HYPOCAUST EXAMPLES

Caerleon

Roman bath, Welwyn
Aquae Sulis, Roman baths at Bath

Hypocaust pillars at Bath
Wrotoxeter

Fishbourne
Ufton Church

See hevac-heritage.org/items of interest/churches & chapels
LIVERPOOL CATHEDRAL

Irregular only in their verbs, the Romans believed in warm feet and cool heads, and so invented a hot air system circulating under the floors of their villas. In our unsettled era, when so many staggering innovations grew obsolete while still in infancy, it is pleasing to note that for one purpose at least the hypocaust remains unbeaten. This is in the special field of the cathedral, where we have the problem of a huge space only needing to be warmed for the first few feet above the floor.

The heating of Liverpool Cathedral was planned before the foundations were laid and it was therefore possible to install a modern version of the hypocaust, which turned the entire floor into a vast radiator. We used the Roman method because its structure has been proved to survive intact for nearly two thousand years, and cathedrals must be made to last.

At the time we prepared this design ducts in the floor itself were considered more permanent than metal pipes embedded in it; but just before the last war, when we were asked to design the system for the new cathedral at Guildford, we decided that copper pipes laid in concrete just below the floor surface were likely to prove as permanent and offered certain advantages of simplicity and economy. It is rather easier, for example, to pump hot water through small pipes than hot air through small ducts. More recently, we have used the same system in Sheffield and Manchester Cathedrals and it will also be used in future extensions at Liverpool.

There, air heated by gas-fired appliances is forced by electrically-driven fans through a closed system of small ducts immediately below the floor surface, the same air being continuously circulated so that the ducts do not become choked by dust. In this way the floor surface can be maintained at a temperature sufficient to warm comfortably the occupied part of the cathedral with notable economy, and without being too hot for the feet.
Westminster Roman Catholic Cathedral
Heritage Spring Visit to Westminster Roman Catholic Cathedral

Westminster Roman Catholic Cathedral was completed as the reign of Queen Victoria drew to a close. The site was previously occupied by Tothill Fields Prison (the Middlesex House of Correction). The Cathedral architect was John Francis Bentley (1839-1902). A notable feature of the building is the 284 feet high campanile (bell tower). The original heating system was installed by G N Haden & Sons (founded 1816) in 1899. It was of the gravity warm air type with coal-fired furnaces in the basement supplying warm air through a system of large underfloor ducts to ornamental floor grilles using principles similar to that employed by the Romans in their hypocaust system. Haden converted the furnaces to oil firing in 1927. The Group extends its thanks to the Consulting Engineers Max Fordham who kindly arranged the tour to view this system prior to its modernisation.