

O V E R
35
years

of experience in
MUSEUM
Indoor Air Quality

 **Dectron**
internationale

Keeping history alive



KEEPING HISTORY

smiling

Before

History dictates that the preservation of artwork, literature and national treasures will ensure a continuance of our evolution and help us understand our very nature as humans. Many objects of historical significance are priceless, and as such, require protection at various levels. Inherently, we understand the need to protect artifacts from theft or vandalism, however protection from the ambient air is not as intuitive.

Damage to artifacts due to the environment in which they are located is cumulative and most often irreversible. The science surrounding the protection of art collections, books, multimedia and paintings has been forced to evolve quicker than the historical collections themselves. Only 50 years ago, it would have been inconceivable to provide a critically controlled environment with regards to temperature, humidity and air purification in a museum or library setting. Moreover, the prevalence of basic air conditioning in the older, historical buildings that housed these national treasures was virtually non-existent¹.

Environmental impact on collections within museums, archives and libraries has been traditionally measured by degree of biological, mechanical and chemical damage that has occurred over the life of the object. Although collectibles are as variant in size, material and age as the buildings in which they are housed, **Curators, Conservationists, Engineers and Scientists have all endeavored to understand and establish set guidelines to protect our most treasured assets.**



And Now...

Today, with the use of Dectron Internationale systems, deterioration can be slowed to such a pace that the once detrimental effects on objects of preservation are of minor concern. The effect of airborne pollutants on objects of historical significance can be minimized. By controlling relative humidity, temperature, and environmental contaminants, long-term sustainability of a protective home for the artifacts can be achieved, thereby maximizing the life of the collections.

High efficiency filtration systems can be integrated into building ventilation systems to control the pollutants of concern, such as fine particulates, Acetic acid, Hydrogen sulfide, Nitrogen dioxide, Ozone and Sulfur dioxide². Surface deposition of airborne particulates, reduced-sulfide compounds and organic pollutants have been identified as potentially causing the most harm to stored materials. Measured levels as low as parts per trillion can pose a significant threat³.

Generally, these guidelines cannot be achieved with conventional heating, ventilation and air conditioning equipment. In order to achieve the acceptable Class of Control, Short Fluctuation Limitation and Space Gradient, a precision environment in terms of humidity and temperature control must be created⁴. **Dectron Internationale** offers a single system that combines the entire requirements of space control with the unique added advantage of complete filtration.

1. 2003 ASHRAE Handbook - Applications, Chapter 21, Libraries, Archives, and Museums.
2. Tetreault, J. 2003. Airborne Pollutants in Museums, Galleries and Archives: Risk Assessment, Control Strategies and Preservation Management, Canadian Conservation Institute.
3. Brimblecombe, P., D. Shooter and A. Kaur. 1992. Wool and reduced sulfur gases in museum air. *Studies in Conservation* 37:53-60.
4. Michalski, S. 1999. Relative humidity and temperature guidelines for Canadian archives. Canadian Council of Archives and Canadian Conservation Institute, Ottawa.

Choosing Us?

Through its group of companies, **Dectron Internationale** is uniquely positioned to offer the most comprehensive, feature-rich, premium packaged air treatment systems for **Museum, Library and Archival storage protection**. Our multidisciplinary approach to this challenge has proven to be successful in a multitude of facilities around the world.



In a typical design, it is imperative to supply a consistently clean and tempered air stream to the preservation environment. Often, the public access areas, cold storage vaults, and short-term storage areas must be treated and controlled differently. Moreover, in order to confirm the quality of the air stream, monitoring the return air stream becomes critical. Diagnostic information retrieved from real-time monitors, specifically designed for archival environments by **Dectron Internationale**, can confirm your system's performance on a continuous basis.

The user-friendly **Supervisaire**[®] Microprocessor Controls employed by our **Circul-Aire**[®], **DRY-O-TRON**[®] or **Ecosaire**[®] products can easily be integrated into any building automation system, and are interconnectable to provide for an optimal energy efficient operation. A typical system can be monitored for air filtration efficiency, heating/cooling, and humidity control. In some circumstances, room pressurization monitoring can also be offered within the system, providing a further element of control to limit the migration of moisture and/or airborne contaminants within the protected space.

Your Needs...

At **Dectron Internationale** we realize that every building is unique and must be addressed differently.



Keeping the basic principles of science and engineering in mind, coupled with laboratory analysis, we can and often provide tailored air treatment systems for each application. Consideration of architectural design and the functionality within the preservation environment is our strength.

Ask for **Dectron Internationale** products to be specified as the single air treatment system of choice for your facility.



KEEPING HISTORY

in shape

Ultimate protection



Indoor Air Quality



CA CIRCUL-AIRE

MULTI-MIX® MEDIA

The installation of any gas-phase air purification system requires periodic monitoring of the filter media to ensure its effectiveness and change-out schedule. **Circul-Aire**, through its **TECH-CHEK™** program, provides its customers with an ongoing service to monitor and evaluate their **MULTI-MIX®** media. All testing is followed up with a computerized report listing a media replacement schedule for all units. The **Circul-Aire** integrated approach provides the best assurance that your quality of air will be maintained at its highest standard.

Circul-Aire's **MULTI-MIX®** filter media provides continuous purification for thousands of odorous and corrosive contaminants.



- **TECH-CHEK™** media analysis
- Reactivity Monitoring Service
- Qualitative/quantitative air analysis
- Full range of gas-phase filtration for museum, library, and archival storage

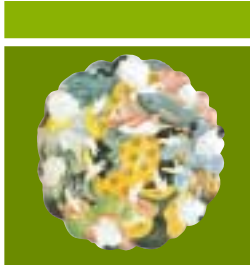


CA CIRCUL-AIRE

AIR SCRUBBERS

Circul-Aire's product engineering group can design the filtration equipment to fit any application regardless of the complexity. Our manufacturing facilities are equipped to produce custom filtration systems with the highest standards of quality control.

- Engineering versatility
- Custom sizes and compact design
- 250 – 18,000 cfm
- Multi-stage filtration
- Designed to maximize gas-phase filtration capability
- Control room air pressurization and filtration
- Tightly sealed cabinet construction
- Integrated fan system
- Outdoor air energy load reduction
- Simplified media replacement
- Low noise and easy maintenance
- Also available in stainless steel and aluminum construction
- **MULTI-MIX®** Chemical Filter Section



Temperature & Humidity



PRECISION ENVIRONMENTAL CONTROL

To protect all valuable and sensitive objects (spaces), it is essential to select air conditioning equipment specifically designed for each unique condition and application. **Ecosaire**® offers maximum design flexibility ensuring continuous and simultaneous control of temperature, humidity, air purity, and air flow within each dedicated operating site.

- 20 Models from 1 to 60-ton cooling capacity
- Horizontal and vertical configurations
- Supervisaire® microprocessor controls
- 100% sensible cooling
- On-demand dehumidification
- DX or chilled-water system
- Dual refrigeration circuits option
- Energy efficient Free-Cool option
- Detachable sections provide clearance through elevators, doors, etc.
- Front and side panels with lift-off hinges for excellent service access
- Low operating and maintenance costs
- **MULTI-MIX**® Chemical Filter Section option

DRY-O-TRON®

CUSTOM DEHUMIDIFICATION

Artifacts, just like humans, are very sensitive to relative humidity. Fluctuation of relative humidity outside the 40-60% RH range can result in increased growth of bacteria, viruses and fungi.

DRY-O-TRON® air dehumidifiers will ensure that indoor relative humidity levels are closely maintained for any specific application.

- 80 Models from 8.1 thru 680 lb./h moisture removal and 1,000 thru 50,000 cfm
- Horizontal and vertical configurations
- Supervisaire® microprocessor controls
- Outdoor rooftop and indoor installation
- Economizer, and Smart Saver Heat Recovery configurations
- Treat 100% outdoor air entering as high as 80°F wet bulb
- Exhaust energy recovery option
- Year-round dehumidification without overcooling the space
- Heat Pump configuration option
- **MULTI-MIX**® Chemical Filter Section option

Our History

 **Dectron**
internationale

 **CIRCUL-AIRE**

 **ecosaire**
BY DECTRON

DRY-O-TRON[®]

 **dia**
designer indoor air™

GEORGE BUSH PRESIDENTIAL
LIBRARY AND MUSEUM
(COLLEGE STATION, TX)

JOHN F. KENNEDY
LIBRARY AND MUSEUM
(BOSTON, MA)

GEORGIA O'KEEFE MUSEUM
(SANTE FE, NM)

SMITHSONIAN NATIONAL MUSEUM
OF NATURAL HISTORY
(WASHINGTON, DC)

NATIONAL AIR AND SPACE MUSEUM
(WASHINGTON, DC)

NATIONAL MUSEUM OF THE AMERICAN INDIAN
(WASHINGTON, DC)

HOLOCAUST MUSEUM HOUSTON
(HOUSTON, TX)

BASS MUSEUM
(MIAMI, FL)

HOLLYWOOD VAULTS
(HOLLYWOOD, CA)

NATIONAL ARCHIVES OF CANADA
(OTTAWA, ON)

NATIONAL FILM BOARD OF CANADA
(MONTREAL, QC)

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