When it opens on September 13 The Parisian Macao will be one of the most efficient integrated resorts in the world, setting a new base line for resort construction and management.

From energy efficiency and water management, construction waste management and recycling to new transportation solutions, The Parisian Macao claims to have conceptualized and implemented new ecofriendly solutions.

To learn more about the features, challenges and future perspectives the Times spoke with Rishi Tirupari, Director of Sustainability for Sands China Ltd.

Tirupari is the leader and manager of all environmental certification programs for Sands China Ltd and is responsible for the implementation of Las Vegas Sands sustainable development standards (Sands ECO360) for all new developments in the territory.

**Macau Daily Times (MDT) – Can you tell us how efficient The Parisian Macao property will be?**

**Rishi Tirupari (RT) –** The Parisian Macao, as a new building, falls under the “Green Buildings” pillar, one of the four pillars of Sands ECO360 program that is a general program for all Sands properties all over the world.
In early 2013 when we developed the Sands ECO360, we developed an internal sustainability document that we call “Sustainable Development Standards” (SDS) that provides guidelines for any new projects.

The Parisian was the first major development that was built after that so it was the first to follow that document that sets international standards for wherever we are building a new project. The document touches energy efficiency, water efficiency, indoor air quality, materials, waste management and recycling, among others, and aims to create a base line for the minimum standards we must follow. Then we develop from that and try to move that base line up in all possible ways.

For The Parisian, besides the SDS certification, we also wanted to follow LEED certification (or Leadership in Energy & Environmental Design) that is a green building certification program from the Green Building Council in the U.S. as that is the most well-known Green Building standard in the world (that recognizes best-in-class building strategies and practices). It is used not only in the U.S. but also everywhere now and this is our first project in Macau that is LEED-certified. This is an advantage for us because with the LEED forms we can contact contractors and others directly and say this is what we want. It works like a checklist for them and makes it easy for them to know what our angle is.

Regarding energy efficiency specifically, we took a lot of measures in The Parisian and we decided to make it the first 100 percent LED (lighting) building.

As a technology, LED has been in market already for a while but now we can really have LED for all purposes and without compromising guests’ comfort and luxury.

That in itself is very sustainable and efficient as when you compare LED to a normal incandescent [bulb] it is almost 50 percent more efficient, so from our experience we expect that The Parisian Macau can perform at least 30 percent more efficiently not just because of lighting but through other energy efficiency measures.

We have made improvements in many other aspects. Lighting is maybe the most visible one but behind the scenes there is a lot more on the pumps, on the control units... and others that are a lot more efficient than other properties, and that results also from our pilot test on other properties which allowed us to chose which one was delivering better results.

On water efficiency, for instance, we try to use ultra-high efficient water features. The technology uses a lot less water but guests do not notice that, the experience is no different, the showers reduce the volume of water but there is air injected into it so it really seems the same and feels the same but in fact the amount of water used is less. In terms of [results] we are aiming for the The Parisian to use about 40 percent less water than a similar building.

MDT – As you mentioned, The Parisian was the first building planned from the beginning to be “more efficient.” In the planning of an “Ecofriendly” project of these dimensions, what was the most difficult task?

RT – Technically it is actually easier to design a new building [than to adjust or transform an old one into a more efficient one] because it's a fresh cut, you can start from your idea about what you want the building to be.

We wanted it to be energy efficient, we wanted it to be water efficient, we wanted it to be environmental friendly and still make a business case, and since the building was at the design stage all these ideas were input into the design and that helped a lot.

We just needed to make sure that the designers and architects would understand that this would be a LEED certified project and this is our goal. Once we told them “this is what we want,” everyone worked together to find how to get to that [goal].

There are of course different challenges in different markets. If we look at Western markets like the U.S. which is a lot more mature, they have been trying to do sustainability projects for the last 25 years. In the Asian market for the last 10 years there has been a lot of talk, trying to evolve and keeping up with the changing certification standards.

So [in our case], it was just a lot of education; talking with the consultants and with the architects, explaining what we need and why we need it (...)and once they understood the goal it was easy.

MDT – Do you take any lessons from the construction of The Parisian that you can use in future projects?

RT – Definitely! Our consultants and contractors that have worked with us now not only have the learning through the process but they now understand sustainability and LEED certification in more depth. They might
have heard of it before but because this project allowed them to be very hands-on they definitely have a lot more knowledge and they can take it to [our] other projects.

For us it is like a building block. We took a lot of lessons learned from our existing properties and we used those lessons in The Parisian. Any other project that we build next in Macau or elsewhere we will build upon The Parisian [experience which is] our minimum now. We have to make sure that what we build next is as sustainable as The Parisian and we will try to make it even more sustainable as technology also evolves and improves.

We are always on the forefront and always try to find the latest products.

A good thing in having so many properties is that we can do a lot of pilot projects and test different solutions getting feedback from guests and from our operating team.

One thing we learned was the "mind set." When we started to talk about the LEED certification for The Parisian there was an assumption that the Asian market does not possess many products that meet U.S. Standards or LEED certifications, which is not true. The more we researched and the more we asked the consultants, we found that there are products available in the market. From the manufacturers' standpoint that was never a problem, it was the middlemen that did not have the knowledge about what the client wanted and what the manufacturer had to sell, so it was a case of educating the middlemen and not just taking no for an answer. We got the right product and it was actually easy in the Asian market as the majority of the products being used worldwide are in fact produced here. Once more, it was just a matter of educating the people involved in the process.

**MDT – One of the big issues on construction sites is construction waste. How did you manage and reduce that waste on site?**

**RT – A lot of people have this conception that recycling construction materials can be very difficult. But the market works in a very simple way; if there is value in that product then they take it to recycle.**

What sometimes happens is that there is value for the product but you need enough quantity [to make it appealing].

So instead of focusing on what we cannot do we focused on what could we do as a company to help recycle more. We implemented an extensive construction waste management program on-site focused on plastic, metal, paper and cardboard, and we made sure that each floor [of the construction site] had two of these stations with these big bins. All the contractors had to acknowledge the system and promise to follow it.

We made it easy for them, all they had to do was to separate and put the materials in the right bin.

It was a lot of effort from the company standpoint; we are talking of a total of around 400 collection bins plus the main collection point. We also had to hire labor to get those bins down to the main collection point and then we bought recycling balers to shrink the materials into cubes to make it very easy for the recycling contractor to pick them up and send them to a recycling facility.
That allowed us to achieve a rate of over 50 percent recovery through recycling materials from construction waste and that was due to the process and the way we made it easy for people to follow.

In addition to the recycling process, another thing that we focused on was to see how could we divert materials that go to landfill. For example, from the piles used in the foundations there is a lot of waste resulting from the final process to cut them to ground level. What we did was to divert that concrete and rebar to a land commission site that then used it for fill. Instead of getting new soil shipped from elsewhere we used what is locally available: we reused those materials.
MDT - Hotels, resorts and shopping malls are usually seen as “big consumers” of energy and resources. How can that image be changed?

RT - For sure, what we are doing not only contributes toward the image of our company but to the image of the industry itself.

When we look at our industry that works 24/7, the small things we do to save actually have a much bigger impact than what we do in our homes or our offices. We have been doing this since 2007 and we keep improving and doing more and we make it greener and more sustainable.

Our backbone is MICE and more and more companies search for places where they can hold their events, their conventions, which can automatically contribute towards their own sustainability programs.

We offer that as we have a specific “green meeting program” that can be adjusted to the needs of the clients in “how green they want to do it” and even if they are not concerned about it, it is still done in a green building.
where we do recycling.

MDT – Regarding transportation - this project will also use CNG (natural gas)-powered shuttle buses. Is that the most efficient system for the time being?

RT – We have a lot more than just the buses. The program includes all transportation systems. For example, [we provide] a large number of bicycle racks that can be used by both team members and guests.

Secondly, we are going to have electric vehicle charging stations and guests can use them when they come here shopping or for a show or when they stay in the property.

For now, we are going to have two charging stations that allow four vehicles to be charged at the same time. These are generic charging stations that allow all types of vehicles to be charged independently of their system or brand.

But once more, this [will be trialed] as a pilot program and if we see that there is a need for more, we will add more according to the demand.

The advantage of adding more gradually in the near future based on demand is they will probably be of a different generation, and technologically more advanced and efficient.

But going back to the shuttle buses, all the vehicles we are buying for The Parisian use CNG technology instead of being common diesel vehicles. They are definitely more sustainable than diesel vehicles, [but] are they the most sustainable? We are not sure.

We also need to note that these are guest shuttle buses and they need to be moving all the time, there is no downtime for them. So you cannot have a technology that ties them up.

We also looked into electric buses and we even piloted one as a team member shuttle bus. We can stop it during non-peak times and charge it but guest shuttle buses cannot be offline for four or eight hours.

So from what is available in the market and from our experience we find CNG a really good alternative and an environmentally friendly alternative to diesel powered vehicles.