Layout of the Festival Hall in 1951
Beyond the public parts of the Hall (which will ultimately include a finely equipped little theatre to seat 750, with its own entirely separate ancillaries) there is a bewildering range of parts to this complex structure that none but the initiate will ever see, ranging from the resident engineer’s flat with an outlook that any New York penthouse might envy, and the fine music library, to such highly specialized sections as the warming, cooling and ventilating plant, the instrument store with its lift to take concert grand pianos, the lost-property repository, the box-office treasury, the full-sized replica of the concert platform for orchestra rehearsals, the compartments for B.B.C. commentators and television transmission, the organ chamber, the artists’ rest and refreshment rooms, the kitchens and cellargage, the various control rooms and workshops, the general manager’s and departmental offices, and all the rest. There are convenient bays for those confined to wheel chairs, and aids to the deaf for such as need them, ample provision of telephone booths and many other amenities such as changing rooms and bathrooms.

And yet this complex structure has been so devised that, as occasion demands, its several parts can function perfectly as independent organs, fully serviced as it were by the heart and lungs of the main body—yet isolated each from each as regards sight and sound. A single building that can acceptably accommodate under one hospitable roof a gala concert, a play or ballet, a dance, a meeting of a learned society, a picture exhibition and a banquet, and afford enviable study, practice, and rehearsal facilities for musicians, all at one and the same time and without any interference of any one with any other—that surely is something which at last makes that rather vague title a ‘cultural centre’ a fine reality.

1. ROOF GARDEN  
2. CHOIR  
3. BOXES  
4. ORCHESTRA  
5. STALLS  
6. GRAND TIER  
7. ENTRANCE STAIRCASE  
8. SIDE PROMENADE  
9. MAIN FOYER  
10. RESTAURANT  
11. TERRACE RESTAURANT  
12. ESCAPE STAIRS  
13. TERRACE

*Description of the Festival Hall as the drawing above*
THE PROCESS KNOWN AS ‘AIR CONDITIONING’ IS STILL RARE ENOUGH IN THIS country to deserve, perhaps, some passing notice. That used at the new Hall is delicately sensitive to changing conditions both inside and out, implacable in its defiance of London’s besieging dust and soot. A pure filtered stream of air is gently, silently, directed to all parts of the building—warmed or cooled, dried or moistened, at the will of the official responsible for the interior climate, or by the automatic instruments, thermostats, hydrometers and such, which can deputize for him and be relied upon to maintain the atmosphere in any desired condition, obedient to little pointers pre-set on their several dials. With the fresh air comes warmth or coolness as required, so well diffused, so softly, that one accepts the agreeable home-made weather as naturally as one does a summer’s day.

As the good new air is pumped in, the not-so-good old is sucked out, though some of it is returned again after due processing, thereby making for ease and economy in the maintenance of the temperature desired.

Since the humidity of the air is as important to health and comfort as its temperature, that too is under close control, whilst the double doors everywhere provided to the auditorium as protection against outside noises are no less useful as ‘air-locks’ except when they are purposely set open. Should there be a cut in the grid electricity supply, or a sudden breakdown, the elaborate climate-control installation will, like all the other essential services of the Hall, carry on without interruption, being simply switched over to its own stand-by diesel generating plant, always ready for instant action.

The heating for air and water is by a battery of gas-fired boilers down in the basement. In addition, during the Festival of Britain the Hall is to reap the benefit of a new experimental heat pump which has been constructed by the Ministry of Fuel and Power. By the use of refrigerants of a low boiling-point, the heat pump can win heat from such an unpromising source as the Thames itself, and it can even be
used in reverse, to provide welcome cooling, if any is needed, during the summer months. There is an apparent ‘something for nothing’ charm about this novel contrivance that is most appealing—a beneficent piece of magic that really does what was foretold for it by its sponsoring scientists. As we are all now poignantly fuel-conscious and interested in any economizing devices, it may be hoped that this new wonder can be displayed and explained to the public.

The contingency of severed water-supplies is not overlooked, for some 20,000 gallons are stored as a stand-by in six high-level and other tanks. There is an elaborate automatic sprinkler and fire-flooding installation in areas where it is required by Council regulations.
The air within the auditorium is carefully conditioned, pushed through slots in the ceiling, and extracted under the floor level. This downward method of extraction prevents dust and germs from rising. The introduction of air without noise into the noise-proof core of the structure was a problem which had to be carefully considered. Before the air enters the main plant-room it passes over a 60-foot length of absorbent material. By this time any sound is eliminated and the air is thrown through into the sound-proof core. It is then conditioned in the plant-room and finally passes through a second length of absorbent duct which is designed to remove any noise caused by the plant itself.
A photograph of one of the expansion loops in the heating pipes, in the sub-basement of the building.

*Why this picture was included is not explained!*
The air conditioning with its heat pump was installed by Matthew Hall & Co Ltd
The gas-fired boiler plant was provided by Cochran & Co of Annan. The installed capacity was 5500 kW for heating and 530 kW for HWS
Cooking equipment for the Festival Hall was provided by Benham & Sons Ltd
Gwynnes provided pumps and J. Gardner installed 170 tons of ductwork.
Kitchen ventilation hoods were manufactured and installed by G F E Bartlett & Son Ltd