Fuel bills and boiler maintenance costs are a major expense for every building by Crawford

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Your building's boiler, for better or worse, will never make you richer–only poorer–and that is on a good day. Fuel bills and boiler maintenance costs are a major expense for every building. While buildings on city steam have no boilers to worry about, their cost for steam usage offsets the cost of fuel, building staff time and the expense of boiler maintenance. Buildings with boilers or city steam do have similar distribution systems which, if not properly maintained, are an open invitation to problems and inefficiencies. The reality (or problem) for many older buildings is that their heating distribution systems have gradually become more and more problematic as steam trap failures accumulate, controls malfunction and settings are switched to manual override in an attempt to compensate for the growing number of deficiencies. From a financial perspective, compensating for these problems only adds additional and unwanted layers of cost and inconvenience. Additional expense and inconvenience on top of what is already a major expense item is not a good story.

On a city wide basis, there is ongoing recognition of the large scale of problematic building heating inefficiencies. In an effort to address this situation and to improve efficiencies on an overall basis, Local Law 87 was enacted in December 2009. This Local Law requires periodic energy audits and retro-commissioning for all buildings in excess of 50,000 s/f. The energy audit schedule for each building is determined by the block number on which the covered building is located. For a building located on a block ending in an "8," the audit must be completed and filed in 2018, ending in a "9," the audit much be completed and filed in 2019 and so on. With this schedule, covered buildings will have an energy audit every 10 years. The professionals conducting these audits and preparing the reports are required to devote a substantial amount of time inspecting and testing heating systems. The LL 87 Audit Reports will include recommendations for improving heating efficiencies as well as corrective measures that must be taken to address existing deficiencies. The combination of recommendations and the required correction of deficiencies will result in a more efficient heating operation. Generally speaking, this report can be utilized as a starting point for any building that would like to improve its heating system.

Buildings systems are unique. There is no one size fits all, so buildings looking to solve their individual heating problems will need to develop their own strategy. As indicated above, the LL 87 Audit Report can be a useful starting point, especially in terms of understanding the deficiencies that must be addressed as well as recommendations for energy saving improvements that could be included in their upgrade program.

Before starting the process, it is important to recognize that the corrective process will need to work around the operations schedule of the boiler. For instance work on steam traps and other boiler modifications will need to be performed in the warmer months, while boiler tests will need to be

performed during the winter months–when the boiler is under a load. Boilers that make the domestic hot water for a building run 12 months a year. Boiler upgrades will often require the boiler to be offline. Our recommendation as a first step to get the process started is to install a stand-alone gas fired hot water production system. These units are extremely efficient and will generally pay for themselves in approximately two years time, as a, result lower levels of fuel and electric consumption. This strategy allows the building boiler to rest over the summer months which then provides an uninterrupted period of time to perform general boiler maintenance as well as install future upgrades. Because of the cost savings associated with independent hot water production, these “savings” could also help finance the heating system upgrade program.

Another measure that could be considered to start the process is steam trap replacement. Traps generally have a useful life in the seven year range. Most older building have traps that are no longer functioning properly, so to improve building comfort levels and achieve cost efficiencies, trap replacement offers another good starting place. When replacing traps, consider using an orifice plate as opposed to a new steam trap. Orifices do the same job, but because they have no moving parts, will have a longer useful life.

Additional steps beyond the starting recommendations will require the involvement of a heating professional, as each building is unique. If your building is scheduled for its LL 87 audit in the near term, the professional conducting the audit could be of assistance in developing your plan. You could also consider a targeted audit, limited to your heating system, if a LL 87 audit is not readily available.

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