



Thermal Efficiency Standards for Buildings

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Recent events indicate that thermal efficiency standards for new building construction will become a reality in the not-too-distant future. The United States is currently embarking on a campaign for the judicious and efficient use of our energy resources. The spearhead of this campaign is the Energy Policy and Conservation Act.¹

Included in this new energy act is a provision which

urges states to adopt (presumably through the use of the state "police powers" via building codes) energy conservation plans which include thermal efficiency standards for new building construction.² Such standards, if promulgated, could mandate minimum insulation standards and regulate building design and location in order to assure at least minimal thermal efficiency and resultant energy savings. Practically speaking, this means that

it may no longer be permissible to construct a building which is esthetically pleasing to the builder but energy inefficient. In addition, even if the design is satisfactory, the builder may well discover that building costs are drastically increased. Insulation, as well as other construction materials and requirements necessary to build the desired structure in a thermally efficient manner, could cause such increases. Failure to meet the thermal efficiency standards in the applicable building code could result in either the denial of a building permit for construction, or the imposition of fines, or the demolition of a structure. All of this could mean that a home at the price and of the design an average American can afford may become increasingly difficult for many Americans to acquire.

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The new Energy Policy and Conservation Act places the burden of establishing and monitoring such thermal efficiency standards on the individual states. This is a proper state role in that thermal efficiency standards can best be classified as a "police power" exercise. The best and perhaps only Virginia authority for establishing and enforcing thermal efficiency standards is the Virginia State Board of Housing, which under Va. Code Ann. 36 §97 et. seq. was given authority for the establishment of a uniform statewide building code. Pursuant to this legislative mandate, the Virginia State Board of Housing, on January 29, 1973, adopted by reference the Building Officials and Code Administrators, International, Inc. code (hereinafter B.O.C.A.).³ The B.O.C.A. code, like most other codes known to this writer, does not in any of its sections make provision for or reference to insulation standards or general thermal efficiency requirements. The absence of such a provision is probably due to traditional theory and precedents for the exercise of the police powers, through which the building code was developed to insure building construction which was consistent with public safety and health.⁴

Thermal efficiency standards are principally related to a desire to make wise and efficient use of energy resources. Though this desire is laudable, it is not so necessary to protect the public health or safety as to withstand a strict construction of constitutional standards. The case law reveals, however, that there is a substantial precedent, through the liberal definition of the term "welfare," for establishing thermal efficiency standards.

ENFORCEMENT

In a 1949 case, the Washington Supreme Court said that . . .

The state, in the exercise of its (police) power to enact laws for the general welfare of its people, may enact laws designed to increase the industries of the state . . . and add to its wealth.⁵

As the court in this case indicates, it is proper for a state to exercise its "police powers" in order to promote the economic and social advancement of a state.⁶ The stated purposes of the new Energy Policy and Conservation Act are as follows:

Sec. 361. (a) The Congress finds that—

(1) the development and implementation by States of laws, policies, programs, and procedures to conserve and to improve efficiency in the use of energy will have an immediate and substantial effect in reducing the rate of growth of energy demand and in minimizing the adverse social, economic, political, and environmental impacts of increasing energy consumption;

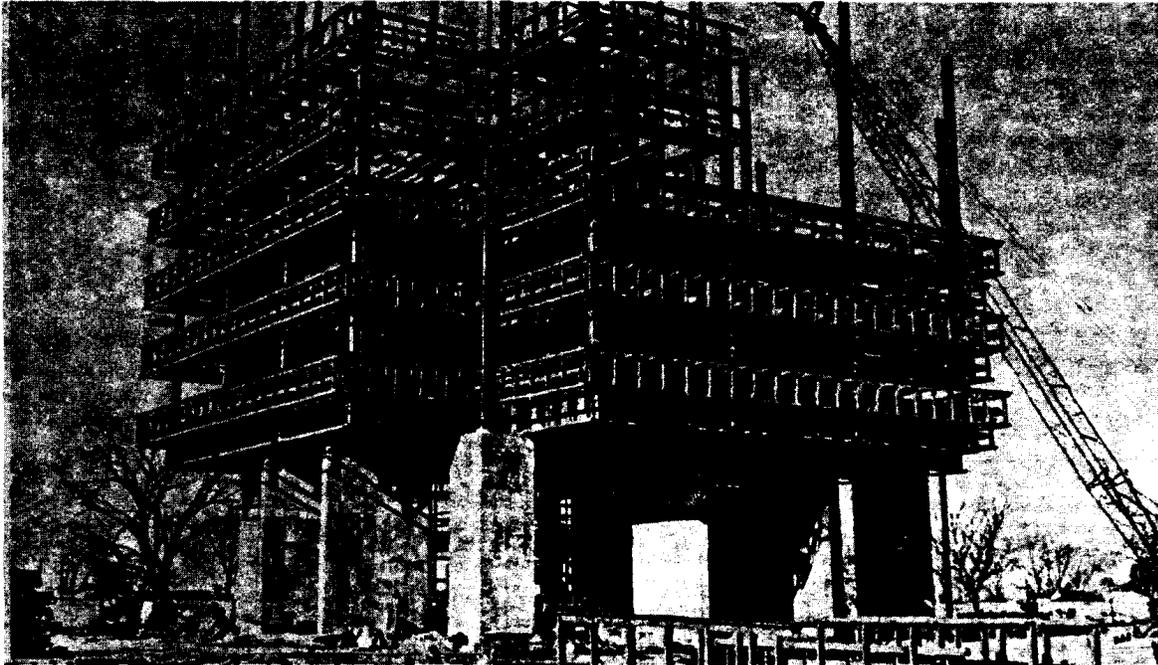
(2) the development and implementation of energy conservation programs by States will most efficiently and effectively minimize any adverse economic or employment impacts of changing patterns of energy use and meet local economic, climatic, geographic, and other unique conditions and requirements of each State; and

(3) the Federal Government has a responsibility to foster and promote comprehensive energy conservation programs and practices by establishing guidelines for such programs and providing overall coordination, technical assistance, and financial support for specific State initiatives in energy conservation.

Clearly the objectives enumerated in this act fall within the scope of the "police power" as discussed in *State v. Dexter*.⁸

Conservation of natural resources has long been recognized as a legitimate police power function. In 1957 an Ohio court of appeals stated that "the conservation of natural resources is within the so-called 'police power' of the state."⁹ The Ohio court's opinion clearly follows the dictate of the U.S. Supreme Court in *City of Trenton v. New Jersey* in which the court held that it is the duty of a state to conserve natural resources.¹⁰ In 1970 the Mississippi Supreme Court clearly adopted this viewpoint when it held that

There can no longer be any doubt as to the power of the state to regulate and promote the utilization of natural resources subject only to the requirements that such regulations be reasonable and not in contravention of the Constitutional provisions.¹¹



A long line of cases hold that states may exercise the police powers to prevent the waste of their resources.¹² Possibly this line of cases should be distinguished from the issue presently under consideration. The thermal efficiency standard for buildings imposed through the use of state "police power" related to the use of energy resources regardless of the source of their origin of extraction. The line of cases cited, however, if narrowly construed deals only with resources actually extracted within the jurisdiction of the state deciding the case. Hence, it is possible to distinguish this line of cases from thermal efficiency regulation which seeks to regulate the use of resources regardless of the point of extraction.

A more general analysis of the scope of the "police powers," without regard specifically to the regulation of resources, will reveal that the establishment of thermal efficiency standards is within the currently recognized scope of the "police powers". In 1959, the Oklahoma Supreme Court stated that

The term "police power" comprehends the power to make and enforce all wholesome and reasonable laws and regulations necessary to the maintenance, upbuilding, and advancement of the public weal and the protection of the public interest. It is plastic in its nature, and will expand to meet the actual requirements of an advancing civilization and adapt itself to the necessities of moral, sanitary, economic and political conditions. No principle in our system of government will limit the right of government to respond to public need and protect the public welfare.¹³

The limit of a state's exercise of the "police powers" is reached when a regulation transcends public necessity.¹⁴ To determine if thermal efficiency standards promulgated for the achievement of energy conservation transcend

public necessity, the courts will have to determine if the enactment in question has for its goal the prevention of some offense or manifest evil which could undermine the preservation of the public health, safety, morals, or general welfare.¹⁵ It is also important to note that the term "general welfare" includes the power of a state to "enact laws designed to increase the industries of the state . . . and add to its welfare."¹⁶

As can be seen, terms such as "transcends public necessity" and "general welfare" are flexible and have evolved over time to remain responsive to the real or perceived needs of an advancing society. As the federal Energy Policy Conservation Act indicated, our society perceives that there is a need to conserve energy in order to assure the future industry and economic wellbeing of the nation. This legislative determination of the nation's needs will not be lightly disregarded by the Judiciary. The Supreme Court's attitude toward regulations which reflect the needs of society is evident in the following statement. "Liberty implies the absence of arbitrary restraint, not immunity from reasonable regulations and prohibitions imposed in the interests of the community."¹⁷

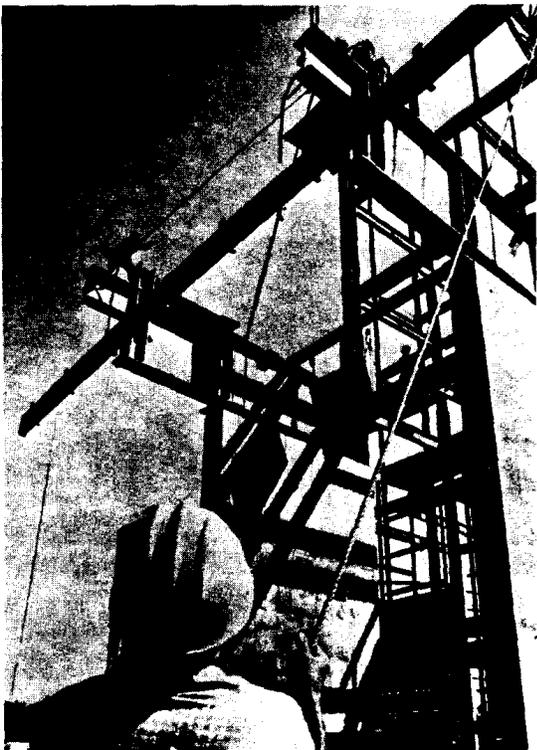
This is the test of reasonableness the courts will apply to the proposed thermal efficiency standards for buildings, since there seems to be nothing arbitrary about such regulations. They are in the interest of the public and do not transcend the public necessity, as the necessity is apparent. The inescapable conclusion is, therefore, that there will be little or no legal difficulty in establishing thermal efficiency standards for buildings as an exercise of the state "police powers" through the use of building codes.

THE MEANS AND THE ENDS

As a general principle, probably everyone favors wise and efficient energy use. In the abstract, few would dispute the advantage of proper construction and insulation procedures to assure at least minimal levels of thermal efficiency. However, a practical public analysis of the specific legal means necessary to ensure this efficiency, with extrapolation as to the ultimate results, would undoubtedly cause some degree of public consternation.

As has been discussed, there is sufficient legal precedent for the use of building codes to promulgate thermal efficiency standards; but the price for the use of such building code standards may be increased construction costs and resultant reduced availability of affordable housing for low income groups. This apparent disadvantage is mitigated by the fact that those who find it possible to purchase housing, even at increased cost, will be able to heat and cool such structures because of their thermally efficient construction. In the long term, such thermal maintenance cost savings will probably exceed initial construction cost increases.

There is, however, another more important, if less obvious, "price" for the use of building codes for achieving thermal efficiency. As with every new or expanded exercise of the "police powers," there is a direct loss of individual freedom of action. A very strict thermal efficiency standard, enforced through building codes, could mandate that architectural design be



regulated. In addition to insulation standards, an architectural design containing large amounts of glass or cathedral ceilings may be suspect. To receive approval for such an architectural design, compromises may become necessary. The owner (builder) may be forced to use only insulated glass with a type of thermal or insulated curtain inside which will reduce heat loss in cold periods, or heat buildup in hot periods. The maintenance of special glass and curtains would have to be monitored, on a continuing basis, through the use of housing codes. One can hypothesize a situation where a building permit would be denied until design revision was made removing all large windows from the north side of a building. An extreme situation could arise where a building permit would be denied for construction of a thermally inefficient building in a location subject to harsh thermal conditions, such as a windswept mountaintop. Certainly a structure could be constructed which would, despite the harsh conditions of the location, be thermally efficient. But what would such a structure look like? Perhaps it would be a squatty, windowless structure half-buried in the ground! No doubt such extreme results are unlikely, but they do point out some of the potential problems with using building codes in order to achieve thermally efficient buildings.

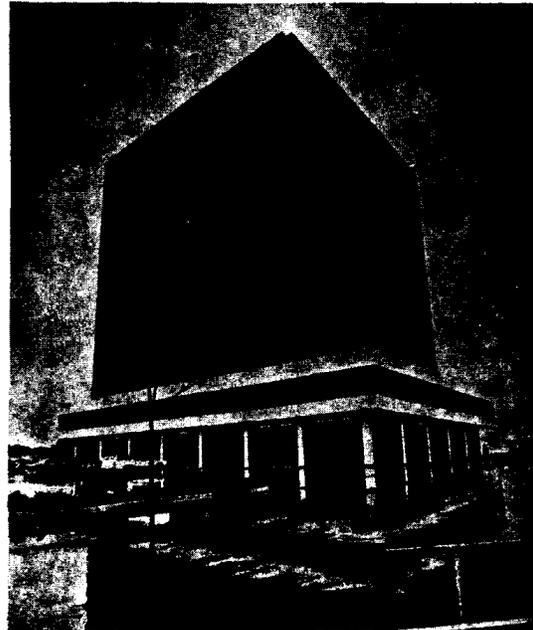
An alternative to the building code approach is found in the well-established system of tax incentives and "penalties". It is beyond the scope of this article to elaborate on the precise manner in which this could be accomplished. The major argument against such a system is that the rich could still make inefficient use of energy if they paid the penalty, and that tax methods place the burden of energy conservation on the poor. But, as has been previously indicated, the less affluent would be benefitted economically by achieving thermal efficiency. First, they would receive significant tax savings through compliance. Second, there would be significant financial savings through reduced fuel costs based on reduced consumption effectuated by the construction of a thermally efficient structure.

There is another advantage of the tax method as compared to the "police power" building code method. The tax method can be used to retrofit existing inefficient structures through tax incentives. The code method would be severely restricted in regard to existing structures; political, legal, and constitutional problems would undoubtedly make retrofit infeasible. The building code method would have to grant a "non-conforming use" to existing inefficient structures and be limited to acting only upon future construction (as does the new energy act cited herein).

Perhaps the most attractive feature of the tax incentive method is the possibility of large scale retrofit of existing thermally inefficient structures. This benefit is important because existing housing has a relatively long life expectancy; hence it will not be rapidly replaced by new, efficient structures. Under the building code system, without retrofit potential, it could be 50 to 100 years before a majority of presently existing housing could be

replaced by thermally efficient new construction. Under a tax incentive system, a large percentage of all structures could be made energy efficient within the near future. The percentage of buildings which could be made thermally efficient, and the time frame in which this could be accomplished, would be functions of the benefit derived by the tax incentive and corresponding tax detriment imposed for failing to retrofit.

The future will hold thermal efficiency standards for new buildings, for the promotion of thermal efficiency to save fuel is desirable. The use of the building code to implement thermal efficiency goals is the method most likely to be employed. However, the building code method has the potential for very real problems, the restriction of individual freedom and the lack of retrofit potential being perhaps the most serious. The tax incentive method is less complex, more equitable, economically feasible, and consistent with maximizing fuel savings in the shortest possible period of time. The United States needs to save energy today. To wait 50 years for the presently existing thermally inefficient structures to be replaced by new efficient construction may be to wait too long. By then the resultant energy savings that are the benefit of thermally efficient buildings may have arrived too late to effectively conserve our fuel resources.



FOOTNOTES

1. Energy Policy and Conservation Act U.S.C. §6201, et. seq. (1975).
2. Id. §6322. Sec. 362. (a) The administrator shall, by rule, within 60 days after the date of enactment of this Act, prescribe guidelines for the preparation of a State energy conservation feasibility report. The Administrator shall invite the Governor of each State to submit, within 3 months after the effective date of such guidelines, such a report. Such report shall include—
 - (1) an assessment of the feasibility of establishing a State energy conservation goal, which goal shall consist of a reduction, as a result of the implementation of the State energy conservation plan described in this section, of 5 percent or more in the total amount of energy consumed in such State in the year 1980 for the projected energy consumption for such State in the year 1980, and
 - (2) a proposal by such State for the development of a State energy conservation plan to achieve such goal.
 (b) The administrator shall, by rule, within 6 months after the date of enactment of this Act, prescribe guidelines with respect to measures required to be included in, and guidelines for the development, modification and funding of, State energy conservation plans. The administrator shall invite the Governor of each State to submit, within 5 months after the effective date of such guidelines, a report. Such report shall include—
 - (1) a proposed State energy conservation plan designed to result in scheduled progress toward, and achievement of, the State energy conservation goal of such State; and
 - (2) a detailed description of the requirements, including the estimated cost of implementation and the estimated energy savings, associated with each functional category of energy conservation included in the State energy conservation plan.
 (c) Each proposed State energy conservation plan to be eligible for Federal assistance under this part shall include—
 - (4) mandatory thermal efficiency standards and insulation requirements for new and renovated buildings (except buildings owned or leased by the United States); and
3. The Uniform Statewide Building Code of Virginia consists of the following:
 1. The B.O.C.A. Basic Building Code/1970 with Accumulative Supplement 1972.
 2. B.O.C.A. Basic Mechanical Code/ 1971.
 3. B.O.C.A. Basic Plumbing Code/1970 with Accumulative Supplement 1972.
 4. One and Two Family Dwelling Code, 1971 edition

5. National Electric Code/1971 and excerpts for One-and-Two Family Dwellings.
6. 1974 Accumulative Supplement to Virginia Uniform Statewide Building Code.

The Uniform Statewide Building Code of Virginia became effective on September 1, 1973. By Sept. 1, 1975, all Virginia localities were using the Code. Va. Code Ann. 36 §97, et. seq. repeals Va. Code Ann. 27 §5.1 which permitted localities to adopt their own individual building codes.

4. Public safety, public health, morality, peace and quiet, law and order,—these are some of the more conspicuous examples of the traditional application of the police power. Yet they merely illustrate the scope of the power and do not delimit it. *Application of Kay*, 341 P. 2d 284, 286 (Okla., 1959).
5. *State v. Dexter*, 202 P. 2d 906 (Wash., 1949).
6. The "police power" of the states is a power which the states have not surrendered to the nation, and which by the Tenth Amendment, was expressly reserved to states, respectively; or to the people. *Jordan v. Gaines*, 131 Me. 291, 8 A.2d 585, 587 (1939).
7. Energy Policy and Conservation Act, 42 U.S.C. §6321 (1975).
8. 202 P.2d 906 (Wash., 1949).
9. *State v. Martin*, 152 N.E. 2d 898, 901-92 (Ohio Ct. App., 1957).
10. 262 U.S. 182 (1922).
11. *Masonite Corp. v. State Oil and Gas Board*, 240 So. 2d 446 (Miss., 1970).
12. *Leiter Minerals v. California Company*, 241 La. 915, 132 So. 2d 845, 851 (1961); *Oklahoma Natural Gas Co. v. Choctaw Gas Co.*, 236 P. 2d 970, 975 (Okla., 1951).
13. *Application of Kay*, 341 P.2d 284, 286 (Okla., 1959).
14. *People's Petroleum Producers v. Sterling*, 60 F.2d 1041 (E.D. Tex., 1932).
15. *Berman v. Packer*, 348 U.S. 26 (1954).
16. *State v. Dexter*, 202 P.2d 906 (Wash., 1949).
17. *Chicago B. & O.R.Co. v. McGuire*, 219 U.S. 549 (1903).