

Arch 464
ECS
Spring 2018

Name _____

Quiz #1

Playing Small Hall



All images: Architects Journal, 22 January 2018

Lanfranc Road (north) Elevation. The three windows in the perf corten-clad façade daylight the small hall.

For this problem you are an architectural critic focussed on daylighting. Your task is to analyze strengths and weaknesses of the existing daylighting strategies for the small hall and to suggest appropriate alternatives. The small hall is a double height room with three north-facing windows and the potential for 4 small skylights (see construction photo on page 2). It is separated from the large hall by a movable partition wall. Ceiling and wall treatments in both halls are similar.

Context. Olga Primary School is located in the London Borough of Bow, at 51°30' NL. It has a humid climate dominated by cloudy days throughout the year. Summers are mild/humid and winters are cool/humid.

READ THE ENTIRE QUIZ BEFORE YOU BEGIN!



The large hall is used as a cafeteria. The black rectangles in the ceiling are two of the four skylights (black out mode). The movable wall to the left separates it from the small hall.

Architecture Initiative completes Olga Primary ‘garden school’ in Tower Hamlets



Olga under construction, north is up.

The school provides space for over 700 pupils on a tight site in Bow

Replacing a single-storey structure built in 1982, the new scheme for Olga Primary School brings greater density with two distinct, three-storey elements separated by a glazed atrium: a teaching block and an administrative and community block, along with a standalone brick pavilion housing a Sure Start Children’s Centre.

The teaching block is built from brick to reference its neighbours, while the community block is clad in Cor-ten steel, cantilevering over an entrance podium. Classrooms are arranged around the full-height atrium, across which bridges provide connections between the blocks.

A series of roof terraces has been designed to give the feeling of ‘walking through treetops’, giving back some of the outdoor space occupied by the new buildings.

—Jon Astbury, *Architects Journal*, 22 Jan 2018

Architect’s view

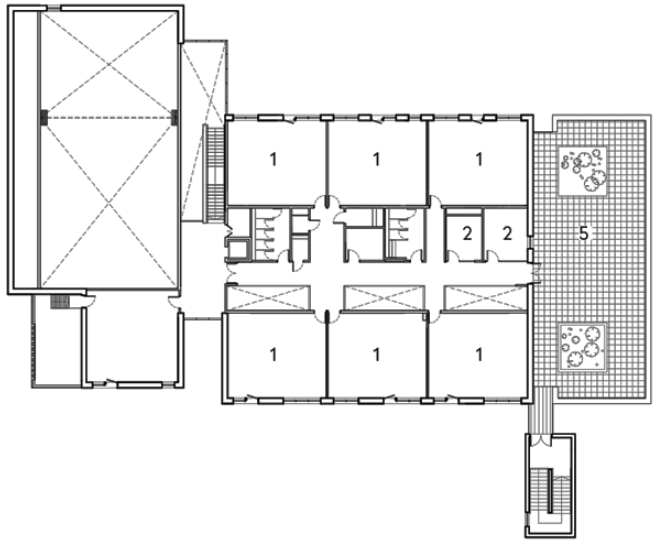
Our aim is to ensure that a new generation of schools inspires and nurtures learning. Olga Primary School has been designed to interact with nature in different ways at each level, creating a variety of experiences and teaching environments beyond the standard classroom. This vertical approach allows the school itself to encourage awareness of biodiversity, ecology and nature, which is often rare in an inner city school. The building is highly energy efficient, with natural ventilation, heat recovery systems and a highly insulated building fabric to help achieve its BREEAM ‘Excellent’ rating.

—Lee Mainwaring, *design director, Architecture Initiative*

Client’s view

The project to expand Olga Primary School from one-form entry to three contributes to the council’s overall programme to meet the need for additional school places for the rising school population. The council’s partnership with Architecture Initiative has resulted in a learning environment that is stimulating, invigorating, and engaging. The design of Olga School offers fantastic teaching space and teaching terraces. Olga School and the community are proud of the amount of green spaces and mature trees which create a refreshing alternative in a highly developed residential area.

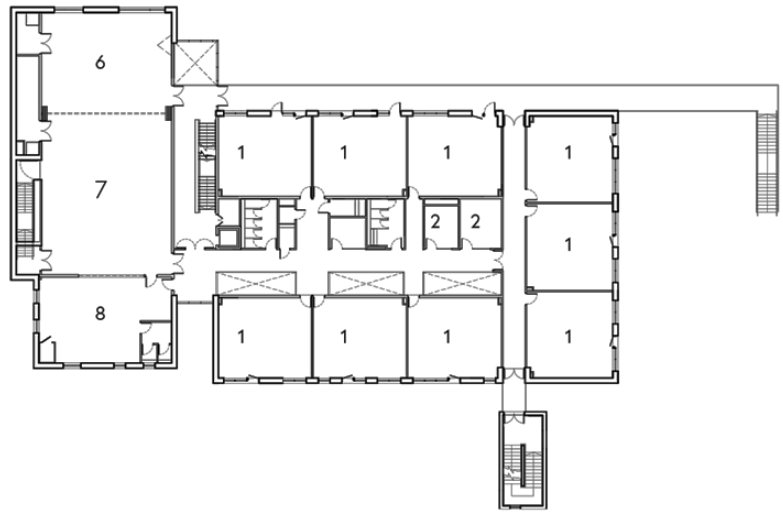
—Duncan Cameron, *building development, London Borough of Tower Hamlets*



second floor

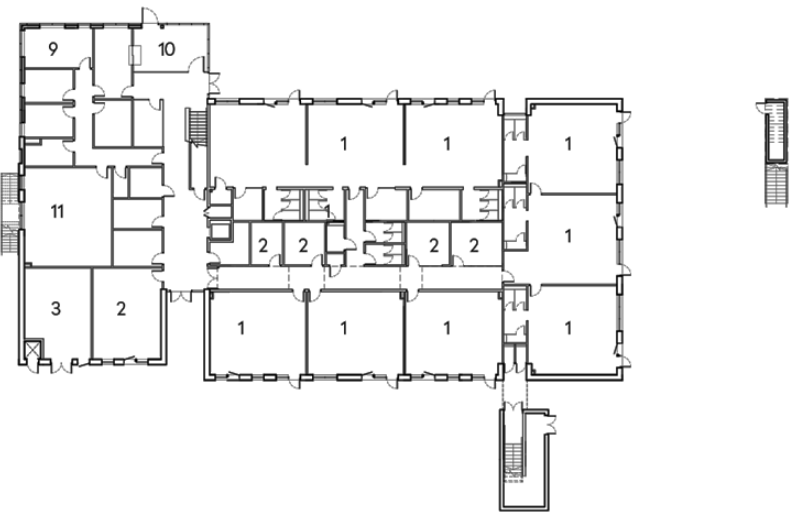


North façade, Small Hall

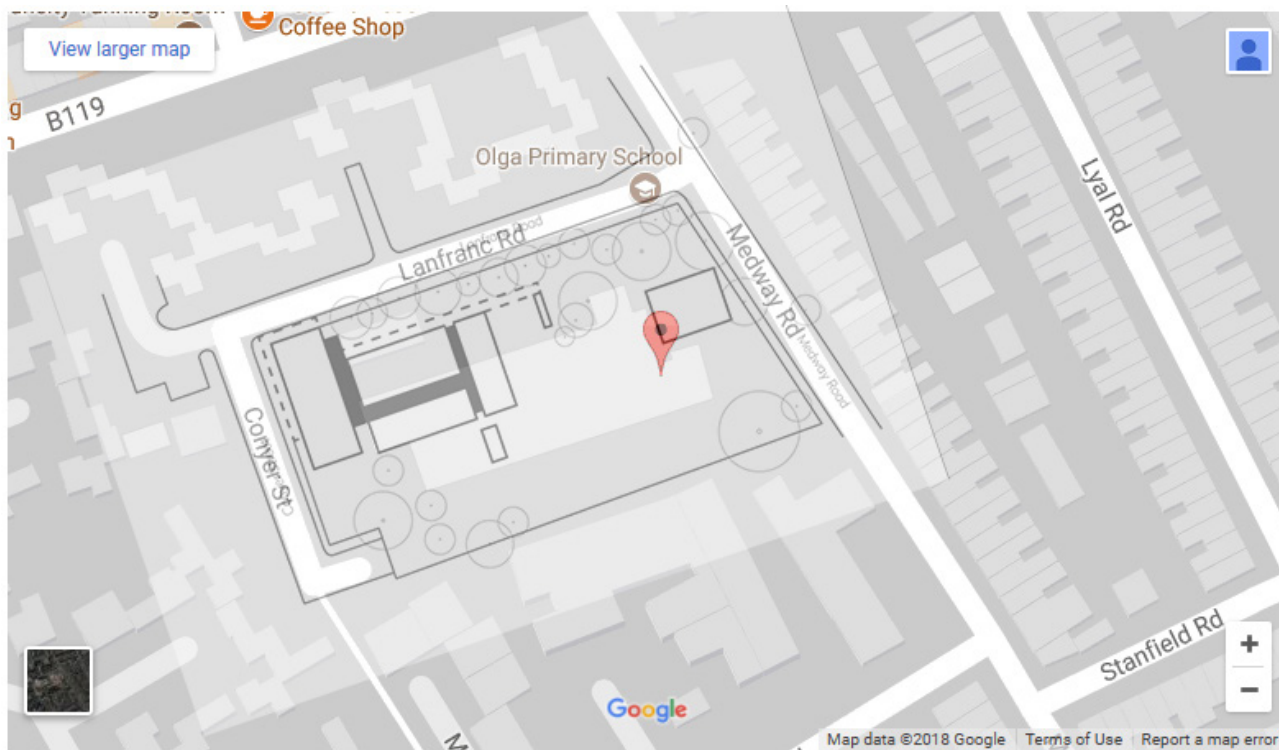


first floor

- 1. Classroom
- 2. Group room
- 3. Plant room
- 4. Activity room
- 5. Play deck area
- 6. Small hall
- 7. Large hall
- 8. Kitchen
- 9. Office
- 10. Lobby
- 11. Staff room



ground floor



Site Plan. North is up. Google marker is on the old one-story school building.



Lanfranc Road (North) elevation.



Conyer Street (West) elevation.

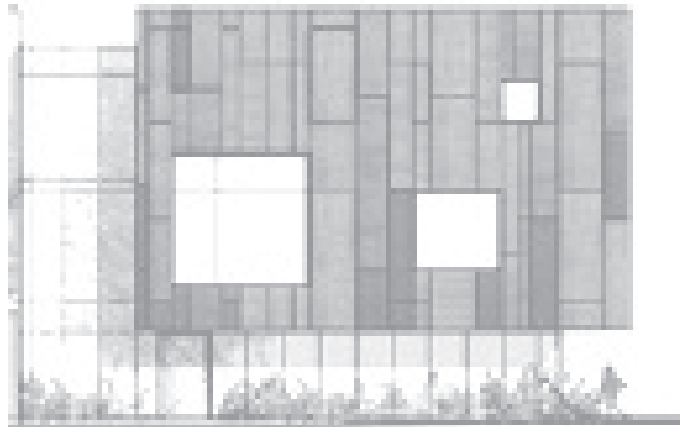
3 pts. 1a. **Cite two age old adages or rules-of-thumb** that apply to the successful or unsuccessful daylighting of the small hall. Fully **explain and illustrate** why you believe that they are effective or ineffective in providing a visually comfortable room.

1b. **Sketch** an alternative north wall configuration that would provide better daylighting. Fully **explain and illustrate** why you believe it would be more effective in providing a visually comfortable room.

Current North façade.



Your North façade.



3 pts. 2. The skylights can be open to admit daylight or closed to block any daylight. Propose a skylight design that provides desirable daylight to the small hall. **Sketch a critical section** through your proposed skylight and the roof to show its effect. **Describe** the skylight's materials and **explain** why it's effective.



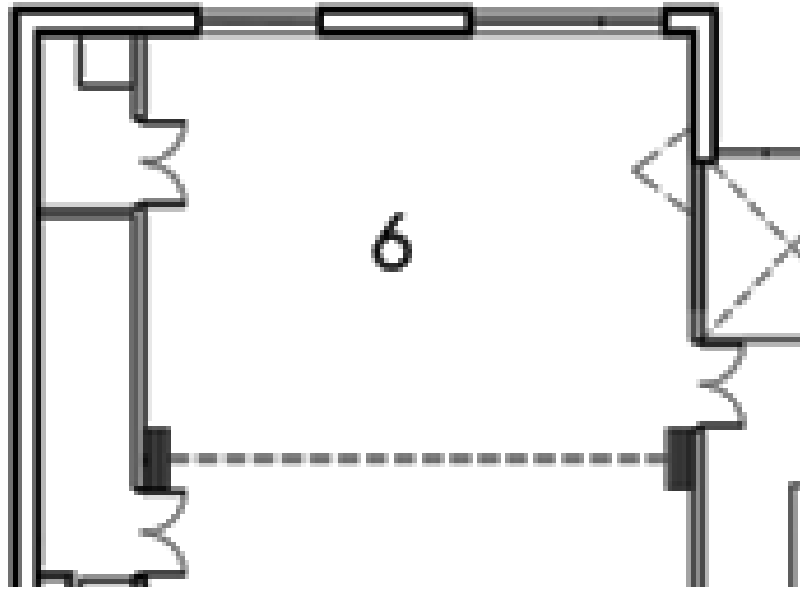
Context. Classroom wing hallway with lightwells.



Typical classroom.

4 pts. 3. **Show the cloudy day distribution** of daylight in plan in the small hall under two configurations:

A. Existing three north wall windows with the skylights closed in blackout mode. Comment on effectiveness.



B. Your proposed north wall window configuration with skylights open admitting daylight. Show your window placement on the elevation below. Comment on effectiveness.

