

STATE OF VERMONT
ENVIRONMENTAL BOARD
10 V.S.A., Chapter 151

RE: Piper Ridge Associates Findings of Fact, Conclusions
c/o Douglas C. Velsor of Law and Order
Box 153 Land Use Permit #2W0112-3-EB
Bondville, VT 05340

This decision pertains to an appeal filed on February 21, 1984 with the Environmental Board ("the Board") by Piper Ridge Associates from District #2 Environmental Commission's ("District Commission") Land Use Permit #2W0112-3 dated January 19, 1984. That permit amendment authorized the permittee to construct an additional 65 condominium units (for a total of 89 units) and the construction of a recreation center. The project is located on Taylor Hill Road in Winhall, Vermont.

The Board convened a hearing in this matter on March 28, 1984 in South Burlington/ Vermont, Chairman Margaret P. Garland presiding. The following were present at the hearing:

Applicant/Appellant Piper Ridge Associates by Jonathan Bump, Esq.;
State of Vermont, Department of Public Service and Agency of Environmental Conservation by Dana Cole-Levesque, Esq.

The Board recessed the hearing on that date pending receipt of proposed findings of fact and conclusions of law, a review of the record and deliberation. Proposed findings were filed by the State on April 6, and by the Appellant on April 10. On April 11, 1984 the Board determined the record complete and adjourned the hearing; This matter is now ready for decision. The findings and conclusions stated below are based upon the record developed during the hearing. To the extent that the Board agreed with and found necessary any requested findings and conclusions submitted by the parties, they are incorporated herein: otherwise, such requests are denied.

I. ISSUES IN THIS APPEAL

The Applicant's appeal was limited solely to condition #5 of the Commission's land use permit which reads as follows: "There shall be no electric space heat in this project without an amendment to this permit." The appeal, therefore, pertains only to Criteria 9(F) energy conservation, and 9(J) public utility services,, of 10 V.S.A. §6086(a).

Applicant contends that the design of its project, including the proposed use of electric radiant heat, "reflect[s] the principles of energy conservation and incorporate[s] the best available technology for the efficient use or recovery of energy." Piper Ridge further contends that electrical service is or will be available to serve the project, and that no excessive or uneconomic demand will be placed on that service.

The State agencies contend that Appellant failed to sustain its burden of proof on the two subcriteria. They conclude that condition #5 is, therefore, reasonable.

II. Findings of Fact

1. On May 9, 1973, the District #2 Environmental Commission issued Land Use Permit #2W0112 approving the construction of 89 condominium units and related facilities on a 95.6 acre parcel in Winhall, Vermont. Little progress was made toward development of this project until July 14, 1982 when the Commission authorized the transfer of the project from the original permittee to Piper Ridge Associates by way of Land use Permit #2W0112-2. That permit approved revisions to the 89 unit project master plan and specifically authorized construction of a 24 unit first phase.
2. The amended permit now under appeal granted approval for construction of the remaining 65 condominium units. The units range in size from 1500 to 2300 square feet and are designed as 2, 3, or 4 bedroom units.

10 V.S.A. §6086(a) (9) (F) Energy Conservation

3. Most units will be oriented towards "solar south," taking advantage of heat gain from the sun. A typical unit will include insulation with an R-Value of 40.5 in the roof, 21.5 in the walls, and 10.2 in the foundation. Units will be triple glazed, each will have an airlock entry system, and all water heaters and hot water lines will be insulated.
4. Appellant proposes to heat the units with a radiant heating system known as "thermo-ray heat pouch"--a heating coil embedded in sheetrock panels which are mounted between ceiling joists. The panels are then covered with another layer of sheetrock, resulting in a distribution of the heat source across the full surface of each ceiling.
5. The electrical system of each unit will be connected to a "Rate 11" meter. Rate 11 provides an incentive to use power during periods of low demand by imposing a high rate for the use of power during periods of peak electrical demand, 7 to 9 a.m. and 5 to 8 p.m. in the case of this project. The electrical systems will be equipped with an "over-ride" which allows the use of electricity during peak periods.
6. **The utility serving the project-** has proposed to implement a "demand rate" as a partial substitute for Rate 11. The service cost under the demand rate would be based, in part, on the average kilowatt load during the fifteen minute **period** of maximum use of electricity during any given

billing period. Exhibit 3. Should this rate be implemented, electricity costs for the project could rise substantially.

7. The Appellant made reference to a computer modeling performed in relation to its application which purported to compare electrical power costs to the expense of using oil or gas fueled systems. However, Appellant's witness was not the preparer of that analysis, he could not identify some basic assumptions underlying the analysis /1/, and he related some assumptions which were not substantiated by evidence presented at the hearing./2/.
8. While electricity is a highly efficient power source once it **reaches the** development site, the overall efficiency of electricity use may be as low as 30%. This low efficiency is attributable to the approximately 35% efficiency lost in converting fossil fuels to electricity at the generator and the approximately 30% BTU loss in the transmission of power to a development. In comparison, fossil fuels such as oil and gas can be burned on site at an efficiency of approximately 75%.
9. Applicant presented little credible evidence concerning the comparative cost and availability of specific, non-electric technology for heating project units. Because the Applicant identified only one piece of heating equipment--the radiant heat fixtures proposed for the project--and did not submit a credible comparison to other available technology, the present record is inadequate to support a finding that the heating system proposed incorporates "the best available technology for efficient use ... of energy."

10 V.S.A. §6086(a) (9)(J) Public Utility Services

10. The approximately 975 kilowatts necessary to support the electricity needs of the 65 units is available from the Central Vermont Public Service Corporation ("CVPSC"), the public utility providing electrical service to the area where the project is located. See Exhibit 3. CVPSC has

/1/ For example, the witness could not identify the occupancy rate relied upon in developing the energy cost figures. The rate of occupancy would appear to be an important factor in developing a cost comparison.

/2/ The analysis apparently relied on at least two assumptions which we find questionable: 1) that unit occupants will use little electricity during peak demand periods; 2) that Rate 11, and not a "demand" rate will continue in effect (see Finding of Fact #6, above).

the legal obligation to provide such service to this project as directed by the Vermont Public Service Board. 30 V.S.A. §219.

11. However, as a matter of corporate policy, CVPSC recommends that electricity not be used for heating purposes. This recommendation is based upon a conclusion that it is in the public interest to reserve electricity for applications where substitute energy sources cannot perform adequately. CVPSC therefore recommended that Appellant not use electricity in meeting its space heating needs. See Exhibit 3 and its attachments.
12. The cost of constructing new power generating plants is shared by all electricity consumers and is not allocated solely to new power users. The cost of constructing new generating plants is likely to substantially exceed the cost of plants already on line. New construction expenses will result in higher electricity costs to both existing users as well as new users. Therefore, to the extent that alternate, more efficient energy sources are available for such purposes as space heating, the addition of residential units heated with electricity places an excessive and uneconomic demand on electrical utilities.
13. As previously noted, the Applicant has not submitted evidence upon which we could find that electric heat is necessary for this project. While the Applicant submitted evidence concerning the availability of electricity, it did not submit any evidence to establish that the use of electric heat will not place an excessive or uneconomic demand on CVPSC./3/

III. CONCLUSIONS OF LAW

1. Subcriterion 9(F) Energy Conservation

We conclude that the project has been planned and designed to reflect the principles of energy conservation. As we round in Finding of Fact #3, buildings have been oriented toward the sun, substantial insulation has been provided, triple glazing is included and an airlock entry system has been proposed. These design elements reflect an effort toward conserving energy.

/3/ In fact Appellant's own Exhibit #3 supports a contrary finding.

However, the Appellant has failed to meet its burden of proving the second requirement of Subcriterion (F): the development must be shown to incorporate the best available technology for the efficient use of energy. 10 V.S.A. §6088(a) places the burden upon the Applicant with respect to Criterion 9. Appellant presented evidence only concerning the equipment it had selected to install. No evidence was presented concerning alternative, available heating equipment using other fuel sources. Its computer modeling cannot be considered as credible evidence under this subcriterion because no witness competent to describe the modeling was present at the hearing and other evidence of record called into question some basic assumptions underlying the modeling.

Because we are confined by the Vermont Administrative Procedure Act to base our findings solely on evidence of record (see 3 V.S.A. §809(g)) and because our conclusions must be based upon those findings, we must conclude that the Appellant has not sustained its burden of proof under this subcriterion.

2. Subcriterion 9(J) - Public Utility Services

We conclude that electrical service is available to serve this project. However, we must also conclude that the Appellant has not sustained its burden of proving that this project will not place an excessive or uneconomic demand on Central Vermont Public Service Corporation./4/

We found that the Appellant has presented no evidence concerning whether or not the use of electric heat will place an excessive or uneconomic demand on CVPSC. This deficiency alone is an adequate basis for drawing a negative conclusion under Subcriterion 9(J). However, there is also substantial evidence to support a conclusion that the use of electric heat by this project would place an excessive and uneconomic demand on the utility. The demand appears excessive in that we have previously found that CVPSC encourages its customers to select alternate energy sources for heating purposes in an effort to reserve limited electrical energy for uses less adaptable to other sources. The demand may well be uneconomic in that new electrical generating facilities may cost substantially more than existing facilities and the expense of new facilities will be underwritten by all electricity consumers not just new users. This evidence suggests that, to the extent that space heating

/4/ We note in passing that "ability to serve" letters based upon a utility's legal obligation to provide service are of little assistance in evaluating the issue of excessive or uneconomic demand.

can reasonably use other energy sources, the use of electricity for this purpose places an excessive and uneconomic demand on this electric utility.

Appellant failed to provide evidence responding to the conclusions suggested above. No representative of the utility was presented to address the issues of excessive and uneconomic demand. Absent evidence to support the conclusions required by Subcriterion 9(J), we must instead conclude that Appellant failed to sustain its burden of proof.

3. Impact of Phase' I Approval

Appellant infers in both its March 16 statement of issues and its proposed findings of fact and conclusions of law that the Commission and this Board are somehow foreclosed from addressing the electric space heating issue by the Commission's decision in the Phase I approval (Land Use Permit #2W0112-1). However, both Appellant's application and the Commission's decision in that case make clear that only Phase I (24 units) and no more received Commission approval and scrutiny under **Criteria 9(F)** and 9(J). The Commission and this Board are required by 10 V.S.A. §6086 to evaluate Phase II by taking new evidence, making new findings, and reaching such conclusions as are appropriate with respect to Phase II.

4. Issuance of Land Use Permit

In accordance with these findings of fact and conclusions of law, the Board will issue Land Use Permit #2W0112-3-EB. This amendment will approve the project subject to a condition requiring the District Commission's approval of a specific heating system for the project units. All findings of fact, conclusions of law and conditions issued by District #2 Environmental Commission in #2W0112-3 dated January 19, 1984 concerning all remaining issues and criteria of 10 V.S.A. §6086(a) remain in full force and effect.

Based upon the foregoing findings of fact and conclusions of law, we conclude that the project described in the application referred to above, if completed and maintained in accordance with all the terms and conditions of that application and Land Use Permit #2W0112-3, as amended herein, will not cause or result in a detriment to public health, safety or general welfare under the criteria described in 10 V.S.A. §6086(a).

IV. ORDER

Land Use Permit #2W0112-3-EB is hereby issued in accordance with the Findings of Fact and Conclusions of Law herein. Jurisdiction is hereby returned to the District #2 Environmental Commission.

Dated at Montpelier, Vermont this 12th day of April, 1984.

VERMONT ENVIRONMENTAL BOARD

By: 
Margaret P. Garland
Chairman