



Specifying Healthy Building Materials:

Considerations, Process, Challenges, and Resources

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Overview

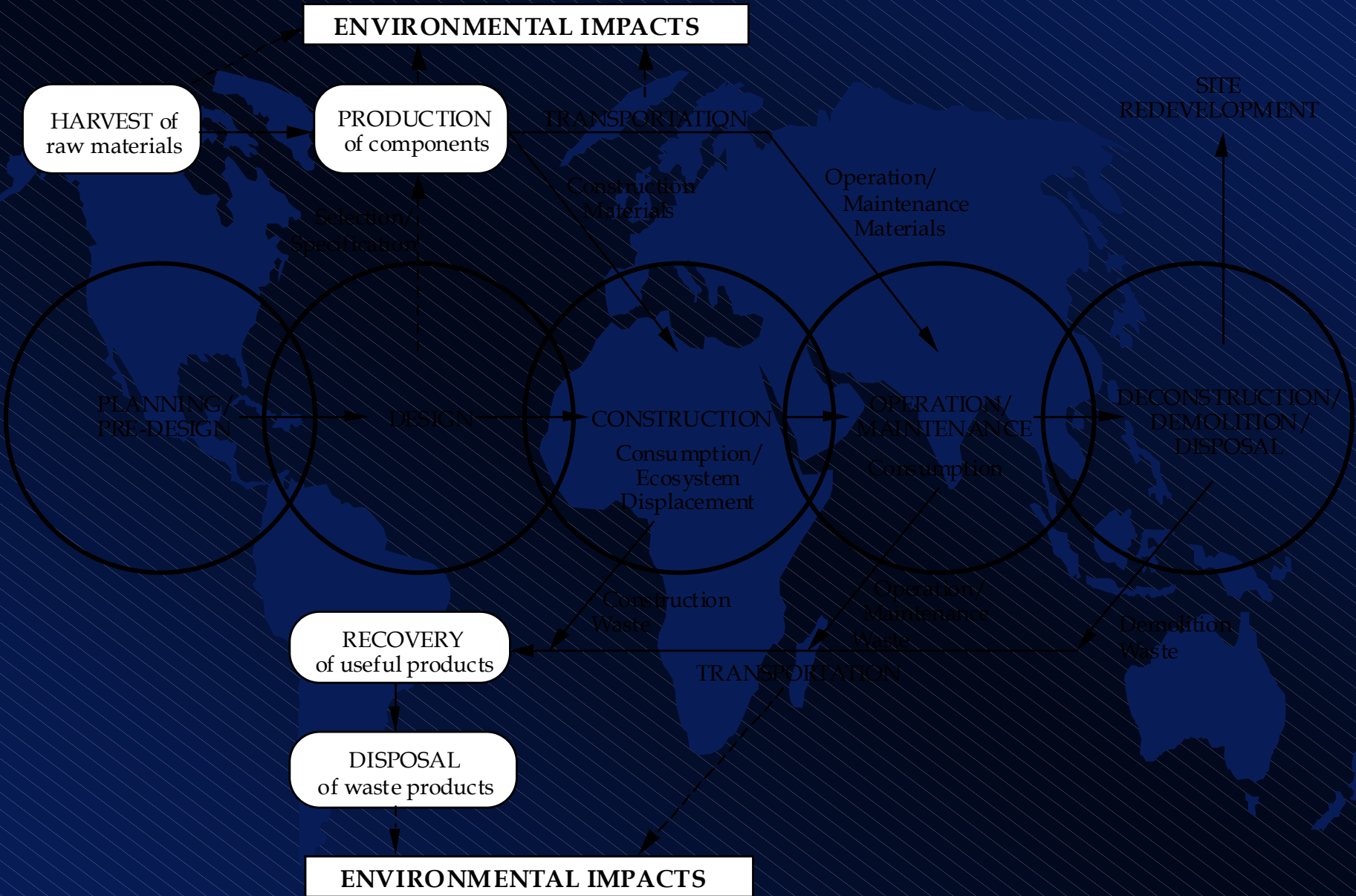


- ◆ Healthy to whom?
- ◆ What does “healthy” mean in terms of building materials?
- ◆ How can we select and specify healthy building materials?
- ◆ What are the challenges of using healthy building materials?
- ◆ What resources are available for more information?

Healthy to whom?



- ◆ Occupants
- ◆ Think life cycle!



Healthy to whom?



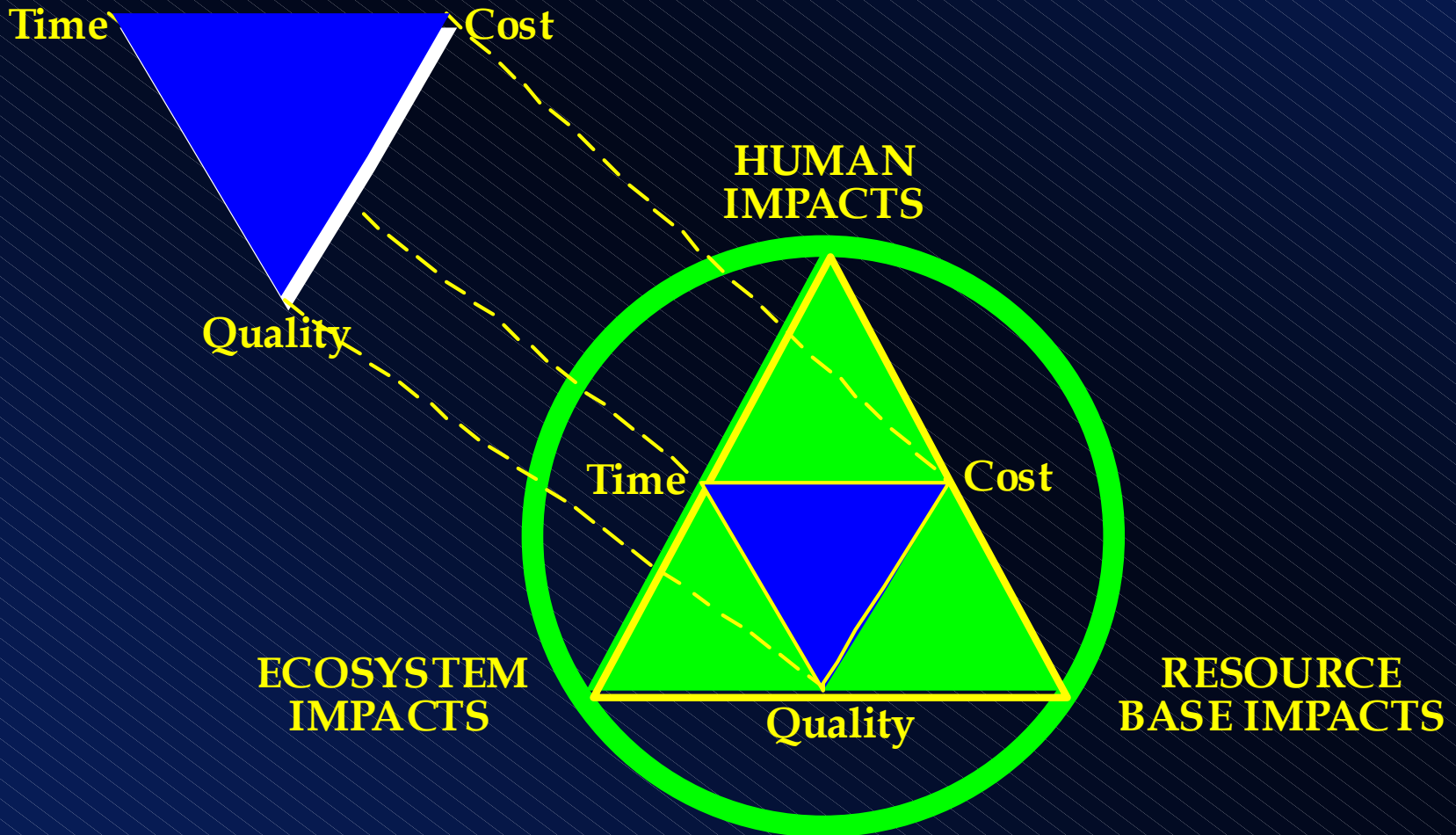
◆ Direct Stakeholders

- Occupants
- Constructors
- Operators/Maintainers
- End-of-service-life Stakeholders

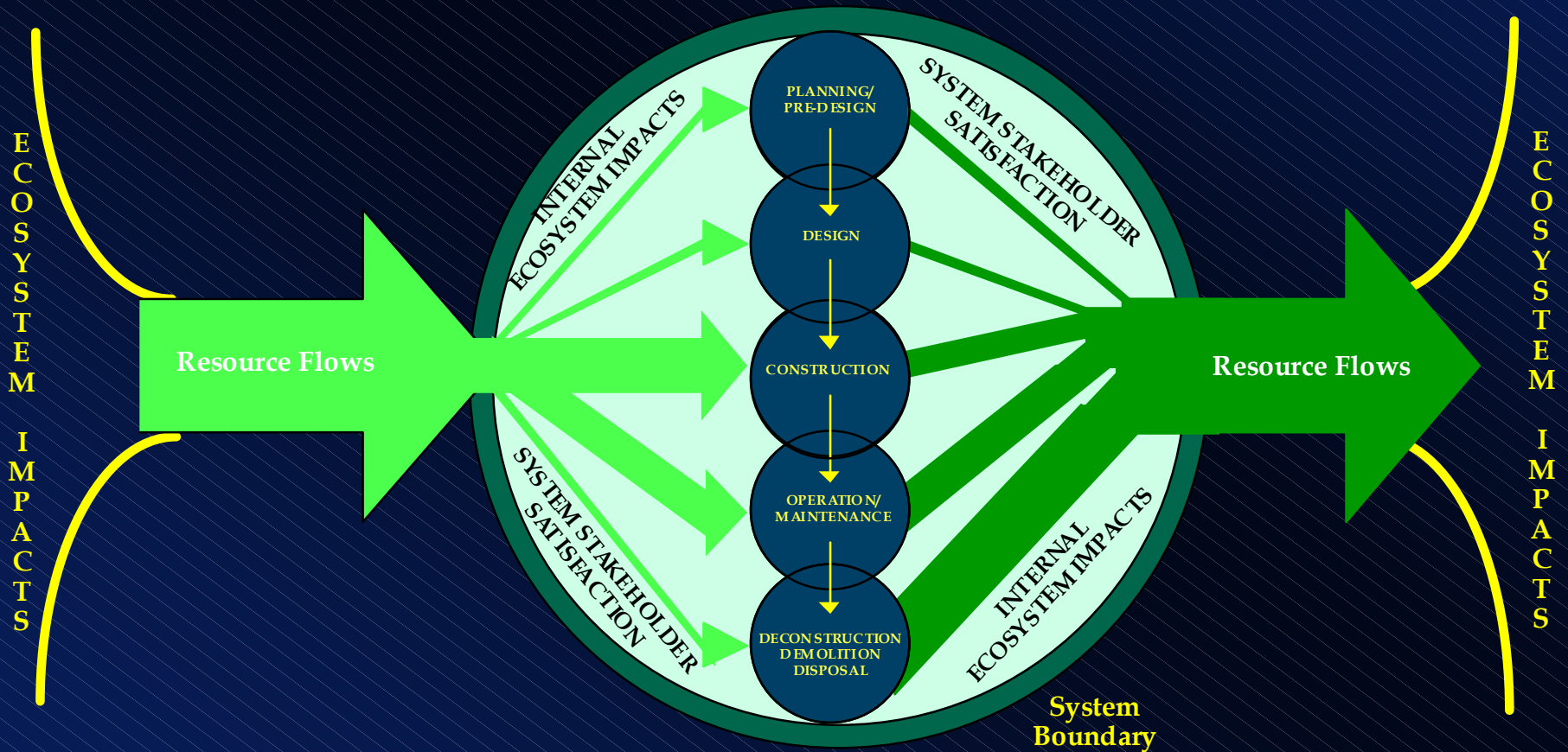
◆ Non-stakeholders and Future Generations

- Preserve ecosystems
- Preserve resource bases

Considerations



Impacts of Material Selection



What does “healthy” mean?

- ◆ Inside the facility system (stakeholders):
 - Technological Performance
 - Socio-Economic Performance
- ◆ Outside the facility system (non-stakeholders and future generations):
 - Environmental Performance
 - Resource Consumption Performance

Technological Performance:

- ◆ Durability
- ◆ Service Life
- ◆ Maintainability
- ◆ Serviceability
- ◆ Code Compliance
- ◆ R-value
- ◆ Strength
- ◆ Constructability

Socio-Economic Performance:

- ◆ Occupant Health/
Indoor Env'l Quality
 - VOC Outgassing
 - Toxicity
 - Susceptibility to
biocontamination
- ◆ Appropriateness for:
 - Scale/Site
 - Climate
 - Culture
- ◆ Economics:
 - Contribution to
Economic Dev't.
 - Cost
 - Labor Skill
Requirements
 - Labor Amount
Requirements

Environmental Performance:

- ◆ Impacts on Air Quality
 - Carbon Dioxide
 - Hydrocarbons
- ◆ Impacts on Water Quality
- ◆ Impacts on Soil Quality
- ◆ Ozone Depletion Potential
- ◆ Site Disturbance
- ◆ Assimilability
- ◆ Scarceness
- ◆ Impacts during Harvest
- ◆ Processing Impacts

Resource Consumption Performance:

◆ Energy

- Embodied
- Operational
- Efficiency
- Distributional

◆ Degree of Processing

◆ Source Reduction

◆ Materials

- Renewable
- Recycled/Recyclability
- Reused/Reusability
- Renewability
- Packaging Requirements

◆ Source Location/ Transport Distance

Selecting and Specifying Healthy Building Materials

- ◆ Defining and framing the problem
- ◆ Articulating objectives
- ◆ Identifying/generating alternatives
- ◆ Analyzing and evaluating alternatives
- ◆ Recommendation/specification
- ◆ Implementation
- ◆ Follow-up

Selecting and Specifying Healthy Building Materials

- ◆ Defining and framing the problem
 - Example: Paper vs. plastic
 - Challenge: Disconnected delivery process
- ◆ Articulating objectives
 - Technological, Socio-economic, environmental, and resource consumption objectives
 - Challenge: Information overload

Selecting and Specifying Healthy Building Materials



- ◆ Identifying/generating alternatives
 - Available resources and examples
 - Challenge: Choosing an appropriate scope
- ◆ Analyzing and evaluating alternatives
 - Technological, Socio-economic, environmental, and resource consumption parameters
 - Challenge: Data availability

Selecting and Specifying Healthy Building Materials



- ◆ Recommendation/specification
 - Challenge: Working within existing processes
- ◆ Implementation
 - Challenge: Resistance to change
- ◆ Follow-up
 - Challenge: Capturing and transferring lessons learned

Challenges

A dark blue silhouette of a world map is centered in the background of the slide. The map shows the outlines of continents and is set against a dark blue background with a fine, light-colored grid pattern.

- ◆ Disconnected delivery process
 - Distributed responsibility and control
 - Isolation of decisions
 - Ignoring the holistic system perspective

Challenges



- ◆ Resistance to change
 - Ignorance: “Sustaina-what?”
 - Skepticism: “Healthy, schmelthy!”
 - Vestedness: “If it ain’t broke...”
 - Risk aversion: “I won’t be the guinea pig”

Challenges



- ◆ Making informed decisions:
 - Choosing an appropriate scope
 - Information overload
 - Lack of data

For more information...

- ◆ Resource guides
- ◆ Theoretical references
- ◆ Rating and certification systems
- ◆ Case studies and examples
- ◆ Manufacturer query
- ◆ Ask for help...

Summary

- ◆ Healthy goes beyond the building's occupants
- ◆ Think life cycle, think systems
- ◆ Question the question
- ◆ Set reasonable and context-specific goals
- ◆ Choose your battles wisely - do only as much as the situation permits
- ◆ Don't hesitate to ask for help!



Questions?