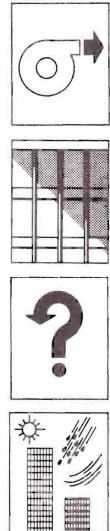




Tame it.

Scout

A POWERFUL
AND VERSATILE
COMPUTER PROGRAM
FOR FACILITY/HVAC
DESIGN AND ENERGY
ANALYSIS



GATX
GARD, INC.

BCS

BOEING COMPUTER SERVICES, INC.

SCOUT is...

- a sophisticated building energy analysis program using state-of-the-art techniques for performing design load calculations, annual energy use forecasts, and life cycle cost analyses.
- the most powerful and versatile energy analysis program available.
- an enhanced version of NECAP (NASA's Energy/Cost Analysis Program) developed by GARD, INC. for NASA.
- a user-oriented program having self-instructional input forms, data check programs, and modular construction allowing the user to choose which portions he wants.
- offering its users regularly scheduled training seminars in many major cities.
- fully documented and maintained by GARD. SCOUT is not a "black box."

SCOUT analysis procedure

1 Data Preparation

Prepare input using building data taken from drawings. No preliminary hand calculations required.

2 Data Check Programs

A series of data check programs verify that you have prepared your data correctly and give the user a verbal description of his problem.

3 Design Load Analysis Program

By inputting design day weather "LAP" will simulate a design day for each month specified to determine thermal capacities required for each zone and building.

4 Hourly Load Analysis Program

Using NOAA weather tapes, "LAP" calculates each hour the thermal requirements for each thermal zone of the building. Optional shadow analysis also is available.

Advantages

SCOUT is unique among all other energy analysis programs because of the thorough engineering treatment that it gives to all aspects of the energy analysis problem.

- SCOUT performs 8760 hours of calculations for determining thermal loads and energy requirements. There are no "short-cuts" taken on this extremely important point.
- Analysis can be done for less than a one year period if desired.
- ASHRAE state-of-the-art techniques are employed.
- SCOUT uses actual hourly weather data from the National Oceanic and Atmospheric Administration (NOAA)
- SCOUT may be used to perform design load calculations or hourly load calculations — one program has two uses.

5 Temperature Analysis Program

"TAP" calculates thermal requirements that each distribution system must supply after accounting for effects of thermostat action, system shutdown and equipment and system undersizing. Also gives a time history of zone temperature.

6 Systems Analysis Program

"SAP" simulates the systems and equipment to determine hourly loads and then based on part load efficiencies, determines the building's demand for fuel and energy.

7 Cost Analysis Program

For the anticipated life of the building, "CAP" makes a life cycle cost analysis calculating the expected annual expenditures to own, operate and maintain the building utility systems. Alternatives are then compared on the basis of payback period.

- SCOUT is modular and lets the user decide how far he wants the analysis to go.
- SCOUT is accurate — as proven in use on several instrumented buildings.
- SCOUT is unbiased — it was developed and is being offered by an independent "third party."
- SCOUT is not a black box.
- SCOUT allows you to model the building as you see and as you want it.
 - any building geometry can be studied
 - any size, shape, and orientation of a surface can be modeled
 - a wide range of systems with control options can be specified
- SCOUT has a support team to answer questions and aid the user in interpreting results.

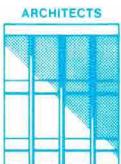
Applications



Before deciding upon a given building heating or cooling system, many engineers (often at the request of the building owner) will compare a number of possible solutions weighing such things as initial, maintenance and energy costs to determine the life cycle costs of the proposed systems. SCOUT's energy analysis program quantifies the energy use of various systems. SCOUT's Cost Analysis Program evaluates the economics of these options.

In addition to being a useful energy analysis tool, SCOUT can also be run as a design load program. Many engineers have used SCOUT for:

- sizing air flows, fans, boilers, and chillers through design load analysis
- assessing annual energy consumption of a facility
- comparing alternate HVAC systems
- studying thermal effects of undersizing



The energy a building uses is directly related to the characteristics of the building envelope. The building exterior is the first climate modifier. The better it does its job, the less costly it will be to own and operate the building's heating and cooling systems.

Architects will find SCOUT particularly useful in:

- window design
- wall design
- roof design
- shadow analysis
- total building envelope evaluation



Although SCOUT has been designed for user convenience, one of the primary uses of this type of energy analysis program is in research into building science. SCOUT does not compromise on analytical capability.

Researchers have used SCOUT for:

- parametric studies
- evaluation of "minor effect" heat transfer parameters, i.e., placement of insulation in wall structure, density changes of air, building orientation, building shapes, etc.
- data reduction
- trend generation



In this era of skyrocketing energy costs, and fuel scarcity, many building owners are faced with a need to conserve energy for economic as well as altruistic reasons. The application of SCOUT to this area is excellent. Initially developed to be used on existing as well as new buildings, SCOUT may be used to predict the energy and economic savings of various modifications to a facility.

The SCOUT energy analysis series is adaptable to analyze a wide range of building types such as:

- schools
- residences
- warehouses
- factories
- office buildings
- hospitals
- total energy plants
- conventional central plants

How to use SCOUT

The SCOUT energy analysis program is accessible through terminals in your own office or through high speed terminals at local BCS offices. If you would like to know more about SCOUT and how it can best serve your needs, or when the next SCOUT training seminar is to be held, call or write one of the following locations:

BCS/CHICAGO

35 East Wacker Drive
Chicago, Illinois 60601
(312) 781-7900

BCS/CLEVELAND

Towers East, Suite 330
20600 Chagrin Boulevard
Cleveland, Ohio 44122
(216) 921-0800

BCS/DETROIT

Parklane Towers, Suite 401-W
One Parklane Boulevard
Dearborn, Michigan 48126
(313) 271-8000

BCS/DALLAS

1111 West Mockingbird Lane, Suite 832
Dallas, Texas 75247
(214) 630-4701

BCS/WICHITA

209 East William, Suite 820
Wichita, Kansas 67202
(316) 687-2824

BCS/HOUSTON

3334 Richmond, Suite 109
Houston, Texas 77006
(713) 526-1331

GARD, INC.

7449 N. Natchez Avenue
Niles, Illinois 60648
(312) 647-9000

About BCS and GARD

Boeing Computer Services, Inc. was formed in 1970 by the Boeing Company to offer the experience of 4,000 people and the computer power provided by a nationwide data communication network to solve data processing problems. Today BCS is one of the largest data processing service companies in the country, doing business with over 2,900 clients.

GARD, INC. is a leading applied engineering, research and development contractor for Government and Industry. GARD has extensive experience in the development, support, and application of computerized energy analysis programs, dating back to 1968 when it began work on the U.S. Postal Service Program.

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