Green Building REPORT

LEED and ISO 14001: Working Together

By Robert L. Westly and Ralph Vasquez

Progressive facility executives look for ways to manage the environmental issues of their properties. They try to manage natural resources without compromising the ability of future generations to use those same natural resources. One strategy for achieving that goal is to use the Leadership in Energy and Environmental Design (LEED) green building rating system developed by the U.S. Green Building Council (USGBC).

The LEED system rates building construction in six categories:

- Sustainable Sites.
- Water Efficiency.
- Energy and Atmosphere.
- Materials and Resources.
- Indoor Environmental Quality.
- Innovation Credits and Design/Build Process.

Within these categories are specific environmental goals, such as stormwater management, water-use reduction, construction waste management, and indoor chemical and pollutant source control. Regardless of whether facility executives use LEED or other approaches to attain environmental sustainability, these efforts have one common goal: to integrate environmental considerations into facility management. The challenge is developing a process to accomplish this goal.

Environmental Management Systems

One systematic process that is used globally to work toward environmental sustainability is ISO 14001, an international standard for environmental management systems that provides a path to continual improvement.

The standard outlines five concepts that can help facility executives develop a process to improve performance on environmental issues. Those five concepts — aspect, impact, objective, target and significant aspect — are not labeled in a way that will be immediately clear to most facility executives. But once a facility executive gets past the names and understands the concepts, the ISO 14001 approach offers a powerful tool.

The five concepts are:

- Aspect: Organization's activities, products and services that interact or may interact with the environment.
- Impact: Any change to the environment resulting from an aspect.
- Significant Aspect: Aspect with a significant environmental impact.
- Objective: Overall environmental goal an organization sets out to achieve.
- Target: Detailed performance requirement that is set to achieve the objective.

To clarify, an aspect is the "cause" and impact is the "effect." A "significant aspect" is one that an organization determines may have a substantial effect. An objective is general, while a target is measurable.

ISO 14001 in Action

The real power of these five linked concepts is the identification of significant environmental aspects — that is, things that an organization does or produces that have significant environmental effects — from a relatively comprehensive list of aspects established for a particular property. This allows an organization to set priorities so that manageable objectives and targets can be developed.

The assessment typically begins with a brainstorming effort by the facility team to identify as many so-called aspects as possible for a particular property. This effort would include the whole property, generally bounded by the property line, and not limited to the building. For some properties, this may include noncontiguous areas, such as remote storage facilities. The assessment can be performed before a

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building has been constructed or after it is complete. A selection of typical items prior to site selection and construction would be based on consideration of the planned use of the property. Is a fast-food restaurant or computer chip fabrication facility going to be built? The differences in the environmental aspects between these uses will be substantial. Aspects to consider include:

- Type of building: Will the planned buildings affect natural resources? That is, what natural resources will be needed for construction materials and what energy demands will be required?
- Waste management: Will the wastes generated during or following construction affect the environment?
- Air emission: Will local and regional air quality be affected by the planned property use during or following construction?
- Stormwater management: Will stormwater quantity and quality be affected by the planned property use during or following construction?

LEED and ISO 14001 are complementary systems. Both seek to integrate environmental considerations into an organization's operations, including facility management

Effects, from Causes

Once the list is developed, a parallel list of impacts or potential impacts to the environment is developed for each aspect. Impacts to the environment are typically associated with potential changes to the air, soil, surface water, groundwater, flora, and fauna, although other environmental impacts can be considered, such as noise.

By determining which impacts are significant, the facility executive can understand which aspects — the causes of those effects — are significant. Those conducting the assessment must define "significance." Objectives and targets are then set for the significant aspects. For example, if it is determined that surface water quality will be affected, the objective may be to reduce the detrimental impact and the target might be to install an oil/water separator by a certain date.

If resources are too limited to address all the significant aspects, the definition of significance can be changed to limit the number of significant aspects. Otherwise, the significant aspects can be prioritized and addressed in order.

The LEED categories are overall environmental goals or objectives and the LEED goals are more like "targets" in the ISO 14001 scheme of environmental management. If these goals and targets, and others addressed by LEED, arose from a significant aspect assessment of a particular property, they would become part of a systematic environmental management system.

An organization continually improves its environmental performance as it repeats the five-step process — typically every year or as targets are met — and identifies new significant aspects and different objectives and targets. Initially, this process results in picking the "low-hanging fruit" first. That is, initially, it's rather obvious which items have the biggest environmental impacts, and objectives and targets are quickly set. As the environmental management system matures, environmental impacts can become more subtle. This is proof of progress toward environmental sustainability.

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