

the first tanks provided more storage than was necessary.)

3. Patented silver-treated, double-glass curtain walls capable of reflecting 85 per cent of solar radiated heat (about twice as much as conventional glass) with little colour distortion of natural light.

4. Perimeter air distribution incorporated into the curtain walls.

5. Highly effective insulation.

6. A low-energy, high-quality coffered lighting system with increased reflectivity. The fully-in-

tegrated ceiling recycles heat from the building to heat pumps (for heating and cooling) and to the energy storage system.

A survey of modern Ontario office buildings over the past five years indicated an average annual use of 182,000 BTUs of energy per square foot. Conventional buildings in Calgary consume between 200,000 and 250,000 BTUs. Gulf Canada Square will require less than 50,000 BTUs of energy per square foot annually. Forty per cent of all energy consumed in Canada, and 30 per cent of that in the United States, is used to heat buildings.

## Tar Sands

The jet black sands of Alberta may contain some 900 billion barrels of oil—more than the world's proven conventional reserves. The amount that can be recovered is uncertain—perhaps no more than twenty-five per cent. Most of the sands are deep, 200 feet or more below the surface.

They have been accumulating a long time. Dead marine plants and animals began piling up

at the bottom of a shallow sea over 200 million years ago. Glaciers came, and time, chance and chemistry went to work. Now they are ready for burning, but they are mixed with the sands and covered by layers of clay and water and vast swampy fields of black spruce and tamarack.

J. Howard Pew, of the Sun Oil Company, was the first to mine the sands on a massive scale. He

*Draglines, bottom left, remove the overburden and mine the tar sand, piling it up in windrows. Bucket-wheel excavators scoop up the oil sand and dump it into trucks, top, or a conveyor system, bottom centre. It is carried to extraction plants where the bitumen separation process begins in tumblers the size of railroad cars, bottom right. The top picture is from GCOS; the bottom ones are from Syncrude.*

