

AR-269

Solar Homes Project Papers
1976-1988
10 ft. 15,000 pieces

The late 1970's were a time of energy crises, leading to the development of new energy sources in the United States. Solar energy was a major research interest. The University of Tennessee, taking its own interest in the energy crunch, built its first of five TECH (Tennessee Energy Conservation in Housing) in 1976.

Much research took place prior to the building of these houses. Data was provided by the National Solar Data Program. Emphasis on the TECH Project was placed on water heaters, insulation, heat pumps, and cooling systems.

The collection is split up into four parts: National data, TVA data, UT data, and misc data, which includes slides and photos of the TECH Project.

AR-269

BOX 1

National Data

- Folder 1: Users Guide to National Solar Data Program, 1978
- 2: Performance Comparative Report of Active Solar Heating Systems, 1979-1980
 - 3: Energy Performance Evaluation: Albuquerque. Multi Dwelling Bldg, 1979
 - 4: Energy Performance Evaluation: Washington, Maryland, California. Family Residence, 1979
 - 5: Energy Performance Evaluation: New York and Ohio. Single Family Residence, 1979
 - 6: Energy Performance Evaluation: Florida and California. Apartment Complex
 - 7: Energy Performance Evaluation: South Carolina and Virginia. Office Bldgs.
 - 8: Performance Data of Residential Solar Heating: Washington. 1978-1979
 - 9: Energy Performance Evaluation: Alabama. Single Family Residence
 - 10: Energy Performance Evaluation: Colorado and Rhode Island. Single Family Residence
 - 11: Energy Performance Evaluation: Kentucky. Office and Warehouse, 1978
 - 12: Energy Performance Evaluation: California. Single Family Residence
 - 13: Energy Performance Evaluation: Montana. Design Construction.
 - 14: Energy Performance Evaluation: Indiana. Moulder Corp., 1980
 - 15: National Solar Data Program Rural Housing Research Unit: Clemson, South Carolina
 - 16: Portland, Oregon G.E. Corp. Solar Heating Project
 - 17: Comparative Reports From National Solar Data Program (NSDP)
 - 18: Availability of Solar Energy Projects
 - 19: Data Comparison of Solar Projects in the United States
 - 20: Engineering Concerns in Solar System Design and Operation, 1979
 - 21: North Carolina Alternative Energy Corp.
 - 22: Pamphlets on Insulation

AR-269

Box 2

- Folder 1: Solar Energy Research Institute: Solar Heating/Cooling Systems Conference, 1979
- 2: American Society of Mechanical Engineers: Solar Energy Division
 - 3: Evaluation of Solar Energy Control Systems, 1978
 - 4: Effects of Air Damper Leaks on Solar Energy Systems, 1978
 - 5: ORNL Crawl Space Heat Pump, 1981
 - 6: Ground Coupled Heat Pump: Papers and Reports
 - 7: Solar Assisted Heat Pumps for Heating and Cooling Bldgs, 1978
 - 8: Solar Energy Research Institute III and VI
 - 9: Heliothermics: Heat Collector
 - 10: Solar Assisted Heat Pump: Seattle

TVA Data

- 11: TVA Solar Strategy Project, 1979
- 12: TVA Solar Strategy Project: Solar Space Heating for Residential Bldgs.
- 13: TVA Active Space Heating Analysis
- 14: TVA Solar Heating Analysis
- 15: Solar Water Heating Assessment for TVA Region
- 16: Solar Heat Pump Reports :TVA Project #2, 1979
- 17: Progress Report on Evaluation of Solar House, October 1976-1977
- 18: Performance Report: TVA Project #1
- 19: Economic Analysis: TVA Project #1
- 20: Temperature Data of TVA. Spring Hill, TN, 1983

UT Data

- 21: Overview of TECH Program
- 22: Construction of TECH House
- 23: TECH Program Donations
- 24: Solar House File on Robert Baugh, Director of TECH Program

Box 3

- Folder 1: Expenses for TECH Project #1
- 2: Expenses for TECH Project #2
 - 3: TECH Site Work: Operation and Maintenance
 - 4: Control House for TECH Project
 - 5: Passive House Proposal, 1979
 - 6: UTK Solar Passive House III: Layout and Data
 - 7: Passive Solar Modular House: TECH House II and V
 - 8: Solar Air System Construction

- 9: Air Solar System DAS, 1979 TECH Facility
- 10: Tests on Solar House I, 1977
- 11: Solar House Evaluation, 1976-1978
- 12: Ditch Witch for TECH House V
- 13: Solar House Statistics and Evaluation TECH House I, 1978-1983
- 14: Performance of TECH House Solar Heat Pump
- 15: Steady State Cooling of TECH House I and V
- 16: Passive House Weekly Data Summary, 1983
- 17: TECH House Meter Readings, 1984
- 18: Correspondence: TECH Project
- 19: Ground Coupled Heat Pump Research

Box 4

- Folder 1: Solar Water Heater/Pump Proposal
- 2: Water-to-Air Solar Heat Pump Construction, 1978
 - 3: Heat Pump System Evaluations
 - 4: Solar House Heat Pump: Air
 - 5: Solar House Heat Pump: Water, DAS (Data Acquisition System)
 - 6: Ground Coupled Heat Pump Weekly Data Summary, 1983
 - 7: Ground Coupled Heat Pump Technical Data, 1983
 - 8: Coefficient of Performance for Solar Assisted Heat Pump and Residential Heat Pumps, 1981-1982
 - 9: Ground Coiled Heat Pump Interim Report #1
 - 10: Ground Coiled Heat Pump Interim Report #2
 - 11: Ground Coiled Heat Pump Interim Report #3
 - 12: Ground Coiled Heat Pump Interim Report #4
 - 13: Ground Coiled Heat Pump Interim Report #5
 - 14: Ground Coiled Heat Pump Interim Report #6
 - 15: Skylight Proposal and Research, 1980-1981
 - 16: Skylight Project, 1982
 - 17: Bradley GTE Automotive Project
 - 18: Solar Water Heater Project for Andy Holt Apartments
 - 19: Specifications: Andy Holt Water Heater
 - 20: Dryer for Large Hay Stacks Project Using Solar Engineering
 - 21: Hay Stack Dryer Project Continued

Box 5

- Folder 1: Communications Bldg. Heating and Cooling Systems for Temp. Recovery, 1988

- 2: Energy Efficiency in Residential Bldg. with Combined Zonal Radiant Heating Research Proposal
- 3: Oliver Springs Thermal Project-- Administration
- 4: Oliver Springs Thermal Project-- Administration
- 5: Oliver Springs Thermal Project-- TES Reports
- 6: Oliver Springs Thermal Project-- DAS
- 7: Rough Draft of Interim Reports/Final Reports of Oliver Springs Project
- 8: ACES (Annual Cycle Energy System) House Construction Correspondence, 1975-1977
- 9: ACES System
- 10: Research on Solar Air Systems, 1979-1980
- 11: SAHP and TES Original Figures for Final Report
- 12: Windmill Project (UT)
- 13: UT Cooling Degree Days
- 14: Completed Data: 1985 Cooling System
- 15: Weather Data Analysis
- 16: UT Energy Analysis Report
- 17: Residential Insulation Retrofit Evaluation
- 18: Alternation Sources of Energy
- 19: UT Steam
- 20: UT Industrial Process Heat, 1979
- 21: Various Expenditures

Box 6

- Folder
- 1: TN Energy Authority Energy Audits
 - 2: UT Center for Industrial Services Energy Audit
 - 3: Campus Energy Audits: Level II
 - 4: Campus Energy Audits: Level III
 - 5: Solar Heating System: Colorado State University
 - 6: ETSU SUN (Solar Utilization Now) Seminar, Knoxville, 1977
 - 7: Heat Pump Assisted Solar Heated Residence: University Wisconsin Madison
 - 8: F Charts from University Wisconsin Madison
 - 9: Misc: Wastewater Treatment, Walden Creek
 - 10: Misc: Data on Coupled Heat Pump
 - 11: Misc: International Systems
 - 12: Misc: Multi Year Research Plans-- Solar Energy Program
 - 13: Misc: Masonry Bldg. Thermal Performance
 - 14: Misc: Fern Engine Solar Space Heating System

AR-269

- 15: Misc: Pamphlets on Solar Energy
- 16: Misc: Energy Savings through Setbacks
- 17: Misc: Canadian Weather Data
- 18: Misc: Special Projects

Box 7

Misc Slides and Photos of TECH Project