Tools for Designing Green: Overview

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SDCB 201 – Green Building Tools and Techniques

Topics . . .

- How tools can be classified
- The intended purpose of different tools
- When and why they are used
- Who will typically use them
- Interrelationships

A Simple Classification System

- Level 1 — product comparison tools & info sources

- Level 2 — whole building design or decision support tools

- Level 3 — whole building assessment frameworks or systems

- Support systems

Level 1

Product Comparison
(BEES, SimaPro, TEAM, GreenSpec, etc.)

- Used at various stages (e.g., pre-design, procurement)
- May include economic as well as environmental information
- May have LCA in the background (e.g. BEES) or
- May be used to construct LCAs (e.g. SimaPro)
- Users may or may not require specialized knowledge (e.g. LCA) depending on the tool

Level 2

<u>Whole building design/decision support</u>
(LCA, LCC, Simulators - e.g. Athena, Envest, EcoQuatum, EE4, E10, etc.)

- Used at conceptual and detailed design stages
- Narrower focus - e.g. environment, cost, energy
- Objective/quantitative
- Can be used by design team members, but may require specialized knowledge (e.g.,energy sim.)
- May involve weighting or scoring

Level 3

Whole building assessment systems

(e.g., BREEAM Green Leaf, LEED, Green Globes)

- ◆ Broad coverage - environment, economic, social
- ◆ Mix of objective and subjective data
- ◆ Use scoring or weighting systems
- ◆ Used by design team throughout the process
- ◆ May apply to new or existing buildings
- ◆ May require external auditors
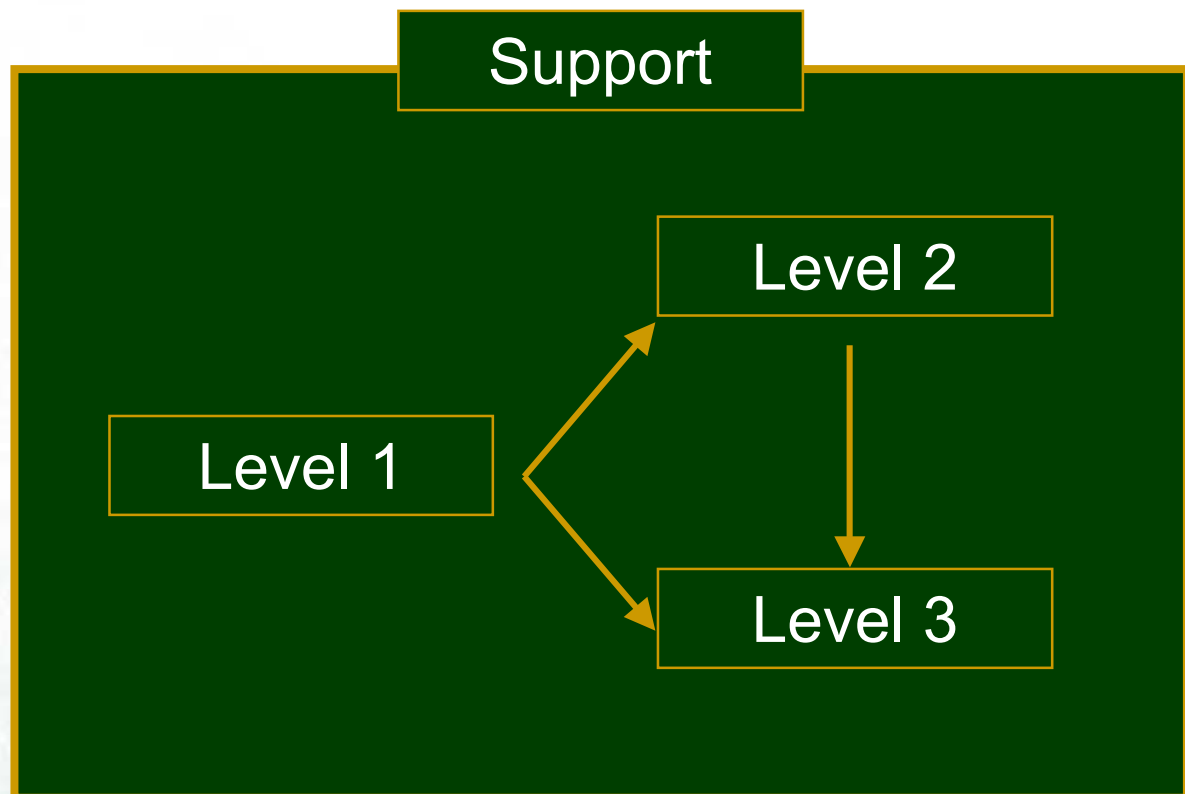- ◆ May yield certificate or label

Support

General information & screening tools/methods
(Baseline Green, LCExplorer, Green Building Advisor)

- Strategic or product-specific information

- Tools for screening, setting priorities, addressing specific concerns

- May apply to whole or part buildings/developments

- May be based on input-output or other data not meeting ISO LCA standards

- A variety of potential users depending on the tool, but most intended for design team

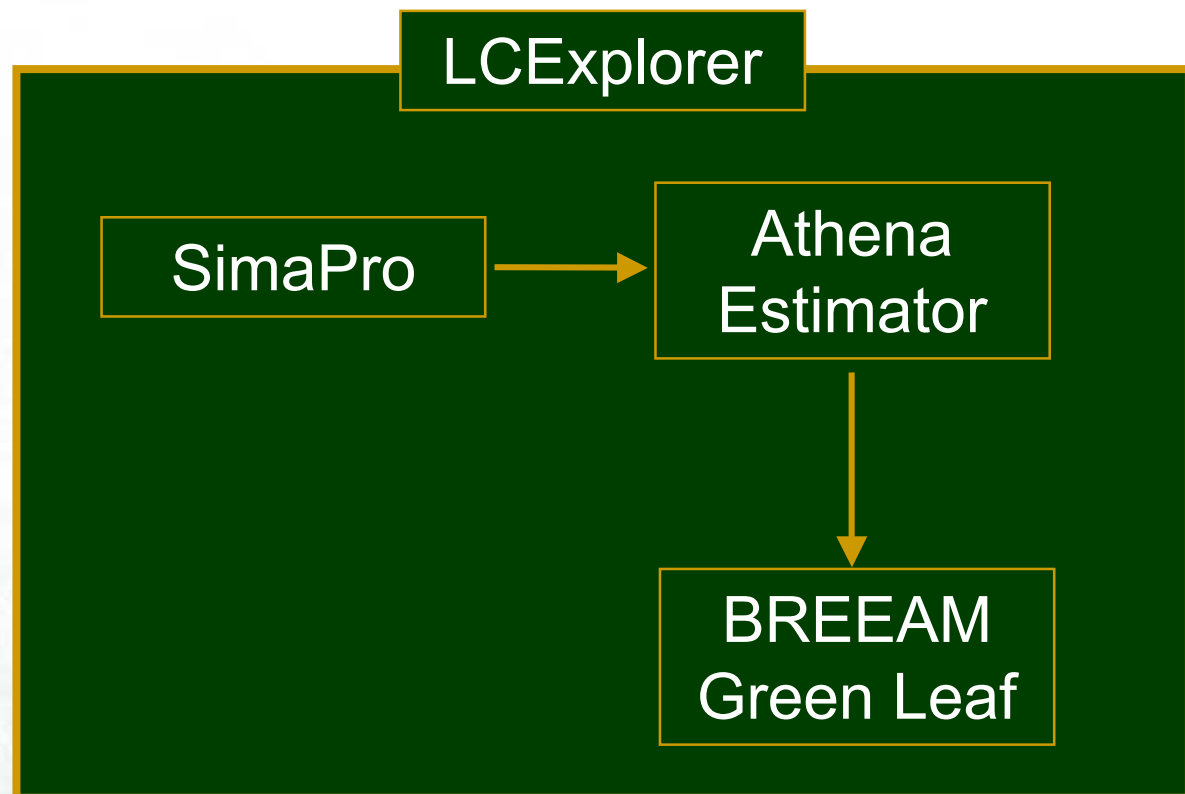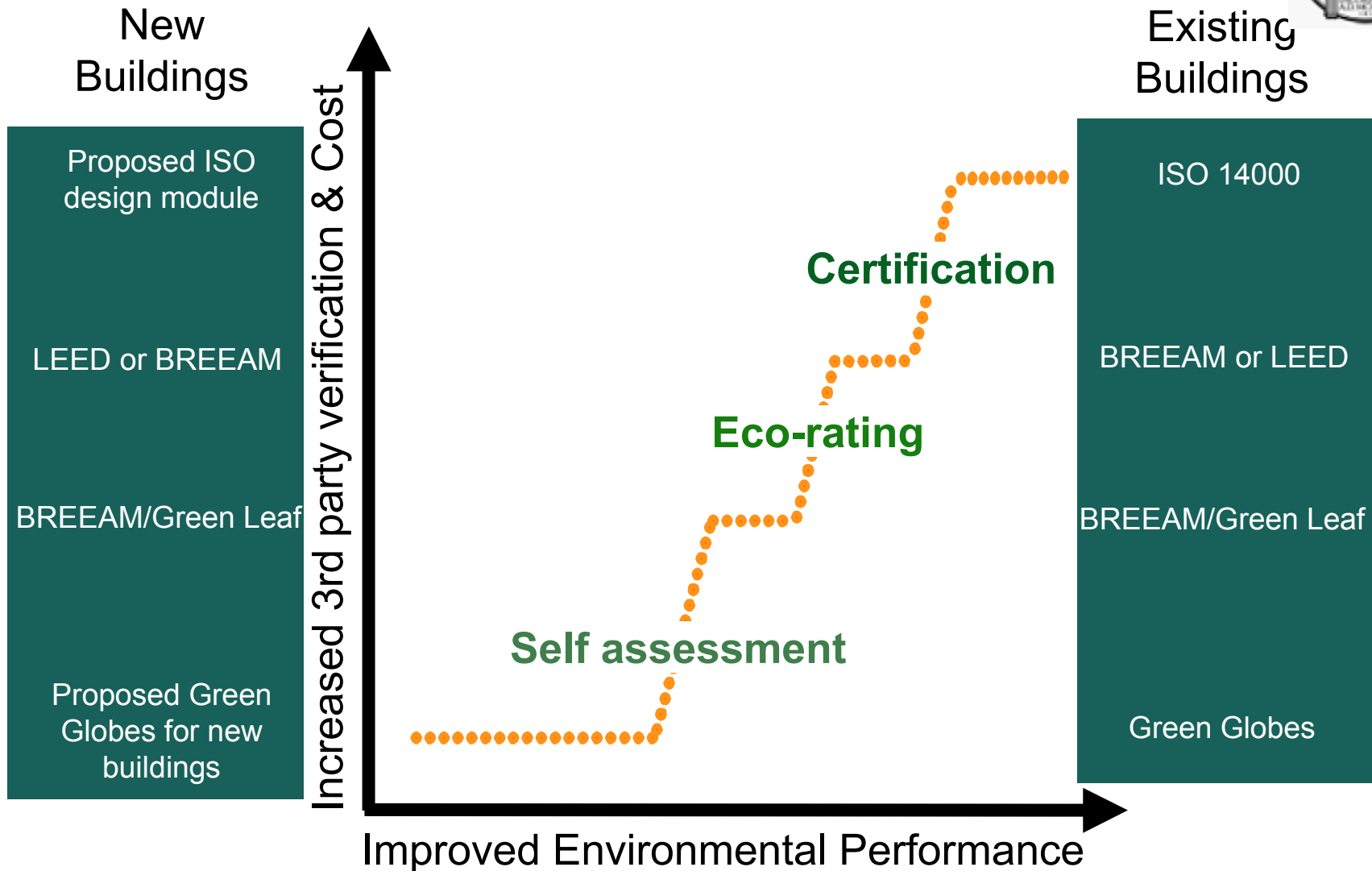# General Relationships

Support

Level 1

Level 2

Level 3

A Specific Example

LCExplorer

SimaPro → Athena Estimator

Athena Estimator → BREEAM Green Leaf

A Suite of Assessment Tools

New Buildings

- Proposed ISO design module
- LEED or BREEAM
- BREEAM/Green Leaf
- Proposed Green Globes for new buildings

Existing Buildings

- ISO 14000
- BREEAM or LEED
- BREEAM/Green Leaf
- Green Globes

Increased 3rd party verification & Cost

Improved Environmental Performance

Certification

Eco-rating

Self assessment

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Make Sure you Understand . . .

- Tool status (e.g. commercial, beta, partially developed)

- Ability of user to modify or add data

- Whether based on agreed LCA or LCC guidelines or standards

- Quality of embedded data

- If functional equivalence is maintained