

Sustainable Design



Sustainable Design

■ Classic Definition:

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Brundtland Commission

■ Triple Bottom Line





Sustainable Design

- *Sustainable* facilities achieve simultaneous excellence on all three goals:

For the People:

- Enhances creativity, productivity and research effectiveness
- Increases possible local development



For the Profit:

- Attracts and retains quality staff
- Attracts scientific partners
- Maximizes return on investment
- Provides extended use of facilities

For the Planet:

- Reduces emissions
- Improves energy usage
- Minimizes legacy waste



Sustainable Design

FEMP Project Goals

- Implement Working Standards for capital and expense projects including the laboratory campus
- Obtain input from other DOE sites
- Post recommendations on the PNNL External Website
- Present the program and results at a DOE or industry conference and 1 workshop for DOE sites



Sustainable Design

Foundation

- Outstanding Scientific Success
- O&M Success
- Reduction of Waste Generation
- Pollution Prevention and Energy Management Awards
- Valued Community Relationships
- Staff pride in the Laboratory



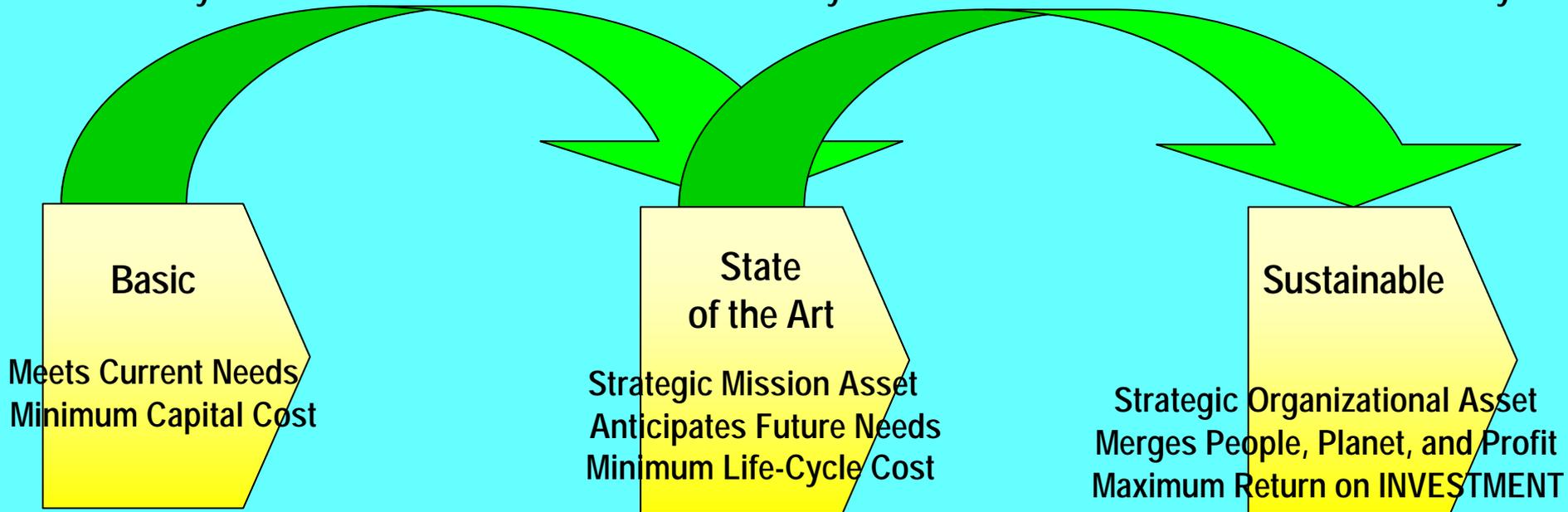
Sustainable Design

Paradigm Shifts

"The Old Way"

"The Present Way"

"The Sustainable Way"





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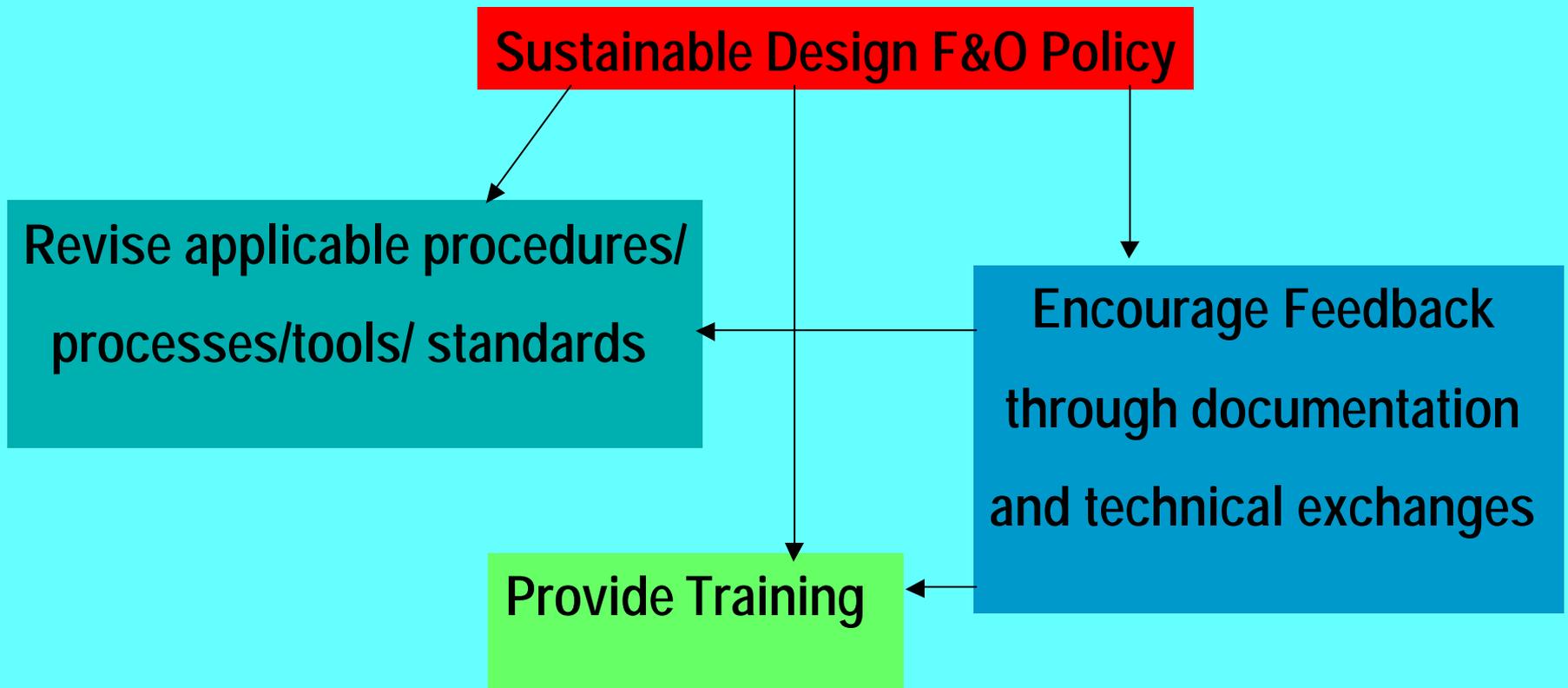
Keys to Implementation

- Management Support
- Involvement
- Vision
- Plan
- Recognize previous accomplishments
- Communicate
- Reward and Advertise Successes



Sustainable Design

Management Commitment





Sustainable Design

Existing Systems/Documents for Incorporation of Sustainable Design

- MA 710 – Design & Drafting Procedure Manual
- Facility Design Manual
- Project Management Manual – ADM-55
- Additional ADM Manuals (CM)
- Financial System/Contracts Process/Guidance
- Environmental Review Checklist
- Facility Modification Permit



Sustainable Design

Sustainable Design Training

- Project Management Group (Project Managers & Program Leads)
- Engineering & Design Staff
- Financial/Contracts Staff
- Building Managers/Building Core Team
- Environmental Compliance Representatives
- Facility Review Board Members
- Facility Strategic Planning Staff
- PNNL Management



Sustainable Design

Responsibility/Tools

- FP&ES Staff - Checklist, LEED, FP&ES Procedures, P2-EDGE, BEES, BLCC
- Financial/Contracts Staff - Federal Acquisition Regulations (FAR's)
- Building Managers/Building Core Teams (BE/Sys Eng.) - Checklist
- Environmental Compliance Representative - Environmental Review Checklist
- Facility Review Board - FRB Procedure



Sustainable Design

F&O Implementation of SD in Individual Projects

- Service Request System
- Project Baseline Document (PBD)
- PBD Review
- Building Core Team
- Strategic Planning
- Eng/Design & Construction
- Facility Mod Permit
- Client Engagement



Sustainable Design

Project Implementation

- Incorporate into Appropriate Manuals
- Include in project budget planning
- Include staff w/ knowledge of sustainable design on project team
- Provide training
- Document sustainable design process/results
- Include sustainable design expectation in contracts
- Communicate lessons learned
- Provide Rewards & Recognition

NOTE: Use existing processes to incorporate sustainable design principles



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Thank you -- Questions?