

Petition Requesting Collaboration with the Town of Chapel Hill on a Sustainable Energy Forum

Dear Mayor Foy and Council members:

I am here tonight on behalf of the citizens group Neighborhoods for Responsible Growth to ask for the Town of Chapel Hill's collaboration and support in presenting a public forum on Sustainable Energy.

How any future buildings in Chapel Hill are heated, cooled and powered is an extremely important issue for our community and its neighborhoods. While our primary concern is the reduction of fossil fuel combustion within the town, reducing dependence on the regional electrical grid is important as well, since it is also powered by fossil and nuclear fuels, each of which have well-known problems and dangers.

The goal of the forum will be to specifically address the question of what sustainable energy options are available **now** which could be used as an energy source for new structures. Any future large-scale development within Chapel Hill should consider these options, including and in particular any development by UNC on the Horace Williams tract. The Town of Chapel Hill might even consider such options as unique components of one or more new zoning categories to be created to encourage sustainable energy use.

Viable sustainable technologies capable of heating, cooling, and even powering large institutional facilities and offering a short-term payback are not pie in the sky – they exist now, and should be integral to all current development planning, particularly in our area with its worsening air quality. And as energy costs continue to rise, every conservation component of sustainable energy use will also continue to increase in value.

UNC's Carolina North proposal, modeled as a forward-looking research-oriented campus, has featured no discussion of such alternatives. This is selling our citizens, our community, our nation, and our planet short.

NRG has sought and obtained commitments from a number of experts in the field of sustainable energy to participate in a public forum. The goal is to present information on these technologies and inject them into the public discussion of energy alternatives for all new Chapel Hill development, including the UNC main campus and on the Horace Williams tract, consistent with the recommendations of the Horace Williams Citizens Committee.

Our tentative list of speakers includes the following distinguished persons:

- o Dr. Thomas Henkel: Professor Emeritus of Physics at New York University
- o Mike Nicklas: Former chair of NC Solar Energy Association, American Solar Energy Association, and the International Solar Energy Association, and principal in Innovative Design, the firm that designed Smith Middle School
- o Larry Shirley: Head of NC Energy Office, former chair of the NC Solar Energy Association, and the American Solar Energy Association, and former director of the NC Solar Center.
- o Richard Harkrader: Retired architect and contractor, three-time chair of NC Sustainable Energy Association, co-founder of Carolina Green Energy, and environmental representative on the NC Legislative Study Commission on Electric Utility Deregulation from 1998 to 2002.

Michael Collins, for Neighborhoods for Responsible Growth
967-4119, [mmcc.collins\(ii.mindspring.com\)](mailto:mmcc.collins@ii.mindspring.com)

October 10,2005

2

We ask that the Town of Chapel Hill support this forum. We have checked the town's calendar and reserved Council chambers on January 19,2006. Full attendance by Council would be a strong sign of our community's commitment to get out in front on this issue.

We look forward to working with the town on this project, and thank you for your consideration.

Michael Collins, for Neighborhoods for Responsible Growth
967-4119, mmcc.collins@ii.mindspring.com

E. Thomas Henkel, PH.D

General Background and Skills Highlights

Over 39 years of experience with scientific education, energy conservation, renewable energy systems, and personnel management. Previous experience includes the design and development of commercial solar energy heating and cooling installations and management of energy audit programs.

Relevant Experience

- ◆ Managed the Consolidated Edison Company Energy Audit Program. This project involved comprehensive energy audits with full building simulations and analysis.
- ◆ Energy Advisor for the New York State Energy Advisory Service to Industry. Performed and wrote reports on 320 energy audits of commercial and industrial buildings.
- ◆ Designed, developed and implemented two commercial solar energy heating and cooling installations.
- ◆ Consultant for Solar Enterprises International and Solargenix Energy in the design and marketing of solar energy systems.
- ◆ Collaborated with Dr. Richard Christensen of the Ohio State University in the design, fabrication, and testing of a dual fired gas/hot fluid generator for absorption cycle heat pumps, chillers, and refrigeration equipment.

Education

Ph.D, Physics Education, The University of Toledo, Toledo, Ohio, 1965

M.S., Physics, The University of Toledo, Toledo, Ohio, 1965.

M.Ed, Science Education, The University of Toledo, Toledo, Ohio, 1963

A.B., Pre-Engineering, Columbia College, New York, New York, June, 1958

Selected Job History

Aspen Systems Corporation
Rockville, Maryland

1996 to present

Project Manager. 1996 to 1998 — Managed the Aspen Systems New York City office. Principle activities included administering the Consolidated Edison Company Energy Audit Program which involved comprehensive energy audits with full building simulations and analysis. This project included the management of field engineers along with supervision of preparation, printing, and mailing of reports to Consolidated Edison. Additional work involves projects for the New York Energy Research & Development Authority FexTech Program and Energy audits for New York commercial, industrial, and institutional customers. Management responsibilities included payroll, budget administration, revenue/costs forecasting, personnel evaluation, and project reporting.

Project Engineer. 1998 to Present — Works on a variety of projects involving building energy systems analysis and technical application studies for manufacturers, utilities, and others.

Solar Enterprise International, LLC
Chicago, Illinois
Solargenix Energy, LLC
Raleigh, NC

1994 to Present

Consultant. 1994 to Present—He designed and co-managed a project in Sacramento, CA to demonstrate new higher temperature solar energy technology for commercial W A C systems. This \$600,000 project, finished in 1997 and funded primarily by the California Energy Commission, installed a 1200 sq.ft. array of Integrated Compound Parabolic Concentrator evacuated tube collectors which powers a 20-ton double-effect absorption water chiller as part of a complete HVAC system for an 8,000 sq.ft. commercial building. This is the first time that a non-tracking solar thermal collector array is successfully powering a double-effect absorption water chiller to meet the air conditioning needs of a building. He collaborated with the Mechanical Engineering Department of The Ohio State University in the design, fabrication and testing of an integrated solar and natural gas fired 2E absorption chiller. A patent on this technology will issue in early 2005. He now assists Solargenix in designing and marketing solar hot water and solar absorption and other HVAC systems. These include a 50-ton 2E absorption chiller in Raleigh, NC, a 30-ton 1Eabsorption chiller in Austin, TX, and a 172 collector solar hot water system for UNC Chapel Hill. A 1000collector solar hot water plant is under design for a NC industrial plant.

Wagner College
Staten Island, New York

1967-1996

Professor of Physics and Chairman of the Physical Sciences Department, 1967 to 1996-

Taught courses in the Physical Sciences, Mathematics, and the History of Science.

Responsibilities included the management of the department budget, supervision of faculty, and maintenance of chemistry and physics laboratories, equipment, and chemical stockrooms, curriculum development, and coordination of grant proposals.

Solar Energy Demonstration Project Director, 1977 to 1986 — Developed the project concept, raised \$1.1 million in funding, organized and administered the Project Management Team consisting of representatives from the Brooklyn Union Gas Co., Consolidated Edison of New York, Owens-Illinois Inc., Carrier Corporation, New York State Energy Research and Development Authority and a large New York City architectural firm. Responsibilities included the development of financial plans, the project accounting system, negotiating and administering construction contracts, supervision of the construction of the solar energy system, direction and monitoring of the operation of the system which heated and cooled two campus buildings.

BEEAH Architects, Planners, & Engineers
Riyadh, Saudi Arabia

1994 to 1996

Consultant, 1994 to 1996-- Designed a 1600-ton solar energy-cooling project.

Parsons-Brinckerhoff, Inc
New York, New York

1992 to 1993

Consultant. 1992 to 1993-- Prepared technical assistance studies for the New York State Institutional Conservation program

VTEC Laboratories, Inc
Bronx, New York

1988 to 1992

Energy Advisor for New York State Energy Advisory Service to Industry, 1988 to 1992-
Performed and wrote reports for 320 energy audits of commercial and industrial buildings.

Electrides Corporation
Staten Island, New York

1975 to 1978

Consultant. 1975 to 1978— Researched and developed an electronic fluorescent lamp ballast.

U.S. Naval Reserve

1958 to 1996

Engineering Officer 1958 to 1996— Experience includes naval steam systems, engineering casualty control, damage control, fire fighting, and nuclear biological-chemical warfare defense. Includes active duty from 1958 to 1960 and retirement after 20 years of satisfactory service with the rank of Commander.

Specialized Training/Certifications

- ◆ Certification as Energy Auditor by New York State Energy Department, 1982.
- ◆ Certification as Boiler Efficiency Auditor by Boiler Efficiency Institute, 1990.

Professional Affiliations

- ◆ American Solar Energy Society, 1978 to present
- ◆ International Solar Energy Society, 1978 to present
- ◆ North Carolina Sustainable Energy Association, 1998 to present. Member, Board of Directors

Selected Studies

- ◆ "Performance of the Wagner College Solar Energy Demonstration Project January 1983 to December 1983". Technical report prepared for the International Energy Agency, Task VI Program, May 1984.
- ◆ "Residential Solar CHPC System: Technical and Market Analyses". New York State Energy Research and Development Authority. November, 2002
- ◆ "Solar Cooling for District Chiller Plant". Jacksonville Electric Authority. November, 2003

Selected Presentations

- ◆ "The Principles of Solar Energy-Driven Absorption Water Chillers". Department of Physics Graduate Seminar, University of Chicago, February 1999.
- ◆ "Advances in Renewable Energy Technologies". Net Impact 2001 Conference, University of North Carolina at Chapel Hill Keenan-Flagner School of Business, November 2001.
- ◆ "Solar W A C Using ICPC Solar Energy Collectors". Building as Power Plant Ascending Strategies Workshop, Carnegie-Mellon University, December 2001.
- ◆ "Today's Solar Thermal Technologies". Air Conditioning Contractors of America 2002 Conference, February, 2002.
- ◆ "New Solar Thermal Energy Applications for Commercial, Industrial, and Government Facilities" World Energy Engineering Congress. November, 2003.
- ◆ "Solar Energy Applications for Non-Imaging Optics". Enrico Fermi Institute Symposium, University of Chicago. May, 2003.
- ◆ "Design, Installation and Early Operation of a Roof-Integrated Solar Cooling and Heating System". American Solar Energy Society conference. July, 2003.
- ◆ "Recent Advances in Solar Thermal Electric Power". North Carolina Energy Conference. March, 2004.
- ◆ "New Developments in Building-Integrated Solar Thermal W A C and CHP Systems". Electric Power 2004. March, 2004.
- ◆ "Solar Energy Applications for the Southeast United States". Southeast Student Renewable Energy Conference, University of North Carolina – Chapel Hill. April, 2004

Community Service

- ◆ Member Million Solar Roofs Committee for the Town of Chapel Hill, NC. Coordinator for the design and installation of a solar hot water system for a community center, gym and swimming pool.

Computer Skills

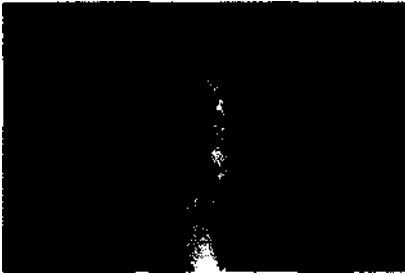
Hardware/Equipment: IBM PC, Macintosh

Operating Systems: MS-DOS, Windows. MAC OS

Software/Applications: Microsoft Works, Microsoft Office, Insite, Market Manager, f-Chart

Internet Browsers: Netscape Navigator, Microsoft Internet Explorer.

Innovative Design's Staff



Michael H. Nicklas, FAIA, Principal

Experience:

Innovative Design, Inc. (Officer/Owner for 25 years)
Raleigh, North Carolina

Professional Societies:

- **American Institute of Architects**
- **American Solar Energy Society**
 - Current Chair
 - Past Chair
 - Past Director of Passive Architecture and Construction Division
 - National Organizing Chairman for SOLAR '85
- **International Solar Energy Society**
 - Past President
 - Past Vice-President
 - Past Board of Directors
- **North Carolina Solar Energy Association**
 - Past Chair and Director
- **North Carolina Home Builders Association**
 - Past Chair of Architectural and Environmental Design Committee
 - Past Chair of Alternate Energy Committee
- **Sustainable Buildings Industry Council (formerly Passive Solar Industry)**
 - Past Director

Michael H. Nicklas, FAIA Principal

Gary B. Bailey, AIA Principal

Jameson M. Cox, AIA LEED

William R Davis, AIA, LEED

Masaki Furukara, LEED

Louis J. Gerics, AIA

Bae-Won Koh, AIA, LEED

Pascale A. Rosemain, DPLG

Jon M. Zubizarreta

Administration

Marianne Coats, Business Manager

Lori Finegood, Office Manager

Appointments:

- NC Energy Policy Council 2000-2002
- Advisory Board of Kenan-Flagler Business School, 1999-2002
- United Nations Development Programme, Advisory Committee Analyzing Progress Towards Sustainable Energy, 1997
- Wake County Citizen's Energy Advisory Commission, Chairman
Triangle J Council of Governments Energy Committee
- North Carolina Solar Center, Chairman
- US Office of Technology Assessment, Renewable Energy

Advisory Board

- AIA Committee on the Environment, Steering Committee
- NC Trade and Industrial Education Advisory Committee, NC Department of Public Instruction, 1983-88
- NC Governor's Task Force on Solar Law, 1982-83
- Solar Advisory Committee, North Carolina Department of Public Instruction, 1977-80

Education:

- North Carolina State University Bachelor of Architecture

Awards:

- American Institute of Architects Fellow, 2001
- American Solar Energy Society Fellow, 2000
- American Solar Energy Society's Charles Greeley Abbot Award for Contribution to Advancement of Solar Energy, 1996
- International Solar Energy Society's Highest Award for Service to Society, 1993
- American Solar Energy Society's Special Recognition Award for Contribution to Society, 1994
- North Carolina Solar Energy Society's Highest Award for Leadership and Service to Solar Energy, 1983

Richard Harkrader, a retired architect, building contractor, solar installer and real estate developer, is founder and partner of numerous businesses: two that he runs with his wife., Lonna, New Morning Solar Realty which owns and manages 45 passive solar apartments with solar hot water that they built in the 70's and 80's and Durham - San Ramon Sister Communities (San Ramon, Nicaragua) where they do community development, health and education projects along with an eco-tourism business and raise organic, shade-grown coffee. The third business, Carolina Green Energy, was recently started with 4 partners to build and own utility scale electric generation in NC using solar, wind and biomass resources. Mr. Harkrader advocates for renewable energy and energy efficiency serving three times **as** Chair of the NC Sustainable Energy Association, where he is currently Policy Committee Chair. He served from 1998 to 2002 **as** the environmental representative on the NC Legislative Study Commission on Electric Utility Deregulation and from 2003 to 2005 as Vice Chair of NC GreenPower, a non-profit providing clean electricity to North Carolinians. Mr. Harkrader lives in Durham, NC.