Strobic Air Corporation
A subsidiary of MET PRO CORPORATION

THE MIXED FLOW GAZETTE

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A periodic newsletter with ideas, information, and solutions to roof exhaust problems involving pollution abatement, exhaust re-entrainment, odor control, and energy savings

Where to see us...

As part of our aggressive marketing program, we participate in a variety of industry trade shows and symposia throughout the year. Our goal is not only to meet current and future users of Tri-Stack systems, but also to help support our representatives and distributors with current technical and applications information.

Hopefully we'll see you at one or more of these events:

March 5-8	Pittcon 2000, New Orleans, LA
March 19-20	PDC 2001, Anaheim Convention Center, Anaheim, CA
April 30-May 1	Tradeline's Research Buildings, Hilton Head, SC
July 4-6	AIHCE Expo, New Orleans, LA
July 11-12	Laboratory Safety & Environmental Management 2001
July 16-17	ASHE, Tampa, FL
October 15-16	Tradeline's Animal Research Facilities, San Antonio, TX
November 12-13	Tradeline's College & University Facilities, San Diego, CA

Seminars and technical presentations

In addition to trade show participation, we conduct many seminars and technical presentations during the year to support our national distribution network. These presentations are usually one-day events and have proven to be quite educational for technical people who are not familiar with all of the applications and advantages offered by Tri-Stack systems. If you'd like to arrange for a technical seminar in your area, we'd be pleased to discuss this further with you.

Neurogen Corp. cuts heating costs for makeup air by 30% or more

With energy costs rising dramatically (and virtually no end in sight), some Tri-Stack users are taking advantage of our accessory heat recovery units to save thousands (or hundreds of thousands) of dollars a year in energy costs. This capability is especially useful for research laboratories, hospital/infirmary isolation rooms, cleanrooms and pharmaceutical manufacturers that require conditioned 100% makeup air in their facility. Obviously it costs money to heat or cool this air, and substantial savings can be realized by taking the heat from building or process exhaust and putting it back into the intake or "makeup" side of the HVAC system.

This is exactly what Bill Waldron, facility manager at Neurogen Corp., in Branford, CT, was thinking as he confronted the prospect of very high energy costs after completing construction of a new 20,000 sq.ft. chemical research building. Neurogen is involved in research and early stage development of drugs, and occasionally enters into joint ventures for production and marketing of specific drugs with other pharmaceutical organizations. Waldron benchmarks the average cost to condition makeup air in the pharmaceutical research industry at about $3.71 per cu.ft. per year. He also said that total energy costs for his industry can easily average more than $6 per sq.ft. per year.

Since code prohibits recycling of all air from Neurogen's laboratory workstation environment, it must be exhausted. This includes both the ambient air and the laboratory workstation fume hood exhaust that is considered as "100% exhaust, 100% makeup." The facility is a "constant volume building," which means that the volume of air that enters the building must equal the volume of air that exits it. Faced with the

Continued inside

A typical Tri-Stack system with accessory heat recovery unit.

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high cost of heating or cooling makeup air, Waldron sought a practical and cost-effective solution. As it turned out, most of the solution was already in place, just above his head.

The solution was on the roof

That's because Neurogen's 18 laboratory workstation fume hoods were being exhausted on the building's roof with Tri-Stack mixed flow impeller exhaust systems. Each Tri-Stack system – connected to an exhaust plenum serving the workstations – provides high efficiency exhaust to eliminate pollution and the possibility of re-entrainment, a particularly critical issue when conditioned air is introduced into a building on a constant flow basis.

Heat recovery

The Tri-Stack systems at Neurogen were designed to accommodate a unique heat recovery unit (essentially a heat exchanger containing coils filled with a solution of glycol and water) that extracts ambient heat from the laboratory workstation fume hood exhaust stream before it is discharged above the roofline. This warmed air is then transferred to the intake or makeup side of the building's ventilation system, and reintroduced as part of the conditioned air entering the building resulting in a substantial reduction of the amount of natural gas required to preheat the makeup air.

Waldron said that in winter, "there were days when we were putting about 10° F into the makeup air simply by treating the air prior to its exit out of the exhaust system and forcing it back into the makeup side." He explained that 10° F was the temperature difference between intake air (at outside ambient temperature) and the makeup air after it was passed through the Tri-Stack system's heat exchanger coils. Waldron stated that "for every degree you add, you reduce your energy costs about 3%. A 10° F rise in intake air translates into a 30% energy saving." As he says, "In addition to reducing our costs, we also help contribute to a cleaner environment since less fossil fuel is consumed."

Waldron cited some specifics at Neurogen. Since the company is located in the Northeast, it experiences varying temperatures during the year. Conditioned makeup air is either cooled with fume hood exhaust during the cooling season or warmed during the heating season, and the system is only usable when the outside air temperatures are below 40° F or above 80° F. "You need a big enough difference between outside and inside air to make it practical," Waldron added. With regard to cooling air in warmer temperatures, Waldron pointed out that if outside air at 90° F is brought back into the building and sent through the heat recovery system, the air temperature drop is typically 4°-5° F. Again he equates these figures to a 3% drop in energy consumption for each 1° F drop in air temperature.

Where to read about us...

You can read about Tri-Stack fans and systems in a broad cross-section of industry journals throughout the year. These articles focus on tutorials, case histories, applications, and other areas of interest to facility managers, contractors, engineers, architects, HVAC specialists, laboratory designers and many others. Following is a brief summary of tentative article subjects – and publications – scheduled for this year:

FM DATA MONTHLY
Technical/tutorial article on heat recovery applications for Tri-Stack systems

FACILITIES MANAGER
Tutorial article on mixed flow technology/Tri-Stack system applications for pollution abatement, re-entrainment prevention, and odor control

LAW ENFORCEMENT NEWS
Case history article on Nebraska State Crime Patrol Laboratory on fume hood exhaust systems to help prevent DNA contamination for criminal investigations

PHARMACEUTICAL ENGINEERING/ISPEAK
Tutorial/case history article on Tri-Stack systems at Albany Molecular Research, Inc. for prevention of laboratory fume hood exhaust re-entrainment

BUILDING DESIGN & CONSTRUCTION
Tutorial article on Tri-Stack systems/heat recovery at Dartmouth College

CHEMICAL PROCESSING
Tutorial article on Tri-Stack systems for odor prevention at industrial wastewater treatment facilities

HYDROCARBON PROCESSING
Case history article on Tri-Stack systems for exhaust re-entrainment prevention at Ashland Chemical Corp.

PLANT ENGINEERING
Technical/tutorial article on Tri-Stack systems/mixed flow impeller technology

HPAC ENGINEERING
Tutorial/case history article on Tri-Stack systems for heat recovery at Neurogen Corp./Dartmouth College

PHARMACEUTICAL ENGINEERING
Case history/tutorial article on heat recovery for Tri-Stack systems at Neurogen Corp.

MODERN HEALTHCARE
Case history article on Tri-Stack systems for diesel generator exhaust at Meridian Health Systems' Brick Hospital

POLLUTION EQUIPMENT NEWS
Tutorial article on Tri-Stack systems for odor control applications at wastewater treatment/chemical processing facilities

ENGINEERED SYSTEMS
Tutorial article on heat recovery with Tri-Stack systems for 100% makeup air facilities

As in the past, we'll prepare reprints for all (or most) of these articles as they are published and make them available to you for distribution to your customers and prospects.

National sales meeting representative awards

Our national sales meeting was held in conjunction with ASHRAE in Atlanta, GA at the end of January. At the meeting performance awards were given to outstanding sales representative organizations in each of three regions across the country. The awards were created to acknowledge the special efforts put forth by these organizations, and were presented to the recipients, ***"In appreciation for your outstanding sales efforts and dedication to customer satisfaction."*** The awards were announced by Strobic Air Vice President & General Manager Paul A. Tetley, and National Sales Manager Rich Maialetti. Here are photos of the recipients.

*The award for **National Sales Agent of the Year/2000** was presented to Rick McGinley, Vice President at DAC Sales in West Kennebunk, ME by Paul Tetley (right).*

*DAC Sales also was awarded the **Eastern Regional Sales Agent of the Year** Award at ASHRAE. Shown in this photo (left to right) are Rich Maialetti, Paul Tetley, and three DAC Sales representatives including Rick McGinley, Jim Shiminski (technical sales representative), and Ed Henningsen (president).*

*DMG Corp., Whittier, CA was named **Western Regional Sales Agent of the Year**. On the left is George Orff, president of DMG with Strobic's Rich Maialetti (center) and Paul Tetley.*

*BTU Company, Westmont, IL was awarded **Central Regional Sales Agent of the Year Award.** In this photo BTU Vice President Jack Luberda (left) is being congratulated by Paul Tetley (right) while Rich Maialetti (center) looks on.*

The Strobic Air/Safety Design Response Team:

At your service...

Our Safety Design Response Team is also available to help analyze your existing pollution abatement and/or odor control system, without obligation. Chances are we can offer a number of alternative design plans to enhance performance, add efficiency, lower costs, reduce stack heights, add redundancy, and provide for future growth.

How to get more information...

Please send me full details about Strobic Air's Tri-Stack™ systems and accessories for the following application(s):

_____

_____

_____

My requirement is: ☐ Immediate ☐ Future ☐ Reference Only

Name _____

Title _____

Company _____

Address _____

City _____ State/ZIP _____

Telephone (_____) _____

Fax (_____) _____

Email _____

☐ Please send additional technical literature

☐ Please call to arrange a demonstration

☐ Please send CD-ROM on Acoustical Silencer Nozzles™

☐ Please send CD-ROM on Tri-Stack™ systems/accessories

☐ Please send feature article reprints

☐ Please send information on CAD files and Selection Programs

☐ Please send an Engineering Guide

☐ Please delete my name from your mailing list

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