

sive application, the average savings expected from the revised guidelines should achieve the original goal of 18% or more.

To the extent possible these revised guidelines will be applied to leased premises at the time when leases are made or re-negotiated.

2. COMPUTER-AIDED BUILDING "TUNE-UP"—ENERGY SYSTEMS ANALYSIS

Since each building has its own characteristics of design, construction, type of heating and cooling and schedule of operation, the optimum operation guidelines for energy conservation will vary from building to building. Thus the Department of Public Works launched in 1971 an energy systems analysis program using a computer program developed by DPW specialists in cooperation with a private firm. This computer tool enables the department to analyse individual buildings for their energy efficiency and to balance and "tune" the building and its equipment for optimum energy savings. Every federal building will, over the next few years, be analyzed and tuned in this program. Furthermore the department with the support of EMR will be offering this computer tool and the department's accumulated expertise to other governments, engineers, architects, consultants and building operators through a special training program.

By way of example this analysis tool has saved energy in the order of \$100,000 per year in one federal building in Ottawa alone. The men operating this program estimate that there is a potential saving of approximately 10% which would amount to about \$300 million a year from all commercial buildings in Canada. And that's at current energy prices.

3. BUILDING MODIFICATIONS FOR ENERGY CONSERVATION

Where the energy systems analysis or common sense demonstrates a need and where it is financially and physically practical modifications will be made to existing government buildings and their equipment in order to conserve energy. Such additions or modifications will include:

- increased insulation in walls, roofs, floors, and around pipes;
- addition of storm windows, double glazing, storm doors, caulking, weatherstripping, etc.;
- installation of separate light switches for offices, work areas and floors;
- lowering of lighting levels through lamp removal and replacement with lower wattage lamps in compliance with lighting guidelines;
- addition of drapes, blinds and window shades to screen out unwanted sunlight;
- adjustment and maintenance of service hot water systems;
- modifications to heating and cooling plants and delivery systems to conserve energy;
- application of heat recovery systems;
- installation of improved controls on heating and cooling systems;
- use of supplemental solar space heating when appropriate.

4. COMPUTER-AIDED BUILDING DESIGN

Most large federal buildings currently under design by DPW are being analyzed for energy effectiveness through the use of the computer program mentioned above as a design tool rather than just a "tune-up" tool. In this way the federal government will be building in energy conservation from the beginning. As in the "tune-up" program, this technology will be made available to both public and private sectors.

In this regard it is safe to predict that the next generation of government buildings will be much more in tune with energy conservation needs than those of the last generation.

5. GUIDELINE COMPLIANCE MONITORING

In order to achieve maximum application of the guidelines, the Department of Public Works will create a system to report back on the degree of compliance, problems in achieving the guidelines and requirements for additional technical assistance or modifications to buildings.

In addition the individual departments will appoint "energy conservation officers" from within their present staffs. Their main tasks will be to encourage employees to conserve energy in their daily work and to assist DPW in monitoring compliance with the building energy conservation guidelines.

III—TRANSPORTATION

There are approximately 15,000 passenger carrying vehicles in the federal inventory thus giving the government not only the responsibility but the opportunity to effect some major savings of gasoline.

1. AUTOMOBILE PURCHASES

At the risk of some oversimplification, it can be said that there are three factors in the purchase of government motor vehicles. The Treasury Board sets guidelines for acceptable orders by departments, individual departments place their orders according to their evaluation of need, and the Department of Supply and Services acts as agent to fill the orders.

At present Treasury Board guidelines emphasize that automobile acquisitions should be based on cost/benefit analysis, taking into account life cycle costs and the use to be made of the vehicle.

For the explicit purpose of energy conservation, and general government economy, the Treasury Board had agreed to further amend and rigidly enforce their guidelines as follows:

(a) All passenger automobiles purchased by federal agencies will be of compact or smaller size unless specific justification for a larger size is made.

(b) Acceptable justification for larger than compact passenger autos will be set on narrow grounds by the Treasury Board. For example, it will have to be demonstrated that a need for extra carrying capacity occurs regularly over the life of the vehicle rather than at intervals. Justification will have to be better as the size of the automobile desired increases. The fact that other automobiles on the road are large or that high