

DONALD R. WULFINGHOFF

Donald Wulfinghoff is a researcher, consultant, and teacher in energy efficiency. Since the "oil shock" of 1973, his research contributed fundamental understanding of energy issues, he guided government energy policy, and he is a leader in energy efficient design and operation of buildings and industrial facilities. He had been described by Congressman Roscoe Bartlett as "the world's leading energy efficiency expert."

Wulfinghoff is the author of the *Energy Efficiency Manual* (Energy Institute Press), the primary reference on energy efficiency in buildings and industrial facilities.

In 1978, he established the first professional courses on energy conservation at George Washington University. His courses, seminars, and lectures have been attended by thousands. He has been heard frequently in the media.

Wulfinghoff authored *Managing Your Energy*, the tutorial for top managers that introduced the concept of profit center management of energy costs.

Wulfinghoff was an organizer and judge of the ASHRAE Energy Awards design competition, the leading efficiency design competition in the United States. He contributed the original Energy Management chapter of the *ASHRAE Handbook*.

Wulfinghoff is active in the development and promotion of ASHRAE Standard 90, which serves as the national energy conservation standard for the United States.

After the attack on the World Trade Center in September 2001, Wulfinghoff initiated a program to protect new and existing buildings against biological and chemical terrorism.

In 2005, Wulfinghoff joined with Congressman Roscoe Bartlett and leading energy supply experts to explain the depletion of fossil fuels and its implications to the public and government. He outlined a national energy efficiency plan that will allow the United States to survive the decline of energy resources during the 21st century.

He founded Wulfinghoff Energy Services, Inc. in 1978 to establish a higher standard for efficient design and operation of buildings and plants. The firm has served organizations ranging from the White House to heavy industrial plants, from small schools to the most complex hospitals. It provides consultation in many areas of technology and management, and trains energy professionals.

Wulfinghoff is a Professional Engineer in mechanical and electrical engineering. He is a licensed First Grade Stationary Engineer. He is a Certified Automobile Mechanic in all specialties. He was trained in arbitration by the American Arbitration Association. He holds a First Class commercial broadcast license.

He received a B.S. in physics from the University of Louisville and an M.S. in physics from the University of Florida, where he completed the core program for the doctorate in physics and electrical engineering. Wulfinghoff served in the U.S. Navy as an engineering officer aboard several ships, and as a project officer in a development unit.

Energy Technology and Systems Projects (Directed)

- analysis of all the energy conservation programs of the U.S. Department of Energy (National Academy of Sciences)
- the National Plan for Solar Heating and Cooling (U.S. Department of Energy)
- Demand-Side Management programs for many public utilities
- the State of California electricity load forecasting model and data base
- energy conservation options for residential buildings (U.S. Department of Energy)
- effects of energy conservation on indoor air quality (U.S. Department of Energy)
- R&D needs for building materials involved in energy conservation (U.S. Department of Energy)
- effect of glazing design on heating energy consumption (U.S. Department of Energy)
- solar energy system performance in high-volume houses (Ryan Homes)
- effect of industrial technologies on energy consumption, environmental effects, and market factors (U.S. Department of Energy)
- the first major study of energy conservation methods at military facilities (U.S. Department of Defense)
- commercialization of energy technologies, including cogeneration systems, heat pumps, and new applications for absorption chillers (U.S. Energy Research and Development Administration)
- adaptation of the TRACE computer program to analyze cogeneration systems (Trane Company)
- cogeneration feasibility studies at many locations
- oil spill prevention for deep water ports (U.S. Department of Energy)

Energy Technology and Systems Projects (Contributed)

- Wind Energy program (U.S. Energy Research and Development Administration)
- Energy Storage program (U.S. Department of Energy)
- design procedures for optimizing life-cycle energy cost of new buildings (U.S. General Services Administration)
- Community Energy Planning program (U.S. Department of Energy)
- Energy Integrated Industrial Park program (U.S. Department of Energy)
- Integrated Community Energy Systems program (Argonne National Laboratory)
- Environmental Development Plans (U.S. Department of Energy)
- Commercialization of Energy Technologies, including cogeneration systems, heat pumps, and new applications for absorption chillers (U.S. Energy Research and Development Administration)
- Modular Integrated Utilities System program (National Bureau of Standards)
- strategies for reducing highway vehicle energy use (U.S. Department of Energy)
- energy consumption in freight transportation (Lawrence Livermore Laboratory)

Government Organizational and Legislative Assistance

- Residential Tax Credit and Utility Retrofit portions of the National Energy Act
- National Academy of Sciences panels established to improve the efficiency and reliability of energy systems in Federal facilities
- formation of the Defense Energy Task Group, the organization that formulated the initial energy policy of the Department of Defense
- Energy Conservation Advisory Committee of Montgomery County, Maryland
- Steering Committee for energy efficiency collaboration between the State of Maryland and the U.S. Department of Energy

Courses and Seminars (partial list)

- *Managing Your Energy*, tutorial for top managers, 1983 to present
- *Energy Efficient Operation and Design of Buildings*, George Washington University, 1977-1982
- *Cogeneration Systems Design and Applications*, George Washington University, 1976-1982
- *Residential Energy Conservation*, George Washington University, 1979
- *Energy Conservation Practices in Operation and Maintenance*, sponsored by the Government of the District of Columbia, 1985
- *Managing Your Energy for Greater Profits*, 1985, sponsored by TVA
- *State of Maryland Energy Conservation Course*, 1981
- Energy Conservation Workshops for Building Owners and Operators, for the U.S. Federal Energy Administration, 1976
- Physics for Students of the Life Sciences, Northern Kentucky University, 1972
- Electron Device Physics, Honeywell Inc., 1971

Major Publications (in addition to research reports for work above)

- the *Energy Efficiency Manual*, published by Energy Institute Press, the primary reference of energy conservation, 2000
- the Energy Management chapter of the *ASHRAE Handbook*, 1984
- *Managing Your Energy*, the top management guide to managing energy, 1983
- revision of the seminal energy conservation manuals *ECM-1* and *ECM-2* (for the Federal Energy Administration), 1976
- U.S. Army Corps of Engineers standards and design manual for cogeneration, 1975
- U.S. Navy engineering design criteria for cogeneration, 1974

Articles, Papers, and Presentations (partial list)

- ***Energy Efficient Design for the 21st Century***, keynote speech, VII International HVAC+R Symposium, Istanbul, May 2006
- ***Energy Efficiency: Key to Survival in the 21st Century***, Sit Investors Conference, Phoenix, Arizona, February 2006
- ***Optimized HVAC for the 21st Century***, plenary presentation for Clima 2005 Conference, Lausanne, Switzerland, October 2005
- ***The Four Steps of an Effective Energy Cost Saving Program***, Maryland Industries of the Future Conference, 2004
- ***Spend More of Your Money for Books by Spending Less for Energy***, American Library Association, 2001
- ***The Most Powerful Way to Reduce Your Operating Costs***, Maryland Plant Engineering & Maintenance Conference, 2001
- ***How to Stimulate Top Management Commitment to Energy Conservation***, Alliance to Save Energy, 2000
- ***Energy Management is a Profession, Not a Hobby***, Industrial Energy Technology Conference, 2000
- ***The Modern History of Energy Conservation: an Overview for Information Professionals***, Special Libraries Association, 2000 (also published in *Electronic Green Journal*, Issue 13, <http://egj.lib.uidaho.edu>)
- ***My Philosophy of Energy Management***, DOE Steam BestPractices seminar, 2000
- ***The Real Economics of DSM Programs***, Berlin DSM Conference, 1995
- ***Demand-Side Management: What Works, What Doesn't, and Why***, Third International Symposium on Distribution Automation and Demand Side Management, 1993
- ***Is Simplicity the Path to Reliability in HVAC Systems?*** National Academy of Sciences, 1991
- ***Hidden Problems in Daylighting***, Construction Specifier, 1991
- ***Is There a Conflict Between Energy Efficiency and Health?***, Industrial Energy Technology Conference, 1986
- ***The Future of Passive Solar in Industry***, Industrial Energy Technology Conference, 1985
- ***Common Sense About Building Energy Consumption Analysis***, ASHRAE Transactions, 1984
- ***Success and Failure Factors in Cogeneration***, National Energy Technology Conference, 1980
- ***Economics of Energy Conservation in Health Care Facilities***, Health Care Horizons, 1978
- ***The Economics of Energy Conservation for the Apartment Industry***, Units, 1978
- ***Window Treatment***, ASHRAE Journal, 1978
- ***The Urban Freeway Base-Lane System***, Traffic Quarterly, 1975
- ***A New Design Philosophy for Small Computers***, Computer Design, 1975

Efficiency Improvements in Buildings and Facilities (partial list)

- The White House
- Old Executive Office Building
- National Cancer Institute, Bethesda, Maryland
- Children's Hospital National Medical Center
- Veterans Administration Medical Center, Washington, DC
- Franciscan Hospital, Rock Island, Illinois
- South Suburban Hospital, Chicago
- Franklin Foundation Hospital, Franklin, Louisiana
- Asbury Methodist Home, Gaithersburg, Maryland
- Library of Congress
- U.S. Department of Commerce Building
- Liberty Loan Building
- Naval Gun Factory Building
- Washington Suburban Sanitary Commission Building, Laurel, Maryland
- District of Columbia Central Post Office
- Norfolk Central Post Office
- all government facilities of Montgomery County, Maryland
- Montgomery College, Maryland
- Academy of the Holy Names, Silver Spring, Maryland
- All Souls Unitarian Church, Washington, DC
- Brown University
- Bausch & Lomb manufacturing plant, Garrett County, Maryland
- Penn Center, Philadelphia
- Cullen Center, Houston
- Columbia, Maryland
- Royal Orleans Hotel, New Orleans
- Whitehall Hotel, Chicago
- International Hotel, Baltimore
- L'Enfant Plaza Hotel, Washington, DC
- Clarion Bay View Hotel, San Diego
- Howard Plaza Hotel, Taipei
- Marina Motel, Sioux City
- Foxfire Apartments, Laurel, Maryland
- Badgerow Building, Sioux City
- Martin Towers, Sioux City
- AT&T Fairlee Communications Station

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- U.S. Naval Academy
- U.S. Coast Guard Academy
- U.S. Marine Corps Training Center, Quantico
- Fort Bragg, North Carolina
- U.S. Naval Station, Great Lakes
- North American Air Defense Headquarters
- Rockville Automotive Recycling plant
- Zong Sine textile factory
- National Sugar Refinery, Kaohsiung, Taiwan
- Lantern Drive house
- Kendall house

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