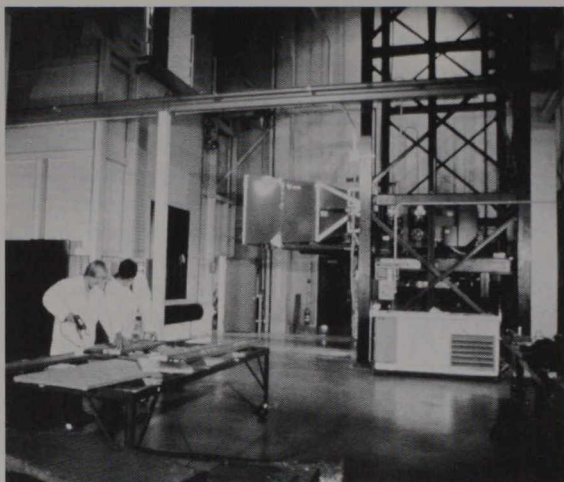




*The National Solar Test Facility has the strongest unnatural light in the world.*

first eight months. More solar development test centres will soon be set up in British Columbia and Quebec.

## How to Put June in January

Heat is hard to store.

The basic problem with solar heating is that sunshine is most abundant when it is least needed. In Canada June's share is twice the annual average and December's is less than a third.

Solar heat has been stored most often in tanks of water or bins of rocks and, less often, in containers of paraffin. Effective storage with these methods is usually limited to a few days.

Here are some other materials that can be used for storage:

### Salts and Sulphates

Heat can be stored for relatively long periods in eutectic salts, such as Glauber's, which store heat as they change from a solid to a liquid. (Ice does the same as it melts but not very effectively.) The Saskatchewan Minerals Corporation manufactures and markets heat storage trays using sodium sulphate.

### Zeolite

Zeolite, crystals composed of silicon, oxygen and aluminum, can store heat indefinitely and, if present research efforts at Carleton University bear fruit, it may make solar and other forms of alternative heating practicable on a broad scale.

When heated, zeolite dries out. When exposed to moisture, it absorbs it and releases the heat it has been holding. Synthetic zeolite is now used as a catalyst in petroleum processing and as a general drying agent.

The process for storing heat is simple. The zeolite is first heated, then kept in a dry place. When heat is needed, it is simply moistened. There is no need for insulation. Since humidity, and not outside temperatures, controls the ex-

change, it will store heat efficiently and indefinitely as long as it is kept dry. A cubic metre can store almost one million BTUs.

Zeolite could be used without elaborate household equipment. Blocks could be heated at a central solar collector, and rented to householders. They could be activated by applying measured amounts of moisture and, when their heat was exhausted, they could be returned to the station for reheating.

The work is still in an early stage but Bryan Holleb, Ronald Shigeishi and Cooper Langford, three scientists working on zeolite at Carleton University, are optimistic.

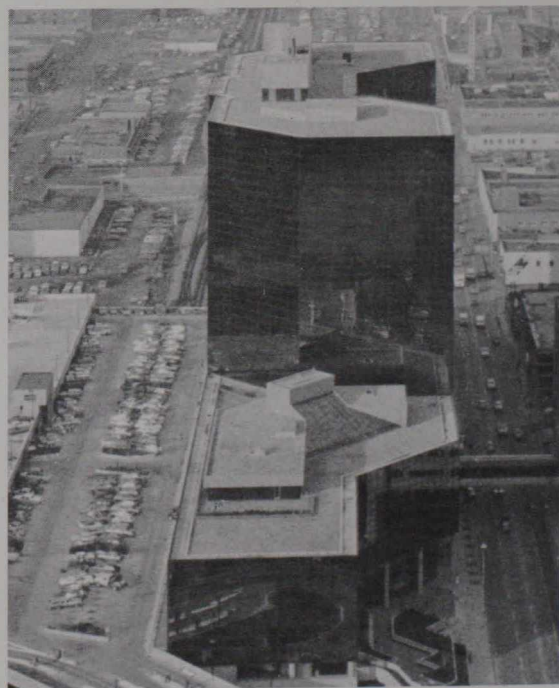
## Conservation

Conservation—the saving of fuel through insulation and other forms of ingenuity—is still the most effective way to cut heating bills. The federal and provincial governments have encouraged it through a variety of tax incentive programs. Here are four success stories, three private, and one a government experiment in Saskatchewan.

### Snuggling up to the Xerox

Gulf Canada Square, a two-block development in downtown Calgary, is probably the most energy efficient building complex in the world.

It heats and cools itself winter and summer at a cost of 10 cents per square foot. Other Calgary



*Gulf Canada Square in Calgary*