Mere Wala Green:
Explorations Of A Design Practice Using
Common Knowledge And
Common Sense

The Scenario

‘Green Buildings’ is the latest buzz word in the field of built environment. It seems to have caught on like wild fire in the print media, in the electronic media and most importantly, amongst the fraternity of builders and clients, for homes, offices, institutions, and many other buildings.

‘Green’ colour, however, has acquired many a hue and many a definition. Architectural practices are fast becoming agents of change from designing buildings of any other colour to ‘Green’. Utility Consultants are also competing with each other for maximum numbers of Green Awards. ‘Green’ products are emerging faster than the users have capacities to absorb them. Consultancies for designing ‘Green’ Buildings, which get recognition of Platinum, Gold or Silver Awards, have emerged as a specialized profession, with lucrative earning potential in the preparation of ‘Green’ Buildings simulations.

It appears that in the near future, those who are not in a position to call themselves ‘Green’, may be considered as outcasts in the industry.

What are ‘Green’ Buildings

‘Green’ buildings is a U.S. initiative, with roots in 1994, through organizations known as Leadership in Energy and Environmental Design (LEED), as well as the U.S. Green Buildings Council (USGBC). They began to pursue this extremely laudable cause of addressing the levels of unsustainable consumption in the U.S., and making efforts to bring them down to more acceptable level of
sustainability. They established targets for designers as well as manufacturers and gave incentives of certifications, awards and accreditations to buildings / professionals.

This has led to new buildings being designed to follow such standards / targets, in the developed world, to begin with, and also in India since 2004. In India the cause is carried forward by the Indian Green Building Council (IGBC), which started with adopting the U.S. standards even for Indian buildings. They have now begun to alter some of these standards for Indian conditions. However, majority of these standards / targets still remain anchored in the U.S. Context.

‘Green’ or ‘Mere Wala Green’

Sustainability or ‘Green’ Buildings can be interpreted in many different ways. What is desirable for one country may be excess for another, and vice versa. Its meanings and understanding will vary according to its context. India has suffered considerably during the past century by adopting directions appropriate for other countries, and using materials not entirely appropriate for their own context. As a nation, it has paid a heavy price, and continues to do so, creating enormous pressures on its resources. Most of the Built Environment of the pre-independence era can, even today, pass through the sieve of what we refer to as ‘Green’ Buildings. It is therefore necessary to initiate dialogues on what constitutes ‘Green’ Buildings for the various regions and climates of India.

Coining the term ‘Mere Wala Green’, is our attempt to clarify to all concerned in the building industry, the architects, the engineers, the interior designers, the builders, the products manufacturers as well as owners, that ‘Green’ is only a direction for achieving greater sustainability, and not a recipe in which, if you use the identified ‘Green’ products it will result in a truly ‘Green’ or sustainable buildings for any context.

Consequently ‘Mere Wala Green’, to us, means

• Understanding sustainability in the context of India and its regions.
• Attempting to understand what constitutes ‘Human Comfort’ in buildings.
• Questioning the needs, identifying their optimum levels in long term scenario, and taking the design provisions to that level only.
• Ensuring what is sustainable today, remains that way in decades to come.
• Ensuring that sustainability is not only in parts but also that way holistically.
• Maximizing the use of traditional wisdom in design, wherever applicable, because it represents the knowledge about the long term behaviour of materials, their strengths as well as weaknesses.
• Assessing all new technologies for their long term impact in the context of India and its development priorities, before accepting them for use.
• Being aware of the embodied energies of the materials, before we specify them.
• Taking the decision making processes to measurable levels, in order to make our choices judiciously.
• Taking the Savings’ benchmark targets closer to the minimum standards of Provisions.
• Addressing all the above issues through the sieve of value engineering, for the specific context of the built environment.
• Pursuing Goals, not Means.

The Approaches, ‘Top Down’ and ‘Bottom Up’

The ‘Green’ Buildings objectives are pursued with two distinctly different approaches namely, the ‘Top Down’ approach and the ‘Bottom Up’ approach. Both are relevant as well as possible, in the Indian context, with varying degree of applicability.

The ‘Top Down’ approach is the one which has been pursued by the USGBC and IGBC. It is:

  a) More popular in the current scenario;
  b) Concentrates more on how much energy is saved;
  c) Accepts Western understanding of sustainability easily;
  d) Uses high technology innovations, materials and products;
  e) Driven by ‘Green’ brand and accompanying recognition;
  f) Recognition based on ‘Intent’, rather than ‘Performance’; and
  g) Necessitates Experts’ inputs and simulations.

Most of the standards or targets arrived in this approach, are geared to reduce the high energy consumption levels. This appears to be an acceptable approach for most of the developed world. However, what is observed in the Indian Context is that the result-
ant ‘Green’ Buildings are not ‘Green’ enough. They still have room for further savings in energy consumption.

The other approach, as understood and practiced by us, is the ‘Bottom Up’ approach. This has been practiced in India for many centuries, and has already been proven to be highly sustainable. It is:

a) Less Popular in the current scenario;
b) Concentrates more on how little is consumed;
c) Pursues the Eastern understanding of sustainability, and questions the Western understanding;
d) Uses Low technology innovations, materials and products;
e) Is not driven by ‘Green’, or any other brand;
f) Recognised as based on ‘Performance’ and not just ‘Intent’; and

g) Necessary to use of Common knowledge and Common sense

We have realized in our practice that the two most important and readily available tools to achieve the Mere Wala Green Buildings are the use of common knowledge and common sense, available to all professionals. They could be further supplemented progressively with innovations, trial and errors approach, and/or scientific decision making processes, as needed.

**Explorations of the ‘Bottom Up’ approach**

**Case Study – 1 Torrent Research Center : Use of Common Knowledge + Common Sense + Innovations + Trials and Errors + Scientific Decision Making Processes.**

This Pharmaceutical Research Laboratory, located in Ahmedabad, is one of the largest successful experiments of passage cooling in Asia. The total built up area of the complex is approximately 20,000 Sq.Mts. 72% of the Central Building has achieved Human Comfort Conditions using Passive Downdraft Evaporative Cooling (PDEC), it has been able to establish extremely low levels of energy consumption, as well as Carbon Dioxide emission per square meter of area.

Its Significant Consequences are:

a) 200 M.Tonnes of Air-conditioning load saved;
b) Summers temperatures remain at 28°-32°C;
c) 6 to 9 Air changes/hour on different floors in summer, including in the chemical laboratory; d) The temperature fluctuations inside do not exceed 3°-4°C, over 24 hour period, when outside
fluctuations are 14°-17°C; e) Humidity not allowed to exceed 65-70% in summer; f) Air Movement velocity not allowed to exceed 1.5 feet/second; and g) The building which was designed for 150 occupants in 1997, accommodated more than 600 users in 2005.

Its more Significant Consequences are: a) Everyone using PDEC areas breathe 100% fresh air, not re-circulated air; b) 250 Kva power is made available for someone else’s use. c) The buildings have accommodated 250% additional users, without significant discomfort; d) The performance has been consistent over the past 10 years of its use and e) It gives healthy financial returns on investment in building costs. The entire cost of the building will be recovered from the electrical savings in 13 years of operations.


A two page ‘standard’ questionnaire was selected for its capacity to provide feedback on a range of 63 variables, covering aspects of overall comfort, temperature, air movement and quality, lighting, noise, productivity, health, design, image and workplace needs. A total of 292 surveys were distributed, and 164 responses returned.

Performances of Torrent Research Center with ‘Top Down’ Approach

“The total energy consumption for PDEC and AC combined (includes light, equipment and AC for 2 blocks) for the 6 blocks in 2005 was 647000 kWh1. This averages to 54 kWh/m2 and 72 kgCO2/m2. Clearly the climate responsive approach to buildings such as Torrent comprising labs and offices with extended hours of operation in hot dry climate in India, the building is compared to available targets for commercial buildings – The Torrent energy consumption performance compares very favorably to the target for newly developed fully air conditioned building currently set in out to exceed 140 kwh/m2 for day use in a composite climate under the recently introduced environmental rating scheme TERIGRIHA and reported typical consumption in Indian buildings of 280-500 kWh/m2 or 375-670 kgCO2/m2. based on GHG coefficient of 1.34. (Singh and Michealowa, 2004)”.

(As quoted in Post-occupancy evaluation of passive downdraft
evaporative cooling and air-conditioned buildings at Torrent Research Center, Ahmedabad, India. by Leena Thomas and George Baird).

Case Study – 2: Pathak’s Bungalow (Use of Common Knowledge + Common Sense + Innovations).

An existing bungalow required an extension for an Artist Studio on the first floor. This was achieved by: a) Lifting the inclined tiled roof by 2 ft; b) Providing roofing sheets below the tiles to create an air gap for insulation; c) Constructing a Rat-trap external hollow wall to create ventilated cavity the new external wall, designed as a RAT TRAP hollow wall to create insulation; and d) providing small square openings in the exterior wall to allow air movement through the hollow part.

The experience in the words of the Owner, is: “a) In past 8 summers, we have not felt the requirement to get false ceiling; b) during the hot summer, while entering the studio one feels the room to be a bit hot, but it is just a matter of body to get adjusted in few minutes and then the room is comfortable; c) if the openings at top level of the room are opened up then it is more effective; d) by late evening this room becomes cool earlier than the other rooms in the house; e) we have not measured temperature, but it seems to be about 5 to 8 degrees C lower than the outside temperature during summer; f) we are not sure how much it has saved on electricity bill, but if we had not gone for such a design of walls and the air draft then we might have required A.C. in this big studio; and we do not think the cost would have exceeded 10% - 15 % more than the conventional construction”.

Case Study – 3: Digantar Rural School (Use of Common Knowledge + Common Sense only).

A Rural school in the peripheral village of Jaipur for Digantar Foundation is an example of application of the principles and understanding of the local materials and construction practices. 250 children are studying in this school since 1994. The school was designed with two sessions of half an hour advice by us to the Principal, at the beginning of the design, and at the beginning of the construction. On the basis of this discussion a plan was prepared by the Principal, who also prepared the cost estimates and got it constructed. Other than the advice, no additional inputs
were required by the Client from us.
It was built within their budget of Rs. 80,000/-, for a built up area of 370 sq.mts. The per square foot cost of construction was less than the cost of ‘A’ quality white glazed tiles in 1994; less than the cost of six waterless urinals imported for an Indian Platinum Award Green Building in 2004; and less than one fifth of the consultancy fees charged by experts in 2008, for preparing the simulation of a ‘Green’ Building.

**Summary of Case Studies**

These are some of the case studies which establish that the ‘Bottom Up’ approach is more relevant, more efficient, more ‘Green’, more applicable to a wider range of built environment, and more contextual as well. It is our understanding that while both the approaches, the ‘Bottom Up’ as well as the ‘Top Down’, are possible to be implemented, the former has a much better potential to achieve the targets in the context of India.

In conclusion, ‘Mere Wala Green’ will lead to:

• Focusing on solutions for India’s own needs, not any other country’s.
• Finding our solutions, from our own resources.
• Finding ways of decreasing our consumption levels.
• Peeping into our own traditional wisdom, for simple cost effective solutions.
• Inviting Common Sense into our lives, instead of Experts.
• Avoiding short term solutions.
• Contributing to making responsible built environment, not Style Statements.
• Contributing to Nation building, instead of Consumption building.