Auroville
Green Practices

0900– 1230
Interactive Session

**TOWN HALL CONFERENCE ROOM**

# *Energy*

## Dr Brahmanand Mohanty

Visiting Faculty, Asian Institute of Technology

1030– 1100
*Tea Break*
**LE MORGAN CAFÉ**

1230– 1400
*Lunch*
**LE MORGAN CAFÉ**

**Auroville Green Practices Conference 2011**
**Regenerative Townships**

**Name of Workshop: Energy**

Name of presenter: Alisha Nisar

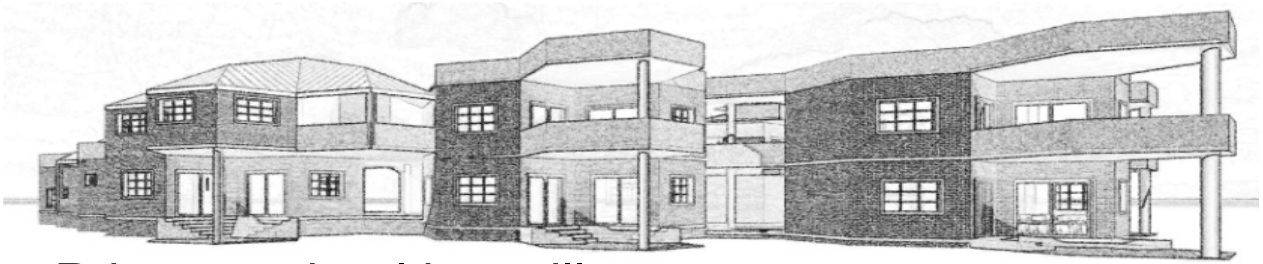
Organization: The Maharaja Sayajirao University of Baroda

City and country: Vadodara, India

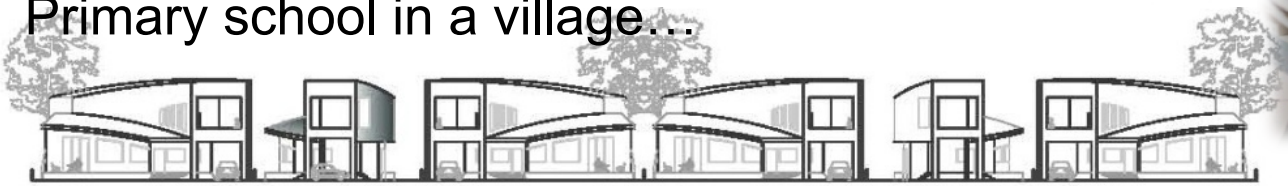
Email id: alisha13nisar@yahoo.co.in

Space Design using waste material…

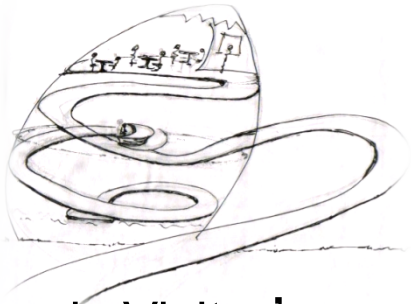
Marriage Hall in middle of old city area…



Primary school in a village…



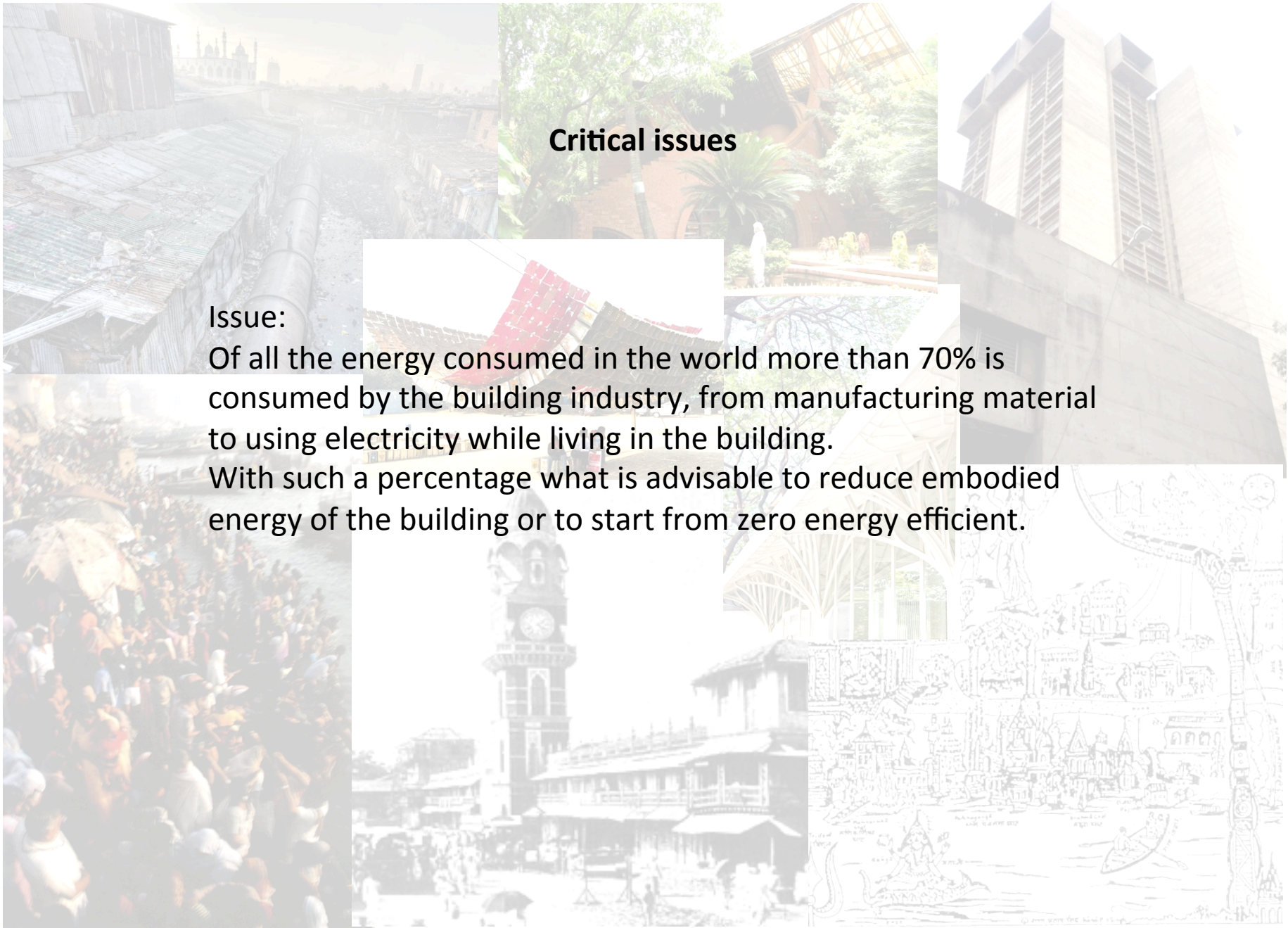
Urban Housing by the river…



Iconic Visitor's Center for a Bird


Study of Human settlement in

Each thought adding to the cities of tomorrow….



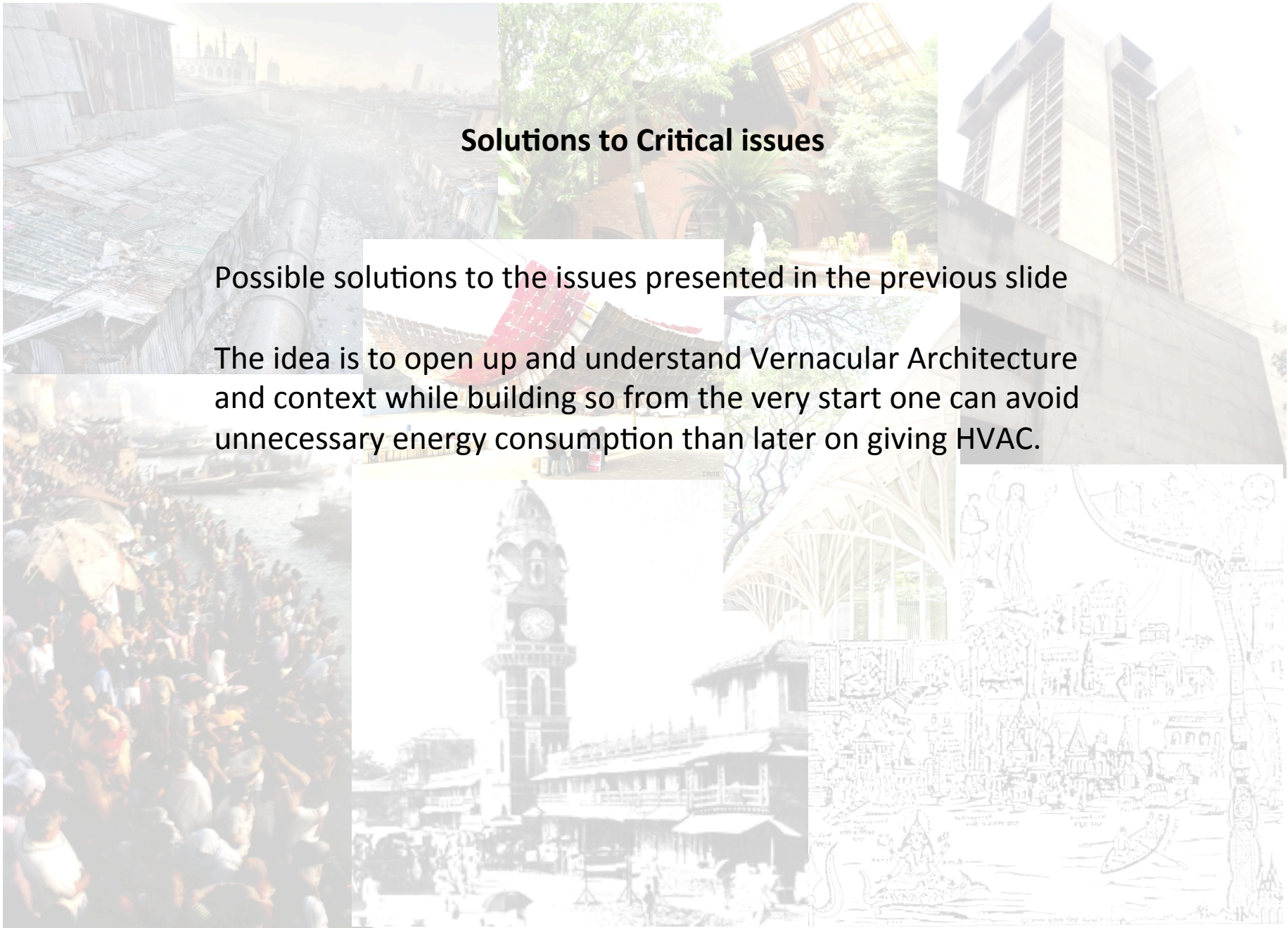
## Critical issues

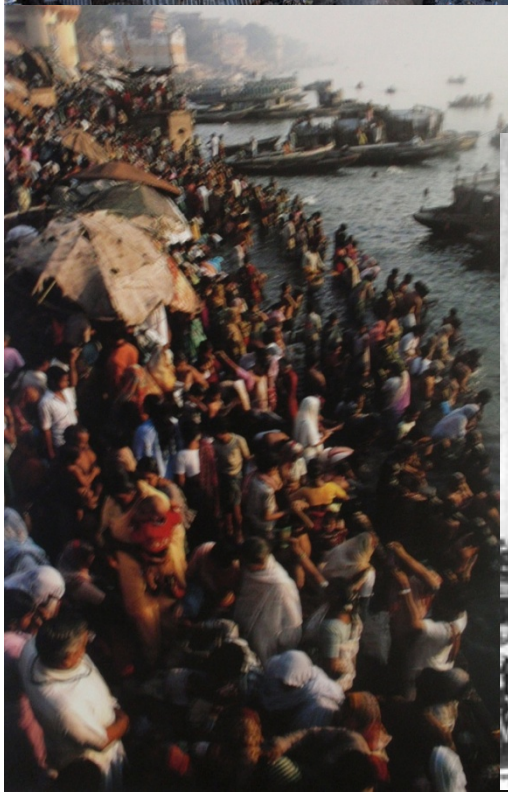
Issue:
Of all the energy consumed in the world more than 70% is consumed by the building industry, from manufacturing material to using electricity while living in the building.
With such a percentage what is advisable to reduce embodied energy of the building or to start from zero energy efficient.

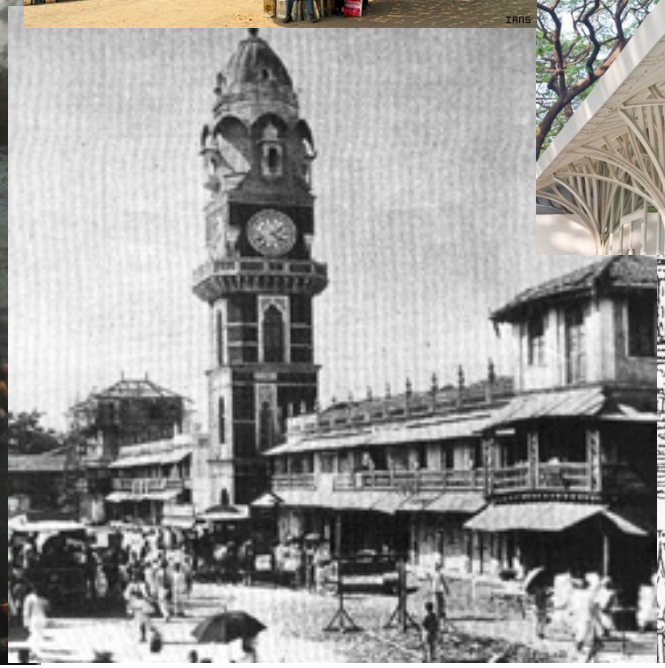
## Solutions to Critical issues

Possible solutions to the issues presented in the previous slide

The idea is to open up and understand Vernacular Architecture and context while building so from the very start one can avoid unnecessary energy consumption than later on giving HVAC.







Thank you

**Auroville Green Practices Conference 2011**
**Regenerative Townships**

**Name of Workshop: ENERGY**

Name of presenter: PASHI KAPUR

Organization: AUROSERVICE- AUROVILLE

City and country: AUROVILLE- INDIA

Email id: pashi@auroville.org.in

Phone: 9443362795

## Background and Experience

List of projects that the presenter has been involved with (as a professional or as a student)

1. Name of project: 1. PRESENITY. Integral Research Project based on Bamboo & Melia Dubia as feed stock for Bio-Mass based energy generation.

2. Name of project: 2. In the past as professional manger with mechanical engineering background, have been involved in setting- up production capacities in private sector for manufacture of steam turbines for mill drives and power generation, also road construction machinery, Tea machinery and Agriculture tractors.

3. Name of project: 3. As founding director of Auroservice from 1970 to 1978 took-up studies in ORISSA relating to manufacture of bicycles, assisting in rejuvenating an Industrial estate by organizing voluntary professional support in financial, Technical and marketing disciplines besides many other activities in varous part of India.

As managing Trustee of Auroservice d, Auroville from 1970 to 1978 with the support of Auroville future, undertook development of Habitat Master Plans for Salem steel plant, Kudarmukh iron ORE project and Vijaynagar steel plant. First two projects were implemented as per our designs.
Besides conceptual plans were prepared for Haryana capital, Faridabad Township and also conceptual study for ORISSA Coast upto Puri etc. etc

## Critical issues

List of issues that the presenter is aware of in the workshop topic

Issue:
Brief description of issue: Sustainable Renewal energy:
Development

Issue:
Brief description of issue: - Energy Audit
- Energy saving project

## Solutions to Critical issues

Possible solutions to the issues presented in the previous slide

Issue:
Solution to the issue: Besides Solar & wind energy, to consider Bio-Mass based power generation as a reliable sustainable Renewal Energy source. Highlights of the research project are:

**1. Project title:**

***INTEGRAL RESEARCH PROJECT PROPOSAL:***
***BAMBOO-MELIA DUBIA***

*2.* **Project summary:**

*To study & measure the development of cultured Bamboo and Melia Dubia in Auroville under different growing conditions including Rain fed growth to obtain sufficient in- situ Data to establish viability of taking up energy plantation, sustainable in terms of financial & ecological terms to recommend development of GASIFIER based Power generation for Auroville with Zero Carbon Dioxide emissions;*

**Thank you**

# Auroville Green Practices Conference 2011
# Regenerative Townships


**Name of Workshop:** Session 6: ENERGY

**Name of presenter:** Ummulkhair Shabana MD

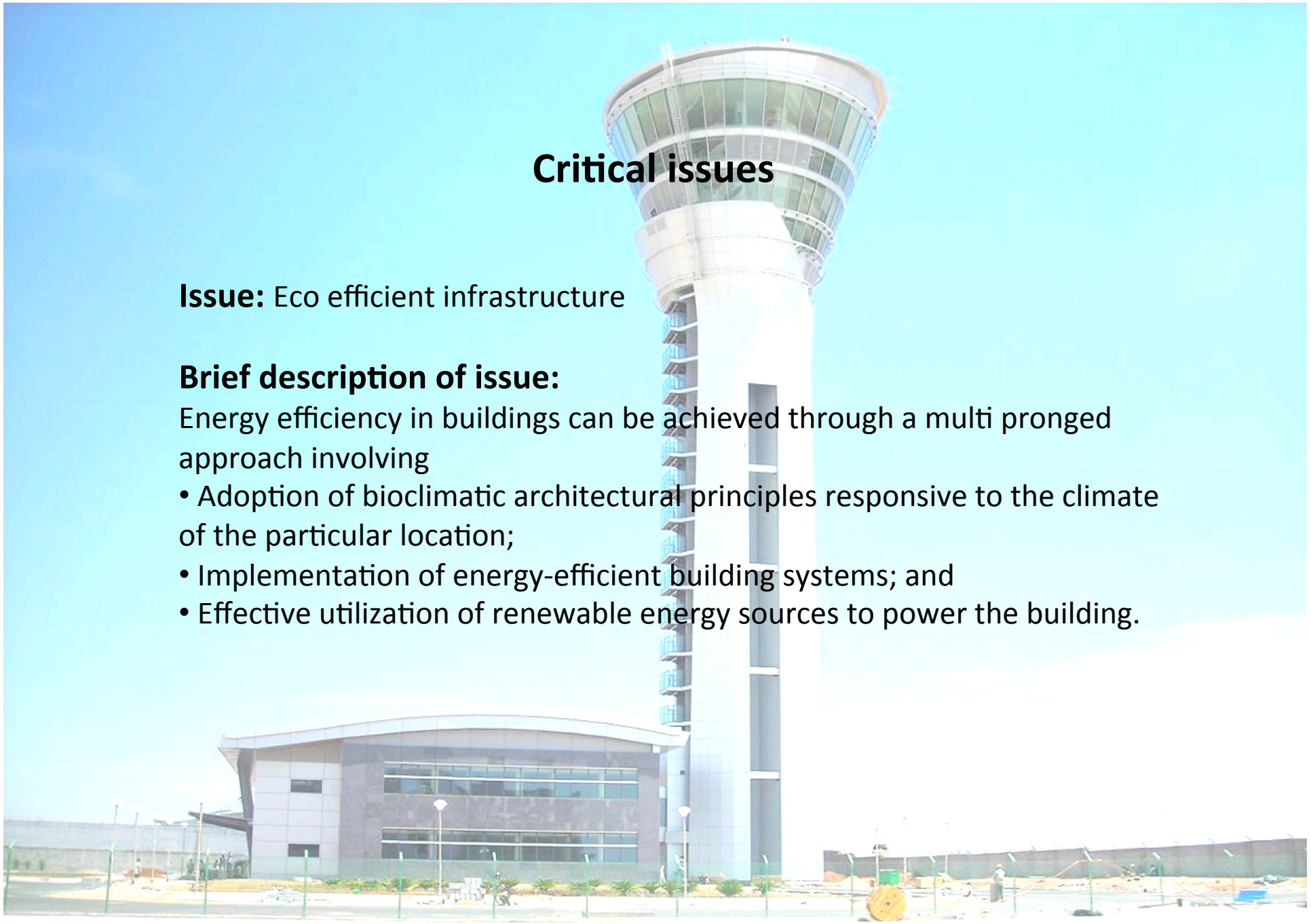
**Organization:** Crescent School of Architecture

**City and country:** Chennai, India

**Email id:** ukshabana@gmail.com

# Background and Experience

- **Name of project:** Rajiv Gandhi International Airport
- **Location:** Hyderabad, Andhra Pradesh
- **Building type :**Public building
- **Consultants :** GMR Hyderabad International Airport Limited (GHIAL) is a joint venture company promoted by GMR Group (**63%**) and Malaysia Airports Holding Berhad (**11%)**, Government of Andhra Pradesh (**13%**) and Airports Authority of India (**13%**) as the other consortium partners.
- **Year of completion :** 2008
- **Built-up area :** 900,000 sq.m
- **Cost :** Rs 2,478 crores



# Critical issues

**Issue:** Eco efficient infrastructure

**Brief description of issue:**

Energy efficiency in buildings can be achieved through a multi pronged approach involving

- Adoption of bioclimatic architectural principles responsive to the climate of the particular location;
- Implementation of energy-efficient building systems; and
- Effective utilization of renewable energy sources to power the building.

# Rajiv Gandhi International Airport - Hyderabad

India's first Greenfield airport is undeniably among the top 10 green buildings in India and the first airport in Asia to be awarded the LEED 'Silver' rating certification by US Green Building Council.

# Day lighting

The non-polluting airport has 100,005 square meter glass encased terminal, which provides natural light to passengers and minimal wastage of electricity or energy consumption.

# Reuse of waste water

Recycling of treated wastewater is used for landscaping, air conditioning and flushing requirements.

# Solutions to Critical issues

**Possible solutions to the issues presented in the previous slide**

**Issue:** Energy consumption
**Solution to the issue:** Providing glass for natural day lighting

**Issue:** waste water management
**Solution to the issue:** Recycling treated wastewater for landscaping, air conditioning and flushing requirements


Thank you

**Auroville Green Practices Conference 2011**
**Regenerative Townships**

**Name of Workshop:Energy**

Name of presenter: Sharath. R. Nayak

Organization:Biome Environmental Solutions

City and country: Bangalore, India

Email id: sharath@biome-solutions.com

**Background and Experience**

List of projects that the presenter has been involved with (as a professional or as a student)

Name of project: Design of Govardhan Eco Village, Wada

Name of project: Design of Oland estates, The Nilgiris

Name of project:

## Critical issues

List of issues that the presenter is aware of in the workshop topic

Issue: Improper landuse planning
Brief description of issue:
-large distances of commute from work places to homes resulting in need of large infrastructure and energy in building the infrastructure and in commuting
-Resources like power and water need to be got from larger distances resulting in more use of energy and also in losses along the way.

Issue:Energy intensive buildings
Brief description of issue:
-Mimicking of buildings suited for other climatic zones for sake of image building.
- High energy consumption for running and maintaining these buildings.

**Solutions to Critical issues**

## Issue:Improper landuse planning

-Encourage and incentivize corporations and technology parks to develop residential facilities near work places.
- Develop efficient mass transport options to encourage use of public transport.
- Do away with soft policies which encourage breach of designated landuse.

## Issue:Energy intensive buildings

-Information dissipation on climate responsive buildings
- Incentivize buildings that consume less by methods like lesser taxes.
- Encourage renewables.

**Thank you**

**Auroville Green Practices Conference 2011**
**Regenerative Townships**

**Name of Workshop: Energy**

Name of presenter: Sujaya Rathi

Organization: Center for Study of Science, Technology and Policy

City and country: Bangalore, India

Email id:sujaya@cstep.in

## Background and Experience

List of projects that the presenter has been involved with (as a professional or as a student)

Name of project: Land Use and Transportation Plans – Various cities in USA
Name of project: Multimodal Investment Analysis, USA
Name of project: Traffic impact studies- India and USA
Name of project: Mobility Indicators for Bangalore, India
Name of project: Traffic Calming project - USA
Name of project: Capacity Building for Sustainable Urban Transport Planning- India
Name of project: Comprehensive Mobility Plan, Guwahati
Name of project: Light Rail Study, India

## Critical issues

List of issues that the presenter is aware of in the workshop topic

Issue: Energy needs urban India

Brief description of issue: What can be the efficient ways to use energy – focusing on the major users of energy?

## Solutions to Critical issues

Possible solutions to the issues presented in the previous slide

Issue: Energy needs urban India

Solution to the issue: Focus on more efficient use of energy , demand management, and awareness of the fast depleting sources of energy, role of technology (smart grids)

**Thank you**