SRUJAN

Srujan Research and Planning Foundation

Green Hospitals




Urban Design I Urban Planning I Regional Planning I Environmental Planning I Township Planning I Green Building Certification and EIA

Green Hospital

What is Green Hospital ?

A Green Hospital is one which enhances patient well-being, aids in curative process while utilizing natural resources in an efficient environment friendly manner.

Components of Green Hospital and Efficient Systems

Energy

1) Improving Energy Efficiency and Conservation
2) Energy Audit: Assessment of energy quality and needs.

- **Solar PV panels**
- **Solar hot water system**
- **Biogas Plant**

Water

1) Improving Water Efficiency and Conservation
2) Water Audit: Assessment of quality and amount of water.

- **Rain water harvesting**
- **Waste water treatment plant**

Waste

1) Biomedical Waste Management
2) Solid Waste Management

- **Collection, Handling and Segregation of Biomedical and Solid Waste**

Benefits of Green Hospital

Lower **energy consumption** without sacrificing the comfort levels

Reduces **water consumption**

Limited **waste generation** due to recycling and reuse

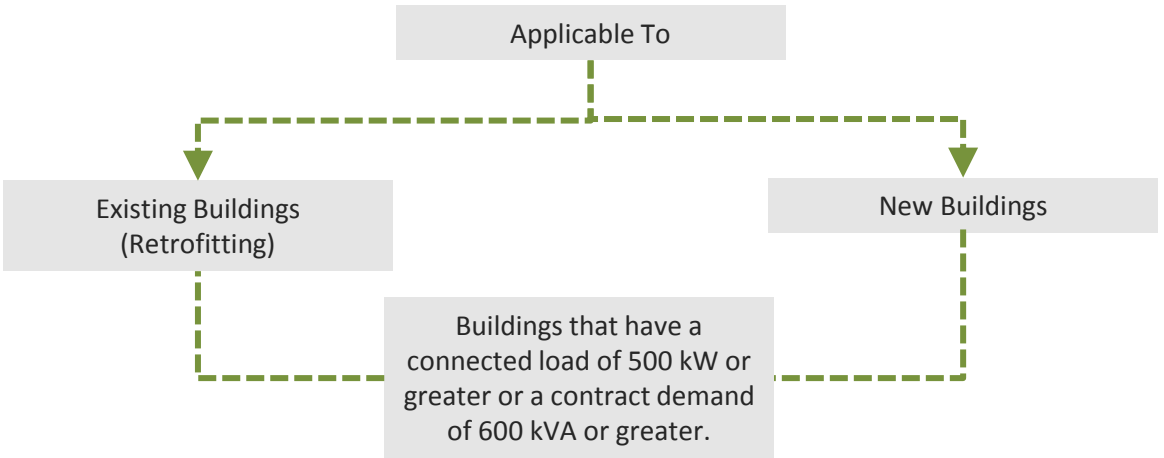
Reduces long-term operating costs of a building

Increases **indoor air quality and occupant comfort**

Reduces **greenhouse gas emissions**, thus helping fight climate change

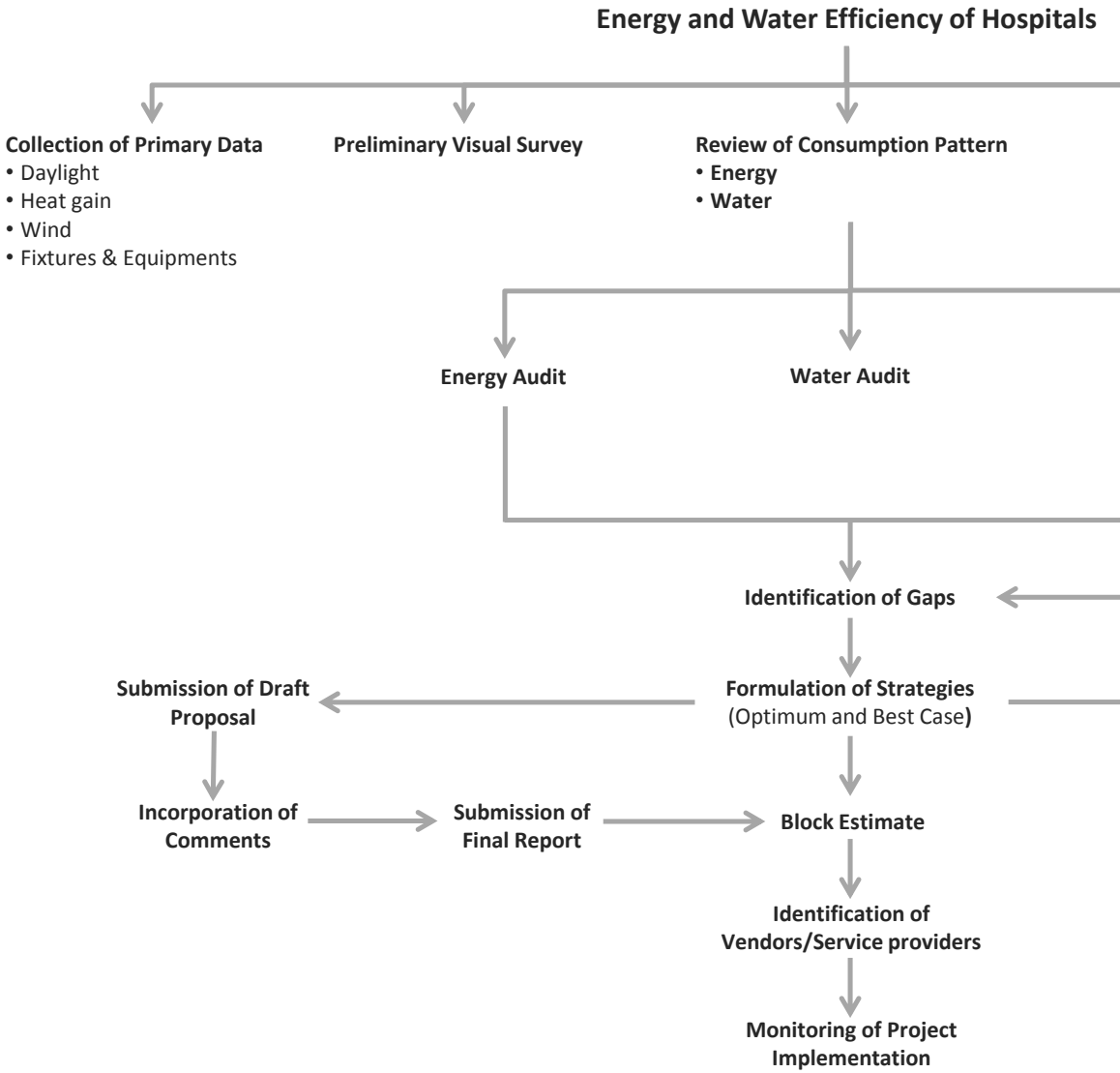
Energy Conservation Building Code (ECBC)

The ECBC compliant building can use 40% to 60% less energy than conventional buildings.



ECBC is one of the green rating systems, launched by Ministry of Power in 2007 and set by Bureau of Energy Efficiency (BEE).

Stages of Retrofitting Existing Hospitals into Green Hospitals



Collection and Verification of Secondary Data
- Climatic data
- Electricity and Water Bills
- Manuals, Acts and Laws

Client's Concerns

Performance of Building (Simulations)
- Daylight analysis
- Thermal analysis

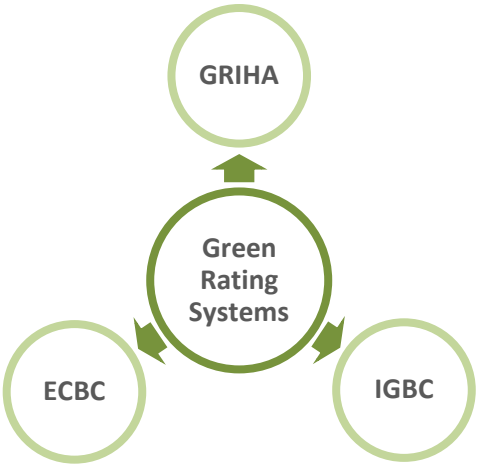
→ **Energy Performance Index** (EPI)

Registration of project with BEE

Submission of performance of hospital building

Other Green Rating System

Overview of green building systems in India



Criterions for ECBC

- Building Envelope
- HVAC
- Electrical Power
- Lighting
- Service water heating & pumping

Criterions for GRIHA & IGBC

- Sustainable Site Planning
- Material & Resources
- Indoor Air Quality
- Water efficiency
- Solid Waste Management
- Health & Well-being

Green Building can reduce:

Energy use	• 24% - 50%
Water use	• 40%
CO2 emissions	• 33% - 39%
Solid waste	• 70%

Efficient Systems

1

Energy Conservation:

Installation of **solar hot water system, solar PV on rooftops,** will help to reduce energy consumption.

The waste from the canteen can be used for **Biogas plant.**

2

Water Conservation:

Reduce water consumption and save about 40% of the potable water by using flow control / green fixtures.

Green initiatives like **rain water harvesting, efficient treatment plant** can also be used to conserve water.

3

Biomedical Waste Management:

Handling of Biomedical waste is most crucial. Proper training for staff for handling Biomedical Waste, is essential along with its disposal.

Srujan Research and Planning Foundation

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