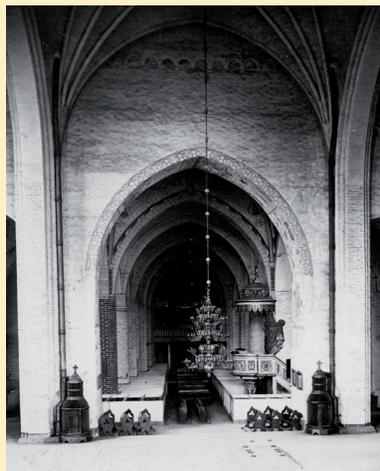


Heating regimes in Swedish churches c. 1880-1980

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Heating was introduced in old churches in Sweden in the late nineteenth century. The primary aim was then, as now, to achieve thermal comfort. The preservation of the building, its interiors and objects always seems to have come in second place. In order to achieve thermal comfort, different heating regimes have been developed.

A first generation of heating regimes was the Gurney's ovens made of iron and most commonly fuelled with coke. These ovens proved to be very popular in parishes as the costs for installation and running were low. But they were abhorred by architects and engineers for several reasons. Architects argued for central heating for reasons of hygiene, thermal comfort, and less maintenance. The central heating systems constituted a second generation of heating regimes. Pipes and radiators of central heating systems were concealed in order not to disturb the archaic sense of place in an old church.



Six Gurney's ovens were installed in Strängnäs cathedral in 1876. In order to make them less visible they were hidden behind the brick columns. Source: A. Thunquist 1906, ATA.

A variety of systems were applied in the cathedrals from caloripher to steam systems by the end of the 19th century. On the island of Gotland low pressure steam heating was installed in the medieval churches in the 1920s and 30s. After WWII electric heating became the third kind of heating regime.

The placing of radiators and piping sometimes came in conflict with aesthetic views. When they could not be concealed under floors or over attics, great care was taken to conceal radiators behind benches, grates and shelves.

Issues under debate today – mould growth, air pollution, dehydration of wood, paint flaking – were recognized a century ago, but damages caused by indoor climate were not allowed to affect the choice of heating solutions. It is illustrating that while the indoor temperature was measured, RH fluctuations or outdoor T was rarely documented.

All three generations of heating regimes used before the 1980s have proved to cause similar damage such as soiling, paint cracking and flaking, and dehydration. These effects have been met by shorter and shorter intervals of conservation and by attempts to increase RH.

Efforts to understand the climate of a building in a more holistic manner have largely been lacking. Especially central and electric heating were associated with a strong sense of technological optimism, and this uncritical optimism led architects and engineers to underestimate the drawbacks of these heating regimes when applied in stone churches with sensitive interiors and objects.

The cost of installing and running a heating system was a main issue in the choice of heating regime. Low investment costs were favored but there was an awareness of the long term economy regarding as well the cost of fuel as for maintenance. Electricity was considered expensive until the 1950s when the supply side expanded. After WWII oil became cheap and future lack of fossil fuel was not expected. The oil crisis of the 1970s put an end to that optimism, gradually forcing parishes to cut their energy bills.

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