

...> **ROBERT BOMBINO, M.S., P.E.**

### Expertise & Role

Mr. Bombino is regarded as an industry leader in evaluating thermal and hygrothermal (heat, air and moisture) performance of building enclosure systems. Robert's expertise in this area began while an undergraduate student at the University of Waterloo and was further developed while earning his Master's Degree in Architectural Engineering at Penn State. His research and thesis at Penn State focused on hygrothermal design issues of steel-stud framed wall systems. The research resulted in practical recommendations for the residential construction industry in Pennsylvania.

Robert's theoretical training coupled with his practical experience and proficiency with state-of-the-art analysis software has enabled him to perform thermal and hygrothermal analyses of a wide variety of enclosure systems and components throughout North America. This analytical work is used as the basis for making recommendations regarding air barriers, vapor retarders, as well as the location and levels of insulation necessary to avoid condensation related problems. This expertise is particularly relevant when dealing with specialty buildings with sustained high indoor humidity such as museums and natatoriums.

Robert has extensive experience with a variety of building enclosure systems, components, and materials used across the United States and Canada. This experience includes steep and low-slope roofing systems, wall cladding of all types (masonry, EIFS, concrete, metal panel, stucco, wood and vinyl siding), windows, glazing, glass/metal curtain walls, as well as below-grade and plaza waterproofing systems.

Robert's experience spans buildings of all types, new and old, including high and low-rise commercial, institutional and residential building projects. His involvement typically includes investigation, design, and construction review of restoration projects for existing buildings of all construction types, as well as construction litigation support services. He also is involved with design and construction review on new projects.

Robert is a shareholder and principal of RDH and therefore participates in the overall direction and management of the firm.

### Education

Master of Science, Architectural Engineering, Pennsylvania State University, University Park, Pennsylvania

Bachelor of Applied Science, Honors Co-op, Civil Engineering, University of Waterloo, Waterloo, Ontario

### Memberships & Awards

Registered Professional Engineer (MA, WA)

ASTM, Member

ASHRAE, Associate Member

### Senior Building Science Specialist, Principal



### Typical Projects

- ...> Building enclosure investigations, condition assessments and litigation support for wall cladding (stucco, EIFS, masonry), plaza and below-grade waterproofing, windows and glass/metal curtain walls: Spirit Mountain Lodge, Grand Ronde, OR; Lake Placid Lodge, Whistler, BC; Santa Cruz County Health Services Building, Santa Cruz, CA; Harbor Towers, San Diego, CA; Kirby Place, Houston, TX; Highland District Hospital, Hillsboro, OH; Rijo Residence, Madeira, OH; University of Connecticut Law School Library, Hartford, CT.
- ...> Building enclosure rehabilitation/renovation design of cladding (brick veneer, metal panel, EIFS, precast concrete, vinyl siding), windows, curtain walls, plaza waterproofing and roofing: Hotel Alder, Portland, OR; Heritage Park School, Mission, BC; Edward V. Gant Science Complex, University of Connecticut, Storrs, CT; Domus 1 Condo, Cambridge, MA; Pavilion Condo, Cambridge, MA; St. Agnes Church, Arlington, MA.
- ...> Construction review for wall, window and roof renovations: Boston Public Library, Boston, MA; Christian Science Publishing House, Boston, MA; Wolff Zackin Natatorium, University of Connecticut, Storrs, CT.
- ...> New construction design review: Pantages Apts, Seattle, WA; Mallard Bay Condominiums, Issaquah, WA; Pharmacy/Biology Building, University of Connecticut, Storrs, CT; Liberty Place, Cambridge, MA; Review of wall and roof systems design for New Boston Schools.

### Presentations & Publications

- ...> "Building Science Basics: Thermal, Hygrothermal, and Climate Design Basics", 3-part internal presentation, 2003.
- ...> "Design Considerations for Inward Vapor Drives in Cold and Mixed Climates", presented at ASTM Symposium on the Performance of Exterior Building Walls, Phoenix, AZ, 2001.
- ...> "Heat and Moisture Considerations with Steel Framing in Low-Rise Residential Construction," authored with E. Burnett, published in the proceedings of Performance of Exterior Envelopes of Whole Buildings VIII Symposium, Clearwater, FL, 2001.

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- ...> “Design Issues with Steel-stud-framed Wall Systems,” authored with E. Burnett, reprinted as, “Weighing Thermal Design Strategies for Steel-Framed Homes (Part 1)” and “Weighing Hygrothermal Design Strategies for Steel-Framed Homes (Part 2),” Energy Design Update, 1999 and 2000.
- ...> “Hygrothermal Design Issues with Steel-Framed Enclosure Wall Systems,” Master’s Thesis, The Pennsylvania State University, Department of Architectural Engineering, University Park, PA, 1999.
- ...> “Steel Stud Framing: Doing it Right,” presented at Innovation Without Headaches: PHRC Conference, State College, PA, 1999.