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PROTECTING SOLAR ACCESS: PREVENTING A POTENTIAL PROBLEM

INTRODUCTION

As a result of both economic considerations and environmental imperatives, society is now faced with the task of conserving existing fuels and developing alternative sources of energy.¹ The initial response to this crisis emphasized nuclear power and coal as primary alternatives.² Although the potential of solar energy has long been recognized,³ only recently has it been considered a viable option. It is now viewed as a clean, inexhaustible energy source, capable of heating and cooling buildings, powering industrial furnaces and generating electricity.⁴ The most immediate and practical goal of current solar energy research is to perfect devices to heat water for domestic use and to heat and cool buildings, although more ambitious goals are also envisioned.⁵

1. The resource crisis, painfully brought into focus by the Arab oil embargo in 1973, and the resulting increase in the cost of imported conventional fuel, forced a reevaluation of our energy policy. As a result, it is now realized that foreign sources of fossil fuels are no longer economically practical or reliable and that domestic sources are not inexhaustible. See, e.g., ENERGY: SUPPLY AND DEMAND 3-5 (D. Reische ed. 1975); T. SZULE, THE ENERGY CRISIS (1974); S. UDALL, C. CONCONI & D. OSTERHAUT, THE ENERGY BALLOON 21-26 (1974).

2. See T. SZULE, *supra* note 1, which notes that President Nixon's 1974 policy of "Project Independence," in addition to its promotion of Alaskan oil and offshore drilling, relied substantially on projections for nuclear power and coal which could not be achieved within five to ten years. *Id.* at 2. It was also argued that the "Project Independence" goal of self-reliance by 1980 was an impossibility from the first. *Id.* See also D. BEHRMAN, SOLAR ENERGY: THE AWAKENING SCIENCE 4-11 (1976).

3. Solar energy has been used in the past as a weapon of war, see D. CARR, ENERGY AND THE EARTH MACHINE 147 (1976), as a signaling device, see D. HALACY, THE COMING AGE OF SOLAR ENERGY 34-38 (1973), and to convert saltwater into drinking water, *id.* at 43. Early architecture devoted a great deal of attention to innovative structural designs for various climates and locations, emphasizing the deliberate arrangement of roof overhangs, directional exposure and curtains, screens and vegetation to admit and trap the sun's heat when it was excessive. See *Japanese Courts Back the Right to Sunshine*, New York Times, July 18, 1976, at 10; *Solar Energy Now: Why Aren't We Using More of It?*, NEW WEST, June 7, 1976, at 36.

4. See generally F. DANIELS, DIRECT USE OF THE SUN'S ENERGY (1964).

5. The current interest in solar energy as an alternative power source has prompted research which now contemplates feats such as the harnessing of thermal gradients in the

While a detailed discussion of the technical aspects of solar energy systems is beyond the scope of this Note, it is hardly necessary because of the simplicity of most systems. Essentially, all that is involved is a series of collector panels on a roof top, a pump which sends water through the tubes in the collectors and an area in which the water can be stored and its heat retained.⁶ This storage area may be connected to a home's plumbing system to produce hot water, or a fan may be installed to blow air past it to provide space-heating. Endless refinements of this system are either available or are being developed to increase the effectiveness and accessibility of solar energy system. However, while considerable progress has been made in solar energy research, certain practical drawbacks must still be accepted or overcome.⁷

ocean, D. CARR, *supra* note 3, at 129-32, and the construction of "solar farms" or "solar furnaces" covering vast tracts of land which could supply twice the present need for electricity in the United States, *id.* at 146-61.

6. A solar collector, which is the essential component of any solar system, converts sunlight to heat and transfers the thermal energy to a storage device before it can be reradiated or lost. The collector consists of a rectangular box, fashioned out of sheet metal and painted a dull black for maximum absorption of sunlight. The box is framed and covered with glass or clear plastic to create a greenhouse effect whereby sunlight is trapped and its loss prevented. The heat captured, which can reach temperatures up to 200° Fahrenheit, is absorbed by either water or air which circulates inside a network of tubes contained within the black box. It is then transported through a closed system to a reservoir or central storage area where, before the air or water is circulated back to the collector to be warmed again, the heat is transferred to the storage medium. Finally, either water or air can then be sent through the storage area and circulated throughout the structure by either pump or fan for heating, bathing or cooking. For discussions of the general mechanics of solar energy systems see W. EWERS, *HOW TO USE SOLAR ENERGY* (1976); D. HALACY, *EXPERIMENTS WITH SOLAR ENERGY* (1969); T. LUCAS, *HOW TO BUILD A SOLAR HEATER* (1975); D. WATSON, *DESIGNING AND BUILDING A SOLAR HOME: YOUR PLACE IN THE SUN* (1976); J. WILLIAMS, *SOLAR ENERGY: TECHNOLOGY AND APPLICATIONS* (1974).

7. Although experimental houses have maintained liveable temperatures year-round, it is generally agreed that an auxiliary energy system is necessary to guarantee that a building will have heat and hot water, even during periods of inclement weather. While this will be of little consequence to owners of existing structures that are equipped with either electric, natural gas or oil systems, newly constructed solar homes must absorb an added initial expenditure for a back-up system. See, e.g., Zillman & Deeny, *Legal Aspects of Solar Energy Development*, 1 ARIZ. ST. L.J. 25, 29 (1976).

More importantly, the savings to be earned by the utilization of solar energy will be realized only after passage of an indefinite period of time, even though immediate fuel bills would be reduced considerably from the outset. This is due to the fact that cost estimates for solar energy systems now vary widely, while the cost of conventional energy sources are not sufficiently stable to lend themselves to estimations of future cost, although they are generally expected to rise. Rixa, *Let the Sun Shine In: Solar Power—An Alternative Energy Source*, San Francisco Examiner, Dec. 1, 1976, at 23-25, col. 3. CALIFORNIA PUBLIC UTILITIES COMMISSION ENERGY CONSERVATION TEAM, *A STUDY OF THE VIABILITY AND COST EFFECTIVENESS OF SOLAR ENERGY APPLICATION FOR ESSENTIALS IN THE RESIDENTIAL SECTOR IN CALIFORNIA* (Oct. 7, 1977) [hereinafter cited as CPUC STUDY], notes that an active solar space heating system which could supply 70% of the annual

From a legal standpoint, the principal problem presented by the expanded use of solar energy is the protection of access to sunlight. Since most sunlight that reaches a piece of land strikes it at an angle,⁸ many solar energy systems depend on sunlight which flows across adjacent property. This light may be blocked by buildings, fences, walls or vegetation on the adjacent property. The legal question is what legal relief, if any, is available to the solar user whose access to sunlight has been obstructed.⁹

Legal recognition of a right to sunlight and ownership of airspace has always been an exceedingly controversial issue.¹⁰ Since Lord Coke first committed English courts to the maxim

space heating requirements of a 1500 square foot home would cost \$6000 to \$8000 to install on a retrofit basis. The study pointed out that in California, where space heating is needed only for four to six months each year, such a system would be idle for at least 50% of the time. During winter, when it would be needed most, the sun is least effective and often obscured by clouds. As a result, the annual savings in fuel costs would only be about \$175, a return of only 2.2% on an \$8000 investment. These factors, the study concluded, would encourage relatively few people to install active solar space heating systems. Domestic water heating systems, which can be used year-round and cost an average of \$1700, were found to be viable alternatives, particularly when the initial expense is mitigated by state and federal tax credits. See notes 160-62 *infra* regarding tax credits.

8. See Eisenstadt & Utton, *Solar Rights and Their Effect on Solar Heating and Cooling*, 16 NAT. RESOURCES J. 363 (1976); Comment, *The Allocation of Sunlight: Solar Rights and the Prior Appropriation Doctrine*, 47 U. COLO. L. REV. 421, 422 (1976).

9. The extent to which the shading of existing structures would prevent a property owner's conversion to solar energy is unknown. Certainly, studies should be conducted to determine this, as well as the extent to which future development may obstruct sunlight. Several studies already undertaken, some involving the use of aerial photography, discovered that present shading was insubstantial and that existing land use controls provide adequate protection for future adaptation. See A. MILLER, G. HAYES & G. THOMPSON, *SOLAR ACCESS AND LAND USE: STATE OF THE LAW, 1977*, at 3 (1977) (published by the Environmental Law Institute, 1346 Conn. Ave., N.W., Suite 620, Washington, D.C. 20036) [hereinafter cited as MILLER & HAYES], citing F. DUBIN, *ANALYSIS OF ENERGY USAGE ON LONG ISLAND FROM 1975 TO 1995: THE OPPORTUNITIES TO REDUCE PEAK ELECTRICAL DEMANDS AND ENERGY CONSUMPTION BY ENERGY CONSERVATION, SOLAR ENERGY, WIND ENERGY AND TOTAL ENERGY SYSTEMS* (1975) (published by the Suffolk County, N.Y., Department of Environmental Control). However, in *CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION, CALIFORNIA COASTAL PLAN* (1975) [hereinafter cited as *CALIFORNIA COASTAL PLAN*], it was estimated that in California, no more than 35% of existing houses could be retrofitted to solar energy because of shade cast by trees, or because the building orientations or roof angles were not suitable for collectors. *Id.* at 102.

10. See, e.g., *Bury v. Pope*, 78 Eng. Rep. 375 (1587), wherein the court stated that no cause of action for nuisance existed against a neighbor who erected a structure so near the plaintiff's home that it blocked the sunlight from the plaintiff's windows, even though the plaintiff had enjoyed the light from these windows for more than 30 years. The plaintiff "can have no action; for it was his folly to build his house so near to the other's land . . ." *Id.* at 375. See also Ball, *The Vertical Extent of Ownership in Land*, 76 U. PA. L. REV. 631 (1928), wherein the author examines more contemporary theories dealing with ownership of airspace.

that "*cujus est solum usque ad coelum et ad inferos*,"¹¹ it has been held that a landowner possesses an unrestrained right to build without regard to whether the construction obstructs sunlight flowing to adjacent property.¹² Thus, literal application of Lord Coke's formula renders owners or prospective purchasers of solar energy collection equipment powerless to prevent such obstruction by their neighbors. The scope of this principle, however, has been steadily narrowed by public regulatory mechanisms, such as the zoning of height restrictions, by private legal arrangements, such as easements, and by judicial decisions, such as *United States v. Causby*.¹³ In *Causby*, which dealt with the ownership of airspace, the Supreme Court stated that Lord Coke's doctrine

has no place in the modern world. The air is a public highway Were that not true, every transcontinental flight would subject the operator to countless trespass suits. Common sense revolts at the idea. [This] would clog these highways, seriously interfere with their control and development in the public interest, and transfer into private ownership that to which only the public has a just claim.¹⁴

Limitations such as these on the common law doctrine reflect a judicial and legislative acknowledgment of the need for legal

11. 1 E. COKE, *INSTITUTES* ch. 1, § 1(4a) (19th ed. 1832). Taken literally, the expression means that he who has the soil also owns upwards to the heavens and down to the depths. See Klein, *Cujus Est Solum Ejus Est . . . Quousque Tandem?*, 26 J. AIR L. COM. 237 (1959).

The language has been applied primarily in controversies in which only ownership of the airspace immediately above the surface was in question. See, e.g., *RESTATEMENT (SECOND) OF TORTS* § 159 (1966); 8 So. CAL. L. REV. 339, 340 n.7 (1935). The maxim has been interpreted to mean that a landowner's property right was invaded by a neighbor's overhanging structure, *Puroto v. Chieppa*, 78 Conn. 401, 62 A. 664 (1905); *Smith v. Smith*, 110 Mass. 302 (1876), by an arm reaching across a boundary line, *Hannbalson v. Sessions*, 116 Iowa 457, 90 N.W. 93 (1902), and even by a bullet shot across the owner's land, *Munro v. Williams*, 94 Conn. 377, 109 A. 129 (1920); *Whittaker v. Stangrick*, 100 Minn. 386, 111 N.W. 295 (1907); *Herrin v. Sutherland*, 74 Mont. 587, 241 P. 328 (1925).

12. See, e.g., *Granberry v. Jones*, 188 Tenn. 51, 216 S.W.2d 721 (1949). Lord Coke's maxim has never been relied upon literally to allow fee owners to make whatever use of their land that they pleased. Fundamental notions of nuisance law prohibit one landowner from using his or her land so as to interfere unreasonably with others' use and enjoyment of their own land. See *Hutcherson v. Alexander*, 264 Cal. App. 2d 126, 70 Cal. Rptr. 366 (1968); *Riblet v. Spokane-Portland Cement Co.*, 41 Wash. 2d 249, 248 P.2d 380 (1952); see also Cross, *The Diminishing Fee*, 20 LAW & CONTEMP. PROB. 517 (1955); Philbrick, *Changing Conceptions of Property in Law*, 86 U. PA. L. REV. 691 (1938).

13. 228 U.S. 256 (1946). The case is discussed in Note, *Air Law: Repeated Low Flights over Property as Trespasses and as Taking of Air Easement*, 35 CALIF. L. REV. 110 (1947).

14. 228 U.S. at 261.

devices capable of accommodating altered social conditions and developing technologies. If such judicial concern continues and is applied to the resolution of solar energy issues, not only may users of solar energy be protected, but solutions may be adopted which will encourage the use of solar energy.

This Note will examine the merits of several possible solutions to the problem of assuring access to sunlight for solar energy users. These solutions are both private and public. The first part of the Note will focus on the laws of nuisance, easements and restrictive covenants, while the second addresses the suitability of public regulatory measures. Consideration will also be given to methods by which solar energy use may be encouraged beyond merely protecting sunlight access.

I. PRIVATE PROTECTIVE TECHNIQUES

A. EASEMENTS

Landowners whose energy needs are satisfied or supplemented by the use of solar energy collectors may be able to protect their access to sunlight by acquiring an easement—a “right in the owner of one parcel of land, by reason of such ownership, to use the land of another for a special purpose not inconsistent with a general property in the owner.”¹⁵ Easements may be either affirmative, allowing the owner to do some act on the burdened property, or negative, preventing a particular use of the servient tenement. Ordinarily, easements may be acquired by grant, express or implied, or by prescription; their creation entitles the owner to a private, individual cause of action for its infringement.

Easements Created by Express Grant

Easements of light and air, whether created by express grant, reservation, exception or covenant, have long been recognized and enforced.¹⁶ Express grants of easements must be evidenced by a writing,¹⁷ but their precise form or the nature of the writing is

15. BLACK'S LAW DICTIONARY 599 (4th ed. 1968). See generally J. CRIBBET, PRINCIPLES OF THE LAW OF PROPERTY 335-46 (2d ed. 1975).

16. See, e.g., *Kennedy v. Burnap*, 120 Cal. 488, 52 P. 843 (1898), wherein the California Supreme Court held that an easement of light and air could only be acquired by express grant—not by implication. *Id.* at 491, 52 P. at 847. See also *Keats v. Hugo*, 115 Mass. 204 (1874); *Story v. Odin*, 12 Mass. 157 (1815); CAL. CIV. CODE § 801(8) (West 1954).

17. See *Long v. Cramer Meat & Packing Co.*, 155 Cal. 402, 101 P. 297 (1909); *Wagner v. Nanna*, 38 Cal. 111 (1869).

immaterial.¹⁸ The language must include a description of the land subject to the easement and nature of the burden.¹⁹

Since light that flows over one lot to another may be obstructed in unique and unpredictable ways, including by buildings, other structures or vegetation, a private regulatory system based on easements has considerable merit.²⁰ First, it would involve only interested parties and rely substantially on the initiative of individual landowners in protecting their own interests.²¹ Second, it would allow the parties to identify and accommodate any peculiarities of the affected properties. Costs would be restricted to the parties involved. Since subsequent owners could be bound by the easement, continuing solar access would be assured.

Unfortunately, certain economic realities may preclude or limit the use of express easements to guarantee solar access. Express easements entitling landowners to enjoin, or recover damages for, any use of adjacent property that would shadow their solar collectors must be purchased. Such purchases would be infeasible for solar users unless their cost would nearly equal the value of the sunlight they would assure. On the other hand, owners of burdened property would surrender the right to develop their land only if the consideration for the relinquishment approximated the value of their right to build, and perhaps the profit they might have realized from such construction. Property

18. See *Pacific Gas & Elec. Co. v. Minnette*, 115 Cal. App. 2d 698, 708, 252 P.2d 642, 647 (1953) (upholding trial court's issuance of mandatory injunction requiring removal of newly constructed garage under plaintiff's power lines); see also J. CRIBBET, *supra* note 15, at 336-37.

19. See *Pacific Gas & Elec. Co. v. Crockett Land & Cattle Co.*, 70 Cal. App. 283, 292, 233 P. 370, 373 (1924); see also J. CRIBBET, *supra* note 15, at 337.

20. Colorado has enacted legislation to protect access to sunlight on the basis of easements. See COLO. REV. STAT. ANN. §§ 38-32.5-101 to 102 (Supp. 1976). While easements are essentially private regulatory mechanisms and are generally valid without express statutory authorization, the legislation does serve to formalize, and perhaps encourage, light easements. The statute provides that solar energy access easements shall be in writing and subject to the same provisions as are other easements to real property. Furthermore, it requires that the written record of such easement state the angle at which the solar easement extends over the servient property. Any provisions for compensation in regards to interference with or maintenance of the easement must also be in writing. For further discussion of the Colorado statute see Reitze, *A Solar Zoning Guarantee: Seeking New Law in Old Concepts*, 1976 WASH. U.L.Q. 375 (1976); Comment, *supra* note 8, at 432-33.

21. See Comment, *supra* note 8, wherein a further advantage is suggested: "Use of easements is more likely to be responsive to the needs of an individual than to the pressures of an interest group." *Id.* at 432-33.

owners wishing to purchase solar easements, especially in developing and high density areas, are likely to be charged exorbitant fees by servient tenants.²² Moreover, complete protection of solar collectors would require the purchase of easements over all potentially interfering property. Since the cost of solar collection units is still quite high,²³ the additional expenditure for a protective easement (and the possibility of long and costly court proceedings to enforce it) may make the expense of solar energy use prohibitive.²⁴

Implied Easements

An easement may also be created by implication. Easements created in this manner are based on the theory that whenever landowners sell one of two adjoining lots or part of one piece of land, they include in the conveyance whatever is necessary for the beneficial use and enjoyment of the land conveyed.²⁵ Ordinarily, an easement will not be implied unless it appears the parties intended it;²⁶ in addition, conditions of necessity²⁷ or preexisting usage must be found present.²⁸

An implied easement is not likely to be relied upon to provide access to sunlight for solar users. This is due simply to the fact that implied easements of light and air have not been recognized by American courts.²⁹ The rationale for this position has been

22. W. THOMAS, ACCESS TO SUNLIGHT: PROCEEDINGS OF THE WORKSHOP ON SOLAR ENERGY AND THE LAW 9 (1975).

23. For a discussion of the economics of solar energy utilization see note 7 *supra*.

24. In addition, it is evident that easements of light are considered property which can be bought, sold and even leased or traded. As a result, such purchases are likely to be taxed. *See, e.g.,* Macht v. Department of Assessment, 266 Md. 602, 296 A.2d 162 (1972), wherein the court upheld an increase in the assessed valuation of property after the owner had leased airspace above it to a neighbor who wished to prevent sunlight-blocking construction. 296 A.2d at 170. *See* Annot., 56 A.L.R.3d 1300 (1974); *see also* notes 160-62 *infra* and accompanying text.

25. *See* Orr v. Kick, 100 Cal. App. 2d 678, 224 P.2d 71 (1950); *see also* CAL. CIV. CODE § 1104 (West 1954).

26. *See, e.g.,* Fristoe v. Drapeau, 35 Cal. 2d 5, 8, 215 P.2d 729, 732 (1950) ("intent [is] the criteri[on], and this is in accord with the rationale of the rules governing easements by implication"); Warfield v. Basich, 161 Cal. App. 2d 493, 498, 326 P.2d 942, 945 (1958) ("[t]he purpose of the doctrine of implied easements is to give effect to the actual intent of the parties as shown by the facts and circumstances of the case.").

27. Traditionally, implication of an easement required strict necessity; it is now sufficient to demonstrate reasonable necessity. *See* Fischer v. Hendler, 49 Cal. App. 2d 319, 322, 121 P.2d 792, 793-94 (1942).

28. *See, e.g.,* Owsley v. Hamner, 36 Cal. 2d 710, 718, 227 P.2d 263, 268 (1951) ("the prior use of the property is one of the circumstances to be considered").

29. *See, e.g.,* Kennedy v. Burnap, 120 Cal. 488, 490, 52 P. 843, 844 (1898); Taliaferro

“that there is no absolute property in light and air, and that there is a physical difference between light and other easements.”³⁰ Furthermore, courts have felt that such an easement “would cripple industry, check progress, promote litigation, and embarrass improvements of estates.”³¹ Since there is no indication that implied easements of light will be recognized in the future,³² and since recognition would probably require such a substantial alteration of the doctrine’s elements that the original concept would become unrecognizable,³³ other theories will have to be relied on to protect access to sunlight.

Prescriptive Easements

An easements acquired by prescription entitles owner to the same rights, protections and powers of enforcement as are incident to an easement created by express grant.³⁴ In order to acquire an easement by prescription, strict requirements must be satisfied. The requirements are essentially identical to those associated with acquisition of title by adverse possession—open, adverse and uninterrupted use with the actual or constructive knowledge, and without the acquiescence, of the owner for a statutorily prescribed period.³⁵

Actions based on claimed acquisition of prescriptive easements for sunlight, however, have been uniformly rejected in the United States.³⁶ As mentioned above, there must be some indication of adverse use of the affected property. In other words, in order to give notice of the right to a cause of action, the use must

v. Salyer, 162 Cal. App. 2d 685, 690, 328 P.2d 799, 801 (1958); see also 23 CALIF. L. REV. 440 (1934).

30. 23 CALIF. L. REV. 440, 441 (1934).

31. *Id.* Note the analogy to nuisance law, where courts have distinguished between conduct constituting a nuisance and the blocking of light. See notes 61-70 *infra* and accompanying text.

32. For a typical example of the contemporary judicial attitude toward implied easements of light and air see *Katcher v. Home Sav. & Loan Ass’n*, 245 Cal. App. 2d 425, 429-30, 53 Cal. Rptr. 923, 927 (1966), quoting 1 CAL. JUR. 2D *Adjoining Landowners* § 30, at 758-59 (1952).

33. For an indication of how unwilling a court may be in this regard see *Maioriello v. Arlotta*, 364 Pa. 557, 73 A.2d 374 (1950).

34. See, e.g., *McKeon v. Brammer*, 238 Iowa 113, 29 N.W.2d 518 (1947).

35. An easement deals with a usage right, while adverse possession deals with possession and title. Although the elements of each are similar, their proof requirements are materially different. See *Raab v. Caspar*, 51 Cal. App. 3d 866, 124 Cal. Rptr. 590 (1975); *Zunino v. Gabriel*, 182 Cal. App. 2d 613, 6 Cal. Rptr. 514 (1960).

36. See, e.g., *Fontainebleau Hotel Corp. v. Forty-five Twenty-five, Inc.*, 114 So. 2d 357, 359 (Fla. 1959). See generally 1 AM. JUR. 2D *Adjoining Landowners* §§ 89-97 (1962).

be inconsistent with the rights of the true owner and constitute an actual invasion or infringement.³⁷ Landowners who enjoy the free flow of light from across adjoining properties are merely exercising a legal right in the enjoyment of an intermittent and incidental aspect of their own property and make no encroachment upon the rights of their neighbors.³⁸ Since there is no encroachment, courts have concluded that there is no adverse use, no cause of action in the adjacent landowner and no opportunity to acquire a prescriptive easement of a pathway for sunlight.³⁹ Thus, prescriptive easements provide no protection for sunlight access.

B. DOCTRINE OF ANCIENT LIGHTS

Although the common law Doctrine of Ancient Lights is properly conceived as a combination of the characteristics of both prescriptive and implied easements,⁴⁰ its essential element is the requirement of use for a prescribed period. According to the doctrine, an owner of land, by enjoying without interruption the light flowing across his or her neighbor's land for a prescribed period, acquires a cause of action against that adjoining landowner for

37. See *Yuba Consol. Goldfields v. Hilton*, 16 Cal. App. 228, 116 P. 712 (1911), wherein the court stated:

Among the reasons assigned for [the rejection of prescriptive easements of sunlight is] that in the nature of things there can be no adverse user of light or air, for the actual enjoyment of these elements by a property owner is upon his own land only, and involves no encroachment upon his neighbor's land, nor any interference with the latter's enjoyment of his own property to which he can object.

Id. at 232, 116 P. at 714.

38. *Id.*

39. This type of usage does suggest the creation of negative easements, which "preclude the owner of land subject to the easement from the doing of an act which, if no easement existed, he would be entitled to do." 25 AM. JUR. 2D *Easements and Licenses* § 8 (1966). However, negative easements are ordinarily created by express grant, not by prescription. See *Chapman v. Sheridan Wyo. Coal Co.*, 338 U.S. 621 (1949); RESTATEMENT OF PROPERTY § 452 (1944).

40. Although there no longer appears to be any requirement of unity and subsequent severance of title, there are prerequisites of measurable and reasonable necessity and preexisting use. See notes 25-28 *supra* and accompanying text. At early common law, however, the doctrine was applied only in the context of a conveyance when one party owned two adjoining lots. If the owner conveyed one of the lots on which there was a building with an apparent and continuous use of the light that came through its windows from across the other lot, there was an implied grant of a continuing right to the light which had been enjoyed in that building. The owner could not act in derogation of his or her own grant by building on the open lot in a way that would block the light going to the conveyed lot. Although the concept of a "lost grant" is still a basis for the creation of these light easements, such an immediate incident of conveyance no longer seems necessary. See 1 AM. JUR. 2D *Adjoining Landowners* § 93 (1962); Annot., 56 A.L.R. 1138, 1139 (1928).

the stopping of "ancient windows" by the erection of any structure on that adjoining land.⁴¹ In 1832, Parliament established a prescriptive period of twenty uninterrupted years;⁴² recently, this was extended to twenty-seven years.⁴³ Application of the doctrine also requires that there be an actual building, a defined aperture intended for the admission of light,⁴⁴ actual use of the sunlight entering the affected window, and a substantial and unreasonable obstruction.⁴⁵

It seems unlikely that the Doctrine of Ancient Lights will be used to protect solar access. The doctrine, like implied easements of light and air, has been repudiated without exception in the United States. Courts have reasoned that the doctrine is ill suited to conditions in this country and inconsistent with public policies favoring continuous and unlimited growth.⁴⁶ Nevertheless, advocates of sunlight access protection have suggested that the condi-

41. See *Knowles v. Richardson*, 86 Eng. Rep. 727 (K.B. 1796); *Sury v. Pigot*, 79 Eng. Rep. 1263 (K.B. 1682); *William Aldred's Case*, 77 Eng. Rep. 816 (K.B. 1611).

42. See 2 & 3 Wm. 4, c. 71 (1832); see also 3 POWELL ON REAL PROPERTY § 413 (rev. ed. 1976), which notes that Parliament's act was the codification of the basic common law rule on the subject. *Id.* at 493. In its earliest form, the doctrine required that a claimant prove his or her use and that enjoyment dated from "immortal antiquity" or for a period of time "whereof the memory of man runneth not to the contrary." This required producing a witness who could testify that at all times within his or her memory the plaintiff had used the light as claimed. See 5 FORDHAM L. REV. 509 (1936).

43. The Right of Light Act, 1959, 7 & 8 Eliz. 2, c. 56 (1959).

44. Reitze & Reitze, *Protecting a Place in the Sun, Part I*, ENVIRONMENT, June 1976, at 2.

45. Several relatively objective tests have been developed to measure the remaining sunlight falling on the claimant's property to determine whether the interference was indeed unreasonable and did in fact substantially deprive a room of sunlight. See Reitze, *supra* note 20, at 389.

Traditionally, however, an adjoining land owner could obstruct about one-half of the previous sunlight, or so much that there was no violation of the so-called "grumble test." This test provided that a jury would visit the room on a day with "full daylight" and decide whether reading without resort to artificial light was possible without grumbling. The doctrine thus appears to establish easements of "daylight," and not specifically of direct sunlight. See, e.g., *Ough v. King*, [1967] 3 All E.R. 859; see also B. ANSTEY & M. CHAVASSE, *THE RIGHT TO LIGHT* 7 (1963); W. THOMAS, *supra* note 22, at 8; Reitze & Reitze, *supra* note 44, at 3; Wilkinson, *Law of Easements: Let There Be More Light*, 118 NEW L.J. 7 (1968).

46. See, e.g., *Yuba Consol. Goldfields v. Hilton*, 16 Cal. App. 228, 116 P. 712 (1911). "[The rule of prescriptive easements of sunlight] is not considered to be adapted to the existing condition of things in the United States and could not be applied to rapidly growing communities without working mischievous consequences to property owners . . ." *Id.* at 232, 116 P. at 714. This policy is clearly reflected in the judicial predilection for promoting real estate development at the expense of access to sunlight. See Comment, *Obstruction of Sunlight as a Private Nuisance*, 65 CALIF. L. REV. 94 (1977); see also notes 71-76 *infra* and accompanying text.

tions leading to these policies, which necessitated the repudiation of the Doctrine of Ancient Lights, no longer exist⁴⁷ and that it is now appropriate to reevaluate the doctrine, adopt it in principle and apply a variation of it to protect sunlight access in the context of solar energy utilization.⁴⁸ Numerous practical and administrative problems remain,⁴⁹ however, and these problems would likely prevent the doctrine from being used as a device to protect access to sunlight, even if the judiciary were to reconsider the merits of the doctrine.⁵⁰

47. See notes 71-76 *infra* and accompanying text.

48. As it now stands, the doctrine's protection of a reasonable amount of indirect sunlight provided through a particular aperture does nothing to guarantee access to direct sunlight necessary to supply solar collectors since the collectors, without exception, are located externally. In addition, the lengthy period now required before the doctrine affords protection will discourage potential users from making the substantial investment in obtaining solar energy, since at any time during the 27 year period, adjoining property could be developed in such a way as to render useless the solar energy collection device and prevent the user from acquiring an easement. If a far shorter period were required, a potential user might feel more confident in making the investment, since the short-term plans of neighbors could be more readily ascertained. One suggestion which has been made is that the requisite use period be substantially reduced to perhaps five or seven years. See Reitze & Reitze, *Protecting A Place in the Sun, Part II*, ENVIRONMENT, July 1976, at 5. Another proposal would require registered public notice of a landowner's intention to install a solar energy system to all neighbors within a defined area. If no complaint were filed within a specified period, a presumption that the system had been receiving light across the affected property for 27 years would be created, and the system owner would therefore be protected. See AMERICAN BAR FOUNDATION MODEL ACTS, CREATION, ALLOCATION AND DESTRUCTION OF SOLAR SKYSPACE RIGHTS 168 (1976).

49. For example, some provision would have to be made for the resulting reduction and instability of community property values when a landowner's right to develop land is threatened by the prospect of a neighbor installing a solar energy system. In addition, while property owners who install solar equipment would await anxiously the passage of the period necessary for their easement to inure, adjacent property owners would be on notice as to the impending loss of their development rights and thus might race to build.

50. Reassessment by the courts is not likely to lead to the adoption of the Doctrine of Ancient Lights. The substantial technical analysis and modification necessary to make the doctrine functional in the context of solar energy utilization are beyond the capabilities of most courts. Consideration by a legislative body would undoubtedly be required. See, e.g., Davis, Cal., Ordinance 784 (Oct. 15, 1975). But see Kressel, *Hanson v. Salishan Properties, Inc.: Preservation of View-Limitation As to Height of Improvements and Architectural Control in Uniform Long Term Lease*, 5 ENV'T'L L. 183, 191-92 (1972) (Oregon case which revived English doctrine of custom in holding that entire Oregon coastline may serve as precedent for application of a traditional doctrine to current problems).

Therefore, the judiciary's traditional encouragement of land development may be less of an impediment than the pressure by real estate, construction and nonsolar energy industry lobbies on a legislative body. In CALIFORNIA COASTAL PLAN, *supra* note 9, it is noted that the building and real estate industries are usually slow to adopt and promote any new device that raises capital costs, even if long-term overall costs would be lower. *Id.* at 103. See also notes 168-70 *infra* and accompanying text.

C. RESTRICTIVE COVENANTS

By agreement, landowners may impose whatever restrictions upon the use of their lands that they desire. Restrictive covenants may arise from an exchange of promises by adjoining landowners;⁵¹ ordinarily, such restrictions are contained in a deed or other writing which evidences the agreement.⁵² They are commonly utilized by a landowner conveying a portion of his or her property in order to prevent the purchaser from engaging in any use or activity on the land that the seller may find undesirable.⁵³

Restrictive covenants are most frequently used today as mechanisms by which developers of new tracts assure homogeneity and the permanent aesthetic qualities deemed necessary to attract investors.⁵⁴ When a subdivider or developer sells individual lots in a new residential community or industrial park, restrictive covenants are inevitably included. These covenants are usually enforceable by and against all present owners, as well as future purchasers despite their lack of direct participation in the covenant.⁵⁵

Innovative developers might incorporate solar access guarantees into their deeds. The guarantees could be couched as easements or as limitations on the heights of vegetation, accessory uses or any other structure capable of interfering with sunlight. Including these guarantees would be simple and inexpensive; it would only require the addition of several clauses to the deeds.

51. 2 OGDEN'S REVISED CALIFORNIA REAL PROPERTY LAW 1137 (1975) [hereinafter cited as OGDEN]. See notes 18-24 *supra* and accompanying text; see also *Relovich v. Stuart*, 211 Cal. 422, 295 P. 819 (1931).

52. See, e.g., *O'Sullivan v. Griffith*, 153 Cal. 502, 95 P. 873 (1908), which indicated that the writing should show an agreement by a party to do or refrain from doing a certain thing and be more than a mere recitation of fact.

53. See 2 OGDEN, *supra* note 51, at 1137.

54. See, e.g., *Trahms v. Starrett*, 34 Cal. App. 3d 766, 110 Cal. Rptr. 239 (1973), where, prior to deeding any lots in the tract, the developer recorded a declaration of tract restrictions. A group of property owners in the development brought an unsuccessful action against other owners in the development to enjoin the violation of one such restriction regarding interference with the view enjoyed by another. See also *Diamond Bar Dev. Corp. v. Superior Court*, 60 Cal. App. 3d 330, 131 Cal. Rptr. 458 (1976); *Arrowhead Mut. Serv. Co. v. Faust*, 260 Cal. App. 2d 567, 67 Cal. Rptr. 325 (1968).

55. For a thorough discussion of the essentials of a running covenant see RESTATEMENT (SECOND) OF REAL PROPERTY § 16 (1977). For the state of the law in California see Comment, *Covenants of Title Running with the Land in California*, 49 CALIF. L. REV. 931 (1961); Comment, *Covenants: California's New Legislative Approach to Covenants Running With the Land*, 9 SANTA CLARA LAW. 285 (1969).

Restrictive covenants, however, will be of limited use in protecting solar access, since they are applied primarily in relation to new developments. In addition, there is currently little to motivate developers to provide such guarantees,⁵⁶ since protective provisions in the absence of any apparent need would be of little value. On the other hand, there is a realistic possibility that restrictive covenants already in effect may hamper the transition to solar use by prohibiting rooftop accessories or by severely limiting building heights.⁵⁷

D. NUISANCE

Nuisance law is the traditional means by which competing interests and uses of land have been balanced. State legislatures have the power to classify certain kinds of activities as nuisances by statute.⁵⁸ Some activities, long regarded as nuisances "per se" under settled case law, may be enjoined without proof of their injurious nature.⁵⁹ Unless conduct or activity falls within these established categories, the determination as to whether it constitutes an actionable nuisance involves a judicial balancing of the utility of the defendant's conduct against the gravity of the harm to neighboring property owners.⁶⁰

56. See notes 123-37 *infra* and accompanying text.

57. See Zillman & Deeny, *supra* note 7, which considers this problem in more detail and suggests that a solar user either: (1) ignore the restrictive covenant in the hope that growing reliance on solar energy and more attractively designed collectors will mitigate the problem; (2) secure a change in the covenant, which may be difficult in a larger development since unanimous consent may be required; or (3) argue that changed circumstances should invalidate the covenant. *Id.* at 36.

58. This is premised upon the state's police power to adopt regulations for the public health, safety, morals and general welfare. See *CEED v. California Coastal Zone Conservation Comm'n*, 43 Cal. App. 3d 306, 118 Cal. Rptr. 315 (1974).

59. See, e.g., *In re Brambine*, 192 Cal. 19, 218 P. 569 (1923); *People v. Adco Advertisers*, 35 Cal. App. 3d 507, 110 Cal. Rptr. 849 (1973).

60. See, e.g., *Antonik v. Chamberlain*, 81 Ohio App. 465, 476, 78 N.E.2d 752, 759 (1947); Comment, *supra* note 46, at 97-99. Factors relevant to such a determination include: (1) the degree of the harm caused, see *RESTATEMENT OF TORTS* § 827(a) (1939); (2) the relative ability of the parties to avoid it, see *id.* §§ 827(e), 828(c), 830; (3) the suitability (see *id.* §§ 827(d), 828(b), 831) and the social utility (see *id.* §§ 827(c), 828(a)) of both the conduct and interest invaded; (4) the existence of malice, see *id.* § 829; and (5) whether the alleged interference predated the competing interest, see *W. PROSSER, THE LAW OF TORTS* § 89, at 611 (4th ed. 1971).

RESTATEMENT OF TORTS § 822 (1939) does not, however, use the term nuisance at all, substituting instead the phrase "interference with use of land." See *W. PROSSER, supra*, § 89. *CAL. CIV. CODE* § 3479 (West 1970) defines a nuisance as

[a]nything which is injurious to health, or is indecent or offensive to the senses, or an obstruction of the free use of property, so as to interfere with the comfortable enjoyment of life or property

A Judicial Presumption: No Nuisance

This balancing test, however, has not traditionally been applied to nuisance actions alleging interference with sunlight.⁶¹ Applying Lord Coke's maxim, courts have held that landowners possess an unrestrained right to build without regard to whether their construction will block sunlight.⁶² The rationale for this con-

The type of tortious conduct causing a nuisance is immaterial: it may be intentional, negligent or extrahazardous. See RESTATEMENT OF TORTS § 822 (1939); W. PROSSER, *supra*, § 89. A nuisance is analyzed primarily according to the consequences rather than the nature of the defendant's actions. See Seavey, *Nuisance: Contributory Negligence and Other Mysteries*, 65 HARV. L. REV. 984 (1952).

A nuisance may be private or, if it affects any considerable number of persons, public. See CAL. CIV. CODE §§ 3480-3481 (West 1970). This distinction is relevant to the appropriateness of the remedies and to the application of the statute of limitations. A private nuisance may be abated by self-help, or the injured party may bring a civil action for an injunction, damages or both. See *id.* § 3501; CAL. CIV. PROC. CODE § 731 (West 1970); W. PROSSER, *supra* at 602. A public nuisance may be abated by civil or criminal actions brought by public officers. See *People v. Gold Run D. & M. Co.*, 66 Cal. 138, 4 P. 1152 (1884); *People v. Wheeler*, 30 Cal. App. 3d 282, 106 Cal. Rptr. 260 (1973); CAL. CIV. PROC. CODE § 731 (West 1970). A private party has no remedy for a public nuisance unless the nuisance is especially injurious to him or her. See *Venuto v. Owens-Corning Fiberglass Corp.*, 22 Cal. App. 3d 116, 99 Cal. Rptr. 350 (1971); CAL. CIV. CODE § 3495 (West 1970). The statute of limitations runs against a private nuisance, but "no lapse of time can legalize a public nuisance, amounting to an actual obstruction of a public right." *Id.* § 3490; see *Strong v. Sullivan*, 180 Cal. 331, 181 P. 59 (1919).

61. See, e.g., the leading case of *Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five, Inc.*, 114 So. 2d 357 (Fla. App. 1959), wherein the court concluded that where a structure serves a useful and beneficial purpose, it does not give rise to a cause of action, . . . even though it causes injury to another by cutting off the light and air interfering with the view, . . . regardless of the fact that the structure may have been erected partly for spite.

Id. at 359.

62. See text accompanying notes 11-15 *supra*. The most frequently cited American case concerning the issue, *Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five, Inc.*, 114 So. 2d 357 (Fla. App. 1959), involved two luxury hotels in Miami Beach, Florida. In 1959, the Fontainebleau Hotel began construction of a fourteen floor addition on the northern portion of its property. This portion abutted the southern boundary of the Eden Roc Hotel, which had been built a year after the Fontainebleau. Construction of the proposed addition threatened to cover Eden Roc's pool, deck and cabana area with a shadow during the afternoon throughout the tourist season. Eden Roc sought to permanently enjoin construction, alleging that the construction was "actuated by malice and ill will . . . and that the construction . . . would interfere with the easements of light and air enjoyed by plaintiff and its predecessors in title for more than twenty years . . ." *Id.* at 358. The trial court granted a temporary injunction, stating that a landowner was prohibited from using his or her property to the injury of another. On appeal, the court reversed on the ground that the injunction was improperly granted. *Id.* The court observed that landowners were free to use their property as they pleased as long as the use did not injure the lawful rights of another. Since no American decision could be found in which a landowner, absent a contractual or statutory obligation, was held to have a right to the free flow of light, the court held that Eden Roc had no protectible interest and, therefore, no actionable injury. *Id.*

clusion has been twofold. First, courts have stated that since a property owner has no fundamental right to receive the sunlight flowing across adjacent property, blocking this light does not interfere with a protectible interest of the landowner.⁶³ Second, it has been the judiciary's position that public policy favors the development of land over access to sunlight.⁶⁴

Similar reasoning has traditionally been used to deny a right to sunlight to landowners even when sunlight was blocked by fences or structures which were prompted by malice and served no purpose other than to obstruct.⁶⁵ More recent cases considering these so-called "spite fences," however, permitted a cause of action for wrongful obstruction of sunlight (or air or view).⁶⁶ Inherent in these later decision is the nuisance action's balancing-of-interests approach coupled with an implicit recognition that sunlight is a protectible property interest of some value. Neverthe-

63. *Id.* at 359-60.

64. *See, e.g.*, Comment, *supra* note 46, at 102.

65. *Camfield v. United States*, 167 U.S. 518 (1897); *Cohen v. Perrino*, 355 Pa. 455, 50 A.2d 348 (1947). The *Cohen* court found that the defendants were entitled to erect a wall on their own land even though it was motivated by malice and obstructed the plaintiff's windows. *Id.* at 460, 50 A.2d at 351. In *Camfield*, the Supreme Court declared:

It is true that a man may build a fence upon his own land as high as he pleases, even though it obstructs his neighbor's lights, and the weight of authority is that his motives in so doing cannot be inquired into, even though the fence be built expressly to annoy and spite his neighbor

167 U.S. at 523.

66. *See Western Granite & Marble Co. v. Knickerbocker*, 103 Cal. 111, 37 P. 192 (1894) (legislature has constitutional authority to regulate height of fences); *Dunbar v. O'Brien*, 117 Neb. 245, 220 N.W. 278 (1928) (lumber placed on lot for sole purpose of blocking light and air from neighbor's window found to be enjoined nuisance); *Erickson v. Hudson*, 70 Wyo. 317, 249 P.2d 523 (1952) (construction of fence motivated by ill will, which blocked plaintiff's light, held to be nuisance). *See also* CAL. CIV. CODE § 841.4 (West 1954), which provides:

Any fence or other structure in the nature of a fence unnecessarily exceeding 10 feet in height maliciously erected or maintained for the purpose of annoying the owner or occupant of adjoining property is a private nuisance.

To some extent, this change of position has been premised upon the belief that a malicious use of property is never a lawful use and that the law must reflect society's disapproval of actions motivated strictly by ill will and spite. *See, e.g.*, *Norton v. Randolph*, 176 Ala. 381, 58 So. 283 (1912) (but for failure to plead malice properly, plaintiff was entitled to pursue cause of action); *Hornsby v. Smith*, 191 Ga. 491, 13 S.E.2d 20 (1941) ("malicious use of property in injury to another is never a 'lawful use'"); *Bush v. Mockett*, 95 Neb. 552, 145 N.W. 1001 (1914) ("[n]o one ought to have the legal right to make malicious use of his property for no benefit to himself, but merely to injure his fellow man"); *Barger v. Barringer*, 151 N.C. 419, 66 S.E. 439 (1909) ("no one should be compelled by law to submit to a nuisance created and continued for no useful end, but solely to inflict upon him humiliation, as well as physical pain").

less, many courts continue to subordinate access to sunlight to the right of adjacent landowners to develop their land as long as the development serves some useful purpose, no matter how slight the utility may be.⁶⁷ The fact that no nuisance action may be maintained for interference with sunlight unless the exclusive purpose of the obstruction is malice or spite suggests the existence of a presumption that "the benefits of *any* useful purpose to which land is put . . . outweigh the harm caused by obstruction of light in *all* cases."⁶⁸ This presumption has led to decisions relying on facile and artificial distinctions; courts have reasoned that blocking sunlight results in a withheld benefit, while other nuisances, such as smoke, noise and dust, consist of the delivery of an undesirable substance.⁶⁹ This rationale ignores the fact that interference with sunlight can also be viewed as the casting of shadows, and delivery of smoke or noise can be described as the denial of fresh air or quiet.⁷⁰

Policy Consideration: Land Development v. Access to Sunlight

In balancing the respective values of land development and sunlight access, there are several policy arguments advanced in favor of continued growth. Based on the assumption that size and growth are synonymous with progress,⁷¹ these arguments

67. See, e.g., *Daniel v. Birmingham Dental Mfg. Co.*, 207 Ala. 659, 93 So. 652 (1922); *D'Inzillo v. Basile*, 180 Misc. 237, 40 N.Y.S.2d 293 (Sup. Ct.), *aff'd*, 266 App. Div. 875, 43 N.Y.S.2d 638 (1943); *Green v. Schick*, 194 Okla. 491, 153 P.2d 821 (1944).

68. Comment, *supra* note 46, at 102 (emphasis in original). However, it has been pointed out that the Restatement of Torts adopted a modified rule whereunder liability might ensue even if the structure served some purpose whenever the purpose was limited and merely incidental, and malice was the predominant motive. *Id.*, citing *Schork v. Epperson*, 74 Wyo. 286, 287 P.2d 467 (1955).

69. In *Musumeci v. Leonardo*, 77 R.I. 255, 75 A.2d 175 (1950), the court compared the blocking of light and air with the casting of "noxious odors, smoke, or other deleterious substances over the land of his neighbor." *Id.* at 261, 75 A.2d at 178. The *Musumeci* court held that while the latter situations clearly constituted nuisances, the former was merely a "[v]iolation of ethics or morals . . . [better left] to the sanctions of the moral law." *Id.* The *Musumeci* court cited with favor *Letts v. Kessler*, 54 Ohio St. 73, 42 N.E. 765 (1896), which stated that "the true test is whether anything recognized by law as injurious passes from the premises of one neighbor to that of another." *Id.* at 83, 42 N.E. at 767. See also Comment, *supra* note 46, at 100.

70. In addition, courts have held to be nuisances activities which involved no physical invasion of the plaintiff's property at all, such as houses of prostitution and funeral homes. See, e.g., *Pon v. Wittman*, 147 Cal. 280, 81 P. 984 (1905) (house of prostitution held to be a nuisance); *Brown v. Arbuckle*, 88 Cal. App. 2d 258, 198 P.2d 550 (1948) (operation of business in exclusively residential neighborhood held to be a nuisance). See also *Red Light Abatement Laws*, CAL. PENAL CODE § 11225 (West 1970), which statutorily defines a house of prostitution as a nuisance.

71. See *Costonis, Development Rights Transfer: An Exploratory Essay*, 83 YALE L.J. 75 (1973), which points out that this position was advocated long ago by English commen-

maintain that continuing development of land is inseparable from economic expansion and prosperity. Thus, encouraging the maximum use of land is a fundament of the free enterprise system.⁷²

It is no longer generally assumed, however, that unrestrained growth is entirely desirable, inevitable or even feasible. Recently, awareness concerning the conservation of resources and environmental quality has prompted a move away from the promotion of unrestricted expansion.⁷³ Advocates of this movement encourage careful inquiry into the traditional purposes and policies of land use controls, the traditional bases for economic health in local communities and the desirability of future population increases. As an alternative to the unplanned growth of the past, they urge the creation of an ecologically balanced environment by limiting new industry, maintaining a stable population and preserving current low-density and low-scale land use characteristics.⁷⁴

While decisions regarding future growth policies are to be made primarily by legislative bodies, it is also advisable for the courts to reexamine the traditional belief that obstruction of sunlight does not constitute a nuisance in all but rare instances. It is already recognized that sunlight has both an economic as well as an aesthetic value, in that it supplies natural light and heat for structures. For example, zoning ordinances which regulate height, bulk and setbacks in order to, among other things, provide adequate sunlight, have been consistently sustained by the judiciary.⁷⁵ Now that technological advances have created new uses

tators and gained increasing prominence in this country, where seemingly endless frontiers begged for exploration, settlement and development. *Id.* at 79-80.

72. See Lamm & Davison, *The Legal Control of Population Growth and Distribution in a Quality Environment: The Land Use Alternatives*, 49 DEN. L.J. 1 (1972).

Growth, and the inherent goodness of it, is more than a philosophy; it is a theology. "Watch Us Grow" is the proud hope on the first sign we see at Averagetown, U.S.A. Towns, counties, and states have historically competed with each other to attract new business and new residents with the unquestioned assumption that to be bigger is to be better.

Id. at 2.

73. F. BOSSELMAN & D. CALLIES, *THE QUIET REVOLUTION IN LAND USE CONTROL* 1, 2 (1972) [hereinafter cited as BOSSELMAN & CALLIES]. The authors undertake an analysis of innovative land use laws of several states and suggest that statewide regulatory schemes are often more appropriate than local ones. See notes 97-102 & 107-15 *infra* and accompanying text.

74. Reilly, *New Directions in Federal Land Use Legislation*, 1973 URB. L. ANN. 29.

75. For example, in *Brougher v. Board of Pub. Works*, 107 Cal. App. 15, 290 P. 140 (1930), the court upheld a San Francisco ordinance which established a height limitation

for sunlight, its value to society has increased accordingly.⁷⁶ When the harm caused by blocking this new energy source is balanced against the utility of an obstructing object, a court may be justified in concluding that the blockage constitutes a nuisance.

Nuisance Balancing in Sunlight Access Cases

The degree of a plaintiff's injury will depend partly on the extent to which the obstructed sunlight supplied his or her energy needs. In this regard, the injury can be measured by increased fuel costs, both current and anticipated, as well as by the lost investment in the solar energy system. In addition, the lost aesthetic value of the sunlight, which can be gauged by the decrease in the value of property, might also be considered.⁷⁷ On the other hand, determination of the utility of the defendant's use of his or her property will depend upon the character of the surroundings, the locality, and the nature and social value of the use. The relative ability of each of the parties to avoid the harm is also relevant. Could the defendant have built on another section of his or her property without incurring added expense? Could he or she alter the structure's design, its height or shape? Could the plaintiff have installed the collector where interference was less likely to occur? Evaluation along these lines might properly be followed to determine whose use is more amenable to change.

It is obvious that results would vary from case to case.⁷⁸ But judicial recognition of a right to sunlight, independent of a statute or a contract, would aid the protection of access to solar energy. It should be pointed out, however, that even if a plaintiff's position in a nuisance action for obstruction of sunlight were considered legally tenable under the proper circumstances, prosecuting nuisance actions to secure sunlight access presents a number of obstacles to the promotion of solar energy systems. The

on all buildings in a certain area of the city. *Id.* at 25-26, 290 P. at 145. The court found that it was not discriminatory, unreasonable or confiscatory, and that it was for the legislature, rather than the courts, to evaluate the expediency of such legislation. *Id.* at 22-26, 290 P. at 142-45. See also notes 83-86 *infra* and accompanying text.

76. See notes 1-9 *supra* and accompanying text.

77. Becker, *Common Law Sun Rights: An Obstacle to Solar Heating and Cooling?*, 3 J. CONTEMP. L. 19 (1976), suggests that consideration also be given to the harm suffered by the community where a solar user's system is rendered ineffective and he is forced to resort to threatened supplies of costly, polluting, traditional energy sources. *Id.* at 29.

78. In some circumstances, the societal value and necessity of the use will render it reasonable despite the fact that it may obstruct sunlight, as in the case of a hospital constructed in an area with insufficient health care facilities.

most important is the simple fact that no protection is assured until a property owner installs a solar system and then prevails in a lawsuit. Therefore, even if a nuisance action were an available remedy,⁷⁹ the additional expense of pursuing litigation to enforce a right to solar access may dissuade a prospective solar energy user from making the costly investment involved in installing the necessary equipment.

Nuisance actions typify the weaknesses of all private legal approaches to protecting solar access. These approaches have not been recognized in the past and there is no clear indication that they will prove to be effective in the future. Even if they are judicially recognized, private causes of action may be so speculative and costly to undertake as to discourage an individual who may already be reluctant to adapt to a new technology. While private legal methods may protect solar access in some situations, it appears that some form of public protection will be necessary to promote widespread use of solar energy devices.

II. PUBLIC PROTECTION OF SUNLIGHT ACCESS

Zoning and land use restrictions are the primary mechanisms by which local governments shape the growth and development of their territories and, in the process, regulate the use of private property. Historically, most municipalities avoided abridging the free exercise of property rights.⁸⁰ However, the transformation from an agricultural society to a highly urbanized one necessitated the implementation of widespread governmental regulation of private property through use of the police power.⁸¹ Thus, cities have passed legislation which limits the height and bulk of buildings, yards, courts and other open spaces, the density of popula-

79. Thus success of such nuisance suits may depend on an alteration of current nuisance laws. See note 106 *infra*.

80. See Elliott & Marcus, *From Euclid to Ramapo: New Directions in Land Development Controls*, 1 *HOFSTRA L. REV.* 56, 58 (1973).

81. A municipality, county or other unit of local government may enact zoning ordinances by virtue of authority delegated by the state. In California, the basic grant of home rule powers is found in CAL. CONST. art. XI, § 7, which states that "[a] county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws." A leading case in this context is *In re Yick Wo*, 68 Cal. 294, 9 P. 139 (1885), *rev'd on other grounds sub nom. Yick Wo v. Hopkins*, 118 U.S. 356 (1886), in which the California Supreme Court upheld local power to enact zoning ordinances, stating that a city "has the power to prohibit or regulate all occupations which are against good morals, contrary to public order and decency, or dangerous to the public safety." 68 Cal. at 299, 9 P. at 142 (emphasis in original).

tion, and the location and nature of specific uses, activities and services.⁸²

In 1926, the constitutionality of zoning ordinances was upheld in *Euclid v. Ambler Realty Co.*⁸³ In *Euclid*, the Court stated that before a zoning enactment could be declared an unconstitutional exercise of the police power, it would have to be proven that it was clearly arbitrary and unreasonable, bearing no substantial relation to the public health, safety, morals and general welfare.⁸⁴ The cases since *Euclid* indicate that the notion of general welfare is an ever-expanding concept⁸⁵—what might have been deemed an unreasonable restriction seventy years ago may now be regarded as entirely acceptable, reasonable and natural.⁸⁶

82. CAL. GOV'T CODE §§ 65800-65907 (West 1965 & Supp. 1977) are the principal statutes pertaining to zoning. They are designed to standardize limitations over local zoning practices; they are not specific grants of authority to legislate. Section 65850 delineates the powers to regulate by ordinance and permits local governments to:

- (a) Regulate the use of buildings, structures and land as between . . . industry, business, residents, open space, including agriculture, recreation, enjoyment of scenic beauty and use of natural resources, and other purposes.
- (b) Regulate signs and billboards.
- (c) Regulate location, height, bulk, number of stories and size of buildings and structures; the size and use of lots, yards, courts and other open spaces; the percentage of a lot which may be occupied by a building or structure; the intensity of land use.

Id. § 65850.

83. 272 U.S. 365 (1926).

84. *Id.* at 387-88, 395. Another test, the harm-benefit test, is better tailored to distinguish between a valid exercise of the police power and an exercise of the power of eminent domain. According to this test, compensation is ordered if a regulation results in a community benefit, but no recovery is allowed if a harmful use of property is abated. See C. FREUND, *THE POLICE POWER* 546-47 (1904); Dunham, *A Legal and Economic Basis for City Planning*, 58 COLUM. L. REV. 651, 663-69 (1958).

85. See Elliott & Marcus, *supra* note 80, at 58.

86. See, e.g., *Cromwell v. Ferrier*, 19 N.Y.2d 263, 225 N.E.2d 749 (1967), wherein a zoning ordinance based solely on aesthetic considerations was found to be a valid exercise of a state's police power. *Id.* at 269, 225 N.E.2d at 752. Nevertheless, actions continue to be filed which allege that regulations restricting or controlling the lawful uses of a property owner's land constitute a denial of due process or equal protection.

In measuring the validity of an exercise of the police power, the fact that such an exercise limits the use and may depreciate the value of property will not render it constitutionally impermissible unless it can be shown that the measure is unreasonable in terms of necessity, or that the diminution in value is such as to be tantamount to a confiscation—a denial to the owner of any possible beneficial use of the property. In such a case, zoning restrictions will be recognized as a taking. See *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 414 (1922) (a regulation prohibiting the mining of coal under private dwellings or streets was a violation of the due process clause).

A zoning restriction may also be held invalid because it is, in operation or application,

A. SOLAR ZONING

Solar energy regulations could be enacted to create a plan which would protect private owners already using or contemplating the installation of solar collectors. Such a scheme, by clearly protecting solar access, would not only protect solar energy collection devices already in operation, but would also encourage their future use. These regulations would certainly withstand the test of constitutionality formulated in *Euclid* and subsequent cases.⁸⁷ Height, setback and lot size limitations enacted specifically to guarantee an adequate supply of sunlight have been consistently upheld by courts when found to promote the public health, safety and general welfare.⁸⁸ Certainly, regulations more specifically directed toward the promotion and protection of solar energy utilization would be considered equally vital. They would serve legitimate police power goals by reducing the use and dependence on fossil fuels and by freeing remaining supplies for use where no alternative is practical or available.⁸⁹

discriminatory and a denial of equal protection of the law. Although no zoning law must be absolutely equal in effect, it must be applied equally to all similarly situated parties. See *Yick Wo v. Hopkins*, 118 U.S. 356 (1886); note 81 *supra*; see generally 1 A. RATHKOPF, *THE LAW OF ZONING AND PLANNING* §§ 8.01-8.07 (4th ed. 1975); J. SACKMAN, *IMPACT OF ZONING AND EMINENT DOMAIN UPON EACH OTHER* (1971).

87. Since a zoning ordinance represents a legislative decision, it is accorded a strong presumption of constitutionality. "If the validity of the legislative classification for zoning purposes be fairly debatable, the legislative judgment must be allowed to control." *Euclid v. Ambler Realty Co.*, 272 U.S. 365, 388 (1926). A challenging party bears the burden of proving that an enactment is unreasonable, discriminatory or confiscatory. See, e.g., *Brougher v. Board of Public Works*, 107 Cal. App. 15, 290 P. 146 (1930).

88. A regulation limiting the heights of buildings around public parks was upheld in Massachusetts in 1899, since it added to the parks' right to light, air and view, although the regulation did provide for compensation to building owners whose property rights were being restricted. See *Attorney General v. Williams*, 174 Mass. 476, 55 N.E. 77 (1899), discussed in NATIONAL TECHNICAL INFORMATION SERVICE, SANTA CLARA, CALIFORNIA, COMMUNITY CENTER COMMERCIAL SOLAR DEMONSTRATION, LEGAL ALTERNATIVES, IMPLICATIONS, AND FINANCING OF SOLAR HEATING AND COOLING BY A MUNICIPAL CORPORATION 21 (1975) (designated Report No. SAN/1083-76/1, this publication is available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161) [hereinafter cited as SANTA CLARA REPORT]; see also *Thain v. City of Palo Alto*, 207 Cal. App. 2d 173, 24 Cal. Rptr. 515 (1962); *Stemwedel v. Village of Kenilworth*, 14 Ill. 2d 470, 153 N.E.2d 79 (1959); *R.B. Constr. Co. v. Jackson*, 152 Md. 671, 137 A. 278 (1927). But see *Welsh v. Swasey*, 214 U.S. 91 (1908) (city ordinance regulating height of buildings held to be invalid).

89. An incidental result might be a lowering of the cost of remaining fossil fuels as reduced demand produces a buyer's market. Moreover, air pollution would likely be reduced. W. THOMAS, *supra* note 22, raises a potential problem in this context: would an increase in air pollution, especially of particulate matter, decrease the overall effectiveness of solar energy? See *id.* at 10.

Any effective legislative program designed to protect solar energy access must include provisions regulating height, bulk and building location. Present enactments governing these factors would have to be modified to address the special problems related to the utilization of solar energy.⁹⁰ For example, height limitations, in addition to being expressed in terms of maximum feet from the ground, would also have to deal with the slope of a building site and seasonal and climatic conditions. Moreover, the changing direction of the flow of sunlight during the course of each day would have to be considered so that a shadow would not be cast upon a neighboring collector during critical times of the year or the more valuable hours of sunlight each day.⁹¹ Similarly, a solar zoning ordinance would have to concern itself with the angles of buildings as well as their vertical height,⁹² and height regulations would have to be applied to vegetation wherever such regulation is absent.⁹³

Admittedly, efforts to enact solar zoning regulations will encounter significant obstacles, both economic and political. One such obstacle would be the influence of formidable lobbyists for competing energy sources and utilities, as well as those representing the construction, banking and real estate industries, which are frequently resistant to change and have a vested interest in high-capital, centralized facilities, such as nuclear or hydroelectric plants.⁹⁴ An even greater problem would be the adaptation of

90. *Id.*

91. Guaranteed exposure to direct sunlight for only part of the day may be sufficient to provide adequate energy for a household. It has been suggested that guarantees may be limited for fixed periods of time, such as for three and one-half hours before and after noon. As a result, a building located directionally and at such a height that it would cast no harmful shadows until after 3:30 P.M. might be worthy of a variance from a solar zoning ordinance which might have otherwise restricted its size. *See Reitze, supra* note 20.

92. SANTA CLARA, CAL., MODEL SOLAR ZONING ORDINANCE § 2(B)(1) (1975) [hereinafter cited as MODEL ORDINANCE] defines an airspace solar easement as "a specific volume of airspace defined by a plane sloping upward to the south at a specified angle from the horizontal (22° is recommended), and the plane is further defined in both plane view and elevation with reference to the property lines over which it passes."

93. Municipal ordinances controlling the height of trees, shrubs, hedges or any vegetation have been enacted, although they are not as prevalent as those regulating structures. *See, e.g., Thain v City of Palo Alto*, 207 Cal. App. 2d 173, 24 Cal. Rptr. 515 (1962), wherein a municipal ordinance requiring property owners to remove certain proscribed weeds was upheld. *Id.* at 194, 24 Cal. Rptr. at 527.

94. *See CALIFORNIA COASTAL PLAN, supra* note 9, which indicates that until 1975, electric utilities had little interest in developing individual solar units or demonstration homes. *Id.* at 103. To see how this situation has changed see notes 168-70 *infra* and

existing structures to solar zoning plans. Obviously, owners should not be required to remove the upper portions of their buildings to eliminate the shadows they cast,⁹⁵ and builders cannot retroactively stagger setbacks on a block running north to south to allow maximum southern exposure when all the houses are already set back evenly.⁹⁶ Moreover, existing zoning ordinances, such as those regulating rooftop accessories, may limit the development of solar energy use although sunlight is otherwise available.⁹⁷

These political and economic obstacles may, to some extent, be overcome if recent trends toward state and federal involvement in land use regulation are applied in the context of solar access.⁹⁸ These trends reflect a belief that municipalities and counties are no longer of sufficient size or political influence to cope with present land use problems, such as air and water pollution, urban and suburban growth, and the prudent and orderly distribution of undeveloped land to competing interests.⁹⁹ This belief has led a number of states to rescind some of the police powers previously delegated to counties and municipalities and to provide for direct statewide land use controls, state review of local land use regulations and the creation of regional land use

accompanying text. See also Zillman & Deeny, *supra* note 7, which states that competing energy industries are afraid of solar development and, therefore, wish to control its growth. *Id.* at 255.

95. AMERICAN BAR FOUNDATION: PROCEEDINGS OF THE WORKSHOP ON SOLAR ENERGY AND THE LAW 18 (March 1975) (discussion of zoning by R. Robbins) (available from the Foundation at 1155 East 60th Street, Chicago, Ill. 60637) [hereinafter cited as WORKSHOP PROCEEDINGS].

96. *Id.* at 16; see also note 138 *infra* and accompanying text.

97. Zillman & Deeny, *supra* note 7, at 43, which also suggests revision of such a zoning ordinance as the logical response, although the validity of zoning purely for aesthetic purposes remains unsettled. *Id.* Zoning ordinances may inhibit solar usage in less direct, though equally effective ways; subsequent additions of a solar collector to buildings constructed within inches of their height limits might add sufficient height to constitute a violation. Similarly, setback regulations frequently require structures to occupy a relatively central portion of a given lot, while solar usage might be most efficient and protectible near the properties' northern boundary line. WORKSHOP PROCEEDINGS, *supra* note 95, at 17 (discussion of zoning by R. Robbins).

98. See generally BOSSELMAN & CALLIES, *supra* note 73.

99. Low, *State Land Use Control: Why Pending Federal Legislation Will Help*, 25 HASTINGS L.J. 1165 (1974), notes the fragmentary effect of the combination of local domination of land use regulation and the proliferation of local governmental units. Obviously, the interests of a highly urbanized area may be in serious conflict with its surrounding suburbs, yet both will create land use plans that reflect only their needs. The result may be suburban restrictions which force heavy industry or low income housing into urban districts. A similar undesirable result would be a boundary line falling between a hospital in one governmental unit and an oil refinery in another. *Id.* at 1168.

control agencies.¹⁰⁰ These trends could lead to a broad exercise of a state's police power to protect solar access. In California, the power of the legislature to declare that acts injurious to the state's natural resources are public nuisances has long been recognized.¹⁰¹ This power could serve as a basis for a statutory declaration that shadows falling on solar collectors constitute a public nuisance. Such obstructions would then be considered nuisances per se and thus would be enjoined without proof of their injurious effects.¹⁰²

Similar trends on the federal level have led to a proposal that Congress pass an act safeguarding unobstructed solar skyspace and requiring states to prohibit any construction that would interfere with an existing solar energy system.¹⁰³ The federal government has both direct and indirect powers that would justify this involvement in the protection of solar access. The reduction of our dependence on foreign fuel supplies and our vulnerability to an oil embargo are legitimate goals of national defense.¹⁰⁴ Because of the increasing interstate marketing of solar devices and the competition that inevitably will arise between solar energy and oil and natural gas industries, the power to regulate interstate commerce could also be relied on to justify congressional regulation of activities affecting the use of solar energy.¹⁰⁵

However, neither state public nuisance nor federal skyspace legislation may be entirely feasible.¹⁰⁶ They exemplify the imprac-

100. *Id.*

101. See *CEEED v. California Coastal Zone Conservation Comm'n*, 43 Cal. App. 3d 306, 118 Cal. Rptr. 315 (1974), wherein the court noted the increased reliance on, and refinement of, public nuisance doctrines to protect the public from acts destructive to the environment. *Id.* at 318, 118 Cal. Rptr. at 324, citing *Huron Portland Cement Co. v. Detroit*, 362 U.S. 440, 442 (1959), and *Bortz Coal Co. v. Air Pollution Comm'n*, 2 Pa. Commw. Ct. 441, 279 A.2d 388 (1971).

102. See notes 58-59 *supra* and accompanying text; see also B. WITKIN, *SUMMARY OF CALIFORNIA LAW, Equity* §§ 99-101 (1974).

103. See MILLER & HAYES, *supra* note 9, at 15.

104. *Id.*

105. For a more extensive discussion of the commerce clause and its applicability to the issue of solar rights see Comment, *supra* note 8, at 422.

106. The more important drawbacks of a public nuisance approach are similar to those limiting a private action. Litigation would be necessary in each case to prove the existence of a nuisance, and nothing would protect a solar user until he or she installed a system and successfully maintained a suit for its obstruction. A government that is considering the adoption of a statutory nuisance approach in spite of these drawbacks would be wise to first amend its zoning laws so that previously authorized but now inconsistent uses are clearly prohibited by the new statute. This would be a necessary procedure in light of judicial reluctance to declare a particular use of property a nuisance where that use is

ticability of broad land use controls attempting to accommodate the variations in climatic, geographic and demographic conditions, and other characteristics that exist in different regions throughout the nation and within each state. Thus, pressure from local political groups may dictate that federal legislation be limited in scope, perhaps consisting only of incentive funding to encourage state and local land use regulations.¹⁰⁷ State regulation may play a much more active role.¹⁰⁸ Although a permanent state institution created to resolve important land use problems would be ideal,¹⁰⁹ California has achieved considerable success by estab-

specifically granted by the legislative authority. *See, e.g.,* *Bright v. East Side Mosquito Abatement Dist.*, 168 Cal. App. 2d 7, 335 P.2d 527 (1959). Zillman & Deeny, *supra* note 7, stated that in spite of the legislative burdens presented by the statutory nuisance approach, the small town of Kiowa, Colorado, passed an ordinance allowing a landowning solar user to have an interfering structure declared a public nuisance, although at the time of this enactment, no one in Kiowa had a solar energy system. *Id.* at 29.

Federal skyspace legislation will encounter additional problems, inasmuch as it will be subject to attack as a taking of private property rights without due process or compensation, and as a nationalization of airspace far beyond that permitted for commercial aviation in *United States v. Causby*, 328 U.S. 256 (1946). *See* MILLER & HAYES, *supra* note 9, at 15.

107. *See* Low, *supra* note 99, at 1169.

108. 1975 Or. Laws ch. 153 (*amending* Or. Rev. Stat. §§ 215.055, 215.110, 227.090, 227.230) is a limited step in this direction, in that it authorizes cities to adopt ordinances "protecting and assuring access to incident solar energy . . . [in] the location, construction, maintenance, repair and alteration of buildings, including height and setback and other structures." The statute also provides for regulation of vegetation and prohibits unreasonable restrictions of construction where conditions make solar energy infeasible. Other kinds of legislation, however, are also of considerable value. CAL. HEALTH & SAFETY CODE § 17959 (West Supp. 1977) authorizes any city or county to require that new buildings subject to the state housing law be constructed in such a manner as to permit

the installation of solar heating or nocturnal cooling devices, including, but not limited to roof pitch and directional alignment suitable for retrofitting with solar energy collecting devices or nocturnal cooling devices subsequent to initial occupancy. Such an ordinance or regulation shall specify a range of permissible roof pitches and alignments which will optimize efficiency for the collection of solar energy and for nocturnal cooling.

Under previous law, county and city building codes were generally required to conform to regulations of the Commission on Housing and Community Development regarding the erection and construction of certain structures. *See* CAL. HEALTH & SAFETY CODE §§ 37120-37135 (West 1973). In that context, the law had been unclear as to whether a local agency has the power to amend its building codes to require such conformity, *see* 1976 Cal. Adv. Legis. Serv. c. 670, Leg. Counsel's Dig., although the City of Davis acted as if it had such authority. *See* *Davis, Cal.*, Ordinance 784 (Oct. 15, 1975). Health and Safety Code section 17959 served to clarify state law and facilitate the adoption of such codes and provisions.

109. Such an institution would be capable of exercising active control throughout a state, avoiding and solving land use problems with programs that predict and precede crises, rather than reacting to them after they have emerged. As a permanent governmental body, it would also avoid costly and dilatory efforts to create a newly legislated bureaucracy for each land use dilemma. *See* Low, *supra* note 99.

lishing regional planning controls¹¹⁰ and implementing critical area legislation.¹¹¹ Solar energy utilization could be encouraged by using these approaches as the basis for statewide legislation toward stimulating the adoption of access preservation plans by local governments.

The legislation could declare that preservation or protection of solar access for present and succeeding generations is of paramount concern to the state. It could create a solar zone protection commission and a designated number of regional commissions which, in collaboration with local agencies and all public and private interests, would undertake studies to determine the planning principles and assumptions necessary to ensure protection of solar resources. After consideration of pertinent factors and within a statutorily prescribed period, the local planners and regional commissions could be required to adopt a plan consistent with certain prescribed minimal standards which take into account each particular locale, its preexisting plan, the character of surrounding buildings and vegetation, and the necessary access to sunlight.

To ensure that any development, prior to formulation or adoption of a solar zone plan, would be consistent with the objectives of the act, any person seeking to develop property in the interim could be required to obtain certification from the appro-

110. See, e.g., California Coastal Act, CAL. PUB. RES. CODE §§ 30000-30900 (West 1977), discussed in Comment, *Saving the Coast: The California Coastal Zone Conservation Act of 1972*, 4 GOLDEN GATE U.L. REV. 307 (1974).

111. The McAteer-Petris Act, in establishing the San Francisco Bay Conservation and Development Commission, see CAL. GOV'T CODE §§ 66600-66661 (West Supp. 1977), declared that the uncoordinated, haphazard filling of the bay by the numerous surrounding governmental units—each of which was under fiscal pressure to expand its tax base by allowing the filling and developing of shoreline—constituted a threat to navigation, wildlife and the quality of the waters of the bay. *Id.* § 66601. The Act stated that preparation of a comprehensive plan was essential to the conservation of the bay and shoreline. *Id.* The McAteer-Petris Act withstood a constitutional attack in *Candlestick Properties, Inc. v. San Francisco Bay Conservation & Dev. Comm'n*, 11 Cal. App. 3d 557, 570-72, 89 Cal. Rptr. 897, 904-06 (1970). See Comment, *San Francisco Bay: Regional Regulation for its Protection and Development*, 55 CALIF. L. REV. 728 (1967).

Sections 66800-66801 of the Government Code created the Tahoe Regional Planning Compact, and CAL. GOV'T CODE §§ 66900-66901, 66905-66907.5, 67000-67130 (West Supp. 1977) all expand that Act. The purpose of the Act is to declare that the Lake Tahoe region is threatened with deterioration that may endanger the beauty and economic productivity of the area and to establish an areawide planning agency with the power to adopt and enforce a regional plan of resource conservation and orderly development. *Id.* § 66801. See Marks & Taber, *Prospects for Regional Planning in California*, 4 PAC. L.J. 117 (1973); Spradling, *Regional Government For Lake Tahoe*, 22 HASTINGS L.J. 705 (1971).

priate regional commission. Such a system need not constitute a moratorium on all interim development;¹¹² it could prevent only that development held to be inimical to the protective objectives of the act or, in other words, development capable of blocking present or prospective solar units.

These interim measures would almost certainly be subject to constitutional attack,¹¹³ although more restrictive measures have been upheld in the past.¹¹⁴ The rationale for upholding such measures has been that it would be destructive of the plan if, during its incubation, parties seeking to evade its operation were allowed to begin construction that would defeat the ultimate execution or primary objective of the plan, either in whole or in part.¹¹⁵

Clearly, solar zoning would be most easily applied to undeveloped areas. When applied to developed communities, especially highly urbanized ones, the problems inherent in its application may outweigh the benefits of the regulations. With these factors in mind, the following three schemes are presented as possible methods which local or regional planners might employ

112. *See, e.g., San Diego Coast Regional Comm'n v. See The Sea, Ltd.*, 9 Cal. 3d 888, 513 P.2d 129, 109 Cal. Rptr. 377 (1973), wherein the effect of a moratorium is discussed and described as extending even to a defendant who has obtained a vested right to construct. *Id.* at 892, 513 P.2d at 131, 109 Cal. Rptr. at 379.

113. Such an attack might be based on the following argument: (1) The Act would constitute an invalid intrusion by the state into the municipal affairs of chartered cities, *but see Bishop v. City of San Jose*, 1 Cal. 3d 56, 62, 460 P.2d 137, 140-41, 81 Cal. Rptr. 465, 468 (1969) (municipal affairs doctrine does not foreclose state regulation when regulated activity has extraterritorial effects); (2) The Act would violate the due process rights of affected property owners, although such "stopgap" or "incubation" legislation enacted without prior notice or hearing has been upheld, *see, e.g., CEEED v. California Coastal Zone Conservation Comm'n*, 43 Cal. App. 3d 306, 118 Cal. Rptr. 315 (1974); *Silvera v. City of South Lake Tahoe*, 3 Cal. App. 3d 554, 557-58, 83 Cal. Rptr. 698, 700 (1970); (3) The Act would operate as an unlawful taking of private property without just compensation, *but see State v. Superior Court*, 12 Cal. 3d 237, 252-55, 524 P.2d 1281, 1291-93, 115 Cal. Rptr. 497, 507-09 (1974) (even more severe interim restrictions on the use of private property have been supported as valid exercise of the police power, pending adoption of a comprehensive zoning ordinance); (4) The Act might fail to provide for procedural due process in its permit application proceeding, although an enactment providing for reasonable notice and an opportunity to be heard is sufficient, *see, e.g., Drummey v. State Bd. of Funeral Directors*, 13 Cal. 2d 75, 80-81, 87 P.2d 848-51 (1939); or (5) The Act would be an unlawful delegation of legislative authority to the Commission, although the doctrine prohibiting such a delegation concerns abdication of fundamental policy decisions and is not violated where a body is granted the task of implementing those policies under adequate directions and safeguards, *see, e.g., People ex rel. Younger v. County of El Dorado*, 5 Cal. 3d 480, 507, 487 P.2d 1193, 1210, 96 Cal. Rptr. 553, 570 (1971).

114. *See, e.g., State v. Superior Court*, 12 Cal. 3d 237, 255, 524 P.2d 1281, 1293, 115 Cal. Rptr. 497, 509 (1974).

115. *See Miller v. Board of Pub. Works*, 195 Cal. 477, 496, 234 P. 381, 388 (1925).

to encourage and protect the use of solar energy devices. Although the first section deals with an existing plan for a low-scale residential community, the second with an incentive arrangement for a new development and the third with a system for highly urbanized areas, none of the three is necessarily exclusive or comprehensive. A highly heterogeneous region might implement portions of all three, as well as other land use regulations.

Solar Zoning in a Low-Scale Residential Community: The Santa Clara Model

An ordinance designed to protect access to sunlight has been drafted for the City of Santa Clara, California, a low-scale, low-density suburban community which is exploring the use of solar energy as a public utility.¹¹⁶ The proposed solar zoning ordinance identifies the economic and environmental crisis regarding energy sources and recognizes that the technology is currently available to utilize solar energy and that such use would benefit the health and welfare of the city's inhabitants.

The preamble acknowledges that in Santa Clara,

existing zoning regulations . . . are sufficient to provide most lots with a minimum of protection from neighboring structures . . . [but] should solar energy become the sole or major source of heating and cooling within the City . . . or should the increased utilization of solar energy be impeded . . . it will be appropriate to provide greater zoning protection . . . by prohibiting the constructing of structures which would cast shadows upon adjacent lots¹¹⁷

The proposed ordinance goes on to define an airspace solar easement and expressly states that adverse possession cannot create such an easement.¹¹⁸ It then provides that "[a]ny person seeking a building permit to construct or modify so as to increase the consumption of airspace over that lot shall certify in writing that

116. The city would finance and install solar heating and cooling systems in new buildings. The program would be conducted on a nonprofit basis, with capital raised through municipal bonds. Consumers would pay a monthly amount to cover amortization and maintenance of the systems. See Barnes, *Who'll Control the Sun Power? The Solar Derby*, NEW REPUBLIC, February 1975, at 17-19.

117. MODEL ORDINANCE, *supra* note 92, at 1.

118. See *id.* §§ 2(B)(1), 2(D)(1)(a).

no airspace solar easement exists over that lot.”¹¹⁹ In addition, variances from zone restrictions, such as those on height, setback and lot density, may be granted to permit unimpaired access to sunlight for property owners who lack such access, so long as the variances do not interfere with existing solar collectors.¹²⁰

Under the ordinance, the city would assume more extensive regulatory authority in imposing restrictions on vegetation, and it would create the office of City Forester. This official would be empowered to trim or remove trees and vegetation on public property which, by their location or nature, obstructed a solar collector’s access to sunlight. The City Forester would also be able to order the trimming or removal of interfering vegetation on private property if a property owner failed to perform his or her duty to prevent such interference.¹²¹ If this occurred, costs and a possible fine may be assessed against the offending landowner.

Since the proposed Santa Clara ordinance bases its protection of solar access on easement theory, the ordinance shares the general weaknesses of easements in this context.¹²² However, because present zoning enactments limit the remaining development potential of most lots, landowners would relinquish little if they were to grant an easement, and therefore its price would probably be minimal. In addition, because of the accessibility of sunlight in Santa Clara and the city’s active encouragement of its exploitation, widespread use of solar power may eventually come into being. As a result, homeowners who paid an adjacent landowner for an airspace solar easement would likely be provided with a return of his or her investment cost when a neighbor on the opposite side purchased an easement over his or her own property.

Solar Zoning in an Undeveloped Area—Incentive Zoning: The Planned Unit Development

While minimal protective strategy may prove adequate in a low-scale, sunny community like Santa Clara, more intensive regulation may be necessary to protect solar use in both undeveloped and high-scale, high density areas. Although mandatory

119. *Id.* § 2(D)(3).

120. *Id.* § 2(E).

121. *Id.* § 4(B), (E), (F).

122. See notes 16-39 *supra* and accompanying text.

installation and land use controls may validly be enacted, particularly in relation to new construction and subdivisions, such legislation is improbable due to both the political realities in the absence of a more drastic energy crisis¹²³ and the persistent threat of litigation alleging interference with private property rights. This threat remains despite recent developments in the field of land use which suggest that the taking issue and compensation requirements have been all but eliminated as a distinction between the police power to zone and the power of eminent domain.¹²⁴ Local zoning agencies have avoided confronting whatever remains of the taking issue by refraining from imposing outright restrictions on the use of property. Instead, they have proceeded by less direct means involving special exceptions and case-by-

123. WORKSHOP PROCEEDINGS, *supra* note 95, at 18 (discussion of R. Robbins).

124. *Costonis*, *supra* note 71, at 77, *citing* *Steel Hill Dev. Inc. v. Town of Sanbornton*, 469 F.2d 956 (1st Cir. 1972) (sustaining a six-acre minimum lot zoning restriction on a tract purchased for recreational home development). *See also* *Potomac Sand & Gravel Co. v. Governor of Maryland*, 266 Md. 358, 293 A.2d 241, *cert. denied*, 409 U.S. 1040 (1972) (sustaining a prohibition of dredging on private lands within state wetlands zone); F. BOSSELMAN, D. CALLIES & J. BANTA, *THE TAKING ISSUE* (1973), stated that the "regulation of the use of land, if reasonably related to a valid public purpose, can never constitute a taking." *Id.* at 238.

This evolution seems to have occurred in response to several trends and conditions. The first of these is the current interest in environmental protection and resource conservation. "Environmentalists believe that *all* development threatens environmental quality. Thus, bifurcating types of development into harmful and non-harmful categories is, for them, untenable." *Costonis*, *supra* note 71, at 78 (emphasis in original). The inevitable result of application of the harm-benefit test is that all development creates a harmful use of land, and no recovery is available to a landowner when a land use regulation prevents this use. A second factor is the financial plight of the cities. *See* *Southern Pac. Co. v. City of Los Angeles*, 242 Cal. App. 2d 38, 51 Cal. Rptr. 197 (1966), *cert. denied*, 385 U.S. 647 (1967), wherein the court indicated that the zoning power of municipalities increases as their strength and power in general decreases. 242 Cal. App. 2d at 48, 51 Cal. Rptr. at 203. The court noted testimony to the effect that, as a result of the lack of public funds, it would take more than one hundred years to achieve the goal of widening existing streets if only eminent domain were available as a tool. A third factor contributing to the minimization of the taking issue and compensation requirements is the belated judicial recognition of land development as a business and not just a cultural heritage. A fourth is the transfer of some land use controls from local governments to state and federal agencies. *See* *Costonis*, *supra* note 71, where Professor *Costonis* points out the likely accompanying trend of courts to favor more readily such land controls out of deference to the expertise of higher level government agencies and because such controls may be more defensible if examined in the context of regional or national goals which also contribute to the shaping of what may be a reasonable return for undeveloped land. *Id.* at 79-80; *see also* note 99 *supra* and accompanying text.

Also involved is the growing sophistication of local planning techniques, which include planned unit development, zoning bonuses, floating zones and development rights transfers. *See generally* *THE NEW ZONING: LEGAL, ADMINISTRATIVE, AND ECONOMIC CONCEPTS AND TECHNIQUES* (N. Marcus & M. Groves ed. 1970) [hereinafter cited as *Marcus & Groves*].

case review.¹²⁵ These techniques seek to preserve low-scale and low-density and to encourage private developers to adopt uneconomic uses and physical amenities by offering economic incentives.¹²⁶ There is no reason why these methods cannot be used not only to protect and promote solar use, but also to enable planning boards to withstand pressures against solar zoning.

The Planned Unit Development (PUD) is typical of the incentive approaches which are ignored by the traditional Euclidean treatment of zoning by districts segregated according to use and by the homogeneity of lots.¹²⁷ The technique allows the planned development of entire tracts of land containing many lots with provisions according to which bulk, use and density regulations may be varied or relaxed in one portion of the community in exchange for the dedication of land for schools, recreation areas or, most often, for green, open spaces in other portions. Thus, the developer is relieved of the inherent limitations of a lot-by-lot approach and the unfortunate results of uniform housing development. Such a planned development would not appear on the initial zoning map of a municipality and is not fixed to any

125. See, e.g., *Golden v. Planning Bd. of Ramapo*, 30 N.Y.2d 359, 285 N.E.2d 291 (1972), wherein the court upheld a regulatory scheme whereby subdivision development was not permitted until availability of proposed services reached a certain specified level. 285 N.E.2d at 304-05. The fact that this level might never be reached did not sway the court.

126. *Elliott & Marcus*, *supra* note 80, at 61. The authors employ the term uneconomic use to refer to one that is deemed necessary and is revenue-producing, but not the most profitable use to which the land could be put. An amenity refers to a plaza, fountain, pedestrian walkway or park that would be a nonrevenue-producing feature of a structure. While regulating the size and placement of a structure to prevent the obstruction of sunlight may not produce the same sort of direct benefit, it nevertheless ultimately benefits the public and is therefore worth encouraging. The authors use the term incentive to mean "an economic advantage to a developer not present under traditional zoning such as additional floor area beyond the district's stipulated maximum or greater use freedom, which is gained on condition that the specified uneconomic uses or physical amenities are provided." *Id.*

127. See *Orinda Homeowners Comm'n v. Board of Supervisors*, 11 Cal. App. 3d 768, 90 Cal. Rptr. 88 (1970), holding that a planned unit development or cluster development does not violate section 65852 of the California Government Code simply because the units are not uniform (*i.e.*, they are not all single family dwellings). *Id.* at 773, 90 Cal. Rptr. at 90. CAL. GOV'T CODE § 65852 (West 1966) requires that regulations be uniform for each class of building or land use throughout a zone. It does not require that the units be alike. *Accord*, *Chrisko v. South Brunswick Township Planning Bd.*, 77 N.J. Super. 594, 187 A.2d 221 (1963); *Cheney v. Village 2 at New Hope, Inc.*, 429 Pa. 626, 241 A.2d 81 (1968). See also *Millbrae Ass'n for Residential Survival v. Millbrae*, 262 Cal. App. 2d 222, 69 Cal. Rptr. 251 (1968). For a thorough discussion of the concept and a compendium of the literature on the subject see *Symposium: Planned Unit Development*, 114 U. Pa. L. Rev. 3 (1965).

location. Instead, it is a floating zone and may be implemented only when it is appropriate.¹²⁸

This system could be applied to allow an arrangement of structures which would protect access to sunlight and encourage use of solar energy.¹²⁹ The proposed Santa Clara Solar Zoning Ordinance¹³⁰ includes a provision enabling the creation of such a PUD.¹³¹ It states: "If for the reason of solar orientation an entire area between two intersecting streets in a block is developed co-operatively or as a unit, all yard regulations may be varied to

128. Ordinarily, zoning ordinances divide a locality into districts and prescribe the uses permitted in each. Since a landowner is assured that he or she may freely establish certain uses without having to appeal to the discretion of a local planning board, this type of planning provides certainty and stability. As in other contexts where certainty is emphasized, typical zoning plans are often rigid and resistant to change. To ensure the flexibility necessary to accommodate any new conditions, the zoning authority may designate a floating zone which, although not immediately effective, may be applied to particular property upon request of the developer if certain conditions are met. The end product is an amendment to a zoning ordinance which reclassifies the property in question.

Floating zones are controversial because they can lead to discrimination or restrictive spot zoning. Spot zoning has been defined as a process whereby one parcel of land is singled out for a use classification which is totally different from that of the surrounding property for the benefit of the owners of that property and to the detriment of the owners of the adjacent property. It is the opposite of planned zoning and is often held invalid because it is not in accordance with a comprehensive or well considered plan. *See Hamer v. Town of Ross*, 59 Cal. 2d 776, 382 P.2d 375, 31 Cal. Rptr. 335 (1963); *Friel v. County of Los Angeles*, 172 Cal. App. 2d 142, 342 P.2d 374 (1959); *Hein v. City of Daly City*, 165 Cal. App. 2d 401, 332 P.2d 120 (1958); *Jones v. Zoning Bd. of Adjustment*, 32 N.J. Super. 397, 108 A.2d 498 (1954); *see also* 55 CAL. JUR. 2D *Zoning* § 71 (1960). However, if a floating zone is applied fairly, there is little danger of constitutional challenge. *See generally* 2 N. ANDERSON, *AMERICAN LAW OF ZONING* §§ 11.01-11.24 (1976); Marcus & Groves, *supra* note 124.

129. A plan whereby structures are clustered in one portion of the land and are characterized by unusual setbacks and yard widths in order to provide for greater open space in another portion might be altered to assure that no future structure or vegetation would obstruct sunlight falling on another structure. The simplest example of this might be the staggering of setbacks from east to west, alternating each house on a street running north to south. In the future, the present method of cluster zoning for the dedication of open space might be used without modification. The space might be used for a "solar farm" which would supply many houses with electricity and would require that only one area be protected in terms of light access. *See WORKSHOP PROCEEDINGS, supra* note 95, at 21 (discussion of transferable development rights by J. Costonis).

130. *See* notes 116-22 *supra* and accompanying text.

131. The validity of such enabling ordinances has been questioned on the basis of the presence or absence of adequate standards to guide local planners in making their decisions, but approval of particular planned unit developments has been upheld despite contentions that the requisite findings or determinations had not been made. This is encouraging in light of the fact that solar energy utilization involves an aborning technology for which no conclusive standards or procedures have evolved. *See Orinda Homeowner Comm'n v. Board of Supervisors*, 11 Cal. App. 3d 768, 90 Cal. Rptr. 88 (1970); *Moore v. City of Boulder*, 29 Colo. App. 248, 484 P.2d 134 (1971).

carry out said purpose . . . ,” provided that the particular plan is approved and found to be noninjurious to adjacent property.¹³² Thus, solar energy provisions may easily be included among those conditions which developers must satisfy before their land will be classified as a planned development. However, because a developer may still choose to proceed in accordance with the preexisting zoning restrictions, thereby disregarding the issue of sunlight access,¹³³ a planning board that actively encourages solar use and its protection should offer developers an attractive package of incentives. These incentives should be formulated to balance the cost-benefit equation in a manner likely to make it economically feasible and desirable for a developer to apply for the classification,¹³⁴ and yet not so generous as to seriously injure the value of adjoining land or conflict with the community’s comprehensive plan.¹³⁵

The task of actually arranging the particular physical features of a development would fall upon a local planning commission which would work in collaboration with an individual developer.¹³⁶ Their negotiations could result in use, bulk, density, setback, lot-coverage area or frontage requirements which might otherwise be contrary to existing ordinances in exchange for the developer’s agreement to regulate building heights and the growth and placement of vegetation which might eventually shade collectors anywhere they are reasonably foreseeable within the development and on all property adjacent to it.¹³⁷ The developer of such a PUD might also be required to install solar energy systems and to protect their continuing access to sunlight through

132. MODEL ORDINANCE, *supra* note 92, at § 2(F).

133. Elliott & Marcus, *supra* note 80, at 61. This is permissible even under the proposed Santa Clara plan; its passage would protect solar access only to the extent that construction would interfere with an existing airspace solar easement.

134. *Id.*

135. See *Frankland v. City of Lake Oswego*, 8 Or. App. 224, 493 P.2d 163 (1972), wherein the court found the impairment of a view to be relevant in evaluating the extent of injury suffered by property owners who claimed that their rights under amended zoning ordinances had been infringed. 493 P.2d at 172. See also *Scott v. City of Indian Wells*, 6 Cal. 3d 541, 492 P.2d 1137, 99 Cal. Rptr. 745 (1972). The *Scott* court stated that a city which was contemplating a zoning change owed a duty to nonresident owners of land adjoining the city when considering the effect of the proposed development. *Id.* at 548-49, 492 P.2d at 1141-42, 99 Cal. Rptr. at 749-50.

136. See *Chrinko v. South Brunswick Township Planning Bd.*, 77 N.J. Super. 594, 187 A.2d 221 (1963); see also 3 C. RATHKOPF, *THE LAW OF ZONING AND PLANNING* 71-45 (3d ed. 1969).

137. SANTA CLARA REPORT, *supra* note 88, at 22.

the recordation of restrictive covenants enforceable by the individual homeowners.

Solar Zoning in an Urban Center: Development Rights Transfers

While the PUD floating zone system is one of the ways in which zoning may be used to protect and encourage solar use, like all zoning plans, it only applies to future development and its effect is limited by the doctrine of nonconforming uses.¹³⁸ This raises the problem of how to promote the use of solar energy systems and protect access to sunlight in medium-to-high-density areas where shadows of tall structures may extend over entire blocks. As discussed earlier, height controls are difficult to mandate when existing structures are involved; the demolition of a skyscraper is certainly not a reasonable method by which to protect solar access. One idea, which has already received serious consideration for purposes of preserving landmarks,¹³⁹ ecological

138. A nonconforming use is one that is in existence at the time of the passage or effective date of the applicable zoning ordinance and, though it does not conform to the uses permitted in that area by the enactment, is permitted to continue because of the hardship and questionable constitutionality of requiring its eradication or abatement. See *Rehfeld v. City of San Francisco*, 218 Cal. 83, 21 P.2d 419 (1933); 55 CAL. JUR. 2D *Zoning* § 128 (1960). If a community were zoned for solar use, the height limits would have to be carefully drafted to avoid the problems that too many nonconforming uses in an area would create (e.g., if 50% of the structures already exceed enacted height limitations). See WORKSHOP PROCEEDINGS, *supra* note 95, at 18 (R. Robbins' discussion of zoning). In CALIFORNIA COASTAL PLAN, *supra* note 9, it was stated that in addition to the substantial problems of amortization of nonconforming units, mandatory retrofitting of old buildings and homes having no access difficulties would "be difficult to justify on a life cycle cost basis because of the shorter remaining life of the building." *Id.* at 102.

139. Costonis, *The Chicago Plan: Incentive Zoning and the Preservation of Urban Landmarks*, 85 HARV. L. REV. 574 (1972). Urban landmarks and architectural treasures are frequently located in congested areas and commercial centers characterized by soaring land values. They often use only a fraction of the height and floor space authorized for their sites under existing zoning regulations and, as a result, realize only a small portion of the rental income that a modern highrise might earn in the same location. In addition, their maintenance costs may exceed those of a much larger modern structure. See *id.* at 579-80. In order to prevent the demolition of such landmarks, which is a salient option available to owners weighing the cost of preservation against the potential profits from redevelopment, both Chicago and New York have formulated Development Rights Transfer (DRT) plans. Under these plans, the owner of development rights associated with the landmark site may elect either to sell those rights to property owners within a prescribed area or receive a cash award from the city itself, which in turn would purchase or condemn the unused rights and later sell them. The landmark owner would, in addition to receiving the value of the development rights, enjoy a significant reduction of his or her real estate tax. The city, on the other hand, would avoid outlays for fee acquisition, maintenance and the loss of the landmark. For a more detailed description of the New York and Chicago plan see *id.* at 584-602.

resources¹⁴⁰ and open spaces,¹⁴¹ is the concept of Development Rights Transfer (DRT). Its discussion here will be offered not as “a solution,” but rather as one possible method by which the presently limited viability of solar energy utilization in high density areas may be increased.

Very simply, the DRT system is premised on a breakdown of real property into two categories: the physical land (including the vegetation and buildings already on the land); and the development potential associated with that land.¹⁴² The theory holds that the development potential can be separated from the physical land and transferred to another parcel within a given community.¹⁴³ In effect, this permits the transfer of the remaining development rights of relatively underdeveloped lands to those areas, probably in commercial zones, which have been developed to the full extent permitted by existing zoning restrictions, but where greater development might not be so objectionable.¹⁴⁴ In these areas, landowners might welcome and actively seek additional space for the development, continued growth, and the accompanying interference with sunlight would have little, if any,

140. See Costonis, *supra* note 71, which suggests a strategy similar to the Chicago Plan for preserving Puerto Rico's Phosphorescent Bay. When applied to historical landmarks, the DRT theory involves transfers of development rights within a fairly restricted urban area; in Chicago, the landmarks and the transfer sites are located within the same area of the city, and New York's plan, deemed less successful, required transfers to adjacent lots. The Puerto Rico plan suggested by Professor Costonis, on the other hand, deals with a formerly remote and unique environmental phenomenon, Puerto Rico's Phosphorescent Bay, whose development was made attractive by the recent accessibility provided by highway construction and the prospect of additional jobs which would ease the island's unemployment problem. It proposes the transfer of development potential in this area and the subsequent sale of the rights to various other areas of the island. For further discussion of the Puerto Rico plan see *id.* at 87-95.

141. See Comment, *Development Rights Transfer in Livermore: A Planning Strategy to Conserve Open Space*, 5 GOLDEN GATE U.L. REV. 191 (1974); see also Marcus, *Mandatory Development Rights Transfer and the Taking Clause: The Case of Manhattan's Tudor City Parks*, 24 BUFFALO L. REV. 77 (1974).

142. WORKSHOP PROCEEDINGS, *supra* note 95, at 19 (J. Costonis' discussion of transferable development rights).

143. *Id.*

144. Another basis for selecting these areas would be the potential of their public services and facilities to accommodate the increased density which would inevitably result from this plan. Using these criteria, a planning agency's previous designation of specific areas for the receipt of transferred rights would, in this context, lessen the amount of case-by-case review that would inevitably follow. See Costonis, *supra* note 139, where the author suggests that transferee sites in high density zones be restricted to increases of no more than 15% in order to minimize the possibility of distortion and abuse of the city's overall design. *Id.* at 596, 599.

detrimental effect.¹⁴⁵ Recognizing that little or no solar energy use is realistic in such zones (Solar Rights Transfer Zones),¹⁴⁶ a community might encourage eligible property owners wishing to develop beyond present height restrictions to acquire the necessary development rights from landowners in the relatively underdeveloped areas (Solar Rights Protection Zones).¹⁴⁷

The classification of a Solar Rights Protection Zone might be reserved for those areas, districts or perhaps single blocks where building heights are low in relation to the zone's authorized limits and where sunlight is relatively unobstructed. In such areas, it may be profitable or otherwise desirable for landowners to absorb the taxes levied on lots zoned for higher uses than those presently operated, since they eventually intend to demolish present structures or add to them to take advantage of their zone's height and bulk allowances.¹⁴⁸ Application of a DRT plan to such areas by a planning board concerned with promoting solar energy use could preserve the existing low-scale features, thereby preventing sunlight-obstructing development.

Transfer of development rights in Solar Rights Protection Zones could be promoted in several ways. Private landowners could be encouraged to donate their development rights if, in exchange for voluntarily forgoing development and conveying a sunlight preservation restriction to the controlling planning agency,¹⁴⁹ they received tangible state, federal and local tax bene-

145. SANTA CLARA REPORT, *supra* note 88, at 24.

146. *Id.* While shadows and slight roof exposure in relation to overall structure size are likely to prevent the installation of sufficient collection capability in Solar Rights Transfer Zones, it may still be possible to provide solar-generated power from a central source—a solar farm. See W. EWERS, *supra* note 6.

147. This classification, which could be made by a local planning board, a city council or a regional planning commission, would also require extensive study of present zoning regulations, the nature of present uses and the extent to which the affected structures may be retrofitted in a manner that would be both structurally feasible and cost effective.

148. There are several factors that go beyond tax implications which explain the appeal of demolition and reconstruction. The most significant is the continuing inflation of urban land values which makes it economically feasible to remove even a relatively new structure in order to construct one that makes more extensive or intensive (*i.e.*, valuable) use of the land. A landowner's choice may not necessarily be between economic loss or economic gain, but rather between obtaining a moderate return and making significant profits. See J. COSTONIS, *SPACE ADRIFT, LANDMARK PRESERVATION AND THE MARKETPLACE* 8-10 (1974).

149. This preservation restriction would prohibit future development of the site by both present and future owners. Upon proper recordation, it would provide notice to purchasers, mortgagees and any other interested party of an encumbrance upon the property. See Costonis, *supra* note 139, at 593. The restriction should state the legal authority

fits.¹⁵⁰ As a means of inspiring such contributions, a city might be willing to make similar sacrifices of its own right to develop some municipally owned properties.¹⁵¹ Transfers might also take place as a result of private sales from landowners in Solar Rights Protection Zones to either the municipality or to landowners in Solar Rights Transfer Zones.¹⁵² Entirely private sales, however, might prove administratively unworkable and inconsistent with the careful and deliberate character of a DRT plan in general.

In all probability, the vast majority of transferred rights would be acquired by the municipality through condemnation proceedings in which mandatory transfers were effected.¹⁵³ One virtue of acquiring development rights in this manner is that if the owners were fairly compensated, no charges of confiscation could be raised.¹⁵⁴ Another advantage is that the city's condemnation purchases would require no expenditure of public funds.¹⁵⁵

upon which its conveyance is premised, any use restrictions and covenants prohibiting material alteration or development, and perhaps requirements mandating solar system installation. See J. COSTONIS, *supra* note 148, at 40, 44.

150. A reduced real estate tax may be extremely attractive. These taxes are often the largest single item in the cost of operating a downtown building. See Costonis, *supra* note 139, at 592. A federal charitable deduction might also be available. See I.R.C. § 170; Rev. Rul. 205, 1964-2 C.B. 62.

151. See Costonis, *supra* note 146, at 598.

152. In J. COSTONIS, *supra* note 148, two valuation and sale systems are outlined. Under the first, the governmental planning agency would

permit or even require the . . . owner to sell these rights . . . for a predetermined sum. The city itself would then resell these rights in the open market, and thus assume the risk or enjoy the benefit of a lesser or greater return respectively. This alternative centralizes control over development transfers in the city and guarantees that the owner will in fact receive a specified sum for the rights.

Id. at 42. Under a second approach, the regulating agency could "prepare and periodically update an index of the value of a stated increment of development rights for all parcels within the development rights transfer district . . . [or] [a]s a variation . . . independently determine the value of each development right transfer as it occurs . . ."

Id. Owners of development rights, however, may not accept the figures in either the index or the regulating agency's appraisal, and this might offset the advantages of allowing sales to take place, to a limited extent, in the private sector. See *id.* at 43.

153. Condemnation proceedings are exercises of the power of eminent domain or the authority of government to acquire title to or an interest in property without the agreement of the owner. They may be undertaken only to achieve a proper governmental purpose and differ from exercises of the police power, such as zoning, in that compensation is required. See generally 5A THOMPSON ON REAL PROPERTY §§ 2575-2584 (replacement ed. 1957).

154. See notes 83-86 & 124-26 *supra* and accompanying text.

155. This procedure would, however, require an initial outlay of public funds in order to finance the costs of the first purchases. Although these original expenditures would be recouped upon subsequent sale of the rights, problems might arise if resale were hampered

The costs of all purchases of development rights from the Solar Rights Protection Zones, whether the result of a voluntary sale or condemnation proceeding, as well as all administrative and operating costs of the DRT system, could be financed by revenue realized from the subsequent sale of the rights to developers in the Solar Rights Transfer Zones. In addition, the city's property tax base would remain substantially unaffected. While a property owner whose development rights were transferred would enjoy a tax decrease reflecting the property's decreased value, the landowner who purchased the additional rights would absorb a corresponding tax increase.¹⁵⁶

This system would be similar in effect to rezoning or a variance, but more equitable and thus less politically and legally objectionable. It would most likely enjoy the support of powerful landowning interests who could make profitable use of future development of property that may already have been developed to the full extent authorized under regular zoning provisions.¹⁵⁷ Complaints regarding discriminatory distribution could be avoided by careful regulation of sales to ensure that all landowners within a Solar Rights Transfer Zone have equal opportunities to make purchases.¹⁵⁸

Numerous provisions might be added to the plan to provide flexibility. For instance, allowances could be made for the purchase of additional rights by owners of property in Solar Rights Protection Zones if their land was in the shade and additional height would enable them to reach the sunlight. Such height addition would be allowed only if it did not threaten the solar collectors which are or would be serving adjacent property. Similarly, the plan might prohibit the transfer of rights to buildings which are technically within the bounds of the Solar Rights

by a depressed real estate market. See J. COSTONIS, *supra* note 148, at 42. A more prudent approach, and one capable of instilling confidence in the entire plan, would involve financing initial acquisitions through donation and sale of the development rights associated with publicly owned property.

156. See J. COSTONIS, *supra* note 148, at 42, 104-06.

157. See SANTA CLARA REPORT, *supra* note 88, at 24.

158. Any DRT plan may be subjected to a variety of constitutional attacks, including possible charges of arbitrariness, denial of due process and equal protection, and taking in violation of the public use limitation on governmental power to condemn property because the system involves eventual sales of rights to private interests. These bases for invalidation are raised and answered in Costonis, *supra* note 139, at 602-32, and in Costonis, *supra* note 71, at 107-21.

Transfer Zone if adding to their height would cause them to shadow an existing solar collector either inside or outside the zone.

The potential of such a system seems unlimited, but administrative and managerial complexities may reduce its utility in a sprawling metropolis. For this reason, it should probably not be adopted solely to guarantee solar access.¹⁵⁹ It might be more readily acceptable, more flexible and more cost-effective if it were incorporated into a municipal or regional comprehensive land use plan calling for the preservation of solar access in conjunction with the maintenance of open spaces, ecologically sensitive areas, coastal resources, landmarks and cultural treasures. This plan would appeal to a wide variety of interest groups and would allow flexibility in terms of the possible trade-offs between restriction and transfer districts.

Implementation of such a plan, however, presupposes the existence of, or inclination to create, a powerful and independent planning authority, eager to promote the preservation of precious resources and energetic enough to undertake the laborious and detailed research and analysis necessary for the enactment of new plans. It also presupposes the availability of funds to finance such a task. In the absence of either of these elements, provisions may be enacted by a local government whereby DRT plays a more limited role. This raises the possibility of DRT functioning merely as a public mechanism for eliminating some of the drawbacks of private remedies. For example, in the case of easements where private parties were unable to reach agreement, a local planning agency might provide a voluntary forum for binding arbitration and thereafter purchase the easements on behalf of the solar user. All public expenses could be recouped upon subsequent sale of the easement in the form of development rights. In the context of a nuisance action, judicial recognition of a right to sunlight might be expedited if courts could rely on a public mechanism which would mitigate the impact of a finding that a particular obstruction is, or would be, an enjoined nuisance. Accordingly, if the owner of restricted property truly deserved compensation, it could be provided by sale of the affected development rights to the local government, which would then sell them to private interests.

159. MILLER & HAYES, *supra* note 9, at 10.

III. CONCLUSION

There is presently a notable lack of empirical evidence from which to evaluate the nature and extent of the solar access problem. It is evident, however, that if a landowner who now installs a solar collector later finds the sunlight on which it depends obstructed, he or she will be without a remedy unless zoning enactments or restrictive covenants proscribe the interference. It is thus incumbent upon public officials who advocate conversion to solar energy utilization to confront this issue, and consideration of the following remedial steps would prove to be a good starting point.

(1) Conduct research to determine:

- a) the extent to which solar usage is prohibited by present shading in developed areas, and whether that shade is cast by vegetation or structures;
- b) the effectiveness of present zoning enactments and existing restrictive covenants in preventing future shading; and
- c) the cost effectiveness and structural feasibility retrofitting existing buildings where access to sunlight is not a problem and present protective enactments are sufficient.

(2) In those locations where access is unobstructed and solar use is cost-effective and structurally feasible on a retrofit basis, but where present protection is insufficient, state legislation should be enacted to:

- a) impose interim minimal restrictions on all development capable of shading present collectors or structures amenable to retrofitting; and
- b) create, fund and delegate to a planning commission with branches of regional jurisdiction the power to formulate and implement plans for complete access protection. Such plans should be consistent with certain prescribed minimal standards, but specifically tailored to each particular locale, its preexisting plans, the character of surrounding buildings and vegetation, and the necessary access to sunlight.

There are several other ways in which legislation would facilitate the conversion to solar energy utilization. Perhaps the most important of these would be tax incentives for solar use. Califor-

nia recently passed legislation which provides an income tax credit of fifty-five percent of the cost incurred in purchasing and installing a solar energy device up to a maximum of \$3,000.¹⁶⁰ Proposals for similar federal tax credits are currently before both the House of Representatives and the Senate.¹⁶¹ Another method

160. Cal. A.B. 1558 (1977) was signed by Governor Brown on September 26, 1977; it amended CAL. REV. & TAX CODE § 17052.5 (West Supp. 1977) and is retroactive to January 1, 1977. Originally, section 17052.5 provided for a 10% credit up to \$1,000. Many other states have passed similar tax incentives, although California's credit furnishes the most extensive relief. See R. EISENHARD, A SURVEY OF STATE LEGISLATION RELATING TO SOLAR ENERGY 1-3 (1976), a report sponsored by the Energy Research and Development Administration and the Department of Housing and Urban Development (the survey is available from the National Technical Information Service, and is designated Publication No. NBSIR 76-1082 Gov't Accession No. PB 258 235). This report reviews enacted state legislation involving tax incentives, reduced property assessments, research and development, solar easements and solar energy promotion. The acts are identified and abstracted, and the responsible state agency and official are listed. This survey has been updated by HUD SOLAR STATUS (1978), a pamphlet available from the National Solar Heating and Cooling Information Center, Box 1607, Rockville, Md. 20850.

161. The Senate completed action on President Carter's energy package early in November, 1977. A good deal of what he had proposed was lost in the Senate, although his program had emerged relatively intact from the House. The package, is, as of this writing, before a House-Senate conference committee. *Where President Carter's Energy Bill Stands*, San Francisco Chronicle, Nov. 11, 1977, at 4, cols. 1-3.

The President's proposal for solar energy incentives provides a 40% tax credit on the first \$1,000 and 25% on the next \$6,400 up to a \$2,000 maximum. This credit would diminish in time and expire after 1984. The House proposed a 30% credit on the first \$1,500 and 20% on the next \$8,500 up to a \$2,150 maximum, with no diminution of this credit. The Senate's proposal called for an extra 15% credit for businesses, with residential credits remaining essentially as proposed by President Carter. The credit would be retroactive to April 20, 1977. *Id.*

The 55% California tax credit will, however, be reduced by whatever federal tax credit Congress enacts. In addition, the interaction of state and federal taxes will produce an increased federal income tax due to the reduced deduction for state income taxes. See CPUC STUDY, *supra* note 7, at II-4, II-5. For example, an initial system cost of \$1,700 would produce a federal tax credit of \$490. The gross state tax credit would be \$935, but the net state tax credit would be \$445 (\$935 reduced by \$490). For a married taxpayer with a 32% federal tax rate for highest earned wages, the reduced state tax deduction would produce an increase in federal income taxes of \$142. This results in a net system cost of \$907. Comparison of this system to an electric water heating system results in an estimate that the solar system cost for saving one kilowatt-hour of electricity is 3.7¢. This is less expensive than the 4.2¢-4.8¢ per kilowatt-hour residential rate as of September 1, 1977, for electric energy sold by Pacific Gas and Electric above the lifeline quantity. *Id.* at II-6 to II-8. A comparison with natural gas water heating indicates that the solar system cost for saving one therm of gas is 38¢. Although this is considerably above both lifeline and nonlifeline rates, which ranged from 14¢ to 22¢ per therm as of September 1, 1977, the study indicated that the 38¢ cost will prove cost-effective. New gas supplies from Arctic or Indonesian sources, when placed in the overall mix of gas sold by utilities in California, are likely to cost 30¢ to 40¢ per therm. *Id.* at II-7, II-9, II-10.

Despite the relatively positive picture these figures present, the CPUC Study suggested that the legislature further assist the development of an expanded solar energy market in California by introducing a new solar tax credit bill. The bill would provide a straight 50% state income tax credit that would apply regardless of any federal tax credit.

by which state legislation could provide financial incentives is through property tax exemptions for solar energy systems.¹⁶² In addition, there has been a considerable amount of state and federal legislation enacted to fund and direct research, development, testing, demonstrations and dissemination of information regarding solar energy.¹⁶³ In both the state and federal contexts, this legislation has produced progress and reason to believe solar utilization is being pursued as a national goal.

In spite of these programs, solar energy utilization has not

This credit could produce a reduction in the solar system cost of saving one therm of gas to 27¢ and reduce the cost of saving one kilowatt-hour of electricity to 2.6¢. *Id.* at III-10.

162. Cal. S.B. 146 (1977) was also signed into law in September of 1977, and added section 234 to the California Revenue and Taxation Code. Section 234 provides in pertinent part:

Any equipment attached to a residential or nonresidential building or swimming pool as part of a solar energy system shall be exempt from taxation, and assessors shall not consider the value of such equipment in assessing the value of such buildings. This exemption shall only apply if the solar energy system is intended for actual use.

1977 Cal. Adv. Legis. Serv. c. 103. This bill will become operative only if Senate Constitutional Amendment No. 15, proposed in the 1977-78 Regular Session of the Legislature, is approved by the electorate in 1978. This amendment would exempt "from taxation all or any portion of property used as an alternative energy system which is not based on fossil fuels or nuclear fuels." For similar legislation in other states see R. EISENHARD, *supra* note 160, at 2. Legislation that would exempt a solar easement from property taxation or provide a credit for it would also be of considerable incentive value.

163. Congress, in response to the energy crisis and especially the Arab oil embargo, passed considerable legislation in 1974. The first act passed was the Solar Heating and Cooling Demonstration Act of 1974, 42 U.S.C. §§ 5501-5517 (Supp. IV 1974), which recognized that solar technology is close to the point of commercial application, but that research, development and testing are still necessary. The Act provides for specification of performance criteria, dissemination of information about those standards and the establishment of a Solar Heating and Cooling Information Data Bank. Section 5510(b) of the Act calls for an analysis of the legal issues raised by the use of solar energy and discusses the need to examine building codes, zoning ordinances and tax incentives. Also enacted was the Solar Energy Research, Development, and Demonstration Act of 1974, *id.* §§ 5551-5566, which, among other things, broadened the area of solar research beyond the heating and cooling of buildings to include solar energy forms, such as wind, sea thermal gradients, products of photosynthetic processes and organic wastes. The Energy Reorganization Act of 1974, *id.* §§ 5801-5891, served to coordinate and consolidate energy research and development through the establishment of an executive agency, the Energy Research and Development Administration (ERDA). This Act is thus related to all energy research and is concerned with solar energy only to the extent that ERDA's responsibilities include administration of all energy planning and development. Another enactment that pertains to energy generally was the Federal Nonnuclear Energy Research and Development Act of 1974, *id.* §§ 5901-5917. This Act deals with the conservation and environmental and social consequences of renewable or inexhaustible sources of energy. For information about state research and development legislation see R. EISENHARD, *supra* note 160.

been adopted as quickly as might have been hoped. To some extent, this is attributable to the inevitable letdown in a transition from the elevated expectations associated with adoption of a new technology and the period of hard work, research and development necessary to improve that technology's efficiency and cost effectiveness.

There are, however, problems beyond those involving technics and economics. The federal government's campaign to convince the public of the urgency of the energy crisis has made little progress.¹⁶⁴ Perhaps even more troubling is the growing belief that the present federal administration is actually "keeping the solar switch turned off."¹⁶⁵ There is evidence that top energy department administrators, many of whom have close ties to the nuclear industry, are, in the words of one congressman, "unquestionably botching by design" or ignoring solar research proposals and making no effort to recruit solar experts into government.¹⁶⁶ In addition, the various types of solar research have been fragmented and absorbed either by conservation or long-range research sections of the Energy Department.¹⁶⁷ Thus, the impact and versatility of a cohesive approach may have been lost.

164. *Gallup Poll: Energy Persuasion Fails*, San Francisco Examiner, Dec. 15, 1977, at 10, col. 1. Gallup reports that the lack of public concern in the United States has caused great concern among leaders of foreign nations, with one result being the dollar's further decline in value. *Id.*

165. Moore, *Why Solar Energy Faces An Uncertain Future—Bureaucrats Surveyed*, San Francisco Chronicle, Nov. 15, 1977, at 1, col. 4.

166. *Id.*, quoting Congressman Richard Ottinger (Dem., N.Y.). This article finds additional evidence of the present administration's attitude toward solar energy in the budget for the fiscal year beginning October, 1977. This budget allocates \$3.4 billion for nuclear development programs, \$903 million for coal and petroleum, and only \$323 million for solar programs—approximately the same amount as that spent for nuclear waste disposal alone. *Id.* at 24, col. 1. This \$323 million allocation was divided so as to reduce the amount appropriated for research and development projects involving the photovoltaic cell. *Id.* The cell, which is discussed in more detail in Chalmers, *Photovoltaic Generation of Electricity*, SCIENTIFIC AM., Oct. 1976, at 34-43, is considered the solar device with the greatest potential. It converts sunlight directly into electricity, requires no maintenance and causes no pollution. Although the technology for production of the cells has existed for some time, they are presently impractical and expensive because each cell must be made by hand. It is believed, however, that mass production techniques may be developed, thereby reducing the cost of photovoltaic cells and making them economically competitive with conventional sources of electricity some time during the 1980s. There had been hope that the federal government could provide an interim market during the period of costly research and development by buying the cells for use in space or in remote military and weather installations. However, such cooperation has not been forthcoming. See Moore, *supra* note 165, at 24, col. 4. See also Chang, *Stable Semiconductor Liquid Injection Cell With Nine Percent Solar-to-Electrical Conversion Efficiency*, 1977 SCIENCE 1097.

167. See Moore, *supra* note 165, where it is noted that solar heating and cooling, as

Beyond public disinterest and a notable government bias favoring established energy industries and centralized power installations lies a similar and predictable partiality on the part of big business and industry.¹⁶⁸ On one level, this reflects a purely economic judgment. The development of high technologies, such as those involved with the nuclear industry, requires heavy financing, extensive construction and considerable manpower. These industries, therefore, enjoy the support of banking, building and labor interests.¹⁶⁹ On another level, this predilection is indicative of a policy orientation that is being subjected to increasing scrutiny as the lines are drawn in the developing confrontation between advocates of "hard" or centralized energy production and those supporting "soft" or decentralized energy systems.¹⁷⁰

well as passive rather than electrical application of solar energy, are being explored by the conservation and application sections of the Department of Energy. *Id.* at 24, col. 3. Solar-electric research is now handled by a section that deals with other long-term projects, such as nuclear fusion and breeder reactors. *Id.* The fear, again reflected by Congressman Ottinger, *see note 166 supra*, is that "[t]he solar electric program is going to get eclipsed . . . [although it] should be cost effective in the NEAR future." *Id.* (emphasis in original).

168. *Id.*

169. *See Id.*; *see also Who Should Own the Sun*, The Marin Energy Examiner, 1977 (on file in the Golden Gate University Law Review Office) [hereinafter cited as *Who Should Own the Sun*], which suggests that multinational, horizontally integrated petroleum corporations may have other reasons for lobbying in favor of high technology energy forms: they presently own over half of the uranium reserves and 30% of the coal reserves in the United States. *Id.* at 8, col. 1. This has led to "high prices, and loss of free market competition, for quality and price, as well as decreased innovation and great power over the entire energy market." *Id.*

170. The "hard" path involves a policy of converting depletable fuels into premium energy forms, mainly electricity, in increasingly larger and more centralized plants. This method is subject to the criticism that it entails enormous costs, environmental dangers and vulnerability to crippling breakdowns. The "soft" or decentralized path would involve substantial utilization of on-site solar energy systems, bio-conversion of crop, wood and other organic wastes for liquid fuel for transportation, and the harnessing of wind and other more esoteric energy forms. *See generally* A. LOVINS, *SOFT ENERGY PATHS: TOWARD A DURABLE PEACE* (1977); Kidder, *Tinkering with Sunshine: The Prospects of Solar Energy*, *THE ATLANTIC MONTHLY*, Oct. 1977, at 70-83. Lovins suggests that while solar, nuclear and other high technology energy sources are not technically incompatible, they are economically and culturally disharmonious.

An example of this controversy peculiar to solar energy and frequently discussed under the heading "Who Owns The Sun?" has particular relevance in California. Recently, California utility companies proposed that they be permitted to install and lease on-site solar devices. Customers would make regular monthly payments to the utility to cover both their continuing electric and gas usage, as well as the system and installation costs incurred by the utility. Even when the utility's initial capital expenditure would be completely recovered, customers would continue to make payments in amounts determined according to the rising prices of the utility's other fuels and their allowable profit. *See Rennert, Sun Power and P.G. & E.: The Rate Also Rises*, *NEW WEST*, June 20, 1977,

Solar energy promises sufficient benefits to overcome the obstacles it faces. However, careful planning is necessary. The need for solar access protection is accompanied by needs for: (1) adequate consumer protection standards for solar equipment; (2) licensing of technicians; (3) arrangements to finance installation, either by government or by public interest groups; and (4) careful regulation of the relationship between solar and competing energy forms. It is probable that reliance on solar energy may one day be taken for granted, just as the use of gasoline was until, in 1973, the public was confronted with the reality of waiting lines, shortages and the possibility of rationing or exhausted supplies. If the transition from our present energy crisis to solar use is to be smooth, it is essential to confront those problems now seen as mere possibilities, rather than reacting to them when they will have become realities.

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at NC-16. While such a proposal offers the advantage of immediate capital for initial installation and some degree of quality control, the probability of price increases and lack of innovation in an atmosphere devoid of unrestrained competition is discouraging. See *Who Should Own The Sun*, *supra* note 169, at 8, col. 1.

California utility companies have also submitted requests for rate increases over the next several years for solar demonstration projects and pilot-leasing projects. Consumer groups have strongly advocated that these be denied. Some commentators feel that solar energy development will be seriously undermined if public utilities are permitted to play an active role in its implementation. They reason that

the utilities—which make their money from huge, capital-intensive investment in oil, coal and nuclear power—have a vested interest in slowing down the introduction of solar energy and keeping its price as high as possible, tied to the spiraling rates for oil, LNG [liquefied natural gas] and other fossil fuels.

Hayden, *SolarCal: Making Sense While The Sun Shines*, *NEW WEST*, July 18, 1977, at 80. The author notes that an alternative proposal has been drafted by the Campaign for Economic Democracy, a Santa Monica organization, which calls for the creation of a “self-sustaining public corporation” called SolarCal. The corporation would finance itself by offering self-liquidating revenue bonds, and its primary economic purpose would be to offer loans at the lowest possible interest rates to “legitimate solar entrepreneurs” and ordinary homeowners. *Id.* This project could result in 250,000 single family homes being equipped with solar energy devices and the creation of 68,000 jobs for each billion dollars raised, as compared with a Southern California Gas Company proposal to spend \$11 million and 5 years installing 315 demonstration models. *Id.*

To some extent, the California Public Utilities Commission has already answered the utility company requests. CPUC STUDY, *supra* note 7, includes a recommendation from the Energy Conservation team that “legislation specifically [prohibit] utility companies or their subsidiaries from entry into manufacturing or the direct marketing (sales, installation and leasing) of solar equipment. The only exception to this would be if the legislature should first declare solar energy as a utility service subject to regulatory jurisdiction.” *Id.* The report does, however, outline those areas in which utility participation would be proper; these include the dissemination of information and financial aid. *Id.* at III-1.

