Green Building Concepts

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Leadership in Energy and Environment

The LEED™ (Leadership in Energy and environmental Design) green building rating system was originally developed by the U.S. Green Building Council (USGBC) to provide a recognized standard for the construction industry to assess the environmental sustainability of building designs.

- LEED™ is a point-based rating system; points are earned for building attributes considered environmentally beneficial. LEED™ differs from other rating systems in that it has quantified most of the "green credits".

Green Building Rating System – Certification Levels

Rating	LEED v 2.2 New Construction
LEED Certified	26-32
LEED Certified Silver level	33-38
LEED Certified Gold Level	39-51
LEED Certified Platinum Level	52-69

Rating and Certification linked to performance of the building

Topics

- **Site Development**
  - minimize storm water run-off, encourage car pooling and bicycling, increase urban density and green space
- **Water Efficiency**
  - eliminate site irrigation, reduce water consumption, minimize or treat wastewater
- **Energy Efficiency**
  - reduce building energy consumption, use renewable energy, eliminate ozone-depleting chemicals, commission building systems
- **Material Selection**
  - minimize construction waste, re-use existing building façade, use recycled and salvaged materials, use renewable construction materials and design and build more durable buildings
- **Indoor Environmental Quality**
  - incorporate day lighting, use low off-emitting materials, provide operable windows and occupant control of work space, improve delivery of ventilation air.
- **Innovation in Design**
  - use a LEED Accredited Professional, greatly exceed the requirements of a credit, incorporate innovative environmental features not covered in other areas.

Sustainable sites

Alternate Transportation

- Parking, Shower & Changing facilities have been provided for the Bicyclists.
- Reserved Parking for car pooling.
- Bus pooling for employees
- Battery Charging facility for electric cars.

Storm water management

- Rain water runoff used to recharge the ground water.

Light Pollution Reduction

- Eliminate light trespass/pollution

Water Efficiency

- **Water efficient**

  Landscaping:

  - Planting Native species in landscaped areas
  - High Efficiency irrigation.

- Treated Sewage from STP reused for gardening, flushing and AC-makeup

ENERGY & ATMOSPHERE

Lighting :

- Reduced energy consumption using energy efficient dimmable ballasts and movement sensors of **Wipro Lighting.**
- Use of light shelves for increasing the natural lighting in the building resulting in low lighting density requirement

Energy and Atmosphere

- **Energy :**
  - Significantly Exceeds ASHRAE 90.1
  - Use of Flat screen energy efficient LCD monitors.
- **Building Envelope:**
  - Walls constructed using Aerated Concrete Blocks.
  - Double glazed windows with energy efficient glass.

Energy & Atmosphere

- **HVAC (Air conditioning)**
  - COP of water cooled Screw Chiller more than 6.3
  - Provision of double Skinned AHU's with VFD's and VAV's.
  - Provisions of secondary chilled water pump system.
  - All HVAC equipment use refrigerants which are non-CFC , HCFC based.
- **Hot water:** Solar heating technology

Materials & Resources

Storage and collection of Recyclables

Separate storage has been provided at each floor for collecting the recyclables like paper, cardboard, plastic and organic wastes

Recycled Content

Use of Fly ash based AAC blocks , Acoustic cladding, reclaimed wood, Glass, Ceramic tile, MDF boards for construction.

Certified Wood from well managed forests

Recycled wood certified by Forest Stewardship Council FSC).

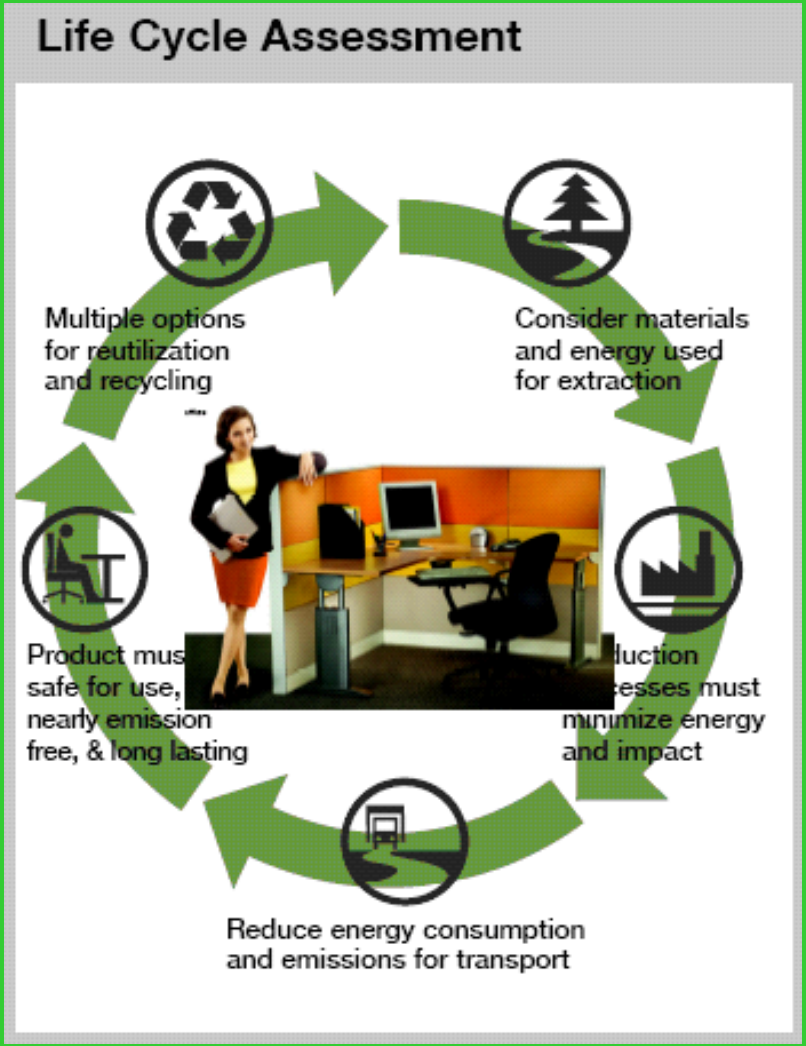
Materials & Resources

- **Local materials**

  More than 40% of the building materials are sourced within 500 miles of the project site.

- **Rapidly renewable materials**
  - MDF boards are being used for interior partitions.

Green Policy of Wipro Furniture



- Energy used in extraction of Steel is one fifth that of Aluminum. The strength of steel is higher than Aluminum and hence the structure is CRCA Steel.
- Energy Efficient production plants to minimize energy waste.
- Regional manufacturing base, with sub vendors in the vicinity of the plant, to minimize energy consumption on transport.
- Use of steel powder coated tiles and steel fabric tiles for completely emission free (VOC) & long lasting life.
- Modular furniture which can be reused again and again in various configurations.
- Materials like particle board which can be recycled to form MDF boards.
- MDF Boards used is a recycled material.

Indoor Environment Quality

- **Tobacco smoke control**
  - Smoking is prohibited inside the building.
- **CO2 and Rh Monitoring**
  - Exclusive sensors are provided inside the Air conditioned spaces to ensure that the concentration is maintained within acceptable limits
- **Low Emitting material**
  - The paints used in the building are low in emitting VOC.

Green -- Returns

- Significant savings on Recurring costs with Nominal increase in Capital Costs
  - Sensitivity Analysis through Energy modeling helped identify right Value for money solutions
    - Low u-value Building Materials
    - High efficiency HVAC equipment
    - Investments on Water Conservation
    - Use of Intelligent Lighting Systems
- Enhanced Occupant Comfort

Thank you