



A further very important result shown by actual test is the even temperature taken at different levels in room, that of the breathing plane being lower than close to the floor, or in other words "cool heads and warm feet."

### Ideal Atmospheric Conditions

As a Hot Water Apparatus designed on the best principles is superior to a Steam Heating System, on account of the low initial temperature of the surface employed, so the Haden Floor Heating System, using a still lower heating temperature, obtains a higher superiority.

The dryness or stuffiness of the atmosphere of a room heated by steam radiators is well known, such condition being caused by the high temperature of the radiating surface would not be possible with the Haden Floor Heating System.

### Absence of Pipes in Rooms, etc.

As the whole of the Heating Apparatus is arranged in the Basement or Heating Chamber no pipes are



necessary in other parts of the house or building, much that is unsightly is therefore entirely avoided.

## No Darkening or Streaking of Walls from Radiators and Pipes

The absence of concentrated heating elements, either in the form of radiators or pipes, prevents the otherwise unavoidable darkening of walls above the radiators or the hot pipes.

The elimination of this evil is a strong point in favour of the Haden Floor Heating System, saving the necessity of frequent re-decoration of the rooms. As the evil is accentuated in many districts owing to the atmospheric conditions, so also will the advantage of this system be increased.

## Special Points for Architects

In addition to the question of Architectural appearance already alluded to, the following advantages are claimed for the Haden Floor Heating System.



## New Building Dry on Completion

With an ordinary System of Heating by Hot Water it is not possible to work the apparatus until the building is nearing completion, and often considerable damage is caused to joinery and fittings being placed in position before the building is dry. With the Haden Floor Heating System the Apparatus can be installed as soon as the Basement is completed and is protected from the weather ; the heat can then be applied to each floor as the work proceeds, and the whole is in operation by the time the roof is completed. The building will therefore be warm when the plastering is commenced, and a great saving of time will be effected ; also, through the walls being dryer some re-decoration of walls will be saved.

## No Cutting of Walls for Pipes and Radiator Stays

No cutting of walls for brackets or pipes stays will be required ; a great saving in " attendance on the Engineer " will therefore be effected.



## No Removal of Radiators for Painting

The System requiring no Hot Water or Steam Radiators, the cost of taking down and re-fixing the radiators for painting and decoration of walls is saved, and all trouble of emptying and re-filling the apparatus is avoided, apart from the absence of heat when the radiators are disconnected.

## Initial Cost

This will depend upon the type and size of building under consideration—approximately, the increased cost of builders' work would be met by the reduction in the cost of the Engineers' Plant.

## Economical Working

As the whole of the heat generated will be imparted to the buildings without any high-temperature surface exposed to the atmosphere, the heat losses will only be in proportion to the heat requirements, and the consumption of fuel in like proportion, according to the efficiency of the heater employed.



## Application to Various Types of Buildings

### HOUSES.

The System is well adapted for large Houses where solid floors are used, as not only the floors but also the cavity walls can be utilized, and the whole house kept thoroughly dry and with all portions warmed; cold draughts from unheated corridors would be avoided.

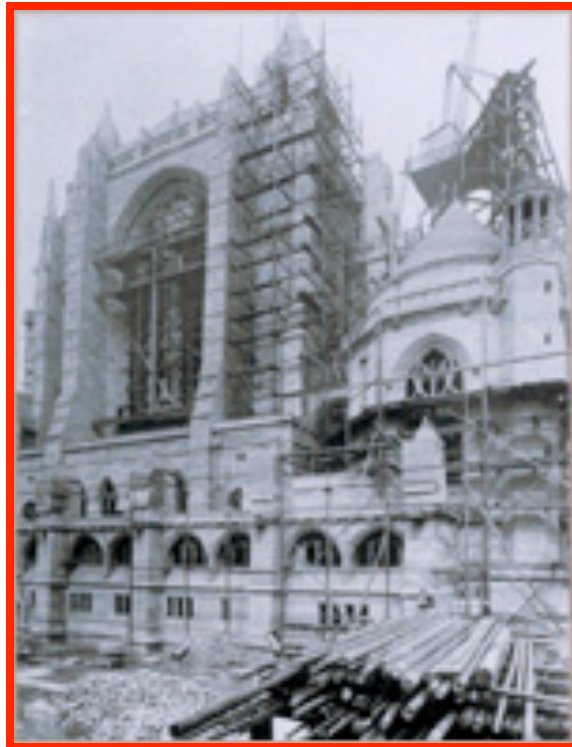
### CHURCHES, CHAPELS, HALLS, Etc.

The System can be very successfully applied to Churches, Chapels, and Halls. With Steam or Hot Water Apparatus difficulties are often experienced in finding suitable positions for the Radiators, apart from their appearance, and discomfort is caused by cold feet. Under the Haden Floor Heating System the temperature of the floor, while being sufficient to prevent any feeling of cold, will not be so high

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as to cause any discomfort. The distribution of the heat will also reduce the risk of cold draughts to a minimum.

The details of application vary naturally with every building and G. N. Haden and Sons, Ltd., are pleased at all times to confer with clients and to submit proposals for schemes to suit the construction of particular buildings.



1931



## Specialities

### DESIGNS AND CONTRACTS :

#### HEATING :

Hot Water, Gravity or Accelerated Circulation,  
Steam, Gravity or Pumped Condensate Return ;  
Warm Air.

#### VENTILATION :

Natural or Mechanical.

#### HEATING AND VENTILATION :

Independent Heater Unit, Plenum or Balanced  
Systems.

#### HEATING :

By Haden's Patent Floor Heating System.

#### DISTRICT HEATING AND HOT WATER SUPPLY :

For Garden Villages, etc.

#### HOT WATER SUPPLY :

" Direct " or " Indirect " Systems.

#### COLD WATER SUPPLY :

Including Hydrant Services.

#### DRYING PLANTS :

Of all descriptions.

#### COOKING APPARATUS :

For Central Kitchens.

#### HEAT ECONOMY SCHEMES :

Utilizing Exhaust Steam, etc.

#### DOPE ROOM :

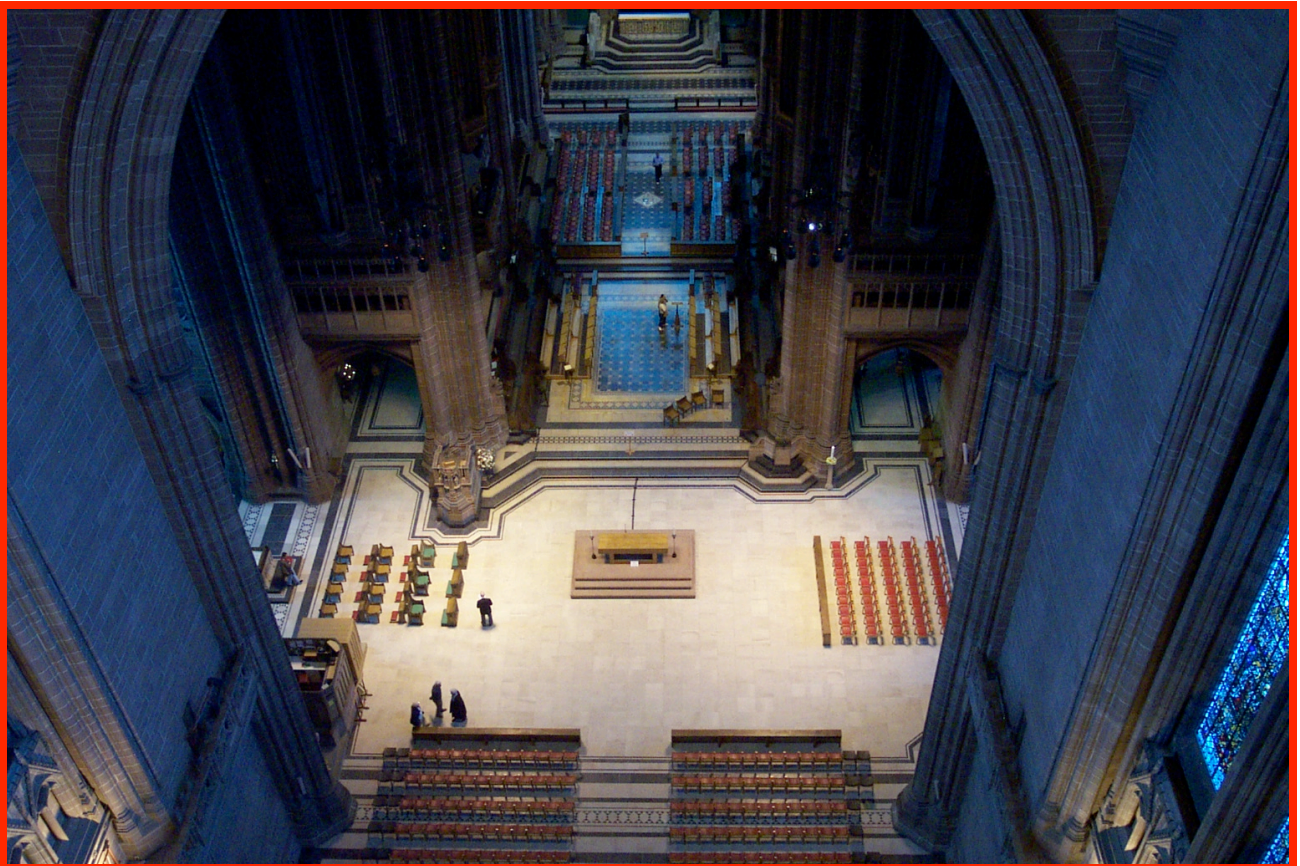
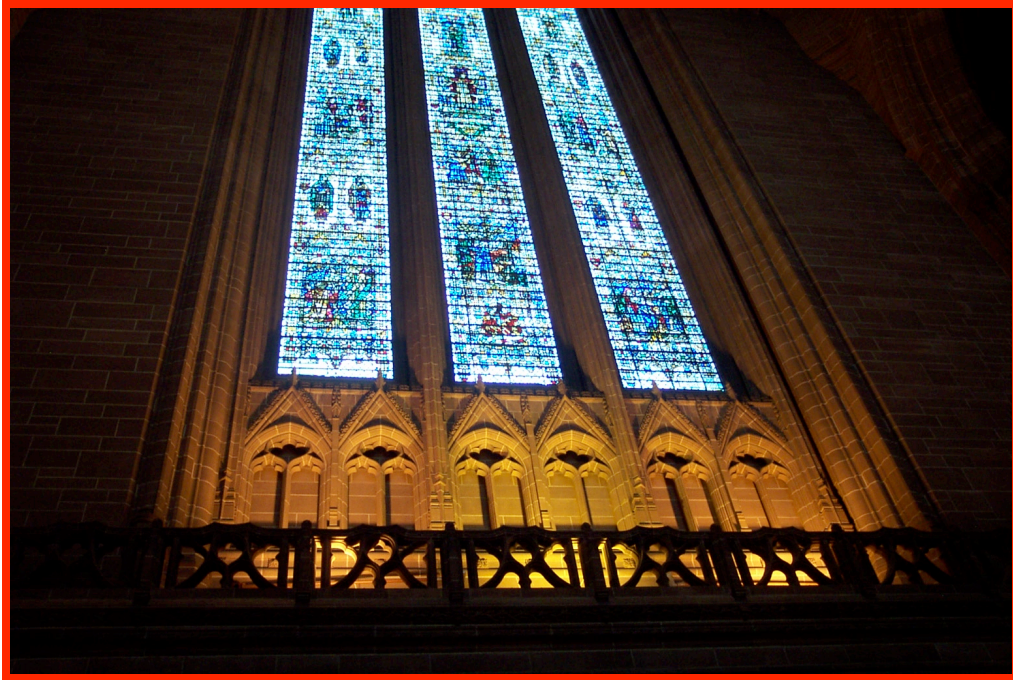
Heating and Ventilating Plant.



MANUFACTURES :

- HADEN'S "TURBO" ACCELERATORS :  
For Heating and Hot Water Supply.
- HADEN'S PATENT CALORIFIERS :  
Live Steam, Exhaust Steam and Water Heated,  
for Heating and Hot Water Supply.
- HADEN'S AUTOMATIC DAMPER REGULATORS :  
For Hot Water and Steam Boilers.
- HADEN'S AUTOMATIC STEAM CONTROLLERS :  
For Calorifiers, Vats, etc.
- HADEN'S WARM AIR STOVES :  
For Heating and Trade Purposes.
- HADEN'S PATENT HEATERS AND HEATER UNITS :  
For Plenum and Independent Unit Heating  
Installations.
- HADEN'S PATENT SELF-CLEANSING AIR FILTERS :  
For Ventilation and Trade Purposes.
- HADEN'S COOKING PLANT :  
For Central Kitchens.
- HADEN'S VENTILATING FITTINGS :  
For Fresh Air Inlet and Extraction.
- HADEN'S CHECKERS :  
For Regulating Hot Water Heating Circuits.
- HADEN'S AUTOMATIC BOILER FEEDERS :  
For Steam Heating Boilers.
- HADEN'S PATENT CONDENSE RETURN APPARATUS :  
For Steam Heating Apparatus, etc.





*Liverpool Cathedral today*