



‘Economic success isn’t possible without good engineering’

Mario Seneviratne, a LEED AP and the first LEED Faculty outside the United States, is Director of Dubai-based Green Technologies. He has championed the cause of retrofit and sustainability in his mission to save energy while providing comfort cooling and better IAQ. In this freewheeling interview, he speaks to B Surendar about issues close to his heart.

You are working on a number of projects in Saudi Arabia. How do you see the market responding there?

We have been seeing quite a lot of high-end homes coming up in Saudi Arabia. I am talking of large developments – say 650 to 1,000 homes, and these are all aspiring to get some form of green certification.

People are looking at high-efficiency HVAC systems as well as IAQ systems. So we are seeing both – an increase in the number of projects aspiring for sustainability recognition and also a clamour for engineering improvements embedded in the very fabric of the projects. Also, we are seeing net-zero-energy buildings coming up.

Speaking of which, you had earlier alluded to working on a net-

zero-energy building in Sharjah. Have you been able to make any progress on it?

We had done all the engineering to demonstrate how it could be a net-zero-energy building, but the happenings of 2008 put it in the back-burner. However, we learnt a lot from the experience, from a technology standpoint, and we applied the learning to other buildings that we were involved in.

For instance, the 66% energy saving in the DEWA building happened owing to the R&D we had done in the Sharjah building.

Do you see the Green Building market maturing? Is the market adequately resourced in terms of low-VOC materials, say?

The Green Building market is maturing. I haven’t seen



I haven’t seen as many enquiries for LEED certification as I am seeing now

as many enquiries for LEED certification as I am seeing now. This is an indication of the green market developing.

We see an interest in Green Buildings in Dubai, and that is because of the relatively higher energy and water costs. So, when energy and water costs go up – and they will continue to rise, owing to various economic factors – people will want to spend on green. And if a building boasts

high water- and energy-efficiency, it will definitely fall into the category of Green Buildings.

As for your question about market readiness, it is really a myth that Green Buildings are dependent on materials. In the LEED system, there are only a certain number of points for green materials. So, we can raise a very good Green Building without the materials; you get most of the points from concrete, steel and glass. Generally speaking, the market has been ready, except for one or two items, like rapidly renewable materials and urea-formaldehyde-less materials.

There is a strong feeling that District Cooling needs a revamp in approach. What are your thoughts on this?

We are seeing a number of District Cooling projects being revisited for an evaluation on how to make them viable. From a technical point of view, from an energy point of view, a District Cooling project should use water-cooled chillers, which are more energy efficient. So, people should be spending their money and efforts in ▶

▶ using water-cooled systems – definitely so for anything above 1,000 TR. If you cobble together 10 such plants and call the system District Cooling, so be it. So that is the type of engineering that people should think about. Depending on the utilisation factor, they should conduct cost studies and, then, cobble all these buildings together. Now, if you are talking of a 100,000 TR project, with a 1.5- or two-metre diameter pipe, it does not make economic sense to me. It will need to be carefully studied.

Generally speaking, all projects need to be studied in great depth, not only their design but also their operation. I know of a District Cooling company that has ramped up on efficiency through the manner in which the people there operate the plants. They have worked on their plants for seven years or so and have plugged water leaks and are using the network as thermal energy storage. So it is not just the design but also how you operate the plant rooms. And in the case of this company, the people there have made a success of it. And it is not District Cooling that makes the system efficient, but the deploying of water-cooled chillers.



If you can demonstrate savings, people will spend that money. But showing is a science in itself!

We are in the midst of a nascent economic upturn. At least there are indications to that effect. With this apparent turnaround, do you foresee a return to compressed deadlines and engineering frenzy?

Economic success is not possible without good engineering. If a client is reluctant to spend time on good engineering, he will struggle to make that project economically successful. So, in short, engineering must be done.

What you see are instances where engineering is being done after the project is completed. We see the need for the fixing of problems that could have been avoided at

the design table. As a result of poor design, the client finds himself confronted with three times the work to fix things up. And the tragedy is that some of these jobs cannot be fixed.

We see a lot of engineering work coming up. Clients will always be clients, and they want results 'yesterday'. But there are a lot of clients that want to do things the right way now, either because they are not as financially robust as before, or because energy and water costs are high. People are asking themselves, 'Did we get the right advice?' I do see instances of a measured approach. District Cooling falls into this category.

Do you see any indications of a shift from cost as the dominant factor in purchasing decisions?

No. As long as clients are there, time and cost will be there.

I meant, cost overriding all concerns to the extent of compromising on quality, numerous instances of which we have seen over the years?

If you can demonstrate that the increase in cost will yield a better ROI, people will do

it. Energy savings and water savings are about reducing operating costs. If you can demonstrate savings, people will spend that money. But showing is a science in itself!

In recent times, we have been hearing plenty of talk on a surge in interest in VRF systems. Where do you see the market heading?

Firstly, I do believe VRF is a good technology. We have to find a way of bringing fresh air into the buildings, though I believe we are now getting systems with 100% fresh air. And secondly, we must see the costs coming down. Some of the gadgets associated with VRFs cost a lot. Of course, a VRF is one condensing unit with several FCUs connected to it; so, the electronics are complicated. The cost of replacing a small component is extremely high, and it has to be sourced from a manufacturer. This cost has to be addressed.

Overall, putting one refrigerant pipe with multiple branches is great. The VRF technology has great potential, if you address the fresh air and cost aspects. Technology-wise, it should work, because we are talking of one pipe, one cable and one condensing unit. ■



Brought to you by *Climate Control Middle East*

HVACR NEWS & VIEWS

The monthly e-newsletter platform of
Climate Control Middle East

FOR EDITORIAL-RELATED QUERIES:
B Surendar, Editorial Director & Associate Publisher
T: +971 (4) 375 6831 • M: +971 (50) 509 2457
F: +971 (4) 434 1906 • E: surendar@cpi-industry.com

FOR ADVERTISING OPPORTUNITIES:
Frédéric Paillé, Managing Director & Associate Publisher
T: +971 (4) 375 6833 • M: +971 (50) 714 7204
F: +971 (4) 434 1906 • E: fred@cpi-industry.com

www.climatecontrolme.com