

## Craig DeWitt, Ph.D., P.E.

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- Profile:**
- ◆ Specializing in building systems, wood, moisture and indoor environmental issues in modern and historic residential and light commercial structures.
  - ◆ 45 years experience in the construction industry.
  - ◆ 35 years experience providing consumer/end-user education and programs.
  - ◆ 30 years of forensic engineering experience.
  - ◆ 12 years of federal funding for building systems programs.
  - ◆ Formal and technical training in structures, environments and building systems.

### Professional Experience:

- 2001-present *Principal*, RLC Engineering, LLC. Provide litigation support, forensic engineering, consulting, and training on indoor environments and building systems. Clients include owners, builders, design professionals, home inspectors, code officials, contractors, real estate, HVAC and pest control professionals, product manufacturers and retailers, engineers, attorneys, insurance companies, the US DOE and many specialty contractors.
- 2012-2017 *Forensic Engineer - Principal Consultant*, Donan Engineering Co., Inc. Provide forensic engineering services on structural, building envelope, construction defects, water intrusion, roofing, hardwood floors, indoor environments and building systems. Clients included primarily insurance companies.
- 1996-2001 *Lecturer/Program Manager* SC Institute for Energy Studies at Clemson University, Clemson, SC. Responsible for building systems program area. Involved with research, development, deployment and outreach involving energy, indoor environments, material and techniques as related to housing and commercial building systems, with an emphasis on wood and wood framed structures. Responsible for preparation and presentation of outreach seminars and programs to building professionals, owners and occupants.
- 1990 – 1996 *Research Associate/Assistant Professor and Extension Housing Engineer* Agricultural & Biological Engineering Department, Clemson University. Responsible for research and outreach in aspects of radon, indoor air quality, ventilation, energy use, construction techniques and materials in housing and light commercial buildings, as influenced by buildings as systems. Principal Investigator of \$2.6 million EPA-funded Indoor Environments program.
- 1984 – 1990 *Systems Programmer & Manager of Consulting and Technical Services*, Division of Computing & Information Technology, Clemson University. Responsible for education, consulting and technical support services for Clemson's various computer systems by users in the Colleges of Engineering and Agriculture. Involved with support and development of a statewide Extension Service information system.

1972 – 2001 *Laborer, carpenter, foreman, owner/partner.* Involved with construction, remodeling, supervising construction crews, cost and material estimating, payrolls, and all other aspects of residential and light commercial construction. Also involved with construction consulting, structural inspections, moisture engineering and environmental evaluations.

**Education:**

Ph.D., Agricultural Engineering, Clemson University, 1993 – Dissertation topic: Crawlspace in Warm Humid Climates

M.S., Agricultural Engineering, Clemson University, 1983

B.S., Botany, Clemson University, 1976

**Professional Licenses and Registration:**

Professional Engineer - South Carolina, North Carolina, Georgia  
Licensed Residential Builder - South Carolina (lapsed 2014)

**Affiliations and Memberships:**

American Society of Heating Refrigerating and Air Conditioning Engineers 1993-  
SC Association of Heating and Cooling Contractors, 2000-  
International Association of Wood Flooring Professionals, 2009-  
VP 2009-  
National Institute of Floor Covering Inspectors, 2014-2016  
The National Wood Flooring Association, 2007-2009  
NOFMA Technical Committee 2004-2008  
Energy and Environment Building Association, 1997-2006  
American Lung Association of SC, Government Relations Committee 1998,  
Board of Directors 1998-, President-Elect 1999, President 2000- 2002  
Pickens County Habitat for Humanity, Board of Directors 1998-2001  
Building Officials Association of SC, 1999-2001  
American Association of Radon Scientists and Technologists, 1992-99  
Sigma Xi, Scientific Research Society, 1993-1994  
Clemson University Building Air and Water Quality Committee. 1993-2001  
City of Clemson Design Control Commission, 1993-1996  
Oconee Homebuilders Association, 1998-2009  
National Association of Home Builders, 1998-2009

**Specialized Training and Certification:**

Instructor for NOFMA's Certified Wood Flooring Inspector program. Training components include wood technology, building construction and building environments

NOFMA Certified Wood Flooring Inspector (2006)

NWFA Certified Wood Floor Inspector (2007)

Certified Home Energy Rater for DOE's HERS and EPA's Energy Star programs - 1999

Completed course titled *Assessing Microbiological Contamination of Indoor Environments*, sponsored by the MidAtlantic Environmental Hygiene Resource Center, April 1994.

Completed course on *Biodeterioration of Wood Products* – Clemson University 1991

Completed course titled *Advanced Hands-On IAQ/HVAC Diagnostics*, sponsored by the H.L. Turner Group, July, 1994

Completed training and certification for EPA Radon Measurement Proficiency (RMP) and Radon Contractor Proficiency (RCP) listing, 1991 and 1993.

Completed Energy Efficient Building Association's *Train-the-trainer* program, April 1998

Approved as Instructor for real estate continuing education courses by SC Real Estate Commission. January 1996

Approved as Instructor for building code officials continuing education courses by the SC Building Codes Council, 1996

Completed *Master Termite Technician/Pesticide Applicator* training program, Oct, 1996

Completed Equine Thermography Course – OSU

Certified Scuba Diver – Open Water, Advanced, Nitrox, Master Diver, Divemaster

Certified Swimming Pool Operator

IAWFP Certified Wood Floor Inspector

USGBC LEED AP certified

**Publications:**

Refereed

DeWitt, C.A., "Crawl Space Myths", ASHRAE Journal, November 2003, ASHRAE, Atlanta, GA

Gardner, L.L. and C.A. DeWitt, "Moisture Damage in South Carolina Housing", Building Research and Information, Vol 20 #3, 1992, pp 166-170.

Redmann, L.L. and C. A. DeWitt, "Preventing Home Moisture Damage in a Warm, Humid Climate", International Journal for Housing Science and Its Applications, Vol 19, Number 1, 1995

DeWitt, C.A., J.M. Bunn, "Airflow through Crawl Space Foundation Vents", Recommended Practices for Controlling Moisture in Crawl Spaces, ASHRAE Technical Data Bulletin, Volume 10, Number 3, January, 1994

DeWitt, C.A., J.M. Bunn, "Crawl Space Ventilation in Warm, Humid Climates", Proceedings of the Thermal Performance of the Exterior Envelope of Buildings V Conference, Clearwater, FL, Dec. 7, 1992

- Gardner, L.L. and C.A. DeWitt, "Moisture Damage in South Carolina Housing", Proceedings of the CIB '92 World Building Congress, Montreal, Canada, 1992
- Gardner, L.L. and C.A. DeWitt, "Moisture Damage in South Carolina Housing", Building Research and Information, Vol 20 #3, 1992, pp 166-170. (invited)
- Gardner, L.L. and C.A. DeWitt, Phase II and III: Home Moisture damage. Bulletin 670. Clemson, SC: SC Agricultural Experiment Station., 1991.
- Gardner, L.L. and C.A. DeWitt, "Home Moisture Damage in a Warm Humid Climate" Proceedings of the 1991 Annual Meeting of AAHE, Durham, NH
- DeWitt, C.A., "Implied Warranties in Residential Housing in South Carolina", Proceedings of American Association of Housing Educators, October 1990

Proceedings and Non-refereed

- Zoetfelt, Bill and C. DeWitt "Determining the moisture content of wood flooring at the time of manufacture", Surfaces Conference, Las Vegas, NV
- DeWitt, Craig "Summer Moisture and Wood Flooring", Hardwood Floors, May/June 2011
- DeWitt, Craig "Winter Moisture and Wood Flooring", Hardwood Floors, Oct/Nov 2010
- DeWitt, Craig, "The Comfort Zone: Understand how the air in buildings affects wood floors", Hardwood Floors, April/May 2007
- DeWitt, C.A., "Ventilation and Moisture Control in Crawl Spaces in A Warm, Humid Climate", Proceedings of the 22nd International IAHS Symposium on Housing Construction and Financing, October 3-7, 1994, Salzburg, Austria.
- Redmann, L.L., and C.A. DeWitt, "Environmental Conservation and Health: Preventing Home Moisture Damage in a Warm, Humid Climate", Proceedings of the 22nd International IAHS Symposium on Housing Construction and Financing, October 3-7, 1994, Salzburg, Austria.
- DeWitt, C.A., J.M. Bunn and R.A. Spray, "Stack Effect and Radon Infiltration, 1992 International Symposium on Radon and Radon Reduction Technology, Minneapolis, MN
- Haapala, M.H., C.A. DeWitt, R.W. Power, and R.A. Fjeld, "Comparison of Continuous and Occupancy Time Radon Measurements in Schools Using Programmable E\_PERMs", 1992 International Symposium on Radon and Radon Reduction Technology, Minneapolis, MN
- DeWitt, C.A., and L.L. Gardner, "Home Moisture Damage in a Warm, Humid Climate", Paper #914520, ASAE Winter Meeting, Chicago, IL 1991
- DeWitt, C.A., "CUFAN: System Development and Design", Proceedings of the 2nd International Conference on Computers in Agricultural Extension Programs. Orlando, FL, Feb 1988

Other publications

Numerous articles for *Hardwood Floor Magazine* and *Wood Floor Business* magazine

DeWitt, Craig, "Spray-in-place polyurethane foam and warm, humid climates",  
[www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Winter Moisture Issues", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Soil Covers", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Termites and Sealed Crawl Spaces", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Window condensation", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Sealed Crawl Space Specs", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "The Fallacies of Venting Crawl Spaces", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Wood Moisture Content", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Moisture and Hardwood Floors", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "MAD Wood – Moisture and Air Dynamics of Wood", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Mold and Rot Locator", [www.rlcengineering.com](http://www.rlcengineering.com)

DeWitt, Craig, "Relative Humidity Calculator", [www.rlcengineering.com](http://www.rlcengineering.com)

Authored section of training program for NAHB's Certified Graduate Builders program

Updated SCERDC's Energy Efficient Manufactured Housing booklet

Edited warm-climate version of NAHB's Home Builder Institute publication on energy efficient construction

Reviewer for ASHRAE Technical Bulletin: Recommended Practices for Moisture Control in Crawl Spaces Volume 10, Number 3, January 1994

Reviewer for Building Research Journal, Small Homes Council/Building Research Center, Urbana, IL.

Developed "Housing Leaflet 250 - Questions about Indoor Air Quality?"

Developed free-standing IAQ display for use at fairs and exhibits.

Developed seven flyers detailing indoor air contaminants to accompany display.

Numerous Clemson Extension Documents and News-to-Use articles

### **Presentations and Programs**

Presented "Crawlspace Condensation: Causes and Control", Columbia, SC 2019

Presented "Moisture, Mold and Mayhem" Donan Engineering, Orlando, FL 2016

Presented "Moisture Science and Measurement" Donan Engineering, Louisville, KY 2016

Presented "Crawlspaces after the Storm" SCAHACC 2016

Presented “Mold, Mildew and Fungi” CAAG conference, Savannah, GA 2015

Presented “Buildings and Floors” NICFI, Denver, CO 2015

Presented “Crawlspace Science”, Charlotte, NC, 2014.

Presented “Relationships between Wood Science and Building Science” NICFI New Orleans, 2014

Presented “Flooring and the Built Environment” NICFI, Las Vegas, NV, 2013

Participation in NPMA conference New Orleans - 2011

Participated in NPMA conference Honolulu, HI - 2010

Participated in DPMA conference in Delaware – 2010

Presented “Prioritizing High Performance Upgrades for homes” at Sustain SC conference in Charleston SC, 2010

Presented “Wood Flooring Basics” Greer Flooring, Greer, SC 2010

Presented “Moisture Control of Critical Spaces” at NPMA conference Las Vegas, NV – 2009

Presented “Wood Technology and building Science” for NOFMA wood flooring inspector program, 2003-09

Presentation on “Moisture Measurement” for Affordable Comfort Conference, 2003

Presentations on “IAQ in Schools”, 2000-2003

Presentations on indoor environments at Green Village Expo, Charleston, SC 1998

Presentations to Habitat for Humanity on Energy Efficient Construction

Presentations, “Moisture Problems in Warm Humid Climates, for the SCAHACC, spring 1999

Presentation, “Healthy Homes” for the American Lung Association of SC, Oct 1998

Green Team member, Habitat for Humanity International’s Jimmy Carter Work Project, Rugby, TN, June, 1997

Presentation, “Healthy Indoor Environments” for South Atlantic Regional Habitat for Humanity Annual Conference, Raleigh, NC, Oct 1997

Presentation “Radon Resistant New Construction”, proponent for code change at Southern Building Code Congress International (SBCCI) meetings, July 1996, Oct 1996, Jan 1997, Oct 1997

Panel Discussion, "Radon mitigation issues in the South East", Georgia AARST meeting, Atlanta, GA, May, 1994

Presentation, "Ventilation and Moisture Control in Crawl Spaces in A Warm, Humid Climate", 22nd International IAHS Symposium on Housing Construction and Financing, October 3-7, 1994, Salzburg, Austria.

Presentation by L.L. Redmann, "Environmental Conservation and Health: Preventing Home Moisture Damage in a Warm, Humid Climate", Co-Authored by C.A. DeWitt, 22nd International IAHS Symposium on Housing Construction and Financing, October 3-7, 1994, Salzburg, Austria.

Poster Session, "Stack Effect and Radon Reduction", 1992 International Symposium on Radon and Radon Reduction Technology, Minneapolis, MN

Panel Discussion "Crawl Space Case Studies", Affordable Comfort VI Conference, Pittsburgh, Mar. 1992.

Presentation, "Home Moisture Damage in a Warm Humid Climate", 1991 Annual Meeting of AAHE, Durham, NH

Other Seminars and Continuing Education courses developed and taught:

Webinar – “Master Suite Moisture Issues”

Webinar – “Crawl spaces and wood floors”

Webinar – “Wood Moisture Meters 101 – For Floor Inspectors”

Webinar – “Wood Floors and Summer Moisture”

“SC State Energy Codes Update”

“Moisture, Mold and Rot in New Construction”

“The HVAC System is Working Fine: It’s the House that is Broken”

“Managing your Mold Liability”

“Duct condensation and other Attic and Crawl Space Moisture issues”

“Bugs, Mold and Rot”

“Indoor Environmental Concerns”