A WALK THROUGH THE WORLD OF IIID AND BEYOND

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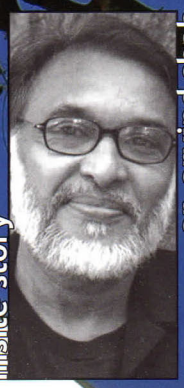

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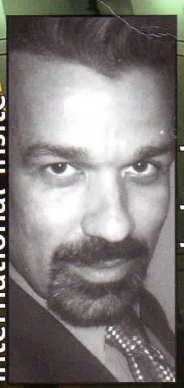

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Different Strokes, Different Styles

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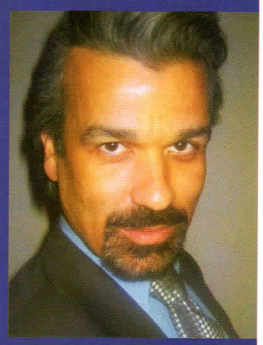
FUTURE SHOCK

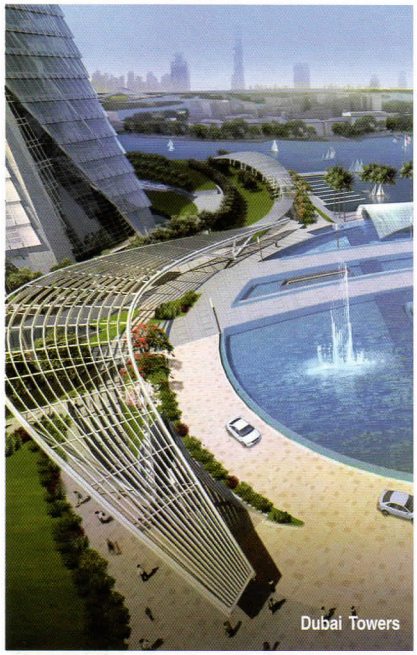
BRIGHT LIGHTS, BIG CITIES

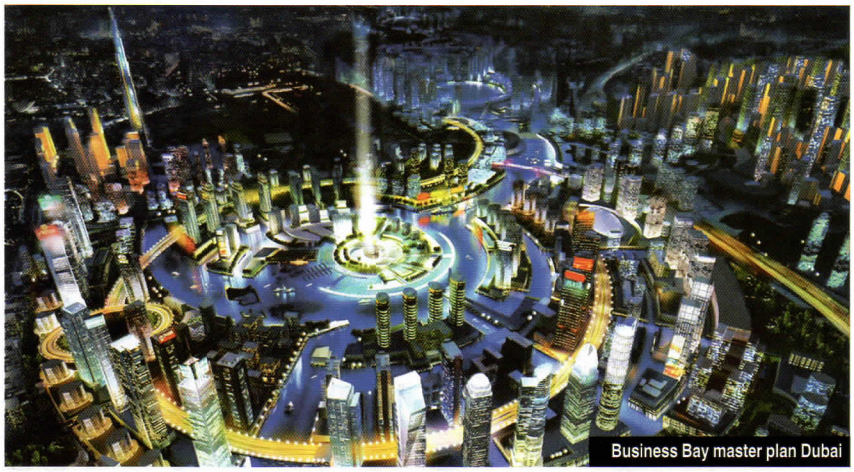


The amazingly talented and dynamic architect Behr Champana - Gagernon is famously associated with futuristic buildings. The forms and structures, he employs in his architectural creations do not, at first glance, suggest the influence of the sustainable design ideology. However, a closer look and analysis of the design of the Dubai Towers in Dubai, UAE (taken as a case-study here) brings forth the designer's burning passion for the environment!!

Text: Roopa Sabnis Pinge, Architect & Design Critic, Mumbai

References: ProQuest Discovery/Ethan Goffman; World Watch Institute/JR Pegg; Green Futures


Dubai Towers


Business Bay master plan Dubai


Atrium Dubai Towers


Atrium Dubai Towers


Dubai Towers Skyline

The green battle - between the developed countries and the developing ones is a ceaseless one. We know the developed world's contribution to global warming; but still have to get sermons about how we, the developing countries, should cut down our carbon emissions, reduce our carbon footprint and help save the earth!

In the world of architecture and building construction, the word 'green' at once suggests and implies a low-rise, organic development using locally available materials and skills and harnessing all the renewable energy sources.

Futuristic and Sustainable are words, which do not really gel well together. In our minds, the two have drastically different, even contrary connotations. It is therefore difficult to accept an architect doing futuristic buildings preaching sustainability.

Architect Behr Champana - Gagernon, however, is set to bust these myths. In a presentation that he did as the Vice President, TVS International; for the Light India International Conference organized by the Indian Society of Lighting Engineers (ISLE) in association with the Institute of Indian Interior Designers (IIID), Champana brought to the forum a refreshing perspective.

Now, the President and CEO, Quantum- AIP Architects; Champana is known internationally as an extremely talented world-class architect and innovator. Behr has over 26 years of experience in the areas of master planning and site analysis, architectural design excellence, programming, construction documents and administration, and business development. In October 2008, he was selected among dozens of international architects to be featured in a worldwide cable special called "Impossible City" in the DISCOVERY CHANNEL on the amazing projects currently being built in Dubai, which included some of his latest futuristic and sustainable projects.

His relevant project experience includes the design of very large mixed-use and complex facilities such as: resorts and hotels, convention and conference centers, large office buildings, retail centers and shopping malls, housing, and other mega commercial mixed-use developments. Behr has also gained a reputation as prolific architect, possessing a true passion for his profession that has resulted in many design awards and winning many national and international design competitions.

In his tenure as Vice President at TVS International, he was the main creator of architectural design concepts of the Dubai Towers, Dubai, and has successfully guided his teams in the visionary master plans, he was currently doing worldwide, including Business Bay and The Lagoons in UAE. He has extensive design experience in the USA and internationally, particularly in the Caribbean, Latin America, Europe and the Middle East. He is fluent in 6 languages and is also an accomplished and talented artist, whose work has won freehand drawing competitions and has been exhibited in museums and galleries.

His views on sustainable design and his interpretations of 'green' in his own architectural output are dynamic and honest; and most importantly unbiased. "There is wide discussion between economists and market trend forecasters that the economies that will lead the world markets for the next 60 years will be focused between the Middle East and

Asia. These predictions are based on the accelerated growth and rising demographics in such countries like China and India, which currently contain well over half of the world's population. Population growth fosters economic growth at all levels, and real estate developments in emerging economies-such as China and the GCC countries -have proven in recent history to create and apply new technologies in ways never imagined before," says Champana.

The focus of Champana's presentation was on the three main inter-related topics:

A- Sustainability-
What emerging economies need to consider in the planning and design of future urban cities

B- Saving Our Watts-
The need to focus on saving energy, seeing the light about energy efficiency, the effects of "light pollution" in the built environment, and why we need to develop a "sustainable design mentality" that will lead to innovative solutions.

C- Future Shock-
How the latest innovations in energy conservation and lighting technologies will be shaping our perception and realities of the sustainable cities of tomorrow to best preserve our environments.

"India and China are now positioning to join the United States as "world powers" with the economic muscle and influence to transform the ecological future of the Earth.

However, serious concerns remain that the booming economies of India and China will result in increased ecological and political instability, unless the two Asian giants steer the world towards a path of sustainability and adopt an 'energy efficient mentality'. The lack of this early mentality by the most developed world economies is what is currently affecting the natural environment and resources of our planet," believes Champana.

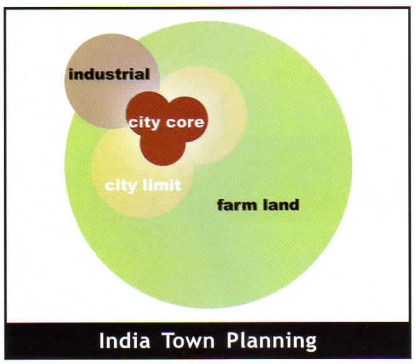
"In recent years, The WorldWatch Institute has cautioned that the choices India and China make in the next several years will have a huge impact on the quality of life throughout the world. But, there is ample evidence that both are following the western model on several fronts - in particular in their use of fossil fuels. Coal provides more than two-thirds of China's energy and half of India's. China is already the world's second largest emitter of carbon dioxide, while India ranks fourth.

India and China must be major players and lead in efforts to combat climate change. Both nations also are growing increasingly thirsty for oil. The fight for "global resource consumption" is already evident," observes the architect.

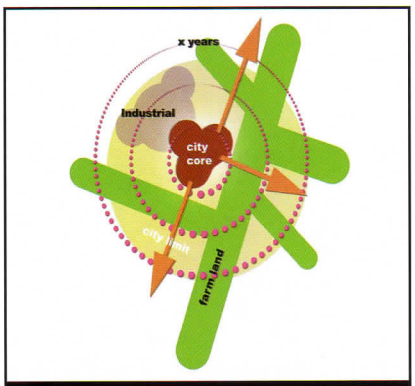
The Centre for Science and Environment in India has advised that India aims to increase renewable energy's share of its power from five percent to 20-25 percent - it already has the fourth largest wind power industry in the world. China has tightened fuel economy standards and declared public transit a national priority. Rainwater harvesting strategies are spreading in India. Efforts also need to be made to use more solar power to heat water. Over 35 million in China use this sustainable method now. Around 400 million people in India still rely on kerosene for household lighting. New cutting-edge technologies now combines next-generation LED lighting with solar panels that can provide a durable, portable light sources in remote areas and villages.

As Champana says, "The road ahead must remain optimistic. In Asia, both India and China along with the Middle East have the opportunity and responsibility to push the world in a new direction and set new working models and examples in sustainable energy efficiency. New technological advances, good governance, and good social practices offer hope and feasible options to "waste less" and avoid further environmental degradation. Even with its escalating population growth rate, if the proper measures are taken, India can become a more prosperous country, with less poverty and better health and education, and a better conserved environment. It is up to India not to repeat the ecological pitfalls of the other world nations".

And great challenges may bring great opportunities. "If India can achieve the right mixture and develop the right formulas that will work for its multiple socio-economic structures, it might also act as a leader in a new world facing unprecedented environmental threats. China, India,



India Town Planning



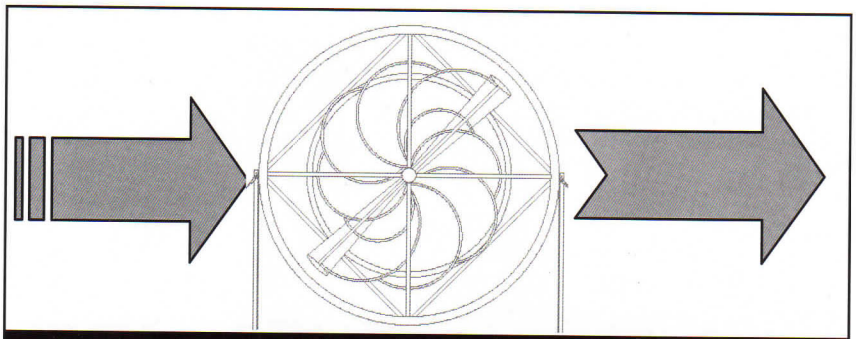
Sustainable Solutions - India Town Planning proposed by Chamapana

Plan for the city

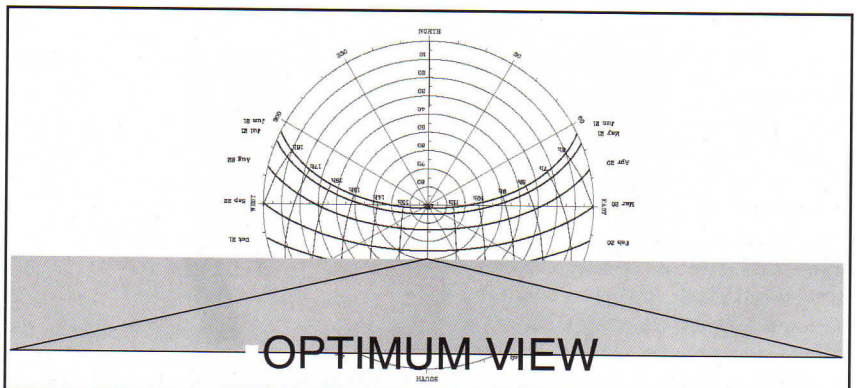
and the United States have a special responsibility to avoid a "new round of self-defeating great power competition" and should instead cooperate on creating a better world future," he concludes.

But, besides giving the statistics of where and how India is going wrong, Champana also highlights the ways in which the situation can be redeemed. The dilemmas we face are loud and clear: Environmental Destruction vs. Emerging Economic Gains; and Quality of Life vs. Economic Growth. As Indian eco-activist and environmentalist Sunderilal Bahuguna said, "You must decide whether development means affluence or whether development means peace, prosperity and happiness".

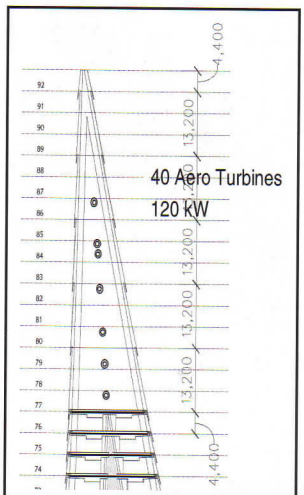
Champana simultaneously also exposes the paradox inherent in the rules and norms specified by the developed world: "In developed economies, growth of energy use harms



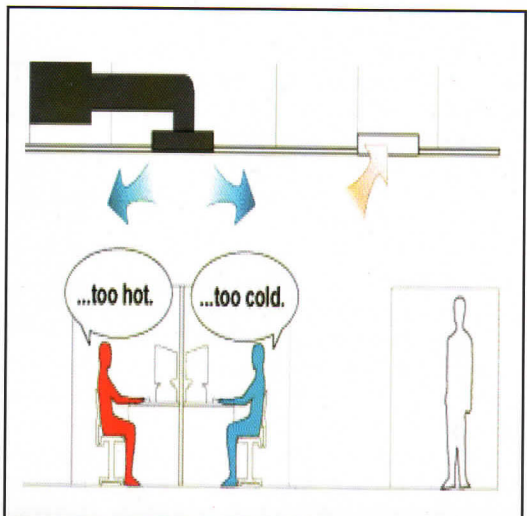
End View - 3 kW Aero Turbine



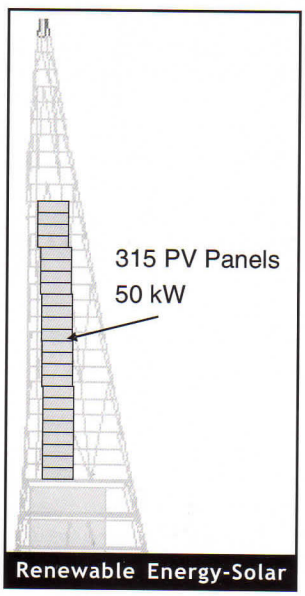
Renewable Energy-Solar



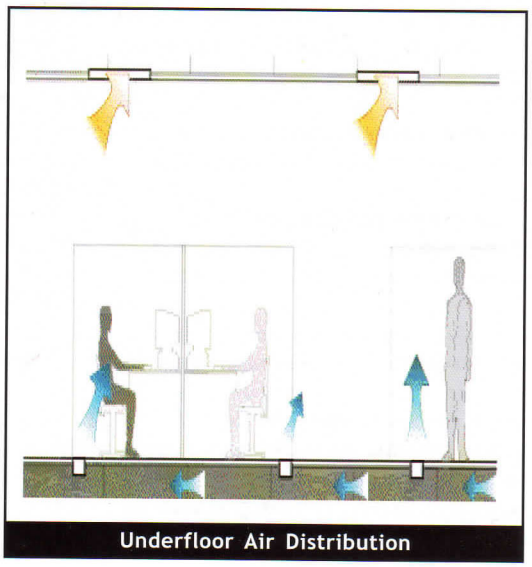
Wind Turbines Arrangement



Overhead Air Distribution



Renewable Energy-Solar



Underfloor Air Distribution

environments, until the economy is developed enough to become more efficient."

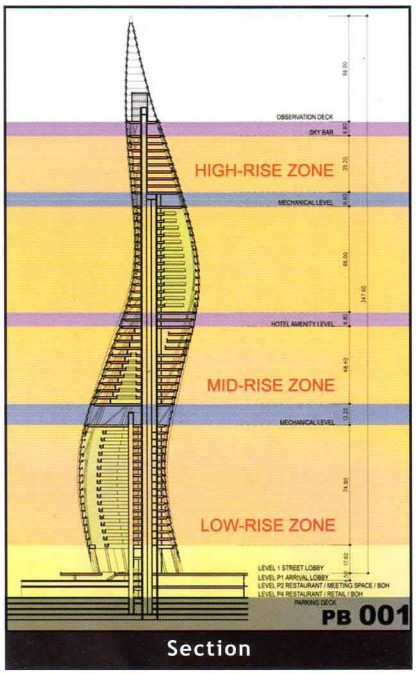
But, hypocritical specifications notwithstanding, the developing countries must acknowledge the need for change. As Champana suggests, the change has to come with distinctly defined parameters. "Sustainability advocates the use of new available technologies now and not later! We, in the New Emerging Economies, need to learn to get energy-efficient. In planning its Cities, Townships and Special Economic Zones of tomorrow, India should take into consideration its socio-economic, cultural, regional identities, and core community values to best succeed in its implementation of a sustainable future. The clues to future developments in India must come from within – not from how the West or the Far East nations are developing".

For India, the Use of Alternative Energy Sources seems to be the most viable option.

- Development of wind power; currently India ranks 4th in the world in market share of wind power
- Solar energy systems; solar powered device systems provide power to light + appliances (Karnataka State Loans)
- Solar Renewable Energy replaces kerosene fuel appliances emitting harmful gases and soot.
- Bio Diesel from oil seeds: Inexpensive and easy to store and used for home - lighting and pumping water.

The basic idea is to create sustainable design in the modern context - sympathetic to modern needs and requirements, and also in sync with the location, climate, population profile, and architectural-urban context of place. This ensures that the new development, despite serving the needs and demands of modern life; and despite being futuristic - does not adversely impact the planet.

LEED (Leadership in Energy & Environmental Design) developed by the US Green Building Council is a world-wide rating system to



Section

optimize implementation of Sustainable and Energy-Efficient Technologies and Methodologies. This system is now followed in 24 countries. It has been adapted by the Indian Green Building Council (IGBC) to suit national context and priorities. LEED rated buildings consume 30-50% lower energy than conventional buildings.

Sustainable Sites, Water Efficiency, Energy/Atmosphere Efficiency, Sustainable Materials / Resources, Indoor Environmental Quality, Innovation & Design Process are the six Matrix Categories of Benefits of Sustainable Design.

In the Dubai Tower designed by Architect Behr Champana as the Vice President, TVS International, we can study the sustainability quotient of a futuristic high-rise development.

Case Study:
Sustainable Building Design - DUBAI TOWER, Dubai, UAE.

Architect:
TVS International,
UAE/USA

Area:
12 million gsf; 6.7 million gsf commercial area

Uses:
Office, Residential, 6-star Hotel and Retail Estimated cost = USD $7 billion

Proposed LEED Certification:
Gold

LEED Sustainable Design Features –

Lighting & Sun Control:
Glazing to supply daylight, but control glare. Use of roof monitors + clerestory windows
Use photocell – dimming sensors to adjust light levels automatically.

Design light switch controls individual areas.
Use light shelves + technologies to bring light deeper into building.

Supplement day lighting with high performance lighting.
Use low ambient lighting levels; use risk lighting as appropriate.
Use occupancy sensors, dimmers photocells, and lumen maintenance controls.

Economic Facility:
Reduced electricity consumption / costs
Lower cooling loads due to lower heat gains from electrical lighting; Reduced energy costs and lower capital costs for cooling system
Higher occupant productivity due to day-lighting

Society/Utility Companies:
Avoidance of electricity generation and transmission/ distribution construction costs

Social & Environmental Society:
Lower electricity use and the associated air pollution/Reduces CO2 emissions
Decreased impacts of fossil fuel production and distribution

Employees:
Improved quality of interior space

- Project won 2008 Cityscape / ME Architect Award for Best Super Tall Building in the World.
- Won 2008 Construction Design for Best Concept Development

Sustainable Approach -
Dubai Towers,
UAE

Energy Efficiency:
Renewable (Wind/Solar) Energy

High Performance Building
Envelope Superior
and
Efficient Air Conditioning Systems

Water Efficiency:
Air Conditioning System condensate water recovery

Low flow Plumbing Fixtures

Material & Resources:
Recycled materials (construction and operation)

Regional Materials

Bio-based Certified Material

Sustainable Sites:
Waterways and Lagoons
Light rail public transportation system Landscaped plaza
High albedo material for roofs/plaza