

For All The Right Reasons,



**Four Seasons**  
HEATING • AIR CONDITIONING • PLUMBING

Since 1971

## Case Study:

### "Making Incapable Solutions Capable" Hinsdale, Illinois

Four Seasons Heating, A/C & Plumbing  
September 2013



## CLIENT INFORMATION

**Client Name:** The O'Rourke Family

**Project Location:** Hinsdale, Illinois

**Project Duration:** 12 days

<http://www.fourseasonsheatingcooling.com/>



## THE PROJECT TEAM

**Project Manager:** Wes Maka

**Installation Specialists:** Sergio Miranda, Randy Szymanek, Wojciech Szymaszek, Dariusz Szymaszek, Javier Acosta, Derrick Edwards, Nicholas Jacobson, Min Lau, Stanislaw Adamczyk, Dajuan Spires, and Miguel Rivas

## PROJECT SCOPE

### INSTALLED

5X  
  
CBX32MV  
Air Handler

5X  
  
13ACX  
Air Conditioner

5X  
  
Healthy Climate 16  
Air Cleaners

1X  
  
GV906 Boiler

1X  
  
Restructured  
Entire Heating &  
Cooling Wiring  
System

3X  
  
Power  
Humidifier

2X  
  
Bypass  
Humidifier

1X  
  
HZ332K  
Honeywell Panel

6X  
  
Rewired Master  
Thermostats

**ENERGY SAVINGS**  
Savings on Gas Bills  
**30%**  
Per Month  
Savings on Electric Bills  
**30%**  
Per Month

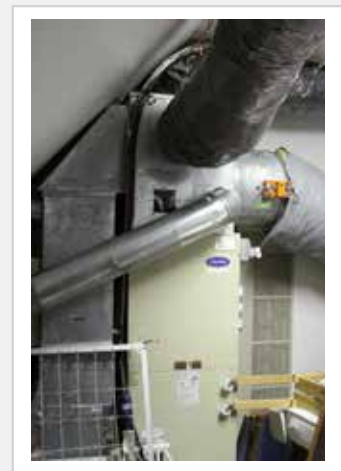
## The Problem at Hand

Over the summer of 2013, the O'Rourke family of Hinsdale, Illinois was finally fed up with their spotty, unreliable heating and cooling system. Areas of their home varied in temperature by as much as eight or nine degrees, some zones did not heat or cool at all, and two of their children's rooms seemed impossible to control. Despite thermostats set to maintain a certain temperature, these bedrooms were always far too hot or far too cold, and modifying these thermostat settings seemed to have no effect.

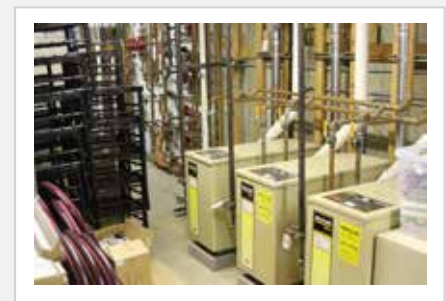
On top of these comfort problems, the O'Rourke's old system would malfunction and needlessly consume hundreds of dollars a month by activating boilers in the summer to assist the Hot Water Heater. To make a bad situation worse, this would also trigger the garage heaters. The O'Rourkes were through paying an arm and a leg for a mysteriously inconsistent HVAC system seemingly unable to provide the home comfort they needed.

**“ Our energy bills were enough to finance a small home for a year! ”**

**-Mrs. O'Rourke**



Old HVAC System



A malfunctioning system triggered these boilers needlessly!

## The Competitor's Reaction

Four Seasons was not the O'Rourke's first call. Instead, they chose another contractor in town known for their low prices. This contractor inspected their fifteen year old system only to discover they were in over their heads. The outdated and irregular system proved to be too sophisticated for their skill level, so the low price contractor was at a loss as to how to actually solve the O'Rourke's problems. Instead the contractor suggested minor repairs to individual pieces of the system which would have only been a bandage on the real wound.



The home would have been a little more comfortable, but the energy waste would have been just as rampant, just as pervasive with the proposed repairs. Considering the age of the system, the O'Rourke's would have found themselves in a very similar situation only a few years down the road. The O'Rourkes needed a solution now, not a bandage. So, they began to look elsewhere for a contractor fit for the task.



## The Four Seasons Response

Four Seasons arrived in Hinsdale on September 9th to assess the problem and discover what was truly causing such bizarre heating and cooling issues. Wes Maka and Randy Szymanek spent a total of nine hours one day analyzing the HVAC system from top to bottom in the O'Rourke's home. This involved the inspection and assessment of 3 boilers tied into a partner hot water tank, 5 air handlers, 5 air conditioners and a tangle of wiring throughout their 12,000 square foot home.

### They Discovered a Mess of Problems.

- ✓ Equipment Over 15 Years Old
- ✓ Two Blown Cartridge Pumps
- ✓ Crisscrossed Thermostats
- ✓ Wiring Issues Throughout the Entire System
- ✓ One Malfunctioning Staging System
- ✓ Disconnected Electronic Duct Dampers/Zoning
- ✓ Outdated Inefficient Blowers
- ✓ No Humidifiers

### In Short... There Was a Lot of Work to Do.

To start, their five outdated ACs were replaced with new energy efficiency Lennox ACX 13 air conditioners featuring SEER ratings between 13-16 in relation to variable speed air handlers and outdoor conditions or load. One GV906 boiler was installed and isolated from the rest of the system to regulate their hot water needs, thus preventing the energy waste of three boilers activating unnecessarily.

Two bypass humidifiers and three power humidifiers were installed allowing the O'Rourkes to provide much needed humidity in the winter. Additionally, the O'Rourkes purchased five Healthy Climate 16 Air Cleaners to improve the air quality in such a large home.

The final components to the new heating and cooling system included two 5 ton, two 3 ton, and one 2.5 ton air handlers drastically increasing the overall efficiency of their HVAC system.

With all the new equipment in place, the team moved on to the last and perhaps the most difficult phase of the project: the complete restructure of the system's wiring. Salvaging much of what was already in place, the Four Seasons crew reconfigured the electronic connections for all 4 boilers, 14 thermostats and 14 zones using three sets of ARM P-6 ARGO controls and one ARM P-4 control for the high velocity pumps.

Upon unveiling the wiring issues at the property, Wes and his team discovered that two of the thermostats in the children's respective bedrooms were crossed. Each thermostat was actually controlling the temperature in the other room. Once fixed, this mysterious issue was finally resolved!



5 new ACX 13 Air Conditioners

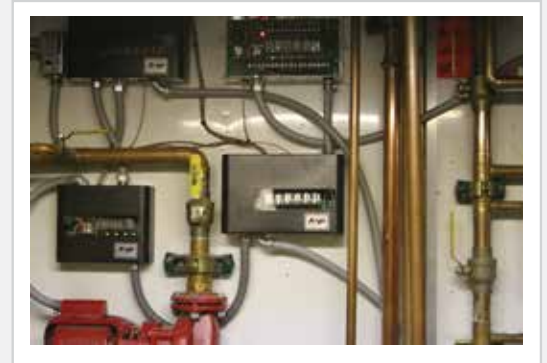


New GV906 Boiler



2 new Lennox Air Handlers

However, just because the O'Rourke's now had all the equipment in place to properly heat and cool their home, this did not mean they knew how to use it effectively. The contractor who originally installed the system instructed the family to set all their thermostats to "AUTO" to simplify their use for the family. This proved troublesome because of the unique structure of the O'Rourke's home. With ceiling heights ranging from 8 - 25 feet, any universal setting across fourteen zones and fourteen thermostats is going to yield inconsistent results between each room. This would cause heating and cooling to potentially fire at the same time, which was one of the initial problems. The Four Seasons crew was able to educate the family on how to best use each thermostat for each zone, thus resulting in a drastically more energy efficient and comfortable home.



New ARGO controls for more precise comfort

## Mission Accomplished

There are a couple lessons to be learned from this success story. For one, every home is different, and the HVAC strategies for one property may yield completely unwanted results in another as can be seen in the O'Rourke's home. Four Seasons assesses each situation individually without relying on precedent to make their decisions

Second, not every HVAC contractor is the same. Beyond pricing, inventory, and policies, there is a skill level required to provide solutions to the heating and cooling concerns of Chicago land. The O'Rourkes had to live with the shortcomings of two incapable HVAC contractors before finally consulting the experts at Four Seasons. Instead of nickel and diming their customers, Four Seasons simply provides best solution for the problem at hand.