

HEAT LOSS FROM BUILDINGS.

The heat loss from a building is due to the following causes: First, conduction of heat through walls and windows; second, leakage of warm air through doors and windows, and through the walls themselves; and, third, heat required to warm the air for ventilation. The loss of heat through the walls of a building depends upon the material used, the thickness, the number of layers, and the difference between the inside and outside temperatures. The leakage of air from a room varies from one to two or more changes of the entire contents per hour, depending upon the tightness of construction and the opening of doors, etc. It is common practice to allow for one change per hour in well constructed buildings where two walls of a room have an outside exposure. As the amount of leakage depends upon the extent of exposed wall and window surface, the simplest way of providing for this is to multiply the total loss through walls and windows by a factor depending upon the tightness of the building construction. For brick buildings the heat loss in zero weather may be found approximately by multiplying the outside wall surface by 20, the glass surface by 85, and increasing the result 10 per cent for leakage. For stone construction, multiply by 34 instead of 20. This gives the heat loss for southern exposure; for other exposures this must be multiplied by factors ranging from 1.06 for southeast to 1.32 for north exposure.

The amount of heat given off increases very much faster than the difference in temperature between the steam inside and the air outside.

The fact that lower radiators are more efficient than taller ones would indicate that the tubes in the high radiators were too closely spaced, and that the air in its passage upward reaches nearly its maximum temperature in a short distance, and from that point onward absorbs but little heat.

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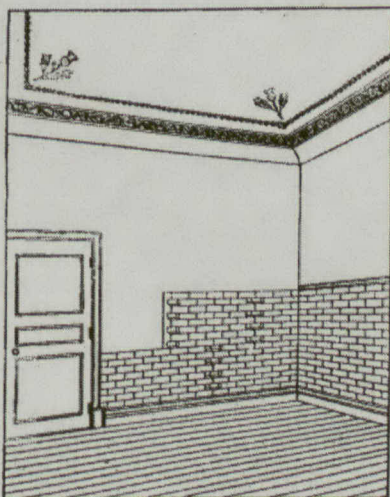
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