great dimensional mismatches. It allows architects to design with sunlight without fear that their ideas will be overridden by future growth. It protects, now and in the future, the rights of property owners to have sunlight in their windows, their gardens, their lives.

Need for Solar-Access Zoning

Interest in solar access generally rises and falls with the perceived security of oil supplies. A brief period of political and economic uncertainty during the 1970s and '80s prompted urgent calls to use solar energy in our buildings, towns, and cities, making solar access a critical issue in the United States. A number of cities and states passed legislation to protect existing solar installations and to ensure continued solar access for future developments. The federal government supported a number of studies to determine the most feasible, effective, and enforceable way to establish solar rights.[10] Then, as oil again flowed freely on world markets during the 1990s, public and political interest waned.

Now, at the beginning of a new millennium, pundits again are expressing concerns about oil. David Goodstein, Caltech's vice provost and professor of physics, has lately written in the *Los Angeles Times*, "Over the last 150 years, we have evolved a civilization firmly anchored in the mathematically impossible premise of an endless supply of cheap oil. Now there is good reason to believe that sometime in the next decade or two, the world's oil fields will start to be depleted faster than new ones can be tapped. When that happens, a gap will begin to grow between the supply of fuel and the need for it."[11] The warning is valid and must be taken seriously, but it is also incomplete.

The difference this time is a convergence of concern for oil supplies (or any other nonrenewable resource) with rapid worldwide urbanization. In this much more compelling context, the sun's energy has again come to be seen as a direct replacement for oil. It

beckons as a local alternative for electric power grids that run our air conditioners during hot summer months. But our understanding of solar energy must be broadened beyond photovoltaics (PV) and rooftop collectors.

We need to go further than the perception of solar access as only a way of providing energy to heat, light, cool, and ventilate our buildings. We need to extend the concept of solar access to include a more rewarding quality of urban life based on opening our experiences to complex natural rhythms. This step goes beyond current perceptions of an energy crisis.

If our current energy problems were suddenly solved by some economic, technological, or political breakthrough, and even if our rate of energy conversion could be miraculously doubled or tripled, we would still need to confront the basic issue of life quality. Many have proposed nuclear energy as the answer but there remain problems with its use. It is a highly centralized and inherently dangerous system that is vulnerable to failure, mismanagement, or attack. Nor have we solved the problem of disposing of nuclear waste. Furthermore, assuming any very direct correlation between rates of energy conversion and the quality of life is an incomplete, if not dangerous, basis for national policy.

Most importantly, zoning boundaries for solar access have meaning beyond energy conversion. They have benefits for designer and dweller alike. The zoning necessary for solar access must be understood not as restricting but as liberating. It must be seen as expanding choice both inside and outside our buildings, as celebrating, not overriding nature and differences of place. The *solar envelope*, an alternative to zoning by either fixed building-line or unlimited building-height (FAR), could be a powerful tool to accomplish these goals while still supporting the urban densities essential to the "fundamental building blocks of prosperity."