

## Overview of the New Heating System

Two hot water boilers are in a new boiler room that was built inside the Sexton's Closet, immediately below the minister's office. This system serves every space in the building.

Two hot air furnaces in the attic above the sanctuary help heat and provide fresh air to the sanctuary. A third furnace in a closet near the exit door of the classroom hallway to the playground, helps heat and provide fresh air to the social hall.

*Why two systems?* The building code requires that newly installed heating systems include the provision for introducing fresh air into spaces that can hold a large number of people. The sanctuary and social hall fall into this category. A hot air system provides the required fresh air, but because these systems can be noisy, the committee did not want to depend exclusively on a hot air system.

As described below, the two systems can be set to work together to provide the church with the best features of each.

The sanctuary has a separate exhaust system which has no heating function but which can be turned on manually to refresh the air in the room. The intake is at the bottom of a new duct on the stage ("stage left"). The exhaust is inside one of the roof cupolas.

The new system does not include air conditioning but was designed to accommodate air conditioning in the future if desired.

## Using the New System

Forced air systems can be noisy but they can also heat the air in a room *much more quickly* than hot water radiators. We can take advantage of the benefits of the hot air system and avoid the noise by having the system run before the start of a service or other event to quickly warm the sanctuary or social hall and then turn that system off to let the hot water system maintain the temperature. This can all be coordinated automatically by the thermostats for events such as the regularly scheduled Sunday services. Manual override is required for special events such as concerts.

The exhaust system on the stage is more noisy than we want, however, it does not operate automatically. It has a set of buttons that can make it run for specific time intervals. A potential use is in the summer, possibly before a service, to draw cooler air in through the open windows.

Thermostats (which both sense temperature and request heat) are located in each room except for the sanctuary, the social hall, and the conference room. In these three spaces, only temperature is sensed; their thermostats (which request heat) are inside the church office. This provides better control over the temperatures (and fuel use) in the rooms that are typically rented to outside groups.