Arch 464
ECS
Spring 2019

Name_____

Quiz #1

168 Upper Street Loft

All images: Architects Journal, 21 January 2019

Upper Street (east) Elevation. The highest window in this façade daylights the loft's lower (fourth) floor.

For this problem you are an artist worried about daylighting a leased loft in Islington. Your task is to analyze strengths and weaknesses of the existing daylighting strategies for the loft's upper (fifth) floor and to suggest appropriate alternatives. You are considering using the fifth floor as a studio for painting and displaying your oils and pastels on canvas. Adequate daylight and solar control are of essence.

Context. 168 Upper Street is located in the London Borough of Islington, 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!

Image: Google

The three highest windows on the north elevation illuminate the fourth floor. None of the fifth floor apertures are visible from the street.

Misremembrance of things past: 168 Upper Street by Amin Taha

Groupwork + Amin Taha's retail and residential building for Aria replaces a demolished section of an Islington terrace with a deliberately misremembered concrete reconstruction. Photography is by Tim Soar.

The 545m² scheme combines ground-floor retail with three apartments on the plot of a longtime bombsite at the northern end of a Victorian terrace. More than that, it manages to weave a commentary on monuments, memory and architectural aesthetics across its concrete façade. That it is concrete at all is a surprise. Approached along Islington's Upper Street from the north, the façade's terracotta tone intentionally harks back to its brick neighbours. What's more, the project's massing is identical to that of its equivalent on the southern end of an 1888 terrace, meaning 168 Upper Street appears ostensibly unremarkable on the streetscape and in fact completes the terrace that had been asymmetrical since it was bombed during the Second World War. Yet the familiar Victorian façade elements, cornicing, bay windows and pared-down columns and pediments, have been cast in concrete. This creates a shell that wraps the entire building, inside and out, and confounds any sense of nostalgic reconstruction, making way instead for what Taha describes as 'deliberate mis-remembering'. As well as functioning as the building's main structural and thermal insulation element, the shell can be conceived as a sculptural interpretation of a Victorian building. The form was constructed by laser scanning the structure at the southern end of the terrace before it was mirrored in CAD and remixed by the practice.

Imperfection is a major theme on a façade replete with twists and intrigue. Keen to play on the blurs and burrs of both memory and heritage reconstruction, Taha's 'misremembering' at 168 Upper Street is reinforced with errors, both deliberate and otherwise. Thus at ground level on the project's north elevation, a section of the rooftop parapet is blank, its corresponding formwork having gone missing and appearing instead at ground level like a misplaced pixel amid a computer screen glitch. Similarly, particularly complex sections of the Victorian façade struggled in their transition to CAD, creating problems during routing and construction. For example, when one of the column scrolls came out broken, the contractors offered to redo it. 'We said: nope, forget about it, it's exactly what we want,' explains Taha.

Inside, the inner layer of the concrete shell (separated from the outer by thermal insulation) is a simpler continuation of the exterior theme. Instead of mimicking details with the same positional precision as the exterior, Taha and his team have been more interpretive, expressing window frames, coving and even a floral wallpaper across different parts of the pink concrete. There is also a greater attention to structural detail on the interior, where deliberate flaws might have become impractical for the building's inhabitants. The concrete shell continues to assert itself on the northern and eastern sides of the building and progresses up to the ceiling of the top duplex, where it is decorated with the reliefs of ceiling roses. Undeniably well-executed in its conception and completion, the shell and its detailing work best on the building façade where they can impress away from the trappings of interior, quotidian life. So imprinted are the echoes of previous lives on the interior surface, the building's residents may struggle to position their own. You wouldn't put a child's drawing on a Rachel Whiteread sculpture; perhaps you wouldn't on these walls

—George Kafka, Architects Journal, 21 Jan 2019

Working detail

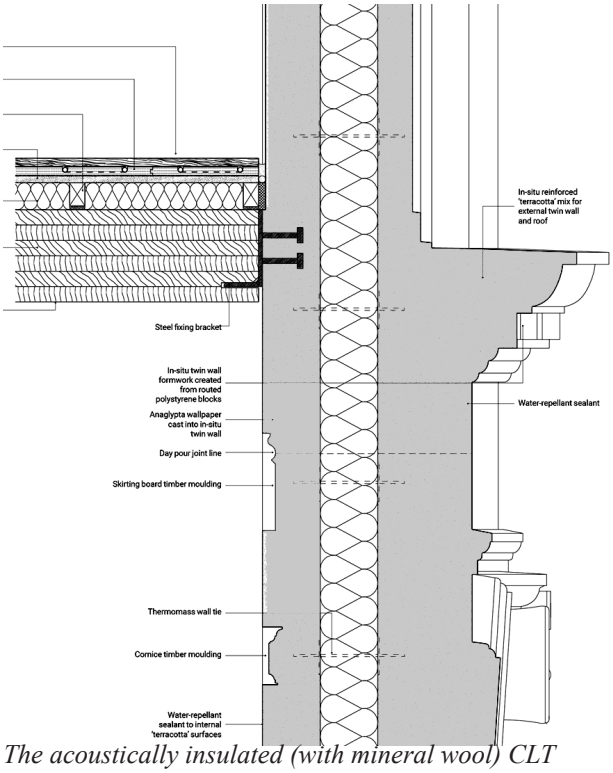
Perhaps unsurprisingly the initial feedback from engineer and quantity surveyor was to clad a steel frame with precast panels on subframes, line the inside with plasterboard, infill with insulation and so on, inevitably all over budget and threatening project viability. Instead we suggested replacing the wasteful build-up (also likely be too visually precise) with in-situ concrete so that a single material (and trade) act as superstructure and finish.

The detail (see pg. 3) illustrates how an inexpensive formwork of recycled expanded polystyrene can create a double skin with closed cell insulation between and tied together so they act as the supporting wall to the internal suspended cross-laminated timber floorplates. The suspended cross-laminated timber is left exposed underneath with an acoustic floor build-up above incorporating underfloor heating and electrical/data services. Internal partitions and doors are set out as integrated cabinetry elements built of spruce to highlight the 'new' occupation from the 'old' cast walls.

—Jason Coe, partner, Groupwork + Amin Taha

Stairs to the fifth floor wrap the cast-in-place fireplace. An east-facing roof window lights the two-story void.

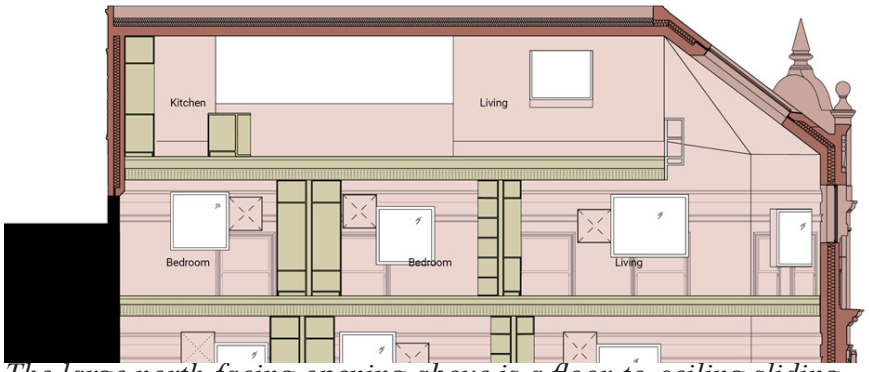
A north-facing roof window lights the fifth floor. The north wall of the loft is sloped. Spruce cabinetwork is typical.



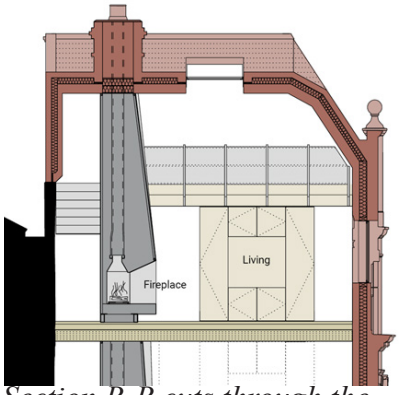
The acoustically insulated (with mineral wool) CLT floors attach to the thermally insulated (with rigid foam) concrete walls.

All of the windows but one are fixed-glass, but some like the one pictured are accompanied with pivoting operable vents.

Section A–A

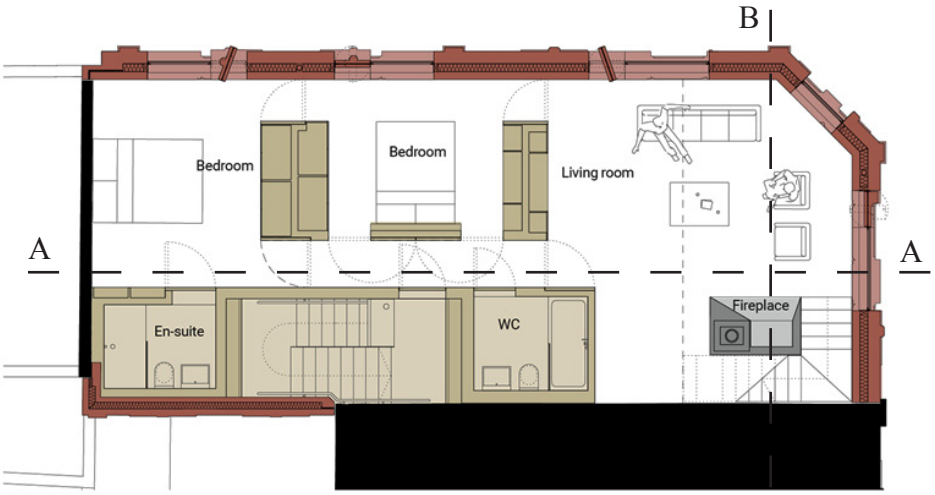


The large north-facing opening above is a floor-to-ceiling sliding glass door. The terrace balustrade is seen in elevation beyond. The other visible fifth-floor openings are the fixed-glass roof windows facing north and east.

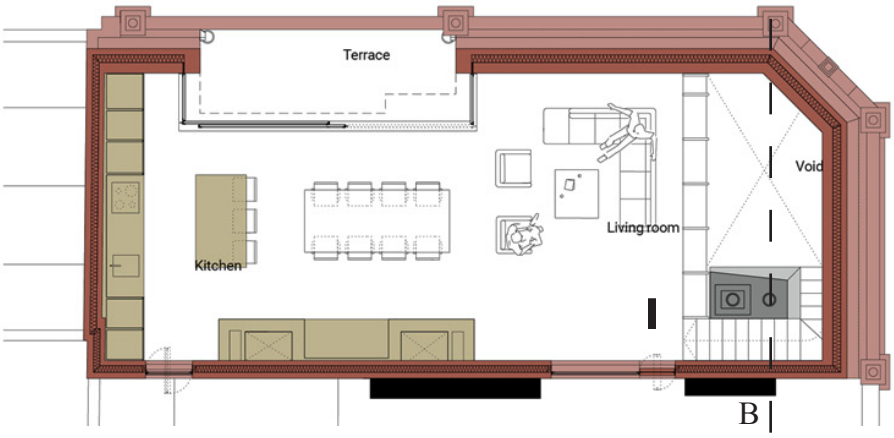


Section B-B cuts through the east-facing roof window above the 2-story void.

Fourth floor plan

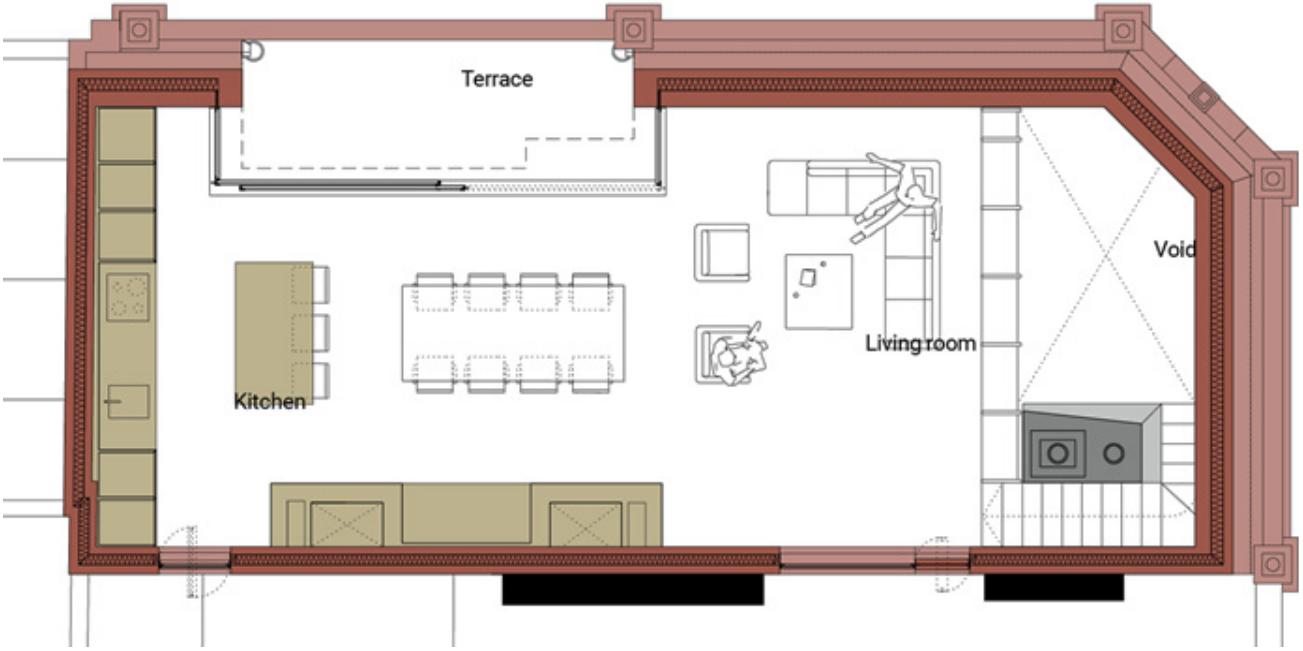


Fifth floor plan

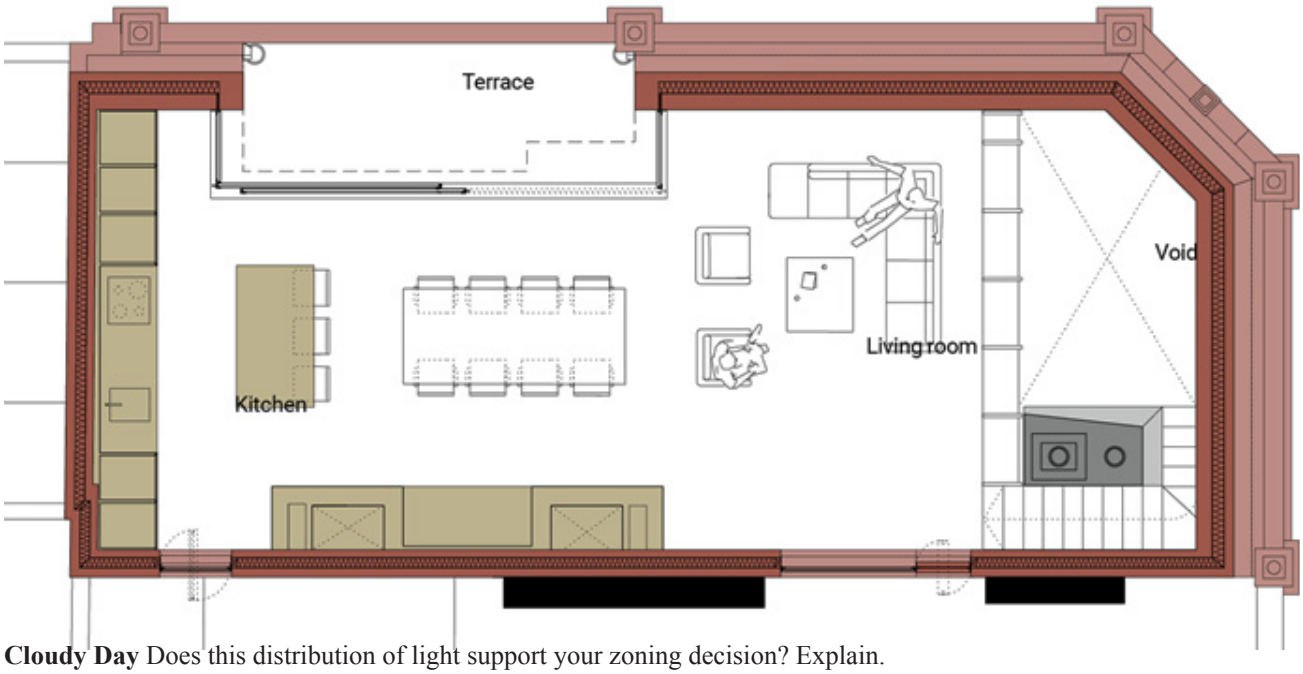


While the north wall of the loft is sloped almost to the floor, its west and south walls are a full nine feet high. The two windows on the south wall are square clerestories with 8-foot heads. The smaller window is the only operable window in the building. There is also an operable ventilation aperture east of the larger window. The spruce cabinetwork is highlighted in tan.

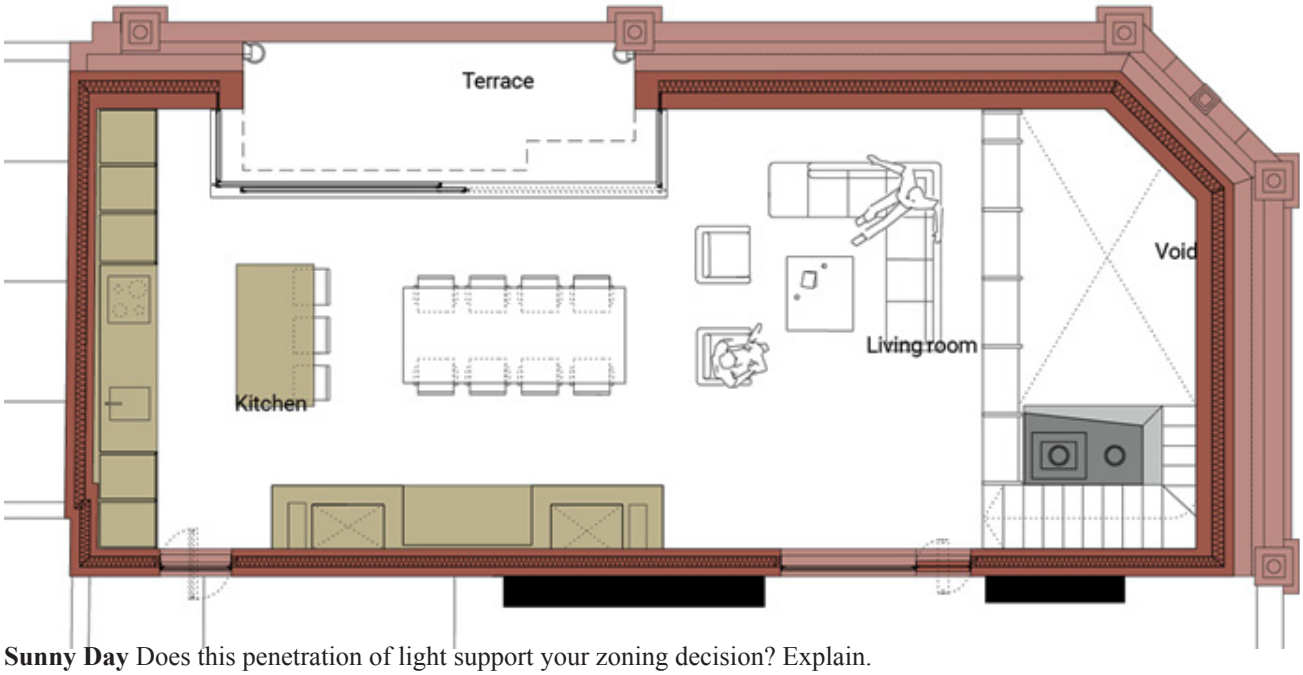
4 pts. 1. **Cite** three age old adages/rules-of-thumb that are either followed or ignored in the design of the loft space. Fully **explain and illustrate** why you believe that the apertures are effective or ineffective in providing a visually comfortable room. **Illustrate below** how you would zone the fifth-floor loft space to accommodate a painting area and a display area.



3 pts. **Show** where the two roof windows are in plan (dot them in). **Illustrate below** how daylight is distributed on a cloudy day in the fifth-floor loft space. On the lower plan **show where direct sunlight penetrates** the space at 9am on a sunny September day (hint: sun bears 45º south of due east at about 45º altitude on the equinox).



Cloudy Day Does this distribution of light support your zoning decision? Explain.



Sunny Day Does this penetration of light support your zoning decision? Explain.

3 pts. **3.** Based on your answers to questions 1 and 2, **suggest, explain and illustrate 3 changes** you would make to the loft to better suit your intended use as an artist's workplace.

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