

Arch 464
ECS
Spring 2004

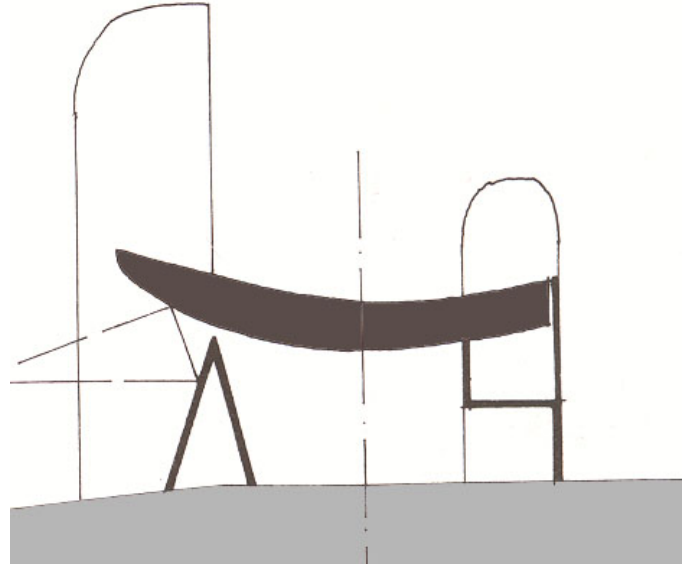
Name _____

Quiz #4

"Festival at Ronchamp"

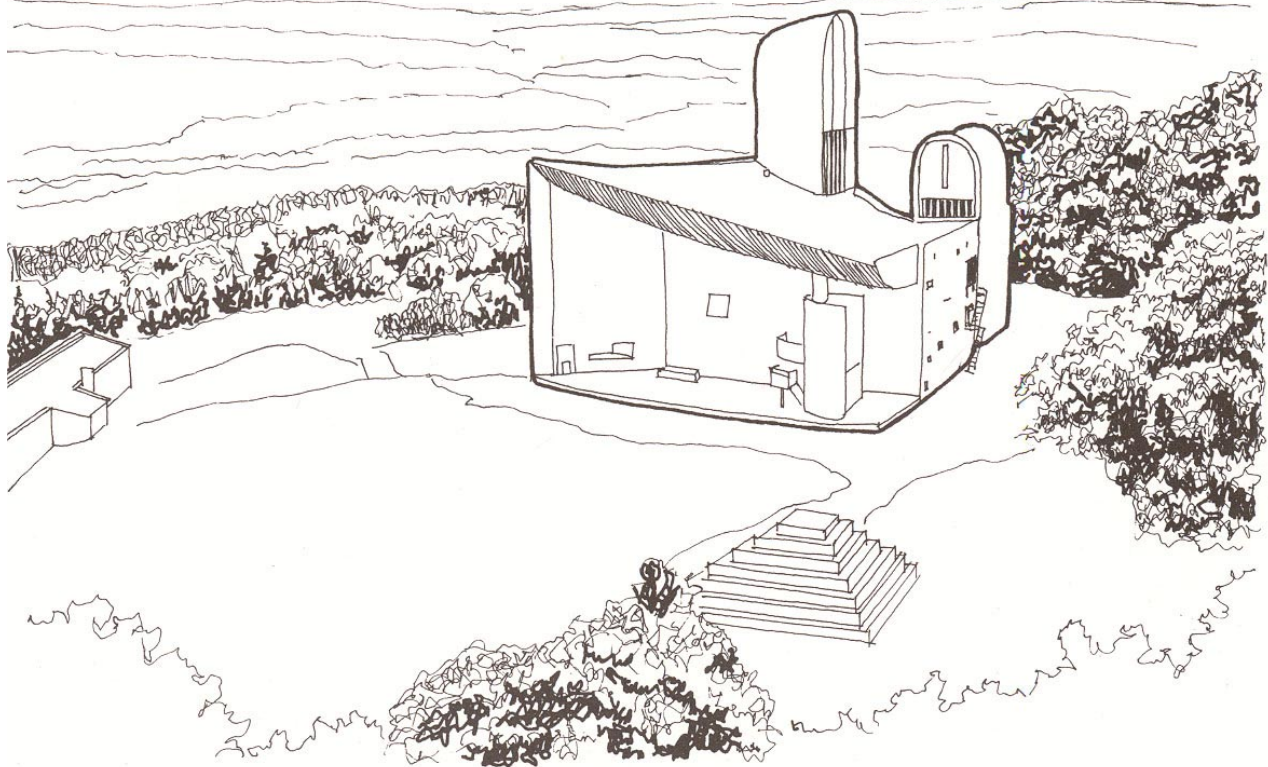
For this problem you are the acoustic consultant for the Chamber Music Festival at Notre-Dame-du-Haut, Ronchamp, France. Your task is to prepare le Corbusier's seminal sanctuary for a week-long musical event that uses both the chapel and the amphitheater. The performers range from trios to sextets playing a variety of woodwinds, strings, and horns.

Context. The chapel is situated on a hilltop accessible only by foot. The nearest traffic is on country lanes that approach the car park at the base of the hill.



Schematic section of chapel, looking west..

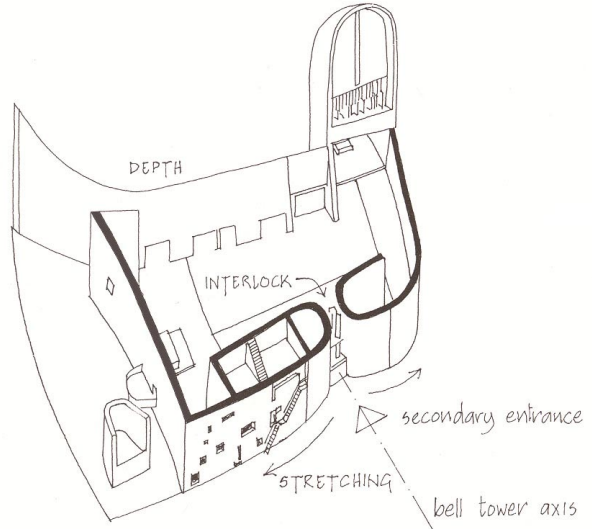
Numerics. The nave averages 25' wide and is 40' long with a 18' ceiling. All interior and exterior finishes are stucco ($\alpha = 0.06$), except for the concrete floor ($\alpha = 0.04$). The chapel seating area (pews) is about 6' x 15' ($\alpha = 0.75$). Audience in upholstered seats has an $\alpha = 0.88$.



East facade showing stage and pyramid as well as the lawn.

Reverberation

2 pts 1 **Estimate** the reverberation time for the existing chapel and discuss its suitability for chamber music. The nave averages 25' wide and is 40' long with a 18' ceiling. All interior and exterior finishes are stucco ($\alpha = 0.06$), except for the concrete floor ($\alpha = 0.04$). The chapel seating area (pews) is about 6' x 15' ($\alpha = 0.75$).



Sectional perspective from above, looking south.

Analysis of Existing Chapel

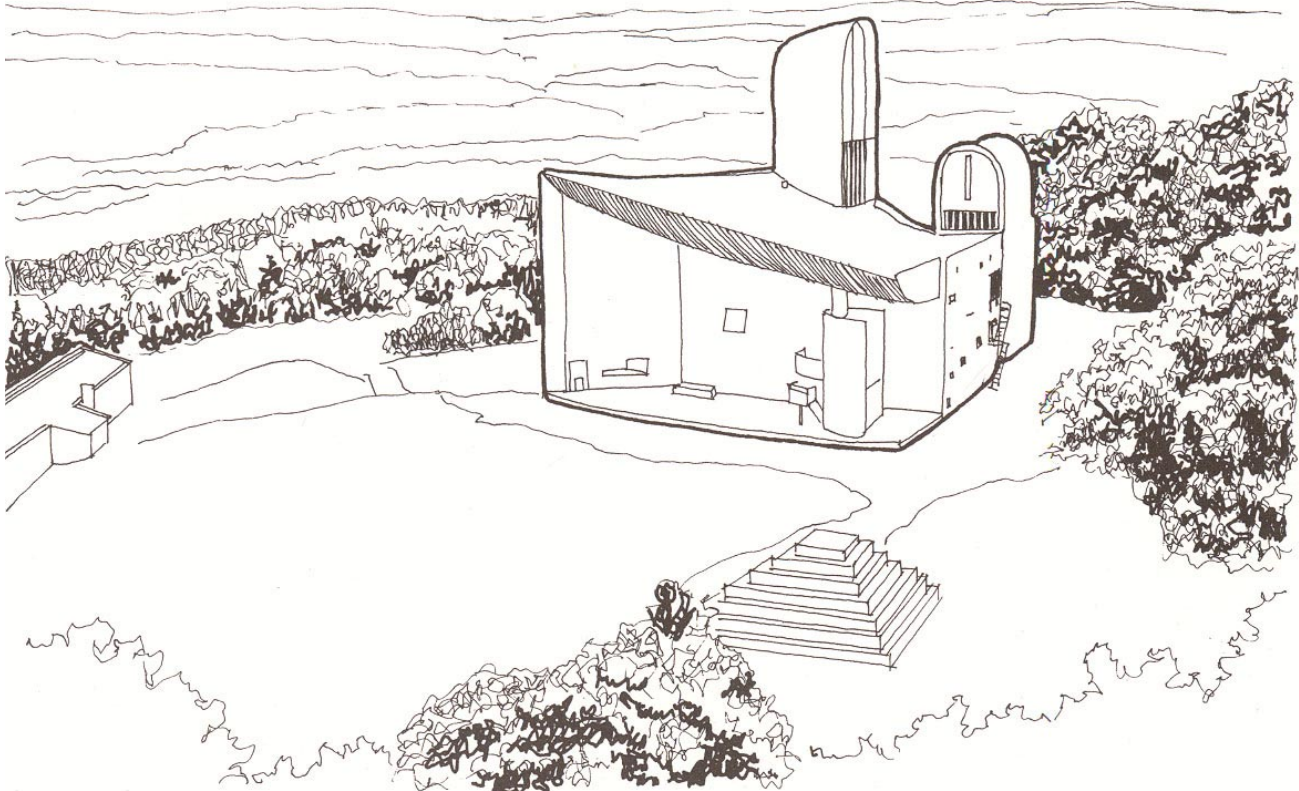
2 pts 2. **Categorize** this space by its acoustic goal—silence or quiet—and explain how it meets this goal (or not).

Also **characterize** the space by its auditorium type—shoebox, wide, or surround—and **defend** your choice.

Explain why it's appropriate (or not) for chamber music.

Analysis and Design of Outdoor Space

3 pts Explain the positive features of using the outdoor space for performing chamber music. In the sketch below show how you'd configure the space. Explain why it's appropriate for chamber music.



East facade showing stage and pyramid as well as the lawn.