

Arch 463
ECS
Fall 2019

Name _____

Quiz #3

"St. Mary Magdalene's East Façade Study"

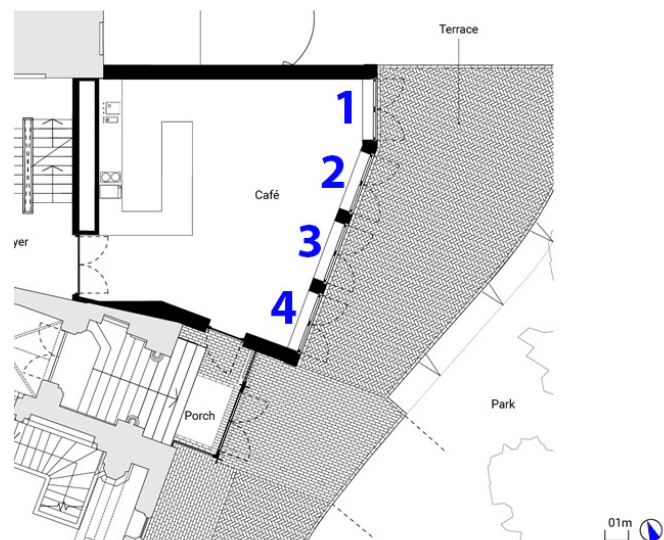
For this problem you are a building envelope consultant for Dow Jones Architects who want to demonstrate appropriate shading and glazing strategies for the cafe in new east addition to this London church. The addition features four full-height east-facing operable glass double doors with no external shading. Consequently, the cafe is overheated on sunny mornings yearround.

They want to install four different door systems on the façade to compare their effectiveness side-by-side. Each opening is 2 meters wide and 2.5 meters tall. Your role is to specify effective combinations of **one** glazing type and **one** shading element for each of the four bays of glazing. You'll need to fully describe your choices and explain why you think they might be effective and/or interesting to test. Keep both shading and daylighting in mind as you choose.

Editor's note: In the actual building the cafe windows face north. I spun the north arrow 90 degrees in order to give you a more interesting problem.-bth



St. Mary Magdalene's addition has four bays of full-height double doors in its east-facing wall.

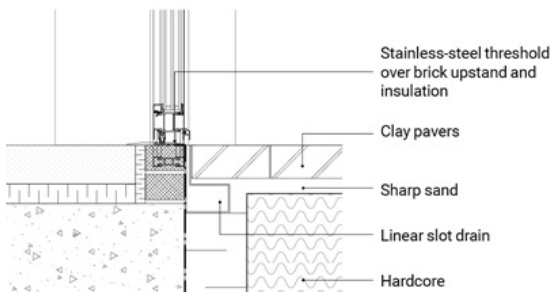
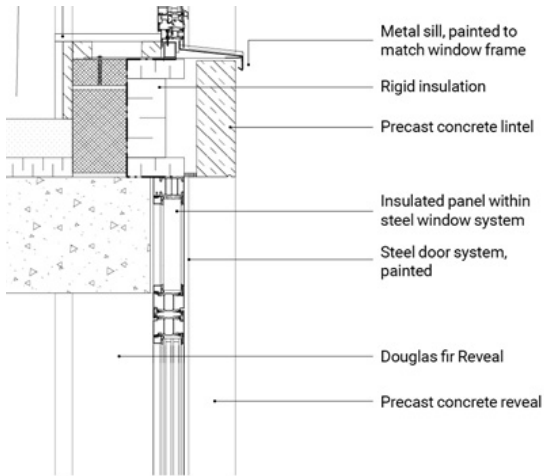


Cafe plan

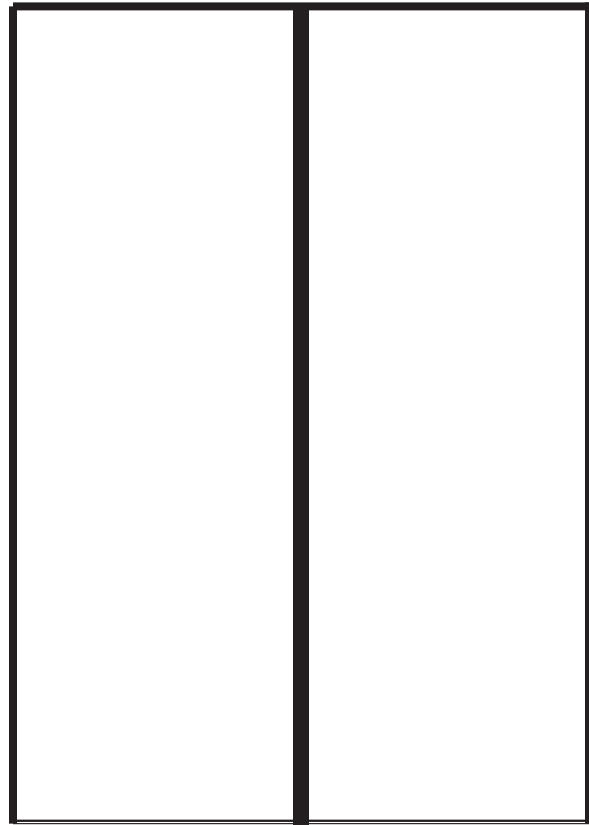
Glazing	Shading
Kalwall, 3" silica aero-gel insulating glazing	Fixed horizontal louvres
Thermo-pane w/blue-green exterior and clear interior panes	Horizontal perforated steel panels
Bronze reflective glass	Horizontal PV panels
Sage electro-chromatic glass	Vertical fritted glass fins
Heat mirror low-e glazing (commercial)	Perforated steel screen
Fritted glass	Canvas awnings

Façade Bay #1

2.5 points 1. Specify your glazing and shading choice for this bay. Call out your glazing choice and illustrate and call out your shading device design choice on the sketch below. Explain why your choices might be effective or interesting.



SECTION
OUTSIDE—INSIDE



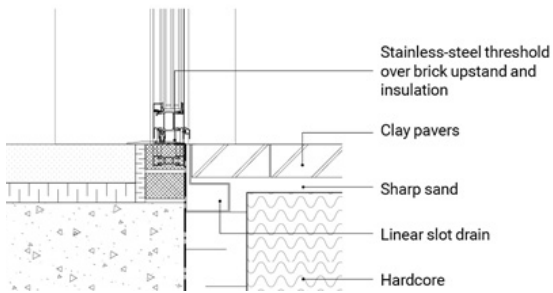
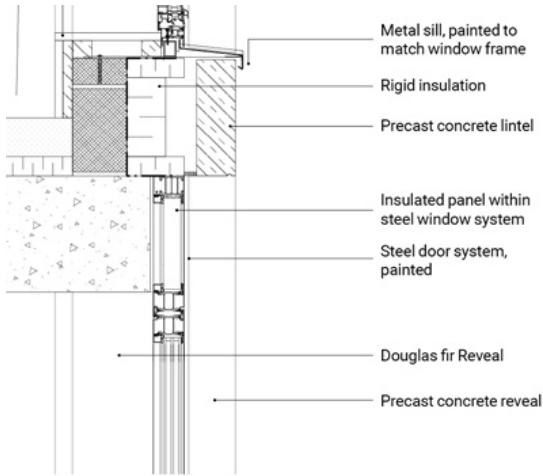
EXTERIOR ELEVATION

Glazing	Shading
Kalwall, 3" silica aero-gel insulating glazing	Fixed horizontal louvres
Thermo-pane w/blue-green exterior and clear interior panes	Horizontal perforated steel panels
Bronze reflective glass	Horizontal PV panels
Sage electro-chromatic glass	Vertical fritted glass fins
Heat mirror low-e glazing (commercial)	Perforated steel screen
Fritted glass	Canvas awnings

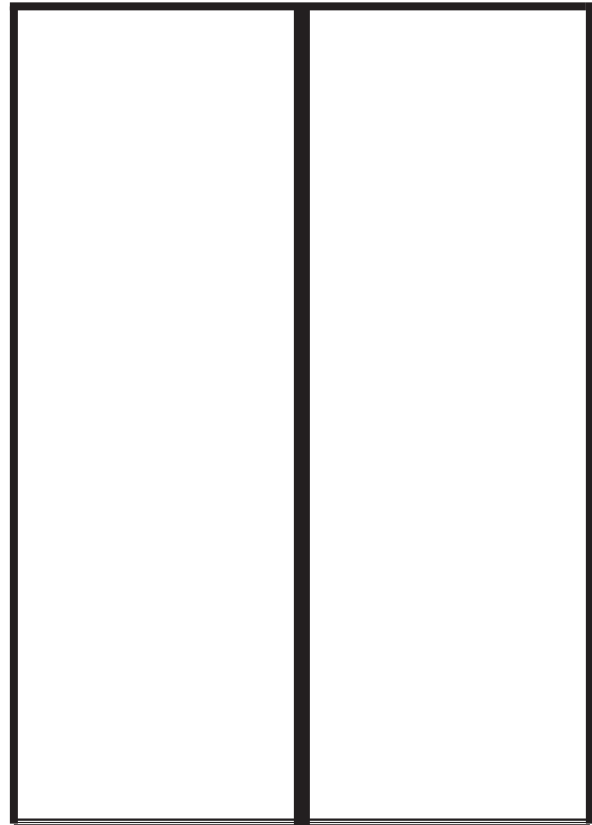
Façade Bay #2

2.5 points

2. Specify your glazing and shading choice for this bay. **Call out** your glazing choice and **illustrate and call out** your shading device design choice on the sketch below. **Explain** why your choices might be effective or interesting.



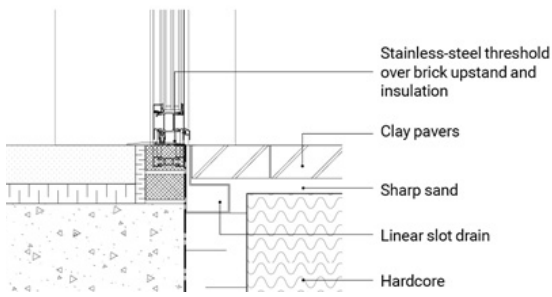
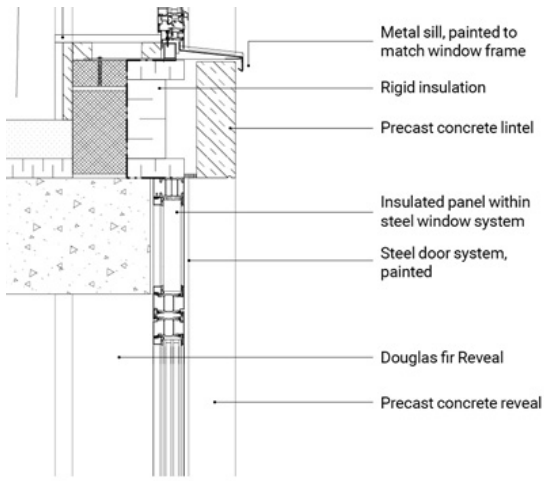
SECTION
OUTSIDE—INSIDE



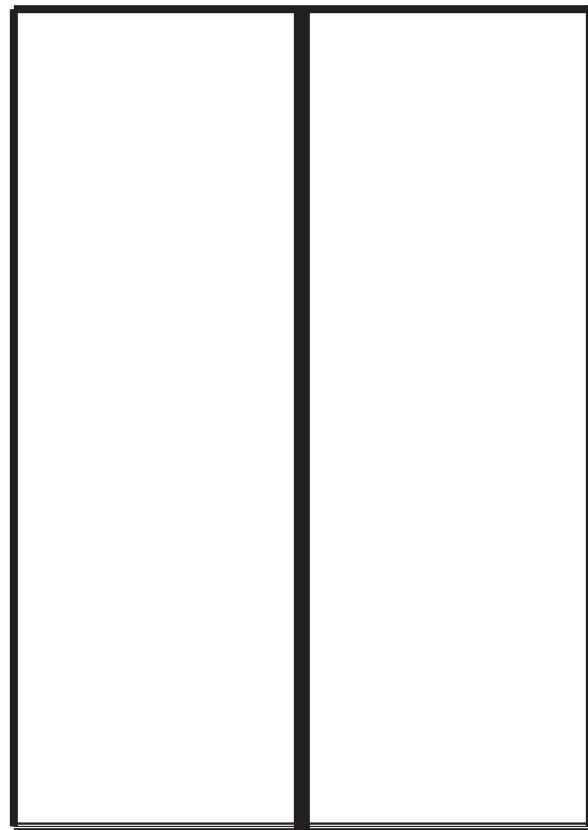
EXTERIOR ELEVATION

Façade Bay #3

2.5 points **3.** Specify your glazing and shading choice for this bay. **Call out** your glazing choice and **illustrate and call out** your shading device design choice on the sketch below. **Explain** why your choices might be effective or interesting.



SECTION
OUTSIDE—INSIDE



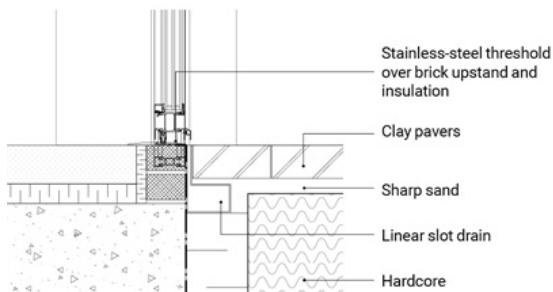
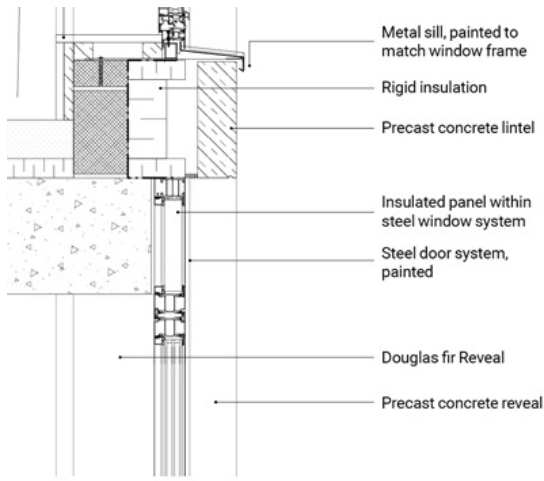
EXTERIOR ELEVATION

Glazing	Shading
Kalwall, 3" silica aero-gel insulating glazing	Fixed horizontal louvres
Thermo-pane w/blue-green exterior and clear interior panes	Horizontal perforated steel panels
Bronze reflective glass	PV glazing panels
Sage electro-chromatic glass	Vertical fritted glass fins
Heat mirror low-e glazing (commercial)	Perforated steel screen
Fritted glass	Canvas awnings

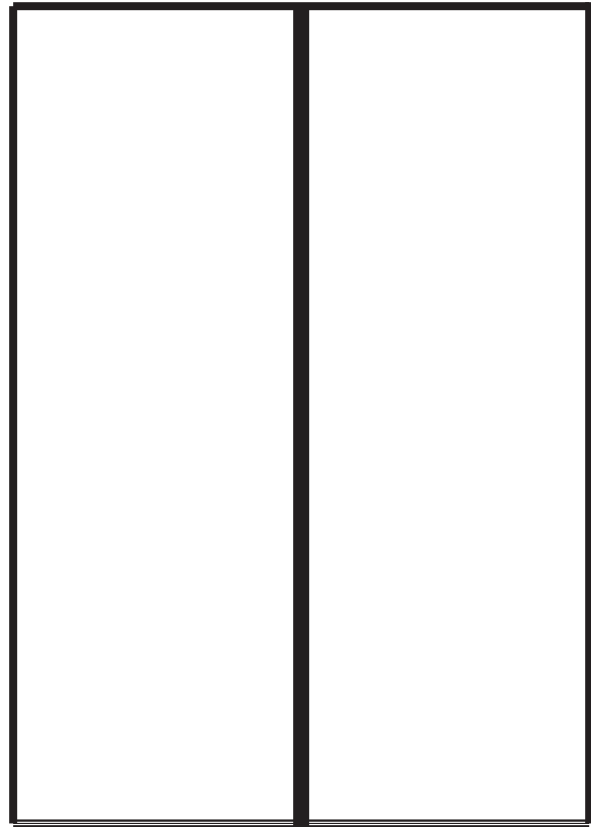
Façade Bay #4

2.5 points

4. Specify your glazing and shading choice for this bay. **Call out** your glazing choice and **illustrate and call out** your shading device design choice on the sketch below. **Explain** why your choices might be effective or interesting.



SECTION
OUTSIDE—INSIDE



EXTERIOR ELEVATION

Extra Credit. (1pt.) Which of your choices is the best (or worst) defence against the morning summer sun and will delight (or irritate) coffee drinkers inside and on the terrace. Explain why.