The Chapel at Ronchamp is a timeless piece of architecture. The interior of the church is an expressive use of light which translates into a dynamic form commanding the summit of a hill at Ronchamp.

The luminous environment in the chapel creates a unique balance of light and brightness adaptation in visual field. Light has been used to highlight form and color.

**External view of the chapel**

**Architect:** Le Corbusier  
**Programme:** Chapel  
**Completion:** 1954  
**Pictures reference:** Alfonso E. Hernandez
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## NOTRE DAME DU HAUT, Ronchamp

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*Internal view of the chapel*
The Chapel at Ronchamp is a timeless piece of architecture. The interior of the church is an expressive use of light which translates into a dynamic form commanding the summit of a hill at Ronchamp.
Architecturally, Ronchamp is a system of convex and concave concrete walls covered by a shell. The altar is on the east wall that has small apertures on it. The roof hovers above the walls to create a sliver of light along the perimeter of the chapel. The south wall is deeply carved with embrasures. When viewed from the dim nave the confined glow of each chapel captivates human attention.

Light is entering into the space by shafts of light in southwest corner, an orthogonal openings in the northeast, light shafts in the northern wall (which mark the entrance to the chapel) and the south wall which is punctuated with deep splayed windows of variable sizes and in some cases fitted with colored glass.
The chambers within this thick wall are splayed and tapered to delay and trap passing light, making each void inwardly glow. Illumination is filtered through perforations and baffles, before being diffused by a series of reflections down to the chapel floor creating a vertical gradation of light. Lighting strategy excludes sky glare stabilizing incoming light and creates a contemplative luminous environment.

The chapel acts as a forum for capturing pieces of sun at various times of the day. Each daylight-capturing device is timed and placed according to solar events/angles. Cavities brighten and dim at different hours and remain lit for different extents of time. The embrasures also have a seasonal rhythm; their openings adjusted in section to intercept high summer sun, while letting low angles of winter sun penetrate through the width of the church.

Visit data
7 August 2009
@14.30 & @16.30
The tower illuminates with direct sunlight and daylight levels grow 5 times (10lux at 2:30pm to 50 lux at 4:30pm). The zone does become brighter but this has little impact on the overall luminous environment of the chapel because of the architectural disposition of the light tower.

The south wall of the chapel with the deep recessed opening plays an important role. The deep recess with the highly textured surface helps degrade the brightness of sunlight to a more perceptible level. Measurement reveal a drop of 360 lux to 36 lux at 2:30pm and 650 lux to 45 lux at 4:30pm.

**Tools:** Ecotect, Radiance
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Tools: Ecotect, Radiance
The different light sources result in the elimination of any brightness contrast. The central nave has a very uneven distribution of light with bright and dark zones. The brightest zones in ascending order are the east facing light tower, the orthogonal windows in the north east corner, the entrances at north and south east, the west facing light scoop, the area adjoining the south wall and the area under the north facing light scoop. The tower is equipped with the same apparatus as the other two light scoops. However, its interior is painted red, with reflectance that is approximately ¼ of the other surfaces. The main zone of the chapel is characterized by even texture and color of material. Hence the luminance are distributed quite smoothly with the exception of the east end of the chapel. This leads to a very animated effect as the visitor is facing the altar. Seasonal study also shows punctuation of the main narthex with areas of high luminance greater intensity in summers.

**Tools:** Ecotect, Radiance

**On-site Measurements**
7 August 2009
Outdoor Illuminance @14:30: 14500lux
Outdoor Illuminance @16:30: 16000lux
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**Observations**

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<tr>
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<td>9a.m, 12 noon</td>
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**Illuminance simulations**

**Tools:** Ecotect, Radiance

**On-site Measurements**

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