

## Upcoming Event Excitement!

We have a lot of exciting events around the corner!

Dec. 9th:  
Sustainability  
Project!

Dec. 12th:  
Annual  
Winter Oyster  
Roast Social!



## Next Meeting Tuesday, November 14th

Harbor Breeze at Patriots Point, Mt. Pleasant

BOG Meeting 5:00-5:30

Happy Hour 5:30-6:00

Chapter Meeting/ Dinner 6:00-7:00

\$30/person

[REGISTER ONLINE](#)

## Presidential Corner by Philip Runyon

Thanks to Steve Marek for planning another good ASHRAE golf outing! Hope all that attended had a good time and we look forward to our next golf outing in the spring.

We want to welcome Chris Muller, an ASHRAE Distinguished Lecturer, to our Charleston chapter and look forward to a great presentation on Indoor Air Quality.

Please look at your schedules and try to attend the Sustainability project coming up December 9<sup>th</sup> if possible. We will be helping DNR with their oyster restoration and enhancement program, see info below in the newsletter for more details.

Also we have our December oyster roast planned for 12/12 at Frothy Beard Brewery in West Ashley. As you all know, there is no technical presentation at this event, it is strictly a social event and we hope all can attend and please bring guests, spouses, etc, the more the merrier. RSVP will be important for this event to insure we have enough oysters and for letting Frothy Beard know how many to expect. We will open up registration for this event very soon so please don't wait until last minute if you know you will be attending go ahead and RSVP so we can get a good head count. See you all next week at the meeting!

Philip Runyon



## Meeting Sponsors

Thank you for your sponsorship. If you would like to support the chapter, please contact the President.

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Gene Brown



# November Meeting Event

## Filtration and Air Cleaning in Sustaining Acceptable IAQ

### Presentation Summary:

A number of concurrent trends are converging to invigorate the interest by designers and building owners in the usage of filtration and air cleaning (FAC) as an adjunct to the environmental conditioning of commercial and institutional buildings. These trends include the recent escalations of costs of energy in all forms; the heightened awareness by tenants and occupants about acceptable indoor air quality brought on by "bad building" publicity; the aging of the inventory of commercial buildings that were constructed to prior standards with deteriorating HVAC systems; recent numerous revisions and addenda to the ventilation standards and related unification of building codes; incentives such as green building/sustainability initiatives and potential energy related tax credits; and concerns about the protection of occupants from airborne chemical or biological contamination resulting from accidental or criminal sources. The results of a field study are presented to demonstrate to users of the ASHRAE Standard 62.1 Indoor Air Quality method that FAC treated air can meet or exceed the anticipated quality level of outdoor dilution air. These data will also a valuable information resource for standards writing bodies and code officials who are faced with the converging needs for assuring sustained or enhanced indoor environmental quality while reducing energy demand.

### Speaker:

## Chris Muller

Chris Muller is Technical Director for Purafil, Inc. (Doraville, Georgia USA) with responsibilities for technical support services and various research and development functions. He also serves as their Global Mission Critical Technology Manager responsible for Purafil's data center business development program. Prior to joining Purafil, he worked in the chemical process and pharmaceutical manufacturing industries in plant management and quality assurance/quality control.

In the 30 years he has spent with Purafil, Chris has become a recognized authority on the subject of indoor/environmental air quality, the application and use of gas-phase air filtration, corrosion control and monitoring, and electronic equipment reliability. He has written and spoken extensively on these topics and counts over 175 articles and peer-reviewed papers, more than 100 seminars, and 8 handbooks to his credit. He has edited chapters in two handbooks on the application and use of gas-phase air filtration, wrote the chapter on contamination control in the ASHRAE Datacom Series Handbook – Particulate and Gaseous Contamination in Datacom Environments, wrote the chapter on gas-phase air filtration in the NAFA Air Filtration Handbook and the chapter on airborne molecular contamination in the Semiconductor Manufacturing Handbook published by McGraw-Hill.

Chris has testified before OSHA on a proposed Indoor Air Quality (IAQ) Standard and has consulted on the preparation of Dutch and Italian governmental standards for indoor environments and has worked closely with many state and national agencies in the U.S. and abroad to develop and implement indoor environmental control strategies for airborne contaminants.

He is one of only a handful of ASHRAE members named as a Distinguished Lecturer and is a frequent speaker at ASHRAE Chapter and Regional meetings both domestically and abroad and has received ASHRAE's Distinguished Service Award. He was a member of the International Scientific Committee for the ASHRAE IAQ Conference Malaysia 2010: Airborne Infection Control – Ventilation, IAQ & Energy. He also served on the Scientific Program Committee (SPC) of the Environmental Health 2013 Conference (Basel, Switzerland). He was a co-author of ASHRAE's Position Document on Filtration and Air Cleaning and is working the ASHRAE IAQ Guideline.



## CTTC Corner

For more information about this column, contact Gene Brown ([gene3380@gmail.com](mailto:gene3380@gmail.com)).

At our October meeting Joel Davis gave an outstanding presentation : “Seismic and Wind Code Related Issues”. In a 2010 earthquake in Haiti over 200,000 people died. In Chile an 8.8 magnitude earthquake killed less than 600 people. The codes make a difference. Most damage is to non-structural components.

In Mexico in 1985 an earthquake caused 10,000 deaths. In the 2017 Mexican earthquake there were 370 deaths. Shear walls were installed and damage was reduced.

In a 2011 earthquake in Japan at a point distant from the epicenter a gas line burst on top of a building.

Risk categories are:

Category I: includes facilities for temporary and agricultural use.

Category II: includes banks, small offices, gas stations and anything not specified in category I, III, IV or V.

Category III: includes large offices, schools, health care without surgery and psychiatric facilities.

Category IV: includes facilities needed in a natural disaster.

Category V: includes missile defense systems etc.

After risk categories, seismic categories are considered.

There are only 2 component importance factors. The factor will either be 1.0 or 1.5.

Life safety items are of high importance. This includes egress lighting, generators (only if they support life/death items), stairwell pressurization in high rise buildings, explosion of boilers and gas systems. Distinction between toxic and highly toxic is given in MSDS.

In a shelter facility if a substance is heavier than air it must be exhausted.

If the importance factor of a component is 1.0 it need not be restrained. If the importance factor is 1.5 it must be restrained regardless of size.

Restraint is required for trapeze support greater than 2 inches. Restraint is required for ducts of 6 SF or 10 #/SF. This is true for ducts with trapeze or other forms of support. Duct for toxic substance or smoke control must be restrained regardless of size.

Equipment in-line with duct and not independently supported is exempt. Independently supported VAV boxes are not exempt.

Spring isolators are not seismic restraints. They can make seismic damage worse.

At building joints pipes must have a U, V or expansion joint.

If 4-inch concrete is specified don't let the contractor use a 2x4 as a form. (1-1/2 x 3-1/2)

Use seismically rated beam clamp. It is rated for sideways load. For longitudinal pipe restraint, attach directly to pipe. Rods over a certain length will buckle under compression. Rod stiffeners are sometimes required.

Registers, grilles and diffusers are required to be attached directly to ceiling.

In 2011 in a school in Virginia, lights and ceiling grid were not seismically supported and everything fell.

There is a clip which can secure diffusers to the ceiling grid. This will eliminate the requirement for 12 gage wire support.

The presentation showed a photo of an AHU on the ground. It had been on the roof before Hurricane Harvey.

Wood today is produced by fast growth techniques and the wood is not as strong as in earlier years. Ratings are having to be changed.

For a duct rising up to 10 feet above the roof, no guy wire is required. For 10 to 20 feet, an engineer must make the decision. For 20 feet and above, guy wires must be used.

ASCE 7-16 will be publishing new wind speed information.

Contract should identify all items which require special inspection.

Require the contractors to use registered design professionals to inspect seismic restraints.

Four or five seismic designers can be involved in a job including mechanical, electrical, plumbing, fire and others.

Code officials do not see the seismic design documents.

### ON ANOTHER SUBJECT

There are individuals who are trying to gut the building codes of requirements for proper construction and energy conservation. South Carolina Senate Bill 579 comes up for a vote in February. Go to the State website and find out who is your legislator. Go to <http://www.scstatehouse.gov/legislatorssearch.php>. Also see our chapter website: <https://charlestonashraechapter.wildapricot.org/GGAC> for information on this topic.





## RP Corner:

I would like to recognize our Officers and others once again for their \$100 honor roll donation to make our goal of Full Circle, thanks again. Maybe I missed you, let me know.

Our Golf Outing was a tremendous success, we had 6 full team and several sponsors, thanks so much for everyone that came out, I really appreciate your participation. We are looking for volunteers to set up the Spring Outing, please get in touch with Philip if you are interested.

The Foundation Endowment to recognize a past member and President of the Charleston Chapter of Eric Crawford is in full swing and we have already donated over \$1000 to the fund. Everyone can help with this just select Foundation and write in Eric Crawford in the blank space, please call me with any questions. I have a link set up on the website; our Goal over the next three years is \$3000 to fully fund this endowment. All donations are tax deductible in the donor's name.

Let's continue another great RP Year in Charleston.

Thanks everyone and see you soon,

Steve Marek

RP Chairman Charleston Chapter

## GGAC Corner:

Check out the new GGAC tab on the Charleston Chapter website. It has some helpful links to the current State Senate Bill 579, concerning our state building codes, and to the Legislator Lookup. Find your representatives in the statehouse and let them know that you are a member of ASHRAE, a LOCAL group of over 100 design and construction professionals with a wealth of knowledge in the building sciences. We can be a valuable resource!

Pete Conroy

GGAC Chair

# 2017-2018 Events

November 14th, 2017 **Meeting @ Harbor Breeze**— [Filtration and Air Cleaning in Sustaining Acceptable IAQ](#)

December 9th, 2017 **ASHRAE Charleston — Sustainability Project: DNR's South Carolina Oyster Restoration and Enhancement (SCORE) Program @ 217 Fort Johnson Rd, Charleston SC 29412** from 9:30 — 11:30 AM

December 12th, 2017 **Annual Winter Oyster Roast Social @ Frothy Beard Brewery** 6:00 PM

January 9th, 2018 **Meeting @ Harbor Breeze**— [TBD](#)

February 13th, 2018 **Meeting @ Harbor Breeze**— [Roundtable Discussion \(Codes, Coordination, etc.\)](#)

March 13th, 2018 **Lunch Meeting @ Harbor Breeze**— [Passion and Performance](#)

April 10th, 2018 **Meeting @ Harbor Breeze**— [TBD](#)

May 8th, 2018 **Meeting @ Harbor Breeze**— [TBD](#)

June 12th, 2018 **Summer Low Country Boil Social @ Harbor Breeze @ TBD**



## Chapter Officers

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# Winter Sustainability Activity

Join us volunteering with DNR's South Carolina Oyster Restoration (SCORE) Program prep bags of oyster shells for building reefs next year.

Where:  
217 Fort Johnson  
Road  
Charleston, SC 29412

Time:  
9:30a to 11:30a

Date:  
Saturday,  
December 9th



RSVP: Online!

[www.charlestonashraechapter.wildapricot.org](http://www.charlestonashraechapter.wildapricot.org)

Note: Wear close toed shoes and clothes that can get dirty.