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BMW Group's Sustainability Management System
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BMW Group's Sustainability Management System: Preliminary Results, Ongoing Challenges, and the UN Global Compact (Part 2 of 2 Parts)

Michael W. Toffel, Natalie Hill, and Kellie A. McElhaney

This article describes preliminary results and ongoing challenges faced by Designworks/USA, an industrial design subsidiary of BMW Group, in its sustainability management efforts since it implemented the world's first certified Sustainability Management System (SMS). In addition, the extent to which the SMS promotes BMW Group's commitment to implement the United Nations Global Compact's human rights, labor, and environmental principles is analyzed. A detailed description of the development of a SMS standard and its deployment throughout the business operations of Designworks/USA was provided in the previous issue of *CES Journal* (see pages 2-29 to 2-39).

Michael W. Toffel is a doctoral student at the Haas School of Business at the University of California, Berkeley. He has served as the Director-Environment, Health and Safety of a diversified group of companies in Southeast Asia, and has worked as a management consultant. He received an MBA and Masters of Environmental Management from Yale University.

Natalie Hill is a fellow at the Human Rights Center at the University of California, Berkeley. Her research focuses on human rights in community justice mechanisms, and forced labor and trafficking. She has served as the Director of the Race and Disability Discrimination Law Section of the Australian Commonwealth Attorney General's Department.

Kellie A. McElhaney, Ph.D., is the Executive Director of the Center for Responsible Business, Adjunct Professor, and Whitehead Distinguished Fellow in Corporate Responsibility at the Haas School of Business, University of California, Berkeley. Previously, she was Director of the Corporate Environmental Management Program and taught at the University of Michigan Business School.

Corresponding Author: Kellie A. McElhaney , Haas School of Business, University of California, 545 Student Services Building #1900, Berkeley, California 94720 USA, Telephone: +1 (510) 643-5642, Fax: +1 (510) 642-4700. Email: kmack@haas.berkeley.edu

Introduction

Following the development of a Sustainability Management System (SMS) standard in 2000, Designworks/USA, a California-based industrial design subsidiary of BMW Group, introduced its SMS through-

out the following year. In December 2001, Designworks/USA became the first industrial design firm in the world to be certified to ISO 14001, and soon after became the first company in the world to achieve third-party SMS certification. These activities were described in an article in a prior edition of this journal.[1] This article describes the preliminary results of Designworks/USA's SMS implementation. Following a discussion of the company's ongoing efforts to refine the SMS, challenges and opportunities the company faces are highlighted. In addition, an analysis is provided of how the SMS may facilitate BMW Group's commitment to implement the United Nations Global Compact's human rights, labor, and environmental principles.[2]

Preliminary Outcomes and Impacts

According to Designworks/USA's Director of Human Resources Sheila M. Walker, the SMS has focused the company on its long-term vision by increasing management commitment to long-term objectives and preserving support for programs even in tight budgetary times. This section describes various outcomes of Designworks/USA's SMS implementation. This section begins by discussing some of the firm's internal projects, then considers its work with its external stakeholders including clients and suppliers, and finally looks briefly at the application of SMS across BMW Group.

Applying SMS to Building Operations and Personnel Management

Several projects have implemented SMS issues into Designworks/USA's onsite activities. A recent example involves the process used to renovate the facility's roof. The typical process is to remove the existing tar, which is often landfilled, and then add new tar. According to Lead Fabricator Craig Eggly, after Operations informed several contractors about its SMS initiative, one of them suggested a new coating system. By encapsulating the existing roofing material and creating a white surface, the need to landfill the existing material is eliminated, thus dramatically reducing the noise, dust, and fumes associated with the project, and the resulting rooftop achieves the U.S. Environmental Protection Agency's (EPA) Energy Star[3] rating. As a result, Designworks/USA will reduce the amount of energy required to cool its building, and will thereby reduce its energy costs. In addition, installing this technology qualified Designworks/USA for a rebate from its electric company that fully offset the additional cost of this technology over the conventional technique, which amounted to several thousand dollars.

A second internal project incorporating SMS issues is the installation of some major new machinery used to create prototype models. Contractors were sent information about the SMS and were asked to generate ideas about how the installation could promote SMS objectives. Contractor proposals included a variety of ideas, such as re-using the doors and other structural components that would be removed in the installation. In addition, contractors offered ideas to ensure that the residual construction debris would be recycled rather than landfilled. The project incorporated several such ideas, which simultaneously

[1] A detailed description of Designworks/USA and BMW Group's efforts to develop an SMS standard and to deploy an SMS through the business operations of Designworks/USA is provided in Michael W. Toffel, Natalie Hill & Kellie A. McElhaney, *Developing a Management Systems Approach to Sustainability at BMW Group*, Corporate Environmental Strategy: International Journal of Corporate Sustainability, Volume 10, Issue 2 (February 2003), Pages 2-29 to 2-39.

[2] The United Nations Global Compact (UNGC) is a voluntary corporate citizenship initiative that seeks to have companies adopt its nine principles into their business strategy and operations. A more detailed description of the UNGC is provided below, and is available on the UNGC website: www.unglobalcompact.org

[3] Energy Star as a US EPA voluntary labeling program that identifies and promotes energy-efficient products and buildings.

increased contractors' labor costs but reduced capital and material costs.

To date, the social considerations that have been factored into the internal thinking of Designworks/USA have dealt primarily with human resources and occupational health and safety issues. For example, the issue of gender and racial equity was considered in the context of a formal compensation assessment program that was launched under the SMS. The program used an external salary survey and developed salary structures based on market value and then benchmarked each employee against this structure. Each person was considered according to his or her experience and education. Adjustments were made for the few individuals who fell below the appropriate level in the new salary structure. This program was implemented in large part to ensure that Designworks/USA was providing remuneration parity regardless of gender, race, or ethnicity. The company is also improving its performance appraisal process by involving multiple review partners, and is seeking permanent resident status for its key employees. It is also considering ways to reduce noise levels in the workshop and is working to enhance its employee recognition program. The SMS process has empowered staff to work with management to discuss, explore, and resolve a wide array of issues, ranging from ideas to reduce waste, to improve the working environment, to bolstering employee satisfaction.

Applying SMS to Client Engagements

As a consultancy, the extent to which Designworks/USA is able to effect change in product design is largely dependent upon its relationships with its clients and the willingness of each client to improve the sustainability attributes of its products. Some clients share Designworks/USA's commitment in this area and have been pleased to work with them to improve the sustainability profile of their products. Other clients have been skeptical of the benefits or have been disinterested in sustainability improvements to their products. The length and depth of the relationship between Designworks/USA and any particular client will affect the extent to which they can work in partnership to generate and implement design alternatives that may require the client to alter some aspects of how it does business. Designworks/USA tailors its approach to how it seeks to educate and influence its clients toward more sustainable design choices. Faced with a disinterested client, designers may recommend the use of high quality, environmentally-preferable materials without focusing on the environmental attributes of the material.

Designworks/USA has begun implementing the SMS into its design and engineering work. For example, the firm is working with a guitar manufacturer to evaluate the use of certified wood and a waste wood composite. In addition, Designworks/USA is working with a vacuum cleaner manufacturer to reduce its motor size, identify recycled materials that maintain a high quality feel, and develop a marketing plan to focus customer attention on performance attributes (e.g., high suction power, low noise levels) instead of motor size. The firm is also working with a construction vehicle manufacturer to consider alternative materials to facilitate their end-of-life recyclability. Social issues are not yet being systematically integrated into the design process.

SMS implementation has also encouraged several departments to actively develop some products even in advance of customer interest. For example, the firm is working with the California Department of Conservation to design an "e-bin," a recycling bin that employs used materials already being collected for recycling but for which there are currently few or no secondary markets. One essential design criterion is that the bin must be iconic: it must maintain its fundamental design attributes while being scalable for home, office, and industrial use. In addition, the e-bin will be designed from a cradle-to-cradle perspective, which means it must be recyclable. By

seeking to utilize materials currently entering the municipal waste stream, and by working in partnership with the California government, this project includes environmental, social, and economic dimensions of the SMS. This project seeks to design an environmentally and socially beneficial product, and has been instigated by employees rather than clients, with the intention of identifying interested clients once the product concept is further developed.

Applying SMS to Suppliers and Contractors

Designworks/USA's Sustainability Policy commits the company to encourage its suppliers to share its SMS goals. So far, the company has taken four steps toward achieving this objective. First, questionnaires were developed to gather information and gain commitments on some environmental, labor, and human rights practices of Designworks/USA's suppliers and contractors. The questionnaires sought a commitment to comply with Social Accountability 8000 (SA 8000), a voluntary standard that addresses several labor and human rights issues.[4] Despite a poor response rate, the information obtained has reportedly influenced supplier selection on several occasions. In a second, related, initiative some departments have taken steps to work with their suppliers to address SMS issues. For example, Operations asked its major suppliers to reduce the size of their packaging, and has been successful in its attempts to have many of them substitute polystyrene packaging "peanuts" with those made of cornstarch.

Third, Designworks/USA wrote to its principal contractors to inform them about the SMS initiative and noted that all future tenders must include descriptions of the measures that will be taken to ensure that the environment is adequately protected throughout the project. The letter also noted that Designworks/USA is seeking to identify contractors "who demonstrate an understanding of environmental issues and who have effective systems for management of environmental risks and prevention of pollution." A fourth step was creating an annual vendor (supplier) open house, the first of which occurred in September 2002. In addition to introducing how both BMW Group and Designworks/USA are implementing SMS, an interactive panel discussed challenges and opportunities associated with sustainability management.

Other Stakeholders/Outreach

Designworks/USA has identified additional key stakeholders with whom they can share their SMS initiative, and has focused these efforts on educating and partnering with their community. For example, several designers have supported a local school's initiative to become the first high school to receive ISO 14001 certification for its EMS by educating students about sustainable design, design careers, and the role of designers in society. Designers and engineers have also lectured on sustainable design at several engineering and design schools including the Art Center College of Design in Pasadena, the California Institute of Technology, and the Engineering Department at California State University, Long Beach. Designworks/USA's Nadya Arnaot, Soren Petersen, and Sheila M. Walker participated in the Newbury Park High School career day, discussing design and engineering careers and emphasizing the company's SMS philosophy. In addition, Greg Brew, Director of Transportation Design, has been working on regional sustainability planning with the Ventura County Sustainability Council.

Applying SMS Across BMW Group

Initially, BMW Group is looking for Designworks/USA to integrate its SMS into its inter-

[4] SA8000 contains provisions dealing with child labor, forced labor, health and safety, freedom of association and the right to collective bargaining, discrimination, disciplinary practices, working hours and remuneration. The standard is available from Social Accountability International's website, ttp://www.cepaa.org.

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nal operations and to its design projects for third party clients outside the automotive sector. BMW Group management, which is considering implementing SMS in other BMW Group facilities and business lines, has learned a great deal about the challenges and opportunities involved in implementing an SMS from the Designworks/USA experience. According to BMW Group's Guido Prick, who is responsible for environmental management in production worldwide, BMW Group is pleased with the Designworks/USA SMS efforts and preliminary results. He described the success of the Designworks/USA SMS as "a role model for the future of all EMS's within the BMW Group."

Ongoing SMS Development

Designworks/USA is engaged in many ongoing projects to enhance its SMS. This section describes the company's efforts to further integrate SMS into its design process and its performance evaluation and compensation scheme, and to make the SMS more accessible to all employees.

Tools to Integrate SMS into Design

A principal aim of the SMS is to incorporate environmental, economic, and social concerns into Designworks/USA's design process by factoring these concerns into the creative process. A preliminary tool has already been developed to help screen prospective clients to understand their level of interest in sustainability. Table 1 describes how the company intends to incorporate sustainability into each element of the design process.

Table 1. Incorporating sustainability considerations into the creative process

Element	Means of incorporating sustainability considerations
1. Define	Build discussion of sustainability into initial discussion with client. Bring client's attention to sustainability issues that might arise in the design process and discuss brand attributes of sustainability.
2. Understand	Consider life-cycle impact of various design alternatives.
3. Explore	Gather information on alternative materials and design solutions.
4. Refine	Ensure technical feasibility and further refine material choices and design.
5. Implement	Seek to ensure sustainability-based choices are implemented in product manufacturing.

Based on the Designworks/USA experience, BMW Group plans to roll out the SMS initiative to its Rolls Royce manufacturing plant in Goodwood, England in 2003 and subsequently to convert every BMW Group production facility's EMS into an SMS. Despite the vast differences in the operations between a design consultancy and a manufacturing facility, Prick does not anticipate that the challenges in implementing the SMS at the latter to differ much from those experienced by Designworks/USA. BMW Group's Dickerson expects that implementing an SMS will actually be easier in a production facility because they feature more repetition, fewer creative processes, and a structured management system already exists. She also noted that the social aspects will be more important because manufacturing sites tend to be much larger.

Several tools are being developed to assist the design and engineering departments to reduce the environmental impact of the products developed for clients. Each tool will support one phase of the design process. For example, in the "Understand" phase, designers need to identify the design areas with the greatest potential to improve a product's SMS performance. As such, several commercial Design for

Environment[5] (DfE) and Life Cycle Assessment[6] (LCA) software tools are being evaluated. In the "Explore" phase, Design and Engineering need access to a wide variety of the latest materials, processes, and technologies to assess how they meet various design criteria including SMS aspects. Engineering has begun to accumulate knowledge about environmentally preferable materials and is developing an online database and a library of physical samples to share with designers and clients. To support the "Refine" stage, the engineering department plans to develop a tool to integrate DfE and Design for Disassembly[7] concepts. To date, the tools under development focus on environmental considerations.

Integrating SMS into Performance Management and Compensation Schemes

Like most consultancies, Designworks/USA operates on the business model of hourly billing. As such, strong incentives are provided to maximize design and engineering staff members' billability. A consequence of these incentives is that work that is not client billable is often de-prioritized. Given such incentives, it has been difficult at times to encourage staff to focus on SMS and other knowledge generating projects. To better align employee incentives with management's desire to maintain profitability while progressing longer-term projects, Designworks/USA developed a performance appraisal system that includes evaluating SMS performance and commitment and it is developing a bonus scheme based on a balanced scorecard approach that will include SMS criteria.

Making the SMS More Accessible

Several employees noted that the initial SMS documents used language that was difficult to comprehend, which both impeded participation and dampened enthusiasm in the SMS initiative. The use of technical language may be partially due to the SMS being initially created primarily by BMW Group's environmental department and its consulting partner, WSP. It may also be due to insufficient employee training to create a common understanding of some of the more technical concepts of the SMS, such as the differences between aspects and action items, or how the prioritization scheme works. A few Designworks/USA employees have been working to translate the SMS procedures and elements into simpler language to make it more accessible to their colleagues. One employee noted that the language seemed overly legalistic, which may be the result of gaps in culture (between Munich and California) and in company cultures (between BMW Group and Designworks/USA). Increasing accessibility is more than re-writing the actual text; it also involves providing ongoing training. At times, this is accomplished using real-life examples. For example, at a company-wide meeting, Craig Eggly illustrated the environmental impacts of excess packaging by showing a real example of how a supplier packaged a cord using several packaging layers. He explained the various types of waste this practice generated, including material consumed in manufacturing the packaging itself and the additional environmental impacts associated with transporting its unnecessary volume. This example will also be used to help educate other

[5] Design for Environment (DfE) is a design approach where designers seek to integrate into product design various health and environmental considerations, such as the toxicity, energy intensity, and recyclability of the product and its materials.

[6] Life Cycle Assessment is a process that evaluates the environmental burdens associated with a product, process, or activity. It involves identifying all inputs (e.g., energy, materials) and outputs (e.g., effluents, emissions, solid wastes) required across all life cycle stages, including raw material extraction, production, transportation, usage, and disposal.

[7] Design for Disassembly (DfD) is a component of some Design for Environment (DfE) programs, where designers seek to reduce the cost of disassembling products at their end of use. For example, this may entail selecting reversible fasteners, excluding materials that are not easily recyclable, or arranging the layout of components to reduce safety hazards.

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suppliers of Designworks/USA's desire to eliminate excessive packaging.

Challenges and Opportunities for Future SMS Development

Designworks/USA's SMS is still in the early phase of implementation. It has been in operation for less than two years. While Designworks/USA accomplished a great deal in a short period of time, the company faced a number of implementation challenges. While some of these have been resolved and others are under active consideration, some remain of concern to staff. Elements of the SMS represent a pioneering effort, such as seeking to integrate environmental criteria into the design of third party clients' products and contemplating the scope of social issues that fit within the sustainability concept. As such, there are few companies to learn from and no ready-made examples to apply. Given this, it is not surprising that many opportunities are available for further program refinement and implementation.

Some challenges will be met through ongoing initiatives. For example, one designer noted that while he was attempting to integrate SMS concepts into client discussions, he often faced questions he was not prepared to answer. This resulted in his conducting follow-up research to prepare a response several days later. To some extent, this predicament will be resolved as designers and engineers accumulate expertise about the sustainability implications of design choices, bolstered in part by the SMS tools currently being developed.

This knowledge gap will be further addressed as Designworks/USA finalizes a plan to tap external sources of sustainability knowledge. This will likely include identifying and sending staff to appropriate training, as well as developing partnerships with universities to increase contact with professors and student intern candidates. In one such partnership effort, Nicole Kranz, a graduate student from the University of California's Donald Bren School of Environmental Science and Management was hired to assist in the development of SMS tools, organize the supplier open house, and work on several SMS Action Plan items. By the end of her 3-month internship, she was among the most knowledgeable individuals at the company about its SMS. In an effort to institutionalize her knowledge, she produced a final report to the SMS Steering Committee.

Another challenge identified is the reluctance of clients to pay Designworks/USA to research ways to improve the sustainability profile of design alternatives. On some occasions, Designworks/USA conducted this analysis anyway, absorbing the cost as a strategic investment to both develop their SMS capabilities and expose clients to the benefits of integrating sustainability concerns into product design. Such investments are designed to both develop a capability that will yield competitive advantage, and to encourage the marketplace to value this capability. Indeed, encouraging its third-party clients to value sustainable design remains one of Designworks/USA's biggest challenges to provide a financial return on its SMS investments and to stimulate continued staff interest in SMS.

While management has asked that SMS be an agenda item in each department's weekly meeting and requires the attendance of departmental representatives at SMS Steering Committee meetings, as discussed earlier, the willingness of department managers to do so has varied. The engagement of management with the SMS will be encouraged by the integration of SMS as a component of performance reviews. As the organization is becoming more energized by the implementation of the SMS, it appears this problem of early resistance from some quarters is being overcome.

While Designworks/USA has recognized the above issues, the organization also faces several challenges and opportunities to improve the effectiveness and comprehensiveness of its SMS. Like many design firms, the company

culture encourages creativity, innovation, and inspiration, and this led to challenges in getting the staff to document and follow procedures. BMW Group and WSP stepped in to provide initial drafts of the formal SMS documentation. While this facilitated the timely implementation of the SMS, apparent gaps remain in the knowledge about the relationship between some of the SMS documents. For example, after the initial development of comprehensive aspect/impact registries and a prioritization scheme, several departments do not rely upon the prioritized aspects as the basis for adding new items to their SMS Action Plans. Instead, they favor the use of a more creative process, brainstorming sessions, to add new action items or decide which ones to address next. While this process is aligned with the company's culture of creativity, it undermines the systematic process the SMS is meant to facilitate and suggests the need to better integrate creative work processes into a systematic management system. For example, this creativity could be channeled into identifying additional SMS aspects, or enhancing the aspect/impact prioritization scheme or sustainability policy. Such changes would then flow through the SMS in a systematic way to add new or reprioritize existing action items.

While the company has focused its SMS performance monitoring on process metrics (e.g., implementing SMS Action Plan items, following up SMS audit issues), few results metrics have been developed. The latter might measure, for example, the cumulative lifecycle environmental benefits of product design changes their clients have implemented due to the Designworks/USA SMS program. With regard to the internal social impacts of the SMS, the company is developing an employee survey. In addition, metrics—such as employee recruitment success rates and employee turnover—already collected for other purposes could also be used to assess the results of SMS implementation.

To date, the integration of social issues into the design process has remained primarily an idiosyncratic process that relies on the awareness of individual designers. Indeed, most occasions where social issues have been included in design work can be attributed to the insight, enthusiasm, and persistence of individual designers. As such, systematically incorporating social aspects of product design into the design process—in a manner similarly envisaged for environmental aspects with the new SMS tools—represents another opportunity for future SMS development.

Finally, Designworks/USA can better leverage its efforts by further disseminating its novel approach to implementing sustainability. To be sure, Designworks/USA has informed its customers and vendors about its SMS, and it has shared its initiative in a few conferences. However, the company could publish a formal internal or external SMS report, integrate its SMS initiatives in its client brochures, and promote its efforts through the company website.

SMS & the United Nations Global Compact

United Nations (UN) Secretary General Kofi Annan proposed the UN Global Compact to challenge world business leaders to take more responsibility for improving the social and environmental dimensions of the global economy. The Global Compact is based on nine principles in the areas of human rights, labor, and the environment, drawn from the Universal Declaration of Human Rights, the International Labour Organisation's Fundamental Principles on Rights at Work, and the Rio Principles on Environment and Development. The Global Compact's principles are presented in Table 2.

BMW Group, the parent company of Designworks/USA, is one of the major international corporations that has formally committed to the UN to implement these principles. As part of its participation in the Global

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Table 2. UN Global Compact principles

Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights; and 2. Make sure they are not complicit in human rights abuses.
Labor	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; 4. The elimination of all forms of forced and compulsory labor; 5. The effective abolition of child labor; and 6. Eliminate discrimination in respect of employment and occupation.
Environment	7. Businesses should support a precautionary approach to environmental challenges; 8. Undertake initiatives to promote greater environmental responsibility; and 9. Encourage the development and diffusion of environmentally friendly technologies.

Compact Learning Forum, BMW Group wrote a case study describing its Clean Energy Project in Germany, which implements the three environmental principles.[8] The current case study is a second step BMW Group has taken to share its practices with other companies interested in the Global Compact. Below, we analyze how the Designworks/USA SMS implements several Global Compact principles.

SMS & Human Rights and Labor Principles

A few of the aspects identified and actions initiated under Designworks/USA's SMS directly address the Global Compact's human rights and labor principles. For example, the consideration of promotion, hiring and performance review practices in order to facilitate gender and racial equity and the attempts by Designworks/USA to improve their understanding of their supplier's practices in relation to a number of human rights, particularly child and forced labor. Together these efforts touch on Principles 1, 2, 4, 5 and 6. Many other social-related Designworks/USA SMS initiatives are socially useful, in that they seek to improve community and government awareness of sustainability issues or improve employee satisfaction. However, while clearly valuable, these initiatives do not directly address the Global Compact's six principles related to human rights and labor.

One way to implement the Global Compact's human rights principles within the company is to harness the SMS process to increase the range of social issues incorporated in Designworks/USA's design process. Just as recommendations on environmentally sound design options are considered a part of the SMS, the company could use the SMS to develop a systematic way for designers to consider the human rights impact that their products may have. Designers have considered issues of accessibility for the elderly and people with disabilities as part of the design process for some time. In North America this was a particularly 'hot' issue for designers in the 1980s and 1990s. Driven mainly by a desire to avoid litigation, this movement was predominantly reactive and client driven, rather than proactive. SMS could provide a framework for a more systematic investigation and consideration of human rights impacts, positive and negative, which may arise from certain design choices. SMS aspect identification allows designers to think beyond simply than the legal requirements and to proactively consider the broad

[8] BMW Group's Clean Energy Project case study, prepared for the UN Global Compact, is available at http://65.214.34.30/un/gc/unweb.nsf/content/ppsubs.htm.

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human rights impacts of the products they design. This approach would result in a more systematic consideration of human rights issues in the design process, particularly if tools for this purpose, similar to those currently being refined by Designworks/USA for use in relation to environmental issues, were developed for human rights issues. Embracing a more systematic approach to infuse social considerations into the design process builds upon the current efforts of individual designers in the areas of accessibility and privacy. Taking this approach would allow a much greater realization of Principles 1 and 2. It would seek to employ client influence as a major instrument to leverage Designworks/USA's SMS competencies to further promote the Global Compact principles.

SMS & Environmental Principles

Many features of the Designworks/USA SMS support the Global Compact's three environmental principles. This case study has provided examples that illustrate how Designworks/USA has embedded environmental concerns into its SMS. As with its social initiatives discussed above, many of Designworks/USA's environmental initiatives go well beyond the Global Compact's three environmental principles.

As mentioned earlier, the SMS approach—akin to the ISO 14001 EMS process—requires each department to identify and prioritize its sustainability aspects and impacts, including environmental ones. Objectives and targets are developed for prioritized aspects, and these become the focus of ensuing SMS activity. This proactive process is a classic example of a "precautionary approach to environmental challenges," as required by Principle 7.

Not only is Designworks/USA undertaking initiatives "to promote greater environmental responsibility"—as called for by Principle 8—through its efforts to minimize its onsite environmental impacts, but a major thrust of its SMS is to work with clients to reduce the environmental impact of their products. As described above, the company is also taking an increasingly active role to reduce the environmental impact of its supply chain, including both material suppliers and contractors.

Designworks/USA's SMS activities also directly relate to Principle 9, which calls on companies to strengthen the market for environmentally friendly technologies. The efforts of its Purchasing and Operations departments to reduce the company's onsite environmental impacts have led to requesting contractors and suppliers to recommend environmentally superior technologies. The roofing example provided earlier is a case in point. In fact, Designworks/USA was the first customer of this new technology, and its order enabled the contractor to procure the specialized equipment required for its application. This is facilitating the diffusion of this energy-saving technology to the contractor's other customers in the area. Designworks/USA has also encouraged the contractor to show its site to prospective customers of this technology. Greater potential to diffuse environmentally friendly technologies is available from the ongoing work of the Design and Engineering departments. As they embed more environmentally superior materials and design concepts into their product designs, these technologies will be disseminated to many of Designworks/USA's clients.

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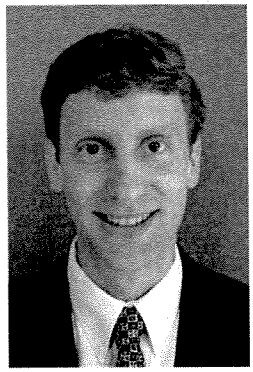

Michael W. Toffel

Natalie Hill

Kellie A. McElhaney

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