ThermIQ

Distributed Supplemental Heat

The **ThermIQ** solution integrates an **OhmIQ** heater into an accumulator tank, along with a three-port valve, circulation pump, temperature sensors, pressure transducer, piping, and an electrical control system box for connection to the building's data network and **ThermIQ**'s cloud services to provide supplemental heat where and when needed.

ThermIQ unit electrical capacity	300 W
Circulation pump flow rate	1.58-4.75 GPM
Accumulator tank capacity	1.32 Gallons
Supply temperature from ThermIQ unit (Discharging/Recharging)	194°F - 122°F
Maximum heat supply temperature from main system	131°F
Dimensions	25" x 18" x 10"
Electricity requirement	120 V, 60 Hz

USB User Interface	MQTT (IOT)	BACnet MODBUS
QAT Sensors / Controls	TCP Network Stack	
OhmIQ Engine Capabilities		
Ohmic Control Loop		
Predictive Heating		
Smart Scheduling		

Enabled with IOT

OCCUPANCY CONTROLS
Intelligent algorithms anticipate heating needs using real-time occupancy data and historical patterns, optimizing energy usage and comfort.

TEMPERATURE SENSOR CONTROLS
Monitors temperature data, proactively adjusting heating operations to maintain desired comfort levels while minimizing energy use.

WEATHER-BASED CONTROLS
Adjust heating operations, factoring in temperature and humidity levels for optimal comfort.

SUPPLEMENTAL HEATING
Adjusts heating temperatures based on demand, optimizing ASHP operation and selectively activating ThermIQ units for maximum efficiency.

DEMAND-RESPONSE CONTROLS
Adjust heating in response to utility signals, optimizing energy use and supporting grid stability.
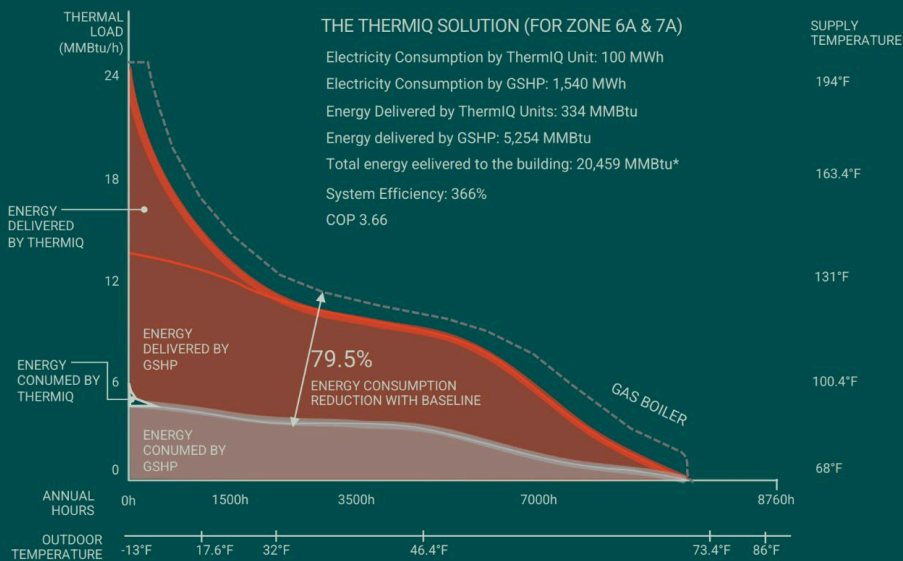
Performance Comparison

(from modeling NY office building)

The table below presents a summary of the performance of the different options. It becomes evident from the table that the ThermIQ solution offers clear quantitative benefits.

Solutions	Baseline Gas Condensing Boiler	Option 1: Electric Boilers	Option 2: Low-Temp. ASHP + Electric Boilers	Option 3: High Temp. ASHP	The ThermIQ Solution with ASHP
Annual GHG Emissions (tCO$_2$)	1,269	1,432	599	396	367
Reduction in GHG Emissions	-	-12.9%	52.8%	68.8%	71.1%
Energy Consumption (MMBtu)	23,884	20,113 (5,890 MWh)	8,404 (2,460 MWh)	5,555 (1,630 MWh)	5,152 (1,510 MWh)
Reduction in Energy	-	15.8%	64.8%	76.7%	78.4%
Annualized COP	0.8	0.95	2.3	3.4	3.6
OPEX (Energy Cost) (USD)	$238,110	$1,296,842	$541,860	$358,160	$332,200

THE THERMIQ SOLUTION (FOR ZONE 6A & 7A)

Electricity Consumption by ThermIQ Unit: 100 MWh
Electricity Consumption by GSHP: 1,540 MWh
Energy Delivered by ThermIQ Units: 334 MMBtu
Energy delivered by GSHP: 5,254 MMBtu
Total energy eelivered to the building: 20,459 MMBtu*
System Efficiency: 366%
COP 3.66

THERMAL LOAD (MMBtu/h)

ENERGY DELIVERED BY THERMIQ

ENERGY DELIVERED BY GSHP

ENERGY CONUMED BY THERMIQ

79.5%
ENERGY CONSUMPTION REDUCTION WITH BASELINE

ENERGY CONUMED BY GSHP

GAS BOILER

SUPPLY TEMPERATURE

194°F
163.4°F
131°F
100.4°F
68°F

ANNUAL HOURS: 0h 1500h 3500h 7000h 8760h

OUTDOOR TEMPERATURE: -13°F 17.6°F 32°F 46.4°F 73.4°F 86°F

Learn more

ohmIQ