

Southface Energy Institute
creating sustainable homes, workplaces and communities

- ◆ Education
 - Homebuilding School
 - Green Design Clinic
 - Publications
 - Training
- ◆ Green Design Services
- ◆ Technical Services
 - Building Diagnostics
 - Affordable Housing
- ◆ Greenprints 2001
March 14-16




You're Always Welcome @ Southface
www.southface.org

- ◆ Over 100 sustainable products and technologies






EarthCraft House
Sensibly Built for the Environment



EarthCraft House
Grand Partners



Why Green Design & Construction?


- ◆ 45,000 housing starts / year
- ◆ Chattahoochee rated in "Top Ten Dirtiest Rivers" (1 developed acre yields 1.5 dump trucks of sediment)
- ◆ Water supply limited (estimated 30 years)
- ◆ Atlanta loses 1 million trees/year
- ◆ Landfill space limited 20 to 40% C&D
- ◆ Atlanta Smog - 40% NOx from electric power plants




EarthCraft House
Welcome

- ◆ 60+ builders - over 500 homes over the next year
- ◆ Extensive local media coverage
- ◆ National media (CNN, Headline News, Metropolis Magazine)
- ◆ Trained 225 builders, lenders, realtors, appraisers




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Builder Benefits


- Product differentiation
- Increased revenues and profits
- Fewer callbacks and reduced liability
- Better subcontractor performance
- Training and technical assistance
- Increased customer satisfaction
- Recognition as industry leader
- Positive public image



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Home Builder Association Benefits

- Builds bridges
 - government (local, state, federal)
 - environmental community
 - media
 - manufacturers
- Motivates HBA staff and members
- Attracts new HBA members
- Strengthens existing programs
- Great public relations







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Home Buyer Benefits

- More house for the money
- Better quality and higher resale value
- Lower energy, water and maintenance costs
- Greater comfort
- Quiet and healthy
- Enhanced durability and peace of mind






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Home Energy Rater Benefits

- Expands market for inspections
- Links Rater and other stakeholders
 - builder, realtor, appraiser, lender, HBA
- Taps green builder program resources
 - advertising, training, technical assistance
- Positions Rater as leader in green building; BUT, who defines "green"





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Program Overview

- ◆ A builder must
 - be a member of the HBA
 - pay program enrollment fee (\$150)
 - attend 1-day training workshop
 - pay program application fee (\$50)
 - schedule walk-through and design review
 - submit preliminary worksheet (score a minimum of 150 points)
 - schedule 3rd party inspection (free) and submit final worksheet
 - if required, schedule re-inspection (fee)





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Training and Technical Assistance

- ◆ workshops
 - builders
 - real estate professionals
 - appraisers
 - lenders
- ◆ design reviews and walk-throughs
- ◆ in-field subcontractor training




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Marketing Strategy

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Marketing and Public Relations

- Builder Marketing
 - points for marketing EarthCraft
 - sales support materials available
- Show Homes and Special Events
 - Street of Dreams, Parade of Homes
 - NAHB Builders Show - Building America and EarthCraft
 - The New American Home
- Home Shows
 - EarthCraft exhibit
 - trained staff
- Financing
 - Fannie Mae Home Performance
 - Power products; LEMs
 - GA Department of Community Affairs
 - OwnHOME program

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Media and Advertising

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Show Me the Money

- 2001 Budget of \$1.2 million
- \$600,000 in-kind print advertising
- Approximately 10% of revenue from builder fees and re-inspections
- Sponsorships cover majority of program and inspection costs

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How the points work

- builder has flexibility to choose measures
- 12 Content Areas including Bonus Points
- many standard building practices are environmentally friendly and earn points
- innovation encouraged
- minimum of 150 points required
- building envelope and mechanical systems energy points
 - minimum 75
 - maximum Energy Star 90

The End

Duct Tape at Its Best!

#1 Site Planning


- ◆ **Site Protection**
 - Erosion, Sediment, Topsoil Plans
 - Grind Stumps and Limbs
 - Mill Cleared Logs
- ◆ **Tree Protection**
 - Building *With* Trees Program
 - Tree Preservation Plan
 - No Trenching / Soil Compaction in Root Zone
 - Plant New Trees
- ◆ **Wildlife Habitat**



#2 Energy Efficient Building Envelope

House = System

- ◆ **Building Envelope**
 - Continuous Air Barrier
 - Complete Insulation Coverage
 - high performance windows
- ◆ **Proper Heating and Cooling Systems and Ductwork**
- ◆ **Controlled Ventilation**



"Our decision to INSULATE requires use of an AIR BARRIER which improves the DURABILITY of the ENVELOPE and requires VENTILATION for the occupants."

Energy Star Homes
Certified by Home Energy Rating System (HERS)


- ◆ **Energy Star Home**
 - National Program
 - Sponsored by DOE / EPA
- ◆ **EarthCraft House Program Requires Each Home Be Rated**
 - Certified 3rd Party Rating Using Software
 - Blower Door & Duct Blaster Test



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Energy Savings

	Per Month	Per Year
Net Cash Flow additional mortgage	(\$46)	(\$551)
energy savings	\$100	\$1,200
net cash flow	\$54	\$649

- 30-year Savings \$21,361
- Water and maintenance savings additional



#3 Lighting and Appliances

- ◆ **Lighting Design**
 - Indoor Fluorescent Fixtures
 - Recessed CFL Fixtures
 - Outdoor Lighting Controls and Efficiency
- ◆ **Energy Star Appliances**
 - Dishwasher
 - Refrigerator
 - No garbage disposal



#4 Resource Efficient Design

- ◆ **Efficient Floor Plan & Interior Living Spaces**
 - 2-ft Dimensions
- ◆ **O.V.E. Framing**
 - Floor Joist Spacing
 - Wall Stud Spacing
 - No Window Jack Studs
 - Non-Structural Headers
 - Single Top Plate
 - 2-Stud Corner
 - Advanced T-wall



#5 Resource Efficient Building Materials
Recycled / Natural Content Materials

- ◆ Recycled / Natural Content Materials
 - Fly Ash Concrete
 - Insulation
 - Flooring
 - Carpet and Pad
 - Carpet Label
 - Outdoor Decking
 - A/C Condensing Unit Pad



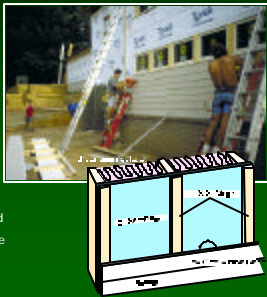
Resource Efficient Building Materials
Advanced Products

- ◆ Engineered Wood
 - Floor, Roof, Walls
 - Interior and Exterior Trim
- ◆ Non-Solid Sawn Wood
 - Beams and Headers
- ◆ Steel
 - Beams and Headers
 - Interior Walls
- ◆ Structural Insulated Panels
- ◆ Aerated Autoclaved Concrete
- ◆ Insulated Concrete Forms



Resource Efficient Building Materials
Durability

- ◆ Roofing
 - Shingle Warranty
 - Light Color
 - Drip Edge
- ◆ Exterior Cladding
 - Warranty
 - Drainage Plane
 - Vented Rain Screen
 - Back-Primed Siding & Trim
- ◆ Windows
 - Glazing
 - Flashing
- ◆ Continuous Termite Shield
- ◆ Gutters Away From House
- ◆ Covered Entryway



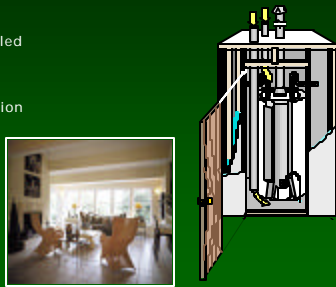
#6 Waste Management

- ◆ Waste Management Practices
 - Framing Plan and Cut List
 - Central Cut Area
 - Donation / Reuse of Excess Materials
- ◆ Recycle Construction Waste
 - Posted Waste Management Plan (Min. 75% of 3 materials)
 - Wood
 - Metal
 - Plastics
 - Cardboard
 - Drywall
 - Shingles



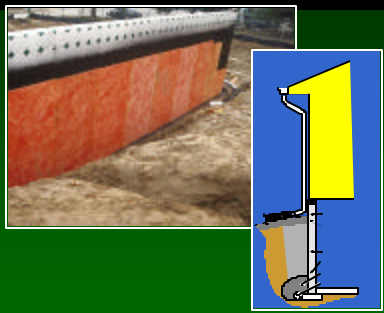
#7 IAQ and Healthy Buildings
Combustion Safety

- ◆ Garage Options
- ◆ Direct Vent, Sealed Combustion Fireplace
- ◆ Isolate Combustion Sources
- ◆ CO Detector
- ◆ Pressure Test



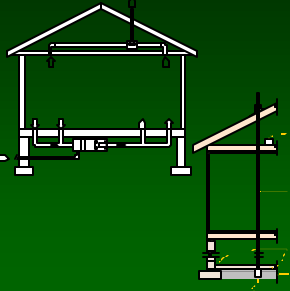
IAQ and Healthy Buildings
Moisture Control

- ◆ Drain Tile Proximity to Footing
- ◆ Drainage Board for Below Grade Walls
- ◆ Gravel Beneath Slab Floors
- ◆ Vapor Barrier
 - Slabs: above gravel
 - Crawl space: 100%
- ◆ Capillary Break



IAQ and Healthy Buildings
Ventilation

- ◆ Radon Safety
- ◆ Spot Ventilation Fans
- ◆ Ceiling Fans
- ◆ Whole House Fan
- ◆ Controlled House Ventilation (.35 ACH)
- ◆ Separate Dehumidifier
- ◆ Vented Garage Storage Room
- ◆ No powered roof vents
- ◆ Dampened Fresh Air Intake



IAQ and Healthy Buildings
Material Selection

- ◆ Limit Urea Formaldehyde in Conditioned Space
- ◆ Low V.O.C. Paints, Stains, Finishes, Sealants, Adhesives, and Carpet
- ◆ Termite Treatment
- ◆ Central Vacuum
- ◆ 30% Filter
- ◆ Ductwork Protected




#8 Water - Indoors

- ◆ NSF Certified Filter
- ◆ Supply Efficiency
 - Clothes Washer
 - Pressure Reducing Valve
 - Low Flow Fixtures
 - Demand Circulating System
 - Shower Drain Heat Recovery
- ◆ Water Heating
 - Energy Factor .62 gas / .92 electric
 - Insulation on Tank / Pipes
 - Heat Traps
 - Heat Recovery System
 - Solar Water Heater
 - Heat Pump Water Heater



#9 Water - Outdoors

- ◆ Greater Atlanta HBA Water Smart Program
- ◆ Xeriscaping
- ◆ Efficient Irrigation
- ◆ Greywater
- ◆ Rainwater Harvest
- ◆ Permeable Paving




#10 Home Owner Education/Opportunities

- ◆ Guaranteed Energy Bills
- ◆ Operations Manuals
- ◆ Built-in Recycling
- ◆ Household Hazardous Waste Manual
- ◆ Environmental Checklist for Walk-through



#11 Builder Operations

- ◆ Build EarthCraft Houses Each Year 10% or 80% of Total
- ◆ Market EarthCraft Program
- ◆ Environmental Checklist Given To All Subcontractors
- ◆ Certified Professional Home Builder
- ◆ Use Greater Atlanta HBA Handbook for warranty standards





#12 Bonus Points

- ◆ Mass Transit
- ◆ Pedestrian Oriented Community
- ◆ Brownfield Site
- ◆ Solar Electric System
- ◆ Alternative Vehicle Fueling Station
- ◆ A.L.A. Health House



The End *Duct Tape at Its Best!*

