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INFRASTRUCTURE ISSUE | SCIENCE & TECHNOLOGY – THE SECURITY SOLUTIONS OF TOMORROW
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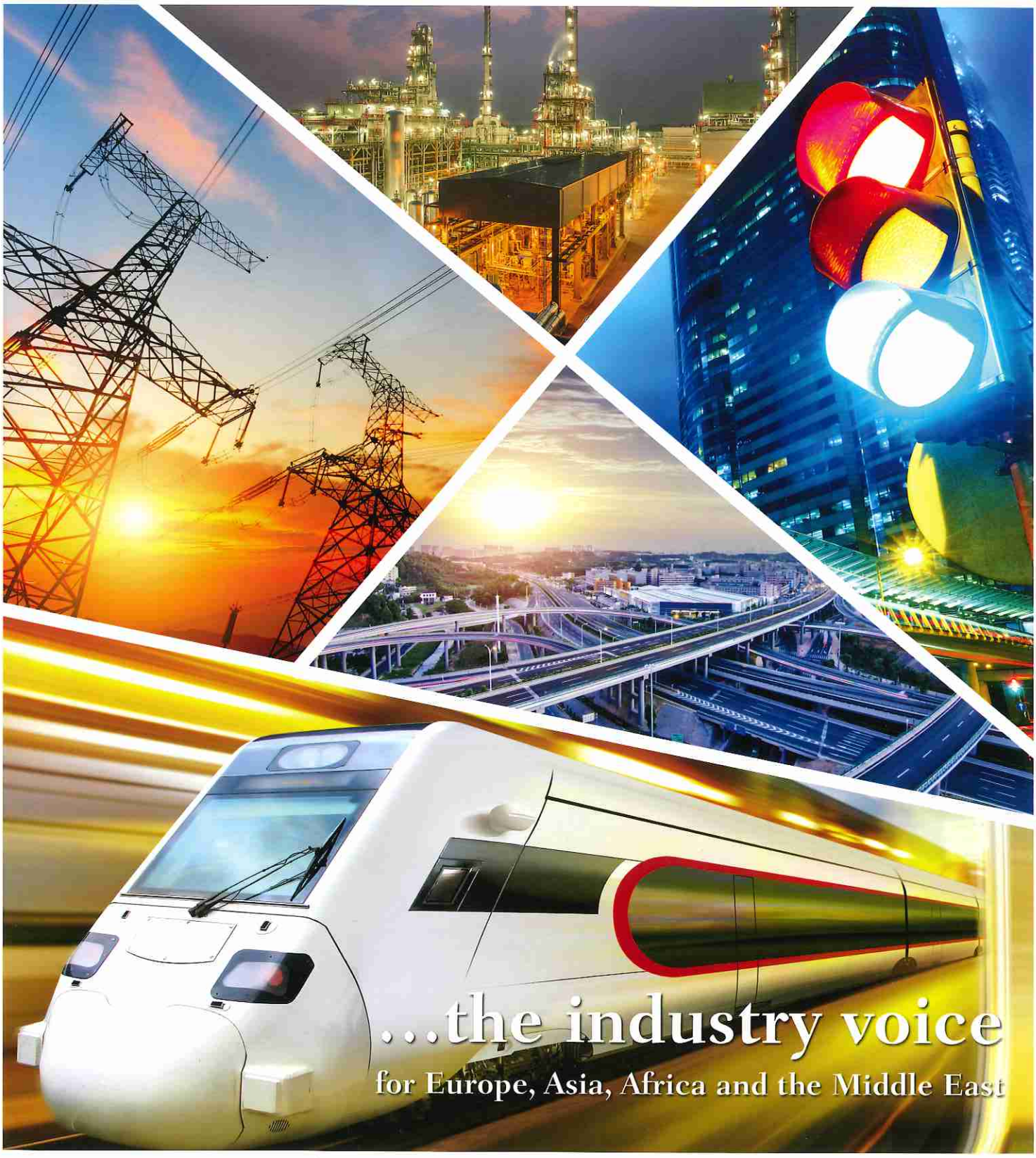

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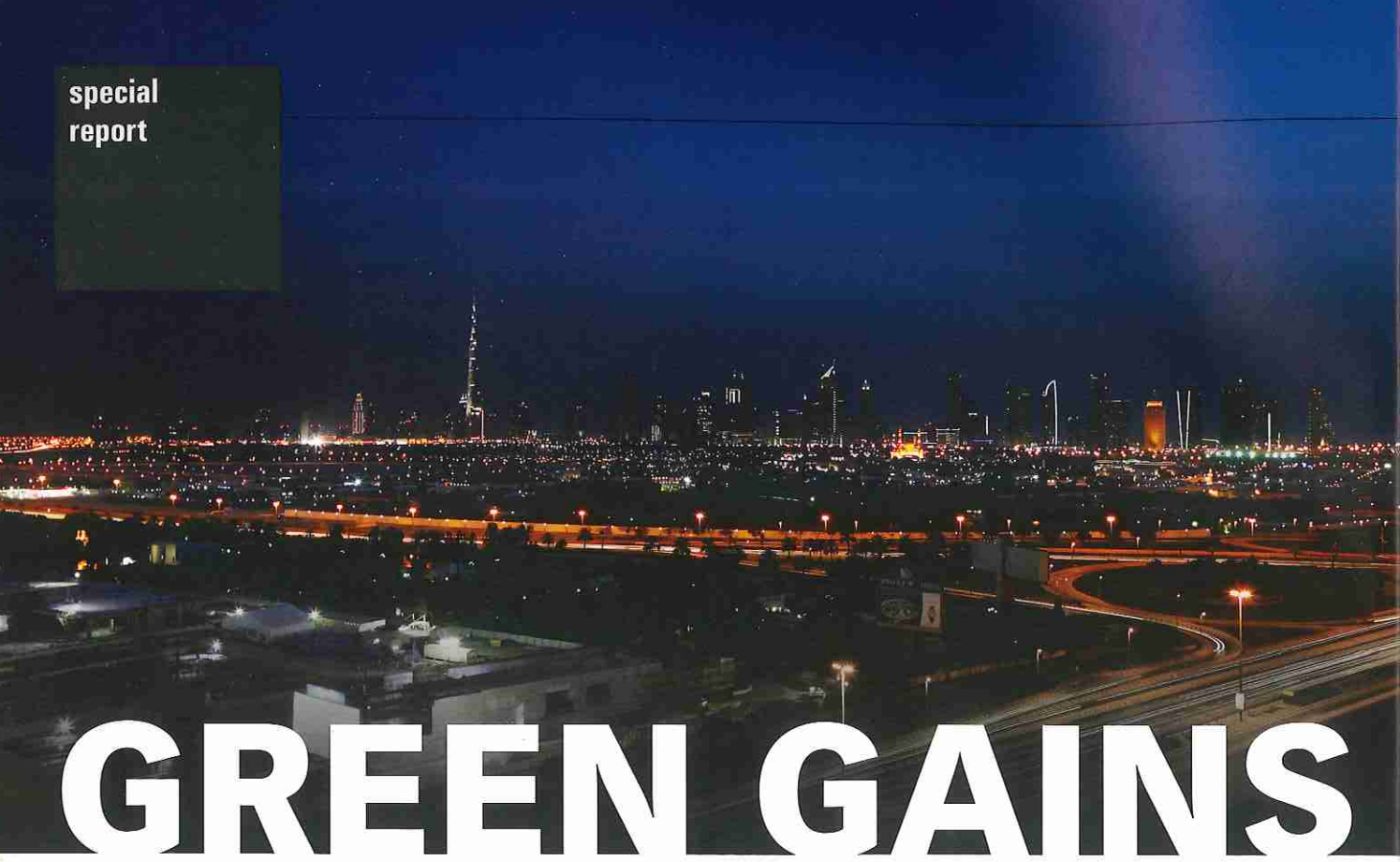

GREEN GAINS

The green building segment has made the transition from expensive, idealistic development, to much needed measures for future-proofing properties against escalating utility bills and environmental mandates. Sarah Pursey catches up with global green building expert, Mr Mario Seneviratne, to discover more about the progress of this increasingly vital approach to construction.

Five years ago, when industry analyst McGraw Hill Construction (MHC) first conducted its study on green building practices in the global marketplace, in association with the World Green Building Council, it was found that the top driver for building green was 'doing the right thing'. Today however, business drivers such as client and market demand are strongly influencing the sector, suggesting that green has become a business imperative. MHC's recent SmartMarket Report characterised the green building movement as one that has shifted from 'push' to 'pull', as companies come to recognise both the environmental and business value of sustainable, energy-efficient buildings.

It is within this context that I caught up with Mr Mario Seneviratne – one of the world's leading advocates of green building. Having been a member of the non-profit organisation, the US Green Building Council (USGBC), since 1998, Mario played a key role in developing the technical side of LEED version 1 Green Building certification. He was one of the six founders of the Emirates Green Building Council in 2006, and has since been inducted into the inaugural class of 34 LEED Fellows the world over, in recognition for his exceptional contributions to green building and significant professional achievement within the rapidly growing community of LEED professionals. Mario is also the first USGBC LEED Faculty member outside the United States and has trained over 1,900 professionals in LEED.

Through his business, Green Technologies FZCO, the Mechanical Engineer has been involved in sustainably developing a long roll-call of prestigious projects across the Middle East, including Wafi City – one of the first utility buildings in the world to receive LEED Gold recognition and the first building in the Middle East to be awarded the rating – and Dubai World Trade Centre (pre-certified LEED Gold in 2008) – a mixed use development that has the potential to become the largest green building development in the world.

Platinum projects

Mario's business is based in Dubai – a city that, with its soaring skyscapers and indoor ski-slopes, might not immediately spring to mind as a setting for sustainable development. Home to the tallest building in the world, it is more often associated with consumption of the most conspicuous kind. Yet now it is also home to the world's most sustainable commercial building – The Change Initiative (TCI) on Sheikh Zayed Road. The 4,000 square metre shop, which, fittingly, provides sustainable solutions, has secured the highest Platinum LEED rating, achieving 107 points out of 110. Yet this is not the first platinum-rated project in Dubai, and even the big ticket projects form part of a wider trend in the Emirate, and the UAE in general, as Mario explains. "Everything in Dubai has to make commercial sense. We therefore see greater efficiency coming to the fore as prices increase. Dubai is certainly not a cheap city to live in, but even by Dubai's standards, property prices are high at the moment. And one of the key reasons for this is that energy and water costs here are the highest in the Middle East."

Indeed, Dubai's power plants run on natural gas – all of which is imported. During the summer months, when increased air conditioning causes a spike in electricity consumption, the emirate is forced to buy expensive LNG, thus adding to the expense, which, in turn, is passed on to consumers via a fuel surcharge.

As important as soaring utility prices have been in the UAE's efficiency drive, it is the government's commitment to sustainability that has guided this sentiment. "In 2006, the country's leadership made a commitment to sustainable development, and since then they have really pushed this agenda," notes Mario. "The recent Dubai Global Energy Forum highlighted especially the drive towards solar, with an upcoming 1,000 MW solar farm that is set to become the largest such development in the Middle East."

Encouraging the use of PV panels on rooftops of residential properties, office buildings and industrial facilities forms another pillar of Dubai's solar plans. "Key to this effort to bring solar to the grid is Dubai Electricity & Water Authority," says Mario. "So, in the UAE it's a combination of the leadership in the country pulling this forward, with the financial benefits becoming clearer to the consumer."

Making the ordinary extraordinary

Mario's view is that, given the processes undertaken in developing a LEED certified building, invariably the result will be a better quality building, by default. "While you could have an energy- and water-intensive building of good quality, a green building will still have an intrinsically higher quality. It's also important to bear in mind that 'green building' does not necessarily mean that you have to have PV panels all over the roof – it's about good architecture and engineering. A well-designed building will inherently save 30-40 per cent energy and 30-40 per cent water. And that should really be our objective.

A good example of this is one of the most efficient buildings that Green Technologies FZCO has recently been involved in developing: the headquarters of DEWA's Water & Civil Engineering Division, which opened for business in February this year. "This just looks like a regular office building," remarks Mario, "yet it was developed with the vision to use less energy, less water and less materials." In so doing, the new DEWA office has become the largest government building in the world to secure a LEED Platinum rating. Features include: special glass to reduce heat transfer into the building; additional insulation to walls and roof; a fully automated control panel to control the cooling; AC and ventilation units; efficient water-cooled chillers; low-powered LED lights and automatic lighting control systems with occupancy sensors; and an on-site grey water treatment plant and sewage treatment plant, with treated water reused in the cooling tower, for irrigation and flushing toilets. In addition, more than 20 per cent of the project site features vegetated open spaces, ↘

with a dedicated area for the collection and storage of materials for recycling, as well as good links to public transportation. Together with an on-site 660 kW solar power plant – one feature that arguably makes this stand out from a regular office building – these measures help the DEWA building reduce consumption of energy by 66 per cent and water by 48 per cent. In addition, 36 per cent of material used in the construction comes from recycled content. "While it just looks like a regular office building, what it has achieved is phenomenal," remarks Mario. "It is a clear of example of how we should be creating buildings."

Lean and green

While such developments sound impressive, there has long been a stigma attached to the green building sector in terms of the perceived additional costs incurred in developing such projects. "People assume that a green building needs to have lots of PV panels and hot water panels, and automatic sensors all over the place – and of course, you can implement those measures, but they are not mandatory requirements," responds Mario. "One of the main points that I'm keen on emphasising is that our approach to green building involves a zero cost premium," he stresses. "A green building saves water and energy by getting the normal architects and developers to design and develop this into the project. Of course, in the Middle East, people have the money to spend – I recently heard that Dubai has the highest per capita retail spending in the Middle East – but the key is to get them to spend it wisely. Having that outlook will result in more water and energy being saved."

So, getting people to understand that green developments do not require piles of cash is obviously important. The next step is getting the right advocates on board, says Mario. "Even if the clients are in favour of developing a green building, the design and the contracting team may show some resistance due to lack of awareness and lack of knowledge in this area. It is therefore a case of educating and giving these individuals the confidence that the same effort is required. That said, such projects inevitably require a more organised and time-conscious effort – a more integrated approach. Once you have that increased awareness, then it is really a case of business as usual."

Another important area of the green building sector – and Green Technologies FZCO's project portfolio, representing 20 per cent of the company's work – is retrofit projects. With a shorter payback period, plus similar expectations for reduced operating costs and increased building values when compared to new green buildings, there is no surprise that firms are increasingly looking at renovation options for increasing the efficiencies of existing structures. And savings on such projects can be huge, especially when such work is undertaken on structures as large as the Empire State Building – its green retrofit will cut the building's energy consumption by 40 per cent and will save about US$4.4 million in power costs each year, while the retrofit will pay for itself in just three years.

Taking the LEED

With education perhaps the most crucial component in driving the adoption of green building development, Mario holds workshops across the Middle East to increase awareness and provide professionals with the tools to move forward confidently into the sustainability arena. "The workshop that we are holding at the Kuwait Big 5 show in September will be the 'LEED 201: Core Concepts & Strategies'. For me, this is the most important class for anyone that wants to understand sustainable building. In the past, most of the people that have attended this class have come up to me afterwards and said, 'You make sustainability sound so easy' – and that is really my goal with LEED 201, to talk to anybody with an interest in sustainability. There is obviously a technology component to it, and it is our goal to make that very lucid – we find that people really appreciate that. They may come to the class with a sense of apprehension, but they leave it confident in what they should do," says Mario, who advises that the workshop is suitable not only for architects, engineers and project managers, but also clients. "I would really encourage clients to come as it is important for them to understand that this is what they should be doing for their next generation of buildings, and that this will soon be a mandatory approach. Once the client understands the benefits, he will then drive the market. LEED 201 also promotes discussion on education, and will encourage those interested in pursuing professional credentials on how they can go about doing this. It builds awareness; it lays the groundwork for a technical understanding of what green building is, and will also set the stage for those looking to enter the educational side of the green building sector."

Evidently, there is a combination of factors that will lead to a rise in the adoption of green building practices in the years ahead. Similar to fuel efficiency ratings for vehicles, rating and disclosing the energy performance of buildings is becoming increasingly common around the world. The next step will be to mandate environmental building requirements – something that Mario sees upcoming in his home market. Above and beyond this, the market demand for green, as seen through the strong adoption of such developments in Dubai – currently the Middle East's most expensive city – indicates that the financial benefits of going green will likely be the greater catalyst for developers. □