The 2011 report is the 17th Annual Environmental Health & Safety Report published by Knoll.

Knoll continues its journey toward becoming a sustainable company. We focus on three areas: Climate Change, Design for the Environment and Third Party Certification because together they constitute a comprehensive approach to reducing the environmental footprint of our manufacturing, product design, facilities and business operations.
2011 was a critical year for Knoll’s strategy and activities targeted at reducing CO2 emissions, a major contributor to climate change. Our investment since 2004 in energy efficiency initiatives and infrastructure topped $3 million. The final audit by the Chicago Climate Exchange (CCX) of our commitment to reduce greenhouse gas emissions at our facilities by 10% over a 1998-2001 baseline certified that we achieved reductions two years ahead of the 2010 schedule and exceeded our goal by 23%. Energy usage adjusted for sales was reduced by 5% over 2010. And in 2011, we redefined our Carbon Reduction Strategy to make it more comprehensive and joined the Carbon Disclosure Project, which commits us to further reductions and public disclosure of results.

“We treat sustainability as a business strategy, not a marketing strategy. As a business strategy, we create infrastructure that enables us to perform at a high level on sustainability measures. We have been working on CO2 reduction as part of our business strategy for a long while. First we focused on reducing energy in our manufacturing processes and facilities. Now we are looking closely at multiple elements in addition to manufacture.”

– Lou Newett, Knoll Environmental, Health and Safety Manager
The Knoll Carbon Reduction Strategy is a broad strategy with many elements:

**Product Design**

We use lifecycle assessment (LCA) methodology to aid in the selection of materials. LCA provides data on energy embodied in materials during extraction and in processing and transporting, and CO2 released into the atmosphere at end of life. Identifying the energy costs associated with material choices helps us make decisions early in the design process that can maximize the sustainable attributes of the final product.

**Facilities Design**

We apply LEED® guidelines in constructing, renovating and retrofitting Knoll manufacturing facilities, showrooms and offices. To date Knoll has a total of 11 LEED® certified facilities, including its LEED® Gold Certified 350,000 sq ft Lubin Manufacturing Facility in East Greenville, PA and 10 showrooms/sales offices in the US and Canada. Additional LEED® showroom projects are in process.

**Manufacturing**

In 2011 Knoll Energy Engineer Barry Bach continued the ongoing energy-wide audit of manufacturing processes and the data was used to develop a new metric for measuring Knoll CO2 emissions. In an advance over the existing metric, which measured total CO2 reductions against sales (CO2/ sold) the new metric measures reductions against the company’s three major process activities: processing steel, processing wood and assembling products. This more accurate metric expresses CO2 emissions in terms of lbs CO2/lbs steel processed; lbs CO2/lbs wood processed; and lbs CO2/units assembled. It tells us exactly where we are using energy and creating CO2, and enables us to establish a more robust baseline for identifying energy reduction opportunities.

To leverage the new metric, we established a framework for evaluating energy saving opportunities, including a database for energy efficiency and conservation that compares best practices to standard practices (for example, the increased reductions associated with using dense air from outside as opposed to less dense indoor air to drive compressors.) We developed guidelines for capital investment (energy ROI) and established a process for review of capital projects to ensure that the best energy reduction technologies are being proposed. The metric created in 2011 will be fully implemented in 2012. As part of its capital budget process Knoll set a goal for a 1% reduction in CO2 emissions in the first year.

**Use of Non-fossil Fuels**

Knoll pursues the use of non-fossil fuels at its facilities where feasible. All electric power at the Lubin facility is supplied by 100% green wind power.
Energy Conservation

Knoll employs energy conservation techniques and programs including lighting upgrades, lighting controls, process/equipment improvements and HVAC commissioning. The Air Wars best practices initiative focuses on increasing efficiency and reducing waste in compressed air operations at Knoll manufacturing sites. Compressed air uses six times more electricity than an electrical tool to do the same job. Reductions in compressed air usage and waste results in substantial energy and cost savings. In 2011 Air Wars achieved energy reductions of 671,130 KWH with savings of approximately $78,000.

Energy Recovery

On the production end, Knoll achieves energy recovery toward its CO2 reduction strategy by diverting organic waste materials (primarily wood) that is not recyclable from landfill to energy-from-waste facilities. Organic waste in landfills is a major contributor to CO2 emissions. As part of its commitment to become a zero waste company, Knoll has achieved dramatic year-over-year increases in the amount of waste diverted from landfill.

In 2011, of the total waste generated at its facilities, Knoll recycled or diverted almost 93% and sent wood scrap and non-PVC plastics that could not be readily recycled to regulated and permitted Energy from Waste (EfW) facilities. In 2011 the amount of sawdust and wood diverted by Knoll from landfill to EfW increased from 57% (2010) to 80%. The Grand Rapids facility diverted virtually 100% of its non-recyclable waste from landfill to an EfW facility.

At the end of product life Knoll helps keep its products, as well as those of other manufacturers, out of landfill through the Full Circle program. Full Circle is a customer-focused program that includes components for Reselling, Repurposing and Recycling products, and for generating EfW. In the EfW process solid waste is combusted at high temperature, turning water in steel tubes surrounding the combustion chamber into steam, generating electricity. EfW:

+ is a greener alternative to creating energy than coal or oil
+ is classified as renewable by the US Department of Energy
+ produces electricity with less environmental impact than almost any other source of electricity

Prevents an estimated 30 million tons of CO2 annually from entering the atmosphere.

(For more details see Design for the Environment.)

Percent of Material Landfilled 2010 vs. 2011

From 2010 to 2011, we reduced materials sent to landfill.
Transportation Energy Reduction

Knoll participates in SmartWay®, a public/private collaboration between the U.S. EPA (Environmental Protection Agency) and the freight transportation industry that helps freight shippers, carriers and logistics companies improve fuel efficiency and save money. Knoll joined the program with its shipping partner, Penske, shortly after the program went into effect in 2004. SmartWay® addresses the efficient loading of trailers, vehicle maintenance, driving practices and alternate distribution to help the trucking industry and its customers reduce fuel consumption. The program reports fuel savings of approximately $6.0 billion to date.

Reporting

The Carbon Disclosure Project

In 2011 Knoll participated in the Carbon Disclosure Project (CDP), an independent not-for-profit organization working to drive greenhouse gas emissions reduction and sustainable water use by businesses and cities. CDP, which originated in Great Britain in 2000, provides a global system for measuring, disclosing, managing and sharing environmental information. Today it reports membership by 3000 companies in more than 60 countries and the largest database of primary corporate climate change information in the world. Knoll has completed two stages of a four-stage process: reporting manufacturing energy usage and supplying sustainable data on products. In 2012 we will begin the research for stage 3, which addresses transportation and travel.

Hoshin Planning

In 2011 Knoll incorporated the Carbon Reduction Strategy into company-wide Hoshin Planning. Hoshin is a strategic planning and management methodology that uses Total Quality Control to help organizations focus on setting and communicating shared goals and holding participants accountable for achieving their part of the plan. Knoll implemented Hoshin Planning at its East Greenville facility about five years ago and in 2011 laid the groundwork for expanding it to all facilities. Incorporating sustainability into operations at this level requires an annual CO2 reduction target to be set for each site and CO2 reduction reports to be made monthly. Results of the company’s annual performance will be disclosed in the Knoll EHS Report for 2012, the first full year of operation.

EPA Green Power Partnership

Knoll is a member of the EPA Green Power Partnership, a voluntary program of the US Environmental Protection Agency that supports the organizational procurement of green power by offering expert advice, technical support, tools and resources. Green power includes electricity produced from renewable resources, such as solar, wind, geothermal, biomass and low-impact hydro. As a member Knoll is committed to annual reporting of its green power purchases. In 2011 the company purchased 100% of its electrical power for the East Greenville Lubin facility from wind power sources, a total of 5 million KWH per year.
“Knoll is committed to being transparent about our environmental activities. The Carbon Disclosure Project (CDP) requires annual reporting on carbon reductions and makes available a company’s data to customers and other interested parties. Carbon Accounting will be the big metric in sustainability progress over the next five years—not just for Knoll, but for the world. We have heard from major customers who looked at our CDP data and commend our efforts.”

–Lou Newett, Knoll Environmental, Health and Safety Manager
Training

In 2011, Knoll trained EHS staff on the new Carbon Reduction Strategy and made presentations on the program to the architectural & design community.

Beyond CO2: Tracking Total Greenhouse Gas Emissions

While CO2 emissions are critical to climate change, other greenhouse gases, including nitrogen oxide (NOx) and methane, also play key roles. Pollutants such as NOx contribute to global warming, affect climate change and have a serious impact on health. Methane is 21% more potent as a greenhouse gas than CO2. In 2011 Knoll continued its efforts to reduce or eliminate these gases from its processes. Knoll facilities are already virtually VOC-free.

Recent Performance CO₂ Reductions

Between 2003 and 2011 Knoll reduced its total emissions by 23% on an absolute basis.
Design For The Environment

In everything we design and manufacture we focus on environmentally responsible materials, products and processes. We build the infrastructure to strategically support sustainability in all aspects of our operation.

**Design for the Environment (DFE) sets standards.**

Product design and development are governed by Knoll Design for the Environment policies and procedures, including a Product Commercialization Process in which stringent SMaRT® criteria are embedded. In 2011, Knoll used the DFE Program to develop the ReGeneration by Knoll® chair. DFE requires a product to meet targeted environmental standards relating to materials (embodied energy and emissions criteria), material content (minimum recycled content) and production processes (energy consumption and clean technology.) Under DFE procedures, the purchase of parts from a new vendor requires documentation of vendor practices that is reviewed by third-party auditors. When new materials are sourced, suppliers must provide documentation of their sources and data on post-consumer and post-industrial recycled contents.

**Life Cycle Assessment (LCA) measures impacts.**

All Knoll products undergo Life Cycle Assessments (LCAs) during design and development to measure potential environmental impacts. Final and complete LCAs are performed on all new products put into production, enabling Knoll to provide customers with detailed and reliable information on the sustainable attributes of the products they purchase. Knoll structures its LCA process in three phases: Cradle-to-Gate, Gate-to-Gate and Gate-to-Grave.

An LCA software tool is used to calculate inputs and impacts at each stage of the process.

**Cradle-to-Gate** looks at supply chain inputs, from raw materials extraction to transportation and secondary manufacture of parts purchased by Knoll.

**Gate-to-Gate** looks at Knoll wood, metal and assembly processes for turning materials and parts into products.

**Gate-to-Grave** looks at what happens to a product at the end of its useful like.

In 2011 Knoll conducted extensive research on Gate-to-Gate energy use, data from which were used to develop the new metric for measuring CO2 emissions (see above.) Additional emissions data was collected on water usage and chemical toxicity, providing robust information for assessing other clean technology impacts. Knoll continued to gather
specific data from suppliers on materials and parts and created spreadsheets for environmental impacts of vendor processes, such as chrome plating and injection molding. To better understand what happens to its products at end of life, Knoll created a profile of an “average customer” for a given product. This profile allows well-based assumptions on which product parts are likely to be recycled and, by modeling data on recovered metals, more targeted assessment of the impacts of decisions at end of product life.

All of the data from all three phases are entered into an LCA software tool that calculates impacts. The quality of the data is critical to the value of the Life Cycle Assessment: the more specific the inputs, the more accurate and reliable the LCA results.

“Many companies in the contract furniture industry rely on industry data available in online subscription libraries for their LCA’s. Knoll collects large amounts of detailed information on our own specific processes, sources and customers. Using as much of our own data as we can gives us a more accurate result and lets us pinpoint where we can take more energy out of a process, or where a change from one material to another will contribute to a more sustainable product.”
—Chris Marozzi, Knoll East Greenville, PA EHS Manager

In 2011 Knoll performed LCA’s on the Template™, Reff Profiles™, Autostrada™, Series 2 Files, Antenna® Workspaces and Morrison™ products and on an EfW Full Circle project (see Full Circle story below.) The LCA tool for these audits was the on-line openLCA Sustainability Assessment Software developed by Andreas Ciroth, PhD, of GreenDeltaTC in Berlin, for which Knoll was a beta site. During 2011, the company invested $50,000 in a new LCA tool named GaBi, which it will begin using in 2012. GaBi Software, developed by PE International, is used by over 1000 companies around the world, including many in the US. While the structure and algorithms of the openLCA and GaBi tools are similar and both produce comparable LCA’s, GaBi offers US-based training and support and enables the user to drill down to deeper data that Knoll can use in developing products.

Three Additional Knoll Products Earn BIFMA level® 3 Certification in 2011

The new level® certifications add to Knoll’s 2010 milestone in which Dividends Horizon® became the first system product in the contract furniture industry to earn level® 3 certification and six additional products certified level® 3 made Knoll the first company to earn level® 3 in multiple product categories.

The newly certified products include the Reff Profiles™, Morrison™ and Series 2 Files and Storage. They join the roster of already certified level® 3 Knoll products: Antenna® Workspaces, Autostrada™, and Dividends Horizon® systems; Generation by Knoll® and Multi-Generation by Knoll® chairs; Calibre® storage; and Reff Wood Casegoods.

The level® standard is a voluntary product standard developed by BIFMA, the Business and Institutional Furniture Manufacturer’s Association, to support safe, healthy and sustainable workplace environments. Products, organizations and facilities are scored on sustainability criteria in four areas: Materials, Energy and Atmosphere, Human and Ecosystem Health, and Social Responsibility. The program establishes prerequisites, requires third party certification including audits of manufacturing plants, and mandates annual reviews to maintain certification. level® points may be applicable to LEED®. Scientific Certification Systems (SCS) provided the third-party certification of Knoll products to the level® standard. SCS, an organization with a 25-year history that has earned respect for its integrity and scientific rigor, was the first to certify products to the level® program.

Points in the four sustainability areas: materials, energy and atmosphere, human and ecosystem health and social responsibility are awarded for the Organization (possible credits 17), Manufacturing Facility (possible credits 38) and Product (possible credits 35.) The total of these three scores provide the final level® score (maximum possible 90 points.) Certification is awarded at three levels: Entry-level® 1 (32-44 points), level® 2 (45-62 points) and level® 3 (63-90 points).
Knoll EHS Manager Lou Newett leads the company’s environmental efforts. He explains, “We submit our products for level® 3 certification. We don’t try for anything lower. As we become involved with programs like BIFMA level® the sustainability infrastructure that we are creating as part of our business strategy enables us to qualify at the highest level.”

To earn level® 3 certification Knoll products received the following points.

**Reff Profiles™ 69 points:**
- Organization 12
- Manufacturing Facility 32
- Product 25

**Morrison™ 68 points:**
- Organization 12
- Manufacturing Facility 32
- Product 24

**Series 2 Files and Storage 63 points:**
- Organization 12
- Manufacturing Facility 32
- Product 19

In 2011 Knoll provided FSC® Certified Wood as Standard for over 90% of the Wood in Systems and Tables Manufactured at Knoll Facilities.

Knoll established the use of wood with an FSC® (license code FSC® C028824) certified claim, as its manufacturing standard on general open plan office systems, tables and casegoods, excluding those with exotic veneers. This standard is the most rigorous in the industry, setting significantly more stringent criteria and reporting requirements than big-timber–industry supported programs.

The company has been able to achieve these milestones because it has spent more than a decade establishing the necessary infrastructure and outreach by developing the supply chain for sustainable wood, creating the business and manufacturing processes and protocols for sourcing, tracking and incorporating FSC® certified wood into product, and building FSC® certification into the ISO 14001 process. Making FSC® standard is an extension of the Knoll Sustainable Wood Policy, which is targeted to protect endangered forests and promote sustainable harvesting of wood resources.

Through our FSC® standard program, Knoll provides FSC®-certified wood without asking, at no surcharge and at standard lead times on all general office plan open systems, casegoods and tables, with the exception of certain products from the KnollStudio Collection. The FSC® Certified Standard applies to the core of all Knoll products with laminate and domestic cherry, maple, oak and walnut natural veneer surfaces, which are responsibly harvested to benefit communities, wildlife and the environment. Products include: Antenna® Workspaces, AutoStrada™, Currents®, Dividends Horizon®, Equity®, Morrison™, Reff Profiles™ and Template™; as well as the Graham Collection, Interaction Tables™, Magnusson Desks and Upstart Tables®.

Knoll chooses FSC® over other industry-sponsored certifying programs because FSC® has the most stringent standards and maintains a presence on the ground in locations where the wood is harvested.

All suppliers of material used to manufacture Knoll FSC®-certified products are currently FSC® certified and the company’s goal is to expand this to all suppliers of wood used in Knoll wood products. Growing the supply chain for FSC® certified wood was an ongoing Knoll effort in 2011. Knoll wood suppliers understand that becoming FSC® certified is a condition for doing business going forward and most have achieved that goal. In 2011 Knoll worked with its remaining suppliers to prepare the necessary documentation toward certification. The Rainforest Alliance, accredited by the Forest Stewardship Council™, conducted our audit in 2011.
Using FSC® Certified Wood Engages Knoll and its Clients in the Fight Against Deforestation

Global climate change is a widespread and growing concern that has led to extensive congressional and international discussions and negotiations. Climate change mitigation strategies have focused on reducing emissions of greenhouse gases (GHGs), especially carbon dioxide (CO2). One significant source of CO2 emissions is deforestation. Reducing deforestation to lower CO2 emissions is seen as one of the least costly methods of mitigating climate change.

Forests are carbon sinks in their natural state (i.e., they store more carbon than they release). Trees absorb CO2 and convert carbon into leaves, stems, and roots, while releasing oxygen. Forests account for more than a quarter of the land area of the earth, and store more than three-quarters of the carbon in terrestrial plants and nearly 40% of soil carbon. When forests are cleared, some of their carbon is released to the atmosphere—slowly through decay or quickly through burning. One estimate shows that land use change, primarily deforestation, releases about 5.9 GtCO2 (gigatons or billion metric tons of CO2) annually, about 17% of all annual anthropogenic GHG emissions. This contribution to GHG emissions makes efforts to reduce deforestation significant in international strategies to mitigate climate change.

Deforestation and Climate Change
Congressional Research Service (CRS) Report for Congress March 2010

Look for FSC® Certified Products

FSC® Forest Stewardship Council™

FSC® Certification
+ The Forest Stewardship Council’s principles represent the industry’s most rigorous standards for forest stewardship.

Knoll can provide Chain of Custody documentation for all its FSC® certified wood products.

+ Knoll can help you achieve LEED® points on your projects with FSC® certified products.

The Forest Stewardship Council (FSC®) is an international body whose goal is to promote environmentally responsible, socially beneficial and economically viable management of the world’s forests, by establishing a worldwide standard of recognized and respected Principles of Forest Stewardship. The FSC®’s ten Principles and Criteria define detailed standards for wood products, from harvest through processing, manufacturing and distribution.

The FSC® accredits certification bodies, such as Rainforest Alliance to certify organizations to FSC® standards. A Chain of Custody is maintained to document the origin of all FSC® certified wood.

Knoll has earned Chain of Custody certification for its FSC®–certified wood products. This standard is the most rigorous in the industry, setting significantly more stringent criteria and reporting requirements than big-timber-industry supported programs. Roger Dower, FSC® President stated that Knoll’s FSC® Chain of Custody certification “brings a major furniture company to the FSC® and will provide leadership for other furniture manufacturers to follow suit.”

Phase II reductions under CA formaldehyde emissions standard for hardwood plywood (HWPW), particleboard (PB) and medium density fiberboard (MDF) were completed in 2011. Between 2009 and 2011, HWPW emissions were reduced from .08 to .05; PB from .18 to .09; and MDF from .21 to .11.
KnollTextiles Introduces Eleven New “Green Bar” Designated Fabrics in 2011

A Green Bar indicates that a fabric contains at least 49% recycled content, at least 75% rapidly renewable material (natural fiber), or 100% Eco-Intelligent fiber. Green Bar fabrics can help companies, healthcare organizations and educational institutions achieve LEED® certification. Fabrics from the 2011 Interplay and Archival collections plus new additions by Suzanne Tick offer 138 new skus, which means that 42% of all Knoll textiles introduced in 2011 had Green Bar attributes. The eleven new additions bring to 93 the total number of KnollTextiles Green Bar designated patterns. All new fabrics listed below are GREENGUARD Indoor Air Quality® certified:

**Cameo** upholstery, contains 75% cotton
**Cato** upholstery, contains 86% wool
**Jubilee** upholstery, contains 76% cotton
**Kinship** upholstery, 100% wool
**Menagerie** upholstery, contains 83% cotton
**Soliloquy** upholstery, 100% recycled polyester
**Abyssinian, Himalayan** and Bengal wallcovering, 100% silk.
**Film Reel** panel fabric, contains 50% post-industrial recycled polyester, 21% post-consumer recycled polyester
**Cable Twist** panel fabric, contains 51% post-industrial recycled polyester, 26% post-consumer recycled polyester

KnollTextiles continues to offer:

+ **Ultrasuede®** textiles made with 80% post-industrial recycled microfiber from a film processing plant that makes film used in products such as plasma screen TVs. Knoll has been the exclusive supplier of Ultrasuede® to the contract market since 2006.

+ **Eco-Intelligent® Polyester** fabrics made of fiber that is a “technical nutrient” designed to be safely recycled into new fabric with no hazardous by-products, and produced and dyed with environmentally safe ingredients including a catalyst that replaces the heavy metal antimony, a known carcinogen.

+ **Terratex®** fabrics which are available with 100% recycled content fabric and are certified Green-e, which means that 100% of the electricity used to make those products is matched by Green-e certified renewable energy certificates that support clean wind energy.

+ **Crypton® Green** fabrics that combine post-consumer recycled polyester fibers with an optimized chemistry for reduced environmental and indoor air quality impact. The Crypton® Green formula provides moisture, stain, odor and bacteria resistance with low VOC emissions.
Knoll Full Circle Completes First Full Year in 2011

The Knoll Full Circle program of integrated sustainable end of life solutions for office furniture, fixtures and equipment (FF&E) is the first comprehensive one-stop program in the contract industry. Full Circle diverts from landfill products that businesses no longer use or want by reselling, repurposing, recycling and converting waste to energy. It applies to projects of all sizes, includes Knoll and non-Knoll furnishings, and encompasses all furniture, fixtures and equipment: from desks, chairs and carpeting to telephones, HVAC systems and elevators.

Knoll developed Full Circle in partnership with ANEW, a California-based non-profit organization dedicated to extending the life cycle of FF&E in an economically, socially and environmentally responsible way. Full Circle alliance partners include InstaNET, a company with more than 250 independent quality furniture installers across the U.S. and Canada; and Covanta Energy, which owns and/or operates more than 40 Energy-from-Waste facilities in the U.S. that produce clean, renewable energy and recycle metals.

Working in collaboration with the Knoll dealer, ANEW develops a Full Circle Decommissioning Strategy for clients who are planning to relocate or renovate a space, based on the client’s objectives. Options include:

**Resale** – usable FF&E is sold to capture financial value for the customer, either as a profit or to help offset the costs of FF&E removal, recycling and/or transportation to an Energy-to-Waste facility

**Repurposing** – usable FF&E is donated to local non-profits for social equity in the community and the tax benefits of donating to a 501©(3) organization (ANEW)

**Recycling** FF&E that has no resale or repurpose value

**Recovering Energy** by converting waste into clean energy (EfW), thereby diverting from landfill anything that cannot be recycled.

The process concludes with Reporting to the customer, which may include documentation for use toward LEED® Certification. (Various aspects of the Full Circle program, including donation and recycling, can earn LEED® Material Resources, Construction Waste Management credits.) More information is available at www.knoll.com FullCircle FAQs.

Facts and Figures

- Approx. 3,000,000 tons (6 billion pounds) of commercial office furniture is sent to landfill every year
- 155 lbs per sq.ft. is the amount of solid material waste from gutted space
- Much surplus without resale value ends up in landfill
- Most furniture recycling programs salvage only metals: wood and plastics are generally sent to landfill
- Organic material in landfill creates hazards for humans, animals and the environment
- Landfills are the #2 source of methane gas, a major contributor to climate change
CASE STUDY
Major international brewing company headquarters in New York State
Scope of Project: Decommission strategies for 30,000 sq. ft. on one floor of corporate headquarters
Inventory: 73 systems workstations, 29 offices, 50 files, 230 chairs, 4 conference rooms
Goal: The company spent over $20K for a previous phase removal of comparable size and was seeking a more cost effective sustainable solution
Strategy: Resale: 100%
Outcome: + 30.3 tons diverted from landfill
+ Total cost of the Full Circle Program decommission was $5K, a savings of $15K over the previous phase
+ Environmental benefits in addition to diversion from landfill included life cycle extension of surplus and a Certificate of Social Sustainability® metric summary

CASE STUDY
Major bank headquarters in Florida
Scope of Project: Three-year renovation project, total 8 building, up to 23 floors
Inventory: 4,000-6,000 workstations, 30 years old; private offices, break room furniture, conference room furniture; seating; ancillary items
Goal: To find the most cost competitive resource with comprehensive services to decommission surplus
Strategy: Resale/Repurpose
Outcome: 2 Floors removed to date: 38.6 tons resale/2.8 tons repurpose
+ 41.4 tons diverted from landfill
+ Full Circle solution cost was lower than cost for landfill disposal
+ Itemized Tax Receipt for items matched into the community
+ Environmental benefits in addition to diversion from landfill included corporate social responsibility through gifting to charities; life cycle extension of surplus; and an ANEW Certificate of Social Sustainability® metric summary

CASE STUDY
Gas company headquarters in California
Scope of Project: 100,000 sq. ft. of a multi-phase office consolidation and restack; mix of new purchases and re-use of exiting product
Inventory: 565 workstations, 337 chairs, 101 files, 120 tables, 35 visual boards
Goal: To find the most competitive resource with comprehensive services to decommission surplus
Strategy: Repurpose/Recycle
Outcome: + 5.88 total tons diverted from landfill
+ 47.80 tons repurpose
+ 58.8 tons recycle (65% diversion rate)
+ Cost competitive, comprehensive solution
+ Itemized Tax Receipt for items matched into the community
+ Environmental benefits in addition to diversion from landfill included life cycle extension of surplus; ANEW Certificate of Social Sustainability® metric summary; and documentation toward LEED® Certification

FULL CIRCLE 2011
Total tons diverted from landfill: 326.1 tons
Resale 209.6 tons
Repurpose 56.5 tons
Recycle (50% diversion) 58.5 tons
EfW 1.5 tons
Total recipient organization served in the US (2010/2011): 19 Includes education, social services, humanitarian, religious, family services, public agencies and environmental groups
**Full Circle Closes the Loop with EfW**

*Full Circle* completed its first EfW (Energy from Waste) project in 2011, closing the loop on sustainability through product end of life.

**CASE STUDY**

*A Global Sustainability Services Company*

**Scope of Project:**
A small amount of surplus furniture with no resale value or repurposing potential due to poor condition.

**Inventory:** 57 task chairs

**Goal:** Diversion from landfill

**Strategy:** Energy from Waste (EfW)*

*EfW is classified as renewable by the U.S. Department of Energy and produces electricity with less environmental impact than almost any other source of electricity.

The chairs were divided into three categories based on predominant material content: steel, plastic or upholstery.

The weight of materials by category and in total was calculated:

As shown in Table 3, a total of 1,232.31 Lbs of steel (558.96 Kg) was recovered in the EfW process. While virgin steel results in the release of 2.08Kg CO2 eq., recycled steel results in a release of 0.424 Kg CO2 eq. Recovering this steel avoided 925.66 Kg CO2 eq. or 2,041.09 Lbs of CO2 eq.

The heat of combustion for all materials and the total energy released was calculated:

As shown in Table 5, approximately 21,784,796 KJ or 6,051 KWH of energy are available from the chairs. At a conversion rate of 18%, 1,089 KWH would be generated.

Landfilled wood has a methane emission factor of 1.89 tons of CO2 per ton of wood. Using this factor the 660.66 pounds of wood from the chairs in this study (see Table 3) avoided 1,248.65 pounds of CO2 emissions.

Outcome: Although small in scale, this project clearly illustrates positive EfW impacts

+ Diversion from landfill avoided emissions of methane, which is a greenhouse gas with a global warming potential 21 times greater than CO2
+ 1,089 KWH of energy recovered
+ 3,289.74 lbs. of CO2 emissions avoided

---

**Knoll Wins 2011 REmmy Corporate Citizen Award for Full Circle**

Knoll was the recipient of a 2011 CoreNet Global, Southern California Chapter REmmy Award for the Full Circle Program. REmmy Awards recognize leadership excellence and best practices in corporate real estate. The Corporate Citizen award won by Knoll acknowledges “a corporate citizen whose culture and product development represent commitment to sustainable design and social responsibility.”

CoreNet Global is an international association for corporate and real estate professionals with 7,000+ members who manage more than $1.2 billion in real estate and workplace assets in Asia, Australia, Europe, Latin America and North America. REmmy Award winners were selected by a national review board comprised of senior corporate and real estate executives. Knoll received its award at a ceremony held at the Beverly Hills Hotel on November 17, 2011 and hosted by John Cushman, Chairman of the Board, Cushman and Wakefield.
BIFMA (The Business and Institutional Furniture Manufacturers Association) supports the creation of Environmental Product Declarations (EDPs) for furniture products that carry reliable environmental information, much as food products carry nutrition labeling. EPDs are based on Product Criteria Rules (PCRs) that provide uniform and consistent criteria for measuring the environmental attributes of products. PCRs are critical for ensuring customers that Environmental Product Declarations mean the same thing from one manufacturer to another. Knoll’s Chris Marozzi served as a member of the BIFMA committee that in 2011 completed Product Criteria Rules for an office chair. The PCR was released for comment, amended to address relevant concerns, and sent to a three-person panel for expert review through the NSF. Final approval of the rules is expected in the first quarter of 2012 at which time the PCR will be made available for public review and released for use by manufacturers to create EDPs for their chairs. The committee will continue its work in 2012 on PCRs for an office system.

Education, Training and Communication

In 2011 Knoll pursued its commitment to leveraging its learning about sustainability through education, training and communication with customers and others in the industry.

- A panel presentation on Full Circle was made at NEOCON as part of the Trade Show Education Series. Panelists were Sarah Freidman, VP, Southwest Sustainability Practice Lead, Environmental and Sustainability Services, Jones Lang LaSalle; Lou Newett, Corporate Manager, Environment, Health and Safety, Knoll, Inc.; Lila Tsuda Grant, Executive Director, ANEW; and Rose Tourje, Founder, ANEW.

- Full Circle training was provided via web cast for Knoll associates and dealers and Full Circle program presentations were made to A&D firms, end users, real estate operators and property managers at locations across the country.

- Continuing Education instruction on sustainability-related topics including LEED®, FSC®, GREENGUARD, SMaRT® and LCA was offered as part of Knoll Educational Forums. Sessions were led by Knoll local and regional A&D Managers trained on CEU program requirements. Attendees earned CEU credits.

- Knoll associates continued to participate in sustainability initiatives, including SMaRT® and BIFMA level®.

- Knoll manufacturing CO2 emissions were made public as part of the Carbon Disclosure Project.
Project Green Light

For more than thirty years Knoll has pursued serious efforts to achieve sustainability, driven by an optimistic vision of a better environment for a better future. Knoll publishes this annual EHS Report to document activities, report benefits and savings, and share important learning related to sustainable practice in an effort to propagate environmental engagement. In 2011 Knoll participated in Project Green Light, a global alliance of companies and organizations that focuses on improving the way we communicate about sustainability. Its mission is to change the stories and the language we use to better communicate the opportunities of sustainable solutions and to create a narrative on sustainable communication that is inspiring, engaging, attractive and appealing.

Project Green Light shares Knoll’s positive, constructive view of discourse on sustainability, rejecting doomsday scenarios in favor of visions for a sustainable planet that have the potential to enlighten and energize. Other Project Green Light corporate participants include GE, SAS, Microsoft, Velux, Philips, Cisco, IKEA and InterfaceFlor. They are joined by numerous international organizations, NGO’s and cities.

In 2011 Project Green Light published Guide to Sustainia, a book designed to portray a fact-based picture of a desirable future. It compiles “real initiatives and real technologies from all parts of the world into an entirely attainable vision of sustainable living…that could be reality as soon as 2020, if we make the right choices today,” its authors explain. The first edition includes modules on Cities, Homes, Energy and Transportation. The full vision, to be launched at the United Nations Conference on Sustainable Development (UNCSD) Rio+20 Summit in June, will address Food, Retail, Workplace, Clothing/Fashion, Water and other elements constituting the key building blocks for a sustainable future.

“Martin Luther King Jr.’s “I have a dream speech” is famous because it put forward an inspiring positive vision that carried a critique of the current moment within it. Imagine how history would have turned out had King given an “I have a nightmare speech instead.”"
Knoll has been a contract furniture industry pioneer in advocating and submitting its products for independent third party certification. We are a strong supporter of certification by independent, respected third parties because it provides the most impartial and trustworthy foundation for broad compliance. Such certification helps ensure that all manufacturers are held to stringent, uniform environmental standards. It tells customers that they can trust a manufacturer’s claims about the environmental attributes of its products.

In 2011 Knoll continued to submit its products for BIFMA level™ certification, a standard designed specifically for the contract furniture industry. level® certification gives customers comparable measures of sustainability with which to assess its products in relation to products offered by other manufacturers in the industry. In addition to BIFMA level®, Knoll continues its commitment to the original “benchmark” certifications, whose sphere of operation extends beyond the furniture industry. LEED®, FSC®, GREENGUARD and SMaRT® are acknowledged leaders with distinguished records for driving long-term, meaningful change and Knoll continues to adhere to the high standards set down by these certifiers as it pursues its goal of becoming a sustainable company.

In 2011 Knoll received and/or maintained certifications from the following:

- Cradle-to-Cradle and SCS (Scientific Certifications Systems) certifications for textiles
- ISO 14001 (International Organization for Standardization)
- FSC® (Forest Stewardship Council)

Knoll established the use of wood with an FSC® (license code FSC® C028824) certified claim, as its manufacturing standard on general open plan office systems, tables and casegoods, excluding those with exotic veneers. This standard is the most rigorous in the industry, setting significantly more stringent criteria and reporting requirements than big-timber-industry supported programs.

The company has been able to achieve these milestones because it has spent more than a decade establishing the necessary infrastructure.
and outreach by developing the supply chain for sustainable wood, creating the business and manufacturing processes and protocols for sourcing, tracking and incorporating FSC® certified wood into product, and building FSC® certification into the ISO 14001 process. Making FSC® standard is an extension of the Knoll Sustainable Wood Policy, which is targeted to protect endangered forests and promote sustainable harvesting of wood resources.

Through our FSC® standard program, Knoll provides FSC®-certified wood without asking, at no surcharge and at standard lead times on all general office plan open systems, casegoods and tables, with the exception of certain products from the KnollStudio Collection. The FSC® Certified Standard applies to the core of all Knoll products with laminate and domestic cherry, maple, oak and walnut natural veneer surfaces are responsibly harvested to benefit communities, wildlife and the environment. Products include: Antenna® Workspaces, AutoStrada™, Currents®, Dividends Horizon®, Equity®, Morrison™, Ref and Template™; as well as the Graham Collection, Interaction Tables™, Magnusson Desks and Upstart Tables®.

Knoll chooses FSC® over other industry-sponsored certifying programs because FSC® has the most stringent standards and maintains a presence on the ground in locations where the wood is harvested. All suppliers of material used to manufacture Knoll FSC®-certified products are currently FSC® certified and the company goal is to expand this to all suppliers of wood used in Knoll wood products. Growing the supply chain for FSC® certified wood was an ongoing Knoll effort in 2011. Knoll wood suppliers understand that becoming FSC® certified is a condition for doing business going forward and most have achieved that goal. In 2011 Knoll worked with its remaining suppliers to prepare the necessary documentation toward certification. The Rainforest Alliance, accredited by the Forest Stewardship Council™, conducted our audit in 2011. The Rainforest Alliance continued to audit and administer Knoll’s chain-of-custody certifications in 2011. In addition, as part of the Knoll Controlled Wood Policy, which establishes detailed procedures and protocols for all wood purchased by the company for use in its products, the company worked with the Rainforest Alliance to leverage the company’s power in the marketplace with suppliers to increase the long-term supply of FSC® certified wood.

+ GREENGUARD™
GREENGUARD (Indoor Air Quality) certification is the gold standard for identifying products that meet stringent testing criteria and have no adverse impact on indoor air quality. In 2011 Knoll certified products included all Knoll North America systems and seating; the majority of textiles; most KnollStudio products; and all KnollExtra accessory products except poster boards.

+ GREENGUARD for Children & Schools™
GREENGUARD for Children & Schools™ is an even more stringent standard developed for sensitive populations. In addition to previously certified Knoll Office Seating products and Template™ and Calibre® Storage Systems, in 2011 the Antenna® and Morrison™ Systems and Wood Casegood products were GREENGUARD for Children & Schools™ certified.

+ LEED®
LEED® (Leadership in Energy and Environmental Design, an initiative of the USGBC (US Green Building Council.) Knoll has a total of 11 LEED® certified facilities, including its LEED® Gold Certified 350,000 sq ft Lubin Manufacturing Facility in East Greenville, PA and 10 showrooms/sales offices nationwide:

+ Knoll San Francisco showroom LEED® CI
+ Knoll Philadelphia and Miami showrooms LEED® CI Silver
+ Knoll Chicago Sales Office LEED® CI Gold
+ Knoll Atlanta, Dallas, Washington D.C., Phoenix and Seattle showrooms LEED® CI Gold
+ Knoll Toronto showroom LEED® CI Platinum

Knoll maintains LEED® (recycled content) databases for all its products and new databases are created as products are introduced. In 2011 databases were created for the ReGeneration by Knoll® chair and new KnollStudio products including Krusin Chairs, the Propellor Table rectilinear base, and the re-introduced Riart Rocker and Pattner Lounge. Creating LEED® databases for KnollStudio products requires vetting detailed information on materials used in manufacturing Knoll products from hundreds of suppliers in six countries on three continents.
In 2011 Knoll supplied LEED® documentation on Knoll systems, seating, furniture and textiles for 150 client projects. The following projects containing Knoll products achieved LEED® certification in 2011:

+ CB Richard Ellis, Dallas, TX
  LEED® CI 2.0 Gold

+ Council on Foundations, Arlington, VA
  LEED® CS 2.0 Gold

+ Ernst and Young, Chicago, IL
  LEED® CI 2.0 Gold

+ Ernst and Young LAO, Phil., PA
  LEED® CI 2.0 Gold

+ Healthcare REIT, Toledo, OH
  LEED® NC 2.2 Platinum

+ Johnson & Wales, Providence, RI
  LEED® NC 2.2 Gold

+ Jones Lang LASalle, Denver, CO
  LEED® CI Gold

+ JP Morgan Chase, New York, NY
  LEED® CI 2.0 Platinum

+ Reno & Cavanaugh, Wash. DC
  LEED® CI Silver

+ RTKL, Wash. DC
  LEED® CI Platinum

+ BIFMA

BIFMA level® Certification Program is a voluntary product standard developed by the Business and Institutional Furniture Manufacturer's Association to support safe, healthy and sustainable workplace environments. It assesses manufacturers' organization, production facilities and products and awards certification at three levels. In 2011 three Knoll products achieved level® 3 certification: the Reff Profiles™, Morrison™ and Series 2 Files and Storage. These join seven Knoll products already certified at level® 3: Antenna® Workspaces, Autostrada™ and Dividends Horizon®; Generation by Knoll® and Multi-Generation by Knoll® chairs; Calibre® storage system, Calibre®; and Reff Casegoods, a wood office product. Dividends Horizon® was the first system product in the contract furniture industry to achieve level® 3 and Knoll was the first company in the industry to earn level® 3 certification for products in multiple categories.

+ SMaRT®

SMaRT® (Sustainable Materials Rating Technology) from MTS (Market Transformation to Sustainability).

SMaRT is a comprehensive sustainability standard covering areas including Public Health and Environment; Renewable Energy and Energy Efficiency; Bio-based or Recycled Materials; and Innovation in Manufacturing. SMaRT addresses 80% of the world’s products and has been adopted by more entities than any other product certification. It mandates an ISO-compliant LCA as a prerequisite. SMaRT is in partnership with the federal government to educate manufacturers and purchasers on credible sustainable product attributes and prerequisites.

Knoll leads the industry in developing products to meet SMaRT® criteria and its rigorous auditing requirements. Knoll was the first contract furniture manufacturer to achieve SMaRT certification (for the Life chair in 2007) and in 2009 Generation by Knoll® became the first task chair to earn SMaRT Sustainable Platinum. Other Knoll SMaRT certifications include the Chadwick Chair, SMaRT Gold (2008); and Template™, Moment and Calibre®, SMaRT Gold (2009). In 2011 the MultiGeneration chair earned SMaRT Gold certification and documentation was initiated for the ReGeneration chair. In addition the Life, Generation, Moment and Chadwick chairs were recertified under SMaRT’s three-year recertification standard.

In 2011 Knoll continued to work with Capital Markets Partnership on the development of a Sustainable Manufacturing Standard/Green Value Score © for Capital Investment. The Capital Markets Partnership (CMP) is a nonprofit, nonpartisan coalition of investment banks, investors, governments, countries and NGOs created by MTS to provide a sustainable investment framework for the capital markets. Its stated goals include “2.8 million green buildings and 1.2 million certified sustainable manufactured products by 2015 to stimulate the economy and stop imminent irreversible dangerous climate change.” The criteria for a Green Value Score for sustainable manufacturing will include a minimum of three SMaRT certified products, FSC® certification, and a Clean Vehicles Standard.
Knoll has established a set of ambitious standards for guiding and reporting on our progress toward becoming a more sustainable company. They are mandated in a comprehensive Environmental, Health and Safety Plan and are defined under Eight Principles that are the foundation of this report:

1. Protection of the Biosphere
2. Sustainable Use of Natural Resources
3. Waste Reduction and Disposal
4. Conservation
5. Risk Reduction
6. Safe Products and Services
7. Environmental Restoration
8. Informing the Public
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 2011, Knoll U.S. manufacturing facilities were more than 95% hazardous air pollutants (HAP) and VOC free.

+ More than 95% of PVC has been replaced by ABS (Acrylonitrile butadiene styrene) for standard edges on laminate work surfaces.

+ The Grand Rapids facility’s Clean Corporate Citizen designation was renewed by the State of Michigan in 2011. Knoll is the only furniture manufacturer in Michigan to achieve the honor, which recognizes excellence in clean technology, waste management and other key environmental factors.

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

+ In 2011, the state-of-the-art water treatment facility in East Greenville treated approximately 21,283,000 gallons of wastewater.

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

+ In 2011 the plasformization process for pre-treating metal parts at the East Greenville facility delivered savings of approximately 1,000,000 gallons of water.

+ The East Greenville facility established new protocols for testing and manually closing shut-off valves to reduce water flow in targeted processes. Instituted in mid-2011, the practice saved an estimated 3,223,000 million gallons of water over 2010, a savings of 23.3%.

+ The Muskegon facility’s counter-flow system for reducing washer usage and discharge completed its first full year of operation in 2011. The facility saved approximately 1,462,096 gallons of water over 2010, a reduction of almost 20%, even as production volume increased.

+ The Muskegon facility continued to pipe wastewater to a county treatment facility that employs sludge ponds and settling ponds to treat water, which is then used to irrigate food-producing farm plots on the property.

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

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

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

- In 2011 KnollTextiles offered a wide range of fabrics made with natural fibers (e.g., linen, cotton, wool) from rapidly renewable sources.

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

- In 2011, Knoll provided FSC® Certified Wood as standard without asking, at no surcharge and at standard lead times on office systems, casegoods and tables with the exception of certain products from the KnollStudio Collection. The FSC® standard applies to 95% of wood-containing products manufactured at Knoll facilities.

- Knoll is committed to meeting certification requirements set forth by the FSC® and implemented by the Rainforest Alliance.

We will minimize the use of wooden pallets.

- Knoll continued to repair, reuse and recycle pallets at all facilities. In 2011 1,430.5 tons of wood pallets were recycled.

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

- Knoll facilities recycled approximately 6074 tons of wood scrap and 4029 tons of sawdust in 2011.

- In 2011 East Greenville sent 100% of its wood scrap to a waste-to-energy facility, diverting from landfill 3459 tons of sawdust and scrap.

- The Toronto facility continued to burn wood scrap as heating fuel in the winter and use excess heating capacity to provide hot water for finishing processes in the warmer months. Burning wood scrap in place of natural gas reduced total gas consumption by 17,791,000 cubic feet in 2011, or 24% of total Toronto facility fuel needs.

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

- In 2011, Knoll facilities recycled 3,616 tons of steel and 100 tons of aluminum.

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

- In 2011, Knoll facilities recycled a total of more than 868 tons of corrugated cardboard, 124 tons of paper and 127 tons of textiles.
Knoll Recycled Powdercoat Finds New Application

“I hate to see anything wasted,” says Mike Feeley, Senior Manufacturing Engineer at the Knoll Grand Rapids facility, “especially powdercoat because of all the expense to produce and purchase it.” Due to the nature of the material, it impossible to get all the powdercoat sprayed during an application to attach to a product, so Knoll has installed equipment at its facilities for reclaiming powdercoat left in the air. The reclaimed material is recycled into subsequent applications until the particles become so small they no longer retain the properties required for Knoll re-use. Several years ago Knoll contracted with a vendor who recycled the scrap for other applications. Then the economic downturn happened, Michigan industry was particularly hard hit, and across the state large quantities went into landfill. While the sources for used powder dried up, Mike didn’t give up. As the economy began to recover he redoubled his research until he found a new source. Today the scrap powdercoat from Knoll operations at Grand Rapids and Muskegon is recycled to a vendor that mixes used powder with new material to spray in utility applications like the underside of bridges.

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

- In 2011, the majority of the wood used to make composite board products at the Knoll Toronto, East Greenville and Grand Rapids facilities contained 100% post-industrial material.
- KnollTextiles fabrics include products made of 100% post-consumer recycled content.
- 93 KnollTextiles fabrics carried a “Green Bar” on their label in 2011, indicating 49%+ recycled content or 75%+ natural fiber.

We will be environmentally responsible in our purchase of materials.

- The Knoll FSC® Certified Wood Standard and Sustainable Wood Policy certified through The Rainforest Alliance ensured that wood materials used in our products in 2011 came from environmentally responsible sources.
- All Knoll leather goods were obtained as byproducts of the meat packing industry. No hides or skins from endangered species were used.
3. Waste Reduction and Disposal

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

+ At the East Greenville facility compactor trash waste decreased on an absolute basis even as production volume increased, as overall recycling went from 87% in 2010 to 92% in 2011.

+ Knoll facilities also recycled 2.33 tons of waste batteries and 29 tons of waste glass in 2011.

+ The Muskegon facility collected beverage cans, which employee volunteers redeemed for the ten-cent Michigan deposit, and the proceeds were donated to Toys for Tots.

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.
4. Conservation

We will conserve energy by improving the efficiency of our internal operations and the goods and services we sell. We will make every effort to use environmentally safe and sustainable energy sources.

We will conserve energy and improve energy efficiency.

+ In 2011 the Toronto facility continued its Air Wars energy conservation program focused on increasing efficiency and reducing waste in compressed air operations. This resulted in energy reductions of 671,130 KWH and savings of approximately $78,388.

+ The Toronto facility designed, engineered and installed a new operation-specific high-efficiency dust collection system with demand control fan motors that ramp up and down according to production load, saving electricity and reducing exhaust to improve worker health and safety. The new system resulted in savings of approximately 267,213 KWH and $29,333 in 2011.

Paper recycling:

+ Estimated 2,108 trees saved
+ Estimated 862,172 gallons of water saved in processing

Recycling paper vs. using new paper reduces air pollution by 95% and water pollution by 80%.

Steel recycling:

+ Estimated 4,520 tons of iron ore saved
+ Estimated 217 tons of limestone saved

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

Aluminum recycling:

+ Estimated 1,400,000 KWH of electricity saved

Recycling aluminum vs. using new aluminum reduces air pollution by 95%.

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

+ In 2011 Knoll continued to specify high-efficiency motors on all new equipment purchases at all North American facilities as part of its sustainable Procurement Policy.

+ Total Preventive Maintenance (TPM) was performed at all manufacturing facilities. It requires machine operators to monitor and maintain motors to optimize energy efficiency.

We will implement a program to upgrade existing lighting, where practical, at each facility.

+ Lighting upgrades (bulbs and ballasts) to T8’s have been completed at Knoll East Greenville, Grand Rapids, Toronto and Muskegon East and West facilities. In 2011 the final phase of lighting upgrades at Muskegon West reduced CO2 emissions by 67 tons, saving $9,474 per year in energy costs.
5. 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 preparing for emergencies.

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

+ Knoll facilities overall incident rate in 2011 was 20% better than the 2010 incident rate.
+ In 2011 the Grand Rapids facility, in consultation with an Occupational Therapist, developed a function-specific stretching program for production workers. The East Greenville facility worked with a Physical Therapist to develop task-specific stretches for machine operators and a stretching module for office workers.

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

+ The East Greenville facility has been recertified as an OSHA VPP Star site, placing Knoll among a select group of companies to achieve that honor. The VPP (Voluntary Protection Program) is a partnership with the U.S. Occupational Safety and Health Administration reserved for companies that demonstrate exceptional long-term success in reducing risk and protecting the health and safety of employees.
+ The East Greenville facility installed thirty Dock Locks in 2011. These fail-safe mechanisms prohibit trailers from pulling away from the dock while they are being loaded.
+ In 2011 The revision of PPE (personal protection equipment) policies at East Greenville resulted in the purchase of new equipment and a requirement that makes hearing protection mandatory for all workers and visitors in production areas.
+ At the Toronto facility noise abatement measures were taken in 2011 to protect employee hearing. Sound-absorbing cladding was installed on dust extraction ducts, reducing the level of indoor noise. Hearing protection equipment is mandatory throughout the Toronto plant.
+ In 2011 Knoll facilities continued to conduct ongoing ergonomic reviews at workstations under the Knoll Employee Health and Safety Analysis program. This practice identifies how work processes might be redesigned and what additional working aids are required.
+ In 2011 the Grand Rapids facility dramatically reduced its incidence rate by instituting weekly safety classes and installing a stop light system that alerts workers when an injury has occurred, raising awareness and remanding workers to observe rules and precautions.
+ The Toronto facility continued to employ a Safety Score Card system to assess accountability of supervisors on the floor, providing data for ensuring compliance with health and safety regulations and targeting areas for improvement.

+ The East Greenville facility instituted a Safety Score Card for production managers similar to that in Toronto.

+ Knoll U.S. manufacturing facilities continued to offer a voluntary stretching program that includes instruction and 10 minutes of free time at the start of each shift for stretching exercises.

+ All facilities continued to maintain safety teams, regular safety inspections and monthly safety meetings.

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

+ Knoll manufacturing facilities continued the hearing conservation program that includes testing of all workers in in-house hearing booths with physician review of test results, provision of hearing protection and education.

+ In 2011 Knoll US facilities provided free flu shots to associates and their families. Additional nurses were brought in to administer the program.

+ Weight loss programs at the all facilities provided nutrition and exercise guidelines and weekly weigh-ins to improve employee health.

+ At East Greenville, a 10,000-step walking program encouraged employees to measure and increase walking time and awarded prizes for success.

+ The Knoll East Greenville, Grand Rapids and Muskegon facilities conducted successful blood drives.

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 and Safety Plan.

+ In 2011, Continuous Improvement Teams (CIT's) at all Knoll facilities conducted regular safety meetings, showed safety videos, trained volunteer safety observers, and created safety posters and newsletters.

+ Knoll facilities continued to train employee First Responder volunteers in CPR, AED (Automated External Defibrillator) and first aid.

+ In 2011, Knoll EHS teams monitored ISO/OSHA (OHSA in Canada) compliance and best practices through uniform procedures in all facilities.
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 2011 three additional Knoll products earned BIFMA level® 3 certification. They joined seven other Knoll products already certified, including the first system product in the industry to achieve that distinction. level® is a voluntary product standard, developed by the Business and Institutional Furniture Manufacturer’s Association, to support safe, healthy and sustainable workplace environments. The three Knoll products to earn level® 3 certification in 2011 were the Reff Profiles, Morrison™, and Series 2 Files and Storage. These join Knoll products already certified at level® 3: Antenna® Workspaces, Autostrada™ and Dividends Horizon® Systems; Generation and Multi-Generation seating; Calibre® storage system, Calibre®; and Reff Casegoods, a wood office system.

+ In 2011 Knoll continued to design and engineer durable products that use recycled materials in their manufacture, have high recyclability, and include ergonomic and safety features.

+ Knoll Design for the Environmental (DfE) guidelines were followed in the design and development of new products in the pipeline. DfE principles include economy of materials, recycled content, clean technology, ergonomics, durability and ease of assembly and disassembly. In 2011 LCA (Life Cycle Assessment) was completed for Template™, Reff Profile, Autostrada™, Series 2 Files, Antenna® and Morrison™ products and an EfW Full Circle project.

+ In 2011 KnollTextiles added 11 new fabric lines with environmental attributes to its collections. These bring to 93 the total number of Knoll Green Bar designated fabrics, which contain at least 49% recycled content, at least 75% rapidly renewable material (natural fiber), or Eco-Intelligent fiber. All new fabrics are GREENGUARD Indoor Air Quality® certified.

+ KnollTextiles continued to offer Crypton® Green fabrics that combine post-consumer recycled polyester fibers with an optimized chemistry for reduced environmental and indoor air quality impact; Terratex fabrics made of 100% recycled content; Ultrasuede® textiles made with 80% post-industrial recycled microfiber; and Eco-Intelligent Polyester fabrics made of fiber that is a “technical nutrient” designed to be safely recycled into new fabric with no hazardous by-products.

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

+ All Knoll systems and seating, all KnollTextiles fabrics, most KnollStudio furniture and all
KnollExtra accessory products except poster boards are GREENGUARD certified.

+ All Knoll office seating, the Template™ and Calibre® Storage Systems, the Antenna® and Morrison™ Office Systems, and Wood Casegood products are GREENGUARD for Children and Schools(SM) certified.

+ Knoll performs structural testing of our products using ANSI/BIFMA protocols. Products are tested in our Quality Assurance Laboratory and independently at outside labs certified by the Canadian General Standards Board (CGSB).

+ All Knoll urethane foam cushioning on seating products meets or exceeds requirements of California Technical Bulletin 117 (CAL 117).

+ Most Knoll seating products include upholstery options that comply with California Technical Bulletin (CAL 133), the most stringent flammability test protocol in the industry.

+ All Knoll systems are listed products with Underwriter’s Laboratories. Listing includes periodic testing of upholstered vertical panels and UL audits of Knoll and component suppliers’ factories four times per calendar year.

7. Environmental Restoration

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

+ In 2011 Knoll caused no conditions that endangered health, safety or the environment.

8. 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.

+ No incidents or conditions occurred in 2011 at any Knoll North American facility that affected the surrounding community or required public notification.
Each year Knoll sponsors an Environmental, Health and Safety Art Contest at the Upper Perkiomen Middle School in East Greenville, Pennsylvania. Some of the winning entries, chosen by professional artists, illustrate this report.