

Greening the City

BY MARA HVISTENDAHL

Cindy Ortega gets the credit for shepherding the world's largest LEED development from start to finish. Designed and built in just five years, MGM MIRAGE's 67-acre, 18-million-square-foot CityCenter is the game-changer among urban entertainment destinations—and not just in Las Vegas. As a former CFO, Ortega understands the business case for sustainable development in detail. Today, she's helping MGM MIRAGE green its properties and operations worldwide. We caught up with her in Las Vegas.

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Cindy Ortega is the senior vice president, energy and environmental services for MGM MIRAGE.

What led MGM MIRAGE to green CityCenter?

Cindy Ortega: Las Vegas is in a place where there probably shouldn't be a city—in the middle of a very arid desert with a harsh climate. But it's a city that continually reinvents itself. The question was how to develop CityCenter in a way that would be innovative and significant. We also asked ourselves what Las Vegas would look like in the future. It seemed safe to say it would be sustainable. For many people, the idea of a green building doesn't conjure up a sophisticated mixed-use development, but CityCenter proves that with the appropriate vision, organization, and determination, you can do the right thing with any building. That brought us to our next question: how to certify six LEED Gold projects at once.

How did you organize the certification process?

CO: We started early, educating our designers about the strategies that work in a LEED development and what to avoid. That way, we ended up with designs that were beautiful and sustainable from the very beginning. When we reached the construction phase, we sat down with the lead architects and the head of construction and went through our LEED-certification goals credit by credit. We broke down what each credit was and what it took to obtain it. We made the right people accountable for each one.

One issue we identified in studying past LEED projects was that developers often fell short of their goals. This was early on, of course, when everyone was still figuring out how to do LEED, but we didn't want to repeat that mistake. It was extremely

important to us to make our mark. We anticipated there would be elements that were beyond our control and some credits that would unravel, so we set the bar higher than LEED Silver. In fact, everything came together. In the end, we exceeded our goal. We got LEED Gold.

Did you consider any other approaches besides LEED?

CO: We focused on conservation. That took in energy conservation, water conservation, and lifestyle choices. We reviewed other rating systems, such as Green Globes, and we also considered focusing on overall carbon footprint and greenhouse gas emissions. Ultimately, we decided to use the LEED rating standard for design and construction, and to emphasize conservation in our existing properties, because that was a language our employees could understand. It's another way to get to the same place.

Environmentalism is about being more mindful of what you use, and wasting less. There's always a financial incentive to do that! The future operation of the building is by far the most important part—that's where the energy and water savings comes in. But we also embraced walkable urbanism. CityCenter is a very dense community, which also reduces its resource use. We give out parking permits for green cars, and we have a people-mover system that lets people get from place to place quickly without having to drive. These strategies earned us an urban-living credit toward LEED Gold, but they also make CityCenter highly livable. That's another payoff. We can't really calculate its value, but we know that achieving LEED Gold gives us an advantage with homeowners.

Has the business case for sustainable development changed?

CO: The costs are coming down as tax incentives push the growth of the green construction industry. When we started CityCenter, we couldn't find a construction waste-recycling company large enough to handle the amount of waste a project of this size generates. We didn't want to send our waste to landfill, so we made a loan to a small waste-handling company, which used the money to buy more trucks and increase the size of its facility in Las Vegas. With that company handling our waste, we recycled and reused over 93 percent of it—285,000 tons. In the beginning, that company cost us substantially more than sending the waste to landfill. In just three years, those costs were almost at parity. CityCenter boosted the demand for green services and products, so the recycling business in Las Vegas grew very quickly. The project also trained thousands of people in green construction.

While we were developing CityCenter, MGM MIRAGE reduced the energy consumption of all of its Las Vegas properties by six percent—a very large number in a desert climate. We also introduced a training program to educate our 40,000 employees in the city on how to reduce their own environmental impact. Implementing changes at this scale isn't easy, especially given the financial challenges Las Vegas has experienced. Yet we didn't drop a single sustainability initiative. The business case is that strong!



CityCenter, Las Vegas, NV

David Nieh, the former chief architect of the city of San Jose, California, is now Shui On's point person in Shanghai. With the Xintiandi project, Shui On brilliantly reshaped urban development in China by turning a run-down corner of the Puxi district into a vibrant mixed-use destination that, by restoring and reusing the area's charming and historic shikumen land houses, proved their value. Now Shui On is pursuing another ambitious goal: Net Zero development. Nieh is spearheading this effort, helping Shui On hit its new green target in a way that makes business sense. We spoke with him in Shanghai.



Xintiandi, Shanghai, CN

David Nieh is the general manager of Shui On Development Limited in Shanghai.

Why the focus on Net Zero?

David Nieh: At Shui On, everything is geared toward sustainable development. We require all of our projects to meet the evaluative criteria for one of the major green building standards. We started off with LEED because we have a number of multinational companies as clients, and LEED is internationally recognized. More recently, we ventured into China's green building standards because we have some residential projects geared toward up-and-coming Chinese consumers. We're using the British BREEAM standards on another project because our partner's vendors understand it. But we feel that none of these standards is really sufficient for our purposes as the leading sustainable developer in China.

Take LEED, for example. It's calculated on a point system that was created for the US market. It doesn't always make business sense in China. LEED assigns one point at the building level for providing bike racks—something that costs a few hundred dollars. It also assigns one point for installing a high-performance mechanical system that can cost millions of dollars. These are obviously two different cost-benefit analyses. And LEED won't tell us how much energy savings we get from a building. When we're sizing the systems or operating the building, it's really important to get that savings into the budget.

Net Zero starts from the premise that the energy use, water use, waste generation, and the use and reuse of materials and products—all the "streams" of development and operation—are quantifiable. We can measure how much water and energy a business uses or saves. We're even able to measure carbon emissions. That allows us to do carbon financing, which brings in additional revenue.

How does Net Zero work in practice?

DN: Net Zero is part of Shui On's triple-bottom-line strategy, which considers the environmental, social, and financial returns on our investments. The idea is to look at a development holistically, at the community level, not just at the building level. That's also how Net Zero becomes attainable. For example, if you introduce clean technology at the building level, you can cut its energy use in half, but you can't get to Net Zero. But if you implement district-wide systems and integrate and optimize energy, water, and waste, you can get closer to zero. Transportation systems are also a large part of

the equation. By linking the buildings with public and shared transit, Net Zero is achievable.

Our developments are typically large—at least 10 million square feet in building area—and mixed use, so we have the critical mass to share systems, ensure efficient transit access, and generate carbon credits. Greater scale means greater efficiency. Let's say we implement district-wide heating. In the daytime on weekdays, heat can be channeled to the office buildings. During nights and weekends, it can be channeled to the housing. We're using the same set of equipment. Water and waste can have similar efficiencies.

Is there a business case for Net Zero?

DN: As a developer, we always have to make a business case for sustainability. That means calculating capital and operating expenditures and plotting them against revenues from selling the heat, waste water, and electricity generated by the development. Carbon credits are another important source of revenue. It's an emerging market and there's no carbon-credit market for individual buildings, but soon we'll be able to get credits if we group buildings together. China incentivizes a number of green building strategies, and we factor that in, at least in the short term. In most cases, we can recoup our investment in sustainable systems within five to seven years. Then they start saving money or even making money. Remember that buildings are fixed assets. One-third of their energy consumption and carbon emissions comes in the construction phase and two-thirds in use. So while there's a strong business case for Net Zero, we actively manage the operation and maintenance of our buildings to make sure we get the return on investment we expect.

Will China take the lead in sustainability?

DN: Absolutely! China is already doing it. Take solar: I went to an industry exhibition in Shanghai in 2009 and counted a few hundred Chinese companies that are producing photovoltaic panels. A lot of them are subsidized by local government, so there's likely to be consolidation in the future, but—just like Silicon Valley—once you get a lot of these companies clustered together, innovation happens, especially with market scale.

China is also looking at effective technologies to clean up the air. Coal is not going away in the foreseeable future, but European cities like Copenhagen and Stockholm also rely on coal plants for power. They rank as some of the cleanest cities in the world, so they are a good precedent for China. People here are highly entrepreneurial. If they see the

commercial reasons for going green, and if the government understands it and guides it through policymaking, there could be widespread adoption of sustainability. I think there's great hope in China for a low-carbon lifestyle.

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