

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

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- Profile:**
- ◆ Specializing in building systems and indoor environmental issues in modern and historic residential and light commercial structures.
 - ◆ 35 years experience in the construction industry
 - ◆ 25 years experience providing consumer/end-user education and programs
 - ◆ 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 consulting and training on indoor environments and building systems. Clients include owners, builders, design professionals, HVAC professionals, home inspectors, code officials, contractors, real estate and pest control professionals, building product manufacturers and retailers, engineers, attorneys, insurance companies, the US DOE and many specialty contractors.
- 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 – Emphasis on wood-frame residential structures and environments

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

B.S., Botany, Clemson University, 1976

Professional Licenses and Registration:

Professional Engineer, South Carolina, North Carolina

Licensed Residential Builder, South Carolina

Affiliations and Memberships:

International Association of Wood Flooring Professionals, 2009-
VP 2009-

The National Wood Flooring Association, 2007-2009

NOFMA Technical Committee 2004-2008

SC Association of Heating and Cooling Contractors, 2000-

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 Society of Heating Refrigerating and Air Conditioning Engineers 1993-

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 Task Force on Recycling 1992-1993

Clemson Homeowners Association, Board of Directors 1992-1994

City of Clemson Design Control Commission, 1993-1996

Oconee Homebuilders Association, 1998-2009

National Association of Home Builders, 1998-2009

Specialized Training and Certification:

Completed Equine Thermography Course – OSU

Certified Scuba Diver – Open Water, Advanced, Nitrox

Certified Swimming Pool Operator

IAWFP Certified Wood Floor Inspector

USGBC LEED AP certified

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

NOFMA Certified Wood Flooring Inspector

NWFA Certified Wood Floor Inspector

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

Publications:

Referred

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-referred

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

DeWitt, Craig, "Spray-in-place polyurethane foam and warm, humid climates",
www.rlcengineering.com

DeWitt, Craig, "Winter Moisture Issues", www.rlcengineering.com

DeWitt, Craig, "Soil Covers", www.rlcengineering.com

DeWitt, Craig, "Termites and Sealed Crawl Spaces", www.rlcengineering.com

DeWitt, Craig, "Window condensation", www.rlcengineering.com

DeWitt, Craig, "Sealed Crawl Space Specs", www.rlcengineering.com

DeWitt, Craig, "The Fallacies of Venting Crawl Spaces", www.rlcengineering.com

DeWitt, Craig, "Wood Moisture Content", www.rlcengineering.com

DeWitt, Craig, "Moisture and Hardwood Floors", www.rlcengineering.com

DeWitt, Craig, "MAD Wood – Moisture and Air Dynamics of Wood", www.rlcengineering.com

DeWitt, Craig, "Mold and Rot Locator", www.rlcengineering.com

DeWitt, Craig, "Relative Humidity Calculator", 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

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 "Moisture Control of Critical Spaces" at NPMA conference Las Vegas, NV – 2009

Presentation on "Wood Technology" 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 SC Heat Pump Association, 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 – "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"