ROBERT BOMBINO, M.S., PE

Sr. Building Science Specialist, Principal

Staff Biography 1/2

Expertise & Role

Mr. Bombino investigates, designs, and reviews construction of enclosure restoration projects for existing buildings. He also provides design and construction review on new construction projects. In addition, he provides expert testimony and litigation support for construction defect claims. He leads building enclosure projects for buildings of all types; new and existing, high and low-rise, commercial, institutional and residential.

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

Robert is also regarded as an industry leader in evaluating thermal and hygrothermal (heat, air and moisture) performance of building enclosure systems. His education, experience, and proficiency with state-of-the-art analysis software enable him to perform advanced thermal and hygrothermal analyses. This expertise is particularly relevant when dealing with specialty buildings with sustained high indoor humidity such as museums and natatoriums.

Prior to joining RDH in Seattle in 2004, Robert spent five years practicing in Boston, MA.

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

Education

M.S., Architectural Engineering, Pennsylvania State University, University Park

B.A.Sc., Honors Co-op, Civil Engineering, University of Waterloo, Waterloo, ON, Canada

Memberships

Registered Professional Engineer (MA, WA)

American Society for Testing & Materials (ASTM), Member

ASTM, Committee C16, D08, and E06 Voting Member

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Member

ASHRAE Technical Committee 4.4, Past Voting Member

Typical Projects

New Construction

Robert has provided building enclosure design review services for several new construction projects. Some examples include:

- Amazon Blocks 26, 32 and 34, Seattle, WA
- Bravern III and IV, Bellevue, WA. Two, 33-story residential towers constructed over a 4-story retail base
- Banner Thunderbird and Ironwood Medical Centers, Phoenix, AZ
- Aspira, Seattle, WA. 38-story residential tower
- Gallery, Seattle, WA. 13-story, residential tower
- Health and Science Center, Northwest University, Kirkland, WA
- Enso, Seattle, WA. Two tower project with a residential and commercial portion. The residential tower extends to 19 stories, while the commercial tower extends to 12 stories. Both towers rise from a 6-story base
- Avalon Towers, Bellevue, WA. Two tower residential project, with towers of 15 and 24 stories
- Pharmacy/Biology Building, University of Connecticut, Storrs, CT

Bravern III and IV, Bellevue, WA

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Condition Assessments

Robert has conducted investigations and condition assessments for wall cladding (stucco, EIFS, masonry), plaza and below-grade waterproofing, windows and glass/metal curtain walls. Some examples include:

- Washington Square, Bellevue, WA
- Labor and Industries Head Office, Tumwater, WA
- Rieke Science Center, Pacific Lutheran University, Tacoma, WA
- Lake Placid Lodge, Whistler, BC
- Santa Cruz County Health Services Building, CA
- Harbor Towers, San Diego, CA
- Kirby Place, Houston, TX
- Highland District Hospital, Hillsboro, OH
- Law School Library, University of Connecticut, Hartford, CT

Labor and Industries Head Office, Tumwater, WA

Litigation Support

Robert regularly provides expert testimony and litigation support related to building enclosure performance problems. He is recognized as objective and provides services for plaintiff and defense clients as well as acting as a neutral expert. Some examples include:

- Gold Pointe, Tacoma, WA – Defense, Developer
- Tidewater Cove, Vancouver, WA – Plaintiff, HOA
- Mira, Kirkland, WA – Neutral Expert
- 11th & Howell, Seattle, WA – Neutral Expert
- Graystone at Altamont, Clackamas, OR – Plaintiff, HOA
- Montere, Sammamish, WA – Defense, Developer
- Woodlands, Everett, WA – Defense, Developer

Rehabilitation and Construction Review

Robert provides building enclosure rehabilitation/renovation design and construction field review of cladding, fenestration, plaza waterproofing and roofing. Some examples include:

- Graystone at Altamont, Clackamas County, OR
- College Inn, Oregon State University, Corvallis, OR
- Hotel Alder, Portland, OR
- Cadillac Hotel, Seattle, WA
- Gant Science Complex, Univ. of Connecticut, Storrs, CT
- St. Agnes Church, Arlington, MA
- Boston Public Library, Boston, MA
- Christian Science Publishing House, Boston, MA
- W. Zackin Natatorium, Univ. of Connecticut, Storrs, CT

Publications

- Finch, G., Hubbs, B., and Bombino, R., "Osmosis and the Blistering of Polyurethane Waterproofing Membranes", proceedings of the 12th *Conference on Building Science and Technology*, Montreal, QC, March 17, 2009.
- Bombino, R., and Hubbs, B., "The Impact of Architectural Design, HVAC Design, and Occupants on Condensation Performance of Exterior Walls in Multi-unit Residential Buildings", proceedings of *10th Conference on Building Science and Technology*, Ottawa, ON, May 12-13, 2005.
- "Study of Poured-in-place Concrete Wall Performance in Coastal British Columbia", (authored with D. Ricketts for Canada Mortgage and Housing Corporation, BC Homeowner Protection Office, 2004).
- Burnett, E.F.P. and Bombino, R., "Heat and Moisture Considerations with Steel Framing in Low-Rise Residential Construction," proceedings of *Performance of Exterior Envelopes of Whole Buildings VIII Symposium,* Clearwater, FL, 2-6 December 2001.
- Bombino, R. and Burnett E.F.P., "Design Issues with Steel-stud-framed Wall Systems," Pennsylvania Housing Research Center, University Park, PA, May 1999. 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,* Dec. '99 and Jan. '00.
- Bombino, R., "Hygrothermal Design Issues with Steel-Framed Enclosure Wall Systems," Master's Thesis, The Pennsylvania State University Department of Architectural Engineering, University Park, PA, 1999.

Presentations

- "Metal Roofing," AIA It's in the Details – The Horizontal Plane, Seattle, WA, Nov. 2006.
- "Key Elements in Designing the Building Envelope," presented to NBBJ, Seattle, WA, Sept. 2006.
- "Stumbling Blocks in Multi-unit Residential Projects," ASHRAE, Quebec City, QC, June 2006.
- "Building Science Basics: Control of Heat, Air and Moisture," presented to GBD Architects, Portland, OR, June 2006.
- "Rainscreen Wall Systems: What, When, How," Construction Specifiers Institute, Seattle, WA, Apr. 2006.
- "Building Science and the Building Enclosure," WABO Conference, Seattle, WA, April 2006.
- "Key Elements in Designing Wall Systems," Portland Building Enclosure Council, Portland, OR, Feb. 2006.
- "The Art & Science of Flashing," ASHRAE, Chicago, IL, Jan. 2006.
- "Introduction to Moisture and Thermal Management," presented to 3M Corporation, St. Paul, MN, July 2005.
- "Lessons Learned - Building Enclosure Design Construction and Performance," *University of Washington Continuing Professional Education Program*, Seattle, WA, March 1, 2005.