

**V
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**Virginia Plumbing and Mechanical Inspectors Association
55th Annual School of Instruction**

**Natural Bridge Historic Hotel & Conference Center
Natural Bridge, VA
April 4th-April 6th, 2018**





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Welcome

to Natural Bridge Historic Hotel & Conference Center
and to the

55th VPMIA Annual School of Instruction



From the President

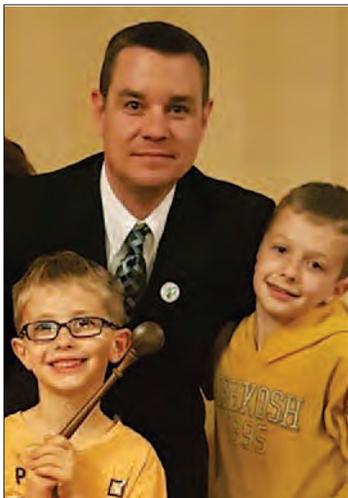
It was a humbling experience to accept the President's gavel last April. It has been my pleasure and honor to serve as your President this past year. VPMIA has amazing members and volunteers that continue to devote their time and energy to the mission and goals of the organization.

First, I would like to congratulate my VPMIA successors. They have recognized the potential of "strength through education and unity" for its lasting benefits to our organization. It is my hope that our future officers will continue to strive to create opportunities that enable VPMIA to grow. They will continue looking over our finances, recruiting new members, becoming more diversified and working together with other state organizations. Remaining vigilant in these areas will be key to VPMIA's sustained success.

VPMIA continues to build a strong reputation at the state and national levels in the code development process. We must continue to build upon this reputation while remaining a key player in the code development process. It is important that we remain successful in the code development process in the future as we have been in the past.

As VPMIA continues to grow, we need to mentor our new and less experienced members. This is critical to the growth of our organization. The next generation of members and volunteers need to feel comfortable taking on new and more involved roles within the organization. Mentoring is an excellent way for our less experienced members and volunteers to become familiar with the different roles throughout the organization. It allows our members to confidently take that next step into service and leadership with an experienced mentor there to assist and guide them.

It is up to us to do everything we can to build more ladders of success for every member and volunteer that is willing to work hard.



As I pass the gavel on to my successor, I hope he or she feels the pride and honor that I have felt leading this great organization. It has been a pleasure serving as the VPMIA president for the last year. I want to thank my fellow officers, committee chairs and everyone that helped keep our organization pointed in the right direction.

Thank you,

Dustin McLehaney

President, VPMIA, 2017-2018

Contents

From the President — 3

SOI AGENDA — 4

Dedication — 5

**VPMIA Foundation,
Officers, Directors and
Committee Chairmen — 7**

Acknowledgements — 9

Resolution, August 2017 — 12

Photos from 2017 — 13

Resolution, March 2018 — 14

Ladies Auxiliary — 15

**Associate
Membership Roster — 17**

Advertisers Index — 19

Tabletop Exhibitors — 21

TECHNICAL ARTICLE — 23

*Understanding the ACCA
Commercial HVAC System
Design Process, by Don Prather*

TECHNICAL ARTICLE — 27

*Eliminating Water Heater Hazards
by Lee Clifton, ICC*

VPMIA 55th Annual School of Instruction

April 4-6, 2018 Natural Bridge Historic Hotel and Conference Center
Natural Bridge, VA 24578

AGENDA

WEDNESDAY, APRIL 4TH

7:00 - 8:15 a.m.	Registration
8:30 - 10:00 a.m.	2015 International Plumbing Code-Medical Gas-Praxair — Luke Miller
10:00 - 10:30 a.m.	Break
10:30 - Noon	2015 International Plumbing Code-Medical Gas-Praxair, cont'd.
Noon - 1:00 p.m.	Lunch (included with registration)
1:00 - 2:30 p.m.	2015 International Pool Code — Kris Bridges
2:30 - 3:00 p.m.	Break
3:00 - 4:30 p.m.	2015 International Fuel Gas Code-Product Certification-UL — John Taecker
5:00 - 6:00 p.m.	Presidents Welcome
6:00 - 7:30 p.m.	Dinner (included with registration)

THURSDAY, APRIL 5TH

8:30 - 10:00 a.m.	2015 International Mechanical Code-Commercial Cooking-UL — John Taecker
10:00 - 10:30 a.m.	Break
10:30 - Noon	2015 International Mechanical Code-Commercial Cooking-UL, cont'd.
Noon - 12:15 p.m.	VPMIA General Membership Meeting Part 1
Noon - 1:00 p.m.	Lunch (included with registration)
1:00 - 2:30 p.m.	2014 NEC Article 680 Swimming Pools, Fountains-UL — John Taecker
2:30 - 3:00 p.m.	Break
3:00 - 4:30 p.m.	2014 NEC Article 680 Swimming Pools, Fountains-UL, cont'd.
6:30 - 10:00 p.m.	Banquet (included with registration)

FRIDAY, APRIL 6TH

8:00 - 9:00 a.m.	Breakfast Buffet (included with registration)
9:00 - Noon	VPMIA General Membership Meeting Part 2

Visit www.vpmia.org for School of Instruction information



Natural Bridge is a geological formation in Rockbridge County, Virginia, comprising a 215-foot-high (66 m) natural arch with a span of 90 feet (27 m). It is situated within a gorge carved from the surrounding mountainous limestone terrain by Cedar Creek, a small tributary of the James River. Consisting of horizontal limestone strata, Natural Bridge is the remains of the roof of a cave or tunnel through which the Cedar Creek once flowed.

Natural Bridge has been designated a Virginia Historic Landmark and a National Historic Landmark. Since 2016, the bridge and its surroundings have been managed by the Commonwealth of Virginia as Natural Bridge State Park.



It is alleged that George Washington came to the site in 1750 as a young surveyor.⁽¹⁾ To support claims that Washington surveyed the area, tour guides claim the initials "G.W." on the wall of the bridge, 23 feet (7.0 m) up, were carved by the future president. Legend also has it that George Washington threw a rock from the bottom of Cedar Creek over the bridge. In 1927, a large stone was found, also engraved "G.W." and bearing a surveyor's cross, which historians accepted as proof that he indeed surveyed the bridge.⁽¹⁾

⁽¹⁾Willis, Carrie Hunter; Walker, Etta Belle (1937). "Natural Bridge". *Legends of the Skyline Drive and the Great Valley of Virginia*. pp. 81–83.

Compiled using, *Wikipedia*

**This Yearbook is dedicated to
William D. Aldridge
(1958-2017)**

If you were fortunate enough to attend a high school basketball game around Christiansburg, Virginia in the last 17 years, Bill Aldridge probably touched your life in a positive way without you even being aware of it. Bill lived his life to make the lives of those around him better all of the time. He volunteered at those basketball games as the announcer. He would play good rock and roll tunes and make witty jokes to delight the crowd. He did all of that as a volunteer. Bill was this way in all aspects of his career and his life. He made the world around him a better place.

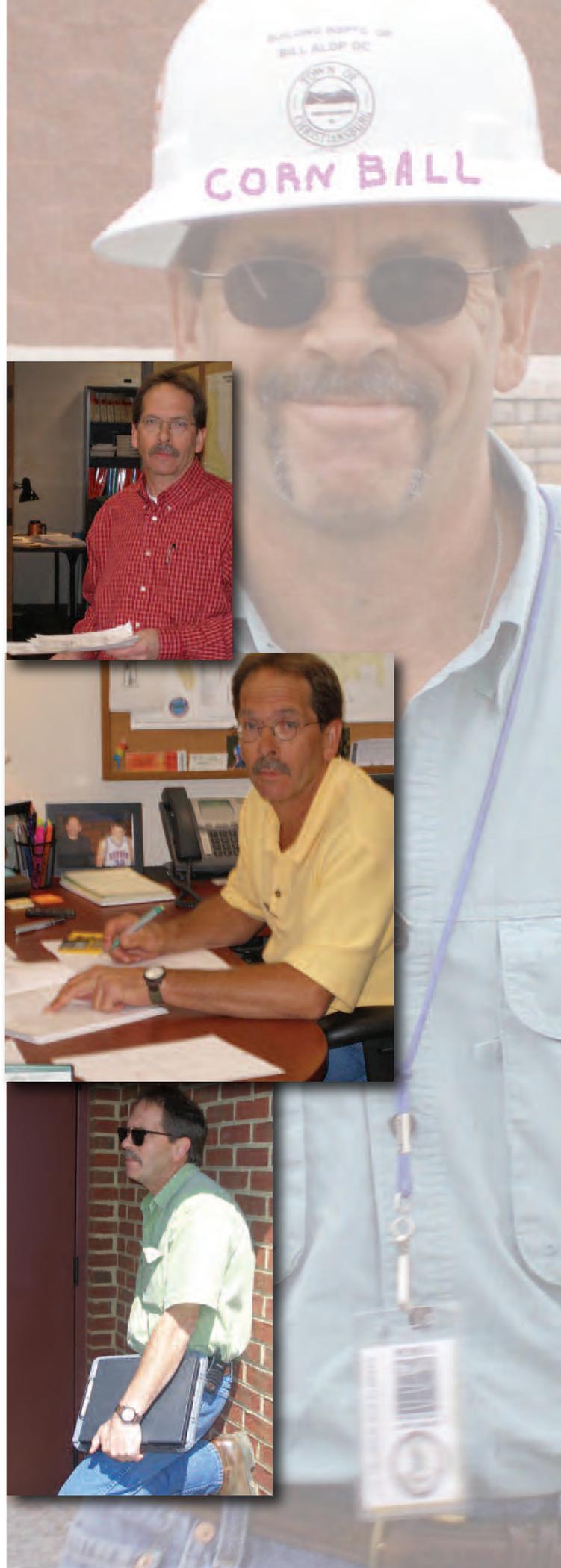
Sadly, on August 16th, 2017, we lost Bill to a heart attack. This unexpected tragedy crushed many that knew Bill, from the Mayor of Christiansburg, who had “known Bill for more than 40 years”, to his coworkers whom he “treated like family”. For everyone that was fortunate enough to have Bill in their life, the news was a great shock.

Bill worked for the Town of Christiansburg as a Building Inspector for about 11 years. Before that he was a contractor in the Christiansburg area. He was a great asset to the community in numerous aspects. With everything he did he still found the time to help out VPMIA.

Bill came on as our District 2 Director around 2009. Bill was an active member and contributed to the organization with the same spirit and enthusiasm that he has always shown. He was active with Building Safety Month in his district and within the organization. He regularly attended meetings and functions, and always had constructive input and ideas to add to the conversation.

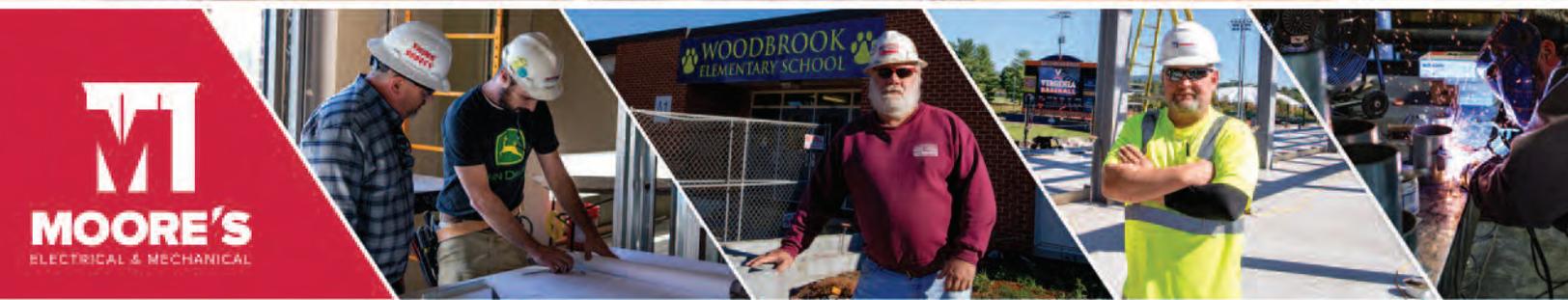
VPMIA dedicates this Yearbook to Bill for his selfless dedication to public service, and to this organization.

This was compiled with information obtained from an *The Roanoke Times* article by Robert Anderson, August 16, 2017 and a *News Journal* article by Sam Wall, August 26, 2017



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VPMIA's Foundation

Vision Statement

VPMIA members are committed to providing code development leadership and continuous training that results in uniform application of the codes. We look for opportunities to partner with all who are impacted and strive to develop and deliver codes and standards that result in health, safety, and welfare protection for the public.

Mission

VPMIA is an association of code professionals dedicated to promotion of uniform enforcement and development of the codes throughout the Commonwealth to assure the health, safety, and welfare of its citizens and any one who may live, work, or visit the state of Virginia. The pursuit of this endeavor is achieved through close, open, and equal working relationships with design professionals, builders, contractors, material manufacturer's and others involved in the construction industry. VPMIA supports the ICC, its goals and mission.

Strategic Plan Mission

VPMIA's strategic plan is to advance our mission through training in order to promote better understanding of the benefits and efficiency of using model codes. The association promotes teamwork, while embracing fairness and respect to all involved parties, always maintaining open communications in every aspect to those who participate in the process.



Photos above are from our 2017 Summer SOI.

VPMIA Officers 2017-2018

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Vice President
Secretary
Treasurer
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Immediate Past President

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James Anjam
Tom Clark
Ellis McKinney
Christopher Martin
Richard Grace



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District 4 Director

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Open
Donald Mimms
Randy Pearce

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Ron Bladen
James Anjam
Johnny Vannoy
Dustin McLehaney
Skip Harper
Jane Kim and
Skip Harper
Ronald Clements
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Richard Grace
Tom Clark and
Chet Reynolds
Bob Adkins
Bob Adkins

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Building Safety Month
VCEC Conference
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RICHMOND

INTERNATIONAL CODE COUNCIL 2018

SAVE THE DATE

ICC PMG Education Day

- WHAT:** Four 90 Minute PMG Sessions
- WHEN:** Tuesday, October 23, 2018
- WHERE:** Richmond, Virginia at ICC's Annual Conference
- WHY:** Qualifies for 6 Hours of ICC Continuing Education

Registration opens May 2018!

Questions? Contact mdominescy@iccsafe.org



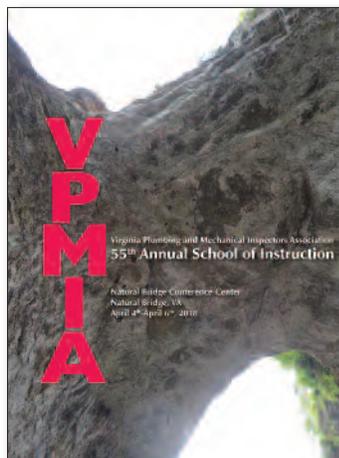
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Acknowledgements

This Yearbook comes to you, in part, thanks to industry support for the mission of VPMIA. Please join us in acknowledging each advertiser listed on page 19 for their contribution. Their strong advertisement support offsets our printing costs.

Also, please visit and personally thank our Tabletop Exhibitors listed on page 21. The Advertising and Yearbook Committee gratefully acknowledges the contributions of Lee Clifton of ICC and Don Prather of ACCA, as well as the efforts of John Seay, Jane Fitzgerald, and Old Town Printing toward the development of this 2018 Yearbook.



— Anthony McMahan and Ron Bladen, Co-Chairmen



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Resolution of Respect for William Davis 'Billy' Aldridge

Whereas prior to his passing on August 16, 2017 at the age of 59 Bill Aldridge was a Riner, VA. Native;

Whereas Bill Aldridge is survived by his daughter Kelly Noto and son Brannon Aldridge, brothers, Lee Aldridge, Sam Aldridge, and sister Elizabeth Aldridge, grandchildren, Sarah Elizabeth Noto and Emily Grace Noto, nephews Andrew Aldridge, Forest Aldridge, and Eamon Aldridge, and niece Libby Aldridge;

Whereas Bill Aldridge was a 1976 graduate of Auburn High School, was a strong advocate for his community, was employed for 11 years by the Town of Christiansburg, 12 years as the proprietor of Little River Contracting and his previous partnership with this father, Bill Sr., at The Furniture Market;

Whereas Bill Aldridge was a long time member in good standing of the Virginia Plumbing & Mechanical Inspectors Association serving on various committees; and

Whereas The Virginia Plumbing and Mechanical Inspectors Association notes with great sadness the passing of Bill Aldridge; now therefore, be it

Resolved, That the Officers, Board of Directors, and the entire membership of the Virginia Plumbing and Mechanical Inspectors Association join the family of Bill Aldridge in celebration of his life and do also offer their most heartfelt sympathy at the loss of this cherished family member; and

Resolved, that the Virginia Plumbing and Mechanical Inspectors Association stands in readiness to assist the family of Bill Aldridge in any manner desired or requested; and

Resolved further, that this resolution be respectfully submitted to Bill Aldridge's family as a permanent memorial to the memory of Bill Aldridge.

Adopted this twenty second day of August, 2017

ATTEST: 
Skip Harper, VPMLA Past President


Dustin McLehane; VPMLA President



Photos from 2017





Resolution of Respect for Emory R. Rodgers

Whereas prior to his passing on March 8th, 2018 at the age of 75, Emory Rodgers was a Winchester, VA native;

Whereas Emory Rodgers is survived by his wife of 25 years, Lucinda “Cindy” Joy, his children Julee P. Clerkin, Danielle E. Rodgers, Michael S. McArthur, and Jennifer Lawrence, brothers Carlin Rodgers, Lewis Rodgers, and sister Kay Attleson, and many grandchildren, nieces, and nephews;

Whereas Emory Rodgers graduated in 1960 from James Wood High School in Winchester, served 3 years in the United States Army, received his Political Science degree in 1968 from Bridgewater College and a Master’s Degree in Public Administration and Government at the University of Maryland in 1970;

Whereas Emory Rodgers career started with Arlington County Government in 1970, he served as Deputy Director, Building & Fire Regulation; Division of Housing and Community Development from 2004 until his retirement in 2015, served on the boards for the Building and Code Administrators, Code Council of American Building Officials, Virginia Building Officials & Code Administrators, and National Institute of Building Sciences, and was a lifetime member of the Virginia Plumbing & Mechanical Inspectors Association;

Whereas the Virginia Plumbing and Mechanical Inspectors Association notes with great sadness the passing of Emory Rodgers; now therefore, be it

Resolved, That the Officers, Board of Directors, and the entire membership of the Virginia Plumbing and Mechanical Inspectors Association join the family of Emory Rodgers in celebration of his life and do also offer their most heartfelt sympathy at the loss of this cherished family member; and

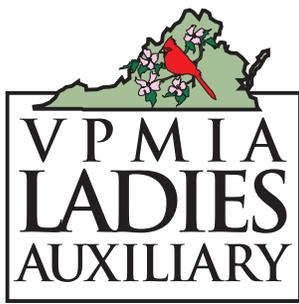
Resolved, that the Virginia Plumbing and Mechanical Inspectors Association stands in readiness to assist the family of Emory Rodgers in any manner desired or requested; and

Resolved further, that this resolution be respectfully submitted to Emory Rodgers family as a permanent memorial to the memory of Emory Rodgers

Adopted this tenth day of March 2018

ATTEST: Skip Harper
Skip Harper; VPMIA Past President

Dustin McLehane
Dustin McLehane; VPMIA President



This year:

Stop by the SOI Registration desk each morning for information on our activities; President Ethel Showman will be posting updates for those gathering at the School of Instruction in Natural Bridge, Virginia.

As this Yearbook goes to press, activities are not yet finalized for Wednesday and Thursday; a gathering is expected for Friday, at the same time as the General Meeting.

Spouses attending the SOI with a member, the Auxiliary activities are invited to participate as our guests. Of course we do hope you will enjoy the company and come back, because this group is also about having fun along the way. Our members like to take advantage of the varied Annual Meeting locales to enjoy some educational and social experiences.

For more information, please contact President Ethel Showman at: eshowman@shentel.net, or Vice President Jane Fitzgerald at: jane@fitzart-d.com

WHAT MEMBERS SHOULD KNOW ABOUT THE AUXILIARY

The Ladies Auxiliary is an ancillary group to, and formed at the same time as, VPMIA. Its purpose is to act as an assistant to and a support for the Association's endeavors to provide code development leadership and continuous training that results in uniform application of the codes. This has included providing activities that are available for spouses who have accompanied their VPMIA member to Annual Meeting. Other than a short business meeting to address requirements, we organize activities during the daytime meetings. Attendees from our group who are in attendance at any VPMIA meetings have remained available to provide an extra helping hand when needed.



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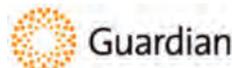
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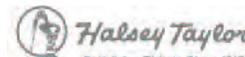
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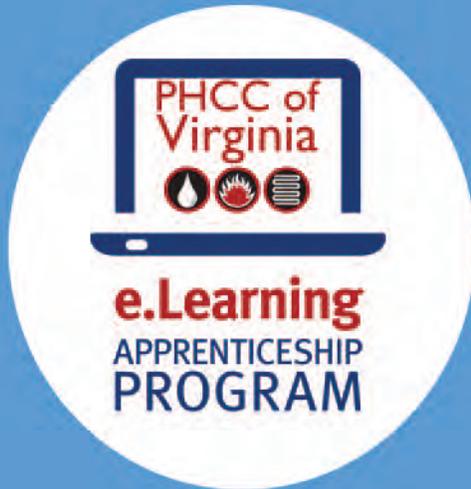
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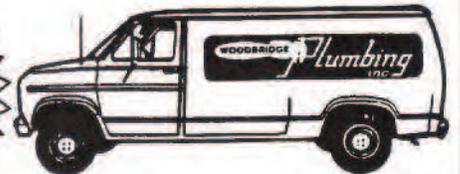


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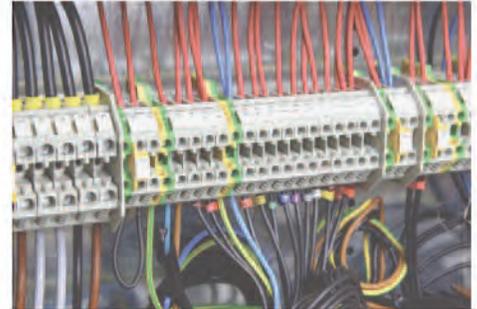
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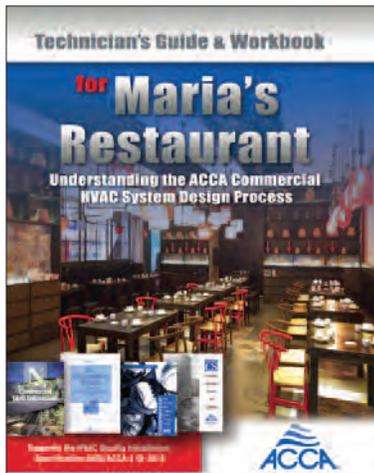


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Understanding the ACCA Commercial HVAC System Design Process

If you have ever gone into a commercial building inspection a little worried about what to look for in a mechanical design and installation... you are not alone. Have you ever thought it would be nice to have a short concise overview of the commercial design process to help you know what to look for during an inspection? The *Technician's Guide & Workbook for Maria's Restaurant* was written to fill that need.

MARIA'S RESTAURANT



Maria's Restaurant is a detailed real-life example of how commercial design concepts are applied in a typical strip mall restaurant. Restaurants have many of the equipment types and design considerations used in other commercial retail situations. Thus, inspectors who understand the restaurant design process, will also be able to transfer that knowledge to beauty parlors, pet shops, or other less complicated retail space, such as jewelry stores, or dry-goods stores.

Maria's Restaurant presents the restaurant design process in two parts. The first is the main body, written in four relatively easy-to-read chapters. This is designed for those seeking a basic understanding of the HVACR system design process. In order to serve a broader audience, the first two chapters in the *Technician's Guide & Workbook* provide brief overviews of comparative loads and differing equipment types. The third chapter focuses on duct design and fitting selection. The fourth chapter provides an overview of the supply diffuser and return grille selection process. The Appendices, the second part, are for those who want to study the design process in more detail. The Appendices provide details on the actual calculations made in each of the four chapters. Appendices cover the following:

- Information for Load Calculations
- *Manual N*[®] Load calculations
- Duct Systems Design Issues and Challenges
- Commercial Kitchen Exhaust
- Hood Basics
- Filtration Primer
- Outside Air
- Math Review
- Glossary

COMMERCIAL STRIP MALL DESIGNS ARE OFTEN SUBPAR

Larger commercial spaces will generally have an engineer's design, equip-

ment selection and duct plan. That is not always the case for smaller properties like those found in a strip mall. However, proper planning and design are critical for all commercial designs. Traditionally, many commercial spaces, and particularly restaurants (see Figure 1), have multiple challenges associated with equipment sizing as well as airflow delivery, and ventilation/makeup air requirements. For restaurants, these challenges can become problems that result in the following negative aspects:

- Staff and patron discomfort due to changing temperatures and drafts throughout the day.
- High utility bills due to excessive infiltration of outside air.
- Uneven cooking temperatures leading to food consistency and quality issues.
- Employee turnover as working conditions are uncomfortable.
- Loss of business due to varying food quality and patron complaints with comfort issues.

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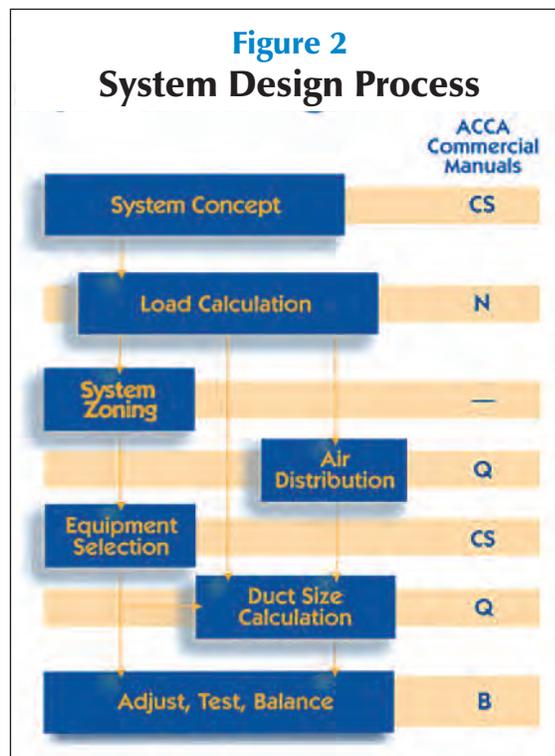
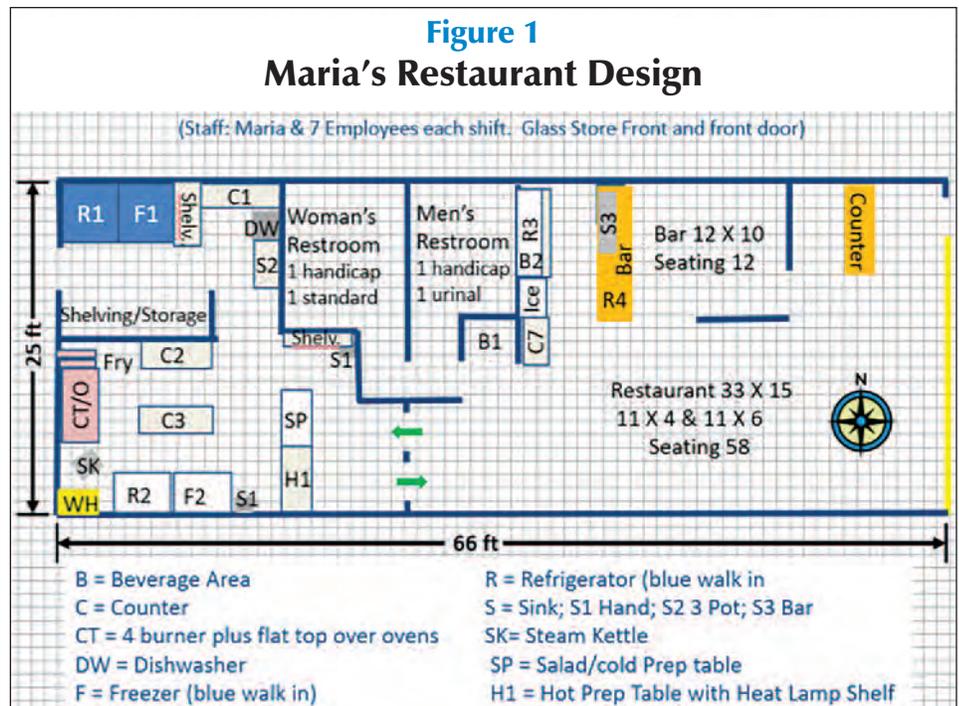
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HVAC System Design, cont'd.

fully addressed. Then, they might use the equipment manufacturer's name plate data for their HVACR equipment selection. *Maria's Restaurant* also addresses other necessary design aspects, such as: ACCA Manual CS® (*Commercial Applications Systems and Equipment* for selection practices), Manual Q® (*Commercial Low Pressure, Low Velocity Duct System Design*) for duct designs, and proper selection of registers and grilles Manual T® (*Air Distribution Basics*). See Figure 2.

HVACR building load, equipment selection and duct design is an engineering task. Thus, it cannot be properly undertaken without understanding the basic math principles involved. Fortunately, the math involved is not at a high level, Appendices include a math review/refresher covering the HVACR design computations used in *Maria's Restaurant*. For example, simple guidance is provided to check the plan's exhaust airflow to make sure it is equal to or less than the makeup air being provided in the plan.

Maria's Restaurant Technician's Guide & Workbook is available through the ACCA bookstore in hard copy (<http://www.acca.org/store>). Better yet, a copy in pdf format is available on-line as part of ACCA's Qtech continuing education credit video series. <http://www.acca.org/certification/qtech> The videos are broken into 10-15-minute segments. When all the individual videos have been listened to, the ICC member registered for the course is eligible to take a short open book on-line exam. Those who pass receive a certificate of completion that can be turned in to meet ICC continuing education requirements. ▲



About the author:

Donald Prather serves as the Technical Services Manager with the Air Conditioning Contractors of America (ACCA). He is currently licensed as an HVAC contractor in Florida, and holds a 1st Class Stationary Engineer Certification in Maryland, and is a graduate of Thomas Edison State University with a B.S. in Mechanical Engineering Technology. Currently he is developing training materials that support continuing education requirements for ICC code officials, HVACR technician's, and HVACR educators.

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 - d. Cast Iron Pipe, Hub and Spigot Gaskets: ASTM C564

- B. Cast Iron Soil Pipe Markings: All cast iron soil pipe shall be clearly marked with the manufacturer’s name, country of origin, eight-digit date code, pipe diameter and length, relevant ASTM standard and registered trademark of the third party certifier. Third party certifier shall be IAPMO, ICC or other organization that is accredited as an ANSI - Guide 65 organization. See www.ansi.org.

- C. Material Test Reports: Supplier of cast iron soil pipe shall be able to provide material test reports in accordance with the relevant ASTM standard and shall include testing and analysis on: radioactivity, dimensional characteristics, tensile strength and hemical/metallurgical content. Suppliers shall also provide MSDS sheets on all coatings.

Eliminating Water Heater Hazards

Based on Section 504.6 of the International Plumbing Code (IPC) ® and Section P2803.6.1 of the International Residential Code (IRC) ®

The water heater installed in a home can be a ticking time bomb if not installed correctly or maintained properly. A water heater temperature and pressure-relief valve is an important safety device for water heaters, as well as for the water distribution system that it is connected to. If the water heater is operating properly, the pressure in the water distribution system is no greater than is required by the Code and the relief valve is in proper operating condition, there should not be any water discharge from the relief valve. Any water discharge from the relief valve is an indication of a water distribution system problem, a water heater problem, or that the relief valve is malfunctioning.

Other important items associated with the relief valve are mentioned in Section 504.6 of the IPC and Section P2803.6.1 of the IRC. These Sections address the requirements of discharge piping serving a pressure-relief valve, temperature-relief valve, or combination temperature and pressure-relief valve. Because the discharge piping from these safety devices that serve water heaters are an extension of the potable water distribution system, the outlet of the discharge pipe must be treated as a potable water supply system outlet.

Item Number 1 states that the discharge piping not be directly connected to the drainage system. Although an air gap is already required for the protection of the potable water supply in Section 608.15.1, a plumber, or other authorized installer, might not realize that the

termination point of the relief valve discharge pipe shall also provide for an air gap.

Item Number 2 requires the discharge to terminate through an air gap located in the same room as the water heater (Figure 1).

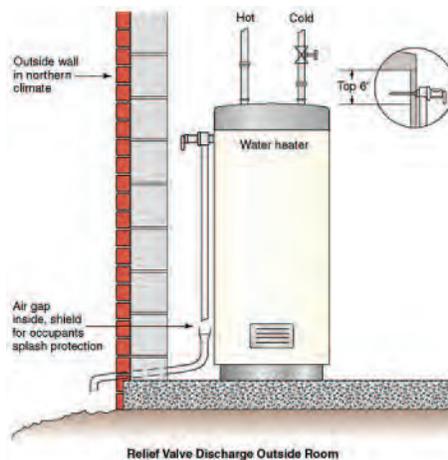


Figure 1

Item Number 3 requires that the discharge piping not be smaller than the diameter of the outlet of the valve served, and must discharge full size to the air gap. (Figure 2).

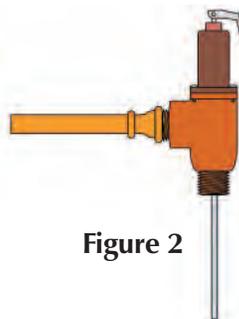


Figure 2

Item Number 4 requires that the discharge piping serve only a single relief device and that it shall not connect to piping serving any other relief device, or equipment. Figure 3 illustrates an ap-

proved means of connecting the discharge from multiple water heater relief valves. The Code is silent as to the size or shape of the waste receptors and the gravity drain line size for capturing and conveying the discharge water from relief valves.

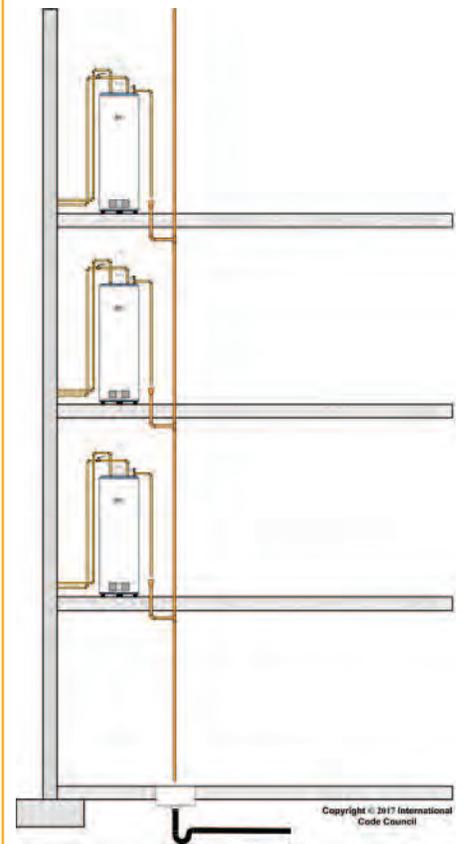


Figure 3

Item Number 5 requires that the discharge piping serving relief valves, discharge to the floor, to the pan serving the water heater or storage tank, to a waste receptor, or to the outdoors.

Item number 6 requires that the discharge piping discharge in a manner that does not cause personal injury or structural damage. A good example of

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Water Heaters, *cont'd.*

locations that are not suitable for the termination of relief valve drain lines are shower floors, laundry trays, kitchen sinks, and bath tubs. Anyone that would be using these fixtures could be subject to injury by hot water and steam that could come from the pipes.

Item Number 7 requires the discharge to terminate to a point that is readily observable by the building occupants. It is important that the occupant be aware of the discharging relief valve or valves as soon as possible to limit the amount of discharge that may possibly cause damage or injury.

Items Number 8 and 9 require the relief valve discharge line to not be trapped, and must drain by gravity without sags in the piping. Retained water in these trapped areas, or piping sags, might cause a buildup of scale or corrosion over time, or possibly freeze if the piping is located in an area that is subject to freezing. Both situations have the potential to create a blockage to any discharge that might come from a relief valve which would create a dangerous condition.

Item Number 10 requires the relief valve to terminate not more than 6 inches (152mm) above the floor surface, a waste receptor, or floor drain, in order to prevent hot water discharge from being directed onto a building occupant that may be nearby. Obviously, for termination points to the floor, the floor must be a suitable location for water discharge. Otherwise, a floor drain, or waste receptor, must be provided to capture and direct discharges from the pipe. See Figure 4 for examples of approved and unapproved termination.

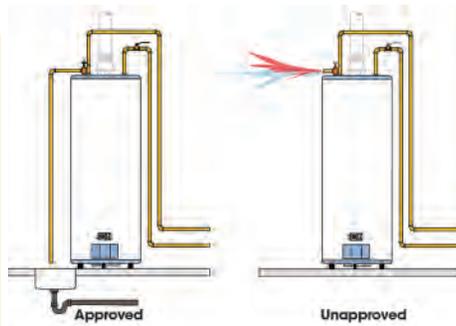


Figure 4

Item Number 11 requires that the discharge piping have no threaded connection at the end of such piping. This would make it easy for someone to screw on a cap, or valve, to stop the dripping water from the pipe. What might be perceived as an easy repair by the handy person could create a dangerous situation that could result in severe damage of the building and injury, or death, to the occupants.

Item Number 12 prohibits discharge pipes from having valves or tees installed. A valve or tee fitting is obviously prohibited as the valve can be closed creating a dangerous situation, and a tee fitting could allow connections of piping from other sources. See Figure 5.

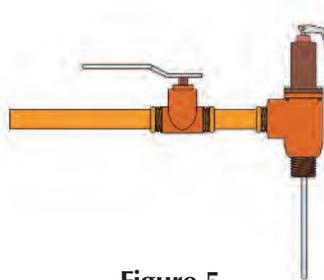


Figure 5

Item Number 13 requires that discharge piping be constructed of materials listed in IPC Section 605.4 / IRC Section P2905.5, or materials tested, rated and approved for such use as in

accordance with ASME A112.4.1. Piping material that comes in contact with potable water is required to conform to NSF 61. Pipe installed in a water distribution system must be capable of withstanding the working pressure of the system at the maximum hot water temperature that could be present in the system. The discharge piping shall have a pressure rating of not less than 100 psi (690 kPa) at 180°F (82°C). The reason the maximum working pressure for the pipe is set at 100 psi (690 kPa) is because of the possibility of pressure surges in a water distribution system.

In summary, the installation requirements of discharge piping serving a pressure-relief valve, temperature-relief valve, or combination temperature and pressure-relief valve mentioned in Section P2803.6.1 of the IRC and Section 504.6 of the IPC, are extremely important. Installation that is not Code compliant could result in contamination of the potable water supply system and/or create a very dangerous situation that could result in an explosion. ▲

About the author:

Lee Clifton, ICC Senior Director of PMG Resources, Government Relations, has 40 years of experience in the Plumbing, Mechanical, and Fuel Gas Industry. His career began as a second generation plumber, working for his father at Clifton Plumbing Inc. in Tampa, Florida. He retired from the City of Los Angeles in 2007 as a Principal Inspector after 21 years of service.



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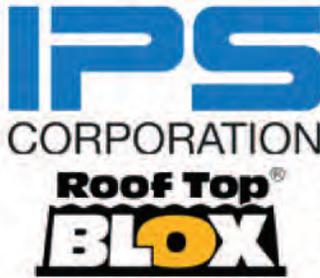
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