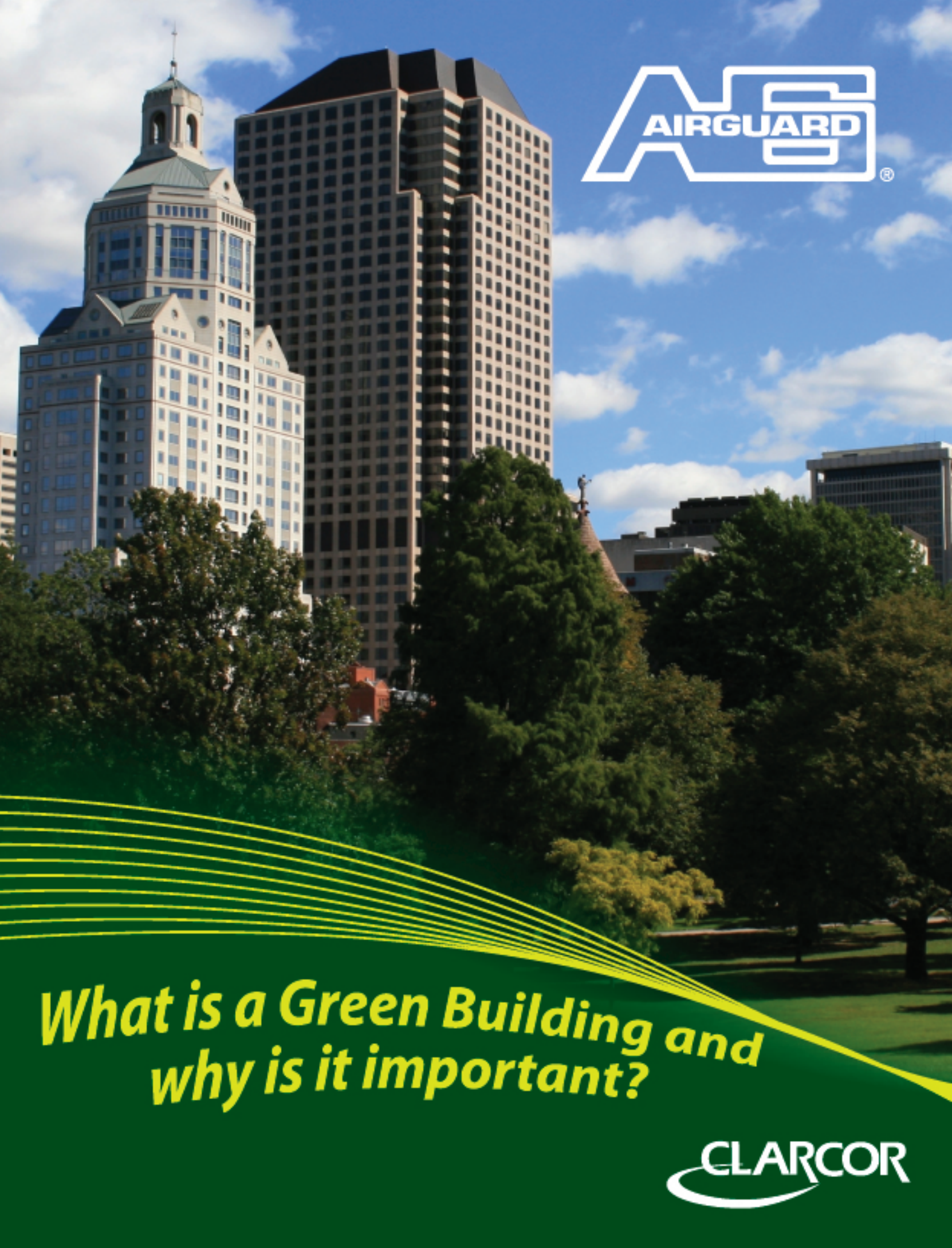
AIRGUARD
What is a Green Building and why is it important?
CLARCOR

Environmental Impact of Commercial Buildings

Buildings that protect us from natures extremes can also have a profound effect on the environment, which is why green building practices are so important to reduce these impacts and promote a healthier environment inside and out. According to the EPA, commercial buildings in the United States account for:

- 39% of total energy use
- 25% of total water consumption
- 68% of total electricity consumption
- 38% of the carbon dioxide emissions

Green Building Benefits:

- Environmental benefits
- Improve air and water quality
- Conserve and restore natural resources
- Enhance and protect biodiversity and ecosystems
- Reduce waste streams

Economic Benefits:

- Reduce operating costs
- Create and shape markets for green services
- Improve occupant productivity
- Optimize life-cycle economic performance

AIRGUARD®

CLARCOR Air Filtration Products, Inc. and the AIRGUARD brand are committed to improving and protecting our environment for future generations. As a result of our systematic approach to energy management, understanding of energy usage and prevention of greenhouse gas emissions, along with the **Energy Savings** tool provided to its customers, CLARCOR Air Filtration Products, Inc. is an established leader in Clean Air Management. Go online to visit www.airguard.com and use the **Energy Savings Program** to see for yourself how AIRGUARD air filters can save you money while minimizing your impact on the environment.

What is Green Building and Why Is It Important?

A green or sustainable building is one where the practice of utilizing resources and techniques in a more ecological and resource-efficient manner is used to improve and provide a healthier environment. By using energy, water and other resources more efficiently, we reduce the overall impact to the environment and minimize excess pollution and waste.

Green building is not just a trend, but is a vital solution to the growing challenge of vanishing natural resources. Green building helps to improve our water supply and air quality, while addressing concerns of the "greenhouse" effect of climate change which is one of society's most pressing environmental issues.

Many countries have developed their own standards of energy efficiency for buildings. The United States Green Building Council (USGBC) has developed The Leadership in Energy and Environmental Design (LEED®) green building rating system, which is the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED is a framework for assessing building performance and meeting sustainability goals.

AIRGUARD®

LEGACY®

AIRGUARD is a leading brand of high quality, high efficiency filtration products designed to reduce energy consumption

DP®40 Pleat

while maintaining high efficiency levels in commercial & industrial buildings. AIRGUARD features a broad selection of filters, such as the LEGACY, DP40 Pleat, V-FORCE, Ultra II and the DP-GREEN filter that will help you reach your LEED® Certification goals.

V-FORCE®

DP-GREEN™

Ultra II

The U.S. Green Building Council

The U.S. Green Building Council (USGBC) is a non-profit organization committed to expanding sustainable building practices. USGBC is comprised of more than 13,500 organizations from across the building industry that are working to advance structures that are environmentally responsible, profitable, and healthy places to live and work.

The USGBC's goal is to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life. For more information visit **www.usgbc.org**.

LEED is a voluntary, point-based rating system for developing high-performance, sustainable buildings. Developed by USGBC, LEED addresses all building types and emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials & resources selection, indoor environmental quality and innovation & design. LEED is a practical rating tool for green building design and construction that provides immediate and measurable results for building owners and occupants.

AIRGUARD®

AIRGUARD is dedicated to improving the environment and offers the broadest line of filtration products in the industry designed to meet or exceed requirements for clean air and better indoor air quality. AIRGUARD products like the High Efficiency Rigid Cell Legacy® and Microguard® LR exceed LEED/ Green Building Initiative requirements of MERV 13 filtration efficiency rating and offer an extremely-low and economical pressure drop.

Earning LEED v3 Certification

LEED v3 Certification of new building construction and major renovation projects measures 100 possible points and awards four levels of certification:

- **CERTIFIED** ~ 40 - 49 points
- **SILVER** ~ 50 - 59 points
- **GOLD** ~ 60 - 79 points
- **PLATINUM** ~ 80 points or more

Components relating to air filtration can account for up to 23 of the possible 100 points.

Reducing energy is the strongest credit component. If an engineer utilizes MERV 13 filtration or higher while decreasing the energy used by the system, more LEED credits can be achieved. In a two-stage system, reducing prefiltration resistance can also garner LEED credit. Reducing the system velocity at the filter bank (ie. reducing from 500fpm to 300fpm) can reduce resistance as much as 2/3 and triple the life of filters.

In all, higher ratings achieved in the LEED v3 Certification process, result in a building that is more environmentally friendly, more healthy for its occupants and operationally more cost-effective.

AIRGUARD®

AIRGUARD offers a full range of high-efficiency HVAC products with MERV 13 or higher ratings. Upgrading to AIRGUARD high efficiency products can increase your overall certification points with the added benefit of reducing small- and large-particulate emission through outside-air exhausts, reducing indoor airborne irritants, and reducing microbial growth.

MERV 13+ FILTERS
Clockwise from top:
LEGACY®, V-FORCE®, CLEAN-PAK, DP-GREEN™ and Microguard® LR.

LEED® for Existing Buildings

LEED Category	Recommended Activities
ENERGY AND ATMOSPHERE	
Prerequisite 2: **Minimum Energy Efficiency Performance** **Required Activity**	Use Airguard's Owning and Operating Tool to understand the impact of the filter airflow resistance on HVAC system energy usage costs
Credit 1.1-1.10: **Optimize Energy Efficiency Performance** **2-15 Points; 2 Points Mandatory**	Complete life cycle and energy cost analysis on the HVAC filter system and switch to a lower resistance air filter to reduce energy costs and loads.
Credit 3.2-3.3: **Performance Measurement: System-Level Metering** **1-2 Points**	Use pressure gauges to measure resistance to airflow to determine the appropriate change out cycle for filters.
Credit 6: **Emission Reduction Report** **1 Point**	Use an energy analysis tool to determine the amount of energy saved and Green House Gas (GHG) emissions reduced by using low-resistance air filters. For internally generated gaseous contaminants use Airguard products for the removal of aireborne molecular contaminants (AMC) and source control.
MATERIALS AND RESOURCES	
Credit 6: Solid Waste Management: **Waste Stream Audit**	Switch from standard-capacity filters and/or bag style to mini-pleat V-bank final filters. This extends filter life to reduce change outs and waste streams, while minimizing resistance to airflow.
INDOOR ENVIRONMENTAL QUALITY	
Prerequisite 2: **Environmental Tobacco Smoke (ETS) Control** **Required Activity**	Install Airguard equipment and use Airguard chemical media to remove airborne contaminants from smoking room. Install HEPA (High Efficiency Particulate Air) filter to filter exhaust air to the outside.
Credit 1.1: IAQ Best Management Parctices: **IAQ Management Program** **1 Point**	Perform surveys and educate maintenance staff about filtration fundamentals and application of various air filtration technologies by using programs offered by an Airgaurd representative and the National Air Filter Association.
Credit 1.4: IAQ Best Management Practices: **Reduce Particulates in Air Distribution** **1 Point**	Install MERV 13 or higher rated filters. Follow a regular schedule for air filter maintenance to keep unfiltered bypass air from entering the ductwork and occupied spaces.
Credit 1.5: IAQ Best Management Practices: **Management for Facility Alterations and Additons** **1 Point**	Install MERV 8 filters at each return air grill for air handlers used during construction. Upon cpmpleation of construction, conduct a two-week building flush out with the new air filters and 100% outdoor air prior to occupancy.
INNOVATION AND DESIGN PROCESS	
Credit 1.1-1.4: **Innovation in Operations** **1-4 Points**	Upgrade to a MERV 14 or 15 air filter, that offers a lower initial pressure drop. Document supplier source reductions, use air filters with recycled content, and utilize gaskets on all filters and holding frames.

LEED® for New Construction*

*(*includes LEED for New Construction, LEED for Schools, LEED for Comercial Interiors, LEED for Core and Shell Development)*

LEED Category	Recommended Activities
ENERGY AND ATMOSPHERE	
Prerequisite 2: Minimum Energy Performance Required Activity	Use Airguard's Owning and Operating Tool to understand the impact of the filter airflow resistance on HVAC system energy usage costs
Credit 1: Optimize Energy Performance 1-10 Points; 2 Points Mandatory	Use an energy analysis tool to understand the impact of the filter airflow resistance on HVAC system energy usage costs.
Credit 1.3: Optimize Energy Performance, HVAC (LEED for Commercial Interiors) 1-2 Points	Complete life cycle and energy cost analysis on the HVAC filter system and switch to a lower resistance air filter to reduce energy costs and loads.
Credit 5: Measurement and Verification 1 Point	Use pressure gauges to measure resistance to airflow to determine the appropriate change out cycle for filters.
Credit 3: Energy use, Measurement and Payment Accountability (LEED for Commercial Interiors) 2 Point	
Credit 5.2: Measurement and Verification– Tenant Sub-metering (LEED for Core and Shell Development) 1 Point	
INDOOR ENVIRONMENTAL QUALITY	
Prerequisite 1: Minimum IAQ Performance Required Activity	Install MERV 6 or above air filters
Prerequisite 2: Environmental Tobacco Smoke (ETS) Control (N/A LEED for Schools) Required Activity	Install Airguard equipment and use Airguard chemical media to remove airborne contaminants from smoking room. Install HEPA filter to filter exhaust air to the outside.
Credit 1: Outdoor Air Delivery Monitoring 1 Point	Use pressure gauges to measure resistance to airflow to determine the appropriate change out cycle for filters.
Credit 3.1: Construction IAQ Management Plan: During Construction 1 Point	Install MERV 8 filters at each return air grill for air handlers used during construction.
Credit 3.2: Construction IAQ Management Plan: Before Occupancy (N/A LEED for Core and Shell Development) 1 Point	Upon compleation of construction, conduct a two-week building flush out with new air filters and 100% outdoor air prior to occupancy.
Credit 5: Indoor Chemical and Pollutant Source Control 1 Point	Install MERV 13 or higher rated filters. Follow a regular schedule for air filters maintenance to keep unfiltered bypass air from entering the ductwork and breathing air. Install Airguard equipment and use Airguard chemical media to remove airborne contaminants.
INNOVATION AND DESIGN PROCESS	
Credit 1.1-1.4: Innovation in Design 1-4 Points	Document supplier source reductions, use air filters with recycled content, and utilize gaskets on all filters and holding frames

Added Benefits of Being a Green Building

Often times we are not aware of what's in the air inside a building because contaminants such as carbon monoxide, radon and some molds are not as obvious as other potential hazards. Thus poor indoor air quality (IAQ) could have a more adverse affect on health and comfort of building occupants because it may go unnoticed.

Hospitals are a good example of where adherence to LEED guidelines can be very beneficial. The two largest operating expenses at hospitals are utilities and salaries and improved air filtration can dramatically affect both. LEED promotes the improvement of air filtration in terms of both higher efficiency and lower resistance to airflow. Virtually all buildings that follow the LEED guidelines can expect to save money, improve indoor air quality and become more environmentally responsible. Although this process may cost more up front, savings are derived from lower operating costs over the life of the building.

LEED®, the "Leadership in Energy & Environmental Design" Green Building Rating System, is the nationally accepted standard for green buildings developed by the USGBC membership. For more information visit **www.usgbc.org**.

Although the U.S.Green Building Council (USGBC) does not certify, promote, or endorse products and services of individual companies, products and services do play a role and can helps in achieving LEED Certification. The specific products you use will directly effect total point accumulation. AIRGUARD's extensive line of High Efficiency Air Filters includes many varieties, like the V-FORCE®, that meet LEED requirements for bringing energy efficiency and improved indoor air quality to today's buildings.

A-GREEN-810

AIRGUARD®

www.airguard.com

MADE IN THE USA

National Air Filtration Association

c UL us

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CLARCOR ISO 9001:2000 QUALITY SYSTEM
UL CERTIFICATE 10001663 QM

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