

Multi-Housing News

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Direct-Fired HVAC System Cuts Fuel Consumption 54%

New York—A new heating and cooling system is saving 51 percent in energy costs for a 180-unit condominium here, after six months of operation.

The Japanese-made Hitachi chiller/heater needs less space and maintenance than the conventional central HVAC system it replaced in the recycled building.

Installation of the compact system at 111 Fourth Ave. by developer David Teitelbaum, president of Teitelbaum Holdings, Ltd., marks its first use in the United States. Over 7,000 units work successfully in Japanese and European buildings.

"We figured a reduction of 40 percent in oil consumption from the previous year's totals would be quite a feat, but the unit saved 54 percent in fuel consumption. That's a lot more than anyone bargained for," noted Teitelbaum.

The Hitachi unit burned 58,847 gallons of #2 oil from December 1979 to May 1980, according to figures released by Gas Energy, Inc., a subsidiary of Brooklyn Union Gas Co. and distributors of the system.

For the same period in 1978 to 1979, the building's HVAC system consumed 128,431 gallons of #6 oil at a rate of 86 cents per gallon.

Using the #2 oil at 92 cents per gallon, the Hitachi system saved \$56,211.42 in six months.

During this same six-month period the system saved a comparable amount in maintenance and operating costs. Figures just released for June and July show continued savings of an additional \$27,122.90 over last year's costs. Teitelbaum anticipates higher savings next winter when the building is converted to gas fuel.

The system houses a direct-fired "chiller/heater," a two-stage absorption machine which uses water as refrigerant and lithium bromide as absorbant. Since

a first stage generator heats the second stage, no boiler is needed.

The unit's parallel flow solution cycle allows the first-stage generator to be placed near floor level, reducing overhead space requirements.

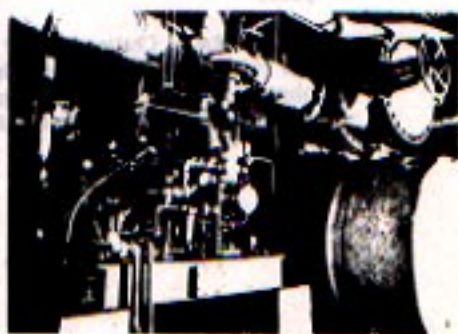
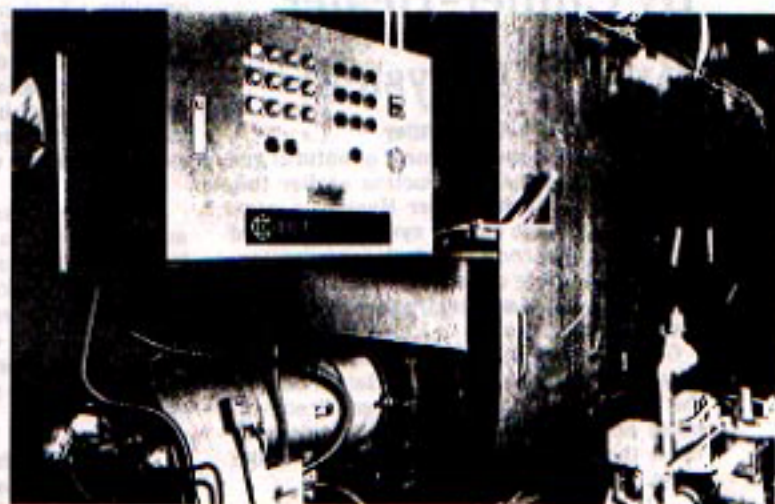
The entire system occupies 2,503 cu. ft.

The former HVAC system's boilers used 8,840 cu. ft., the heat exchanger

used 180 cu. ft., chiller used 2,618 cu. ft. and condenser, 972 cu. ft.

The Hitachi chiller/heater can be retrofitted or directly installed with new construction. Teitelbaum remarked that it cost "under \$400,000—including installation—less than the total cost of a new conventional system of comparable output."

Teitelbaum plans to install a Hitachi system in his next project—conversion of the Federal Archive Monument in Greenwich Village to residential, cultural, community and recreational development. □



FUEL AND SPACE SAVER, the Hitachi chiller/heater (top) installed at 111 Fourth Ave. saved \$56,211 in fuel costs in six months. The unit occupies 2,503 cu. ft. The former HVAC system boiler (above right), hot water (above), chiller (right) and condenser (not pictured) took up a total of 12,610 cu. ft.

Cuts Fuel Consumption By 75%, May-August

From May to August, the Hitachi HVAC system at 111 Fourth Ave. reduced fuel consumption by 75 percent, using 21,950 gallons of #2 oil to air condition the building.

The old HVAC system burned 87,253 gallons of oil to cool the building during the same months last summer.

Total fuel costs for this summer amounted to \$20,194, saving 73 percent over 1979's costs of \$75,037.