

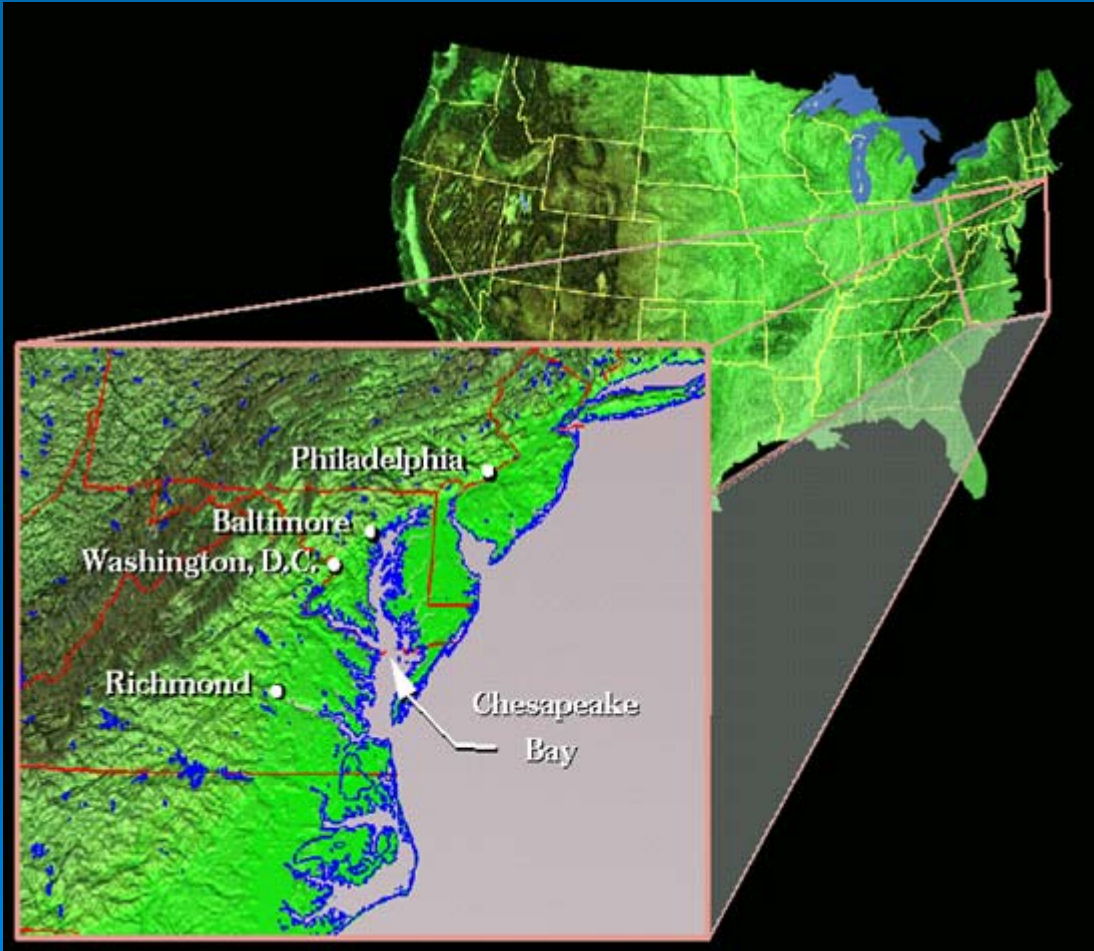
The Philip Merrill Environmental Center



Source: USGBC

The Chesapeake Bay Foundation's new headquarters (2000)

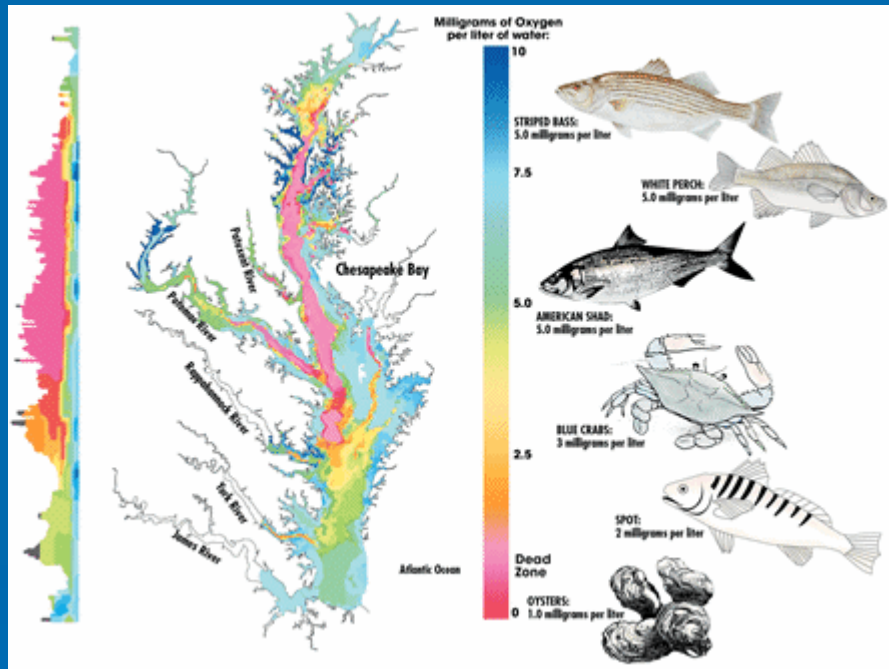
Annapolis, MD



The Chesapeake Bay



Comprised Watershed = Compromised Water



CBF



Chesapeake Bay Foundation



- Founded 1967
- 140,000 active members
- Non-profit dedicated to restoring the health of the bay.
- Largest organization focusing on the Chesapeake



The Brand New, Super Green Philip Merrill Environmental Center



- First Building in US to receive platinum LEED rating
- “greenest building in the world”
- \$11.6 million dollars
- 32,000 sqft
- 80-100 employees

Some blueprints

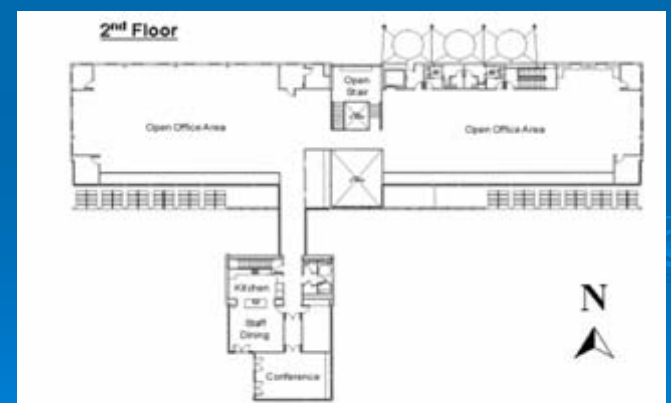
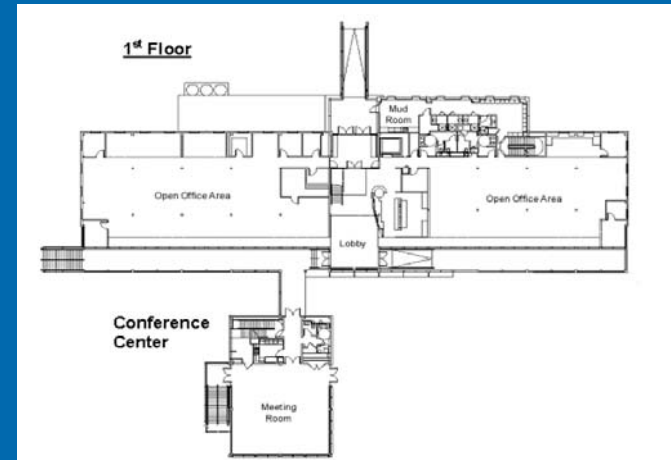


Figure 4-2 First- and second-floor plans for the Merrill Center

Scores and Awards

LEED Scorecard

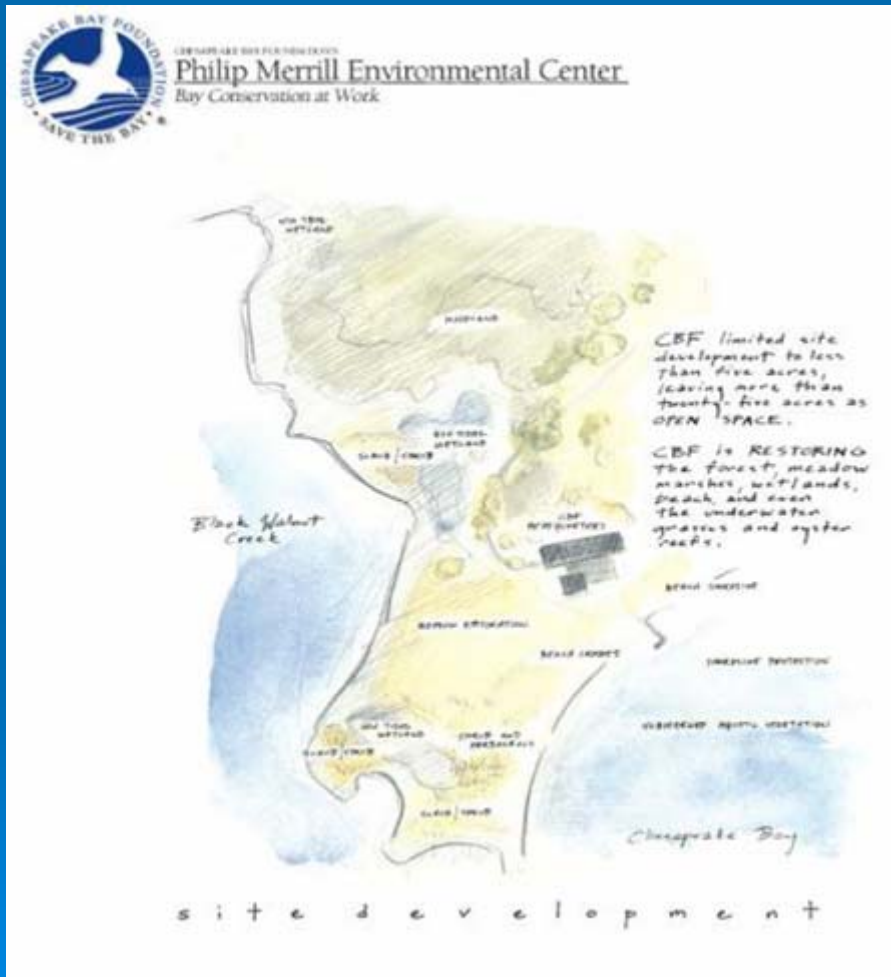
- Planning sustainable sites: 7 /11
- Improving Energy Efficiency: 7 /11
- Conserving Materials and Resources: 7/12
- Enhancing Indoor Env Quality: 5/7
- Safeguarding Water: 6/8
- Improving the Design Process: 1/1



Awards

- **ASHRAE Technology Award** (2001) -- 1st Place Award in the Commercial New division
- **AIA/COTE Top Ten Green Projects** (2001)
- **Business Week/Architectural Record** (2001)
- **AIA Washington, D.C., Chapter** (2001) Award for Excellence in Architecture
- **NESEA Green Building Awards** (2003) First Prize: Places of Work
- **Building Design & Construction Magazine** (2001) Grand Award, Building Team Project of the Year

Site Selection and Prep



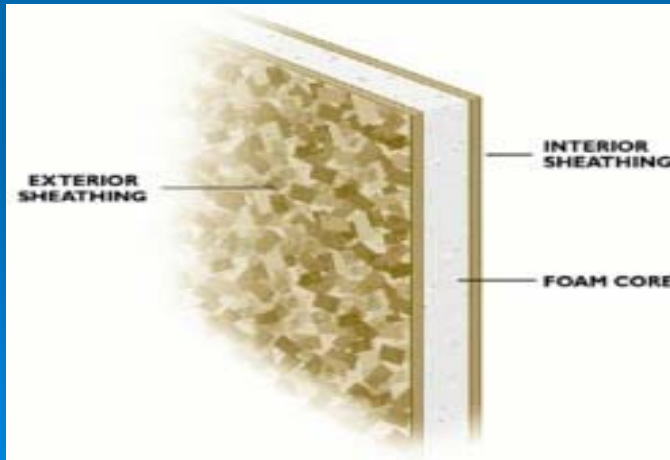
- MD's Smart Growth Policy
- Dismantled existing structure – recycle, reuse, auction
- Chipped concrete foundation and used for permeable driveway
- Trees cut : 8
- Trees planted : 130
- Replanted native grasses

Materials



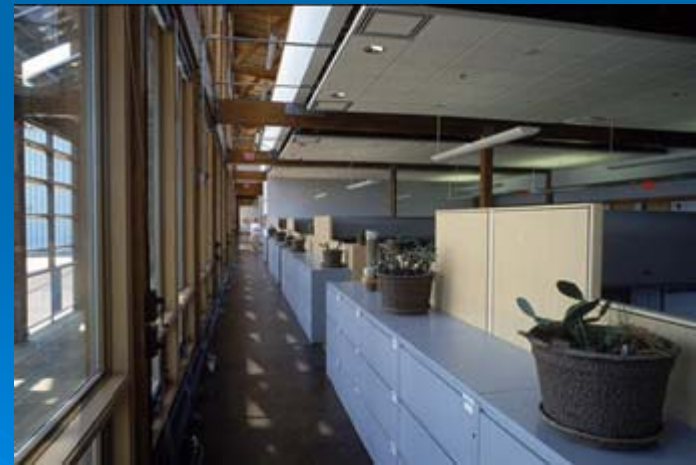
- 51% of all materials come from within a 300 mile radius
- Cradle-to-cradle philosophy
- Biodegradable, renewable materials; e.g. bamboo and cork
- Innovative recycling; pickle barrel slats

New construction technology

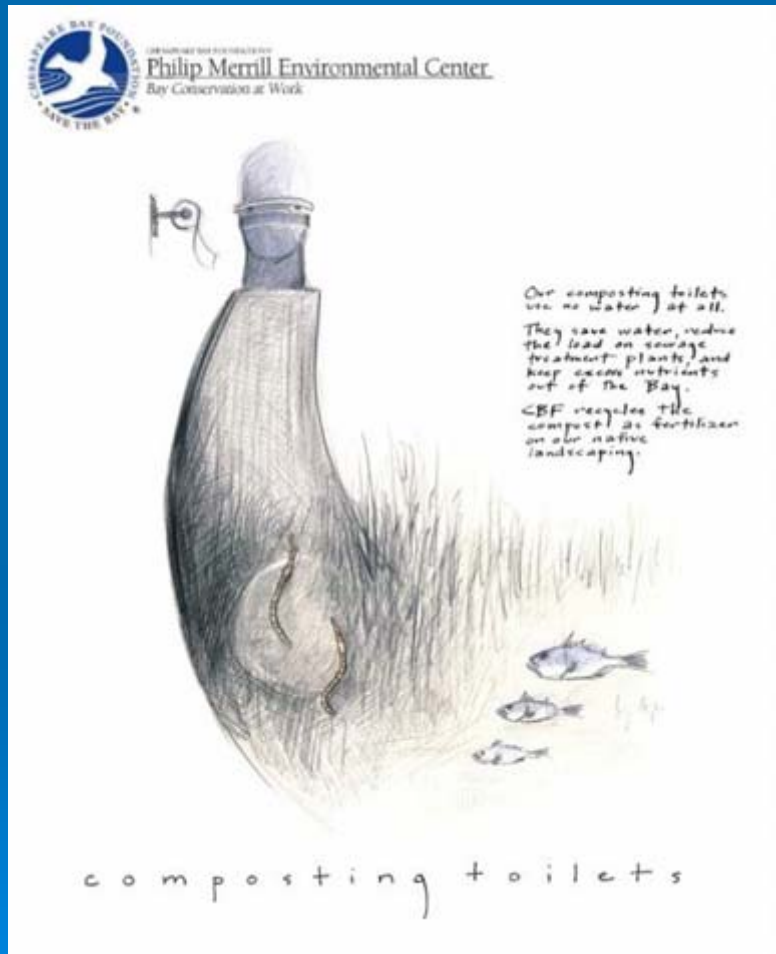


- Parallel strand beams
 - no mature hardwoods necessary
 - Stronger *and* renewable!
 - Uses more of the tree
- Structurally Insulated Panels (SIPs)
 - Stronger
 - Recyclable materials
 - Less wood

New materials → new possibilities



Composting toilets

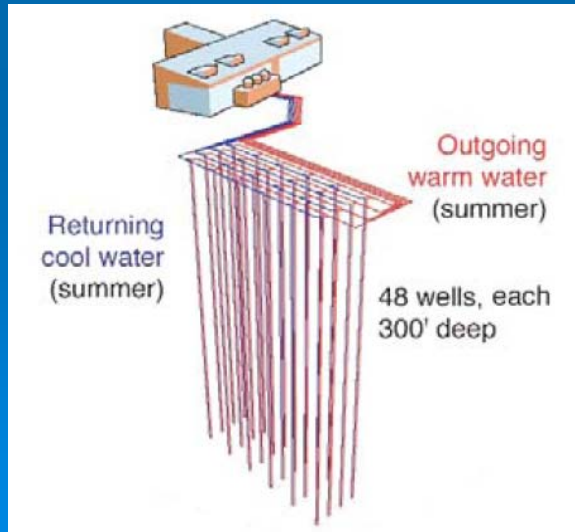


- Saves water
- No chemicals
- Good, clean soil for fertilization

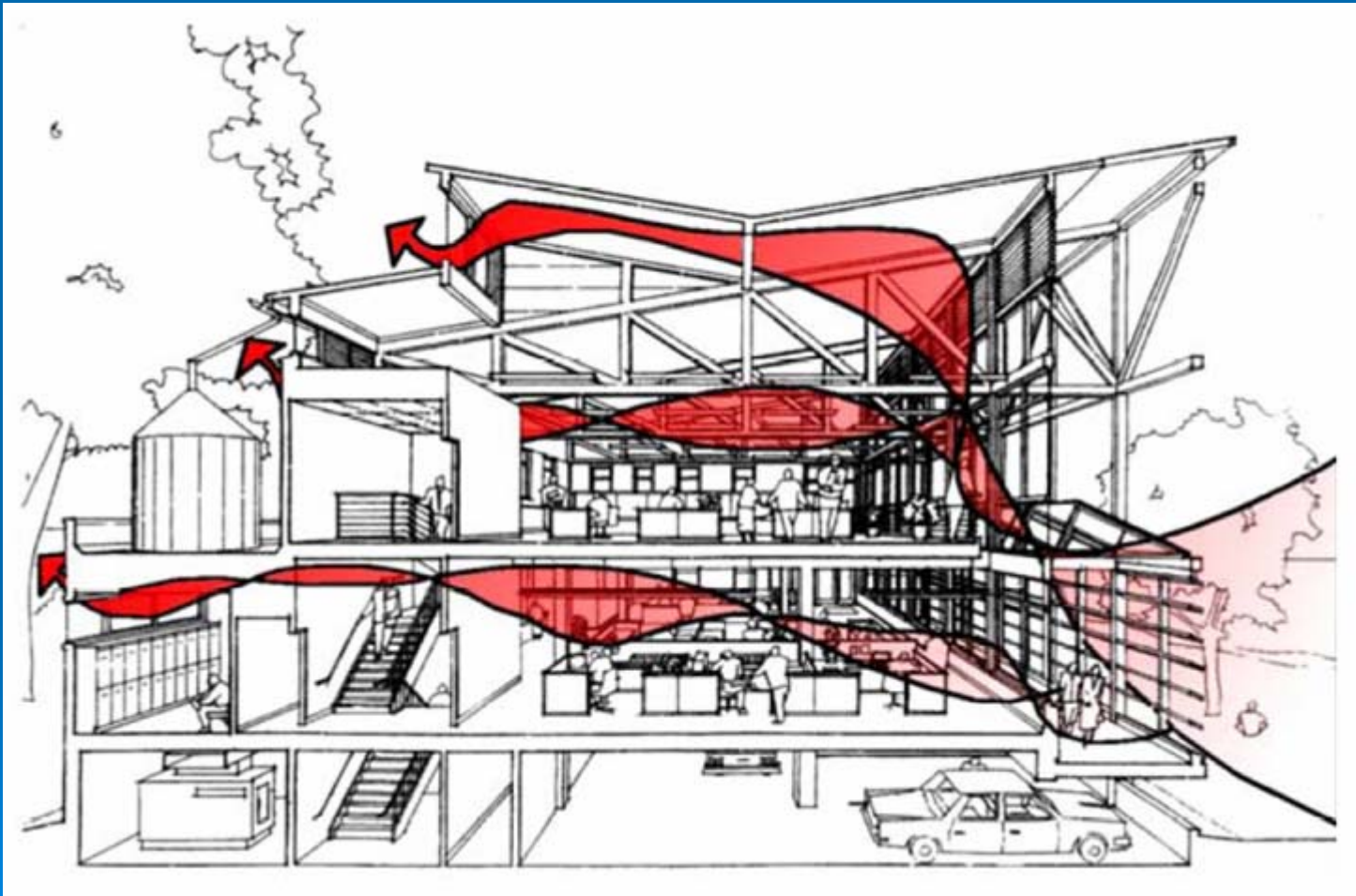
Energy Production



- Solar collectors used to heat water
- Photovoltaic panels used to generate electricity
- Ground source heat pumps used for cooling/heating



Hybrid Natural Ventilation



Other features...



Great but not perfect...

- Despite efforts to reduce energy consumption, not as much savings as expected
- Leaky building envelope (fixed?)
- Lighting is not absolutely maximized

Conclusion

- Extremely successful design and construction process
- \$199/sqft to build, \$46/sqft for green strategies; payback in 7 – 8 years.
- Employee morale and satisfaction extremely high