center of New York, which it is in many respects becoming now, with Time-Warner and a number of other groups in this area.

Academy Meetings

In any event, we hired Norman Foster, and as they say, the rest is history. This is the first building in New York City to be awarded the LEED Gold Medal; LEED stands for “leadership in energy and environmental design.” Many others will follow us, but we feel privileged to have set the pace. There are many reasons why this building received this high ranking: We saved 2,000 tons of steel, which means we used 20 percent less steel in construction than we would have normally. Moreover, 90 percent of the structural steel is recycled. We also use 26 percent less energy, which translates into reducing as much carbon dioxide in a year as could be achieved by taking 174 cars off the street. Additionally, we collect rainwater on the roof, which besides serving us inside the building keeps that rainwater from flooding into the city’s sewers during heavy rainfalls. Finally, we installed light sensors around the building that turn lights on and off as people enter and exit rooms. So all over the building, we are controlling the output of electricity, which is directly related to how much natural light is coming in as well.

We are proud of this building. We always wanted to do something that was great for the city of New York and for our employees. But we have to give Norman Foster an enormous amount of credit for leading us in the direction of being as green as we are.



Joel E. Cohen

Joel E. Cohen is the Abby Rockefeller Mauzé Professor of Populations at Rockefeller University and Columbia University. He has been a Fellow of the American Academy of Arts and Sciences since 1989.

Presentation

I am going to take a global perspective on cities in the next half century. Though the demographic statistics are imprecise, sometime in 2007 or 2008 the world will, for the first time, have more urban than rural people. By 2050, the world’s urban population will probably double. If that happens, it will be necessary to build, in the next 40 to 45 years, urban infrastructure for as many additional people as the people now in cities.

The rural population of today’s so-called more developed countries has been declining since the beginning of the twentieth century, while the urban population of these countries has been increasing slowly (see Figure 1). The

Cities will face four main challenges over the next half century: urban population growth in developing countries, population aging, environmental changes, and governance.

population of today’s less developed countries has been predominantly rural; the rural population rose steeply but is now leveling off. Lately, the urban population in the less developed countries has been rising extremely rapidly and will overtake the rural population in the less developed countries within fifteen years. Rural populations will be declining everywhere before the middle of this century.

Cities will face four main challenges over the next half century. Urban population growth in developing countries is the first challenge. Urban populations grow in three ways: by people migrating from the countryside into cities; by rural areas growing into urban areas; and by births outnumbering deaths in existing urban areas – natural increase, in other words. Migration accounts for about 40 percent of urban population growth, and natural increase for about 60 percent. Until 1800, cities had higher death rates than birth rates. That has changed now; cities are a source of their own growth.

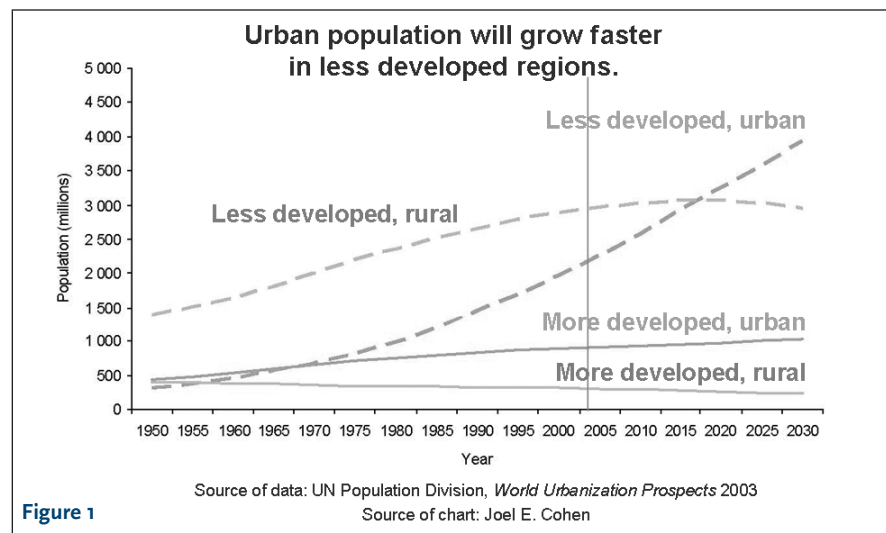


Figure 1

The second challenge cities face is aging, especially in developing countries, where rapid aging will interact with rapid population growth.

The third major concern is environmental changes, including climate change; vulnerability to infectious diseases; and limitations in resources like water, energy, and food.

A fourth challenge is governance. When a city outgrows its official political boundary, its government loses the capacity to solve the problems its people face, because governance is shared with surrounding entities. New York City has partially solved this problem by incorporating the five boroughs and by creating institutions of shared governance with neighboring states; a hierarchy of collaboration is necessary, from local commu-

Virtually all of the increase in the world's population is going to happen in cities in presently poor or middle-income countries.

nity boards through state, regional, national, and international relations. Thus boundary overflow is one major challenge to governance. Another governance issue is congestion. A third is security in two senses: internal security to assure public order and protect the rights of minorities within a city, and external security to protect a city against its enemies. Employment to assure that people have the means to live in the city is a fourth issue. Fifth, and foundational for me, is inequity – ensuring that there are not such raw gaps between the rich and the poor that the city becomes unstable.

In my limited time here, I am going to talk only about the first two of these challenges: rapid urban population growth in developing countries and population aging (the increase in the *proportion* of elderly people in the population). The challenges of the environment and governance are equally important topics for another conversation.

The urban population of the world will grow roughly twenty-two-fold from 1900 to 2030.

In 1900, 210 million people lived in cities (about two-thirds of the current U.S. population). According to the UN Population Division's *World Population Prospects*, just under 5 billion people will live in urban areas in 2030. Over the next few decades, the urban areas of less developed regions are projected to absorb nearly all the population growth expected worldwide. Virtually all of the increase in the world's population is going to happen in cities in presently poor or middle-income countries.

This projected increase depends on assumptions about the future. Which future we get depends on which assumptions turn out right. The world's population is now about 6.7 billion. If fertility rates continue as they are today, global population will grow to almost 12 billion by 2050. But the UN Population Division anticipates that the average number of children born per woman in a lifetime will continue to fall approximately as it has over the last half century. If so, the global population of 2050 is projected at 9.1 billion (in the so-called "medium" projection). If the average woman has half a child more than anticipated in the medium projection, then the population will grow to 10.6 billion by 2050 (in the so-called "high" projection). If the average woman has half a child less than anticipated in the medium projection, then the population will grow to 7.7 billion by 2050 (in the so-called "low" projection). A difference, on average, of one child per woman per lifetime from now to 2050 entails a difference in 2050's world population of 2.9 billion people – the difference between 10.6 billion people and 7.7 billion people.

The future is very sensitive to what we do starting now – and in particular to how much we invest in the education and health of children worldwide, especially girls, especially the poor.

By 2050 there will be three would-be grandparents for every young child.

The future is very sensitive to what we do starting now – and in particular to how much we invest in the education and health of children worldwide, especially girls, especially the poor. In general, people who are educated take greater interest in the quality than in the quantity of their children.

Are the added billions of people going to live in big cities or in villages? About half of the world's people live in cities of 500,000 or fewer. Mid-sized cities, with populations of half a million to a million, have been the central trend for the last 25 years, and we expect that to remain the case in the future.

Between 1900 and 1950, the world added a million urban people every 35 days. Between 1950 and 1980, a million urban people were added every 12 days. Between 1975 and 2000, every seven days. Between 2000 and 2005, every six days. From now to 2030, the world will need to accommodate another million urban people in poor and middle-income countries every five days. That is a great challenge.

Where are those new city folks going to live? China is the country with the largest population now, but not for long. India's population will overtake China's within the next couple of decades. Soon after that, Africa's people will outnumber both India's and China's. While Africa and Asia are the least urbanized areas in the world today, by 2030, Asia and Africa will rank first and second in the number of urban dwellers. By 2030, almost seven of every ten urban residents in the world will live in Africa or Asia.

The difficulties inherent in this colossal transformation are obvious, but it could have a bright side. Cities reduce the economic incentives for families to have many children. And it is easier to reach children with education in cities than in the countryside.

The second challenge I mentioned above is aging. From now on, the world will have

fewer young people (up to age 4 years) than old people (aged 60 plus). By 2050 there will be three would-be grandparents for every young child. Globally, between now and 2050, the number of people aged 80 and older will increase by a factor of 4.5, while the number of people aged 60 and older will increase by a factor of 3. If the total population grows by a factor less than 1.4 between now and 2050, as the medium projection expects, the proportion of elderly people will

From now to 2030, the world will need to accommodate another million urban people in poor and middle-income countries every five days.

rise dramatically. Because developing countries are starting with fewer elderly people now, their numbers of old people will increase even faster than the global average, by factors of 6 for those 80 plus and 4 for those 50 plus. The biggest increases in aging will be in the places least equipped to deal with it, namely, the developing world.

While the relative increase of elderly is most rapid in some developing countries, the greatest numbers of elderly are presently in more developed countries. Cities in developing countries will face an unprecedented confluence of rapid population growth and rapid aging. Will the world's cities be ready? How will whatever is in scarce supply be allocated between tomorrow's children and tomorrow's elderly?



Daniel L. Doctoroff

Daniel L. Doctoroff was Deputy Mayor for Economic Development and Rebuilding for the City of New York. He is currently President of Bloomberg L.P.

Presentation

I would like to talk about how one city, namely your city, becomes a sustainable city. Let me begin by saying that “sustainability” is rapidly becoming one of the most over-used terms in the English language. That’s not to say it doesn’t have enormous value. However, because there are so many different definitions I thought I’d start off by giving you the definition that the mayor and I used when creating PlaNYC. To us, sustainability is an almost sacred obligation, to leave this city better off for future generations than we who are here today found it.

We believe New York can be a sustainable city, and we have proposed a series of steps to reach that goal. The largest barrier is not the development of technologies or strategies. No, the biggest obstacle is will and leadership. By definition, when you think about sustainability as we’ve defined it, it means taking actions today – some of which have significant costs – that will better future generations. These are long-term investments. Those are not things that, by their very nature, our political system is well equipped to make.

Two years ago, we set out to think about how to make New York a sustainable city. The process involved literally thousands of New Yorkers. We gathered experts for our sustainability advisory board, at least one of whom, Andy Darrell from Environmental Defense, is here today. We reached out to the public

Sustainability is an almost sacred obligation, to leave a city better off for future generations than we who are here today found it.

and asked them what they saw as the challenges to the future of New York City. Our website received thousands and thousands of comments. We went out to town halls in every borough. And after a lot of research, we discovered three fundamental challenges to making New York a sustainable city.

The first ties into what Joel Cohen said: this city is going to grow. Our estimate is that the population of this city will grow from 8.2 million people today, an all-time high, to 9.1 million people by 2030. Think about how crowded the city is today, and then add almost a million more people into our very small five boroughs.

The second major challenge is our infrastructure. By 2030, our water system, our energy network, our roads, our bridges, our subways, our commuter rail lines will all be at least 100 years old. Every day, we see evidence of increasing failures as a result of underinvestment in infrastructure over the past several decades. When you take growth and aging infrastructure into account, and mix that with an already precarious environment, the third challenge is simply that the worsening of our insecure environment is becoming even more problematic. And so, the three challenges – growth, infrastructure, and the environment – are what we have to think about as we design a plan for a sustainable city in the future.

In doing so, we learned three fundamental things. The first is that these three challenges and the solutions required to deal with them are completely interdependent. You cannot think about land use without thinking about how you move people around, i.e., transportation. Your transportation network is highly dependent upon energy. Energy produces air quality problems. And, ultimately, every element of our urban environment affects perhaps the greatest challenge we as a world face today, which is climate change.

A more encouraging note, however, is that there does not have to be a conflict between creating a city that is sustainable *and* capable of economic growth – they can in fact be mutually reinforcing. Reducing traffic congestion, expanding our mass transit system, upgrading the energy grid and providing more capacity, and cleaning up contaminated land can remove many of the greatest barriers to economic growth. This was perhaps the single most important discovery we made: that smart investments in sustainability more than pay for themselves economically.

The third thing we found was that we didn't have to invent it all ourselves. As we developed PlaNYC, we shamelessly stole from cities around the world: congestion pricing from London and Singapore; renewable energy from Berlin; new transit policies from Hong Kong; pedestrianization and increased use of cycling from Copenhagen; bus rapid transit from Bogotá, Colombia; and even water-cleaning mollusks from Stockholm.

When you think about sustainability as we've defined it, it means taking actions today – some of which have significant costs – that will better future generations.

The result of all of this is PlaNYC, the long-term plan that the mayor unveiled last April. It is the most comprehensive plan ever undertaken by a city to address its own urban environment. It includes 127 separate initiatives, each one of them detailed, each one of them with identified financing sources. Together, these initiatives will enable us to achieve greater, more efficient use of our land, solving the problem of how the 2.7 million New Yorkers who don't live within walking distance of a park can live within walking distance. The plan details how we will clean up all 7,600 acres of our brown-fields, how we can reduce travel times while accommodating all the additional people, and it goes on and on. It includes specific actions that will create a sustainable city. You've heard about some of them, such as conges-

Our estimate is that the population of New York City will grow from 8.2 million people today, an all-time high, to 9.1 million people by 2030.

tion pricing. Planting a million trees. Hybrid taxis. Greening the building code. Each one, as I mentioned, has a detailed implementation plan.

Now let's return to the initial topic of political will: the mayor is only going to be in office for another 760 days. How do we sustain a sustainability plan that is designed to be achieved over a 20-year period? That, we believe, is where you come in. We need you to place pressure on our successors to sustain this. Already, we're placing pressure on ourselves by reporting our progress on the 127 initiatives every six months. Ultimately, however, we're not going to be here after 760 days, and so it will be up to people like you, who have influence, to hold our successors accountable.



Martin Filler

Martin Filler is a longtime contributor to The New York Review of Books and former architecture critic of House & Garden. He has been a Fellow of the American Academy of Arts and Sciences since 2003.

Presentation

What interests me as a critic trained as an architectural historian is the prehistory of the green cities movement. It takes us back to the mid-nineteenth century, to the English garden city movement. There was this sense in England that these Dickensian overgrown cities of the Victorian period (especially London, which in the nineteenth century was larger by far than any other city in the world) had reached the absolute limits of expansion. A number of theorists in mid-nineteenth-century England, Sir Ebenezer Howard chief among them, developed the notions of green belts and the maximum desirable size of cities, thoughts which were actuated in the early twentieth century with such new developments as Letchworth Garden City and Welwyn Garden City in England.

The English movement influenced a number of American thinkers – most notably Lewis Mumford and the other members of the Regional Planning Association of America (RPAA), a group of reformists in the early decades of the twentieth century – to institute some of these notions of limits on growth and sustainable cities for a new world and certainly for a new economic development in the United States. It was taken almost as an article of faith among RPAA members that the ideal size for a city was somewhere between 100,000 and 500,000, and that it was much better to build numerous small

cities of that size in a constellation around existing cities, insulated with green belts. We see this type of development in areas around London particularly, but also in other areas in Europe, specifically in the cities that were rebuilt after the war. So it's quite interesting in retrospect to see how in recent years notions of appropriate city size have changed.

New York is now sixth on national lists of green cities – or sustainable cities, if you will. In fact, according to the most recent calculation – which is based upon a complicated formula that involves various factors, including public transit, renewable energy, availability of local food, development and growth policy, and congestion and traffic

What interests me as a critic trained as an architectural historian is the prehistory of the green cities movement.

patterns – Portland is the greenest city in the United States, followed by San Francisco and then Seattle – three choices that would probably not surprise many of us. Chicago follows in fourth place, Oakland in fifth, and New York in sixth. Some of you may be puzzled by New York's relatively high ranking, but New York is actually remarkably carbon efficient thanks to its density, availability of rapid and mass transit systems, and proximity to locally grown food, among other things.

This city is starting from a position of strength, but undoubtedly the initiatives undertaken by the Bloomberg administration have done a great deal to increase its strength. Among the factors that Deputy Mayor Doctoroff cited – growth, infrastructure, and environment – the notion of growth has to be looked at most closely. Of course we want economic growth. Unless the city can employ people and maintain a viable local economy, the rest of these issues are moot. But I'd like to see perhaps more advocacy in places that would serve to galvanize the public interest. I was somewhat disappointed by the recently released proposals for the Hudson Yards development, which I was hoping would be

a showcase for sustainable design. I did not see a strong expression of that, and I hope that as those projects are refined and re-focused, there would be more emphasis on sustainability.

I can't stress infrastructure strongly enough. There's no question, as the Deputy Mayor has just pointed out, that 100-year-old systems of every sort – mass transit, water, all kinds of things that we depend on in this city – are reaching crisis proportions. This is due in part to the fact that the city has not received the funding that it should have received for several decades, at least since the 1960s, an issue that has very much to do with inequities in terms of returning taxes to this city, and one that the Bloomberg administration is well aware of. More help from the national government could improve things tremendously. The enormity of the infrastructure problem was brought home with great force last summer when the city was practically brought to its knees by nothing more than a heavy rainstorm, revealing how climate change, rising sea levels, and other issues are certain to become more menacing in the decades ahead.

Luckily, a number of institutions are looking seriously at these problems; they include the Institute for Sustainable Cities at Hunter College of the City University of New York. The Institute has an excellent website, which I would urge you all to visit. The Sustainable Cities Program of the University of Northumbria in the United Kingdom also addresses many of the same issues.

A few weeks ago, I had the pleasure of serving on an urban redevelopment jury for a large commercial multiuse scheme in Istanbul that was sponsored by the Zorlu Group, a Turkish real estate developer who is trying to approach sustainability with the same kind of seriousness and attitude toward excellence as the Hearst Corporation did in hiring Norman Foster to design this remarkable building. The jury included the Japanese architect and Pritzker Prize winner Fumihiko Maki and others, and the participants included a number of international stars. We found attentiveness to environmental issues shockingly superficial. The designs included, for example, trees positioned in balconies and other superficial gestures to green architecture that were handled like parsley on a plate.

It was taken almost as an article of faith that the ideal size for a city was somewhere between 100,000 and 500,000, and that it was much better to build numerous small cities of that size in a constellation around existing cities, insulated with green belts.

One of the participants said, "Thank you, no, I don't think I want salad with my architecture." The Hearst building, on the other hand, is an encouraging sign of the ways in which large corporations will engage these issues with the high level of expertise that has always been typical of the Foster office. Regardless of what one may think of it in terms of design, in terms of function and in its address of environmental issues, it's unimpeachable.

As much as I applaud the initiatives in this city that can serve as a real model for other cities in this country and around the world, I would love to see a few more dramatic set pieces that can further engage the public in the same way as the redevelopment of Ground Zero engaged the public in notions of urban planning. The enormous public response to that program gave a good sense of how the public can be engaged if approached in the proper way. ■

© 2008 by Frank A. Bennack, Jr., Joel E. Cohen, Daniel L. Doctoroff, and Martin Filler, respectively