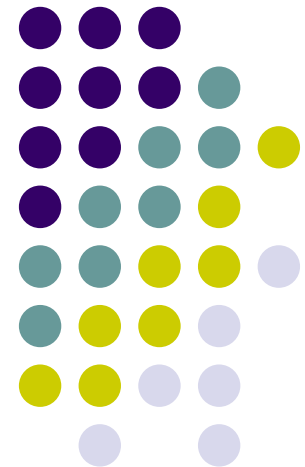




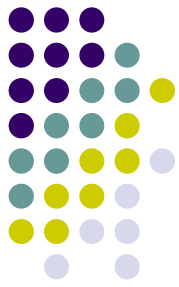
Eco-Housing Program Design and Assessment Criteria

Municipal Corporation of Greater Mumbai
17 June 2006



Presentation outline

- Defining :eco-housing”
- Technical criteria design
- Certification process - Pune



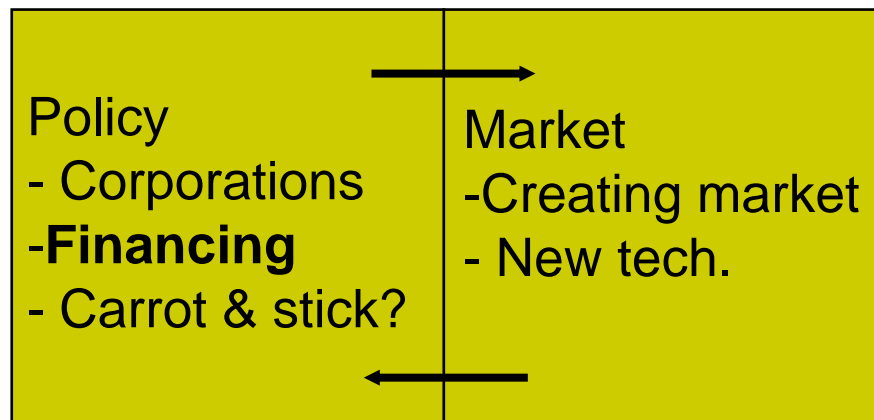
Eco-housing targets creation of a win-win-win situation for policy-makers and market players



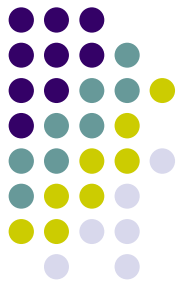
- Is it about making new laws?
- Is it about promoting technologies/construction practices?
- Is it about providing low-interest finance for “Eco” concepts?

OR

- Is it about using “policy-push ~ market-pull” market transformation concepts?



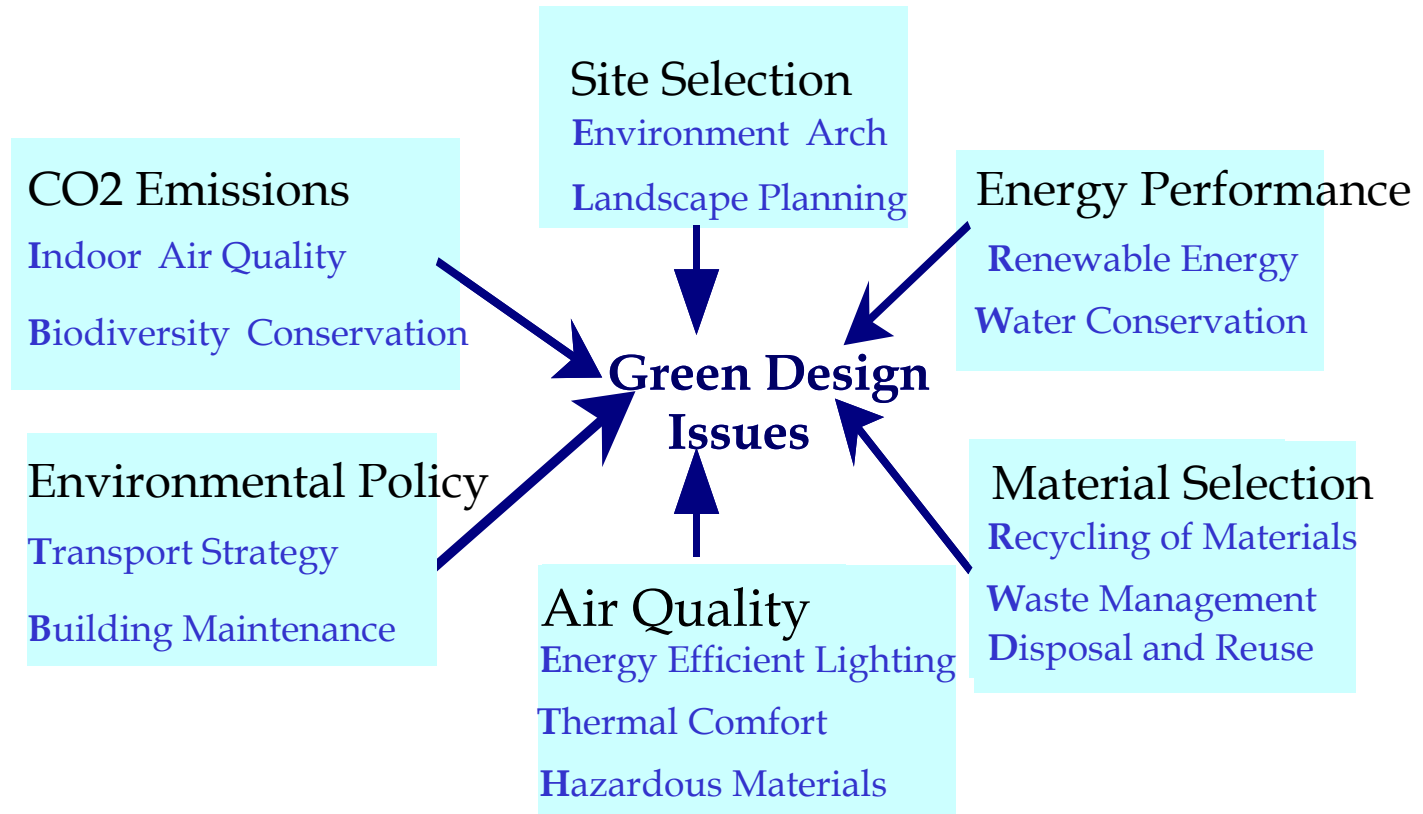
Eco-Housing is defined as a combination of environmentally benign construction



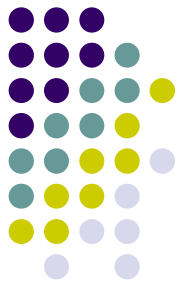
‘Eco-Housing’ stands for

- Environmentally benign and energy efficient buildings
- Sustainable construction practices
- Healthy and productive indoor environment
- Lowered use of natural resource

Scope of Eco-housing activities spans from site-selection to energy-efficient materials and construction

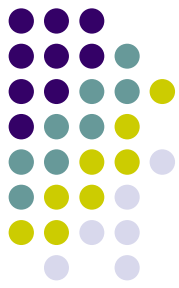


Mainstreaming activity covers policy/market aspects, training, financing intermediation and demonstration



- Policy support for enforcement of Eco-Housing principles
- Use of financial products to scale up demand for Eco-Housing
- Development of assessment criteria for benchmarking
- Training and capacity building
- Institutional mechanism or interface through which program directives get implemented
- Creating a market for sustainable products and services
- Demonstration Eco-housing projects

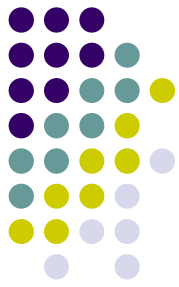
Assessment criteria developed based on environmental impacts of each attribute



- To establish baseline for Eco-Housing
- To quantify the environmental performance of residential building projects
- Serve as an assessment tool to differentiate between eco-friendly and conventional projects
- Criteria – a 1000 points-based system

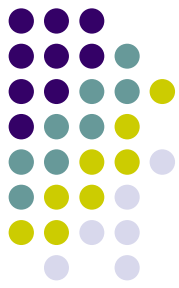
Points	Rating
500	★
501 – 600	★ ★
601 – 700	★ ★ ★
701 – 800	★ ★ ★ ★
>800	★ ★ ★ ★ ★

Development of Assessment Criteria

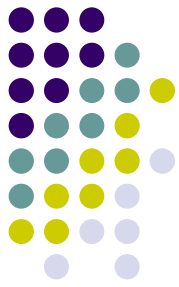


- Developed by IIEC together with STP and TERI
- Technical criteria divided into categories each with specific measures and associated points
- Weightages to the different focus areas depending on environment impact

Criteria development process included a consultative process – uses a combination of mandatory and voluntary options



- Developed by IIEC together with STP and TERI
- Assessment criteria includes a total of 1000 points.
- Includes both mandatory and voluntary criteria
- To qualify for Eco-Housing the project must get a minimum of 500 points
- Eco-Housing rating depends on number of points achieved



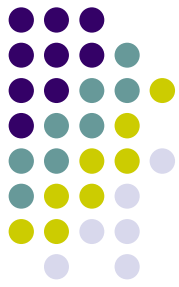
Focus Areas

- The assessment criteria is divided into 8 focus areas
 - Site Selection
 - Environment Architecture
 - Efficient building materials
 - Energy efficient lighting
 - Solar Water Heaters
 - Water Conservation
 - Segregation of Waste
 - Other innovative measures (Sustainable Construction Practices)

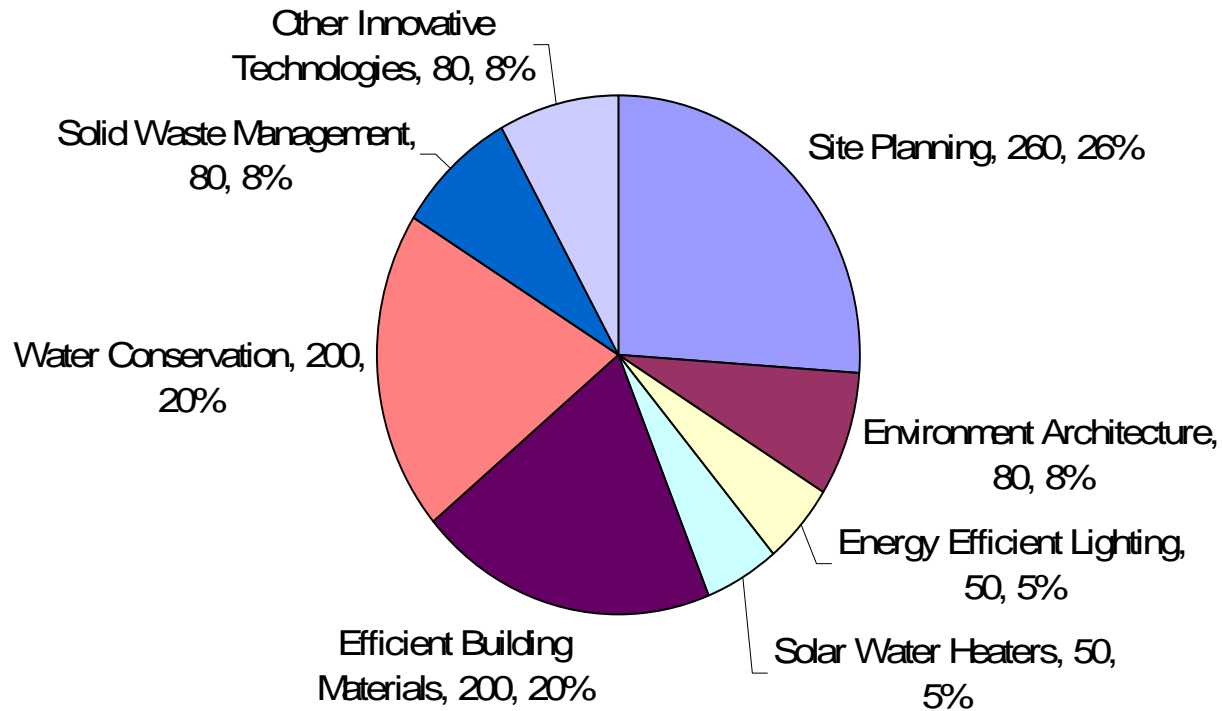
Point Allocation

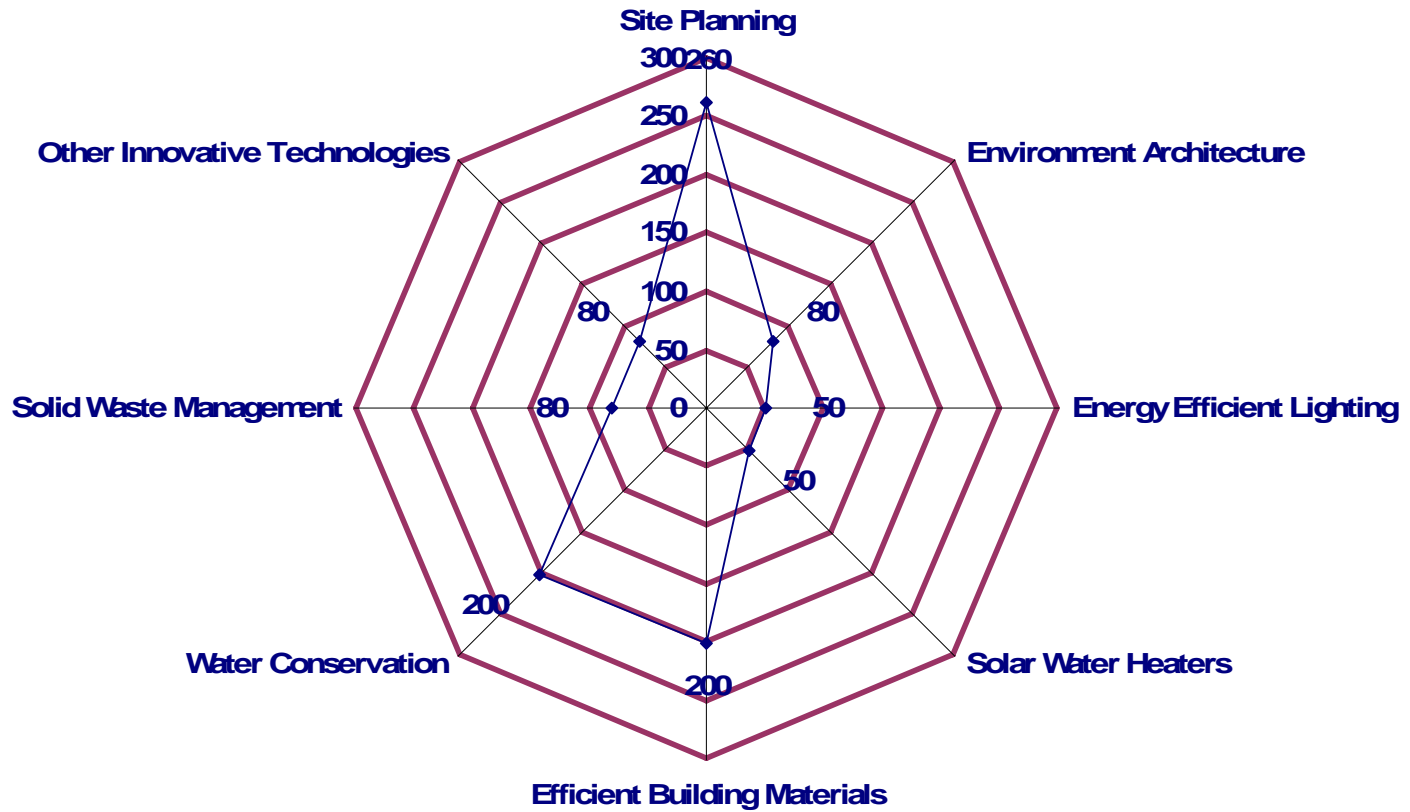
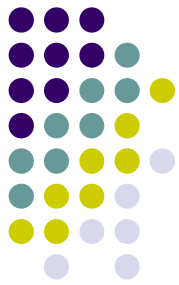


Category	No. of Measures	Total Points	Mandatory		Voluntary	
			Measures	Points	Measures	Points
Site Planning	24	260	7	70	17	190
Environment Architecture	5	80	1	25	4	55
Energy Efficient Lighting	4	50	1	5	3	45
Solar Water Heaters	3	50	--	--	3	50
Efficient Building Materials	21	200	6	25	15	175
Water Conservation	18	200	7	75	11	125
Solid Waste Management	5	80	2	50	3	30
Other Innovative Technologies	8	80	3	30	5	50
Total	88	1000				

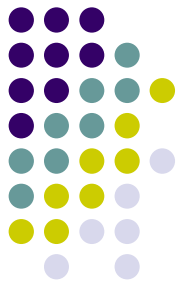


Weightage of attributes



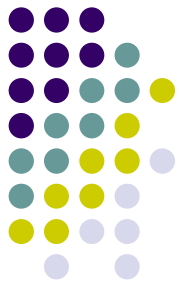


Intent of Assessment Criteria



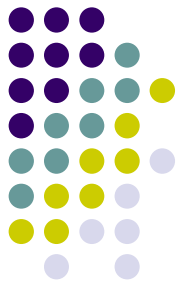
- Site Selection encourages measures such as
 - Reuse of top soil, preservation of existing vegetation on site, minimize soil erosion, use of renewable energy for on site lighting, biodiversity conservation, mitigate heat island effect, storm water drainage
- Environment Architecture includes measures that
 - Prevent excessive heat gain into the building, enable solar access, adequate day lighting and maximum ventilation

Intent of Assessment Criteria



- Efficient Building Materials promotes the use of
 - Less energy intensive, recycled and rapidly renewable materials, products that use industrial waste and with low embodied energy
- Energy Efficient lighting encourages use of
 - Pre wired CFL fixtures, low loss ballast and ensures appropriate lighting power density is met

Intent of Assessment Criteria



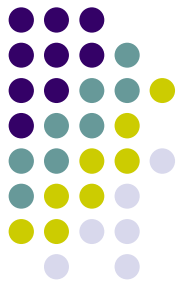
- Solar water heaters
 - Reduce heating load on conventional energy, SWH gas hybrid systems, provision for plumbing line for ducting hot water to houses.
- Water Conservation measures
 - Minimize fresh water consumption by rainwater harvesting, treatment of grey water by using eco-friendly, non energy intensive technologies, reuse of water for landscaping purposes, use of low flow fixtures

Intent of Assessment Criteria

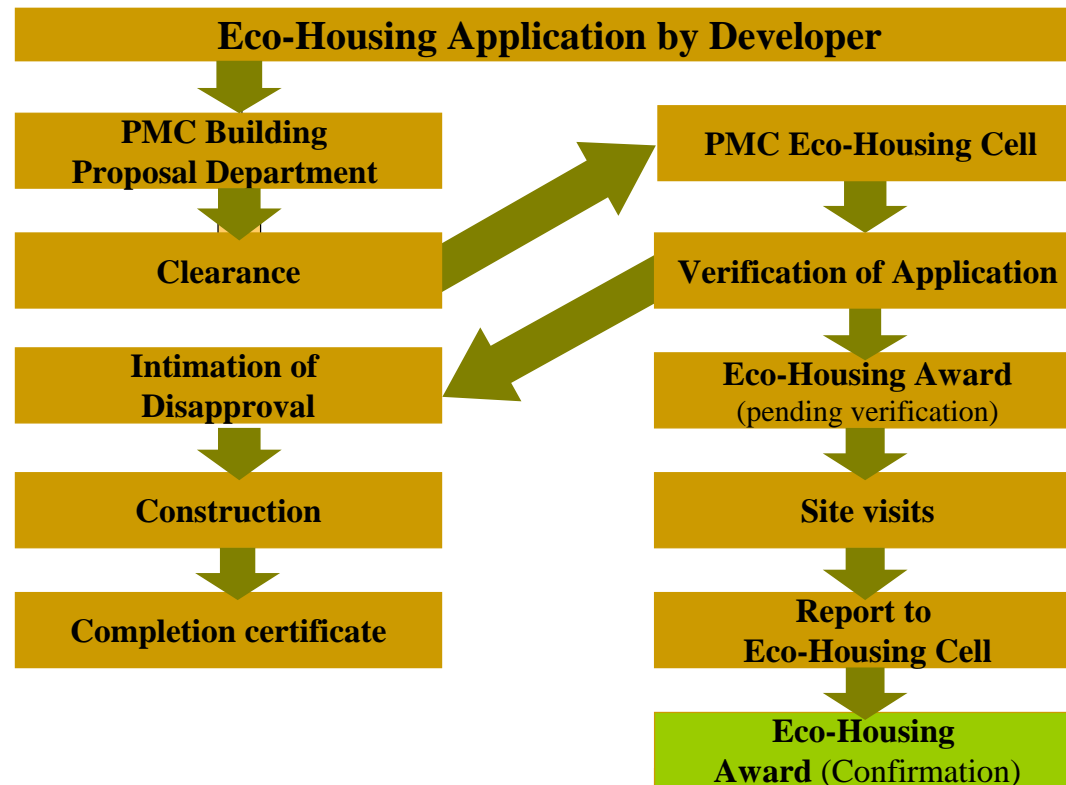


- Solid Waste Management
 - Manage waste and recover resources by setting up decentralized treatment plant based on non energy intensive and eco-friendly technology eg. vermi-composting
 -
- Other measures (Sustainable Construction Practices)
 - Measures to ensure safety during construction, provide minimum level of sanitation, handicap access and control levels of suspended particulate matter.

Eco-Housing Certification Process

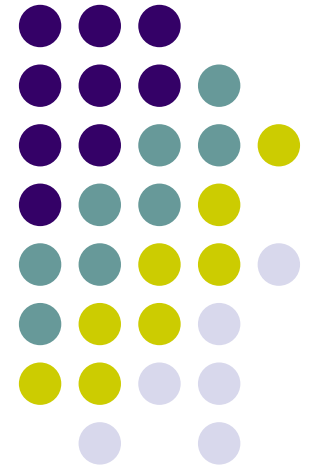


Proposed Eco-Housing Certification Process





Thank You



International Institute for Energy Conservation [IIEC]

ecohousing@iiec.org

www.ecohousingindia.org

www.iiec.org



IIEC