


Green Purchasing: Tips and Tools for Buying "Green"

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The Pentagon – A Small City

The Pentagon has never undergone a major renovation in the past *60 years!

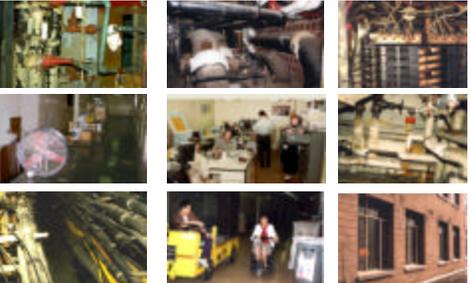


- 34 acres
- 6.5 million sq. ft.
- 3 Empire State Bldgs.
- 7,748 windows
- 17.5 miles of corridors
- 25,000 personnel
- 1,000,000 calls each day
- Police force
- Metro station
- Fire Station
- Healthcare Facilities
- Post Office
- Mini-mall
- Heliport

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The Need for Renovation

Major building systems beyond repair, non-compliant with current building codes,
 hazardous materials present throughout, poor energy efficiency



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Pentagon Projects

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Challenges

- Diverse Pentagon projects – Renovation and new Construction
- Rebuild from 9/11 tragedy
- Force-Protection: DoD Personnel & Real Property
- Logistical & Organizational Challenges

- How to address these challenges and build **green** facilities, in a fiscally responsible manner?

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Unique Projects require flexible acquisition strategy

- Contract is a Framework
 - Long & Short Term Projects (2 to +10 years)
 - Flexibility
 - Technological improvements
 - Design-Build
 - Performance based criteria/requirements
 - Award Fee
 - Incentive Fee

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Green Design & Construction Initiatives

Design and Construction

- Sustainable Material / Product Evaluation Process
- LEED™ Supplement
- QA/QC Involvement
- Provide LEED™ and LCCA Training
- Continuous Value Enhancement Process (CVEP)



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Implementing Green Building

- Each Wedge is considered a separate project for LEED™ certification purposes:
 - demonstrates progress to management in the near term;
 - team gains recognition as they reach sustainability targets;
 - reaching short-term achievements helps to boost morale and keep team members motivated.
- Monthly Contractor Progress Reports including:
 - progress towards meeting Green goals;
 - status of LEED™ point achievement, e.g., quantities of diverted construction waste;
 - results of on-site Green material/product testing;
 - potential new Green considerations for the project; and
 - study findings; e.g., feasibility of carpet recycling.

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Field Guide for Sustainable Construction

Pentagon Renovation and Construction Program Office and The Pennsylvania State University



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Field Guide for Sustainable Construction

Why did we develop the Field Guide?

- Little practical field-level guidance on sustainable construction exists
- Minor construction decisions – such as selecting adhesives/ sealants – can have major sustainability impacts, on Indoor Air Quality, Maintenance, and Adaptability
- Opportunities exist to enhance sustainability at every project phase
- Create field-level attitude and awareness - the "why" and "how" of sustainability
 - Promotes buy-in to sustainability

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Field Guide for Sustainable Construction

Target Audience: supervisors, managers, construction workers – requires targeted educational strategy – like on-site safety awareness

Purpose: Provide guidance and education to field-level supervisors, managers and construction workers

Strategy: Manual of sustainable construction practices with examples of good practice; site-specific orientation; stand-alone chapters based on ten categories of Sustainable Construction

Content: Trade-specific issues, mini-case studies, how-to examples, and references

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Organization of the Field Guide

Sections

- Summary
- Planning
- General Conditions
- Sitework
- Demolition and Abatement
- Foundations Substructure
- Superstructure
- Exterior Enclosure
- Roofing
- Interior Construction
- Conveying Systems
- Mechanical
- Electrical
- Information Technology
- Equipment
- Finishes

Chapters

1. Procurement
2. Site/ Environment
3. Material Selection
4. Waste Reduction
5. Waste Recycling
6. Energy Use
7. Building and Material Reuse
8. Construction Technologies
9. Health and Safety
10. Indoor Env. Quality

Field Guide for Sustainable Construction

Section	Chapter	Page	Start	End														
Summary																		
Planning																		
General Conditions																		
Sitework																		
Demolition and Abatement																		
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Potential Benefits

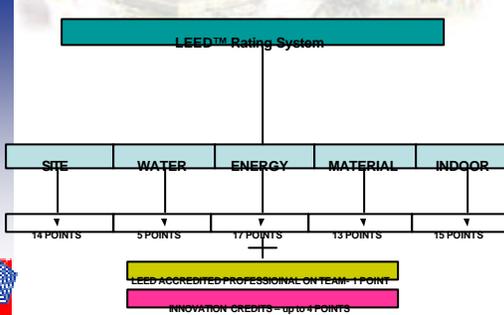
- Achieve sustainable goals and attain LEED™ credits
- Develop competencies / achieve profitability goals in the trades
- Open door for improvement suggestion from the field



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Sustainability Metrics



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Materials Evaluation Process

1. Identify the target materials
2. Determine options
3. Complete Sustainable Material Evaluation Matrix for each option
4. Conduct LCCA
5. Complete Sustainable Material Selection Narrative



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Why we developed the Green Material/Product Selection Process

- Process is needed for evaluating green materials and products in a consistent manner
- Decisions left up to design-build team
 - D-B team green material/product selection process driven primarily by schedule and first cost
- Performance criteria add complexity:
 - How prescriptive should we be?

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Supporting Tools

Design Life Cycle Database

Click on the following:

- 01_General Construction
- 02_Site Construction
- 03_Concrete
- 04_Masonry
- 05_Metal
- 06_Wood and Composites
- 07_Thermal and Acoustic Insulation
- 08_Steel Joist Systems
- 09_Finishes
- 10_Envelope
- 11_Envelope
- 12_Envelope
- 13_Special Construction
- 14_Curtainwall Systems
- 15_Mechanical
- 16_Electrical

Product Selection Screen
System Maintenance

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Division Finishes

Please select one of the following finishes:

- 0000_METAL BEARING ASSEMBLIES
- 0000_FLASER/AMBIKAT/BERKUNG
- 0000_CUSTOM DUNE
- 0000_FLASER/BERKUNG
- 0000_TILE
- 0000_PLASTIC/PAVING TERRAZZO
- 0000_ACRYLIC COATING
- 0000_PORCELINO FLOORING
- 0000_CEMENT
- 0000_CERAMIC TILE
- 0000_ACRYLIC WALL TRIM LINE
- 0000_LAMINATE/INSULATION
- 0000_FLOORING/PAVING TERRAZZO

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