

Walter-Gropius-Schule

Berlin, Germany
 52,5°N, 13,2°E
 predominantly cloudy

School building

bilateral daylighting strategy on hexagonal plan



building

The Walter-Gropius-School consists of several classroom-pavilions, a main building, a kindergarten and smaller buildings for workshops. They are connected by a pergola that also defines the school-yard. The surveyed pavilion is three stories high. The classrooms are hexagonal in shape and clustered around a central common space. The school, one of Walter Gropius' last projects, was realized by his office 'The Architects Collaborative' (TAC, Cambridge, MA)



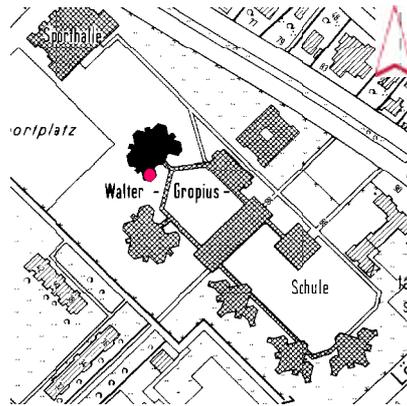
daylight strategy

The windows of the classroom are placed on the two sides opposite the blackboard allowing bi-directional daylight to enter the space. Additional light can enter the space from an apses attached to the back of the room. Since the building is exclusively used in the morning, a shading device is only installed on the southeastern facade, but not the southwestern one. When the southern window is hit by direct sunlight it is therefore possible to close the exterior louvers completely while still receiving enough daylight from the West. Even though this maintains the daylight illumination it may cause glare problems to occur on the blackboard.



classrooms

The classrooms are designed on a hexagonal plan. On one end each classroom extends to a small apses meant to be used by smaller work groups. These apses, as well as the large common space in the center of the pavilion, do not fit the functional needs of the school.



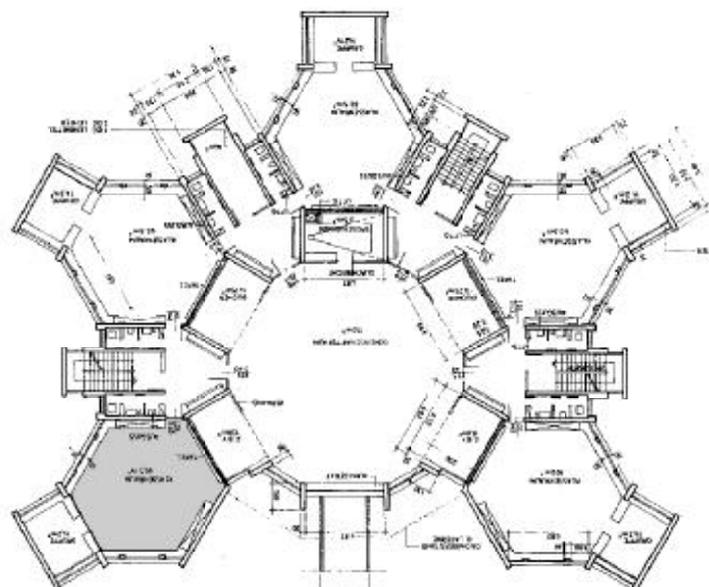
Clusters of classrooms form separate buildings, they are served by a pergola enclosing the school-yard.



The complex shape of the school building is partially self obstructing.



Exterior view of one of the pavilions, the construction consists of prefabricated concrete slabs. Some roofs of the school are characterized by large overhangs.



Floor plan of a classroom building. Five classrooms enclose a space dedicated to common purposes.

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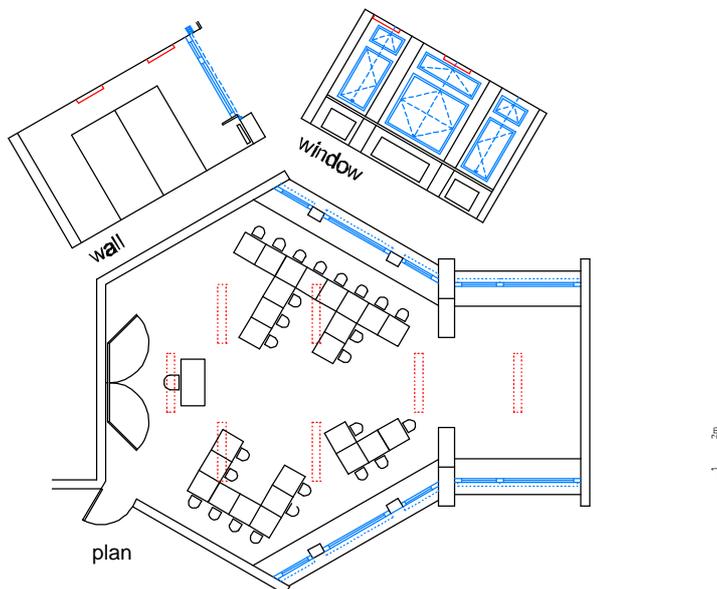
Fisheye view from the apses to the blackboard of the classroom.

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Window system in the apses of the classroom.

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building data

size	2100 m ²
number of stories	3
architect	TAC, Walter Gropius
year of completion	1968

office room

daylight strategy	bilateral, sidelighting
dimensions (depth/width/height)	8,4 m / 8,4 m / 3,3 m
room area	74,7 m ²
floor	linoleum, 18%
wall	painted plaster, 50%
door	painted timber, 21%
ceiling	fiber board, 70%
table	coated timber, 47%
blackboard	green coating, 11%
window sill	coated timber, 14%
windows	double clear glazing
lamp types	fluorescent lamps
installed power density	6,7 W/m ²
control strategy	manual switching

facade	west facade		southeast facade
	orientation	255°	135°
glazed area	5,9 m ²	5,9 m ²	
opening index	0,22	0,22	
daylighting	●	●	
view outside	●	●	
ventilation	●	●	
operable	●	●	
shading	□	●	
redirection	□	-	
function systems			exterior louvers
sun shading			●
glare protection			●
redirection			-
inside			-
window pane			-
outside			●
movable			●
fixed			-