From the Source

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P3 Program Revamped to Better Recognize Environmental Leaders

by Bob Donaghue, Assistant Director

Instilling a pollution prevention ethic in the public and business community is a major part of P²AD's mission. Recognizing organizations in Georgia that serve as environmental leaders has always been a priority for P²AD. Historically, the division has recognized these leaders through an annual, competitive Governor's Awards program and a certification program called Pollution Prevention Partners (P3).

In fall 2002, P²AD began restructuring its recognition program to provide greater benefits to participants, merge our two recognition programs, streamline the application process, encourage a systems approach to continuous improvement, and align the program with other environmental recognition programs such as the U.S. EPA's National Environmental Performance Track.

Our revamped recognition program is still a "work in progress," but we are putting the finishing touches on it. The new program will better meet the needs of all our clients, such as non-profits, agri-business, health care, hospitality, military, manufacturers, and others. It will include an advocate level to provide all organizations an opportunity to support the program, and three levels of increasing commitment to showcase an organization's environmental stewardship effort. The highest level will be reserved for organizations that have made substantial progress toward sustainable operations and corporate social responsibility.

A panel of judges, representing a cross-section of business, government, and academia, will evaluate the applications and determine whether criteria for program acceptance have been met. As organizations advance through the various levels, greater incentives will be provided

See **Recognition Program,** *page 4*

15 State Agencies Represented at LEED™ Green Building Training

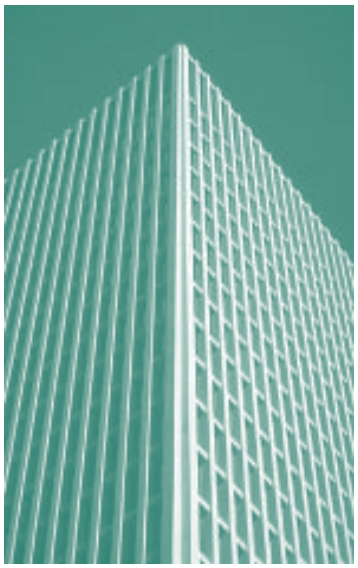
by Teresa Shiflett, Sustainable Building Specialist

The Georgia General Assembly has allocated almost $1.5 billion for new construction projects over the next year. P²AD's sustainable construction program is working to ensure that these new buildings are as "green" as they are cost-effective.

On Jan. 21, 2003, 30 people representing 15 state agencies took part in a one-day workshop sponsored by P²AD to learn about a set of design, construction, and operational guidelines for sustainable buildings. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is one of several voluntary, consensus-based national standards for developing high-performance, sustainable buildings.

The participants learned how the LEED™ "whole-building" approach assesses a building's performance and meets sustainability goals through site development, water conservation, energy efficiency, materials selection, and indoor environmental quality. These standards are currently being applied to many government building construction projects around the nation, and workshop instructor Bob Kobet, AIA, from the U.S. Green Building Council (USGBC) discussed the application of the LEED™ criteria to the design and operation of State buildings (both owned and leased).

Participants also learned that by using LEED™ standards, they could expect to receive both long-term financial and environmental benefits. Though LEED™ certified



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DIRECTOR'S COLUMN

by G. Robert Kerr

Stephen R. Covey, author of *The Seven Habits of Highly Successful People*, finds wisdom in Chinese philosopher Lao-Tzu's aphorism: "Give a man a fish and you feed him for a day; teach him how to fish and you feed him for a lifetime."

It may surprise you to find that Wildlife Resources is not the only DNR division in the business of teaching people how to fish. In P²AD's case, we focus on helping manufacturers, commercial operations, and institutions learn how to be more efficient in the use of raw materials, water and energy; and how to reduce the generation of waste by-products; and frequently, how to save money by doing it. In this troubled economy, P²AD offers many of the right solutions at the right time.

Over the past 10 years, our staff of engineers and scientists has honed their skills working with business to reduce all forms of pollution and save money. Some examples include: Southwire Industries, Synthetic Industries, and the Georgia Department of Corrections. Corrections alone has found a potential of $500,000 in savings at just three facilities, and they will be able to implement many of these same cost-cutting efficiency measures at all 50 of their prisons and facilities.

In addition to our one-on-one work with clients, many of our efforts focus on providing training to various sectors. This quarter we hosted a series of sold-out water conservation workshops to help local governments develop cost-effective water conservation programs for their communities (see page 3). We also provided training to 15 different state government agencies on the benefits of incorporating "green building" practices into their design and construction projects (see page 1). These trainings will hopefully help communities throughout Georgia conserve our precious water and other natural resources, and transform the way that Georgia agencies build buildings - saving the state across the board.

Also in this issue, you will read about the impressive results of America Recycles Day activities, including the many mercury collection events (pages 6 and 7) and a contest at Robbins Air Reserve Base (page 11). Though our programs and client base continually expand and our newsletter reflects this, we are not neglecting our manufacturing client base in their P2 efforts. In this issue we provide the latest guidance on high-efficiency paint spray equipment for this audience (see page 5).

Finally, this past quarter we completed our 2002 Biennial Report and it is available both in hard copy (contact us at (404) 651-5120 for copies) and electronically at www.p2ad.org. This report includes metrics of our program successes and also addresses how our programs are fulfilling our larger vision. I encourage you to read all about our efforts in this new publication.

Terry Gandy, Senior Budget Director at the Georgia Office of Planning and Budget once said that P²AD is the "best kept secret in state government." We are changing that. Let's go fishing.

From the Source

From the Source is a quarterly publication of the Pollution Prevention Assistance Division (P²AD) of the Georgia Department of Natural Resources (DNR). P²AD provides free, confidential technical assistance in the areas of pollution prevention, resource conservation, waste reduction, by-product reuse, and recycling. Our clients include manufacturers, commercial businesses, institutions, military and government facilities, agricultural operations, consultants, and the citizens of Georgia.

Please contact us with address corrections, inquiries, and opinions. Articles in *From the Source* may be reprinted with permission from P²AD. This publication is also available online at www.p2ad.org.

For more information about P²AD's services, contact the division at (404) 651-5120, (800) 685-2443 (outside Atlanta), or via email at info@p2ad.org.

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From the Source Goes Electronic!

In our previous issue, we gave our readers notice that we were starting our transition from paper to electronic distribution. This move will not only help us prevent pollution by reducing paper and ink consumption, but will also help us save valuable state funds in this difficult economy. We have heard feedback from some of you and added you to our email distribution list.

Please take a moment to confirm your interest in receiving this publication, either electronically or in paper form. Email us at info@p2ad.org or fax your address to (404) 651-5130.

Water Efficiency. . . .A Worthwhile Investment

Local government officials gather around the state to discuss water conservation opportunities

by Judy Adler, P.E., Pollution Prevention Engineer

Despite heavy rains in fall 2002, local government officials filled crowded rooms across the state to learn about water efficiency. P²AD sponsored five workshops to help local governments develop cost-effective water conservation programs for their communities, bringing together a coalition of 18 different organizations to help plan the workshops.

Long-term conservation solutions can result in significant cost savings for local governments, protect ecosystems, and satisfy the demands of growing populations. "Water conservation will *always* be the cheapest new water you can buy if you consider the full acquisition costs," said Mary Ann Dickinson, Executive Director of the California Urban Water Conservation Council. Water efficiency leads to cost savings for both water and wastewater utilities through delayed or avoided infrastructure expansions, and operation and maintenance cost savings.

Speakers at the sold-out workshops highlighted success stories from communities across the U.S. and right here in Georgia. Guy Pihera, Water Production Manager for the Clayton County Water Authority, said the best place to look for water conservation opportunities is in your own backyard. Clayton County installed automatic flushing systems to maintain water quality in their water distribution lines. By regulating the frequency and volumes of water used for flushing, this system has reduced potable water demand by more than three million gallons per month.

Frank Banks and Michael Coon of the City of Savannah echoed this statement and described Savannah's aggressive leak repair and detection programs and water reclamation and reuse system. Reclaimed water from the President Street Wastewater Treatment Plant is used to irrigate the new Savannah Harbor Course on Hutchinson Island and Savannah Golf Club.

> ***"Water conservation will always be the cheapest new water you can buy if you consider the full acquisition costs."***
>
> *-Mary Ann Dickinson, Executive Director California Urban Water Conservation Council*

President and CEO of Dalton Utilities Don Cope presented water conservation rate structures as a tool to reduce water demand and fund water conservation efforts. Dalton Utilities has implemented one of the most progressive water conservation rate structures in the state. Mr. Cope described Dalton's inverted block rate as "the more you use, the more you pay." Through water conservation efforts, Dalton Utilities has reduced water demand by 7.1 million gallons per day over the past five years, despite a growing customer demand.

Dr. Rose Mary Seymour with the University of Georgia described the principles of water efficient landscaping, dispelling the myth that Xeriscaping means cactus and rocks. In Georgia, we have the luxury of gorgeous drought-tolerant plants. Post Properties apartment complexes have some of the most beautiful landscapes in Atlanta, and their landscaping professionals use Xeriscaping principles.

The men and women behind the scenes. Members of the workshop steering committee included (l-r) Bryan Wagoner, Roy Fowler, Joe Krewer, Judy Adler, Darcie Boden, Alice Miller-Keyes, Frank Stephens, Becky Mixon, and Rose Mary Seymour.

P²AD dispelled another myth that new ultra-low-flush toilets require two flushes. Since low-flow fixtures became mandatory in 1994, the design of plumbing fixtures has improved dramatically. Plumbing retrofit programs can reduce residential water use in a single-family home by 30% without any behavioral changes. A toilet retrofit program in Santa Monica, California, saved $9.5 million dollars through avoided purchases of imported water and wastewater treatment plant expansions. Santa Monica has a retrofit-upon-sale ordinance that requires installation of water-saving devices whenever a property is sold or transferred.

P²AD also provided information on its free water efficiency assistance services for industry and institutions, and presented success stories from across the state. Unilever Home and Personal Care, a manufacturer of laundry detergents in Cartersville, reduced wastewater generation at its facility by 90% through reuse and rainwater harvesting systems. Wellstar Health Systems Laundry in Marietta, reduced water use by 85% through the installation of a wastewater treatment and reuse system. This system saves the company $250,000 per year in energy, water, and chemical cost savings. Both Wellstar and Unilever have won P²AD Governor's Awards for their water conservation achievements.

Under the Ground Water Use Act and the Water Quality Control Act, permit applicants for groundwater or surface water withdrawals exceeding 100,000 gallons per

See Water Efficiency, *page 8*

Allowing Donation of Undeliverable Samples Saves U.S. Postal Service $$ and Resources

by Vanessa Freeman, Information Manager

On average, U.S. post offices stockpile an estimated 164,000 tons of undeliverable product samples per year. Undelivered items include food, toiletries, periodicals and other publications, merchandise and product samples, and over the counter medications.

In the past, these items were disposed of in the trash. Thanks to the Reuse Development Organization, Inc. (ReDO), the National Waste Prevention Coalition, and the King County (Washington) Solid Waste Division, these undelivered items will now go to those who need them most.

These groups gathered input from around the country, wrote new regulations for the U.S. Postal Operations Manual, and contacted top environmental officials to get the new regulations passed. It's now easier for the U.S. Postal Service to donate undelivered product samples and other items to food banks and homeless shelters.

The new regulations, that went into effect last October, state that undeliverable product samples are to be donated to food banks, shelters, or other non-profits. The U.S. Postal Service is to be commended for itsefforts to reduce the amount of waste as well as making these items available to the many Americans who need food and supplies.

How can your charitable non-profit organization benefit from these changes?

- Contact your local post office for more information.
- Ask to be put on a list to receive undelivered items. You will be required to sign a waiver for food items.
- Print a copy of the regulations from the website below and take it to your post office. Some may not be familiar with the new regulations yet.

Download new regulations from http://www.usps.com/cpim/ftp/bulletin/2002/html/pb22088 in the "Domestic Mail" section of the Postal Bulletin. For more information on waste minimization measures that your organization can take, visit P²AD's website at www.p2ad.org.

Recognition Program, *continued from page 1*

to spur continuous improvement in waste reduction efforts.

P²AD is in discussions with the Environmental Protection Division (EPD) on various regulatory incentives that could be granted to organizations that have gone beyond compliance, and are model corporate citizens. We are also exploring methods to increase social opportunities for the participating organizations to mix with other businesses striving for sustainability, DNR decision-makers, non-governmental environmental organizations, and researchers in sustainable development at our major universities.

As a result of these significant changes in our recognition program, we will not offer Governor's Awards for Pollution Prevention this year. During National Pollution Prevention Week in September 2003, P²AD will host a luncheon in lieu of the traditional Governor's Awards ceremony to introduce our new recognition program to the public. We appreciate your patience as we make the transition to a program that we feel will better recognize Georgia's environmental leaders.

Please visit www.p2ad.org for updates on the new program.

Choosing the Right Tools for the Job

Part Two of a Series on Liquid Spray Finishing Process Efficiency

by Bill Vondersmith, Pollution Prevention Engineer

Part one of this series discussed application efficiency[1] associated with paint spray operations and the effect on quality, waste and pollution. This article will look at the effects various types of paint spray equipment can have on application efficiency. While the high performance coatings being applied today differ a great deal from those used a decade ago, application equipment has changed relatively little.

It is important to determine the best application method for each coating. To do this, one must understand the advantages and limitations of different spray finishing equipment. The most important questions to ask when selecting equipment are:

- Will the equipment produce the required finish quality?
- Is the equipment compatible with the coating?
- Will the equipment keep up with production?
- Is the equipment acceptable to the spray operator?
- Does the equipment comply with environmental regulations?

It is possible that the answers to some questions may conflict. For example, the use of a high volume low pressure (HVLP) spray gun may comply with environmental regulations, but it may not adequately apply the paint. Therefore, knowing how the various applicators work is necessary to select the right equipment for the job. Most industrial paint spray equipment can be categorized by how the coating is atomized. For the equipment discussed here, air or hydraulic pressure is used to atomize coatings (i.e., break up the coating into small droplets).

Air Atomization

Airspray equipment uses the energy of compressed air to atomize the coating. Conventional and HVLP spray guns fall in this category. The optimal use of airspray equipment is a function of fluid delivery rates and atomizing air pressure. The fluid pressure should be kept at the lowest possible setting to maintain a flow rate suitable for production. This may require experimenting with fluid pressure and nozzle sizes. After the fluid delivery rate is set, a minimum amount of atomizing air is used to provide the required finish quality. Using more air than necessary will over atomize the coating and result in excessive overspray.

While conventional airspray guns can operate at high air pressures to atomize coatings, improper adjustment of the devices can lead to poor application efficiency. Although this equipment can be used efficiently when properly set-up, improper use has given it a bad reputation in regard to transfer efficiency.

HVLP guns are designed to limit the atomizing air pressure to 10 psi, which addresses the control problems of the conventional guns. Although HVLP guns are promoted as being highly efficient, their limits are not always understood. Since the air energy for atomization is limited, overspray is reduced and transfer efficiency increases. Increases of 40 to 60 percent are not uncommon with the use of HVLP guns. However, HVLP guns can have a problem atomizing high viscosity coatings due to the low energy of the atomizing air. Frequently this is compensated for by reducing the fluid delivery rate and/or viscosity. These changes are not always possible or may have a negative effect. In many cases, conventional airspray guns that are properly adjusted perform more efficiently than the HVLP equipment, particularly when high viscosity coatings are being applied.

Hydraulic Atomization

Airless and air-assisted airless spray equipment use hydraulic fluid pressure pumped through a small diameter opening in the spray gun to atomize the coating. As the high pressure fluid exits the small opening it forms a sheet. The sheet expands and folds onto itself along its leading edge causing the fluid stream to tear apart and atomize. The velocity of the fluid exiting the gun tip determines the point at which it will become atomized. The higher the fluid velocity the faster atomization occurs. The velocity of the fluid exiting the gun is a function of the tip opening size and the fluid pressure. With these systems fluid pressure can range from 300 to 5,000 psi.

One characteristic of airless equipment, is that the fluid pressure for adequate atomization will likely differ from that needed to form a well-developed spray pattern. For example, while adequate atomization can be achieved at 1000 psi, the spray pattern may contain tails, thus making it unacceptable. Increasing the fluid pressure to 1500 psi may be needed to get a well defined spray pattern.

Air-assisted airless spray equipment uses the same hydraulic atomizing technology, but air is used to shape the spray pattern. This allows the air-assisted airless equip-

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RESULTS OF AMERICA RECYCLES DAY

Exchange Programs Remove Mercury from our Environment

A Quick & Easy Approach

by David Gipson

One of the goals of P²AD's mercury reduction program is to help develop local recycling programs for household mercury devices. A thermometer exchange event is an excellent way to provide an incentive for households to recycle their mercury fever thermometers. It's also an easy, low-cost program for the host. Since the award of EPA grant funds in October, 2002, P²AD has helped four local government recycling offices and one school plan, promote, and operate exchanges.

State Employees Do Their Part!

To help celebrate America Recycles Day Nov. 15, 2002, P²AD held a collection event for state employees to recycle household mercury fever thermometers, rechargeable batteries, and button batteries. We also took old cell phones and donated them to a group that reprograms them to dial 911 and distributes them to victims of domestic violence. Employees from the following state agencies/ offices participated:

- Department of Agriculture
- Department of Human Resources
- Department of Natural Resources
- Department of Veterans Services
- Georgia Technology Authority
- Secretary of State

The Results are in...

Thermometers and thermostats

246 thermometers
4 thermostats

Cell phones

30 cell phones
15 batteries
29 chargers

Other

1 case fluorescent light tubes
6 jars of elemental mercury

Household batteries

1 sealed lead (Pb)
3 nickel metal hydride (Ni-MH)
1 nickel cadmium (Ni-Cd)
1 lithium ion (Li-ion)
5 button batteries

Some batteries, particularly button batteries, contain mercury.

TOTAL: 8,597 grams or 18.95 pounds of mercury

MERCURY COLLECTION EVENTS

Other Collections Around the State

Trickum Middle School in Stone Mountain held a two-day exchange program on Nov. 13-14, their early release, parent conference days. Organizers placed a P²AD-designed flyer in the school newsletter and mailed the "Mercury Awareness Program" brochure to parents prior to the event. A P²AD specialist attended the first day of the event and trained a teacher for the second day. The parents were very thankful to get rid of their old thermometers and thrilled to receive a digital replacement. The event resulted in the collection of 109 mercury fever thermometers.

Have an old cell phone lying around?

Donate it and help others through www.collectivegood.com and www.donateaphone.com

Sandy Springs Recycling Center and the Newton County Landfill began their programs in October, 2002. They both customized P²AD outreach materials to economize on the cost of promoting their collections. Both locations have received several ounces of elemental mercury stored in glass jars from residents have been trying to get rid of it properly for several years. The sites also collected 80 thermometers and a case of fluorescent light tubes.

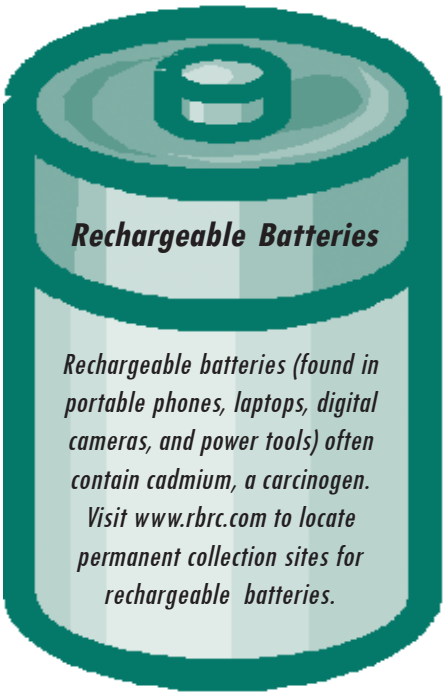
Most recently, P²AD has helped Athens-Clarke County and Statesboro-Bullock County plan and promote mercury fever thermometer exchanges. P²AD's funding priority is to local government recycling center exchange programs and school districts that want to rid their schools of all mercury and replace their mercury fever thermometers.

Organize a Thermometer Exchange in Your Community

Thermometer exchanges can be sponsored by government recycling centers and schools. Contact P²AD's David Gipson at (404) 657-5208 or david_gipson@p2ad.org to find out how.

Did you know?

- The release of just **one gram of mercury per year** into the environment is enough to contaminate all the fish in a lake with a surface area of **20 acres.** (Source: U.S. EPA).
- Just think of all of the pollution that was prevented by removing **8,597** grams of mercury from the environment through these collection events!



Radon Mitigation and Measurement Training Available

Expand your business and help serve the increasing demand for radon services in Georgia

Are you a builder, contractor, home inspector, remodeler, or plumber looking to expand your business in these difficult economic times? If you work in the building industry, you may be able to incorporate radon measurement and/or mitigation services into your business with very little cost and tap into a growing industry.

Radon is a naturally occurring radioactive gas that forms in the ground and can move into buildings through openings in the structure. Approximately 15,000 lung cancer deaths per year in the U.S. are attributed to radon exposure. The U.S. EPA has set an Action Level for radon at four picoCuries per liter of air. If the radon concentration is at or above that level in a residence or other building, EPA recommends mitigation to reduce occupant exposure.

P²AD, as the agency charged with handling radon issues for the state, developed the Georgia Radon Program in part to alert residents to the risks posed by this gas. As our public awareness campaign progresses, there will be an increasing demand for radon measurement and mitigation services in Georgia.

To help build this service industry, the Southern Regional Radon Training Center (SRRTC) is conducting training in conjunction with the University of Georgia Cooperative Extension Service, P²AD, and Southface Energy Institute. SRRTC was established in 1990 in the College of Engineering at Auburn University to provide radon awareness and conduct radon training programs throughout the southeast.

Radon Measurement Operator (RMO) Course

Mar. 12 and Mar. 15

This two-day (16-hour) course is designed to prepare individuals to provide competent residential radon measurement services and to sit for the National Environment Health Association (NEHA) and National Radon Safety Board (NRSB) measurement certification exams. The registration fee is $375 and the exam fee is $125.

Radon Measurement & Mitigation Combined Course

Mar. 10-14

This five-day course consists of a standard RMO course for the first two days, with intensive coverage of mitigation-specific topics and classroom and field exercises the last three days. The registration fee is $725 and the exam fee is $125.

Both courses will be held at Southface Energy Institute, located in Midtown Atlanta at 241 Pine Street NE (next to SciTrek Science Museum). A confirmation letter to registrants will include a map, hotel and other logistical information. More information about Southface can be found at www.southface.org.

Contact Jack Hughes, Robby Cardwell or Jan Carrington, SRRTC at (800) 626-2703, (800) 446-0382, or email janc@eng.auburn.edu for more information on the training center programs. The registration form is available at www.p2ad.org. For more information on the Georgia Radon Program, contact Marci De Sart at (404) 657-5204 or marci_desart@p2ad.org.

Water Efficiency, *continued from page 3*

day are required to submit water conservation plans (except for agricultural water usage). Permit holders are also required to submit a progress report five years after the issuance of a new or modified permit.

The workshop audiences gave their opinions of the Environmental Protection Division's current water conservation planning requirements and guidelines. Many participants recommended adding implementation and enforcement requirements, in addition to planning requirements. Local governments also expressed the need for state funding to jump-start water conservation programs in their communities. Once these programs are up and running, they could fund themselves through water rate structures and cost savings

Mary Elfner, Water Conservation Coordinator for the Department of Natural Resources, outlined current water conservation efforts in state government and the plan to develop and implement a state-wide water conservation plan. Ms. Elfner stressed that it is everyone's responsibility to conserve water, and we must practice what we preach. As Mohandas K. Gandhi once said, "You must be the change you wish to see in the world."

If you would like more information on the water conservation workshops, including presentations and handouts, please visit www.p2ad.org.

Staff News

Adler, Seymour Chosen for Water Wise Council Posts

Judy Adler, P.E., an engineer with P²AD, was elected President of the Georgia Water Wise Council (GWWC) during the group's January meeting. Ms. Adler manages water efficiency programs for P²AD and works with Georgia manufacturers and institutions on environmental management systems.

Dr. Rose Mary Seymour, with the University of Georgia, was elected President-Elect of the the Council and will take the lead in 2004. Dr. Seymour receives funding from P²AD to develop educational programs and research projects for pollution prevention and resource conservation in urban agriculture.

GWWC is a non-profit education corporation focused on promoting water conservation in Georgia. It is a voluntary partnership of government, education, business, and citizens. The Council is responsible for publishing, distributing, and promoting *Xeriscape: A Guide to Developing a Water-Wise Landscape*. If you would like more information on GWWC, visit www.gwwc.org.

Stephanie Busch Elected Georgia Recycling Coalition Officer

Stephanie Busch, P²AD Program Manager, was elected to serve as secretary of the Georgia Recycling Coalition (GRC) Board of Directors for the 2003-2005 term. The Georgia Recycling Coalition's mission is to complement and coordinate activities relative to recycling, to foster communications among professionals, organizations, government agencies and individuals, and to promote and enhance reduction and recycling programs throughout the state. For more information on GRC, visit www.georgiarecycles.org.

Teresa Shiflett Joins Staff as Sustainable Building Specialist

Teresa Shiflett joined the staff of P²AD in October, 2002 as a Sustainable Building Specialist. She will work with commercial, institutional, and industrial sectors (involved with) the building industry on P2 initiatives. Her major duties will be to promote sustainable principles and practices for the design, construction, renovation, demolition and deconstruction of buildings in Georgia, particularly for State government projects. She will also work with these industries to minimize construction and demolition (C&D) waste and increase recycling of C&D materials through statewide market development activities.

Teresa has 19 years of solid waste management experience, and most recently owned and operated a consulting firm based in Tampa, Florida. Her experience includes planning, design, construction management of solid waste, C&D and recycling collection and disposal systems. Teresa has performed more than 20 waste characterization studies for the public and private sector and was actively involved in market development, local solid waste policy development and training in Florida as the founding chairman of RecycleFlorida Today, Inc., the recycling association of Florida. She also served as Co-Chair of the Governor's Recycling Markets Advisory Committee in Florida. Teresa, a native of Lindale, Georgia, has a B.C.E. in Civil Engineering and a M.S.E. in Environmental Engineering from Georgia Tech.

Application Equipment *continued from page 5*

ment to operate at lower fluid pressures, reducing equipment wear and improving efficiency.

Finish Quality and Atomization

Airless and air-assisted airless equipment have the capability to perform at high production rates and atomize high viscosity coatings to provide quicker film builds. The trade off is courser atomization and a textured finish (that may be desired in some applications). On the other hand, using HVLP and conventional air spray equipment to apply lower viscosity coatings, produces a finer atomization, but at lower fluid delivery rates (meaning slower production). This equipment is generally used where a smooth, high-quality finish is required.

Summary

The first article in this series established that to run a successful coating operation, the equipment must perform at the highest possible application efficiency. The selection of the proper application equipment is critical to achieving this goal. Knowing the limitations, advantages, and trade offs associated with the various equipment and how it all relates to your operation is essential to choose the appropriate equipment.

If you are interested in assistance with your spray painting operation or have questions, contact Bill Vondersmith at (404) 651-7446, or e-mail: bill_vondersmith@p2ad.org. Information for this article was adapted from: Glen Muir, Graco Inc., Brian Gedlinske. IWRC (Summer 2001) Application Equipment Selection Considerations for Liquid Spray Finishing. Ahead of the PAC²E (pp. 7-10). Cedar Falls, IA: Iowa Waste Reduction Center - University of Northern Iowa.

1. Application efficiency associated with paint spray operations is composed of three basic elements: finish quality, transfer efficiency (TE), and dry film build efficiency (BE).

LEED *continued from page 1*

buildings have been found to often require a 1-3% increase in capital costs on the front end, the payback during the operation of these buildings can be substantial.

Georgia agency representatives at the workshop included staff from the Department of Natural Resources – Parks Division and Pollution Prevention Assistance Division, the Board of Regents, the Georgia Building Authority, the Department of Corrections, the Department of Administrative Services, the Department of Community Health, the Georgia World Congress Center, Georgia Southern University, Georgia Institute of Technology, the Department of Public Safety, the Office of Planning and Budgets, the Board of Regents, the Georgia State Financing and Investment Commission, and the Department of Juvenile Justice. Response to the session was very positive, with a number of participants remarking that it was an "excellent workshop." Participants noted the value of learning what can be done to improve the quality of buildings, hearing about case studies in Georgia, networking with other peers interested in green building, and receiving resource materials. Based on the participant's feedback, P²AD will likely expand future LEED™ trainings to two-day courses and include more detailed information on Georgia LEED™ projects.

This workshop was sponsored by P²AD in partnership with the Georgia Association of State Facilities Administrators (GASFA), the Construction Division of the Georgia State Financing and Investment Commission (GSFIC), and the Financial Managers' Council (GFMC).

P²AD, LEED™ & Sustainable Construction

Recognizing the need for criteria to guide sustainable building in Georgia, P²AD joined the USGBC in 2002. Through P²AD's membership, all state agencies have access to the Council's member-only benefits. The USGBC's membership, representing building industry professionals worldwide, developed the LEED™ certification program that establishes guidelines for new building design, construction and operation. Several state and local governments have adopted or developed similar guidelines for commercial buildings.

Standard construction practices can lead to the over-consumption of natural resources during construction, operation and maintenance. Sustainably built structures, on the other hand, reduce natural resource consumption; improve occupant comfort and health; and lessen impacts on burdened infrastructure. Sustainable construction is consistent with P²AD's mission to conserve resources, spend tax dollars wisely and promote the development of commerce that uses sound environmental practices.

LEED™ Projects in Georgia

The workshop also showcased some of the 17 new construction projects in Georgia now seeking LEED™ certification. These include two laboratories, four higher-education buildings, three K-12 facilities, four park buildings, three commercial office buildings, and one conference center. According to David Freedman, Chief Engineer for the Department of Natural Resources, Parks Department, the involvement of the Parks Department in four LEED™ registered projects has influenced many sectors of the building industry. Architects, engineers, contractors, interior designers, and owners now all sit at the table to discuss the environmental aspects of the project from day one of the design process. Architects that hired LEED™ consultants in the past are now active members of the USGBC and have become LEED™ Certified Professionals to meet the increased demand for LEED™ design projects in Georgia.

Upcoming Sustainable Construction Activities

P²AD used the LEED™ workshop as an opportunity to determine the usefulness of our FY03 goals that focus on promoting sustainable building practices. A survey of the participants found support for the following activities:

- Developing a listserv for state employees to post sustainable construction updates
- Developing an online database of Georgia manufacturers whose products satisfy LEED™ materials criteria
- Consolidating existing databases into one comprehensive online source for the reuse and recycling of construction debris
- Developing question and answer fact sheets addressing the issues and perceived barriers to sustainable building for state buildings
- Developing online case studies for LEED™-registered projects in Georgia and links to similar projects around the country
- Continuing workshops and presentations on LEED™ certification throughout Georgia
- Convening focus groups to discuss building codes, legislation/executive orders, financial accounting, commissioning, procurement, and training in relation to sustainable construction
- Organizing a quarterly roundtable discussion of state LEED™ projects.

For more information about P²AD's sustainable construction program, contact Teresa Shiflett at (404) 657-7440 or teresa_shiflett@p2ad.org.

Dobbins ARB Employee Wins State Prize for America Recycles Day

by Stephanie Busch, Program Manager

On November 15, 2002, in hundreds of events throughout the state, Georgians celebrated the 6th Annual America Recycles Day (ARD). The national event raises awareness of the need to recycle and "close the loop" by purchasing recycled-content products. "Every citizen in our state should take this time to evaluate opportunities for recycling in their community and take action to reduce waste and conserve resources," said Gloria Hardegree, state ARD coordinator and President of the Georgia Recycling Coalition (GRC).

As part of the annual event, citizens are asked to pledge to *make every day America Recycles Day*. The pledge cards are then entered into a drawing for state and national prizes.

One state prize winner, Hal Huddlestun, won a television donated by Caraustar. An employee of Dobbins Air Reserve Base (ARB) in Marietta, Mr. Huddlestun completed his pledge card during the base's ARD celebration. An Environmental Engineer and Restoration Program Manager, Mr. Huddlestun pledged to increase recycling efforts at school, home, and work.

According to Gina Rose, the event's coordinator and a member of Dobbins' environmental team, the Dobbins' ARD celebration focused on getting the word out to base employees that recycled-content products are durable, cost-competitive, and as attractive as products that are made from virgin materials. This year's event included a drawing for recycled-content items from Green Glass USA (www.greenglassna.com). More than100 pledge cards were completed during the event. Attendees were amazed by the variety and quality of recycled-content products available. The true measure of success, according to Ms. Rose, came when an event participant liked the recycled-content glass so much that she ordered a set of glasses to give as Christmas presents.

Ms. Hardegree and Nancy Womack, GRC Board Member and a Caraustar representative presented the television to Mr. Huddlestun at a ceremony on Dec.10, 2002, in ARB's Bankston Rock House. The Bankston Rock House, once slated for demolition before base personnel determined it was an excellent candidate for adaptive reuse (i.e., adapting or restoring a building for a new use while maintaining its historic value or features) was restored in 2000. The house, included on the National Register of Historic Places, is a wonderful example of 1930s stone masonry construction in a rural dwelling. Fittingly, the home, protected for future generations to see, now houses the base's environmental program office.

(l to r) Hal Huddlestun of ARB with Nancy Womack of Caraustar, Bruce Ramo of Dobbins ARB, and Gloria Hardegree of GRC.

Dobbins ARB's commitment to recycling doesn't end with its ARD events. Dobbins ARB also has a comprehensive recycling program on base that recycles 33% of itswaste stream. In a win-win situation for both, Dobbins contracts with the Tommy Nobis Center to provide collection of recyclables and to operate the recycling center. The Tommy Nobis Center is a private, not-for-profit community rehabilitation program that provides job training and employment services to individuals with obstacles to employment.

P2AD has worked in partnership with the Department of Defense in Georgia for many years to identify opportunities to conserve natural resources, reduce solid waste, and to promote partnerships between the installations and their local communities. For additional information on the partnership's accomplishments, visit our website at www.p2ad.org.

In addition to the prize drawing, other state ARD activities included a proclamation the the governor declaring Nov. 15 America Recycles Day in Georgia (ARDGA) and a collection event for state employees (see page 6).

ARD in Georgia is coordinated by GRC, in partnership with the Georgia Department of Community Affairs, Georgia Environmental Protection Division-Land Protection Branch, trade associations, and corporate sponsors.

Did You Know?

- The 13 military installations in Georgia divert **tens of thousands of tons** of materials from landfills for recycling and composting each year.
- Several bases partner with local governments and/or businesses to take their recyclables.
- Several bases, including Robins AFB in Warner Robins, **divert more than 40% of their solid waste** to recycling and composting.
- The federal government is the largest purchaser in the U.S., spending more than **$200 billion annually** on various products and services.

Calendar of Events 2003

Mar 21-23	**Environmental Education Alliance (EEA) of Georgia 2003 Conference** in Savannah, GA. Registration materials available at www.eealliance.org/conference.htm or call (912) 898-3980 for information.
Mar 24-27	**SWANA's Annual Landfill Gas Symposium** in Tampa, FL. For more information, call SWANA at (800) GO-SWANA or visit www.swana.org.
Apr 6-9	**Southeast Recycling Conference & Trade Show** in Pensacola Beach, FL. For more information visit: www.southeastrecycling.com or call (334) 277-7050.
Apr 13-16	**SWANA Southern States Regional Conference** in Biloxi, MS. For more information, call SWANA at (800) GO-SWANA or visit www.swana.org.
Apr 13-16	**Industrial Wastes Technical and Regulatory Conference** in San Antonio, Texas. For more information, contact (800) 666-0206 or visit www.wef.org/conference.
Apr 22	**EARTH DAY** - Visit www.p2ad.org for suggested activities.
Apr 23-24	**2003 Georgia Water Resources Conference** at the University of Georgia, Athens, GA. For more information visit http://ga.water.usgs.gov/gwrc/.

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