

Sustainable Material Selection: Unpacking the Complexities

Moderator: Michelle Ludwig – LDC & PJCarew Consulting

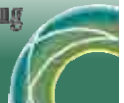
Panelists: Sean Doel – WSP Group

Jeremy Stewart - Source Interior Brand Architects

Jason McLennan – Living Building Institute

GBCSA Green Conference 2011

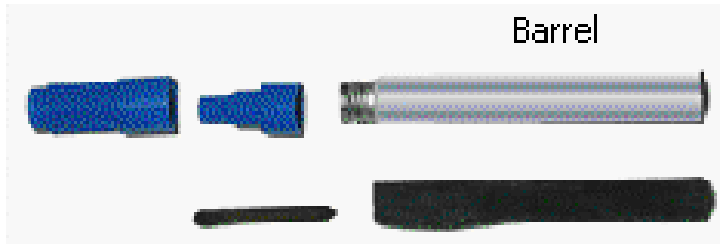
Cape Town



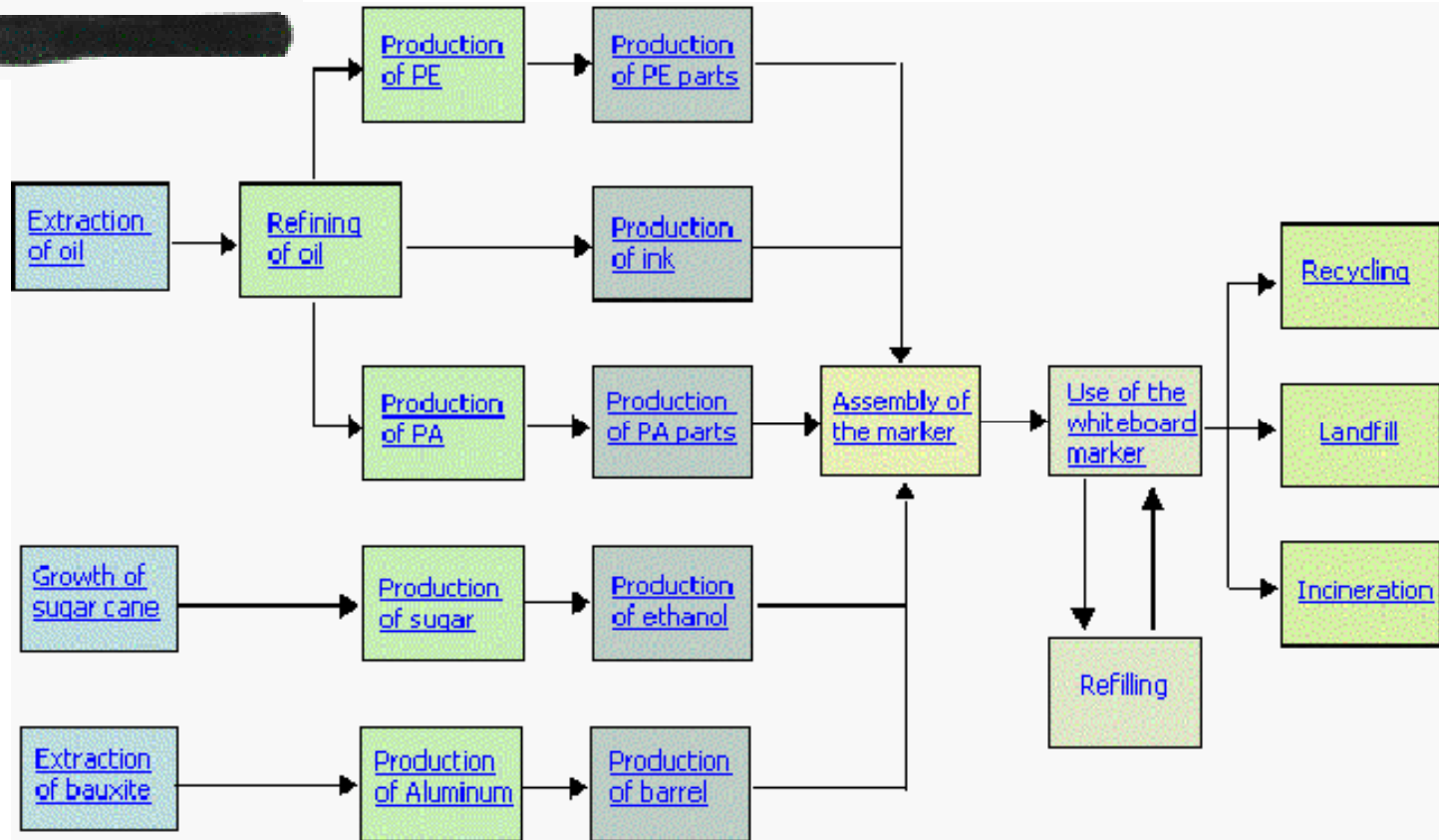
What is the perfect material?



Complexities



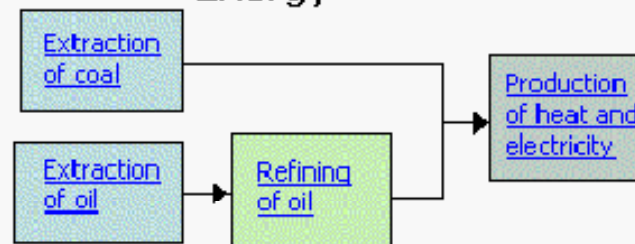
Plastic Parts



Ink

Barrel

Energy



Transportation



Trade-offs



Save Trees Use Metal

We all have a responsibility to preserve our environment.



Embodied Energy

Embodied energy - is the energy consumed by all of the processes associated with the production of a building or product, from the acquisition of natural resources to product delivery.



Extraction

+



Transport

+



Processing

+



Transport

+



Manufacturing

+



Assembly

+



Transport

=

Embodied energy

Life Cycle Analysis

Challenges: Context - Data - Transparency – Project relevance



Now what?



Reductionist vs. Regenerative

ECO-EFFICIENCY

The strategy for "sustainability" of minimizing harm to natural systems by reducing the amount of waste and pollution human activities generate.

Now with
30% less
bad stuff!

Being less bad \neq being more good

ECO-EFFECTIVENESS

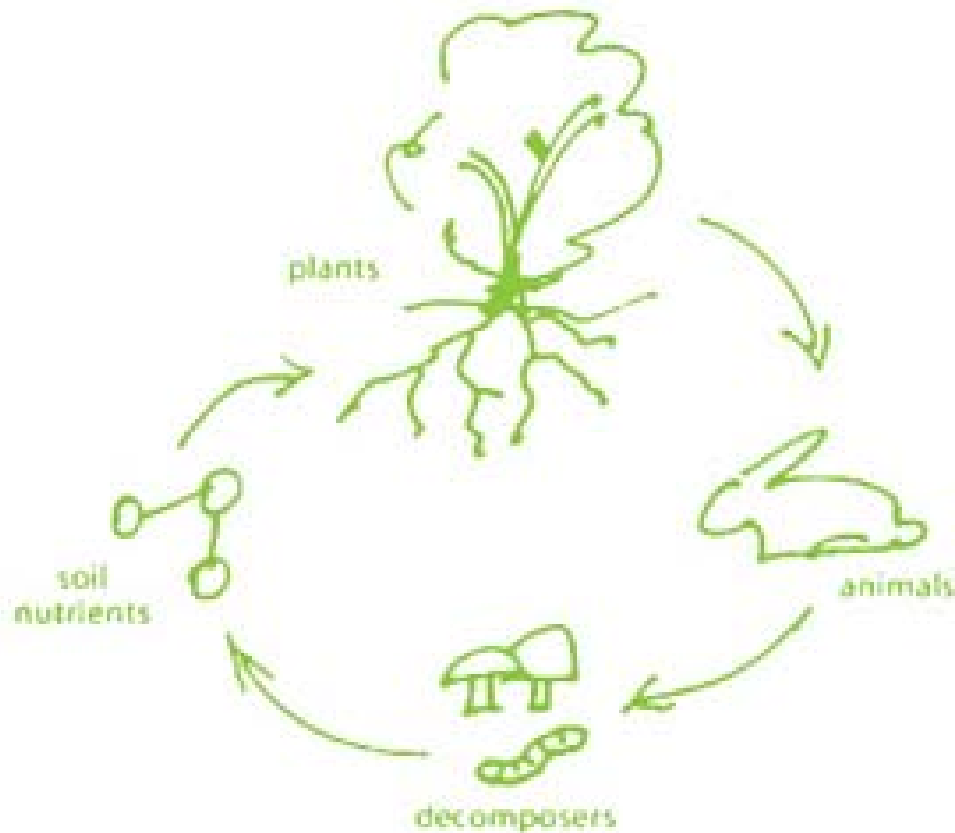
Strategy for designing a human industry that is safe, profitable and regenerative, producing economic, environmental and social value.



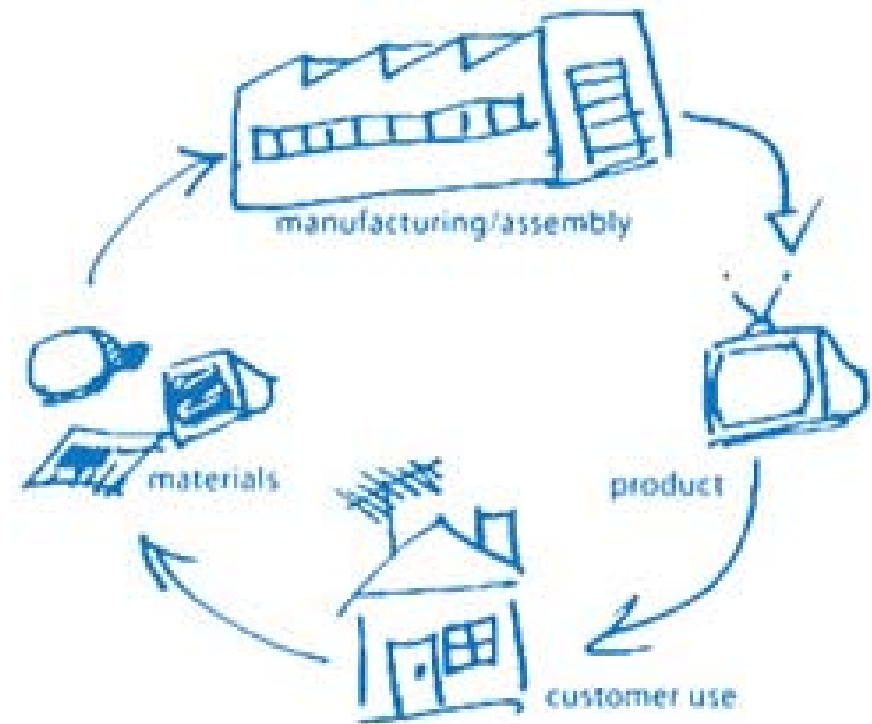
Credit: W. McDonough / M. Braungart

Cradle to Cradle

What happens to a material or product when it comes to the end of its useful life?



Biological nutrient cycle



Technical nutrient cycle

Decision-making

Traditional criteria

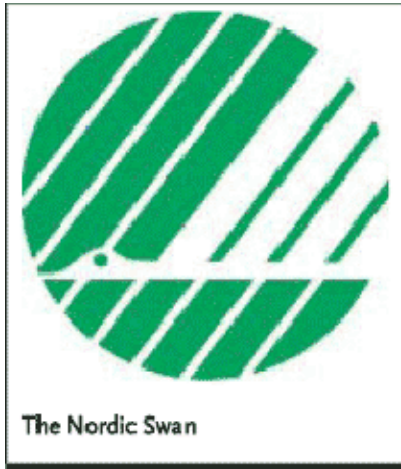
- › Performance
- › Cost
- › Availability

Additional criteria

- › Environmental Impact – Ecological health
- › Environmental Impact – Human health
- › Social Impact – Human justice



Eco-labelling



EcoStandard

South Africa's assessment & eco-labelling scheme

What can we DO?

Reduce

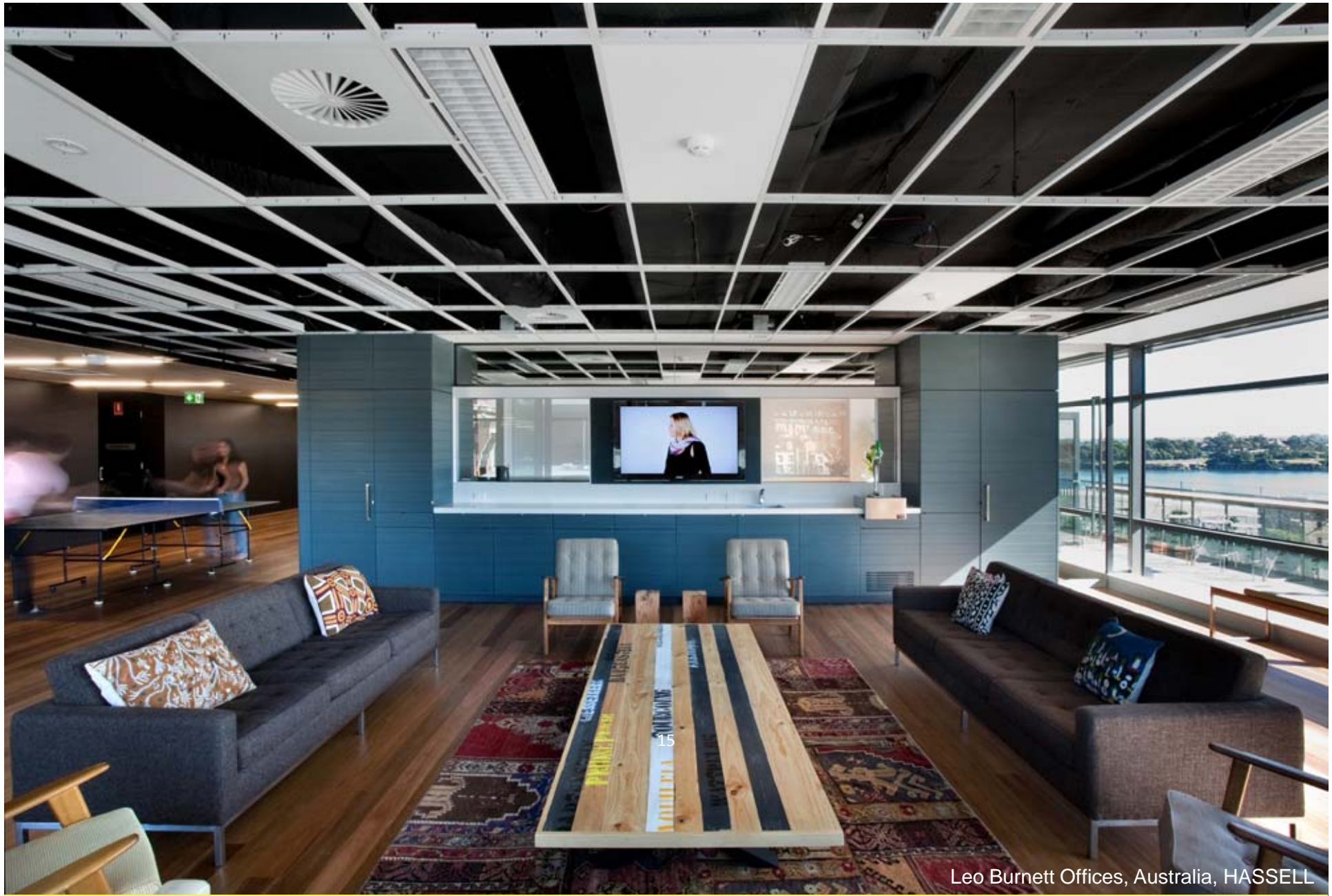
Reuse

Recycle

Rethink



Reduce



Reuse



Reuse



Slowpoke Cafe, Anne Sophie Poirier



Pringle Bay House, Kate Otten Architects

Recycle



Ninety-nine percent recyclable, the Think chair can be disassembled in five minutes using common hand tools. The chair's parts are separable rather than fused to increase the likelihood that they will be recycled at the end of its life.

Courtesy Steelcase

Reduce

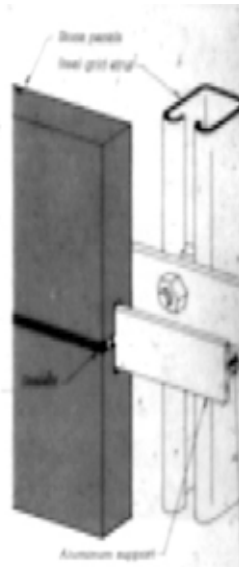
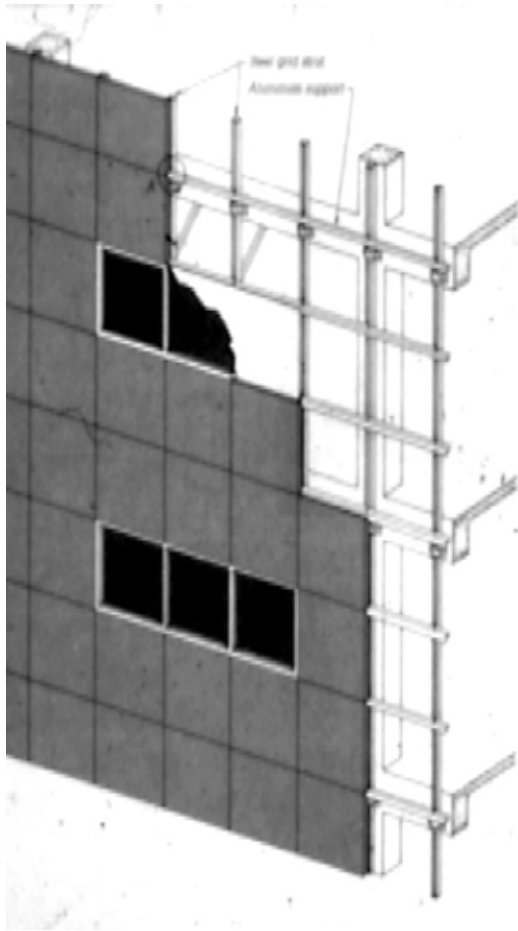
Reuse

Recycle

Rethink



Design for Disassembly



Reduce

Reuse


Recycle

Rethink

Reality



Evaluation questions

- › What is it made from?
 - › How is it made?
 - › Is this harmful to environment or humans?
 - › Can I use less of it?
 - › What are the options at the end of its useful life?
 - › What are the alternatives?
- 

Understand issues involved

Take context into consideration

&

Make an *informed* decision



Other points of view.....

