



GUIDE FOR LEED NC

AERCO and LEED	pg. 2
Site Development – Maximize Open Space	pg. 3
Water Efficient Landscaping	pg. 4
Optimize Energy Performance	pg. 5
Low Emitting Materials – Adhesives & Sealants	pg. 6
Low Emitting Materials – Paints & Coatings	pg. 7
Indoor Chemical & Pollutant Source Control	pg. 8
Innovation In Design	pg. 9



AERCO & LEED

Sean Dabroski, LEED A.P.

The environmental impact of commercial building design, construction and operation is significant. The negative impact of buildings has become a social and economic focal point of society today. The United States Green Building Council was established to create standards for sustainable building design; more specifically the LEED Green Building Rating System.

So why make your building Green?

Green buildings are known for conserving natural resources, using alternative material and recycling construction waste. People now see the financial advantage as well. Well designed green buildings yield lower utility and operational costs. **Building green is no longer a pricey experiment.**

What is LEED?

LEED is a certification system that deals with the environmental performance of buildings based on overall characteristics of a project. The USGBC does not LEED-certify individual products.

LEED addresses:

- 1) Sustainable Site
- 2) Water Efficiency
- 3) Energy and Atmosphere
- 4) Materials and Resources
- 5) Indoor Environmental Quality
- 6) Innovation and Design Practices

What can AERCO do to help you achieve LEED points?

This paper examines how AERCO products support the intentions of the LEED rating system. Furthermore, we are committed to populate our organization with people who are familiar with the concepts of Green, understand its metrics and can be identified by owners, architects, facility managers and general contractors as being experts.

AERCO International recognizes the importance of both LEED and Green and is striving to adopt these principles into our company's culture and products.

Sustainable Sites

SS Credit 5.2 **Site Development – Maximize Open Space**

Intent:

Provide a high ratio of open space to development footprint to promote biodiversity.

Potential Product Application:

AERCO's innovative products are designed with a **small footprint and flexible venting and piping options, all of which can help reduce the sprawl of building space.**

Footprint:

- Our products have minimum footprints allowing them to fit through a standard size door, and are a solution for mechanical rooms with space restrictions/limitations.
- Modulex boilers are designed with complete redundancy, eliminating the need for a multiple boiler plant.
- Tank-less design of our domestic water heaters eliminates the need for storage tanks and other system accessories which take up space in the mechanical room.

Sealed Combustion:

- Eliminates the need for make up air units for combustion.

Venting:

- Smaller duct sizes attributed to long equivalent runs
- Termination flexibility (roof top, side-wall)
- Single penetration to the outdoors via the ability to common vent multiple boiler/heater ducts (exhaust & combustion air)
- Modulex connection flexibility allows for various installation options

Piping:

- Single (primary) loop installation (eliminates secondary loop and associated auxiliary equipment)
- Modulex connection flexibility allows for various installation options
- Tank-less water heater design reduces piping requirements

AERCO Products:

Benchmark Boiler

Modulex Boiler

Esteem Boiler

Innovation Water Heater

Smart Plate Water Heater

B+II Water Heater

Water Efficiency

WE Credit 1.1

Water Efficient Landscaping

Intent:

Limit or eliminate the use of potable water, or other natural surface or subsurface water resources available near or on the project site, for landscape irrigation.

Potential Product Application:

AERCO's high efficiency gas-fired products produce a significant amount of condensate during operation.

Water Efficient Landscaping:

- Flue gas condensate can be recovered and used for irrigation or other grey water applications (as high as 40 gph on the BMK6000 LN). Neutralization of the condensate may be required prior to use.

AERCO Products:

Benchmark Boiler
Modulex Boiler
Esteem Boiler

Innovation Water Heater
Smart Plate Water Heater
B+II Water Heater

Energy and Atmosphere

EA Credit 1 *Optimize Energy Performance*

Intent:

Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Potential Product Application:

AERCO products are designed to reduce environmental and economic impacts associated with excessive energy use.

- Meet the overall intent of ASHRAE 90.1 specific to hydronic heating systems
- Meet the requirements of ASHRAE 90.1, section 6.4: We exceed efficiency requirements shown in table 6.8.1F (hot water boilers).
- High turndown ratio minimizes cycling losses (minimizes wasted energy) and maximizes operating efficiency.
- The condensing of flue gases (latent heat of vaporization) ensures maximum heat transfer, thus minimizing thermal losses.
- VFD controlled blower motors are used to optimize performance with minimal electrical consumption.
- B+II WaterWizard sub cooling coil extracts latent heat from condensed steam in order to maximize efficiency.
- The tank-less design of the Innovation, Smart Plate, and B+II Water Heaters eliminates the requirement for storage and subsequently, the standby losses associated with that storage volume.
- The Innovation onboard controls feature water heater management programming to efficiently sequence multiple units to accurately match building load, increase system turndown, further reduce energy consumption, and virtually eliminate cycling, and standby losses.

AERCO Products:

Benchmark Boiler
Modulex Boiler
Esteem Boiler

Innovation Water Heater
Smart Plate Water Heater
B+II Water Heater

Indoor Environmental Quality

EQ Credit 4.1 Low Emitting Materials – Adhesives & Sealants

Intent:

Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Potential Product Application:

AERCO uses low emitting Volatile Organic Compounds (VOC) adhesives, sealants, and insulation in the manufacturing of our products. The VOC limits are established by Green Seal Standard GS-36 and Green Guard®.

AERCO Products:

Adhesives

Benchmark Boiler
Innovation Water Heater
Smart Plate Water Heater
B+ Water Heater

*Insulation**

Benchmark Boiler
Innovation Water Heater
B+ Water Heater

Sealants

B+II Water Heater
Smart Plate Water Heater

*The insulation has been GREENGUARD Indoor Air Quality Certified® by the GREENGUARD Environmental Institute under the GREENGUARD Standard for Low Emitting Products.

EQ Credit 4.2

Low Emitting Materials – Paints & Coatings

Intent:

Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Potential Product Application:

AERCO uses low emitting Volatile Organic Compounds (VOC) paints in the manufacturing of our products. These paints are applied to prevent corrosion and oxidation (rust). The VOC limits are established by Green Seal Standard GS-03.

AERCO Products:

Benchmark Boiler

Innovation Water Heater
Smart Plate Water Heater
B+II Water Heater

EQ Credit 5 Indoor Chemical & Pollutant Source Control

Intent:

Minimize exposure of building occupants to potentially hazardous particulates and chemical pollutants.

Potential Product Application:

AERCO's high efficiency gas-fired products utilize sealed combustion. The benefit is the elimination of damper systems mounted on outside walls which reduces the distribution of pollutants and particulates through the building (outdoor contaminants are isolated from occupants of building).

AERCO Products:

Benchmark Boiler
Modulex Boiler
Esteem Boiler

Innovation Water Heater

Innovation & Design Process

ID Credit 1.1 – 1.4 Innovation In Design

Intent:

To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED for New Construction Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by this Rating System.

Potential Product Application:

Turndown

- AERCO's high efficiency gas-fired products have a turn down ratio as high as 30:1 which reduces overall energy consumption by minimizing cycling which reduces overall fuel consumption and electrical KW demand (purge cycle).

Footprint

- AERCO's products have an extremely small physical footprint providing an opportunity to increase the buildings open space. We can also deliver one of the smallest installed footprints in the industry.

AERCO Products:

Turndown (Modulation)

Benchmark Boiler
Modulex Boiler
Esteem Boiler
Innovation Water Heater

Footprint

Benchmark Boiler
Modulex Boiler
Esteem Boiler
Innovation Water Heater
Smart Plate Water Heater
B+ Water Heater