joists, upon the lower flanges of which transverse boarding is laid, supporting a bed of concrete 10 inches thick. In this are imbedded 3×3 inch fillets, and upon these the roof boarding is nailed, which is covered by galvanized iron laid upon rolls. The whole is supported by built girders resting on the walls.

The roof has a slight inclination towards the north, and light is admitted through an elevated wrought-iron skylight.

In the south-cast angle of the boiler-house there is a smoke flue and ventilating shaft carried up to a height of 100 feet over finished surface, $11\frac{1}{2}$ feet square, with an inside opening of $6\frac{1}{2}$ feet square. In this is a brick flue, 18 inches diameter inside, carried up to the level of the attic floor. From this point to the top there is an 18-inch boiler-plate pipe. From the boiler-house two underground flues, 2 feet diameter, are connected with the ventilating shaft in rear, opposite the south entrance. In this an 18-inch brick flue is also carried up to the level of the attic, and from thence an 18-inch boiler-plate pipe to the top.

There are two Cornish boilers, 20 feet long and 5 feet diameter, built in brickwork, and fitted up with all the requisite apparatus. They have been tested to a pressure of 100 fbs. to the square inch, and locked up to a pressure of 30 fbs. of steam. They are provided with ornamental cast-iron fronts.

Fuel is supplied through an opening in the east wall, a little over the surface of the ground.

In the north-east corner is placed a wrought-iron tank into which the draw-off from the steam pipes is discharged. Alongside of this is a steam pump for supplying the boilers. In a room adjoining the boiler-house there is a wrought-iron tank capable of holding 5,000 gallons, fed from the water supply pipes.

Warm Air Vaults.—In front, and alongside of the basement passages in the south and west portions of the building, is a line of warm air vaults, 4 feet wide and 484 feet long. This is however, interrupted by two passages to the front basement rooms, one 7 feet, and the other 4 feet wide. Where the line of vaults is thus broken they are provided with iron doors at each end.

Under the narrower corridor of the Agricultural wing there is a vault 67 feet long and 4 feet wide. Between the basement passages and the rear of the building near the several stacks of closets there are also three short lengths of vault, about 22 feet each. At the north end there is an extension of the main vault, 62 feet long, which reaches to within 16 feet of the east end of the wing. The total length of vaults is about 680 feet. They are built of brick, arched on top, and generally about 9 feet high.

Four-inch steam and return pipes are laid above the perforated covers of the cold air ducts along the whole length of the main vault. From these pipes of smaller diameter are extended in the branches at the Agricultural and north wings, and the short lengths leading to the water closets. In all cases the return pipes are of the same capacity as the steam pipes, and the vaults are supplied with a series of coils arranged in a similar manner to those described for the Parliament Buildings.

Steam is supplied to all the latter through a 4-inch pipe which runs across the north ends of the boilers, and is continued in the same line, to an arched way, and thence to a connection in the main vault, at a point about 34 feet north of the main tower. The return pipe at the boiler-house is dropped below the level of the floor, and carried along in front of the boilers, with which it is connected by two stand pipes having regulating valves.

The basements are heated by pipes leading from the mains, and communicating with coils in the different rooms. The returns from these lead into the main return pipes.

There is a separate 2-inch steam pipe carried up alongside the north wall of the main tower, for the purpose of heating the large model room on the south front, and other attic rooms on the quadrangle. This is also extended to heat the tank rooms, in the towers.

In the arches of the warm air vaults, are openings, communicating with flues in the walls, which conduct the warm air through registers into the various front rooms and corridors above.

Heated air is also conveyed, by means of galvanized iron pipes, across the passages in the basement, to fluce in the corridor wall, which lead to the rooms in the rear portion of building.

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