

NOTES ON VENTILATION.

1. In designing a combined system of heating and ventilation for public buildings, one of the main difficulties is to get a uniform draught in all the ventilation flues leading from the different rooms. Where, as frequently happens, some of the ventilation flues act and others do not, the equable distribution of heat is interfered with, and therefore it is all the more necessary when a building is to be well heated and ventilated to see that both sets of flues, hot-air and foul-air, shall act properly. The following plan, it appears to me, will be attended with success when the building is heated by steam on the indirect system, and there is an attic available. When the hot-air flues are in the inner walls, the ventilation flues should be in the opposite or outside walls, and *vice versa*. In the former case, all should be extended directly up until they connect with a large tin-lined box running around the exterior of the attic and leading into a ventilation shaft or chimney. On the bottom of this box and along its whole length a large steam pipe should be laid so as to cross the openings provided for the ventilation pipes. All joints and connections should be made tight, and the dimensions of the flues adjusted in due proportions. When the ventilation flues are in the inner walls a corresponding treatment can be adopted.

2. It has also appeared to me that, to a limited extent at any rate, the ventilation of railway cars would be improved by taking the supply of fresh air, so as to avoid dust and smoke, from a point in front of the locomotive. A pipe could be extended from this point to any part of the train by means of rubber connections between the cars, and any excess of draft at the point of delivery of the fresh air could be reduced by means of check plates. Were it not for the admirable system of heating cars by means of hot water pipes, it might be worth while considering if the fresh air so supplied could not be first warmed by passing it over heated pipes in a special car near the locomotive.