



Institutionalizing Green Procurement

- Opportunities and Proposed Approach

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Procurement for Built Environment

Thus far...


- Procurement based on competitive pricing and high quality
 - Recurring operational and maintenance typically not considered
 - Health and Environmental benefits not taken into account
 - Are they meeting green building requirements

Limitations

- Increase in Operational and maintenance cost
- Significant impact on occupational Health and environment
- Quite often Products and materials do not meet Green building requirements – Becomes a major challenge to correct later



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Green Procurement

- ❖ Adoption of ecologically responsible practices in Procurement

➤ Materials, Products , Technologies,
Services etc.

- ❖ Facilitates minimal ecologic impact throughout life cycle of the products



green procurement



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Green Procurement - Global Initiatives

- ❖ Japan has formalized Green Purchasing Law
- ❖ European Union has set up Green Public Procurement Guidelines
- ❖ NITI Ayog Strategic Paper on Resource Efficiency

➤ Ecolabelling and Sustainable
Procurement – Key strategies for
enhancing resource efficiency at
National Level



सत्यमेव जयते
NITI Aayog

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Benefits of Green Procurement

- ❖ Contributes to reduction in operation and maintenance cost of the buildings
- ❖ Enhances the Health and environmental benefits
- ❖ Improves the overall green building performance
- ❖ If considered by design, leads to reduction in construction cost



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Proposed Approach for implementation of Green Procurement

1. Development of 'Green Procurement Policy'
2. Capacity building for organization's staff
3. Development of 'Green Procurement Guidelines'
4. Implementation of Green Procurement

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1. Green Procurement Policy

❖ Develop 'Green Procurement Policy' at organization level

- With overall objective of reducing environmental impact and cost
- Highlight broad product categories
- Specify short, medium and long term goals

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2. Capacity Building of staff

❖ Training programs on Green Procurement

- Need for Green Procurement
- Benefits
- Best practices adopted at national & international level
- Plan for implementation – step by step approach etc

❖ Cover all key personnel related to product procurement

- Procurement managers, Operational managers, Engineers etc.

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3. Green Procurement Guidelines

❖ Incorporate Green Specifications

- Incorporate green specifications in existing procurement guidelines



Energy Efficiency



Material & Resources



Indoor Environmental Quality



Water efficiency

- Over and above quality, price and other existing criteria

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Energy Efficiency

❖ Procurement of Construction Block

- Thermal performance of construction block – significantly affects overall energy performance of building
- High thermal insulation – Very important
- 'High performance blocks'

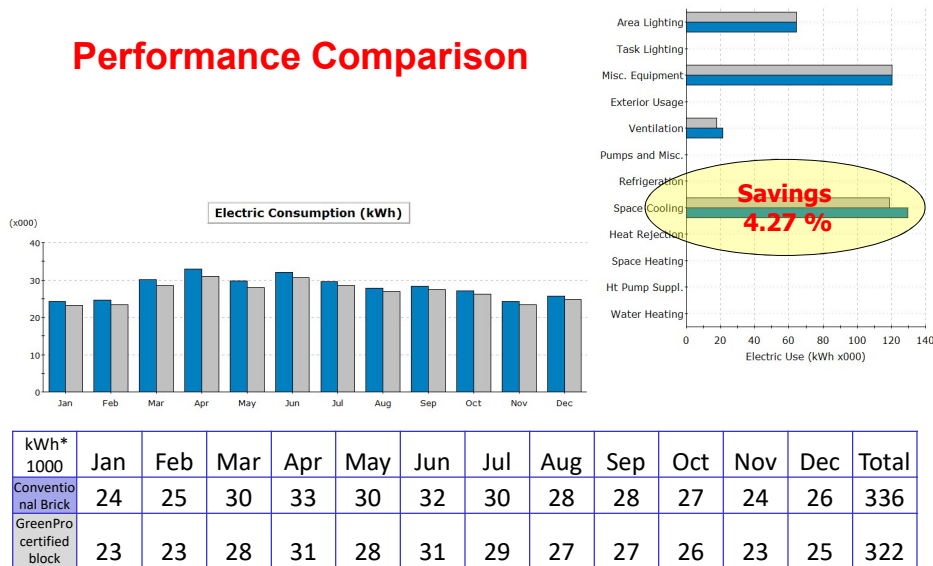


- AAC blocks - (9 inch) : 0.7 W/m² k
- Conventional Brick - (9 inch) : 2.6 W/m² k

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Performance Comparison



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Benefits achieved

S No	Parameter	Conventional Brick	GreenPro certified Block	Saving (%)
1	Monthly Peak Demand (kW)	1268.9	1183.1	6.7
2	Energy (kWh)	336140	321770	4.27
3	AC Capacity (TR)	56	47	9

Increase in Energy saving potential for high raise buildings

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Materials and Resources

❖ Green Cement - Utilizes maximum Industrial waste

- PPC – Fly ash based cement (upto 35%)
- PSC – Slag Cement (upto 70%)



❖ Benefits

- Increase in strength over a period of time
- Offers durability in construction
- Increases life of buildings



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Indoor Air Quality

❖ Eco friendly / Green paints

- Very low Volatile Organic Compound and formaldehyde
- ROHS Compliance
 - ❑ Lead, Chromium, Cadmium, Mercury
- Enhances occupant health and well being



"THERE IS NO KNOWN LEVEL OF LEAD EXPOSURE THAT IS CONSIDERED SAFE."

World Health Organization

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Paints Vs Green Paints

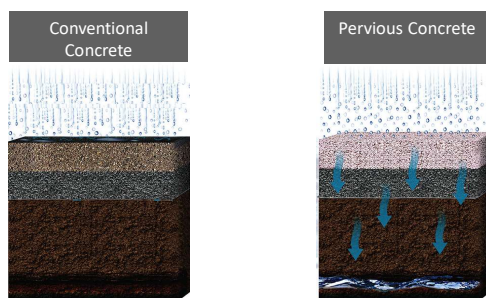
Parameters	Paints	Green Paints
Volatile Organic Compound (VOC) in mg/lit	>100	10-50
Presence of Heavy metals – Lead, Cadmium, Chromium and mercury	Yes	< 0.1 % (or) 1000 ppm
Formaldehyde	High	< 0.1%

Enhances health and well being of occupants

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Water Efficiency



- ❖ Pervious concrete with high percolation rates reduces the site runoff and increases water percolation
- ❖ Percolation rates for pervious concrete : 200 to 500 lit/minute/m²

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How pervious is concrete?



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Conventional vs Pervious Concrete

Project Information:

Concrete Pavement Area : 6000 m²

Rainfall Intensity (IDF Curve) : 102 mm

Runoff Coefficient

- Conventional : 0.95
- Pervious concrete : 0.6



S. No	System Parameters	Conventional Concrete	Pervious Concrete
1	Rainwater Runoff	581.4	367.2
2	Percolation Pits Required for Ground Water Recharge (Dia 150 mm & Depth 6 m)	205	130
3	Increase in rain water harvesting (%)	-	37%

Reduction in investment for rain water harvesting system

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4. Implementation of Green Procurement

- ❖ Identify priority product categories
 - High volume and High value
 - High environment impact
- ❖ Set target for purchasing the Green Products
 - Eg: Year 1 - 20-30 % of cost of products purchased
Year 2 - 40-50% of Cost of products purchased
- ❖ Measure and monitor the impact – Financial and Environmental Benefits
- ❖ Expand and scale up gradually to achieve 90-100% of products

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'GreenPro' Ecolabel – A tool for selection of green products for procurement

- ❖ Assess 'How green is a product'
 - Based on 'Life Cycle Based' approach
on par with international standards
- ❖ Highlights the way forward to achieve environmental performance
- ❖ Guides the manufacturer to position the product as 'Green'



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GreenPro at par with global standards

- ❖ GreenPro accredited by
Global Ecolabelling Network
(GEN)

- GreenPro standards at par with International Standards
- Increased export opportunities for GreenPro certified products



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GreenPro Ecolabelled Products

100+ Companies are adopting GreenPro

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Over 800 Certified products are available for Green Buildings

Architectural Products				Boards, Panels, Ceilings & Plaster				Glass Products			
HunterDouglas, igubax , onutone , Aimstrong , Decor Panel Products Pvt. Ltd. , Gyproc , H&FELE , INDIA GYPSUM PL LTD. , Samay Industries Limited , SAHYADRI , senses , skuski-f , VISAKA , AIS , SAINT-GOBAIN				ACC , BIRLA CEMENT , Dalmia , JK LAKSHMI , JSW Cement , ORIENT CEMENT , SAGAR , ITF , HORMANN , sumai , TATA STEEL , JOHNSON , NITCO				fusion , gleny , CONSTRUCTION , JK LAKSHMI , JSW CONCRETE , RON-CONCRETE , XTREMA , H , HERCON , imfa , OSINCON			
ABHOK CHEMICALS , exam , Greenview , Haylida , Herbicare , DDP , Berger , ROCK WOOL , ROCKWOOL , Supreme , TWIGA				AlkoNobel , Berger , WALLACE , Shree Ram , Decorchem , NIPPON PAINT , panache , BOUJANYA , surfa coats , USAF , TATA BELLESCOPE , JSW Cement , SAGAR , TATA STEEL				ADATION , BIO-TECHNOLOGIES , eden , EMERSON , furat , gleny , SAVITA , hindware , WPC Products			
aeropure , air quality by bonphul , FTTOREM , Honeywell , Magneto , STERLING & WILSON , interio , SOS , TATA STEEL , ACC CONCRETE , gleny , SlubSpeed											

Supporting Council and Organisations

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To conclude...

- Implementation of 'Green Procurement' key for reaping the maximum benefits
- Use of Green Products, Materials and technologies enhances performance of Green Buildings
 - ▣ Leads to significant benefits
- GreenPro – enables architects, developers and builders to choose right products
- Creates a 'Win – Win' situation for users and Product manufacturers



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