

## *Silicon Real Estate*

Gordon E. Moore, chairman of Intel Corporation, proposes in *Daedalus* (Spring 1996) an arresting image of the semiconductor.

*Our industry sells an area on the silicon wafer for about a billion dollars an acre; this has remained roughly constant since the advent of the integrated circuit. By making things smaller, development density is increased. More function can be built on a given area, causing the price of electronic functions to be cheaper and cheaper.*

strands are repeatedly broken and reattached by enzymes during the replication process.” Such mechanisms may be nature’s ad hoc

way of sidestepping the problems with the double helix, he observes, but they hardly enhance its aesthetic appeal.

## *Electromagnetism Unplugged*

“Apocalypse Not” by Jon Palfreman, in *Technology Review* (Apr. 1996), Bldg. W59, Massachusetts Institute of Technology, Cambridge, Mass. 02139.

For more than 15 years, some scientists, journalists, and activists have been warning that the electromagnetic radiation generated by electric power lines may cause cancer or other diseases. Journalist Paul Brodeur, in a much-noted series in the *New Yorker* (and later in a book, *The Great Power-Line Coverup* [1993]), wrote about a high incidence of cancers among the residents of a Connecticut street and the staff of a California school, both near power substations. Despite such “smoke,” there is no convincing evidence of any “fire,” maintains Palfreman, a senior producer at WGBH, Boston’s public TV station, where he specializes in medical-political issues.

Of some four dozen epidemiological studies, he points out, none have established any cause-and-effect relationship between proximity to electromagnetic fields and disease. The high incidence of cancer Brodeur found, Palfreman notes, could well be simply the result of chance.

The proposition that power lines’ electro-

magnetic fields cause cancers or other diseases is unlikely in the first place, Palfreman says, given the extensive existing knowledge about the interaction of such fields with living tissue and what one physicist calls the “absolutely minuscule” strength of the fields involved. “Cancer is usually caused when very energetic radiation, or some chemical agent, directly breaks or rearranges DNA,” he observes. “But the forces holding DNA molecules together are millions of times larger than any force that electromagnetic fields from power lines could produce.”

Laboratory studies conducted as part of a \$65 million federal program under the auspices of the National Institute of Environmental Health Sciences have so far failed to find any adverse health effects in lab animals from electromagnetic fields.

“Even if we suppose that magnetic fields from power lines do cause cancer,” Palfreman points out, “the fact that the connection has been so hard to prove means that, by definition, the risk cannot be large.”

## *The Tinted City*

“City Lights” by James Bradley, in *Metropolis* (April 1996), 177 E. 87th St., New York, N.Y. 10128.

Since the 1970s, America’s cities have literally been cast in an entirely new light. During that decade, municipalities across the country began replacing their old incandescent and mercury-vapor streetlights with

more energy-efficient, high-pressure sodium lamps. The change, says Bradley, a New York writer, has hurt city street life.

The sodium lamps emit a yellowish light that casts a strange, muddy pall over the