

Home Technology and LEED: A Guide.

In light of increased consumer demand for green building certifications for homes, design and build professionals and electronic systems contractors (ESCs) have an unprecedented opportunity to support their clients' goals for sustainable living.

LEED (Leadership in Energy and Environmental Design) certification is among the most widely recognized standards for green building, and the LEED for Homes Rating System offers a detailed breakdown of essential practices for reducing a home's environmental impact.

Partnering with an ESC early in the planning process offers numerous opportunities to contribute to a project's total points in the LEED Rating System while providing a more sustainable lifestyle for the homeowner.

Beyond Audio is especially suited to this type of collaboration as the owner, Mike Ohman was originally trained as a Power Engineer, and is a CEDIA Certified Electronics System Designer (1 of only 7 in Canada) with has over 20 years' experience in the electronics systems industry.

Below are just a few ways in which home technology can support project goals in specific categories of the LEED for Homes Rating System.

Innovation & Design Process (ID)

Audio-video systems

Strategies for reducing the impact of audio-visual systems include selecting energy-efficient components, incorporating devices for control of parasitic power, and programming systems to shut off components when not in use.

Monitoring Systems

Monitoring systems integrated with HVAC systems as well as perimeter, motion and smoke/heat sensors can detect leaks, helping to save money, reduce consumption and protect property. In addition, monitoring systems can provide instantaneous, actionable feedback on both system performance and resource consumption. Reports and recommendations based on this feedback allow for ongoing system optimization.

Water Efficiency (WE)

Irrigation, Pool & Spa Control

Smart sensing and control can decrease water and energy use, reducing costs and increasing the life of components due to more efficient tasking.

Energy & Atmosphere (EA)

Beyond Audio can develop a control system that has the potential to influence overall energy performance, thereby contributing to a project's total points. Home Automation and control can influence the performance of HVAC equipment, water heating equipment, appliances and other systems.

Lighting Control

Lighting control applications such as dimming capabilities and remote access and control help occupants reduce their usage of lighting systems. Additionally, when integrated with occupancy sensors and solar irradiation sensors, lighting can be automated to reduce energy consumption and cost while increasing the life expectancy of bulbs.

HVAC Integration

Beyond Audio can offer services such as programmable thermostats, remote access and control of HVAC systems, time-based temperature parameter settings and occupancy sensing to help manage utility consumption and extend the life of components. Systems can also be designed to capture and re-use heat generated by components through the use of energy recovery ventilators (ERVs).

Motorized Window Treatments

When integrated with lighting control, HVAC systems and solar irradiation sensors, window treatments can be automated to offer daylight harvesting and heat mitigation functions, reducing the need for artificial lighting and heating.

Renewable Energies (Solar, Wind, Etc.)

Beyond Audio offers integration services for renewable energy technologies, including solar photovoltaic, wind turbines and fuel/power cells.

Materials & Resources

Choosing & Procuring Products

ESCs can help guide homeowners toward products with reduced environmental impact by considering such factors as:

- Compliance with the Restriction of Hazardous Substances (RoHS) Directive
- Electrical & Electronic Equipment Recycling
- Local sourcing to decrease delivery distance
- Energy Star and other certifications
- Low- or no-VOC and non-toxic components

Project Execution Practices

Beyond Audio can contribute to sustainability through efficiency- minded jobsite practices such as reusing existing infrastructure where possible and recycling packing materials and used components.

Awareness & Education (AE)

Educating the homeowner, tenant and/or building manager on control systems is required for LEED certification, along with training on all the other systems and equipment in the home. By participating in delivering training or developing training materials, Beyond Audio can contribute to this segment of the rating system while ensuring the occupant knows how to get the most out of the energy-saving components of their home.

Mike Ohman is a Registered Outreach Instructor, delivering a variety of courses eligible for continuing education credits, some of which are applicable to energy conservation and management.

Indoor Environmental Quality (EQ)

Indoor air quality sensors and monitoring devices can be integrated to provide feedback on indoor air quality.