such a room as a unit, it follows that the rooms should be so disposed as to receive light in sufficient quantity and render them easily accessible from stairways and corridors wide enough to permit rapid circulation of classes, and egress.

CORRIDORS.

Another consideration that has influenced the plan was the endeavor to depart not only from the conventional type of school building, wherein the central corridor lined with rooms on each side, was necessarily dark, but to introduce, if possible, outside light into the main corridor throughout its entire length, thus insuring the penetration of sunlight to all parts of the building during some part of the day. This naturally led to a plan grouping the class rooms on three sides of the corridor only; the remaining side being open almost its whole length to the light.

WINDOWS.

Since the success of a school building depends upon the adequate lighting of its class rooms, it naturally follows that the width, height and location of the windows dominate the exterior design. In no case is the window surface less than one-fifth of the floor area.

It is conceded that the maximum, if not all, of the light should come from the left of the pupil, and preferably from one side only, in order to avoid cross lights. Windows set 3 feet 6 inches, above the floor and extending to within 6 inches of the ceiling, are located to diffuse the light. This fenestration is possible except in corner rooms, where small windows are introduced on one other side of the room, in order that the design should receive fitting architectural treatment; it being manifestly impossible to locate desks in all rooms so that pupils will receive light from the left only, without enclosing the facade side of the room with a blank wall.*

GENERAL GROUND FLOOR.

The general plan developed by these rigid requirements is necessarily more or less similar in all of the schools approximating in form the letter E, except where kindergarten rooms are incorporated in the plan. In all cases the sites have been wisely selected to permit ample space surrounding the building, affording generous playgrounds, as well as good light and air.

The basements average 15 feet in height (or a clear height of 12 feet under heating ducts) and have been planned with the view of supplying separate playrooms for boys and girls for use in inclement weather, and rooms for physical culture, as well as affording space for the installation of the heating and ventilating plant, the storage of coal, and the general toilet rooms for both sexes. On the floor above the basement, corridors 18 to 20 feet wide afford direct communication to class rooms averaging 25x32 feet 6 inches in size, with ceiling 13 feet 6 inches to 14 feet in height. Wardrobes or coat rooms lead from class rooms only (a radical departure from the usual custom of opening them upon the corridor as well as into the room), an arrangement that not only gives the teacher full control over the class room and wardrobe, but permits ventilation of the room through the wardrobe; the constant passage of air carrying with it the vitiated air from the room, as well as odors arising from damp clothing in the wardrobes, thus entirely eliminating the disagreeable odor usually prevalent in schools.

Staircases are located at each end of the corridor on the open side, thus permitting rapid egress. In no case has the height of the buildings exceeded three stories; the tendency in the later buildings being two stories, with basement entirely above the ground.

HEATING AND VENTILATION.

The buildings have all been planned for a mechanical system, using low pressure steam and a fan for forcing the air, This method insures (regardless of the state of the weather, or the humidity of the air) a positive flow of pure warm air at a uniform temperature into each room, and a consequent outflow of a like quantity of vitated air through the wardrobe vents.

The system has been designed on the basis of supplying each pupil with 30 cubic feet of air per minute, this amount being exceeded somewhat under actual working conditions. This delivers to each room 1,800 cubic feet of air per minute and changes the entire volume of air in the room about every seven minutes. This is accomplished with a steam pressure of from 5 to 15 pounds upon the boiler. The system is arranged so that the building can be warmed in mild weather by the exhaust steam from the engine that propels the fan. Experience proves that this is possible in our climate for about one-third of the heating season, thus effecting a material reduction in the consumption of fuel.

Fresh air is drawn into the fans in the basement, usually from an elevation of about 30 feet above the ground, first passing through the tempering coils, where the temperature of the air is raised to about 65 or 70 degrees Fahrenheit. It then passes through the fan to the heating coils, where the temperature can be raised to any required degree. It is then driven through ducts from the hot chamber to the various rooms and corridors.

The heating coils are arranged with a system of by-passes and double dampers so that the air may be taken from the hot chamber, or may be mixed with the cooler air passing beneath the heating coils, and so tempered to any desired degree. The system is therefore very flexible and capable of many combinations at the will of the operator.

The warm air is introduced into the rooms about eight feet above the floor, the heat inlets being placed at or near the same end of the room as the outlet.

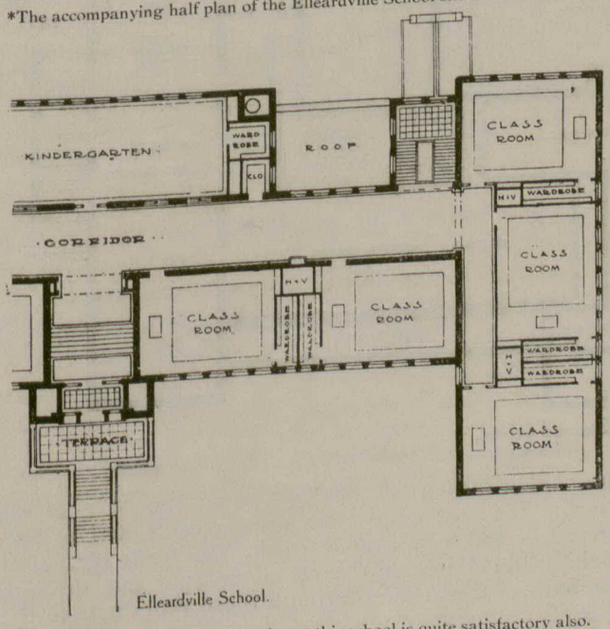
The air enters the class room at a velocity of about 300 feet per minute, and by means of deflecting blades at the inlet is evenly distributed throughout the entire room. The air is thus compelled to make a circuit of the room before passing out through the wardrobe vent.

The thermostat device to regulate the temperature is placed at or near the opening leading from the class room to the wardrobe ; and when set at the temperature desired, maintains it within a variation of one degree during the entire winter.

For the schools in the down town, or particularly smoky districts, an air washing device is being installed. This device will also be used during the summer mouths and the rooms rendered comfortable from the constant flow of cool air.

In order to heat the building rapidly in the morning the system is arranged to by-pass at the fresh air inlet, the fan drawing the air from the rooms and corridors, thus converting it into what might be termed a direct

*The accompanying half plan of the Elleardville School shows that this impossibility has been met. The perspective ot this school is quite satisfactory also.



Elleardville School.