

# Green Building Designs



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# **Abstract**

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## Necessity of the study.

- **Indian construction industry is growing at a rate of 9.2% as against the world average of 5.5%.**
- **Buildings as are designed and constructed today contribute to a serious environment problems.**
- **The Building industry is the 3rd largest consumer of energy after industry and agriculture. With rising urbanization and change in lifestyle and food habits, the amount of municipal solid waste has been increasing rapidly and its composition changing.**
- **Global warming is today's burning issue. Construction industry has large contribution in Global warming.**

# Concept of Green Buildings.

## 1.1. Green Building Principle

Green building, also known as a sustainable building, is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity, using energy, water, and other resources more efficiently, and reducing the overall impact to the environment.

## Benefits of Green building

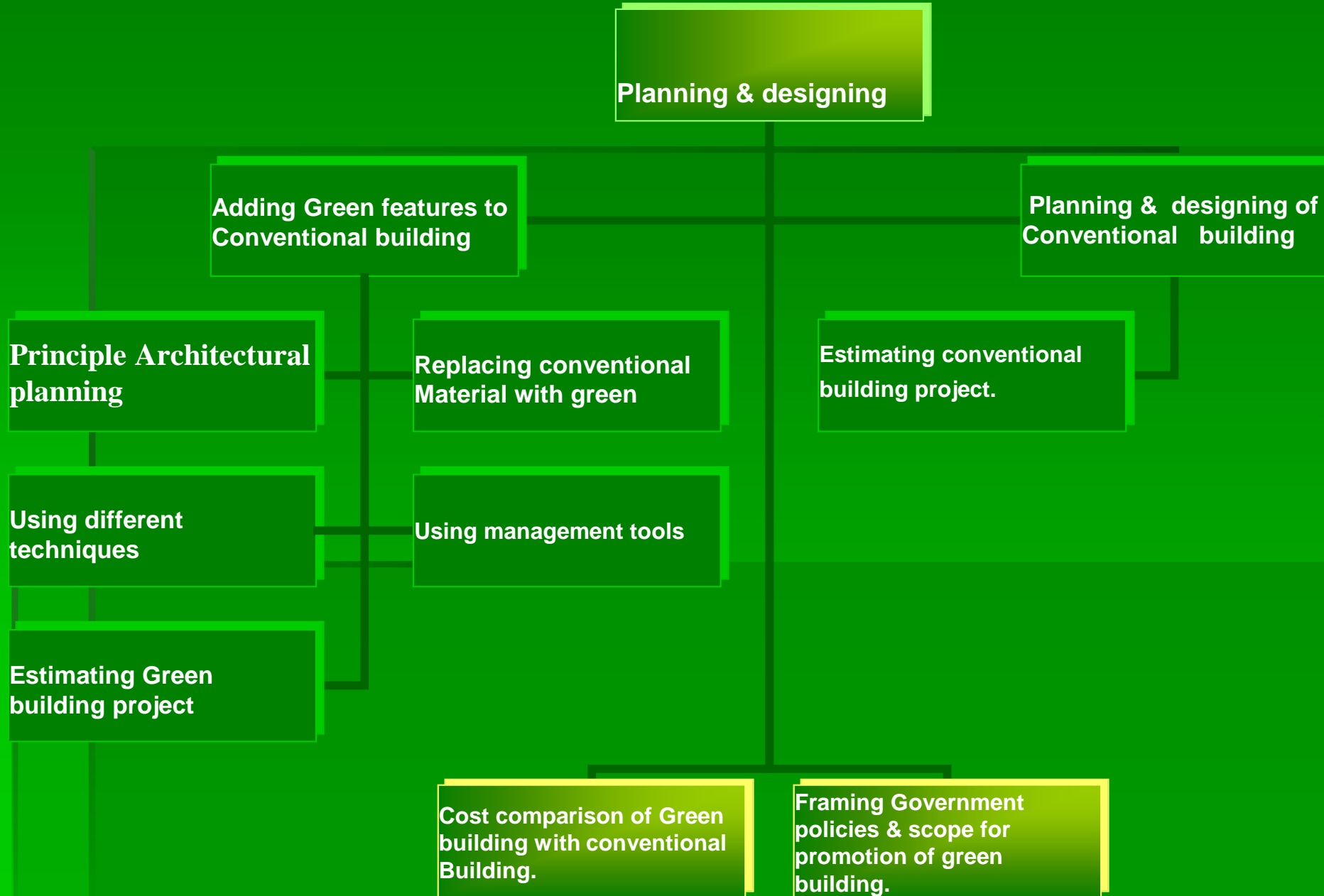
- Save energy
- Conserve water
- Reduce Waste
- Add longevity and durability
- Protect natural resources
- Create a healthier living environment

## Brief abstract of Project work: -

I am working on Project for my post graduation, Main objective of my project work is to analyze and compare cost of GREEN building with Conventional Building. Due to high initial cost all the concepts of green building can not be implemented in actual practices.

Builder and customers has to bare this increased cost. Government has some policies for adoption of G.B. even though these are not sufficient. Objective behind this project is to frame modified policies required to be laid by Government for promotion of G.B. so that common man can afford green house in today's scenario.

# Methodology to be adopted.



# Green Building planning

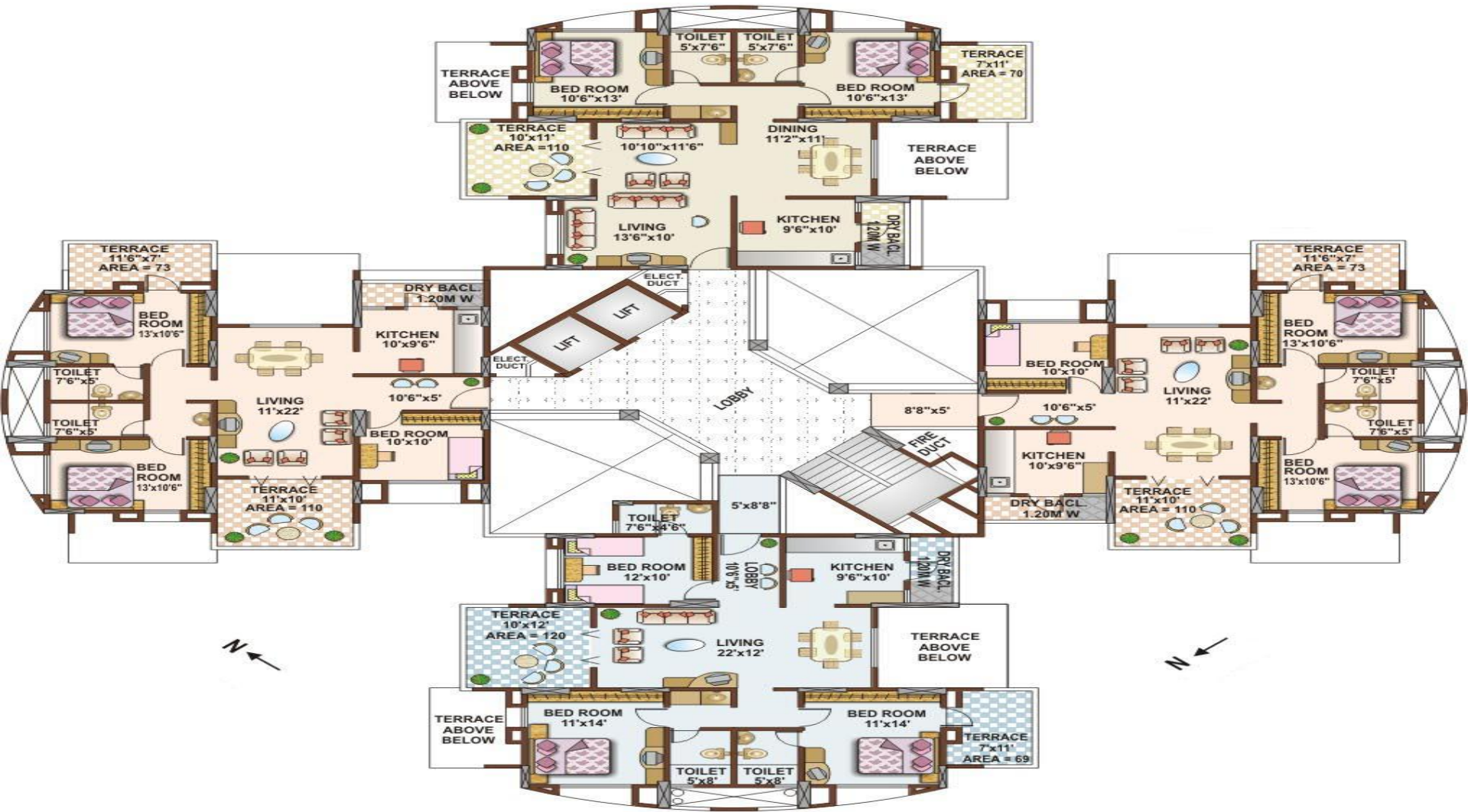
Green features which can be introduced in conventional building.

- a) Environmental Architecture and planning concepts.
- b) Replacing conventional Material with Green one.
- c) Using some techniques



# Environmental Architecture

- Orientation of building-Long walls along E-W direction.
- Aspect-Allocation of diff. units according to their functional utility.
- Proper placement of external doors & windows.
- Provision of sufficient open space



**In the plan given below all planning principles are followed, so as to get maximum benefits of natural resources such as sun, wind direction and rain etc. It is also beneficial for minimizing electricity bills.**

## Replacing conventional material with green one.

- Environmental friendly building materials like fly-ash blocks, Low VOC paints, Insulation, False ceiling, etc.,
- High performance glass
- Environment friendly carpets & floor care and Bamboo products
- HVAC Systems & Controls
- Energy efficient and Low water head pumps
- Lighting systems & controls
- Eco-friendly chemicals
- MDF Boards
- Portland Slag Cement
- RCC Door Frames
- Sand and aggregate from pulverized debris
- Recycled steel for reinforcement bars
- Recycled aluminum and brass components for Sanitary fittings
- Epoxy Resinous Flooring,
- Phospho Gypsum Tiles
- Gypsum plaster
- Calcium Silicate Plaster
- Lato blocks (laterite + cement)
- Terrazzo flooring
- Hollow recycled steel channels for doors & windows
- Laminated Hollow Composite Shutters
- Unplasticised PVC products for electrical works
- Polymer Plastic for Sanitary and Plumbing System
- Epoxy Resin Paint
- Ferrocement
- Calcined Phospho-Gypsum Wall Panels
- Calcium silicate boards and Tiles

## Using some techniques

- Preservation of top soil during construction
- Low Flush Toilets & low head showers
- Use of effluent water for Gardening
- Rain water harvesting
- Solid waste management
- Solar panels systems
- Proper plant Selection and effective landscaping for reducing solar radiations

## Conclusion

**The green building movement is essential for the benefit of environment, individuals, society and the country at large.**

## References:

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- D.M Roodman and N. Lenssen, A Building Revolution: How Ecology and Health Concerns are Transforming Construction,

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*Thank You*