GREEN DESIGN + GREEN BUILDING = ETHA

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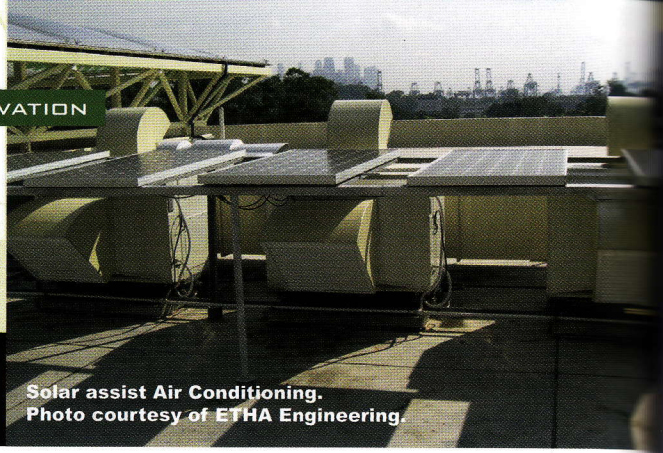

Solar assist Air Conditioning.
Photo courtesy of ETHA Engineering.

One decade ago, few people talked about global warming & carbon emission. Today, controlling emission and improving energy efficiency have become key concerns of any industry.

Given the fact that building emission is almost half of all greenhouse gas emission, the industry needs to take more ownership role to address the carbon footprint, towards creating more advance energy efficient building and development through passive design and adopting renewable power for the assisting the building's load.

Developers need to take the challenge head on. We need to change our mindsets and review our traditional approaches in recognition of the urgent need to act now.

There is a need to expedite and speed up the adoption of good energy practices by individuals, industries and governments to better prepare for the challenges of climate change, for a more sustainable future. Companies such as leading green developer City Developments Limited (CDL) have already embarked on the extensive use of solar power in its iconic residential projects such as Cliveden at Grange, and commercial developments like City Square Mall and Tampines Grande – all BCA Green Mark Platinum Award winners.

Buildings use large amounts of energy. Traditional designs of cooling & heating systems are not environmentally friendly as they treat electricity, cooling, heat, indoor air quality, water and other facilities' system as a separated system rather than as an integrated energy system.

Just take a look at a common measurement scheme. The energy performance of the air-conditioning system is usually evaluated based on quantity of the energy used for the space, which in fact fails to address the issue of quality of the energy, which is called "availability performance". This measures the true thermodynamic performance of any integrated energy system.

Let me explain further with these examples. Rather than having a separated cooling and water heating system, owners should seriously consider a heat pump system that uses the same compressor to produce air-conditioning and the same time using the waste heat from the compressor to produce hot water, thus the energy performance is greatly increased compared to a separated system.

Let us take a notch higher, we traditionally use fossil fuel to run generator to produce electricity, then we transfer this electric power to the building to run air-conditioning chillers. During the generation of electricity power in a power plant, there are huge energy losses in the areas of mechanical loss, heat and other losses like water. At the transportation of electricity from the power plant to the building, there are losses again in the transfer in terms of heat and resistance. By the time the electricity reaches the air-conditioner, the compressor being a machine of mechanical nature will have mechanical loss and heat loss up to 50 percent. There are huge potential savings here, with an opportunity to establish a more quality and cost effective system by simply using various options available in the market, like a direct CNG driven chiller to create air-conditioning to the building with savings of up to 80 percent, or other alternatives like design in Solar Driven air-conditioning which can be operated without grid.

The fact is that true efficiency is simply output over input. If we are still using an efficiency benchmark on the individual HVAC system, we are on a narrow path looking only at the quantity and not able to reach far on the quality aspect that are be effective in achieving a more meaningful sustainable building.

Policy markers and developers need to go considerably further in the reduction of emissions, designing advance green building to combat the ever increasing climate changes to a more acceptable level as our only planet cannot wait forever.

The leading green developer CDL based in Singapore has already embarked on Solar-power assisted installation in their recent iconic buildings. And the good mates in South Australia government recently introduced into state parliament the first feed-in laws in Australia, which allow consumers to sell back electricity they produce in their homes or business to the grid at a profit. If approved, the SA laws would allow consumers to be paid twice as much for any electricity they return as they would be charge for it. Indeed an innovative way of seeding a solar powered green nation.

We ask all policy markers to think green in decision making and adopt a long term view. This we believe will see the emergence of a new segment of sustainable electricity source and electricity users dubbed as "pro-sumers", or energy producer by day and consumers by night, making everyone having ownership and the chief executive officer of their own power station, how is that for a paradigm shift in mindset ?

About ETHA Engineering Pte Ltd

ETHA Engineering Pte Ltd designs state-of-the-art green climate control technologies and specialist solutions to minimise energy wastage and carbon footprint through integrated hybrid eco offerings and create greener buildings. The company was founded under the philosophy of providing "Efficient Energy & Environmental Solutions" to the HVAC market.

ETHA green design is focused on energy efficient, smarter and more environmentally responsible way to cool. The company hopes to achieve the world's highest level of energy efficiency without ozone depleting chemical. ETHA aims to offer best of its class and leading energy efficiency ECO COOL Green air-con and hybrid air-conditioning systems for the industrial and commercial segments in the Asian markets.

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