

CURRICULUM VITAE (abridged)

DEAN R. HEERWAGEN

Birth date and place: 12/27/42; Summit, New Jersey

Marital status: Married to Judith (Hannula) Heerwagen, 8/21/71

One daughter, Margaret J.R., born 11/1/81

Education:

Phillips Academy, Andover, MA; Diploma, June 1960

Cornell Univ., Ithaca, NY; Bachelor of Metallurgical Engineering, 6/65

MIT, Cambridge, MA; Master of Science, 1/67

MIT, Cambridge, MA; Master of Architecture, 6/71

Professional Experience:

Teaching:

1971-73 Assistant Professor, Dept. of Architecture, Cornell Univ.

1975- Acting Assoc. Prof to Assoc. Prof., Dept of Architecture, Univ. of Washington

Research:

1965-66 Research Assistant, Dept of Civil Engineering, MIT, Cambridge, MA

1966-67 Staff Engineer, Phelps Dodge Copper Products Corp., Elizabeth, NJ

1967 Research staff, MIT Instrumentation Laboratory, Cambridge, MA

1969-71 Research Assistant, Dept of Architecture, MIT, Cambridge, MA

1975 Research staff, Urban Systems Laboratory, MIT, Cambridge, MA

Consulting:

1968-70 Self-employed consultant: architectural engineering topics

1974 Engineering staff, Francis J. Linehan, Jr., & Assoc., Consulting Engineers, Boston, MA

1979-80 Consultant for energy use, policies, & conservation, Communication Design, Seattle, WA
(a social science consulting organization); our clients were:

(1) City of Seattle, Lighting Department (the electric utility agency); and

(2) State of Washington Energy Office, Olympia, WA

1979-95 Self-employed consultant: bldg energy conservation., solar energy, & HVAC systems design

1996 Visiting Scientist, Battelle Memorial Institute, Seattle-Human Affairs Research Center

Courses Presently Offered at the University of Washington:

Design & Planning for Changing Climates

Green Technology

Architectural Acoustics

Creating Biophilic & Biomimetic Environments

Major Research Grants:

"Incorporation of Energy Conservation Principles into the Design of State Buildings" (member of an eight-person faculty team); funding from the Washington State Legislature, \$683,000, 7/76 -- 9/79

"The Development of a Cost-Effective Approach to the Aseismic Design of Buildings for the Pacific Northwest" (principal investigator; with C.W. Roeder, Department of Civil Engineering); funding from the National Science Foundation, \$25,000, 1/79 -- 12/80

"Request for Purchase of Research Equipment to Measure Solar, Luminous, and Longwave Radiation" (with A.F. Emery & C.J. Kippenhan, Department of Mechanical Engineering); funding from the National Science Foundation, \$30,000, 8/85 -- 6/87

"Dynamic Response of Building Components in Residential Buildings: A Study of Current & Proposed Conservation Standards" (member of a eight-person faculty team); funding from the Washington State Legislature, \$1,473,000, 3/86 -- 4/89.

"Developing architectural design guidelines for improving speech intelligibility in K-12 classrooms" (principal investigator; with UW-private industry team); funding from the UW Royalty Research Fund, \$34,735, 7/96 -- 6/97.

"Testing the renovated Architecture Hall" (prin. invest.); funding from the UW Student Tech Fee, \$53,167, 7/05--6/07.

"Air quality testing in Architecture Hall" (co-p.i.); funding from UW Facilities Services, \$60,197, 10/07-8/09

"Air quality testing in Architecture Hall" (co-p.i.), funding from Seattle City Light, \$32,000, 9/08 – 8/09

Major Technical Reports:

- Strain-Rate Effects in Alpha-Iron Single Crystals* [SM Thesis]. Research Report #66-41. Cambridge, MA: Dept of Civil Engineering, MIT, 9/66.
- Contributor to: *A Conceptual Design of a Lunar Colony*. [Prepared by a fifteen-member study team @ Manned Spacecraft Center, Houston, TX under a NASA-ASEE Faculty Fellowship Program], 10/72.
- Contributor to: *The Incorporation of Energy Conservation Principles into the Design of State Buildings*. (Prepared for the Washington State Dept of Social and Health Services, Olympia, WA, by a Univ. of Washington faculty/student team); Reports: *Phase 1*, 6/77; *Phase 2*, 9/78; *Phase 3*, 10/79.
- Contributor to: *Procedures for Evaluating the Energy Conservation Programs of the Washington State Energy Office*. [Prepared by Communication Design, Seattle, Washington; M.R. Olsen, project director], 8/80.
- Contributor to: six reports prepared for the Washington State Energy Office (as a member of eight-faculty and several-graduate-student team from the Departments of Architecture, Building Construction, and Mechanical Engineering, University of Washington): -- As an example: *Summary Report for "Dynamic Response of Building Components in Residential Homes*, 8/89.

Monograph published:

- Observing air flow in buildings* (prepared for the Vital Signs Project, University of California, Berkeley, 3/96, 110 ppg)

Book published:

- Passive and Active Environmental Controls: Informing the Schematic Designing of Buildings*, (New York: The McGraw-Hill Companies, 2004), 960 ppg

Selected Conference Presentations and Other Publications:

- "The Evaluation of Passively-Controlled, Alternate Building Designs by the Thermal Simulation Computer Program UWENSOL" (with A.F. Emery, C.J. Kippenhan, G.B. Varey). *Proc. 2nd Nat'l Passive Solar Conf.*, 1978, ppg 357-364.
- "The Optimal Energy Design of Structures by Using the Numerical Simulation of the Thermal Response -- with Emphasis on the Passive Collection of Solar Energy" (with A.F. Emery, C.J. Kippenhan, S.V. Stoltz, G.B. Varey). *Energy and Buildings*, 1(3), (1978), ppg 367-382.
- "Developing Office Building Design and Operation Strategies Using UWENSOL and the COMFORT Routine" (with A.F. Emery, C.J. Kippenhan, G.B. Varey). *ASHRAE Transactions*, 76(1), 1980.
- "A Piagetian Approach to the Development of Energy Curricula for Schools of Architecture" (with J.H. Heerwagen and N. Cook). *Proc. 1981 Internat'l Conf. Energy Education*, August 1981.
- "Energy & Psychology: Designing for a 'State of Mind'" (with J. H. Heerwagen). *Journal of Architectural Education*, 37(3/4), 1984, ppg 34-37.
- "Human Variability: The Comfort 'Annoyance Factor'" (with J.H. Heerwagen, A.F. Emery, D. MacGowan, G.B. Varey). *Proc. 10th Nat'l Pass. Sol. Conf.*, 1985, ppg 632-637.
- "Lighting and Psychological Comfort" (with J.H. Heerwagen). *Lighting Design + Applications*, April 1986, ppg 47-51.
- "Measured and Predicted Performances for a Passive Solar Test Cell In The Pacific Northwest Using a Trombe Wall System" (with R.D. Kunkle, A.F. Emery, C.J. Kippenhan, J.L. Garbini). *Proc. 11th Nat'l Pass. Sol. Conf.*, 1986, ppg 130-135.
- "Holes in the Fabric of 'Comfort': What One's State of Mind Has to Do with One's Bodily State" (with J.H. Heerwagen). *Proc. Internat'l Sym. on Advanced Comfort Systems*, 1988.
- "On The Extensive Use of Heat Flux Transducers for Evaluating Residential Building Component Performance -- Calibration and Deployment" (w/ C.J. Kippenhan, A.F. Emery, K.H. Nicholaisen, G.B. Varey, & J.L. Garbini), *Proc. Workshop on In-Situ Heat Flux Measurements in Buildings*, May 1990.
- "Measuring Speech Intelligibility in K-5 Classrooms in a Seattle Public School." (w/ K. Anderson, D. Lang, & R. Towne) presented at the 134th Mtg. Acous. Soc. America, 12/97 (published by the ASA, appearing on the Web at <http://www.acoustics.org/heerwagen.htm>).
- "Fixing the speech intelligibility of classrooms at the University of Washington" (w/ P. Sampson), presented at the 137th Mtg. Acoust. Soc. America, 6/00, Atlanta, GA.
- "Measured and Predicted Thermal Performance of a Residential Basement" (with A.F. Emery, C.J. Kippenhan, and D.E. Steele), *HVAC&R Research*, 13(1), January 2007, ppg. 39-58.
- "Assessments of the Natural Ventilation Function in a University Building using CO₂ Measurement" (w/ S. Ilyas & A. Emery), *ASHRAE Transactions*, 2010, 116(2), 41-48.
- "Occupant Perceptions of an Indoor Thermal Environment in a Naturally Ventilated Building" (w/ S. Ilyas, A. Emery, & J. Heerwagen), *ASHRAE Transactions*, 2012, 118(2), 114-121.
- "Influence of a CO₂ Feedback System on Occupant Behavior in a Naturally Ventilated Space" (w/ S. Ilyas & A. Emery), *ASHRAE Transactions*, 2015, 121(2), 1-8.
- plus approximately 40 other papers not listed here*

