Going Local: TRAVEL! CULTURE! Food! Music!

Wavelength

The Sustainability ISSUE

Music to Our Ears:
The New Musical Instrument Museum
Wavelength gathered some of the Valley’s most distinguished “green” thinkers and asked them to discuss energy, transportation, building, economic and environmental issues—and assess Arizona’s future.

Edited by John Werner and Trisha Coffman
Photography by Art Holeman

sustainability roundtable
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in a sustainable place? It’s hot, consumes a boatload of electricity, gives off a lot of heat at night, arguably has a questionable water supply, and we have four major problems. So the question I want to put on the table is: Do you think we live in a sustainable place?

BRYAN: On the energy front, we can survive. We have plenty of energy on a per-square-foot basis from the sun. That can be converted into many forms and used domestically. That’s not a problem. Its leader, Chris Vison and some economics that are more of a problem. The urban heat island is worse. We’ve had a nighttime minimum temperature increase of 10-12 degrees in the last 40-50 years, and that’s unsustainable.

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could make much of this Valley
unlivable. So changes are water and heat
island. But as far as energy for buildings, we can get that from our renewable resource, the sun. It’s a challenge, but it can be done.

MELNICK: All right, Stuart. Harvey talked
about solar radiation. Your expertise is in

MELNICK: There are always trade-offs between environmental quality and the economy. Does the perceived sustainability of a place, whether Phoenix or elsewhere, affect its economic health, or is it the other way around?

JAMES: That’s an interesting question. I’ve been around sustainability for years, but have never really figured what “sustainable” actually means. The heat island effect. The fact that we’re growing in an unsustainable way in the Valley by growing outward rather than thinking about population densities and growing upward. The draw of resources. I want to change the context to a worldwide sense. America is quite famous for pulling more resources out of the world system than the population on a pro-rata basis would say it should. I think that means over the long term—30, 40, 50 years—we will see funda-
mental changes to the nature of the economy and the amount we’re allowed to draw out. That makes us a little unsustainable, in technological and economic terms, however you want to put it.

MELNICK: Mick, you’re in the green business. There’s so much talk today about green jobs in the Obama administration. How does this play out between real private-sector opportunity versus some fad?

DALRYMPLE: You have to keep in mind that
solar—solar plants. There’s a movement
solar-powered. From an economist’s point of view, what will it take to solarize the state?

Now, every job is a dot-com job, because Internet technology is part of what we do all. I believe “green jobs” will likewise go away—that green jobs are just dot-com jobs. We’re just doing them a different way, using different tools, thinking in different contexts. It’s really about incorporating sustainability practices into what we do otherwise to be productive. As far as the private sector and how green stuff plays out, I haven’t seen a lot of change. With the stimulus, it seems revenue is being pushed down through state and local governments and not-for-profits. It should be from the ground up, versus having giant Haliburton type companies that don’t seem to be getting to the ground. A number of local governments appear to be using the funds to shore up the public sector and infrastructure. So, if it’s the private economy? No, seems more to be the public economy. That’s not necessarily a bad thing, but it wasn’t the original intent.

PERKINS: I agree that the stimulus is having a slower impact than the designers had hoped. But you have to look at the difference between state government and local government. At the state level, funds being approved are to shore up existing government operations—for schools, universities, health-care programs. On the local side, it’s different. In Phoenix, all funds are going back out for activities we wouldn’t have done otherwise. You can see the work underway at Sky Harbor—that would have been just off. There are real guys and real tractors out there working, that might not be otherwise. Same with the weatherization program. There’s $7 million that’s put a lot of small contractors to work weatherizing people’s homes. It’s work that wouldn’t be happening otherwise.

MELNICK: I’m going to go to Gary, who just moved here after 14 years in Beijing. When I spent time in Beijing, I was struck with how many problems we have, and Phoenix have in common that are challenges in sustainability—water, transportation, air quality, etc. Now, Beijing is 10 times the size of Phoenix. My question is, what do we have to learn from developing urban areas, and how can they learn from us? How do we export what we know about sustainability, and how do we take advantage of what they’re doing?

DIRKS: You get a lot of different develop-
ments in developing countries. The way Shanghai has developed is very different from Beijing, and different from Guang Chao and Chin Jin. But we can say as a starting point in how you create cities you feel good about from the standpoint of efficiency—the way they use resources, how they organize themselves—nobody has figured this out yet, at least not at the scale of a major metropolitan area. Even some smaller programs that are meant to be cities of the future are struggling. But therein lies an opportunity, because we’ve all got these problems. China is about 45 percent urbanized. They believe they need to get to about 80 percent. They’re putting about 16 million people a year into urban environments. In the case of the U.S., it’s hard to envision that we can be the way we are today two decades from now. That’s why we’re having these kinds of discussions. There’s a lot we can learn from each other about what developing countries are doing and what they’re experiencing, and where we see ourselves going. The best way to do that is to really get into detail, but the practitioners never get to sit down together in large enough numbers and frequently enough to say, “Well, I’ve got this problem and I’ve thought about it like this. What about you?” These metropolitan areas have to work, they simply have to. And there’s a real imperative to get together, exchange views and solve these problems.

MELNICK: You’ve just started running something called LightWorks. To the degree I understand LightWorks, it starts with investments in science, about converting light to energy. How long, far, complicated is the path from science to applying the science to make a place like Arizona more sustainable?

DIRKS: LightWorks begins with the idea that light is an extraordinarily versatile

PERKINS: Tammy J. Perkins

has been with the City of Phoenix since 1982 in various capacities, including assignments with the Office of the Mayor and Intergovernmental Programs Office, and as Neighborhood Services director. Her current stewardship includes the City’s sustainability policy. She earned a bachelor’s degree from Drake University, a master of public admin-
istration from the University of Denver, and is a graduate of the Senior Executive in State and Local Govern-
ment program at Harvard.
When you think of climate change, what comes to mind? Do you think of the polar ice caps or the Great Barrier Reef? Perhaps you think of the wildfires in California or the hurricanes in the Gulf of Mexico. What about the air quality in your city? Do you notice any differences in the air quality when the wind blows from different directions?

**Gary Dirks**

**Gary Dirks** is a professor in the School of Sustainability at Arizona State University (ASU). He is also the director of ASU’s Energy and Environment Initiative. Dirks is well versed in the field of sustainability and has worked on research in the area for over two decades. He received his doctorate in chemistry from ASU in 1980.

**ODLE: The regulation should go hand-in-hand with the market approach. I think it’s a fatal flaw to ask if Phoenix is sustainable. That’s part of the problem, that we tend to look at things in too small an area. The reality is, sustainability deals with the Earth’s ability to continue its diversity and production over a period of time. Sustainability requires criteria of space and time. If we say we’re not sustainable, we’re really making a prediction that only becomes a reality if you get to the end of the game. It’s a mistake to think of sustainability on a small scale. One strategy has to be to take responsibility for some portion of the lack of sustainability outside your own jurisdiction, in order to help educate and develop new technologies. So, should we regulate our way out of it? I think we can regulate a large amount by market-based activities. For example, everyone knows that the more scarce something is, the more restricted you have, the more it costs, and the more money is put into new technologies, looking for alternatives. There’s a need to decouple economic growth from environmental degradation. One way is to use taxes, whether carbon taxes or a permit system, that restrict the things we’re doing. Sustainability is a journey. It’s part of Phoenix’s responsibility not just to look in Phoenix but to look outside, to avoid the myopic vision of sustainability. When you integrate economics and social issues in a way that you enhance and maintain the adaptive capacity of the environment, and start taking responsibility for areas not just in but out of your jurisdiction, that will put us in a direction of improved sustainability.**

**PERKINS: Look around the room. You’ve got a crowd of white faces, and that’s too small a discussion. What sustainability might mean to me as a middle-class professional white person may not be the same thing it would mean to a grandmother raising grandchildren because her family is incarcerated, or to a new immigrant who’s just getting acculturated here.**

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**MELNICK: You said for all of the people living here. How do you that?**

**BRYAN: Increase the price of energy. Washington is talking about some kind of carbon system. Most of the rest of the world is farther along in thinking about those things than we are, but we’ll have to get there pretty soon. Until we value the environmental impact of emissions, we can’t start making trade-offs between different kinds of resources.**

**MELNICK: Anything anyone else would like to dictate?**

**BERG: We’re talking about enormous facilities we can barely find on a satellite map. So we have to drive it from the economic end. And if you can’t get there, you can’t get there. If we see pathways where research can get us there, we’ll pursue them. But it’s not an exaggeration to say that Arizona is the Saudi Arabia of light. We’ll be missing a real opportunity not to take advantage of it.**
“We need to have the sand in our shorts to say we’re going to be part of the world solution, which always starts locally.”

JAMES: I’m about to shoot everything down in flames! You can’t have social equity when you start increasing the prices of resources.

JAMES: I’m not disagreeing that we need to do something, but we need to be wary of the issues that surround anything we do. Because you can’t just go for a policy that everyone is to put PV on their roof. Because, you know what will happen? The first ones to do that will be the wealthy. They have more access to credit, can borrow like crazy, so where are all the current PV installations in wealthy areas?

BOWDEN: Is that such a bad thing? They’re still offsetting their enormous usage of energy and driving down the price of energy. They’re creating a market.

DIRKS: You see the distortions created by well-intentioned policy all over the world. Nonetheless, we have to be very careful about assuming the market will fix it. Because the problem, particularly with energy, is that rarely have developed countries developed policies that will work.

James came to Arizona from the United Kingdom with degrees from the University of Warwick and the University of Southampton. He’s been a faculty member at institutions in the UK, France and the U.S., and is currently a director of research and consulting and a research professor in economics at ASU. James has consulted for many international clients, including the European Commission, the Prime Minister of the UK and the Arizona Investment Council.

DREAN: From a regulator’s standpoint, I’m not sure you don’t already have these inequities you're afraid you're going to create by strong policy. If you look at India and Africa, approximately 15 percent of the population has electric power. Over 1.6 billion people in the world, representing a quarter of all humanity, do not have electric power—a significant worldwide inequity. You have to start somewhere, and we can’t continue with the fuels we have. We need a three times as expensive, the people in Fountain Hills will say, “I don’t care.” They use 1,000 gallons a day on their greenscape. But the problem is that people in downtown Phoenix—who use a fraction of the water—will say, “Wow, you just killed me. That’s taking a huge amount out of my budget.”

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James: There is an incontrovertible case that climate change is taking place. We, as humans have to do something. I take that as a given. All I’m saying is that when you make changes to whatever market mechanism, you have to be aware of the unintended consequences that will occur as a result of changing people’s incentives. If you have 95-96 percent of people in the U.S. have power to their home, the problem we’re going to create if we trelle the price of some resources is that that number will go down, and that will be a regressive step. We have to find a system whereby we in the Western world take less out of the system, and allow the developing world to levelize with us. Because we’ve had, since the Industrial Revolution, maybe 200 years of growth, and we’re enjoying the fruits of that. It’s unfair to say to the rest of the world, “Well, now we’re going to turn the tap off, and you guys are going to have to stay where you are.”

DIRKS: That is, in fact, the sustainability challenge. Because I can’t personally see any good reason, either considering the trajectory of underlying economics or from the standpoint of simple ethics, why there should be an enormous disparity between 20 percent of the world’s population and the other 80 percent. I just don’t see how we can believe that would be sustainable. This means we have to be planning, in this century, for some type of convergence if we believe the world is to evolve in a more or less stable way, as opposed to developing via discontinuities such as wars. It’s hard to see how the convergence can be around the lifestyle we enjoy.

MELNICK: I want to see if Harvey or Stuart wants to be king. You said your price things differently. Anything else you’d do? BRYAN: First of all, especially in the energy sector, tremendous subsidies exist in traditional forms. When a new technology comes along, such as solar, we see people coming out saying we shouldn’t be giving subsidies to this. And that may be true. We’ve had serious talks in the solar community about if we could take all subsidies off traditional sources, we could probably compete. Because that’s not the case, we would certainly like to be at the table, too, with at least some start-up subsidies. At some point that could be reintroduced. In California some of the rebate systems are winding down because they’ve got a level of penetration they’re comfortable with. That’s not the case here, so we’d like to encourage those, to get the technology off the ground.

DAREYMPLE: I'd argue that it wasn't really successful. Essentially all of that was front-loading, taking revenue out that we're lacking now. So essentially we had an economy based on borrowed stuff to attract people here for tourism or to live, so they could get jobs building buildings to attract people to live here. That whole economy was unsustainable, and it was subsidized through all of the national, state and local things, policies and financial markets. We're essentially living in the consequences of an unsustainable economy. We really need to take this opportunity to rethink and restructure. And when the legislature does unproductive things, like allowing builders to not pay any for infrastructure to make their developments sustainable, bankrupt cities, then we're moving in the wrong direction.

MELNICK: Do we need a whole new way of thinking about the built environment— materials, technology, financing mechanism, what we expect from buildings, how we monitor them? BRYAN: We have to put a performance-based metric on our buildings, like miles per gallon for cars. We’ve done some preliminary work, tested some buildings that were...
Bryan was trained as an architect at ASU and the University of California at Berkeley, and specializes in building technology and renewable energy. He serves in several professional and technical societies, including on committees concerned with energy standards and the environmental impact of building. He’s a professor in ASU’s School of Architecture and Landscape Architecture and serves on the board of the Green Building Initiative.

Melnick: We haven’t talked a lot about transportation, yet it’s a big area for sustainable how do you get people to ride the light rail? They all have cars, grew up with cars, poor people have cars. How do we get people to ride light rail?

Perkins: The people riding the light rail aren’t the people we thought we were going to be riding. It’s not commuters that are raising the numbers. It’s people coming downtown to see a movie and have dinner. So we have a tool that does things we didn’t even envision. The opportunity for Phoenix, and all of us, is to think about new technologies, whether it’s transportation or solar or new behavioral things, and not be afraid to learn that extra thing at the end. We’d have thought we could hop on a light rail at happy hour and ride around and hear musicians play?

James: I just want to throw this slight note of reality here. The UK has an extensive heavy rail system. You can almost live in the UK without interacting with private transportation. London has the premier underground system on the planet. With all that, and the bus systems, how much of England travels in cars? 95 percent. So if it’s a red herring to think we’re going to capture people’s behavior with public transportation, because it just doesn’t happen.

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