

# Helping to reduce energy demand

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cause the need to “wait” for hot water to arrive at the tap is eliminated.

Since the installation, supply issues have been eliminated and the costs of heating the water were drastically reduced.

### Sunny Hill Nursing Home

After reading an article written by Metropolitan released in a trade magazine and also attending a seminar conducted by Metropolitan Industries, the Maintenance Director of Will County approached HVAC Division manager Matt Brickey for his input regarding replacing existing commercial hydronic boilers with a skid-mounted Navien package.

The nursing home used their massive hydronic boilers to supply heat to their domestic hot water storage tank through an internal shell and tube heat exchanger. The problem with this configuration is inefficiency because the huge boilers would short

cycle 24/7 due to satisfying the load quickly, turning off, and then turning back on again shortly thereafter due to a drop in domestic water temperature.

Short cycling causes numerous issues for a heating system. One, it causes more stress on the boiler components by constant expansion and contraction. Boiler parts will wear and fail quicker than their intended life cycle. The second issue is the amount of wasted heat energy that is thrown up the stack. Each time a boiler turns on, or off, it goes through a purging process. During this process, a substantial amount of energy is lost in the form of wasted heat when the boilers short cycle.

Metropolitan’s solution was designing a heating system that can directly heat the domestic water more efficiently and allow the maintenance staff to shut down their existing boiler plant in the warmer months. Metropolitan supplied a skid-



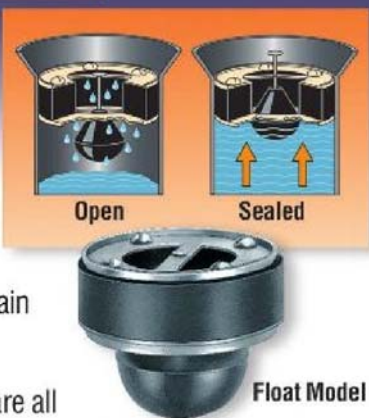
*Pictured is a prefabricated domestic heating system skid consisting of eight 98% efficient Navien tankless water heaters, a variable speed supply pump that circulates domestic water from the domestic storage tank to the heaters, a control system and all the necessary piping & valves manufactured by Metropolitan Industries Inc. for Sunny Hill Nursing Home.*

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The Flood-Guard operates like a check valve to seal off water back-up caused by overloaded sewers. Water flows normally through the drain until the sewer begins to back up. Then the Flood-Guard float rises to seal off the drain opening until the water recedes.

A screwdriver and a couple of minutes are all you need to install a Flood-Guard. Once in place, it can prevent property damage and a very messy clean-up job.



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mounted 98% efficient Navien condensing domestic heating system that modulates and heats the existing domestic tank without any short cycling. A unique feature of these units is the ability to cascade them for high-Btu applications.

The system included eight tankless water heaters, a variable speed supply pump that circulates domestic water from the tank to the heaters, a control system that monitors tank temperature and adjusts pump speed accordingly by sensing the flow and all the necessary piping and valves manufactured on a prefabricated skid for a complete functional system. This system also allows for ease of installation by the contractor because field work is limited to making piping connections from the tank to the skid, bringing electrical power to a single point connection, and running the CPVC exhaust & intake to the outside wall.

The anticipated natural gas energy savings during the summer months is expected to be a whopping 50% to 75%.

In both project examples, the end user saved money because of reduced energy demand by using Navien condensing tankless water heaters. Metropolitan Industries stocks a large supply of these units in their shop ready for immediate delivery, and can fabricate large custom commercial systems for contractor installation.

For more information, contact Mark Brickey at 815-886-9200 or visit their website at [www.metropolitainind.com](http://www.metropolitainind.com).