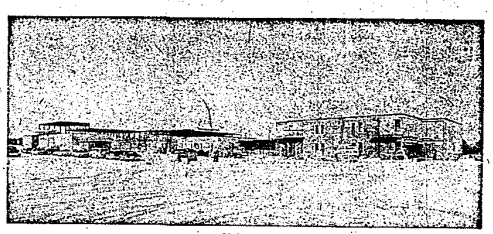
The growing use of ELECTRIC HEAT IN SCHOOL BUILDINGS has made a lot of people curious--- here are the FACTS

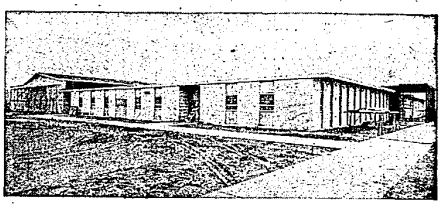


GROSSE ILE HIGH SCHOOL, in southwest Wayne County, another fine, new total electric school.

Before we even begin to talk about the superiority of electric heat, let's look an old bugaboo straight in the eye... it costs too much.

It simply isn't so!

Something can only cost too much in comparison with something similar. In this case, it's the operating cost of an electric heat system vs. the operating cost of some other kind of heating system.



AKRON-FAIRGROVE HIGH SCHOOL, Tuscola County, will be as modern as tomorrow—a total electric school.

Operating Cost Is More Than Just Fuel Cost

Perhaps *operating cost* should really be thought of as *cost of ownership*. In this broader context, there are a number of building construction, building equipment, annual repair and maintenance and annual labor costs which are affected by choice of heating systems.

Among the building construction and equipment costs which are altered or eliminated, according to choice of heating system, are these:

Building Item Required	Electric Heat	Fuel Fired System
Boiler room	No	Yes
Smokestack	No	Yes
Fuel storage	No	Usually
Steam or hot water piping	No	Yes
Pipe trenches	No	Yes
Boiler and controls	No	Yes
Boiler water pump(s)	No	Yes
Boiler water treating system	No	Yes

To keep this set of comparisons absolutely fair, the insulation of an electrically heated school must be better than the applications which are now acceptable in most school buildings.

It would pay to have topnotch insulation in EVERY school—pay off in heating economy and in student-teacher comfort, both winter and summer. But since it is not yet in widespread demand in all school plants, this may be an item of increased cost in an electrically heated building. The additional cost, however, when related to total construction cost, is insignificant.

Expansion Costs

In a constantly growing area like southeast Michigan, new school buildings invariably are increased in size—very often, more than once in their careers. Always a major item of cost when classrooms or other facilities are added is complete replacement of a too-small boiler or addition of boiler units.

Even when a foresighted school administration—anticipating building enlargement—installs an over-capacity boiler to begin with, school funds are tied up in the too big boiler and its auxiliary equipment. This non-productive use of money may be a burden for several years.

School building expansion, when the heating system's electric, is never a problem or an undue expense. All that's required is electrical distribution from the transformer to the newly added school plant—a normal cost of expansion which would apply regardless of type of heating system.

Annually Recurring Costs

There is another class of ownership costs which needs consideration when comparing electric heat to other types of heating systems for a school. These are the various expenses which recur, most of them on an annual basis.

Typical Recurrent Costs	Electric Heat	Fuel Fired System
Boiler maintenance	No	Yes
Boiler inspection fee	No	Yes
Boiler insurance	No	Yes
Boiler attendant(s)—labor	No	Yes
Ash disposal	No	Usually

Another recurrent cost which is sizable enough to help make the difference in heating systems is the amount of interest paid on the money which is borrowed to build a school.

An electrically heated school will be less costly to design and build because you are not buying a boiler with all its auxiliary equipment. No money goes for a boiler room, smokestack or a steam or hot water distribution system. So it follows—a less costly school, less money to borrow, less interest to pay on the borrowed money.

Electric Heat–Low Cost Comfort For Children And Teachers

The Superintendent of Schools of a school district in northern Ohio recently prepared a two-year comparative analysis* of heating operational costs for four of the schools under his supervision. It was a painstaking and detailed comparison, taking into account these major factors: fuel cost, heating labor cost, auxiliary fuel, auxiliary power, ash disposal, heating system maintenance.

Two of the schools have coal-fired boilers, one has a gas-fired boiler and one is completely heated electrically. Quoting from the report, "... the cost (for heating the electrically heated school) during the 1962-63 school year was 5¢ per square foot less than at the other three buildings ... For the 1963-64 year, the savings was 12.9¢ per square foot."

In subsequent years, the savings should be closer to the 12.9¢ per square foot figure than to the 5¢ figure. This is a conclusion drawn from the following facts.

In 1962-63, the electrically heated school was a new structure. Some of the heating cost for it went to drying out concrete, masonry and plaster. This is an extraordinary expense not to be repeated.

Also, in February 1964, the utility serving the electrically heated school reduced its rate for electric power from 1.6¢ to 1.5¢ per kilowatthour.

And, finally, by 1963-64, the staff at the electrically heated school were better able to control electric power consumption.

One condition which helped establish the greater per-square-foot savings in 1963-64 may not always hold true. The weather during the '63-'64 heating season was slightly warmer than it was in '62-'63.

**Copies of this analysis will be made available to qualified inquirers on request.*

Electrically Heated Schools In Southeast Michigan

1958 was the first year of record for electrically heated schools in the area which Detroit Edison serves. In that year, there were 26 classrooms completely heated in this modern way. **Now, in early 1965, there are 12 total electric schools having 220 classrooms in the area.**

In number of electrically heated classrooms, this is more than an eight-fold increase in seven years. Several more school and college buildings which will be all-electric, including heating, are now under construction within the area.

More For The Money

These are the features of electric heat which appealed most to the school administrators who wrote the analysis quoted above. Only slightly edited for brevity, this is essentially the language of that objective report.

Safety—Electric heat is highly automated. A minimum of human attention and judgment is all that's required in its operation. By so reducing the human element, a maximum of safety is achieved. Nor is electric heat complicated by auxiliary or satellite systems of any kind.

Simplicity—The absence of complex mechanisms makes it easier for building custodians to concentrate on their prime function—keeping a building and its equipment clean. Boiler room attendants are not a requirement.

Dependability—Electric heat reduces the possibility of building freeze-ups; eliminates boiler breakdowns during unattended hours.

When there's a boiler failure, the whole school must close down. If an electric heating unit fails, only the one room involved need be closed.

Flexibility—Electric heating equipment can be used just in the room or rooms where heat is required, completely independent of and without affecting any other part of the heating system. On a cool but sunny autumn day, for example, the heat may be on in rooms on the shady side of a school, off in rooms on the sunny side of the building.

Unscheduled, off-hours use of a school-room—even with the briefest advance notice—creates no heating problem. Electric heat reacts quickly and, again, there can be selective, one-room-only use.

Cleanliness—Since there is no combustion, electric heat does not create smoke, soot or ashes to add to cleaning chores.

Efficiency—With electric heat, there are no long, laborious heating up or cooling down cycles. The equipment is ready to furnish heat at the moment of need and there is no wasteful heat carryover when the equipment is shut down.

Warm weather benefits—With more efficient and effective building insulation, a school will be cooler and more comfortable in warm weather—a decided advantage to students and teachers.

Air conditioning is also simplified and made more economical since the electrical wiring installed for the heating system can also energize air conditioners.

Through the taxes it pays, Detroit Edison is one of the largest supporters of schools in the state. In this role, we are as concerned and interested as you are in seeing that our educational system operates as efficiently and economically as possible. It is our sincere belief that electric heat, when evaluated with an objective and open mind, will show itself to have the economy and efficiency we all want in our schools.

EDISON CUTS ELECTRIC RATE FOR TOTAL ELECTRIC SCHOOLS

Detroit Edison has just voluntarily reduced the electric service charge to schools in its service area which are all electric, including the heating. School administrators, school board members, architects and consulting engineers are invited to inquire at any Edison office concerning the details of this downward rate adjustment.

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