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Guest on THE INFRA BLOG

Jonathan F.P. Rose, Sustainable Developer and Author of *The Well-Tempered City: What Modern Science, Ancient Civilizations, and Human Nature Teach Us About the Future of Urban Life*

Conversation with Steve Anderson, Managing Director, InfrastructureUSA

Cities Are Back in Style

There has been a cycle of appreciation of cities. They were deeply appreciated as America urbanized—from really the late 1880s until about the 1950s—and then we had the great suburban movement, people thought less and less of cities. But my sense is that they have been coming back. They've actually been coming back since the late 1990s, but we're increasingly recognizing the economic role of cities, the cultural role of cities, the generative power of cities. Because the world is so rapidly urbanizing—by the end of this century we expect that 80% of the world's population will live in cities—we now recognize that they are the centers of our civilizations. They are the cause of many of our problems, but they are also the nexus points upon which we can solve most of our problems.

We Need Social Cohesion to Overcome Our Challenges

Climate change is a huge challenge to all of civilization: not just to our cities, but to our agricultural systems that feed our cities, to the whole balance of nature which sustains all forms of life on earth. Climate change is an enormous challenge that we have to deal with, and cities can be very, very efficient—energy-efficient and resource-efficient—ways of living, and so cities can be part of the challenge, but if properly done can be part of the solution. What climate change will do is sea level rise. Most cities are formed around oceans or around rivers. Sea level rise is going to be a very significant issue for cities. Growing heat—I've read studies that show that by 2100 parts of the southern part of America will essentially be intolerable, that the death risk will be huge except when one is in air-conditioned spaces for many days of the year. Changing weather patterns—so we're seeing enormous droughts already in the Southwest, and torrential rains happening in the Northeast, exceptional rains that we've never had before, very, very snowy winters, mosquito-borne diseases going to places they never went before. There's going to be an enormous range of both predicted and unpredicted changes from climate change. The world's population is going to rise to at least 10 billion by 2050. The world's population is also becoming more middle class, and therefore consuming a whole lot more, which is depleting resources. We're seeing biodiversity loss; we're seeing enormous social disruption giving rise to fundamentalism and terrorism on one side, and income inequality on another side, and all these things are all happening at the same time, which means that there is a lot of volatility ahead. When you look throughout history, when there is a combination of climate change, resource depletion, and enormous income inequality, civilizations fall apart, and we see collapse. And when there's a lot of social cohesion, then civilizations are able to overcome some of the stresses they're facing. And so these issues are all interrelated, and as much as

we need behavior changes and energy-systems changes, and a lot of technological and certainly infrastructure changes to deal with climate change, at the root we also need to create a more equitable social system to accomplish them. I think we need to be aware of the crises that we're facing and the volatility ahead and then use the opportunity function of cities, the opportunistic capacity of them, and the generative capacity of cities to create a much greater resilient and equitable society so that we can surf through the crisis ahead and come out on the other side.

The Well-Tempered City: Music, Math and Cities that Work

The book is called *The Well-Tempered City*, and it's based on the idea of temperament, which is a musical idea. About 2500 years ago, Pythagoras observed that the distance between the notes on a musical scale was in the same proportion as the distance between the planets in the sky, and he said therefore there was this grand proportion, this sacred proportion that existed throughout all the universe. Ever since then people felt that they had to tune their musical instruments that way. But if you try to play that scale with another scale, they're slightly out of tune with each other, and there's no alignment. And so for the next 2,000 years you could never switch from one key to another key in music, which really limited the music, and around 1600 a system came out of China and came down the silk road and into Germany: the idea of temperament is another mathematical set of formulas that looked at how could you tune the notes a little bit in between—not perfectly, but so that the compromise between them all was very pleasant but it allowed you complete integration across scales. I view that as a new operating system for music, and at the same time there was a new technology that emerged called the clavier, which was a forerunner to the piano. Bach was so taken with both the new technology and the new operating system that he decided to write an instruction manual for them, and he called it *The Well-Tempered Clavier*. In his music he actually used every note on the keyboard and he showed how you could integrate every single major and minor scale that was known and it expresses this incredible harmony. He said that his purpose was really to reflect the architecture of the universe in music. This higher spiritual aspiration, this sense for big and deep harmony moved throughout this incredibly beautiful and passionate music. So if we look at the problems we really are facing today in the 21st century in our cities, a lot of it has to do with siloization. We have agencies that have totally separate budgets: housing and health and transportation and parks have not talked to each other, have not collaborated with each other. There have been boundaries between them. They've tried to perfectly tune them for themselves, but not for each other. And so the idea of temperament, in which you can create vast integration, to me, is exactly what we need in our cities. It's what we need in our public policy, it's what we need in our budgets, and it's what we need in our rules and regulations. Once that happens, then you see enormous opportunity unleashed for integration and for integrative solutions which tend to be much greener, much more cost-effective.

The Power of Civic Engagement

If we look a lot of the great city and regional plans that have been done, they have been done by volunteers. For example, the great Plan of Chicago, which shaped Chicago's growth for the next hundred years, was done by a bunch of volunteers. In fact, even

New York City's Central Park, a bunch of good citizens got together and said, "We need a central park." They even went out and commissioned the landscape architects. They ran a competition to design it. group of engaged citizens really can make a huge difference. What we deeply advocate for is that they first start on setting out a vision, because when there is a large vision of "What is wellbeing, what is the great city, what is the great society that we want to aim for?" it gives cohesion, it gives everybody a sense of direction as to where they're going. In the book I describe a wonderful process that Peter Calthorpe led with a group called Envision Utah. The people of Utah and the greater Salt Lake City area, many were living there because they love to hike in the mountains and ski and they love the beautiful environment. They were rapidly suburbanizing and they were choosing suburban homes, but at the same time the suburbs themselves were undermining the very reasons that they moved out there. They decided that they needed a master plan, and the first thing that they did was scenario planning where they came to understand that with a good economy what the growth was going to be, what the population was going to be, the number of schools they needed, the number of housing units they needed, et cetera. And then basically Peter turned that into a little kit of parts, like a little Lego set, and ran dozens and dozens of community workshops in which people were given these parts and said, "This is the future." He gave people big maps and they all sat around tables and he said, "You can put them on the map any way you want, but you have to take every house and building and whatever's in the box, and you've got to put them on the map, and let's see what patterns you come up with." So the first thing that people did is they sprawled them out, because that's what they were used to, and they were being given the feedback on what that created. All sprawl does is create more traffic, and they then began to create town centers and denser and denser places, and they ended up coming up with a really —on their own—with a New Urbanist vision, that produced the least amount of traffic and the greatest amount of home value and the most walkable communities and all the things it turns out that they really wanted. And so all the fight about NIMBY-ism and density and sprawl and all that stuff got resolved by people going through this exercise and understanding the consequence of different actions. Three alternatives—the sprawl alternative, the high-concentration alternative, and then a moderate one—were published in the local newspaper on a Sunday and again thousands, I believe tens of thousands of people gave feedback on that, and this plan was adopted for the region. The plan that was adopted by the people and by this group called Envision Utah had no legal authority. It had enormous moral authority. The hundreds of towns and counties and transportation boards and school boards, and everybody who actually had authority, started developing new plans that were in alignment with the vision. A light rail system was built and then town centers built along the light rail system, and that created an alternative transportation system, and all this fantastic stuff grew out of it, and the plan never had total legislative authority. When a group of citizens get together and collectively lay out a vision, and collectively wrestle with the issues, that's how powerful it can be.

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