

THE MAINTENANCE BEACON

The Monthly Newsletter of the North Carolina Public School Maintenance Association

Volume 58, Number 11

November 2021

Contents

Roxie Off Road4

49TH ANNUAL NCPSMA EASTERN CONVENTION

The 49th Annual NCPSMA Eastern Convention Workshop was held at the DoubleTree in Atlantic Beach, September 22-24, 2021. The theme for the convention/workshop this year was "Embrace the Chaos, Be Flexible." There were around 400 attendees.

The participating LEA's include the following: Alexander County, Beaufort County, Bladen County, Brunswick County, Carteret County, Caswell County, Charlotte Mecklenburg, Clinton City, Craven County, Cumberland County, Davidson County, Davie County, Duplin County, Edgecombe, Harnett County, Johnston County, Moore County, Mooresville Graded, Nash County, Perquimans County, Public Schools of Robeson, Sampson County, Stokes County, Vance County, Washington County, Wilkes County and Wilson County.

We had 62 exhibitor displays this year. Companies who participated in the event include the following: ACI Systems, Inc.; APR Restoration; Allegion; Atlantic Coastal Supply, Inc.; Belfor Property Restoration; BIRS, Inc.; Bliss Products and Services, Inc.; Buckeye Cleaning Centers; CSS Boiler & Mechanical Supply; Champion Systems; Cook and Boardman Group, LLC; Curtis Construction Company; Daktronics; Davidson Sash & Door, Inc.; Dormakaba, USA; Duro-Last Roofing, Inc.; Edwards Electronic Systems; Energy Systems Group, LLC; Engineered Control Solutions, Inc. FaciliServ; FSI Mechanical, Inc.; Flexco Corporation/Stanley Stephens; Garland Company, Inc.; Hardware Distributors, Inc.; Heat Transfer Sales; Hoffman Mechanical Solutions; James M. Pleasants Company, Inc.; Lewis Boiler Supply & Service; Loman Garrett; Luxout Stage Curtains; Matt Marshall & Company, Inc.; Mohawk Group; Next Level Recreation of the Carolinas. Inc.; North Carolina Sound; Oasis International; Performance Services; Piedmont Service Group; Pinnacle Dryer Corporation; Playworld Preferred; Precision Safe Sidewalks; Premier Drapery Cleaning Service; Price Marketing, Inc.; RSG Building Solutions; Royalwood Associates, Inc.; Saffelle, Inc.;



Registration and Raffle



Workshop



Workshop



Workshop



Workshop



Workshop



Workshop



Workshop

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Meetings and Events

DISTRICT SEVEN MEETING

November 18, 2021 at 6 pm

WCS Stone Center for Performing Arts

613 Cherry, Street North Wilkesboro, NC 28659

For more information please contact the Wilkes County Schools Maintenance Dept at 336.667.2021

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MEETING DATES

The districts of NCPSMA meet twice yearly.

District 1

January, July

District 2

January, July

Pres. Ronald Moore
Phone: 910.296.1875

District 3

February, August

Pres. Mark Letchworth
Phone: 252.399.7822

District 4

February, October

Pres. Donna Fields
Phone: 910.678.2565

District 5

March, September

Pres. Justin Dyson
Phone: 336.909.2280

District 6

April, October

Pres. Chris Adkins
Phone: 980.343.4526

District 7

May, November

Pres. Raymond Bowles
Phone: 336.751.1991

District 8

March, November

V. Pres. Jason Kelly
Phone: 828.456.2402

Meeting Dates & Locations

Should be sent to The Maintenance Beacon two months in advance for publication.

Deadlines

Publication deadline for articles and advertisements is first day of the month prior to month of publication.

WSHP SYSTEM DESIGN

PART TWO: INTRODUCING OUTSIDE AIR INTO A SPACE

By Chad Edmondson

Now that you know how to determine the amount of outside air needed for a given space, it's time to think about how to bring the air into a space that is conditioned by a WSHP.

There are two main ways to bring outside air into the space. Outside air can be introduced into the space either by direct duct into the space itself or by ducting into the return air duct that sits between the return air from the space and the WSHP. If the outside air is unconditioned and comes straight from the outdoors then the WSHP should be sized for the space load and the outdoor air load, including the latent heat load needed to dehumidify. Introducing unconditioned outside air directly into the room is not a recommended method.

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PROUDLY SUPPORTING NCPSMA MEMBERS

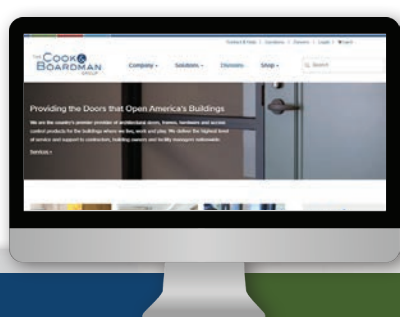
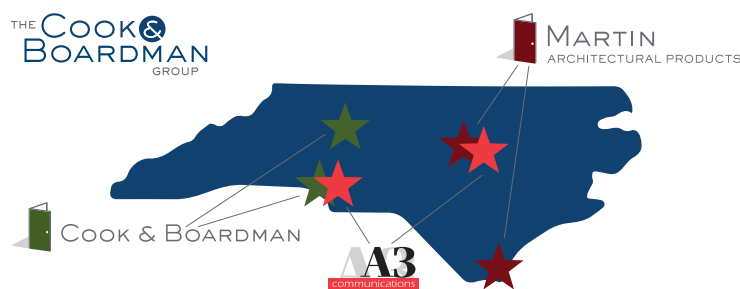
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49TH ANNUAL NCPSMA EASTERN CONVENTION

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Schneider Electric; Seating Safety Solutions, Inc.; Seven Oaks Doors & Hardware; Seven Oaks Supply Company, Inc.; SKY Enterprises, Inc.; Tarheel Paper Supply; Terracon; The Malish Corporation; True IP Solutions, LLC.; Viega, LLC; Voss Lighting; WC Rouse & Son.; Watson Electric; Wolf Trail Engineering.

The first morning of the convention/workshop was busy with members checking in and heading to class. A workshop on "Demystifying Electrical Hardware" was presented by Ed Garver, ASSA Abloy. "Electrical Part One" was presented by Danny McManus, Union County Schools Facilities Assistant Director. "Ornamental & Turf Pest Control" was presented by Tom Glasgow, Craven County Extension Director. More workshops began at 10:15 am including "Charlotte Mecklenburg Schools Indoor Air Quality Initiative Strategy" presented by Phil Berman, CMS Executive Director, Facilities and Building Services. "Door Closers, Troubleshooting and Tips" was presented by Thomas Heavey, LocDoc Security. "Electrical, Part Two" was presented by Danny McManus. "Ornamental and Turf Pest Control" was presented by Shawn Banks, Carteret County Extension Director "Press Fittings in the Plumbing World, Installation and Application" was presented by Andreas Adrain, Technical Manager, MidAtlantic/Southeast, Viega, LLC.

An Advisory Council Meeting/Luncheon was held. The Luncheon was sponsored in part by Wolf Trail Engineering, PLLC.

The Opening Session followed with NCPSMA State President Bergie Speaks presiding. President Speaks welcomed everyone and called the General Business Session to order. State Vice President David Martin, Mooresville Graded School District, gave the invocation. He recognized first-time attendees, those who had served in the military, those who are currently serving as well as those who currently have family members in service. He then asked for a moment of silence to remember and honor those how passed away since the last Eastern Convention: C.W. Wise, Retired Kannapolis City Schools; Rickey Cox, Clinton City Schools; Frank Stevens, Retired Washington County Schools; Eddie Wilmoth, Northwestern Carolina Distributors (NWCD).

The minutes from the 2019 General Business Session were read by Reggie Long, Past NCPSMA State Secretary. The minutes were approved as read. Roxie Mack gave the 2020-2021 Financial, Membership and Convention Reports. Raymond Bowles, District Seven President presented the nominations for the 2021-2022 state officers: Bergie Speaks of Wilkes County Schools, State President; David Martin of Mooresville Graded School District, State Vice President; Justin Dyson of Winston-Salem/Forsyth County Schools, State Secretary and Mark Letchworth of Wilson County Schools, Liaison Officer. There were no nominations from the floor and the new officers were elected as presented. Immediate Past State President Michael Spillman presented a request for a NCPSMA By-law change as follows:

Current By-Law

Standing Committees
Section 2

- The executive committee will consist of a chairman and four (4) other members with all members being appointed by the President of the NCPSMA. The chairman of the executive committee will be the immediate past president. Terms of office will be for a period of one (1) year. Members may be appointed for additional terms.

Proposed By-Law

Standing Committees
Section 2

- The executive committee will consist of a chairman, current state president (who will not have the privilege of voting rights) and four (4) other members with all members being appointed by the president of NCPSMA. The chairman of the executive committee will be the immediate past president. Terms of office will be



Workshop



Workshop



Workshop



Workshop



Workshop



Bergie Speaks



Reggie Long



Raymond Bowles



Bryan Kidd & Mark Letchworth

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ROXIE OFF ROAD

Material for The Maintenance Beacon has been slim – more so than usual. I asked some of our vendors for articles. Several have taken time to send in an article. They will be placed in “Roxie Off Road” in the order they were received. We appreciate our vendors so much!

Bleacher Inspections – Tons of Reasons to do Them Right

By Terence K. O’Hagan, President – FaciliServ

Who is qualified to conduct inspections?

Did you know the weight of just 500 fans is 40 Tons? Who should do inspections sounds like an easy question, even for mere mortals like you and me (i.e., non-lawyers). Yet lately it’s caused some confusion and our children’s safety is at stake.

To sort this out, let’s look at what the Building Code requires.

Like most states, by law North Carolina adopted the 2012 version (or more recent versions) of the International Building Code (IBC) and the International Code Council (ICC) #300 standards regarding bleacher safety. Among other things, the Code requires that all bleachers be professionally inspected for safety each year. But who’s qualified as a “professional” to inspect them?

First: Who is a “Professional”?

A “professional” is someone who performs bleacher safety inspections for a living. Obviously, they must be independent and objective. They can’t have any conflicts of interest. That means persons who work at a school district can’t inspect their own bleachers unless they have a professional license (example: a structural engineer).

Second: What Traits are Required of a “Professional”?

The Code says that the “professional” must be familiar with the requirements of the code itself and with the operation and maintenance of the bleacher being inspected.

BEWARE... of the “certification” deception. One bleacher manufacturer is handing out “certifications” that aren’t independently accredited to its own salespeople, installers, and service staff. They may be telling you only they can inspect your bleachers. That’s wrong. They’re handing out diplomas to themselves for personal gain. Their “certifications” are merely deceptive sales scare tactics.

Who decides what the words mean?

Lawmakers often rely on other sources to define terms in the law/building code such as: Past Precedents, Other Laws, or Administrative Rules and Regulations. Laws couldn’t be implemented without these definitions.

Examples of definitions not found in the laws themselves:

- For schools, there are laws that require standards that are fair and equitable. But the law depends on local school boards and other school authorities to establish the rules and regulations that define and shape the specific means of implementing the standards required in the law.

- In labor law, while the law establishes the fact that the unemployed are entitled to state unemployment benefits under certain circumstances, most states have sub-committees that create definitions and logistics for providing benefits. For example, a person discharged for “misconduct” is not eligible for benefits, but the definition of “misconduct” is not found in the law. It is found in administrative rules and past precedents.

Who determines who is “qualified” to perform a “professional” inspection?

Good News! There are places you can find more details about who can/should perform safety inspections.

One source for definitions re: bleacher safety inspections is the United States Consumer Product Safety Commission (CPSC) Publication #330. It’s been the basis for the development of many of the bleacher safety Codes since 1999. It says you should be an architect, engineer or qualified professional bleacher service firm to perform an inspection. In the absence of a definition in the code, this is another well-established source that’s been used for over two decades.

CPSC #330 Recommends Even More

It also recommends school staff perform safety checks before and after each use. (Note: Safety checks conducted by: school personnel, loss control staff at insurance companies, safety generalists, local handymen, etc. don’t meet the annual professional inspection requirement in the Code.)

The Intention of the CPSC & The Building Code

Again, the weight of just 500 fans is 40 tons. Ouch! That’s why the intention of the CPSC and the Building Code is to require “professional” inspections by those whose insurance liability policy, professional expertise, and knowledge of the Code make them qualified to conduct a complete inspection and prepare a professional report.

Reputation Matters

Whether you use an architect, engineer or professional bleacher service firm, you’re responsible for determining if they’re sufficiently trained and experienced with bleachers or not. Here are some additional tips to help you decide. Ask for references, professional endorsements, independent 3rd party certifications, the size of their company, and how long they’ve been in business to help you determine which professionals are most qualified. Professional associations, safety councils, insurance companies, and other schools are all sources of independent, unbiased information. Schools are well-advised to beware of local handymen, welders, or contractors. Some have little more than a pickup truck to lose if they overlook safety issues and you’re sued.

Conclusion

A “professional” must conduct bleacher safety inspections each year. Only a professional

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49TH ANNUAL NCPSMA EASTERN CONVENTION

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for a period of one (1) year. Members may be appointed for additional terms.

The change was approved by the membership (in attendance) vote. Milt Saffelle of Saffelle, Inc. presented the NCPSMA Maintenance Director of the Year Award to Michael Spillman of Davie County Schools. The dates for the 2022 Western Convention were announced as May 25 & 26, 2022. The dates for the 2022 Eastern Convention were announced as September 21-23, 2022. Bryan Kidd of Moore County Schools won the preregistration (\$50) drawing. President Speaks adjourned the General Business Session.

Later in the afternoon, workshops were presented simultaneously. "Meeting Today's Code Compliance Requirements, Preventative Maintenance and Insuring Seating Safety" was presented by Stephen Bishop, Seating Safety Solutions; "Boiler Systems and Service" was presented by Jeff Miller, James M. Pleasants, Company; "Electrical, Part Three" was presented by Danny McManus. "General Review of Administrative Codes" was presented by Carl Jobe, retired Guilford County Schools and Robert Parrish, Seven Oaks Doors and Hardware; "Drinking Fountains and Bottle Fillers in a Post COVID-19 World" was presented by Brian O'Keefe, National Strategic Account Manager, Oasis International.

The weather for the golf tournament, held early Thursday morning, was not cooperative. The Annual Jay Palmer Memorial Golf Tournament was held at Star Hill Golf & Country Club. Winners of the tournaments were recognized during the Awards Banquet. Credit hour classes began early on Thursday morning. Patty Alder, Training Coordinator, NC State University. presented "Structural Pest Control, Part One and Part Two. Later in the morning Matt Knight with FaciliServ presented "Bleacher Codes and Inspections." The exhibitor display selection was held, and the exhibitors set up their displays. A "Directors and Supervisors" visitation was held when set up was complete. State President Speaks presented the NCPSMA Vendor Appreciation Award to Raven Broeker of BIRS. The NCPSMA Vendor Appreciation Award is awarded each year to a vendor who has displayed outstanding support of NCPSMA.

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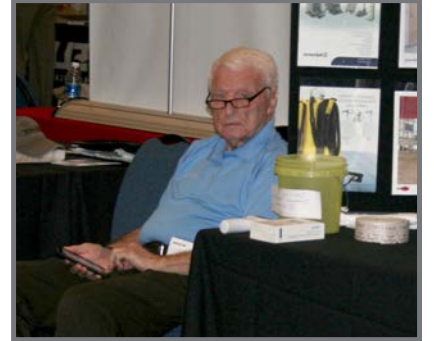
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Michael Spillman and Milt Saffelle



Milt Saffelle



Keith Russell and James Miller



David Lesane and Keith Burney



Angela and Michael Spillman

A luncheon, sponsored by Cook & Boardman Group, LLC was held for Directors/Supervisors. After lunch participants visited with the exhibitors and enjoyed a refreshment break. Some of our exhibitors sponsored the door prizes. Many, many thanks to all the exhibitors who donated door prizes. Jason Miller, Davie County Schools won a laptop case donated by Champion Systems, Inc. Blane Hunt, Cumberland County Schools, won a \$50 gift card donated by Loman Garrett. Phil Berman, Charlotte Mecklenburg Schools, won a \$50 gift card donated by Airtetik (Division of Loman Garrett). Kevin Sandlin, Clinton City Schools, won a set of steak knives donated by SKY Enterprises. Neil Gooden, Bladen County Schools; Michael Locklear, Public Schools of Robeson County; Mike Norville, Nash County Schools and David Martin, Mooresville Graded School District, all won a knife donated by SKY Enterprises. Cook and Boardman Group gave away two \$75 gift cards (the winners names were not listed). Randy Speight, Craven County Schools; Jeremy Allen, Johnston County Schools; David Martin, Mooresville Graded School District; Angela Lane, Wilson County Schools; Greg Woodard, Wilson County Schools and Ron Mack, retired, all won an infrared thermometer donated by Saffelle, Inc. Donna Ritterpusch, Nash County Schools; Kevin Sandlin, Clinton City Schools; Chris Campbell, Alexander County Schools; David Lesane, Bladen County Schools; Travis Murphy, Duplin County Schools;

for a period of one (1) year. Members may be appointed for additional terms.

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MEMBERSHIP APPLICATION

Please mail this form with your dues payment (\$20) to:
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_____ Yes I would like a reminder sent.

ROXIE OFF ROAD

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is “qualified” to perform them. Given the tremendous loads on bleachers (just 500 fans = 40 tons), they should not be left to the well-meaning but untrained. Our children’s safety is worth it.

Author

Terence K. O’Hagan, President – FaciliServ, Inc. (888) 963-6526 tohagan@faciliserv.com
 Facili-Serv is the largest indoor & outdoor bleacher repair, installation and inspection firm in the country. It has provided bleacher safety services to thousands of schools, inspecting and servicing over 8,000 indoor and outdoor bleachers per year. It is the only firm of its type endorsed by major national insurance firms and selected to serve on the International Code Council’s Bleacher Safety Committee. Mr. O’Hagan is a frequent speaker on bleacher safety. He combines 40+ years of management consulting, human resources and general business with his insights on bleacher safety to offer a practical approach to bleacher risk management and maintenance.

49TH ANNUAL NCPSMA EASTERN CONVENTION

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Doris Ray, Nash County Schools and Mark Letchworth, Wilson County Schools all won a \$25 gift card donated by Saffelle, Inc. Mark Johnson, Sampson County Schools won a Yeti Lunch Box and koozie donated by Terracon. Jamie Baggett, Johnston County Schools won a Yeti Cooler 45 donated by Wolf Trail Engineering, PLLC. Keith Burney, Bladen County Schools, won a Soft Side Cooler donated by Seven Oaks Doors & Hardware. Steve Matthews, Harnett County Schools, won a gift donated by Pinnacle Dryer. Brooks Moore, Johnston County Schools, won a lawn chair donated by Edwards Electronic Systems, Inc. Kevin Sandlin, Clinton City Schools; Joe Tysinger, Davidson County Schools; David Martin, Mooresville Graded School District; Brooks Moore, Johnston County Schools all won a \$25 Lowe’s card donated by Seating Safety Solutions. Doris Ray, Nash County Schools, won a \$50 gift card donated by APR Restoration and Commercial Development. (This is a list of what was turned in for prize winners).

Friday brought a full day of activities. The morning began with visiting with the Exhibitors while enjoying a Continental Breakfast sponsored by Cook & Boardman Group, Energy Systems Group, NCPSMA District Three and District Seven. An “Emergency Response Planning” workshop was presented by Joe Johnson of Builder Services. Directors and Assistant Directors met for round table discussions. A workshop “Roof Coating Forensics – Problem Solving” was presented by Fred Wolfe, Business Director, Everest Systems.

After a short break it was time for the Annual NCPSMA Awards Banquet. State President Speaks served as the Master of Ceremonies. David Martin, State Vice President, gave the invocation. A delicious meal consisting of Herb Grilled Chicken Breasts & Grilled Beef Medallions, Side Salad, Roasted Parmesan Red Potatoes, Vegetable Medley and Strawberry Crème Cake was served for dessert. The Band of Brothers provided entertainment for the event. They did a great job and were most enjoyable!

State President Speaks and State Vice President Martin conducted the membership drawing. Winners were drawn from each district, one through eight, and each winner won a \$100 cash donated by individual sponsors. District one was sponsored by ACI Systems and was won by Yvonne Young, Washington County Schools. District Two was sponsored by CSS Boiler



Bergie Speaks, Thomas Speaks and Raven Broeker



Directors Round Table Attendees



Bergie Speaks



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees

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THE MAINTENANCE BEACON

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Officers of the Association

President	Bergie Speaks	336.667.2021
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WSHP SYSTEM DESIGN

PART TWO: INTRODUCING OUTSIDE AIR INTO A SPACE

continued from page 1

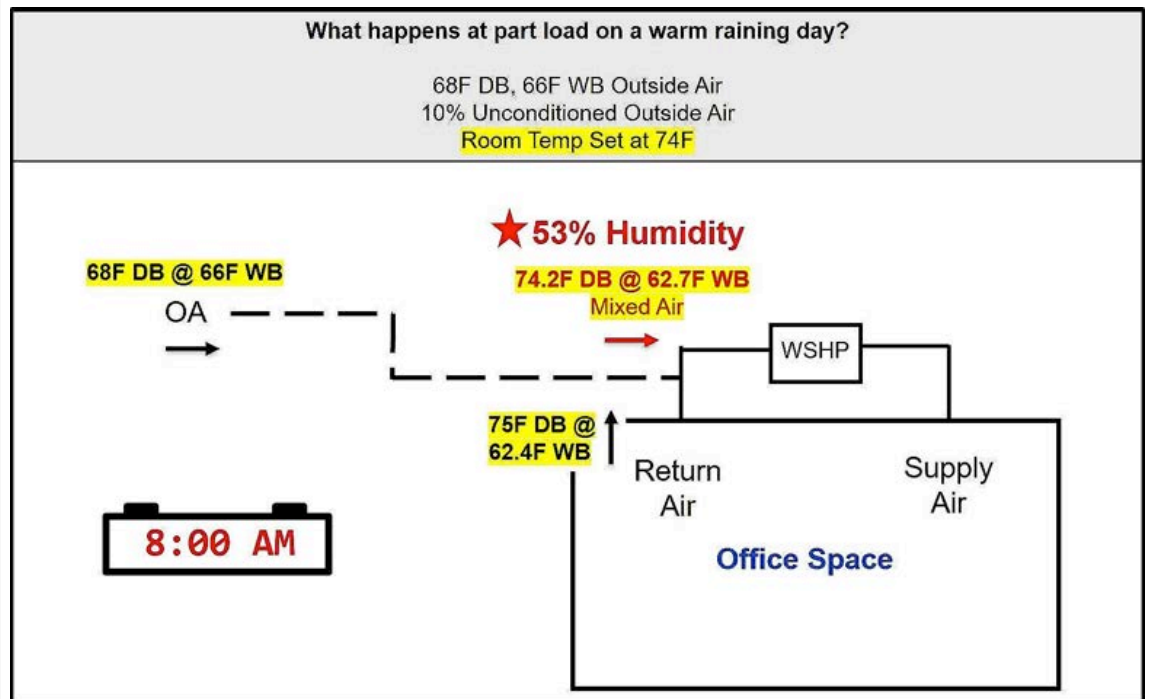
If you decide to bring the outside air to the WSHP then this will require the WSHP fan to run continuously while the room is occupied. If you bring the outside air directly into the space the WSHP fan runs only when needed. However, if outdoor air is brought directly into the room, additional duct work and diffusers may be required to introduce the air. You also should take care that the air is not introduced into the room at a location that is in close proximity to occupants, as direct exposure to this unconditioned air may be uncomfortable.

Regardless of which method you choose, the WSHP will have to be sized for a dehumidification/cooling design day. The chart below gives an example of what those design parameters might look like in the South, in particular the mixed dry bulb (DB) and wet bulb (WB) of the outdoor and return air. (Table 1)

Cooling System at Dehumidification Design Conditions							
Based on: ASHRAE 0.4% Dehumidification Design Day 10% Untreated Outside Air							
Location	Outdoor DB	Outdoor WB	Return DB	Return WB	Mixed DB	Mixed WB	Humidity
Charleston, SC	84.4F	80.2F	75F	62.4F	76.0F	64.5F	54%
Nashville, TN	82.9F	77.1F	75F	62.4F	75.8F	64.1F	53%
Asheville, NC	77.4F	73.1F	75F	62.4F	75.2F	63.6F	53%

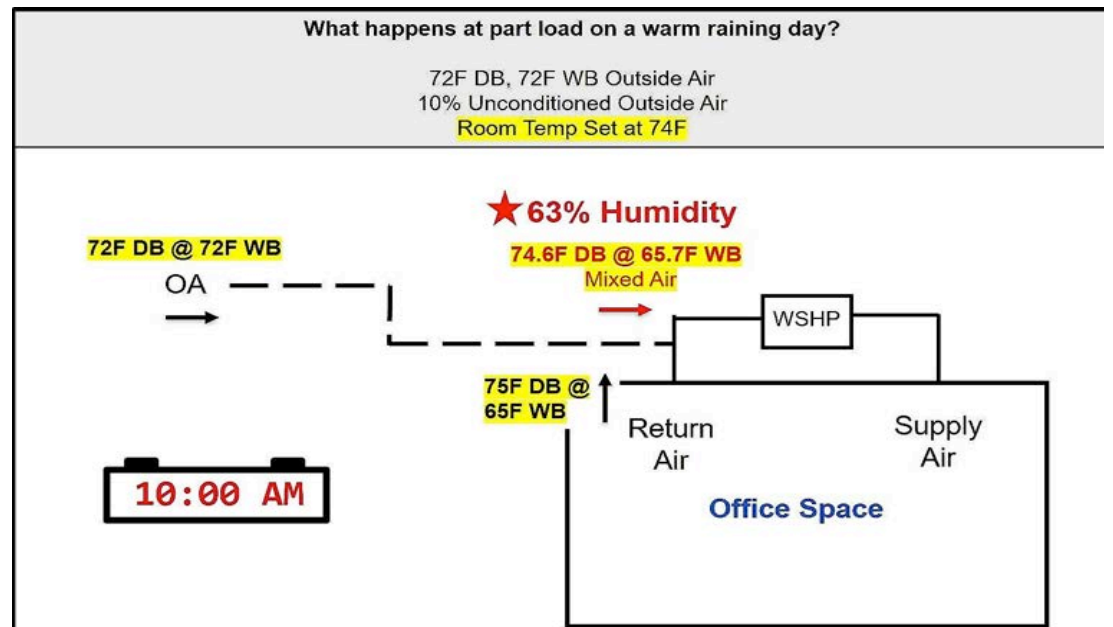
Table One

Notice that the indoor humidity is at a reasonably comfortable level when the system is fully loaded assuming it was sized to handle the latent load. Problems start to occur when the system is at part load on a day that is warm and rainy. Let's look at how the humidity of the supply air to the heat pump starts to creep up on such a day.



At 8:00 AM, the outdoor air is at 68°F DB with a wet 66°F WB. This is the air that we will be bringing into the building as people come to work. Notice that the thermostat is set at 74°F and our mixed air temperature to the WSHP is also 74.2°F. The WSHP is not yet operating and already the supply air humidity is up to 53% RH.

By 10:00 AM the outdoor air is 72°DB at 72°WB. It is raining outside and the outdoor air is fully saturated.



continued on page 9



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49TH ANNUAL NCPSMA EASTERN CONVENTION

continued from page 6

and Mechanical Supply and was won by Sergio Mendez, Craven County Schools. District Three was sponsored by Schneider Electric and was won by James Thompson, Wilson County Schools. District Four was sponsored by Hardware Distributors and won by Paul Maynor of Cumberland County Schools. District Five was sponsored by Lewis Boiler Service and Supply and won by Kevin Watkins of Rockingham County Schools. District Six was sponsored by Flexco Corporation/Stanley Stevens and won by Hoover Nguyen of Charlotte Mecklenburg Schools. District Seven was sponsored by Seating Safety Solutions and won by Doug Dixon of Surry County Schools. District Eight was sponsored by Belfor, USA and won by Dan Messer of Haywood County Schools. Congratulations to the winners and many thanks to all the companies who sponsored this event!

One Hundred Percent Membership Award Certificates were presented by State President Speaks and State Vice President Martin. Certificates were presented to the following: District One - Edenton Chowan, Washington County. District Two - Carteret County Schools, Clinton City, Craven County, Duplin County and Sampson County. District Three - Nash County, Northampton County, Vance County and Wilson County. District Four - Cumberland County, Moore County and Scotland County. District Five - Rockingham County. District Seven - Alexander County, Caldwell County, Catawba County, Hickory City, Mooresville Graded School District, Surry County and Watauga County. District Eight - Haywood County.

State President Speaks announced the winner of the NCPSMA Member Appreciation Award. The NCPSMA Member Appreciation Award is awarded each year to a member who has displayed outstanding support of NCPSMA. Jeff Adams of Yadkin County Schools won the Member Appreciation Award.

Golf Tournament awards were presented by Chris Adkins of Charlotte Mecklenburg Schools. The winners are as follows: Longest Drive was won by Michael Spillman, Davie County Schools. Closest to the Pin was won by Chris Adkins, Charlotte Mecklenburg Schools. Third Place Low Net was won by Pete Lee, Beaufort County Schools. Second Place Low Net was won by Michael Spillman, Davie County Schools. First Place Low Net was won by Chris Adkins, Charlotte Mecklenburg Schools. Third Place Low Gross was won by Pete Lee, Beaufort County Schools. Second Place Low Gross was won by Chris Adkins, Charlotte Mecklenburg Schools. First Place Low Gross was won by Michael Spillman, Davie County Schools

Milt Saffelle of Saffelle, Inc. presented the 2021 NCPSMA Maintenance "Employee of the Year Award" to Sherry McGowan of Caswell County Schools. The 2021 NCPSMA Superintendent of the Year winner was Mark Byrd, Wilkes County Schools. Many thanks to Saffelle, Inc. for continuing to sponsor these awards.

State President Speaks and State Vice President Martin presided over the raffle prize drawing. We had a lot of nice prizes donated for the drawing. Many thanks to those who donated prizes. Milt Saffelle donated a \$100 gift card, won by Sherry McGowan of Caswell County Schools. Carl and Bobbie Jobe donated a handmade necklace and earring set won by Alysa Watkins, Schneider Electric. District Seven donated two \$100 Harbor Freight Gift Cards won by Weston Hockaday, Johnston County Schools and Randy Hunt, Davidson County Schools. ASSA Abloy donated a \$75 Gift Card won by Bryan Egan of Charlotte Mecklenburg Schools. C.H. Edwards donated four \$50 Gift Cards won by Jevon Moorer, Charlotte Mecklenburg Schools; Buddy Swindell, Craven County Schools; Clayton Burns, Moore County Schools; Sharon Speaks, Wilkes County Schools. Thank you also to all the members who volunteered their time to work the raffle table, especially Chris Adkins with Charlotte Mecklenburg Schools who worked it a great deal of the time. Through the generous donations of the door prizes and the volunteers who worked the table we raised \$606.00. Clayton Burns of Moore County Schools won the 50/50 drawing of \$182.00. State President Speaks gave the benediction.

Many thanks to all those who helped with the registration table, raffle table, workshops, etc. We could not do it without you! Many people volunteered at the last minute, so if I leave someone out, I apologize. Volunteers who signed up before the event include the following: Ron Mack; Chris Adkins of Charlotte Mecklenburg Schools; David Martin of Mooresville Graded School District; Carl Jobe, retired, Guilford County Schools, Donna Ritterpusch, Nash County Schools; Bergie Speaks, Gary Burdiss, Kent Barker, Derick Gamble, Austin Whitley, Richard Shephard, and Tommy Spicer of Wilkes County Schools.

A special thank you to Reggie Long, retired Moore County Schools, for helping at the registration table and taking minutes at the Western Planning Meeting, Advisory Council Meeting, and the General Business Session. Many thanks to Chris Adkins with Charlotte Mecklenburg Schools for the many hours he spent working the raffle table. Many thanks to State President Bergie Speaks, State Vice President David Martin and Liaison Officer Mark Letchworth for working at the registration table. A huge thank you to Ron Mack, who helps prepare for the convention, packs/unpacks and who is constantly working behind the scenes during the convention to keep things runny smoothy. Also, many thanks to Ron for taking most of the pictures this year.

Thank you to everyone who contributed to the success of another convention/workshop. It takes a lot of planning and a lot of work, from "many different individuals" to make the convention the success it is year after year. Thank you again to everyone who gave of their time, energy, and resources.

Please remember the companies who presented the workshops, those who were exhibitors as well as those who sponsored events. We certainly appreciate their support. Please remember them when obtaining bids and making purchases.

Check back next month for the exhibitor convention photos.



Banquet Attendees



Banquet Attendees



Banquet Attendees



Banquet Attendees



The Band of Brothers



The Band of Brothers



The Band of Brothers



Bergie Speaks



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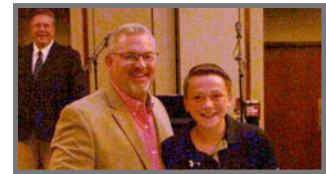
Sherry McGowan & Milt Saffelle



Craig Bennett, Sherry McGowan & Milt Saffelle



Jevon Moorer



David Martin & Thomas Speaks



David Martin & Bryan Egan



David & Sherry McGowan



Mark Letchworth

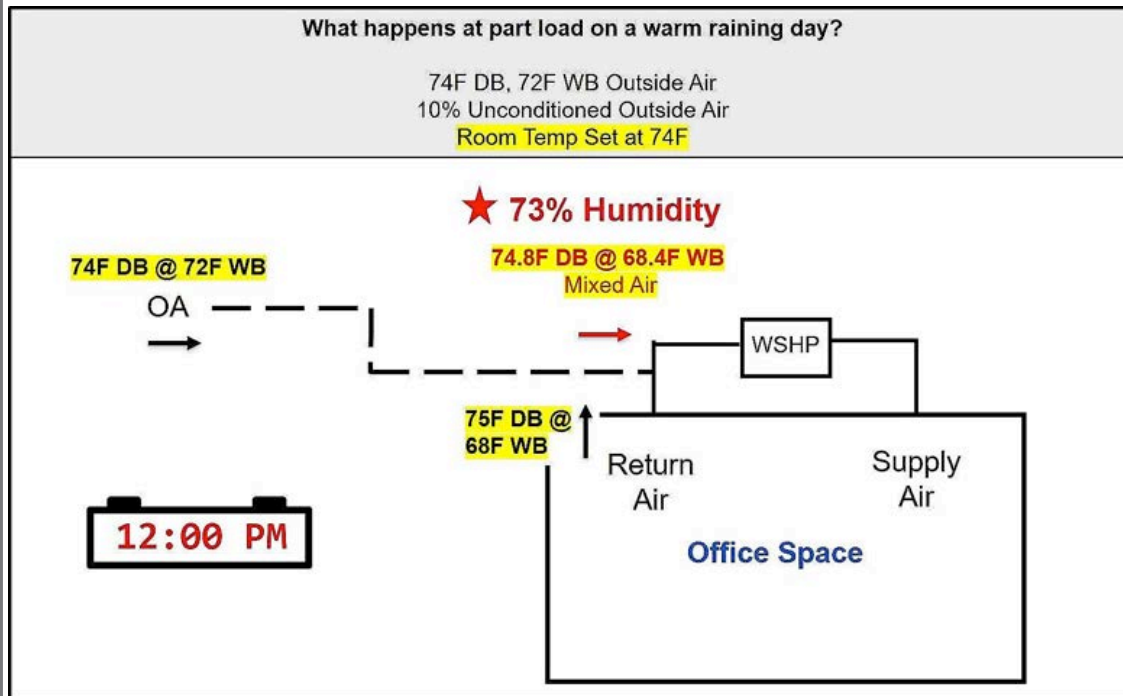
WSHP SYSTEM DESIGN

PART TWO: INTRODUCING OUTSIDE AIR INTO A SPACE

continued from page 7

Our mixed air temperature is 74.6°F DB with a 65.7°F WB. The humidity of the supply air to the WSHP is now up to 63% RH and our thermostat is still set at 74°F. Because the thermostat only sees the sensible load of the building, the WSHP only comes on for a short time before it achieves the 74°F setpoint. The indoor humidity is now very uncomfortable and the only choice we have to dehumidify is to overcool the room. Either way, occupants are going to be uncomfortable.

By lunch time the outdoor air is 74°F DB at 72°F WB.



Our mixed air temperature is now 74.8°F DB at 68.4°F WB. Our mixed air to the WSHP is now extremely moist with a humidity of 73% RH! Since the WSHP is still only slightly loaded with our 74°F thermostat setting, it will not be running long enough to dehumidify the space. Our occupants are now extremely uncomfortable and the room feels very muggy.

What happens at part load on a warm raining day?

72F DB, 72 WB Outside Air, 10% Outside Air
Room Temp Set at 74F
Mixed Air Conditions
Unconditioned Outside Air

Time	Outdoor DB	Outdoor WB	Return DB	Return WB	Mixed DB	Mixed WB	Humidity
8:00am	68F	66F	75F	62.4F	74.2F	62.7F	53%
10:00am	72F	72F	75F	65F	74.6F	65.7F	63%
12:00pm	74F	72F	75F	68F	74.8F	68.4F	73%

Table Two

Humidity is an issue!

Table 2 summarizes the conditions in our example as the day progresses. We are bringing in 72°F outdoor air that has a humidity close to 100% RH. There is no external heat load outside so the WSHP turns off. As we bring more outdoor air into the building with the heat pump turned off, we are unable to dehumidify the space.

This happens to be a fairly common weather day during the shoulder seasons here in the Southeast. These part load, warm, rainy days are why we often need to condition the outdoor air before we bring it into the room.

How do we do that? Stay tuned for Part Three!

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