

# **George H. DuBose, CGC**

## **Specialist in Building Forensics, Building Envelope and HVAC system Failures, Moisture and Mold Building Failures, Expert Witness Services**

---

### **Education and Licensing**

Bachelor of Science, Mechanical Engineering, Georgia Institute of Technology  
Certified General Contractor – Florida - CGC1513786

### **Distinguishing Qualifications**

- Chair of ASHRAE's committee on Moisture Management in Buildings (TC 1.12) (Current).
- Task force member on ASHRAE's Damp Buildings (Current)
- Voting member of ASHRAE's Mold Policy (2015)
- Co-author of online Monograph Series Educational Course for NCARB (National Council of Architectural Registration Boards) on Mold Prevention. (2015)
- Co-author of Building Envelope Chapter in joint AIA, ASHRAE, EPA, SMACNA, BOMA Manual - Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning, 2009
- Co-author of NCARB Mini Monograph: Hidden Risks of Green Buildings, (2007)
- Since 1993, Co-author of three manuals on moisture-related indoor air quality (IAQ) problems and building commissioning, plus over 15 technical articles and seminars.
- Lecturer on building performance problems at the University of Florida TREEO Center, Clemson University, and Adjunct Professor at Valencia Community College.
- Co-inventor of a hybrid fan coil unit (patent pending) that improves occupant comfort, increases energy efficiency, and substantially decreases initial construction cost over current available equipment. Installed in over 10,000 rooms in the Central Florida area and in 400 rooms in Hawaii.
- Technical advisor to the Atlanta Committee for the 1996 Olympic Games (ACOG) to assist in the commissioning of the Olympic Village facilities.

### **Area of Technical Specialization**

- Building water and moisture intrusion problems
- Building envelope and HVAC system failure analysis
- Litigation support, expert witness, for mold and moisture building failures including building envelope and HVAC systems
- Building air infiltration, vapor intrusion, and water leakage performance

problems

- Assessing green design, construction and product failures that resulted in mold and moisture problems.
- Remediation design of building envelope and HVAC systems
- Allocation and recovery expert witness for mold, moisture, building envelope and HVAC system failures

During the past 25 years, Mr. DuBose, has diagnosed, provided remedial solution and verification services in buildings throughout continental US, Hawaii, Canada, Mexico, Caribbean, and Southeast Asia. Work has been performed in most all sectors of project types including hospitality, healthcare, multifamily, government, and education.

## **Related Expertise**

### **Building Forensics Specialty**

Mr. DuBose is an expert at evaluating the dynamic interrelationship of competing building systems and their effect on moisture problems. He has analyzed building problems with diagnostic techniques, such as water intrusion testing, moisture mapping, tracer gas testing, fan pressurization assessment, thermographic evaluation, pressure differential testing, and real-time moisture characterization - all unique variations of American Society of Testing and Materials (ASTM) testing protocols designed for IAQ, mold, moisture-related building defect problems. His experience with these techniques has provided critical diagnostic analyses to determine causes of moisture and building systems problems at facilities exceeding a total construction value of 3 billion dollars.

He has assisted professional design firms in successfully avoiding mold, moisture and IAQ related problems in building envelope and HVAC systems in facilities that have included hospitals, schools, judicial complexes, resort facilities, and office buildings. Predicting key design flaws and implementing steps to avoid potential mold and moisture problems with the building envelope and HVAC systems is Mr. DuBose's specialty.

He developed a moisture and mold avoidance manual for a major theme park and resort owner in Central Florida. This manual was written to address multimillion-dollar-per-year losses experienced by the owner. Over \$4B worth of construction has been successfully completed using this manual.

### **Moisture and Mold Expertise**

Mr. DuBose has broad experience in the detection, mitigation, and control of moisture- and mold-related building problems. He has determined the cause and severity of mold contamination in more than 100 facilities, including a multimillion-dollar problem at the Martin County Courthouse and Constitutional Office Building.

This 100,000-square-foot facility was evacuated in 1992 because of problems relating to moisture and mold contamination.

Mr. DuBose provided oversight of a ductwork remediation program at a 1.2 million SF healthcare facility, one of the largest facilities of its kind in the country. The work required analysis, diagnosis, remedial design, and remediation verification, while ongoing construction was being completed on the complex. The work led to and was the basis of a satisfaction of a government letter of show notice and the basis of recovery from the builder's risk coverage of the complex.

Mr. DuBose led the analysis, diagnosis, and provided expert witness services for a 2,000+ room resort in southeast asia that had a 9 figure mold and moisture problem. This led to a successful

Mr. DuBose has assisted several private and public clients in mitigating microbial contamination, including an 11-story building where water intrusion caused microbial problems requiring fast-track removal and repair to meet an imminent opening deadline.

He developed a moisture and microbial avoidance manual for a major theme park and resort owner in Central Florida. This manual was written to address multimillion-dollar-per-year losses experienced by the owner. Over \$1B worth of construction has been successfully completed using this manual.

### **Implementing Consulting and Mitigation Services**

Mr. DuBose has directed several fast-track consulting and mitigating solutions. One such project involved a high-rise facility in Orlando, Florida, which required rapid mitigation of both architectural and HVAC systems while still maintaining a fully operational facility and avoiding significant revenue loss. He has counseled clients on ancillary catastrophic IAQ problem buildings.

His experience has ranged from design and mitigation services for a Mississippi hospital patient wing and surgical suites, to a South Florida elementary school, to federal housing in South Carolina, to a five-star resort in Hawaii.

### **Program, Construction, and Project Management Highlights**

- Program, consulting, and construction management of a 25-townhome complex with moisture-related building problems, including both HVAC and building envelope problems.
- Project development and project management of the renovation and upgrade of two resort properties in the Central Florida area comprised of over 2,000 rooms in multiple-lodge buildings. Upgrade included major infrastructure repairs and renovation of the building interiors. The scope of services ranged from funding

approval to occupancy.

- Program development of the repairs to a 24-story hotel facility with widespread moisture-related problems, including the design and construction of repairs to both the building envelope and HVAC systems. Repairs totaled more than 55-million dollars.
- Program development of moisture-related repairs to multi-family housing complexes that required the repair or replacement of the building envelope.

## **Awards**

- Recipient of the US Army's Commanding General's "Award of Excellence" for superior project performance of the Hale Koa Hotel's building renovation and re-activation project in Honolulu, Hawaii.
- Distinguished Award for Informational Brochures, "Moisture Problems: Why HVAC Commissioning Procedures Don't Work in Humid Climates" Society for Technical Communication (STC), Florida Technical Publications and Art Competition.
- Excellence Award for Informational Brochures, "Solving Indoor Air Quality Problems in Hot, Humid, Climates," STC International Technical Publication Competition.
- Best of Show Award and Distinguished Award Informational Brochures, "Solving Indoor Air Quality Problems in Hot, Humid Climates," STC Florida Technical Publications and Art Competition.

## **Partial List of Publications, Seminars, and Presentations**

### **Manuals**

With David Odom and Richard Scott. National Council of Architectural Registration Boards (NCARB) Monograph Series Educational Course on Mold Prevention. (2015)

Contributing Author. Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning for the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) in developing partnership with The American Institute of Architects (AIA), Building Owners and Managers Association (BOMA), Sheet Metal and Air Conditioning Contractors' National Association (SMACCNA), U.S. Environmental Protection Agency (USEPA), and the U.S. Green Council, 2009.

With David Odom and Richard Scott. *NCARB Mini Monograph: Hidden Risks of Green Buildings*. 2007.

With David Odom, Norman Nelson and Richard Scott. *Mold & Moisture Prevention*. An AIA continuing education monograph (115 pages) for the National Council of Architectural Registration Boards (NCARB), 2003?.

With J. David Odom. *Preventing Moisture and Mold Problems: Design and Construction Guidelines*. Developed for a Florida Theme Park. Updated 2003 (originally published 1991)

With J. David Odom. *Commissioning Buildings in Hot, Humid Climates*. Published by Fairmont Press, June 1999.

With J. David Odom. *Preventing Indoor Air Quality Problems in Hot, Humid Climates: Problem Avoidance Guidelines*. Published in 1991; revised in 1992, 1993, and 1994.

### **Publications**

With David Odom and Richard Scott, "Hidden Risks of Green Buildings" Owners Perspective. Winter, 2012.

With David Odom and Richard Scott, "Can Going Green Lead to Hidden Building Risks?" Commercial Construction Renovation. November/December, 2010.

With Norman Nelson and Richard Scott, "Hidden Risks of Green Buildings: Why Building Problems are likely in Hot, Humid Climates" Green Lodging News. August, 2010.

With David Odom and Richard Scott, "Hidden Risks of Green Buildings" Construction Specifier. March, 2010.

With David Odom and Richard Scott, "The Hidden Risks of Green Buildings: why Building Problems are Likely in Hot, Humid Climates" Construction News (Alabama). February/March, 2010.

With David Odom and Richard Scott, "Hidden Risks of Green Buildings" Claims Magazine. February 2010.

With David Odom, and Richard Scott. "The Hidden Risks of Green Buildings, Why Building Problems are Likely," Construction Advisor Today, October 2009.

With David Odom and Richard Scott, "Hidden Risks of Green Buildings: Why Building Problems are likely in Hot, Humid Climates" RCI-Interface. August, 2009.

With David Odom and Richard Scott, "Hidden Risks of Green Buildings: Why Building Problems are likely in Hot, Humid Climates" Environmental Observer. August, 2009.  
"Avoid Risks When Mothballing Buildings." Lorman Newsletter, May 2009.

With J. David Odom and Richard Scott, "Hidden Risks of Green Buildings." *HPAC Engineering Magazine*. October 2008.

With Richard Scott and J. David Odom. "The Hidden Risks of Green Buildings: Why Moisture & Mold Problems are Likely." *Florida Engineering Society Journal*. October 2008.

With David Odom and Richard Scott, "Hidden Risks of Green Buildings: Why Moisture and Mold Problems are Likely" Design Green Construction July, 2008.

With Richard Scott and J. David Odom. "The Hidden Risks of LEED: Avoiding Moisture & Mold Problems in Green Buildings." *Texas Architect*. September/October 2008.

With David Odom and Richard Scott, "Hidden Risks of Green Buildings" Contracting Business Blog. September, 2008.

With Richard Scott and J. David Odom. "Is Your Green Building the Best it Can Be?" *Facilities Engineering Journal*, January/February 2008.

With David Odom and Richard Scott. "The Hidden Risks of Green Buildings, Why Moisture and Mold Problems are Likely," Lorman Educational Services. January, 2008.

With Richard Scott and J. David Odom. "The Hidden Risks of Green Buildings: Avoiding Moisture and Mold Problems." NCARB continuing education mini-monograph, *Direct Connection*, 2007.

With James M. Light. "Avoiding IAQ Problems in New Building with an Emphasis on Hot, Humid Climates." Submitted for publication in proceedings. *IAQ '95: Practical Engineering for IAQ*.

With J. David Odom and Philip Fairey. "Commissioning in Hot, Humid Climates: The Rules Are Different." *TAB Journal*. Summer 1994.

With J. David Odom and Philip Fairey. "Moisture Problems: Why HVAC Commissioning Procedures Don't Work in Humid Climates." *ASHRAE Journal*, December 1993.

With J. David Odom & Philip Fairey. *Moisture Problems: Why HVAC Commissioning Procedures Don't Work in Humid Climates*. Paper Presented at the Eighth Annual Symposium on Improving Building Design in Hot, Humid Climates. Ft Worth, Texas, May 13-15, 1992.

Principal contributor to "Designers Wring out Moisture Problems." *Building Design & Construction*, August 1992.

With J. David Odom and Norman L. Nelson. "Designing and Constructing Mildew Free Hotels." *ASHRAE Transactions*. Vol. 98, Part 1. January 1992.

With J. David Odom. "Design Practices Can Avoid Mildew Problems." *Suncoast Architecture/Builder*, August 1991.

## **Lectures**

Lecturer in over 20 Lorman and PESI Seminars in all parts of the United States.

Guest lecturer at half-day seminars conducted by the Trane Company on building problems and solutions.

Lecturer for multiple University of Florida TREEO educational and training seminars.

Lecturer on half- and full-day seminars on IAQ problems and building failures at Valencia Community College (Orlando, FL).

Co-presenter at CEU-accredited seminars for AIA in South Florida.

With J. David Odom. "Solving IAQ Problems in Hot, Humid Climates." A one-day seminar prepared for and given in conjunction with the University of Florida TREEO Center and Clemson University.

## **Presentations**

Co-presenter - "Hidden Risks of Green Buildings" WPL Webinar. September, 2010.

“Solving the Hidden Risks of Green Design and Construction.” Construct 2009.  
Indianapolis, IN, June 2009.

AIA. Fort Worth, Texas, October 2008.

“Hidden Risks of Green Buildings: Why Certain Green Approaches are Risky.” AFE  
Webinar, October 2008.

Co-presenter of *Building Failures are Likely and How to Reduce Your Risk in the District  
of Columbia*. Lorman Education Services. Washington, DC. October, 2008.

Engineering Green Building Conference. Las Vegas, October 2008.  
FES. Ft. Lauderdale, FL. October 2008.

Co-presenter of *Hidden Risks of Building Green: Why Problems Occur and How to Avoid  
Them*. Florida Engineering Society and RCCP. Ft. Lauderdale, FL. September, 2008.

“The Increased Risks of Green Buildings; What Contractors Need to Know.” AGC, August  
2008.

IAQ Update. Tyndall Air Force Base, AFCESA. Annual Conference of MAJCOM  
Mechanical Engineers. November 1994.

“Dehumidification by Heat Pipes in HVAC.” ASHRAE Annual Meeting. Orlando, Florida.  
June 1994.

“Preventing Moisture Problems in Hot/Humid Climates through Proper Commissioning.”  
ASHRAE Regional Conference, Regional XII. Jacksonville, Florida. June 1994.

“Forget Everything You’ve Heard About Building Commissioning Procedures – They  
Don’t Work in Hot, Humid Climates.” Second National Conference on Building  
Commissioning. St. Petersburg, Florida. May 1994.

“Moisture Problems: Why HVAC Commissioning Procedures Don’t Work in Humid  
Climates.” 8th Symposium on Improved Methods of Building Design in Hot/Humid  
Climates. Texas A&M University, 1992.



“Moisture Control in New Construction.” Presented to the American Institute of Constructors, Orlando, Florida. 1991.

“Designing, Constructing and Operating a Mildew-Free Hotel in Florida.” Presented to the Engineer’s Network of the CFMHA, 1989.

“Mold and Mildew Problems: Cause, Cure and Prevention.” Presented to the Central Florida Building Engineers. 1989.

### **Membership in Professional Organizations**

- Chair of ASHRAE TC 1.12 – Moisture Management in Buildings
- Member American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
- Past Secretary of Technical Committee for Building Envelope Systems (TC 4.9), member since 1991
- Past member of Research Subcommittee for Building Commissioning (TC 9.9)
- Past member National Institute of Building Sciences (NIBS)