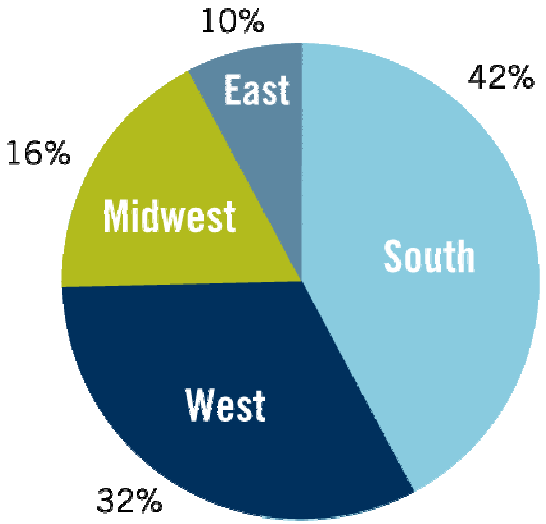
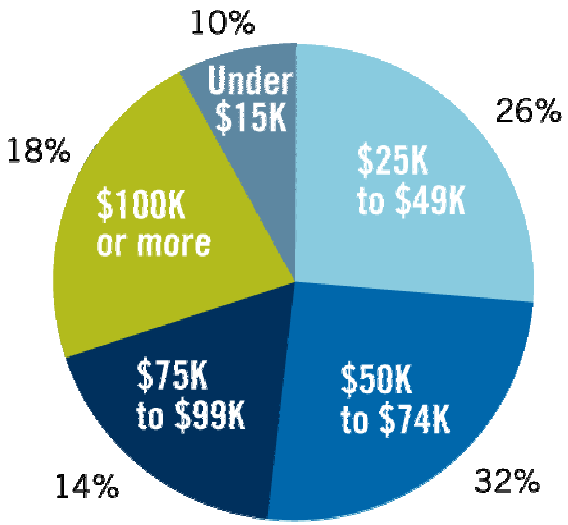
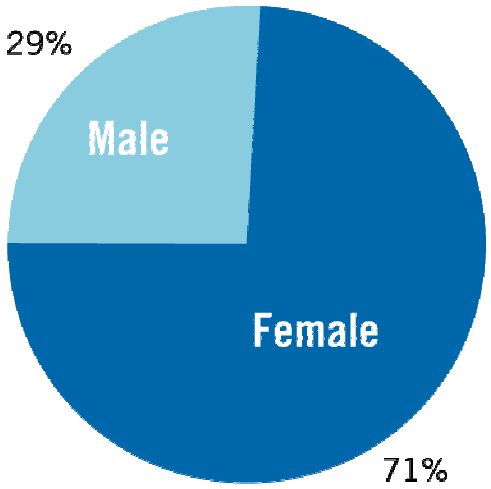
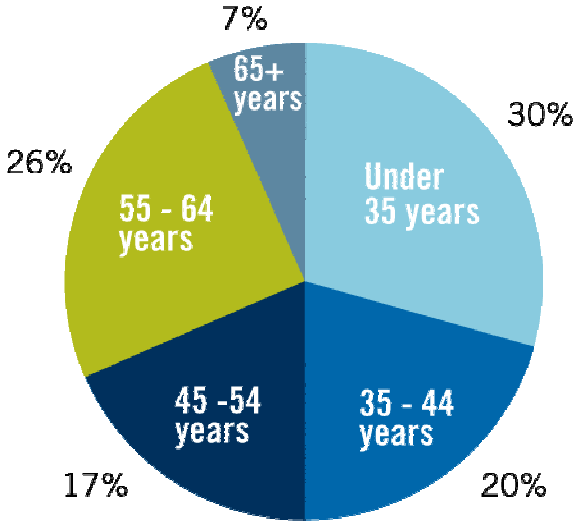
Residential Green Buildings

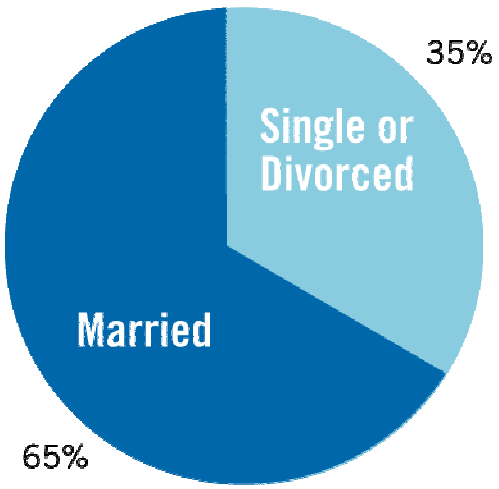
Who's Buying Green Homes?



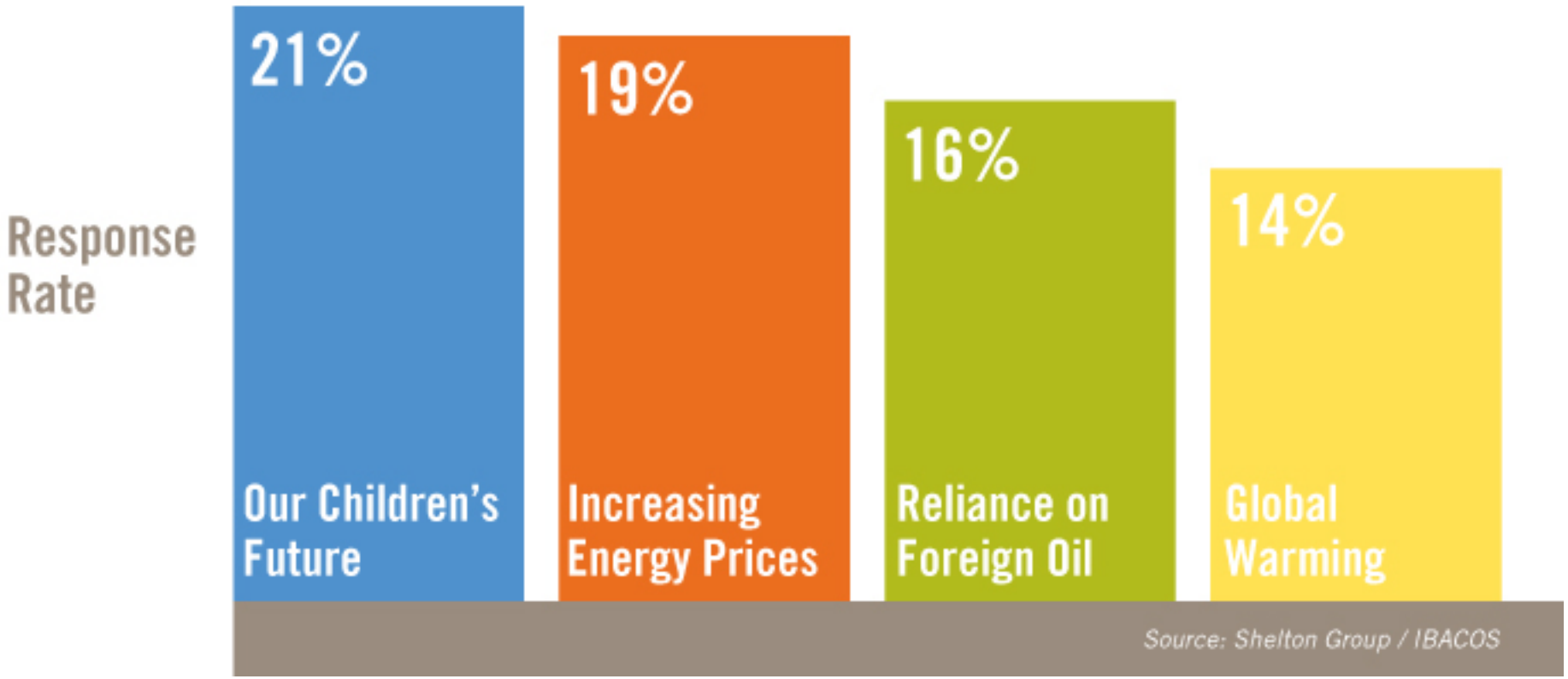








Consumer Motivation

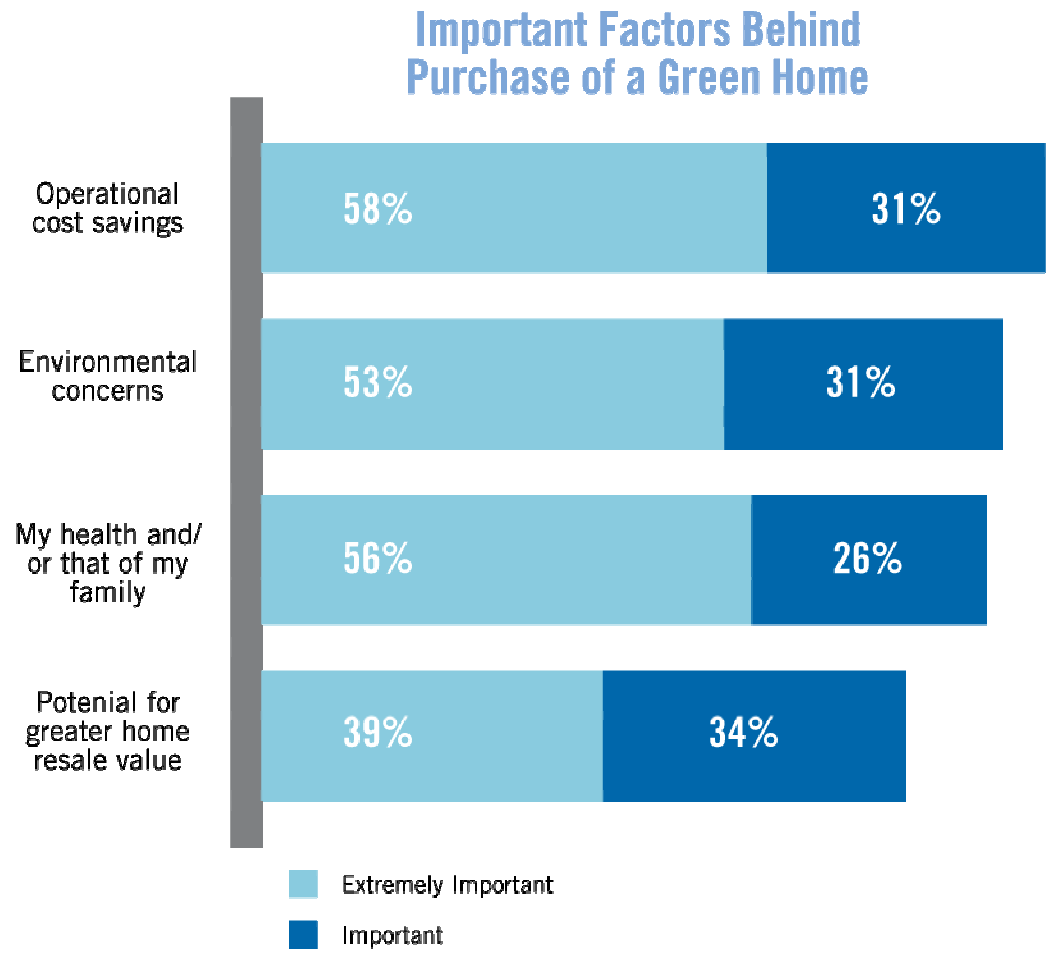


Important Influences to make a decision to Buy a Green Home

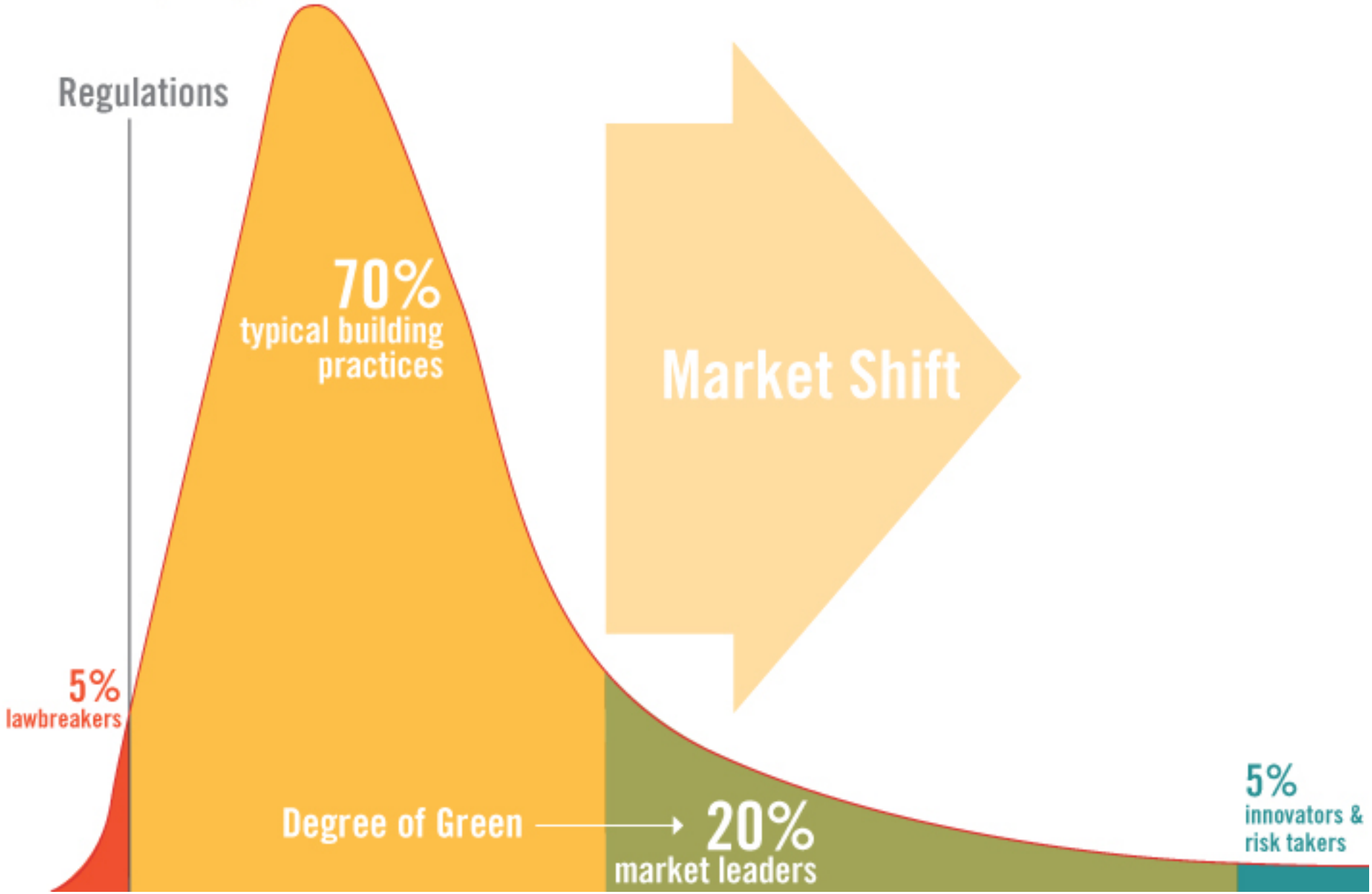
Cost saving, health and environmental concerns all have an important influence on Green Home purchase

Demographic Differences:

- All factors are highly important **regardless of demographic**
- **Health concerns:** More important in the South than in other regions



Varying Performance Levels



How Do You Define Green?

Builder A

Builder B

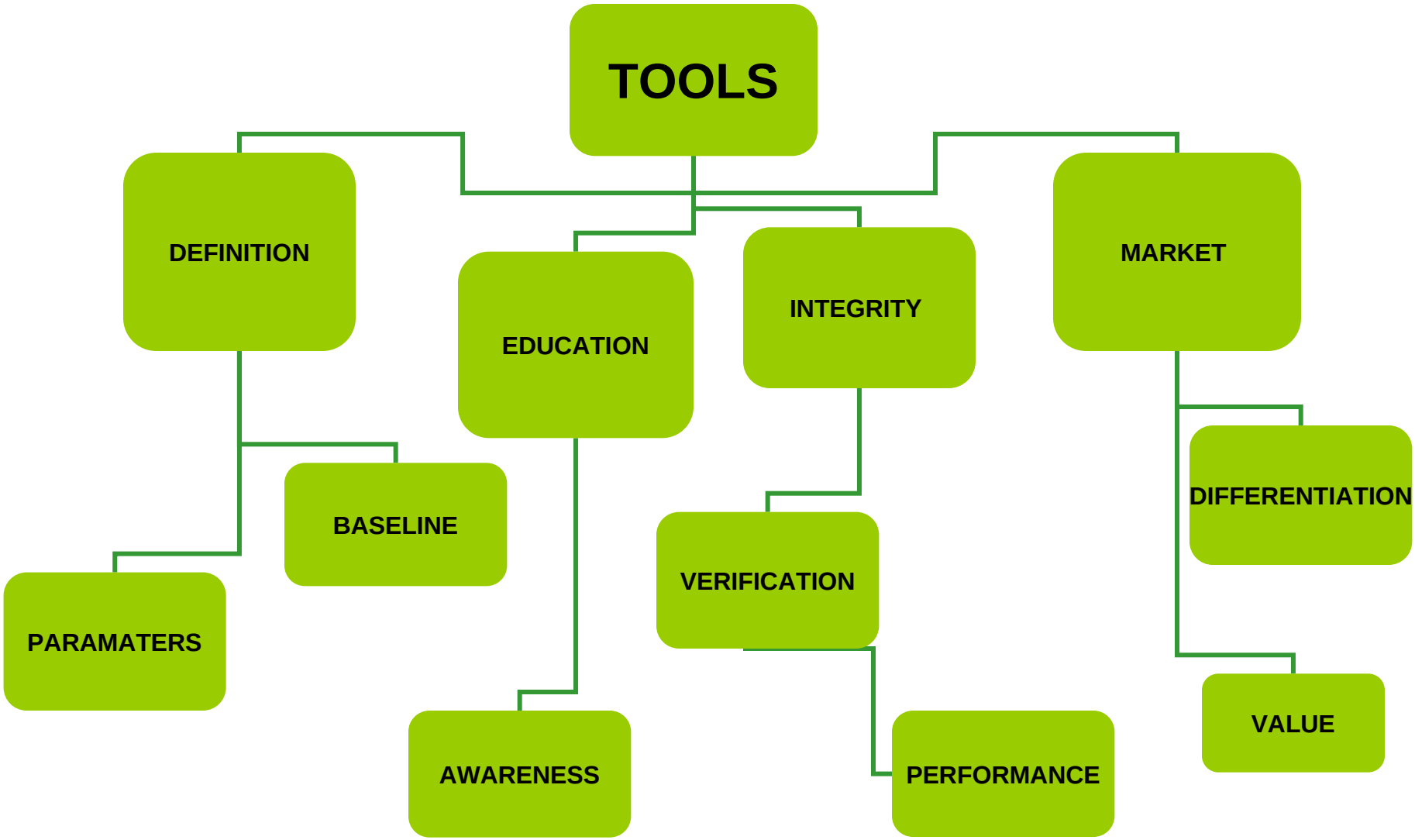
Builder C

Green Home Checklist

How do you know if a home is truly green? What should you look for?

- **Location**
- **Size**
- **Insulation**
- **Windows and Doors**
- **Energy Efficiency**
- **Renewable Energy**
- **Indoor Environmental Quality**
- **Landscaping**

Rating Programs



Structure of Green Rating Programs

- Point Systems
  - Mandatory Measures
  - Optional Credits
- Requirements
  - Performance
  - Prescriptive

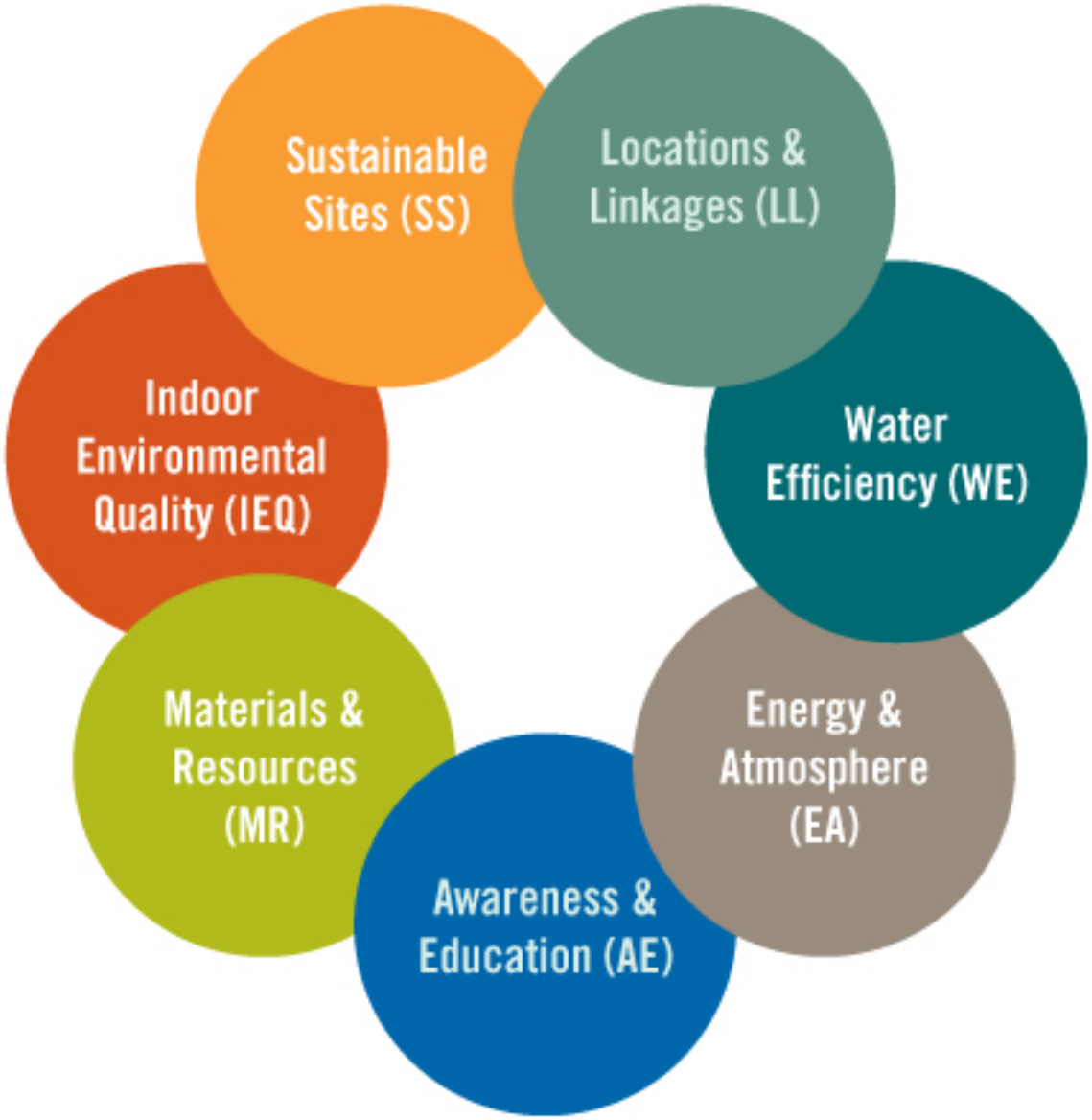
Sustainable Sites (SS)			(Minimum of 5 SS Points Required)	OR		Y / Pts	No	Maybe
1. Site Stewardship		1.1	Erosion Controls During Construction		Prerequisite			
		1.2	Minimize Disturbed Area of Site		1			
2. Landscaping	☒	2.1	No Invasive Plants		Prerequisite			
	☒	2.2	Basic Landscape Design	SS 2.5	2			
	☒	2.3	Limit Conventional Turf	SS 2.5	3			
	☒	2.4	Drought Tolerant Plants	SS 2.5	2			
	☒	2.5	Reduce Overall Irrigation Demand by at Least 20%		6			
3. Local Heat Island Effects	☒	3	Reduce Local Heat Island Effects		1			
4. Surface Water	☒	4.1	Permeable Lot		4			
Management		4.2	Permanent Erosion Controls		1			
		4.3	Management of Run-off from Roof		2			
5. Nontoxic Pest Control		5	Pest Control Alternatives		2			
6. Compact Development		6.1	Moderate Density		2			
		6.2	High Density	SS 6.1, 6.3	3			
		6.3	Very High Density	SS 6.1, 6.2	4			

Rating Programs in Montana

- **LEED for Homes**
  - http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147#2008
- **NAHB Guidelines**
  - http://www.nahbgreen.org/index.aspx
- **Greater Yellowstone Framework**
  - http://www.yellowstonebusiness.org/our_programs/growth_challenges/

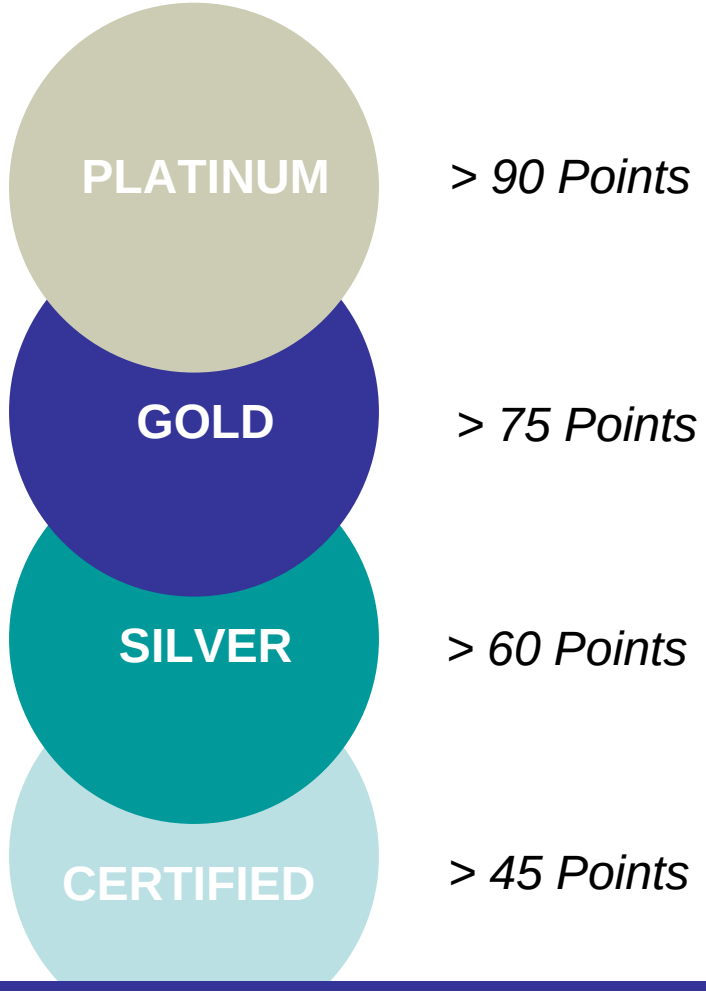
LEED for Homes

Credit Categories



Consensus-Based Standards

USGBC has four levels of LEED:



Regional Differences

- Even as a national benchmark, LEED for Homes should adequately address unique regional needs.
- LEED was designed to include different criteria for various climate regions, precipitation zones, radon zones, and termite infestation zones.
- The program also includes a process for adding a limited number of regionally appropriate credits.

Roles

Providers

Raters

USGBC

Provider

- Responsibilities:
  - Marketing to Builders
  - Preliminary Review
  - Project Registration/Setup
  - Submitting documents for certification

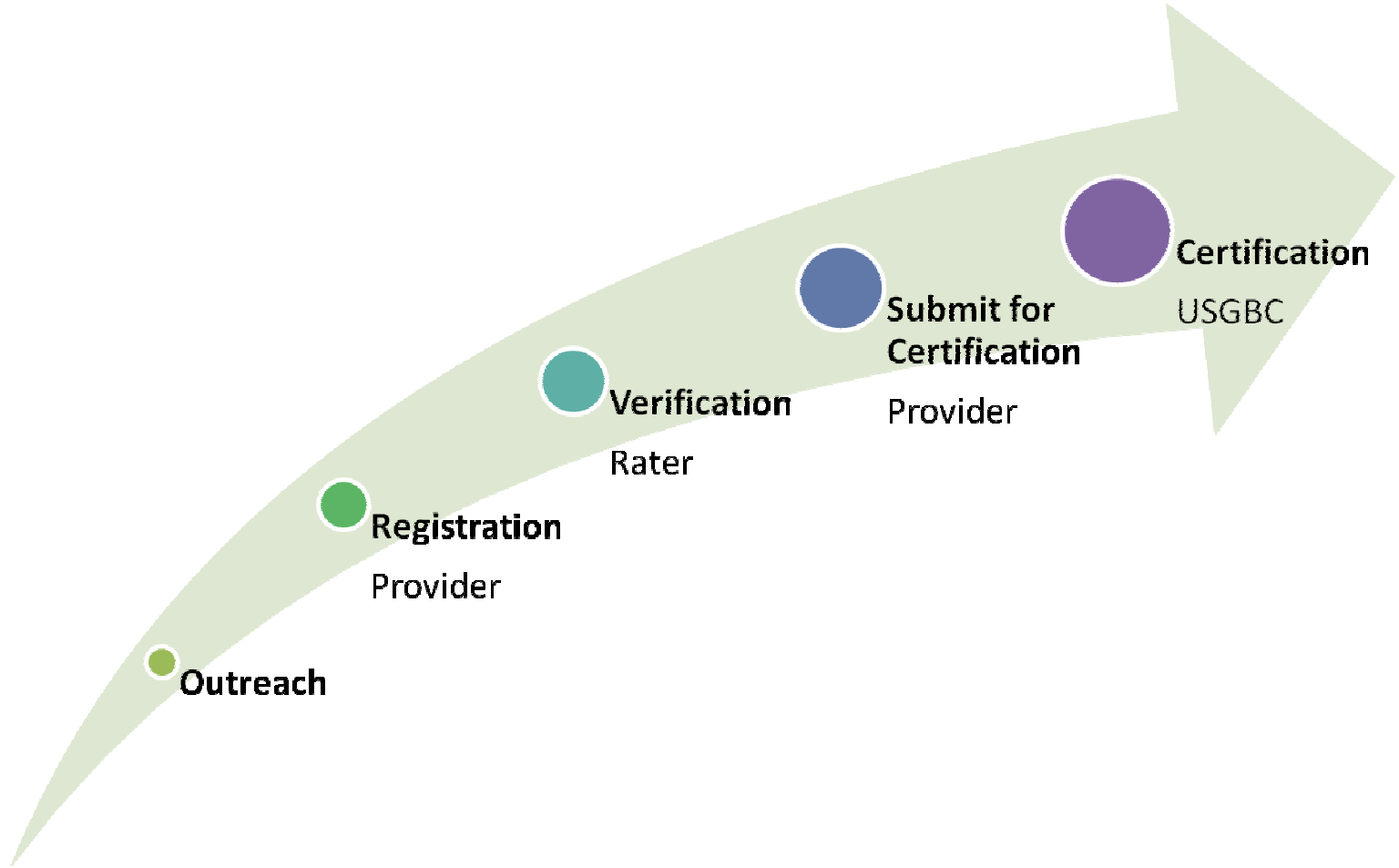
Rater

- Responsibilities: Verification
  - Energy testing
  - Project inspection
  - Compilation/Completion of:
    - Project Checklist
    - Durability forms
    - Accountability forms

USGBC

- Responsibilities: Processing & Certification
  - Registration processing
  - Review of certification materials
  - Issuing of Certification
  - Certification processing
  - Project Tracking & Reporting

Project Timeline



Verification Process

Step 1:
Builder joins LEED for Homes program

Step 2:
Rater performs plan review

Step 3:
Home design is refined, as needed

Step 4:
Home is built

Step 5:
Green rater performs inspections / rating

Step 6:
Provider completes certification

The Rating System: Simple & Streamlined

3 documents

136 points

45-point entry

How Much Does a LEED Home Cost?

An Example

Comparison Criteria	Code Home	LEED Home	Difference	
			($.Month)	($/Day)
Sticker Price	$300,000	$308,500		
Mortgage Payment	$1,890	$1,945	+ $55	+ $1.80
Energy Bill	$150	$105	- $45	- $1.50
Water Bill	$30	$20	- $10	- $0.30
Net Cost of Ownership	$2,070	$2,070	- $0	- $0

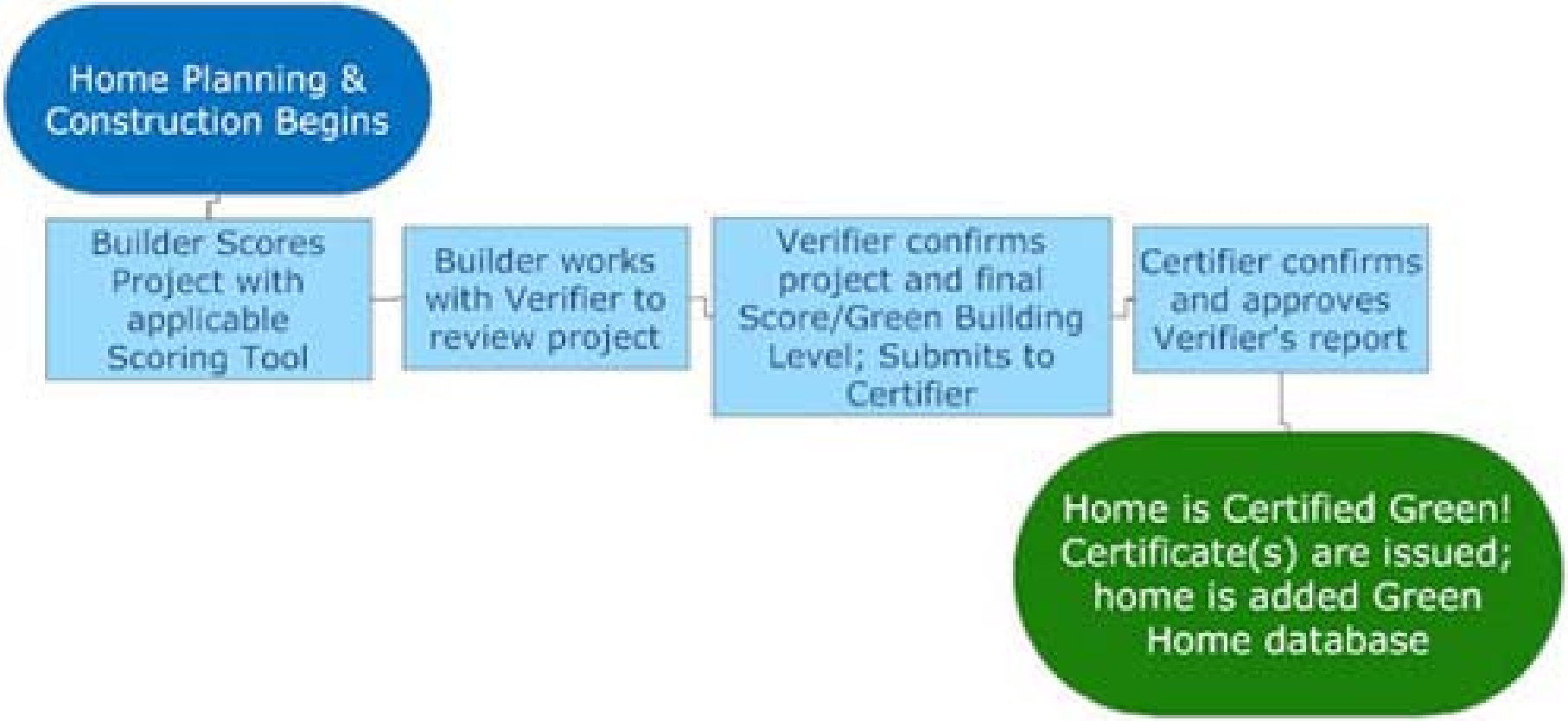
New Fee Structure

Project Type	Single Family	Multi Family	Volume Pilot
Registration	$150 Members $250 Non- Members	$450 Members $600 Non- Members	*Proposed* Flat Fee $10,000
Certification	$250 (M) $350 (NM)	$0.035/Ft² (M) $0.045/Ft² (NM)	

Benefits of a LEED Home

List of Features / Benefits	LEED Home
• Higher quality	✓
• 30-50% more energy efficient	✓
• More comfortable living environment	✓
• 100cfm of fresh air every hour	✓
• 50% better air every hour	✓
• 30-50% of building materials are environmentall preferable	✓
• Non-toxic pest management	✓
• Ozone safe refrigerant	✓
• 50% less waste to landfill (during construction)	✓
• 30% less stormwater run-off (less pollution into watersheds)	✓
• Higher resale	✓

NAHB
GREEN GUIDLINES

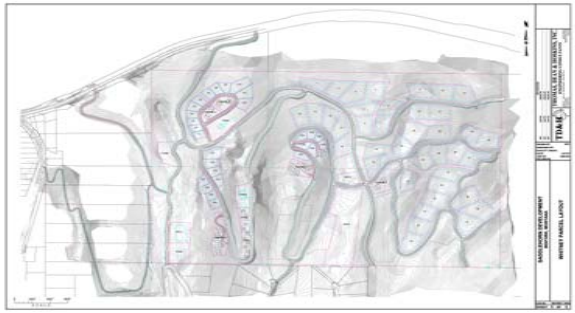


Building Green In Montana

Custom Homes

Renovation

Developments



SADDLEHORN

Saddlehorn Sustainability Commitment

Saddlehorn is committed to demonstrating the highest level of sustainable standards throughout the planning, design, construction, and operations of the Saddlehorn Community. The following guiding principles will govern the decision-making processes and will constitute an agreement with investors, residents, and the community of Bigfork, Montana.

1. Respect for the Land

2. Respect for Water

3. Reduced Power Dependence

4. Respect for Resources

5. Innovative Transportation

6. Interconnected Communities

7. Robust Adventure

8. Community Investment

Doug Averill, Principal

Jim Frizzell, Principal

Green Support Organizations

- Montana Chapter to the USGBC
- Green Builders Guild
- Sustainable Business Council
- YBP
- Northern Plains Resource Council
- Montana Contractors Association
- Billings Architectural Association
- AIA Montana Chapter (Architects)
- ASHRAE Montana Chapter (Mechanical Engineers)
- ASLA (Landscape Architects)
- Green Drinks, Billings, Bozeman, others?
- Sonoran Institute
- NewWest

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