



**Knoll**

**Commitment**

For more than a quarter century, Knoll has acted on its commitment to environmental responsibility in the design and manufacture of products for the workplace. We have established ambitious standards and continue to measure performance against them. The standards are mandated in a comprehensive Environmental, Health & Safety Plan and are defined in eight Environmental Principles that are addressed in this report.

**Innovation**

Knoll is a recognized leader in the development of clean technology for the furniture industry and continues to share its innovations in order to promote sustainable practices. We are innovators in the use of recycled materials and certified and renewable resources in the manufacture of our products.

**Collaboration**

Sustainability is a collaborative process. Knoll works in partnership with customers, vendors, industry associates, professional organizations and third party certifiers as we make steady progress toward our goal of sustainability.

**Knoll made significant progress on our journey toward environmental sustainability in 2004. Once again, we focused our efforts on three strategic areas: Design for the Environment, Third Party Certification and Communication. Highlights for the year included continued advances in clean technology, multiple initiatives for bringing Knoll facilities into conformance with LEED® standards and the launching of Knoll Environment, a link for environmental information on the Knoll website: [www.knoll.com](http://www.knoll.com).**

**Design for the Environment**

Knoll continued to develop the systematized infrastructure that makes design for the environment possible. We expanded our supply chain management and implemented significant improvements in existing processes. In 2004 we:

- Revised existing databases for recycled content to simplify documentation for internal review and LEED certification.

- Completed new recycled-content databases for the Currents and Morrison product lines.

- Set vendor targets for indoor air quality and recycled content in material and parts.

- Provided data on recycled content of products in first quarter ISO (International Organization for Standardization) 14001 audits.

- Developed and completed controlled studies for two new wood coatings, targeted for introduction in 2005, which will improve indoor air quality and reduce VOC (volatile organic compounds) emissions.

**Third Party Certification and Innovative Alliances**

Knoll actively promotes independent third party certification because it provides the foundation for industry-wide environmental compliance. Certification by established and respected third parties ensures that all manufacturers are held to the same high standards and that customers can trust a company's declarations about the environmental benefits of its products. In 2004 Knoll received:

- ISO 14001 certification for its three Toronto, Canada facilities. All Knoll manufacturing facilities now are ISO 14001 certified.
- FSC (Forest Stewardship Council) re-certification, following successful completion of the first annual FSC audit, of all North American plants that manufacture wood products. FSC certification authorizes Knoll to provide chain-of-custody proof that wood bearing the FSC mark comes from forests that protect environmental, social and economic values.
- GREENGUARD™ (Indoor Air Quality) certification for additional Studio products and new textiles added to the collection. All Knoll North American systems, seating, Studio seating and textiles are GREENGUARD certified. GREENGUARD certification is the gold standard for identifying products that meet stringent testing criteria and have no adverse impact on indoor air quality.

In 2004 Lou Newett, Director of Environment, Health and Safety at Knoll, served as chairman of the GREENGUARD Environmental Institute's Technical Committee. This body provides feedback from manufacturers on issues and developments related to furniture products that is used by the Institute's Advisory Board in establishing standards for product testing.

- LEED Gold Certification in the Existing Building Pilot Program for the 350,000 square-foot Lubin manufacturing facility in East Greenville, Pennsylvania. In addition, the LEED Commercial Interiors Pilot Project at the Knoll San Francisco showroom was completed and submitted for certification. LEED (Leadership in Energy and Environmental Design) is an initiative of the U.S. Green Building Council that establishes criteria and awards certification for sustainable design.

**Communication**

In 2004 Knoll used internal and external communications on environmental issues as tools for increasing environmental awareness and supporting sustainable practices. Communications included:

- The training of Knoll Environment, Health and Safety Council members in all facilities on changes in third-party certification programs. Communication of this kind is vital to maintaining the infrastructure that supports sustainable practices.
- A joint education program with the GREENGUARD Environmental Institute in which Knoll sponsored 26 Indoor Air Quality education seminars in various locations throughout the country. This program, which has educated 2,500 architects, designers and spec writers to date, enables design professionals to earn continuing education credits, through AIA, IIDA and IDSA, in Health, Safety and Welfare.

- The launch of Knoll Environment, a link on the website [www.knoll.com](http://www.knoll.com), for information on Knoll environmental history and activities, news, products, manufacturing practices and third party certifications.
- The creation of an online education video module on Sustainable Furniture, and collaboration in a module on FSC certified wood, produced by MTS (The Institute for Market Transformation through Sustainability), which promotes education, unified standards and business development to advance sustainable practices in the built environment. MTS education modules enable design professionals to earn continuing education credits.
- Presentation of the Lubin LEED project to the Dallas and New York City LEED chapters as part of their education process.

**“We are raising awareness among the architecture and design community on the importance of selecting low-emitting materials in furniture products. Knoll has really stepped up to the plate. Partnering with them helps us educate design professionals about indoor air quality and enables audience participants to earn continuing education credits.”**

Tresa Banks, Business Relationship Manager, GREENGUARD Environmental Institute



The Knoll Lubin Manufacturing Facility,  
East Greenville, Pennsylvania

LEED Gold Certification: Existing Building Pilot Project



**1986: An Environmentally Advanced Building for Its Time**

Designed by Mitchell/Giurgola Architects (now MGA Partners) and completed in 1986, the 355,000 square-foot Lubin facility is a gleaming white and natural stone structure set on a grassy hill planted with flowering trees. The building and its site embody aesthetic and environmental values not typically associated with manufacturing facilities. Design and construction were preceded by a company-initiated environmental impact study that guided the process. Original environmental features included:

- access to natural light and outdoor views throughout
- high ceilings
- windows that open to provide ventilation
- an energy-efficient boiler system

- the use of chillers instead of water for cooling in production processes
- a state-of-the-art wastewater treatment plant
- water-efficient devices on plumbing fixtures
- naturally draining stone parking lot where feasible
- reflective roofing
- a native grass lawn that requires no sprinkler systems or herbicides

**2003/2004: Working Toward a Higher Level of Sustainability**

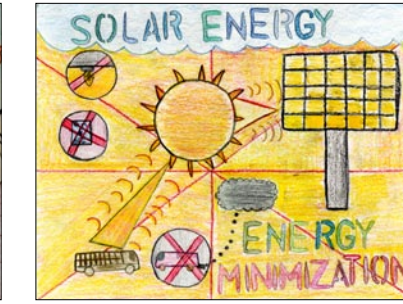
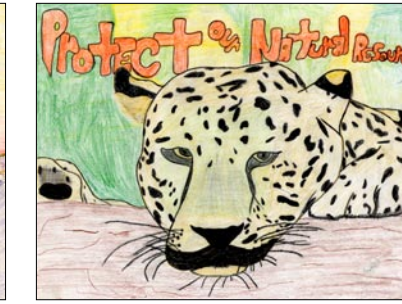
In the Lubin LEED Existing Building Pilot Project, Knoll focused on four major initiatives:

- *Lighting:* Knoll partnered with Philips Electronics to replace light sources throughout the facility with Philips' industry-leading low-mercury lights. This innovation provides a healthier and more comfortable visual environment for workers.

“Here we have good air circulation. We can open more windows than in other plants I’ve worked in. The overall work conditions are lighter and cooler. I think the lightness and brightness have a lot to do with your attitude about work. When you come into this building you notice the difference.”

Joe Stoddart, Knoll Textiles





**2004: LEED Gold Prerequisites and Credits:**

- *Plan for Green Site & Building Exterior Management:* Procedures developed and implemented
- *Alternative-Fuel Vehicle Parking:* 10% of parking spaces allocated
- *Car Pooling & Telecommuting:* 5%+ population participation
- *Reduce Site Disturbance:* 100% vegetation is native or adaptive; 67% of all surface area is open vegetated.
- *Stormwater Management:* Pervious 50.3%
- *Light Pollution:* Zero light trespass to neighboring properties
- *Discharge Water Compliance:* Tertiary treatment of 100% of wastewater

- *Water-Efficient Landscaping:* Zero irrigation applied to vegetated areas
- *Ozone Protection:* No ozone depleting materials on site
- *Building Operation & Maintenance:* Temperature and CO2 system controls installed
- *Source Reduction & Waste Management:* Storage and Collection of Recyclables & Waste Stream Audit part of ISO 14001
- *Toxic Materials Source Reduction:* Low mercury bulbs installed throughout
- *Construction, Demolition and Renovation Waste Management:* Procedures developed and implemented
- *Optimized Use of Alternative Materials:* Local supply chain developed for FSC-certified wood
- *Occupant Recycling:* More than 70% of waste materials recycled, 626.17 tons in one year
- *Environmental Tobacco Control:* Smoke free environment

- *Outdoor Air Delivery Monitoring:* Computer system with alarm monitors CO2 levels
- *Construction Indoor Air Quality Management Plan:* Program developed and implemented
- *Reduce Particulate in Air Distribution:* Mats installed; cleaning schedule in operating plan
- *Daylighting & Views:* Daylighting factor of 2% or greater in 93% of occupied space; direct line of views for more than 90% of occupants
- *Green Cleaning:* Independent ventilation for janitorial closets; low environment impact GS37 cleaning products used; low environment impact pest management policy
- *Green Housekeeping Equipment:* Vacuum systems meet CRI green label criteria
- *Low Emitting Materials-Construction and Renovation:* Green Seal GS11 parts; CRI green label carpeting; VOC-limited adhesives

- *GREENGUARD Certified Furniture:* All furniture GREENGUARD certified
  - *Education Program:* All building occupants educated
  - *LEED Certified Consultant:* Envision Design
- Project Team**  
*Knoll, Inc.*  
 Lou Newett, Project Manager  
 Paul Nowicki, Project Engineer  
 Patrick Best, Project Coordinator
- Envision Design*  
 Ken Wilson, LEED Consultant  
 Ann Ardery, LEED Consultant
- Philips Electronics*  
 Lance Burghardt, Lighting Consultant





## Protection of the Biosphere

We will strive to make continued progress toward reducing or eliminating the release of any substance in an effort to safeguard all habitats affected by our operations.



*We will continue to reduce the use and or emissions of hazardous air pollutants and volatile organic compounds from our manufacturing operations through the introduction of clean technologies.*

- In 2004 Knoll U.S. manufacturing facilities were more than 90% HAP (hazardous air pollutants) and VOC free.
- The Knoll Toronto, Ontario facility converted all solvent-based stains used in roller applications on its flat (panel) lines to water-based stains, reducing VOC emissions by 75% over 2003.

- The Toronto facility reformulated remaining solvent-based stains used in its spraying operation to eliminate 2-methoxyethanol, a newly defined toxic substance.
- In 2004 engineers at the Toronto plant began development of a steel connector to replace styrene glue on REFF panels. The connector, to be implemented in 2005, will eliminate the use of 25 tons of styrene glue per year.
- Knoll completed controlled studies and began pilot studies in 2004 on new wood coatings for Knoll Studio (non-seating) furniture designed to eliminate indoor air emissions. As part of the company's supply chain management process, the new coating technologies will be shared with vendors.

- The Grand Rapids, Michigan facility received a Clean Corporate Citizen Longevity Award from the state of Michigan in recognition of five years of environmental citizenship.

**“It is important to see a major national environmental organization like NRDC make the commitment to FSC wood. On the other hand, it also is important to have Knoll as a voice in the marketplace for how you can use sustainable wood in products in a way that is commercially viable and meets market demands. That sets the stage for others in the industry to say, We can do that, too.”**

Roger Dower, President, Forest Stewardship Council U.S.

- In East Greenville, Pennsylvania, all CFCs in water coolers and related equipment at the Lubin plant were removed as part of the LEED project. Extending the process to the adjacent plant resulted in the elimination of all CFCs in both facilities.

*We will provide water treatment facilities that meet or exceed discharge criteria.*

- Engineering changes at East Greenville increased nutrient removal at its state-of-the-art wastewater treatment facility. In 2004 the facility treated 10,981,055 gallons of wastewater.

*We will monitor storm water, conserve water use and develop processes to minimize water pollution.*

- The Grand Rapids facility reconfigured its powder coat finishing line from an open continuous-flow system to a closed-loop system, reducing wastewater discharge and cutting water consumption by over 75%.

- In 2004 the Grand Rapids facility instituted a grounds maintenance program to keep rainfall from collecting dirt and polluting streams.

- The Toronto facility engineered upgrades in its internal water treatment program to address increased streams generated by conversion to water-based stains.
- In 2004 the Toronto facility worked closely with the Canadian Ministry of the Environment to develop new measures and regulations aimed at reducing VOC emissions in the wood manufacturing industry.
- The Muskegon facility switched to a phosphate-free cleaner for building maintenance, reducing phosphates in its wastewater by 50%.

## Sustainable Use of Natural Resources

We strive to make the best use of renewable resources, such as water, soil and forests, and conserve nonrenewable natural resources.

*We will make sustainable use of renewable natural resources through efficient use and careful planning.*

- In 2004 the Knoll expanded range of work-surfaces made of rapidly renewable resources included Strawboard, Agriboard and Marmoleum.
- LEED projects at the East Greenville Lubin facility and the San Francisco showroom included the use of renewable, recycled and recyclable resources.

*We will continue to seek opportunities to use sustainable forests in our products.*

- Knoll was re-certified by FSC in 2004 and continued to offer FSC-certified wood in its systems products.
- In 2004 Knoll FSC-certified REFF workstations and conference tables were chosen by the NRDC (National Resources Defense Council) for its LEED Platinum regional office building in Santa Monica, California.

*We will minimize the use of wood pallets.*

- Knoll continues to use recyclable corrugated pallets where possible. Wood pallets are repaired, reused and recycled at the end of life. In 2004, 9,572 wood pallets were recycled.



*We will attempt to recycle or make beneficial use of wood scrap generated in our manufacturing operations.*

- Knoll facilities recycled 2,988 tons of wood scrap and 2,461 tons of sawdust in 2004. Recycled wood scrap was used for animal bedding and greenhouse fuel. Sawdust was used as fuel for industrial boilers. The Toronto facility burned wood scrap as heating fuel.

*We will continue to recycle steel, aluminum and other metal components.*

- In 2004 Knoll facilities recycled 4,177 tons of steel and 60.1 tons of aluminum.

*We will continue to seek recycling opportunities for scrap generated in our manufacturing operations.*

- Knoll facilities recycled over 537 tons of corrugated cardboard, 56 tons of paper, 107 tons of textiles, 10 tons of leather, 14,000 gallons of waste solvent and 24,000 gallons of waste oil in 2004.

*We will continue to utilize post-consumer and post-industrial materials in our products where practical.*

- In 2004 over 90% of the wood used to make composite board products at Knoll's Toronto, Ontario and East Greenville, Pennsylvania facilities contained an average of 93% post-industrial wood.

*We will be environmentally responsible in our purchase of materials.*

- All Knoll leather goods were obtained as byproducts of the meat packing industry. No hides or skins from endangered species were used.



## Waste Reduction and Disposal

We reduce, recycle and, where possible, eliminate waste and will dispose of all waste using safe and responsible methods.

## Conservation

We will conserve energy by improving the efficiency of our internal operations and the goods and services we sell.



### Waste Reduction and Disposal

*We will seek opportunities to recycle process scrap from our operations.*

- Waste reduction and recycling are important aspects of ISO 14001. In 2004 the Knoll Toronto facility was especially focused on these factors as it achieved ISO 14001 certification.
- Overall in 2004 Knoll facilities recycled virtually 100% of all aluminum and steel scrap generated in manufacturing. In addition, wood, leather and fabric scrap were recycled for beneficial use wherever possible.
- In 2004 Knoll facilities also recycled 4 tons of batteries, 1 ton of fluorescent lights, 27 tons of fiberglass, 7 tons of waste powder and 3/4 tons of plastic bottles.
- The Muskegon facility initiated a recycling program in which it collects used printer and toner cartridges and delivers them to a local school, which re-sells them to earn money for school activities.

*We will dispose of our waste only in well-operated permitted facilities.*

All Knoll manufacturing facilities adhered to stringent mandates for disposal of waste in approved and monitored facilities.

### Conservation

*We will make every effort to use environmentally safe and sustainable energy sources.*

- Knoll continued to save on energy consumption in shipping its products by loading trailers to help maximize use of cubic space and by using collapsible, returnable packaging that better utilizes trailer volume.
- In 2004 Knoll recycling efforts had the following impacts on the conservation of natural resources:

*Paper recycling:*  
21,394 trees saved  
957 gallons oil saved  
Recycling paper vs. using new paper reduces air pollution by 74% and water pollution by 35%.

*Steel recycling:*  
10,442,500 pounds iron ore saved  
4,177,000 pounds coal saved  
167,080 pounds limestone saved

Enough energy saved to light 8,354,000 60-watt bulbs for 26 hours.

Recycling steel vs. using new steel reduces air pollution by 86% and water pollution by 76%.

*Aluminum recycling:*  
Enough energy saved to run 3,846,400 TV sets for three hours. Recycling aluminum vs. using new aluminum reduced air pollution by 95%.

*We will initiate a program to upgrade existing low-efficiency motors to higher efficiency motors.*

- In 2004 Knoll continued this ongoing program by specifying high-efficiency motors on all equipment purchases at all North American facilities.

- The Knoll Toronto facility installed a new dust extracting system equipped with energy efficient motors and variable speed drives to conserve power.
- At the East Greenville Lubin facility, every piece of powered equipment was overhauled to maximize energy efficiency as part of the LEED project.

- The Grand Rapids facility upgraded its powder coat finishing line, replacing five motors with three more energy-efficient models.

*We will initiate a program to upgrade existing lighting where practical at each facility.*

- In 2004 Knoll continued its participation in the Green Lights Initiative in U.S. facilities and participated in a comparable Canadian government-sponsored program at the Toronto facility. Knoll U.S. facilities moved closer to 100% conversion to low energy-use lighting. The conversion of all ballasts and bulbs in the 350,000 square-foot Lubin facility in East Greenville, Pennsylvania contributed to a LEED Gold Award in the Existing Building pilot program.

- The Grand Rapids facility installed sensors on lights in vending machines so lights remain in the off position until a person stands in front of the unit.

*We will continue to explore opportunities to reduce the loss of energy by employing conservation methods such as controlling HVAC equipment, shedding non-essential power and controlling heated air loss.*

- In 2004 the Knoll Toronto, Ontario facility installed a rapid roll door on the main receiving dock to reduce heated air loss.



## Risk Reduction

We will strive to minimize the environmental health and safety risks to our associates and the communities in which we operate through safe technologies, sound transportation practices, safe facilities and operating procedures and by being prepared for emergencies.

## Safe Products and Services

We will reduce and, where possible, eliminate the use, manufacture or sale of products and services that cause environmental damage, or health or safety hazards. We will inform our customers of the environmental impacts of our products. We will use independent testing to help assure the safety of our products.

*We will design our processes to prevent injury to the health and welfare of Knoll associates, the community and the environment.*

- In 2004 the Knoll Toronto, Ontario facility received ISO 14001 certification.
- The Knoll clean technology program continued to achieve reductions in air pollutants discharged from our facilities. In 2004 90% of metal and wood coatings in Knoll U.S. facilities were VOC free. The Toronto facility reduced VOC emissions by 75% over 2003.
- The East Greenville, Pennsylvania facility implemented new ergonomic measures, including carts on production lines that reduce employee bending, electric scissors in the fabrics area that reduce repetitive motion, and anti-torque guns in the workshop that eliminate wrist twisting and are about three pounds lighter than those they replaced.

*We will develop and implement health and safety policies and programs to help prevent injury and illnesses to our associates.*

- Knoll decreased its overall accident rate in 2004 by 23% compared with the previous year. The 2004 incident rate of 3.24 per 100 employees was the lowest rate achieved since the formation of the Knoll Group in 1991.
- The East Greenville and Muskegon facilities introduced a stretching program, already in operation at the Grand Rapids facility, that includes instruction and 10 minutes' free time at the start of each shift for stretching exercises.

*We will develop and implement health and wellness awareness and illness prevention programs.*

- In 2004 Knoll U.S. facilities conducted weekly safety meetings, showed safety videos, trained volunteer safety observers, and created safety posters and newsletters. The facilities offered information on smoking cessation, exercise and healthy eating.

*We will design and develop training programs to provide Knoll associates with the necessary skills and knowledge to fulfill the objectives of the Environmental, Health & Safety Plan.*

- In 2004 Knoll facilities continued to train employee volunteers in CPR and first aid.
- The East Greenville facility initiated a "green awareness" program for employees to educate them on recycling and waste streams and to reinforce participation in sustainable practices.

### Safe Products and Services

We will reduce and, where possible, eliminate the use, manufacture or sale of products and services that cause environmental damage, or health or safety hazards. We will inform our customers of the environmental impacts of our products. We will use independent testing to help assure the safety of our products.

*We will design and engineer durable products; investigate using recycled materials in the design of our products; and design safety features and ergonomics into our products.*

- In 2004 Knoll continued to design and engineer durable products that use recycled materials in their manufacture, have high recyclability, and include ergonomic and safety features.
- Design for the Environment guidelines developed in 2003 were implemented in 2004. An Environmental Design Brief used in the development of a new task chair, to be introduced in 2005, specified criteria for durability, material selection, recycled content, clean technology and indoor air quality.

*We will provide independent testing to help assure the safety of our products.*

- In 2004 all Knoll systems, seating, Studio seating and textiles were GREENGUARD certified. Products under development were submitted for testing prior to introduction.

## Environmental Restoration

We will comply responsibly with the law to address conditions we have caused that endanger health, safety or the environment.

## Informing the Public

We will comply with the law to inform in a timely manner those who may be affected by conditions caused by our operations that might endanger health, safety or the environment and will encourage associates to report dangerous incidents or conditions to management.

### Environmental Restoration

We will comply responsibly with the law to address conditions we have caused that endanger health, safety or the environment.

- In 2004 Knoll caused no conditions that endangered health, safety or the environment.

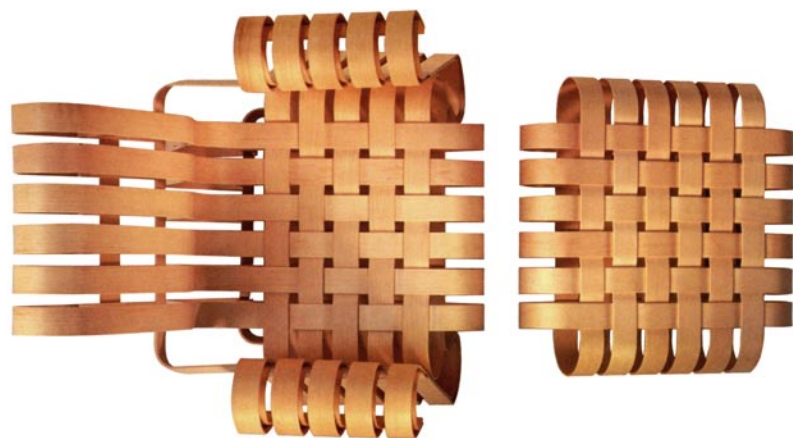
### Informing the Public

We will comply with the law to inform in a timely manner those who may be affected by conditions caused by our operations that might endanger health, safety or the environment and will encourage associates to report dangerous incidents or conditions to management.

- There were no pollution incidents at any Knoll facility in North America that either affected the surrounding community or required public notification.







In 2004 Knoll once again sponsored the Annual Environmental, Health and Safety Art Contest for school children. Some of the winning entries, chosen by professional artists, are featured in this report.

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