HEAT-TIMER® CORPORATION

CASE NO. 21

PROJECT: Clearveiw Gardens Apartments

LOCATION: Queens, NY

APPLICATION: Heat-Timer internet-based control system helps eliminate headaches and labor associated with controlling boiler systems for large, multi-unit complex.

Heat-Timer Provides Two Decades of Solutions to Large Apartment Complex-- *One Innovation at a Time*

PROBLEM: Sometimes a heating problem isn't so much mechanical as it is geographical. Just ask James Marsanico, General Manager for Clearview Gardens, a sprawling 88 acre garden apartment complex in the Whitestone neighborhood of Queens, NY.

According to Marsanico, sheer acreage has been his toughest challenge in his 20+ years with Clearview Gardens Corporation. With 35 separate boiler rooms serving 1788 units of this multi-building apartment complex, heating issues are a fact of life. Being aware of them before a tenant complains, and being able to resolve them quickly before they cost the complex money, has always been his toughest challenge.

"The reduced boiler maintenance after the installation of the HWRs was enough to pay for the controls."

James Marsanico,
General Manager

SOLUTION: The issues faced by Clearview Gardens are typical of most any large, multi-building property. What makes Clearview Gardens unique is the fact that for 20 years, the management has consistently taken a proactive approach to improving overall boiler operation and maintenance. For two decades the corporation has partnered with Heat-Timer to enhance the efficiency, reliability, and maintenance of their boiler plants, literally keeping pace with every innovation in boiler communications that Heat-Timer has introduced. As a result, the property has improved tenant comfort, decreased fuel usage, and eliminated much of the legwork required to manage multiple boiler plants.

Solution #1: Hot Water Reset

Clearview Gardens' relationship with Heat-Timer initially began in the 1980's when problems with thermal shock were costing the corporation thousands of dollars in boiler repair. At the time, Clearview Gardens operated multiple boiler systems manually by turning heating pumps on and off based on thermostat readings in the

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boiler room. Thermal shock occurred frequently because the water cooled down significantly during off times, shocking the boilers with cold water when the system pumps came back on line. Not only was this controls approach damaging to the boilers, it was also running the maintenance staff ragged.

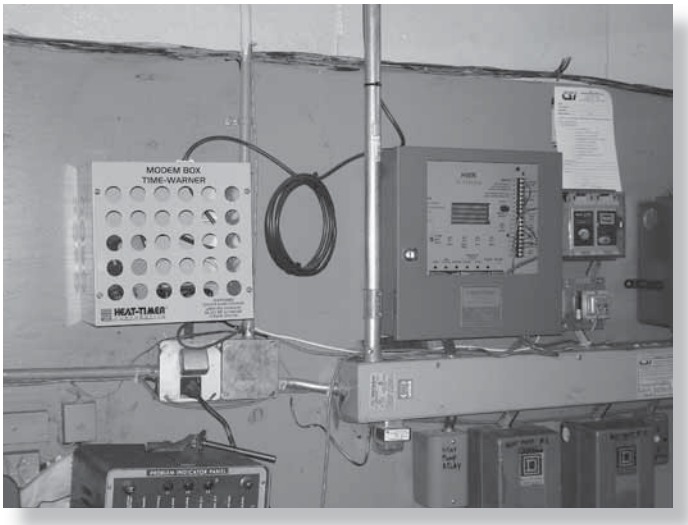
Heat-Timer helped resolve these problems by installing motorized valves and Hot Water Reset (HWR) controls in each of the boiler plants. The HWR helped resolve the boiler problems by operating the system based on outdoor air temperature, as opposed to an indoor thermostat reading. This greatly reduced the excessive on/off action of the pumps, and saved Clearview Gardens significantly in boiler maintenance.

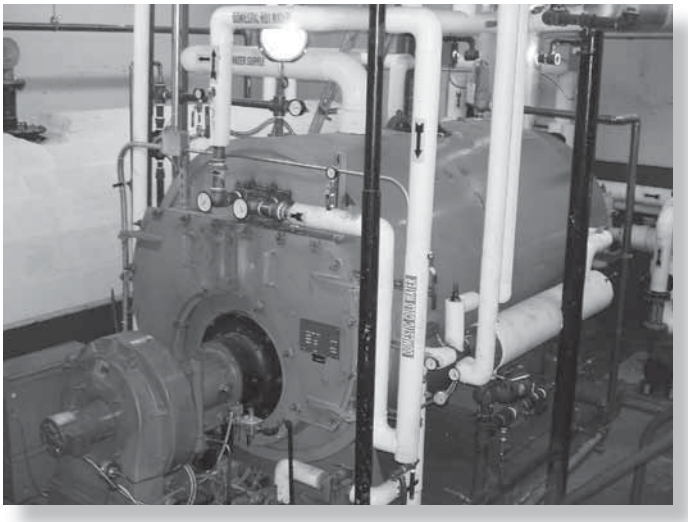
"The reduced boiler maintenance after the installation of the HWRs' was enough to pay for the controls," said Mr. Marsanico. "But we also saw an immediate difference in our fuel bills."

Solution #2: Remote Communications

When Heat-Timer first introduced Remote Communications in the 1980s, Clearview Gardens was one of the first complexes to take advantage of this innovation. Aware of the fact that servicing a property of this size was his greatest challenge, Mr. Marsanico welcomed the opportunity to install a system that would allow him and other authorized users to access each of his boiler rooms via phone line.

For the first time, Clearview maintenance personnel could monitor boiler systems in all 38 boiler rooms without physically traveling to each site. They could now access the boiler controls from a computer in their main office. However, there were limitations to the DOS based system, not the least of which was that users had





Maintaining efficient boiler operation and tenant comfort is easier now that Clearview Gardens has upgraded its control sytsem with Heat-Timer's Internet Control Management System (ICMS). The new control system gives operators instant access to all 35 boiler rooms at the large apartment complex.

to memorize a series of 3-letter commands in order to access system temperatures and status.

"It was the best available at the time," said Marsanico. "But it was hard to remember the DOS commands."

All this improved drastically when Heat-Timer introduced a Windows™ based upgrade to its remote communications system called "Visual Gold." Marsanico was eager to try this new upgrade which allowed users to view and manipulate the boiler systems using user

friendly graphics that Windows allowed. Visual Gold also provided easy-to-read charts and history reports to help property owners troubleshoot problems and verify space temperatures. Visual Gold increased the number of inputs to 64 by utilizing LON hardware and protocol, so Clearview Gardens could derive even more information from each HWR control.

"The best part was that a picture of the control actually popped up on the computer screen, so it was like you were actually in the boiler room," said Marsanico. "It was much easier to use."

Solution #3: Internet Based System

Visual Gold was a powerful tool for multi-building property owners in the 1990's. For the first time, Clearview Gardens and others with Visual Gold were able to monitor their boiler systems, change settings, troubleshoot problems, and access extensive operational and temperature histories from a single modem connection. Still, monitoring dozens of buildings via phone lines was cumbersome because each building had to be dialed up individually and then disconnected before another could be viewed.

Clearview Gardens improvised by installing a monitoring system that routed all alarms to a central board in the main office. If an alarm status occurred, it triggered a main relay that would light up the board to alert security to call maintenance, who would then go to the boiler room to see what the problem was. The alarms did not relay any specific information about the problem, and the system was often in disrepair due to the phone line connections.

These and other problems were fully resolved with the 2005 introduction of Heat-Timer's Internet Control Management System (ICMS). Vincent Clerico, Vice President of Marketing for Heat-Timer, explained how Heat-Timer developed a custom monitoring system for Clearview Gardens using existing hardware from their original monitoring system.

"First, we took the main relay from the make-shift monitoring system they already had and tied it into the Heat-Timer's ICMS. Then we developed a monitoring screen which replaced the large lighted black board they had been using. Now, they can monitor all their buildings via a flat screen TV where each and every building is visually represented,"said Mr. Clerico.

With real time monitoring, Marsanico and other authorized users know immediately if an alarm status occurs and they also know the exact nature of the alarm without having to call up the individual building. For instance, if building C2 has a problem in the boiler room, a specific alarm is sent via e-mail or text message. The recipient of this alarm immediately knows whether the alarm is related to a domestic water meter, a stack temperature, a low water cut-off, etc.

This new, web based control offered Clearview Gardens a wealth of other benefits, including:

- *Enhanced speed*. With broadband connections, accessing and navigating through all of Clearview Gardens boiler systems is much faster, facilitating problem resolutions.

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- Increased data storage. More data can be stored on the internet than on individual systems, so the user has access to larger, more detailed history reports. All this data is backed up by the server, so if a panel goes down, the history reports are still available.

- Live data. All information provided through the ICMS, i.e. space temperatures, boiler activity, etc. is all live so adjustments are even more effective than they once were.

- Integrated communication with a variety of network and wireless space sensors (advantageous because they can be moved around easily to investigate complaints or troubleshoot problems) including oil tank meters and domestic water or boiler feed meters. Other feedback can also be incorporated including lights and doors and other equipment.

- Downloadable history reports of panel parameters and sensors that can be generated in a spreadsheet or imported into a database. History reports can be customized and automatically e-mailed to user(s) daily, weekly, or monthly.

By far, internet based communications has had the greatest impact on operations at Clearview Gardens of all Heat-Timer innovations. With instant access to virtually unlimited operational data, Marsanico and other authorized users can continuously tweak the systems to maximize fuel efficiency.

"It is especially helpful on weekends when problems occur because the system immediately sends me a text message to my cell phone as well as an e-mail to my computer that lets me know what is going on with a particular boiler or boilers," says Marsanico. "Once I get the message, I can sit down at my computer at home or wherever and troubleshoot the problem. Most times, I can resolve a problem right there at the computer."

Each morning Marsanico, and other designated personnel receive reports via e-mail that give them a complete overview of space temperature, etc., so they can quickly determine if any adjustments need to be made. Clearview Gardens determines the content and frequency of these reports. Thanks to this enhanced control and communications, Clearview Gardens has been able to reduce fuel bills and still improve comfort to the tenants. Best of all, says Marsanico, they've been able to do so with a "lot less effort."