





LEED RATING SYSTEM OVERVIEW

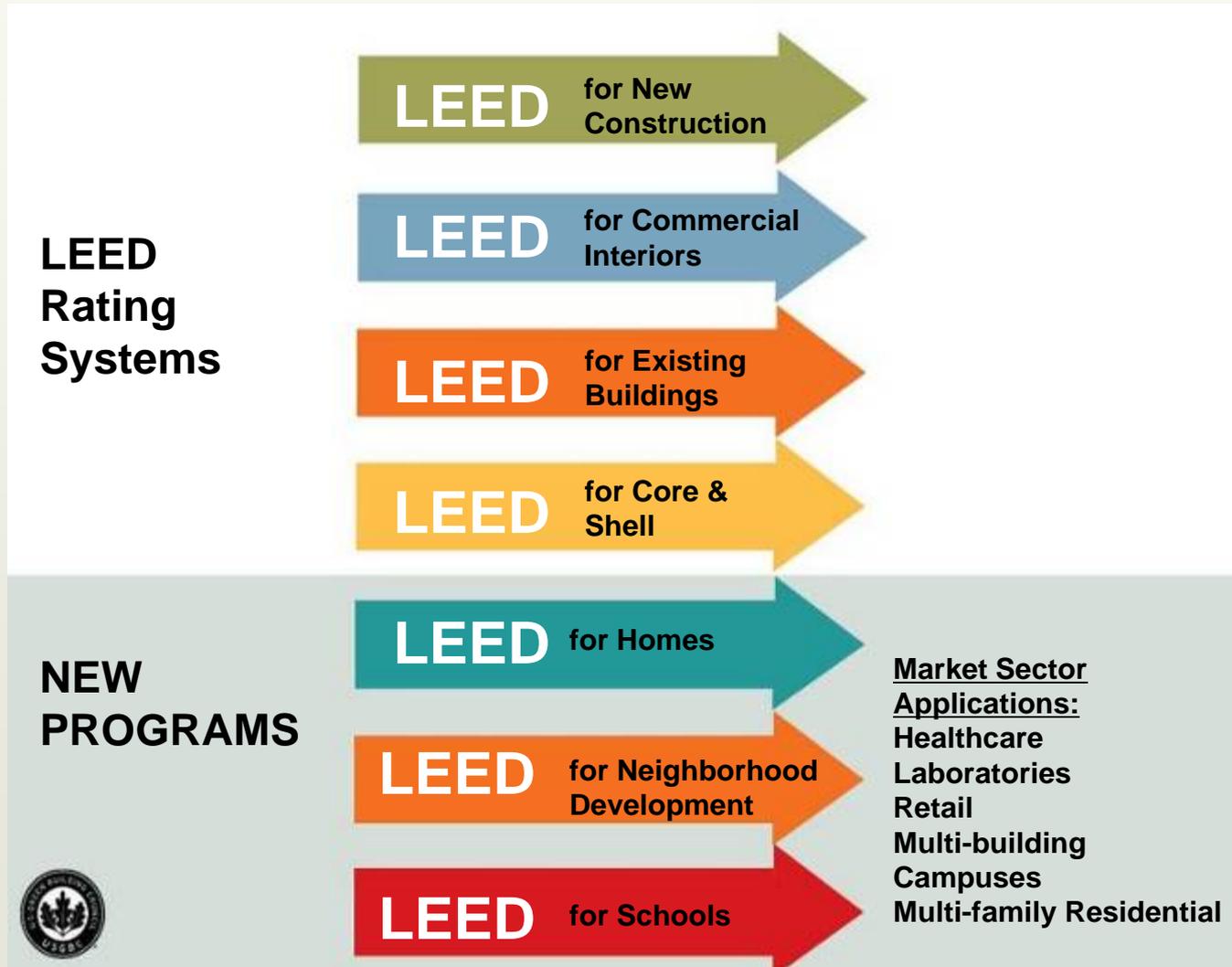


U.S. Green Building Council

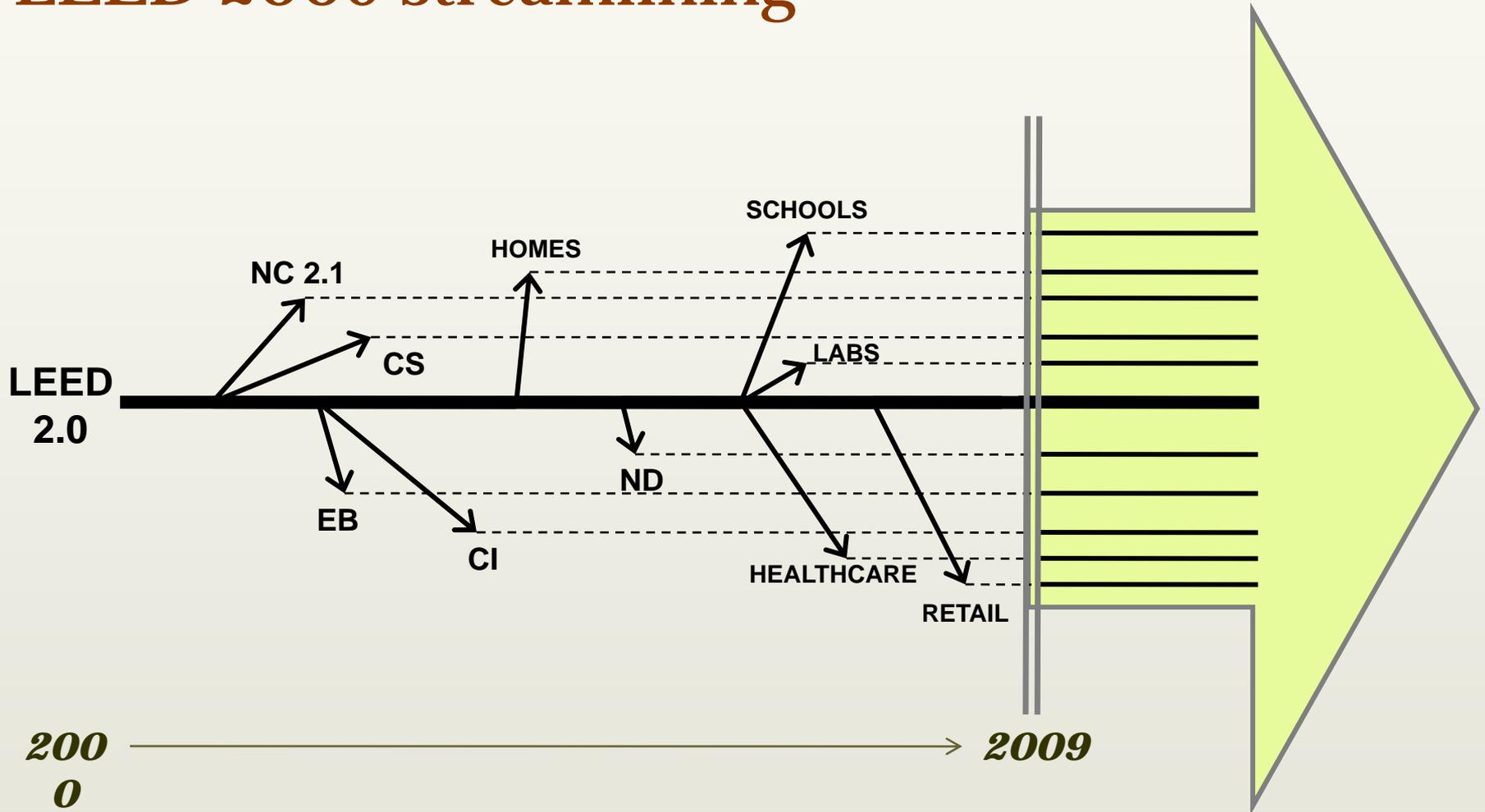
- » National nonprofit organization based in Washington, DC
- » Diverse membership of organizations
- » Consensus-driven
- » Committee-based product development
- » Developer and administrator of the LEED Green Building Rating System



LEED Programs



LEED 2009 streamlining



Format & Structure of LEED

SUSTAINABLE SITES

WATER EFFICIENCY

ENERGY & ATMOSPHERE

MATERIALS & RESOURCES

**INDOOR ENVIRONMENTAL
QUALITY**

INNOVATION & DESIGN

- » Performance-based, and prescriptive requirements
- » Prerequisites and credits
- » The rating system provides:
 - Intent
 - Requirements
 - Submittals
 - Technologies and Strategies



Materials & Resources

Raw materials, Source practices

FACT: Making recycled paper instead of new paper uses 64% less energy and uses 58% less water.

Materials & Resources

Goals

- » Reduce the amount of materials needed
- » Use materials with less environmental impact
- » Reduce and manage waste

FACT: Making recycled paper uses 64% less energy and uses 58% less water.





Materials & Resources: Issues

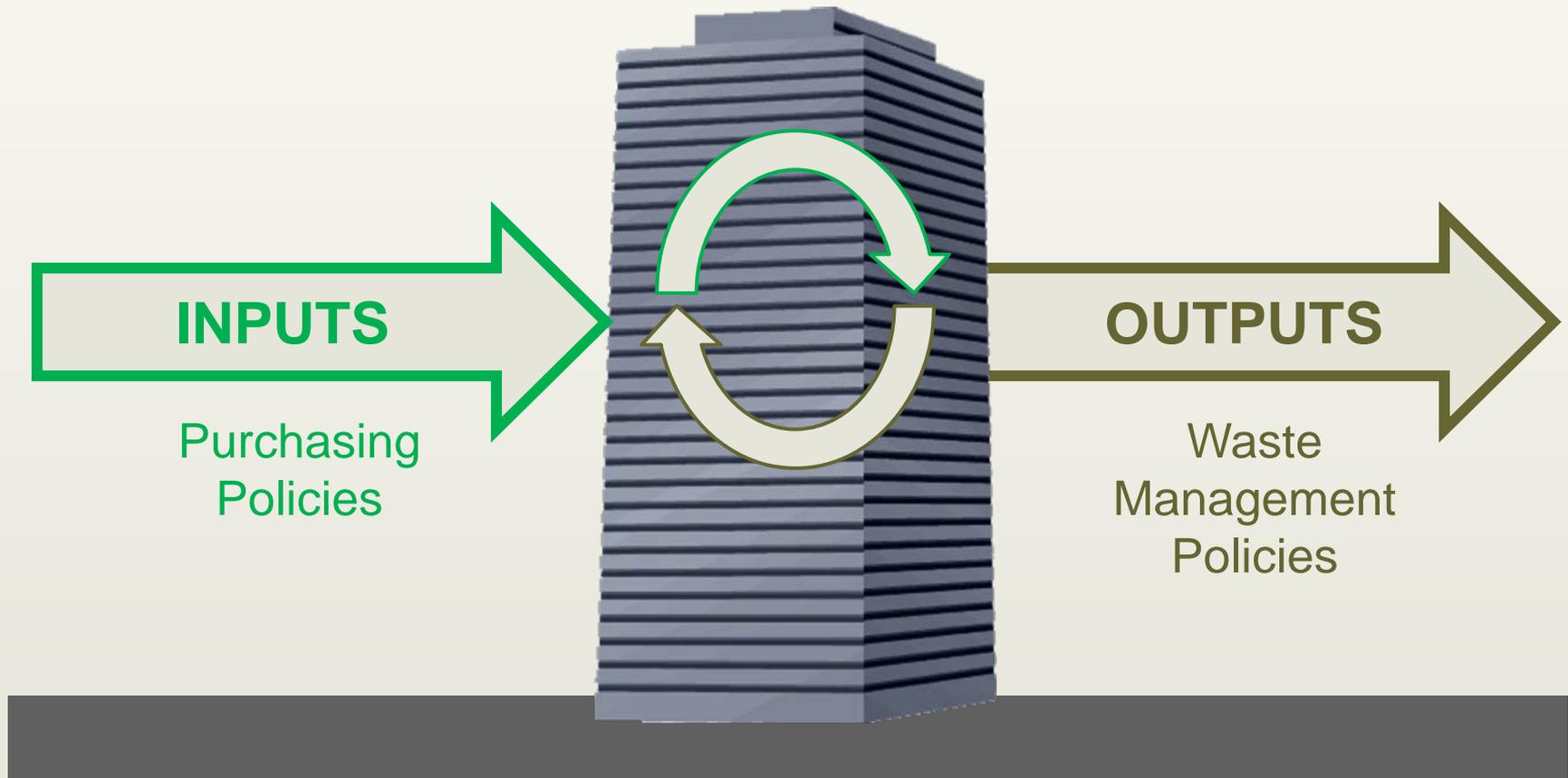
Purchasing



Solid Waste

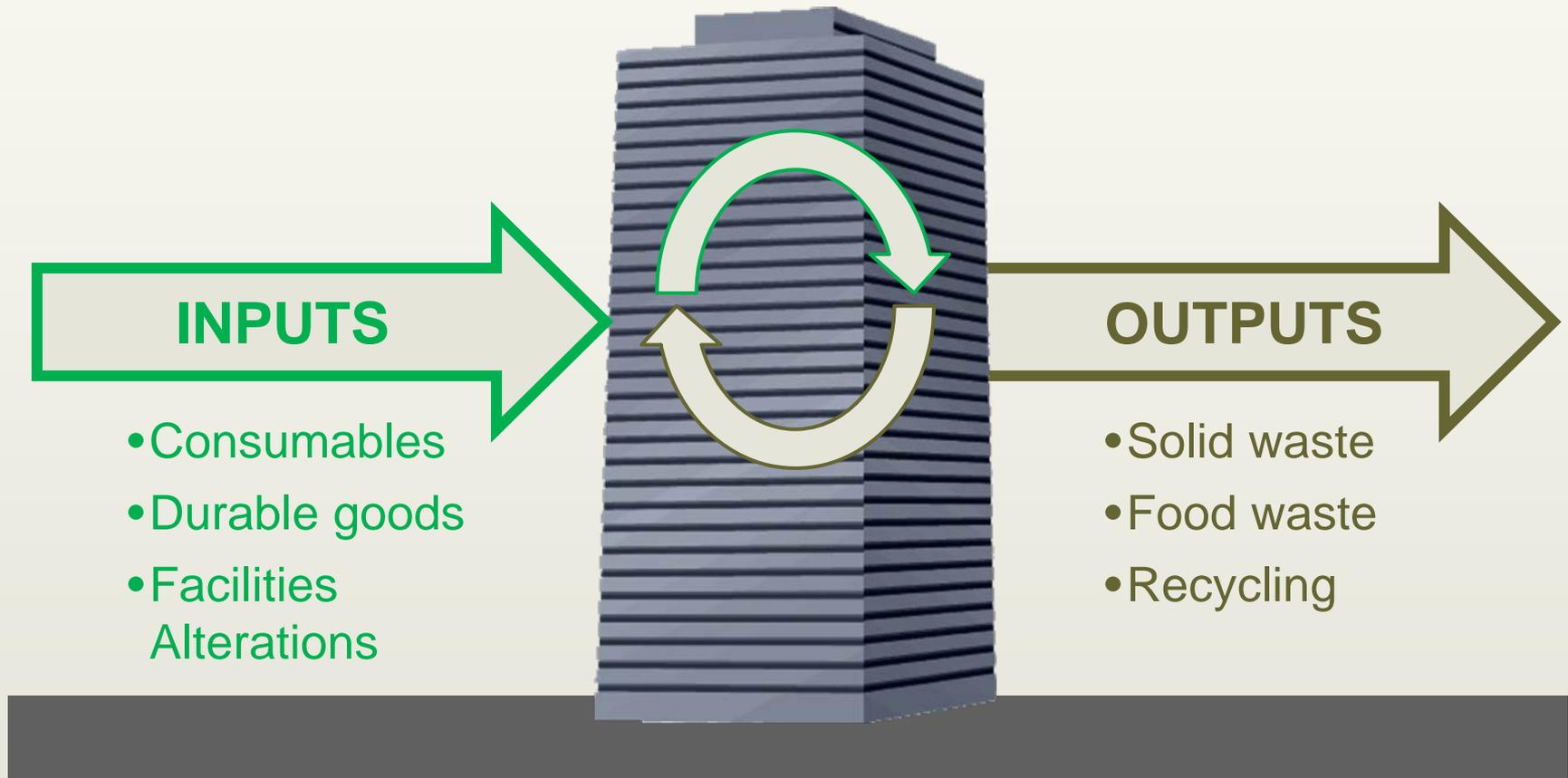


Materials Flow Policies





Materials Flow Policies





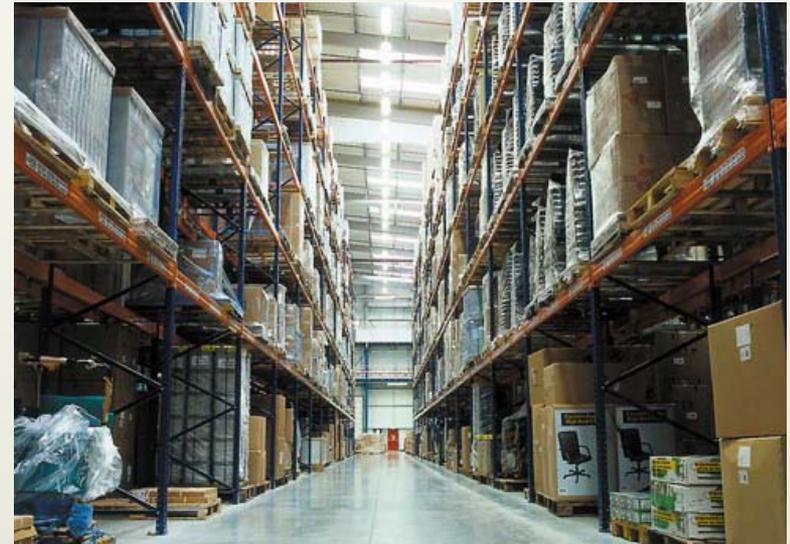
Sustainable Purchasing

Concerns:

- » Overuse of resources
- » Pollutant source reduction
- » Responsible purchasing & supporting industries

Benefits:

- » Decreased impact on material production
- » Decreased waste impacts
- » Decreased purchasing redundancies
- » Healthier indoor environment



How do we select green materials?

Certified Products: Eco-labels

- » SCS: Recycled Content
- » FSC: Certified Wood
- » Green Seal: Paints
- » Green Guard: VOC Emissions
- » CRI Green Plus Label: Carpet
- » Floorscore: hard flooring





EPA Energy Star

Energy Star covers over 50 different product types

- » appliances
- » heating and cooling equipment
- » Lighting
- » home electronics
- » office equipment



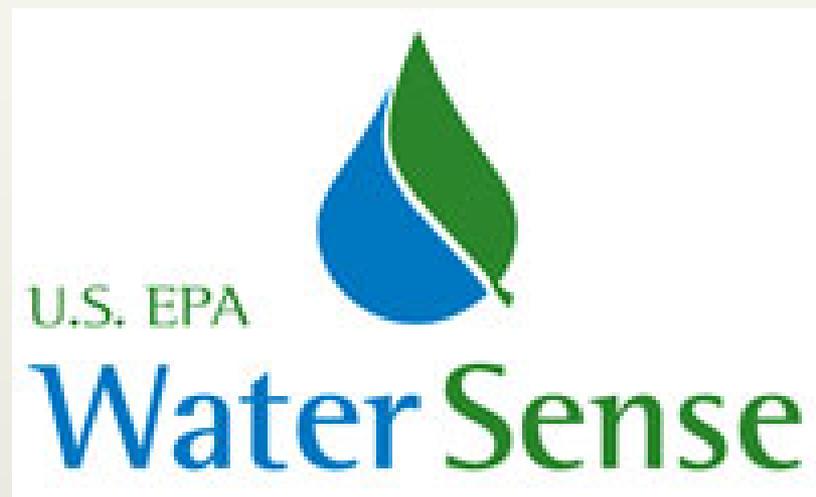
www.energystar.gov



EPA Water Sense

Modeled after Energy Star, the EPA's new **WaterSense** program promotes water-efficient products and practices.

www.epa.gov/watersense

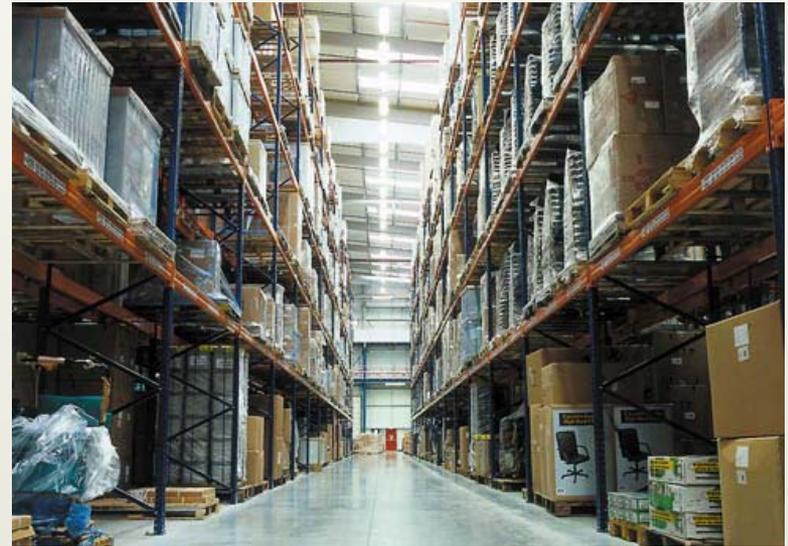


Sustainable Purchasing

Intent:

To reduce the environmental impacts from materials acquired for use in the operations, maintenance, and upgrades of buildings.

- » Ongoing consumables
- » Durable goods
- » Facility alterations/additions
- » Toxic source reduction
- » Food





Purchasing: Ongoing Consumables

Office Products Purchasing Program

- » Frequently used materials (paper, notebooks, envelopes, toners, batteries, etc.)
- » Program should include materials that have green attributes:
 - Recycled content
 - Rapidly renewable
 - Locally harvested
 - FSC certified
 - Rechargeable (batteries)

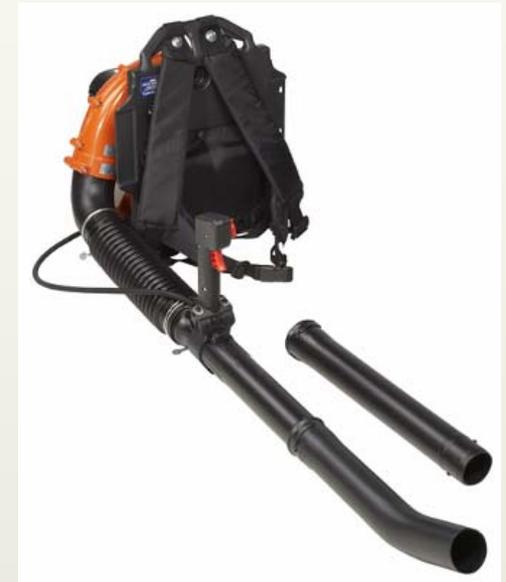




Purchasing: Durable Goods

Equipment Purchasing Program

- » Infrequently purchased materials (computers, printers, scanners, water coolers, refrigerators, etc.)
- » Meet criteria for Electric Powered Equipment
 - Energy Star labeled
 - Replaces conventional gas-powered equipment





Purchasing: Durable Goods

Furniture Purchasing Program

- » Recycled content
- » Rapidly renewable
- » Salvaged or re-used
- » Locally harvested materials
- » FSC-certified wood
- » Meets Green Guard Certification or BIFMA for low VOC limits



Purchasing: Facility Alterations and Additions

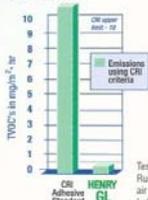
Purchasing Programs & Specifications

» Address facility renovations, refits, and additions:

- Wall studs
- Insulation
- Windows
- Carpet
- Sealants
- Paints
- Attached finishes

WHAT IS ULTRAGREEN?

Adhesives with the UltraGreen Certified seal are the lowest emitting flooring adhesives manufactured. HENRY's GreenLine products are UltraGreen certified. UltraGreen represents adhesives that are up to 47% below the current Carpet and Rug Institute's (CRI) Indoor Air Quality emissions criteria for adhesives. In fact, HENRY GreenLine products conform to the same guidelines as the carpet itself! Other CRI compliant adhesives are up to 20 times higher in emissions than GreenLine!



TVOC's in mg/m³, hr

CRI Adhesive Standard HENRY GL

Tested per Carpet and Rug Institute indoor air quality "Green Label" program.



The W.W. Henry Company
400 Ardex Park Drive
Alliquippa, PA 15001

For a free demonstration of one of the most advanced flooring adhesives in the world, call your HENRY representative at 1-800-232-4832. Or, visit us online at www.henrygreenline.com





Solid Waste Management

Intent:

Reduce waste and toxins generated from the use of consumable products.





Indoor Environmental Quality

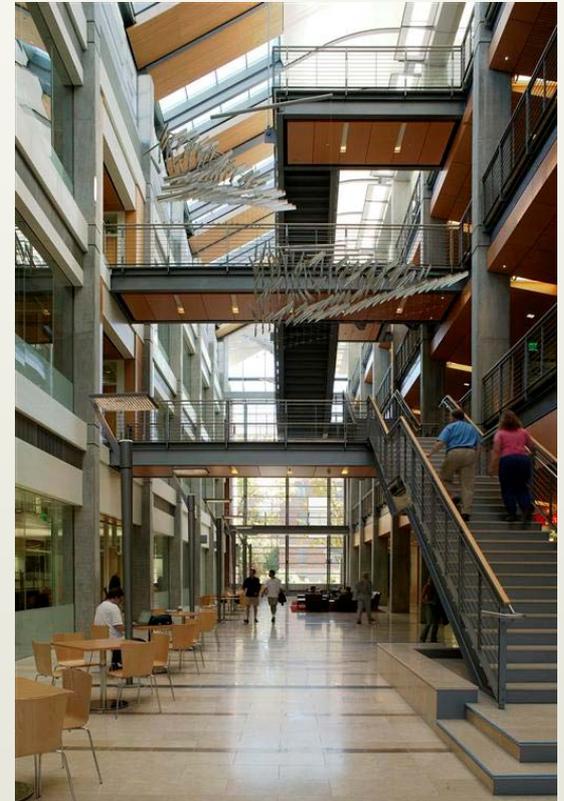
Quality of environment, quality of life

Indoor Environmental Quality

Goals

- » Establish good indoor air quality
- » Eliminate, reduce, manage the sources of indoor pollutants
- » Ensure thermal comfort and system controllability
- » Provide for occupant connection to the outdoor environment

FACT: Americans spend 90% of their lives indoors.





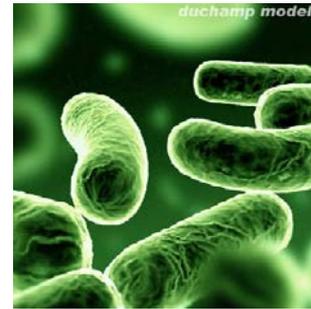
Indoor Environmental Quality: Issues

**Outdoor Air
Delivery &
Monitoring**



**Occupant
Comfort**

**IAQ Best
Management
Practices**



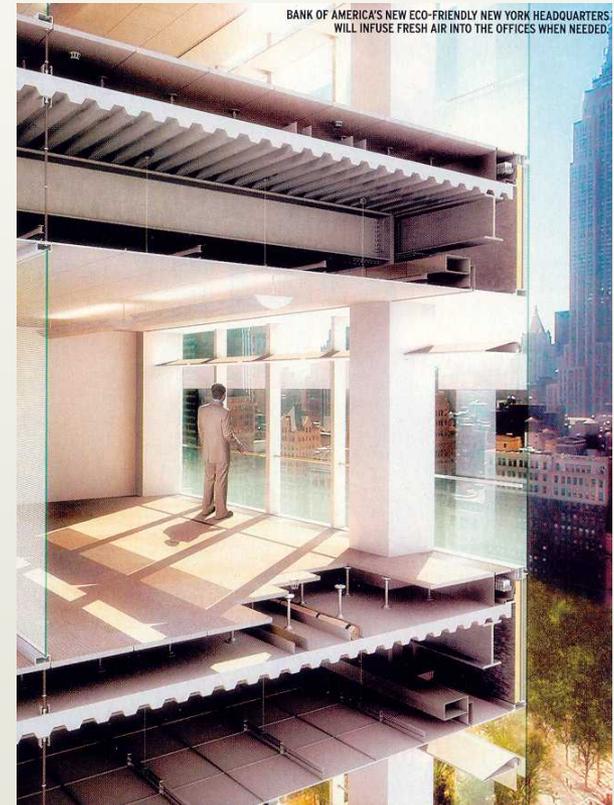
Green Cleaning



Outdoor Air Delivery & Monitoring

Intent:

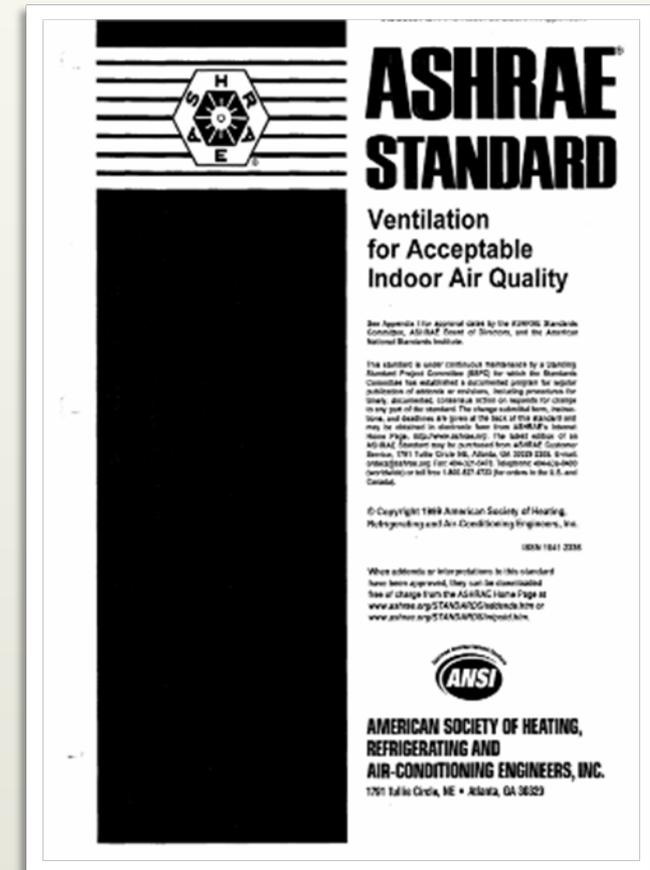
To ensure that ventilation systems sustain occupants' comfort and well-being.



Outdoor Air Delivery & Monitoring

ASHRAE 62.1

Standard that defines minimum ventilation rates for commercial and institutional buildings.

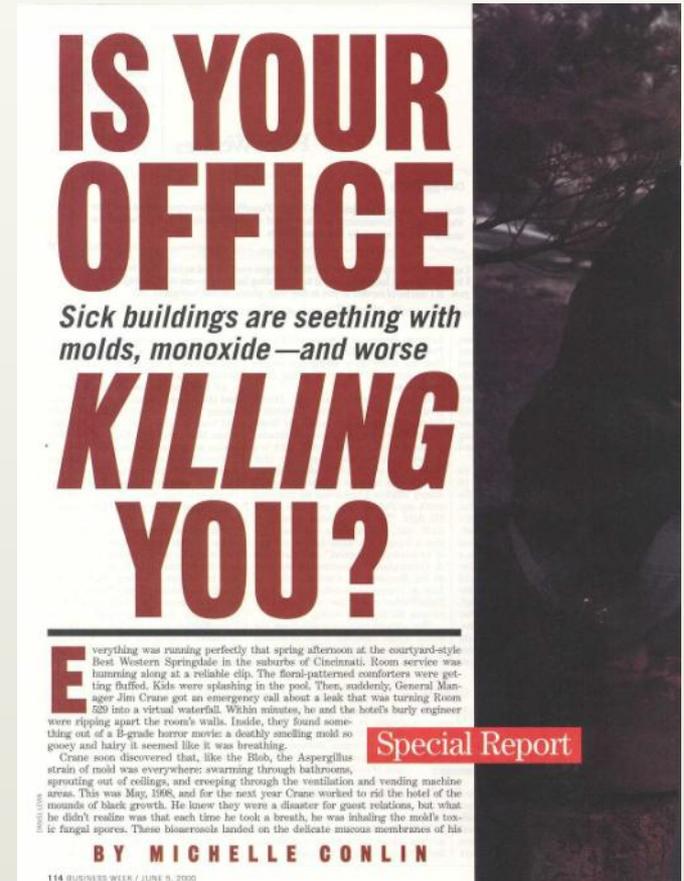




IAQ Best Management Practices

Intent:

- » Prevent indoor air quality problems
- » Promote well-being of the occupants
- » Address any moisture or mold accumulation



IS YOUR OFFICE

Sick buildings are seething with molds, monoxide—and worse

KILLING YOU?

Everything was running perfectly that spring afternoon at the courtyard-style Best Western Springdale in the suburbs of Cincinnati. Room service was humming along at a reliable clip. The floral-patterned comforters were getting fluffed. Kids were splashing in the pool. Then, suddenly, General Manager Jim Crane got an emergency call about a leak that was turning Room 209 into a virtual waterfall. Within minutes, he and the hotel's burly engineer were ripping apart the room's walls. Inside, they found something out of a B-grade horror movie: a foully smelling mold so gaseous and hairy it seemed like it was breathing.

Crane soon discovered that, like the Blob, the *Aspergillus* strain of mold was everywhere: swarming through bathrooms, sprouting out of ceilings, and creeping through the ventilation and vending machine areas. This was May, 1998, and for the next year Crane worked to rid the hotel of the mounds of black growth. He knew they were a disaster for guest relations, but what he didn't realize was that each time he took a breath, he was inhaling the mold's toxic fungal spores. These bioerosols landed on the delicate mucous membranes of his

Special Report

BY MICHELLE CONLIN

114 BUSINESS WEEK / JUNE 9, 2000

IAQ Best Management Practices

IAQ Management Program: Facility Alterations & Additions

- » HVAC protection
- » Controlling Pollutant Sources
- » Pathway Interruption
- » Housekeeping
- » Scheduling to minimize contamination
- » Construction sequencing



IAQ Best Management Practices

Environmental Tobacco Smoke Policy

- » Prevent and minimize exposure to Environmental Tobacco Smoke (ETS)
- » Prohibit all smoking in the building
- » Locate exterior designated smoking areas at least 25 feet away from all building entries, outdoor air intakes, and operable windows



Occupant Comfort

Occupant comfort

- » Temperature
- » Humidity
- » Air Velocity
- » Air Quality
- » Building cleanliness
- » Acoustics
- » Access to daylighting
- » Proper HVAC balance/zoning
- » Controllability of lighting and HVAC
- » **OCCUPANT PERCEPTION**





Green Cleaning

Concerns:

Janitorial staff

- » Direct exposure
- » 6% injured every year

Building occupants

- » Distribution of chemicals via HVAC system
- » VOC levels up to 36x higher than acceptable two hours after cleaning



Green Cleaning

Concerns:

Pollution issues

- » Air pollution/smog
- » Ozone depletion
- » Eutrophication of waterways
- » Interference with sewage treatment
- » Bioaccumulation of toxins in plants and animals
- » Endocrine disruption in wildlife





Indoor Integrated Pest Management

Intent:

- » Integrated methods
- » Site or pest inspections
- » Pest population monitoring
- » Emergency application of pesticides
- » Communication strategies



Thank you.

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Bellaire, TX

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A clear blue sky with several fluffy white clouds scattered across it. The clouds are of varying sizes and are positioned in the upper and middle sections of the frame. In the bottom right corner, there is a light blue rectangular box containing the text "Questions?".

Questions?