

Southface Energy Institute

- Education and Research
- Greenprints
Feb 17-19 2004
Atlanta, Georgia
- Green Design Services
 - commercial
 - residential
 - communities



Promoting sustainable homes, workplaces and communities



The EarthCraft House™ Story



Sensibly Built for the Environment



Sustainable Priorities for Atlanta

- Chattahoochee rated in “Top Ten Dirtiest Rivers” (1 developed acre yields 1.5 dump trucks of sediment)
- Water supply limited (estimated 30 years)
- 50 acres/day of trees lost
- Landfill space limited (construction waste over 25%)
- Atlanta Smog - up to 40% NOx from electric power plants
- Drive 34 miles/day/person



Non-Profit Partnership



Industry & Government Partners



Why Green?

- Lessen environmental impacts
- Encourage high performance, integrated design and construction
- Build industry partnerships
- Create positive image for housing industry



Atlanta Journal-Constitution, Wednesday, October 18, 2000

Study links power plants to pollution deaths, illnesses

By Charles Seabrook

Microscopic particles from coal-burning power plants are contributing to the deaths of 1,630 Georgians each year and to debilitating sickness in thousands more, according to a report issued Tuesday by local and national environmental groups.

About 650 of those deaths are in metro Atlanta, the study said.

The tiny particles of soot, sulfates, dust, metals and other pollutants are known collectively as particulate matter.

"As this report documents, particulate air pollution is a serious public health hazard," said Dr. Howard Frumkin of Emory University's Rollins School of Public Health. "Power plants are an important

source of this pollution, accounting for more deaths every year than drunk driving or homicide."

Nationwide, power-plant pollution is cutting short the lives of 30,100 Americans each year, the report said. In Georgia, the pollution is blamed for 1,050 deaths, 38,200 hospitalizations and 38,200 attacks annually.

The report, "Deadly and Dirty Power: Measuring Health Damage From Pollution from Power Plants," was released by the Atlanta-based Clean Air Task Force. Clear the Air, a campaign backed by the Georgia Charitable Trusts and Georgia Airkeepers.

The research on the report is based on methodology that is

used by the U.S. Environmental Protection Agency. Dr. John Spengler of the Harvard School of Public Health reviewed the study.

"These findings imply that our regulatory strategies and priorities (for air pollution)

are not adequate," said company spokesman John Sell. "Nonetheless, Georgia Power takes seriously our obligation to safeguard public health when it comes to their facilities."

He said the company and other electric utilities are engaged



Environmental Impact

915 EarthCraft Homes prevent:

- 4300 tons CO₂
 - 25000 pounds SO₂
 - 9100 pounds NO_x
- From going into the air

- 600 tons of wood
 - 230 tons of drywall
- From going to landfills



What is Green?



Priorities for Sustainable Construction

1. Save Energy
2. Recycle Buildings
3. Create Community
4. Reduce Material Use
5. Save Water
6. Maximize Longevity
7. Protect and Enhance Site
8. Healthy Buildings
9. Minimize Construction and Demolition Waste
10. Green Your Business



From *Environmental Building News*

To put it simply

High Performance,
Resource Efficient,
Durable and
Healthy



Benefits to Buyer

- Enhanced health
- Lower utility costs
- Reduced maintenance
- Greater comfort



Benefits to Builder

- More profitable
 - Cost saving measures
 - Reduced callbacks
 - Better subcontractor performance
 - Market differentiation
- Unbiased information
- Recognition as industry leader



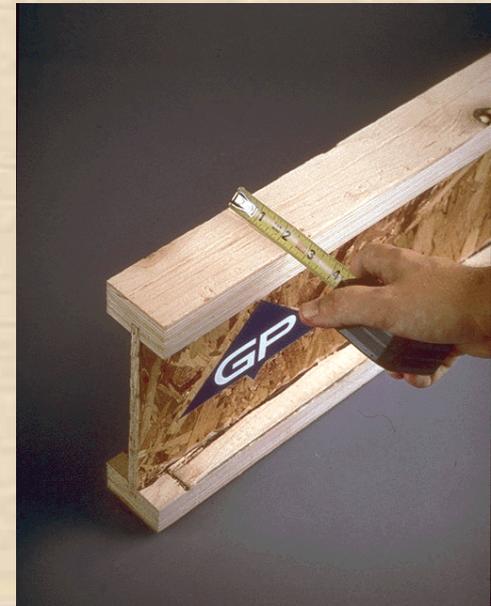
The New Home Program

Minimum 150 points
(at least 75 in energy)

Many standard building practices are
environmental friendly and earn points

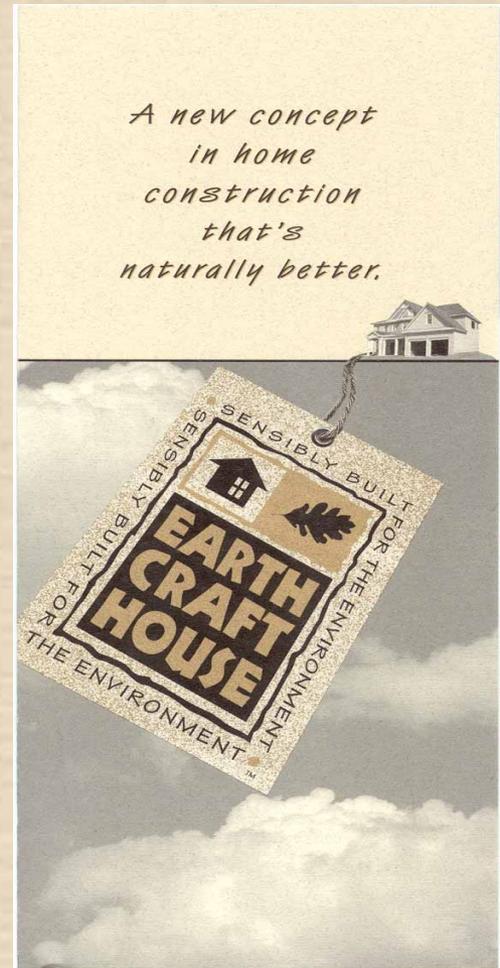
Builder flexibility

Innovation encouraged



EarthCraft House Marketing

- Consumer brochures
- Full page newspaper ads
- Promotion of program by partners
- Promotion of program to Greater Atlanta Home Builders Association's members



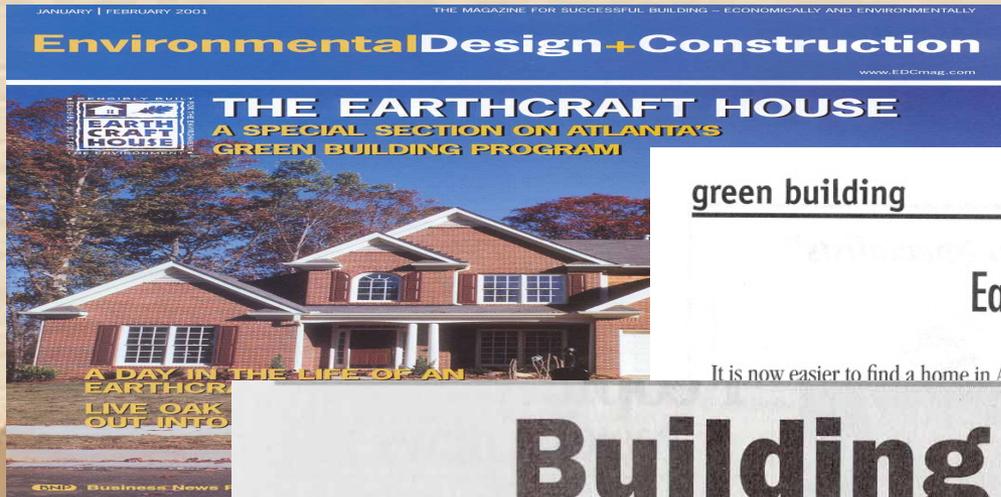
Ribbon Cuttings



Extensive Media Coverage



Over 150 million impressions



green building

EarthCraft House Makes its Mark on Atlanta

It is now easier to find a home in Atlanta

Points are earned through efficient site

back unless they sell the h

Building green

Cobb builders, homeowners say energy efficient houses worth the extra cost

By Nooshin Ahangar
Marietta Daily Journal Staff Writer

MARIETTA — An Atlanta “green-building” program taking off in Cobb has captured home buyers like Elizabeth Graham.

Before moving into her Kennesaw home several months ago, Mrs. Graham saw its special environmental features as too futuristic and impractical for the typical homeowner.

“We didn’t realize the difference it was going to make on our heating and air bills until we moved here,” Mrs. Graham said. “To me, [it’s] a considerable difference.”

She and her husband, Gregory, moved from West Palm Beach, Fla., into the home labeled EarthCraft, a 3-year-old home building program by



efficient home that
o consumers.
al EarthCraft House
e lenders, real est
s. Three sessions
asses help introd
mortgage offered
al estate training
each have been co

Case Study: 1020 McLynn Ave.

- Builder: McConnell Homes, Inc.
- List price: \$850,000
- Size: 3970 square feet with finished basement
- Location: Virginia Highlands (intown Atlanta)



Case Study: 1020 McLynn Ave.

- Tree preservation plan
- Mulch & gravel to limit runoff
- Erosion control plan



Case Study: 1020 McLynn Ave.



- Airtight construction
- Attic kneewalls R-19 with attic-side air barrier
- Basement walls insulated to R-13

Case Study: 1020 McLynn Ave.



- Properly sized mechanical equipment based on Manual J calculations
- High efficiency furnace and air conditioner (92 AFUE, 12 SEER)
- Sealed duct system (4% leakage)

Case Study: 1020 McLynn Ave.

- Minimized wood waste (central cut area, advanced framing)
- Ground all wood and drywall waste on site



Case Study: 1020 McLynn Ave.

- High efficiency, low-noise bath fans
- High efficiency pleated filter media
- Outside air intakes



Case Study: 1020 McLynn Ave.

- Blower door test: 0.33 ACHnat
- Duct leakage: <5%
- Certified Energy Star Home
- Scores 198 points in EarthCraft House, well over the 150 points required
- Saves \$433 per year in energy bills



Case Study: 1020 McLynn Ave.

Category	Upgrade Cost
Site planning	\$200
Building envelope	\$1300
Mechanical systems	\$1650
Waste management	\$850
Indoor air quality	\$700

- Total EarthCraft House upgrade: \$4700
- <1% increase in cost of the house



Case Study: 241 Miller Reed Ave.

- Builder: Habitat For Humanity, Atlanta Affiliate
- List price: n/a
- Size: 1248 square feet on crawlspace
- Location: Southeastern Atlanta



Case Study: 241 Miller Reed Ave.



- Air-tight construction
- Two layers of insulated sheathing
- Low-e windows



Case Study: 241 Miller Reed Ave.



- Unvented crawlspace with R-8 on crawlspace walls
- Ductwork inside conditioned space
- High efficiency air conditioner (12 SEER)

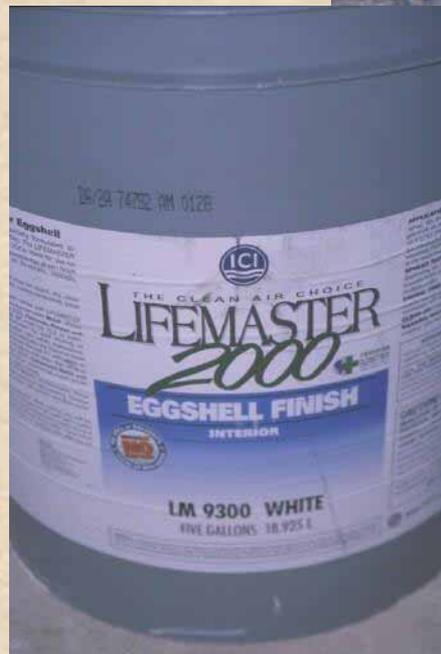
Case Study: 241 Miller Reed Ave.

- Minimized wood waste (framing plan, advanced framing)
- Ground all wood and drywall waste on site



Case Study: 241 Miller Reed Ave.

- Low VOC paints
- High efficiency appliances



Case Study: 241 Miller Reed Ave.

- Blower door test: 0.34 ACHnat
- Certified Energy Star Home
- Scores 174 points in EarthCraft House, well over the 150 points required
- Saves \$214 per year in energy bills



Case Study: 241 Miller Reed Ave.

Category	Upgrade Cost
Site planning	\$0
Building envelope	\$553
Mechanical systems	\$650
Waste management	\$0
Indoor air quality	\$400

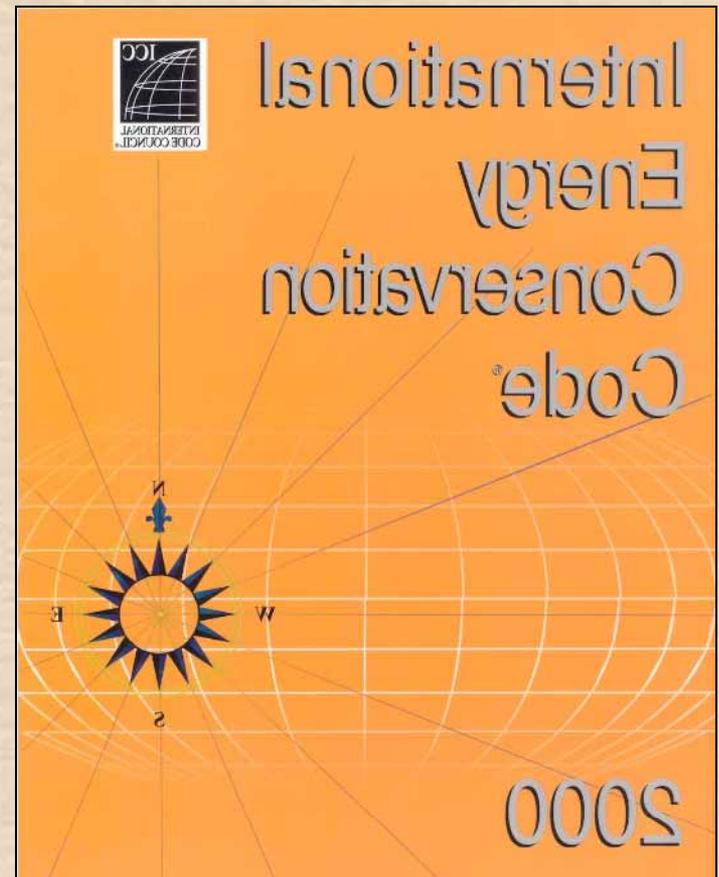
- Total EarthCraft House upgrade: \$1603
- <1% increase in cost of the house



New Georgia Energy Code

Emphasis is on:

- Better air sealing
- Better duct sealing
- R-19 attic kneewalls
- R-7+ foundation walls
- Low-e windows in 2004



New Georgia Energy Code

EarthCraft Houses meet the energy code because:

- A whole house approach is encouraged
- Free technical assistance is provided to builders over the phone and in person
- Diagnostic testing on every house



Green building education



Every builder in the program receives:

- Full-day training
- A one-on-one design review to discuss their plans
- On-site walkthroughs in each community
- Final inspections of every home in the program



EarthCraft House™



Sensibly Built for the Environment

