

Materials

Materials

A key aspect of daylighting design; they directly affect the quantity and quality of daylight in a space, and are mutually dependent on each other as they are only visible when they come together. For this reason, great architects have always allowed themselves to be directed by light in their choice of building materials.

Variation and structure in **surface texture** creates contrast and shadows. That allows the viewer to perceive depth in a material and reinforce the awareness of the position and size of light sources.

Due those factor the surface seems dynamic.



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Not only the material's surface properties determines the light behavior, also the material itself and possible light transmittance is crucial. It depends on the inner structure how and in which quality light passes through.

Once the daylight has penetrated past the glazing, it interacts with the interior of the building. There it can be absorbed and contained, or bounced and blended, transmitted, depending on the building design, the materials and the intended use of daylight.



Material properties

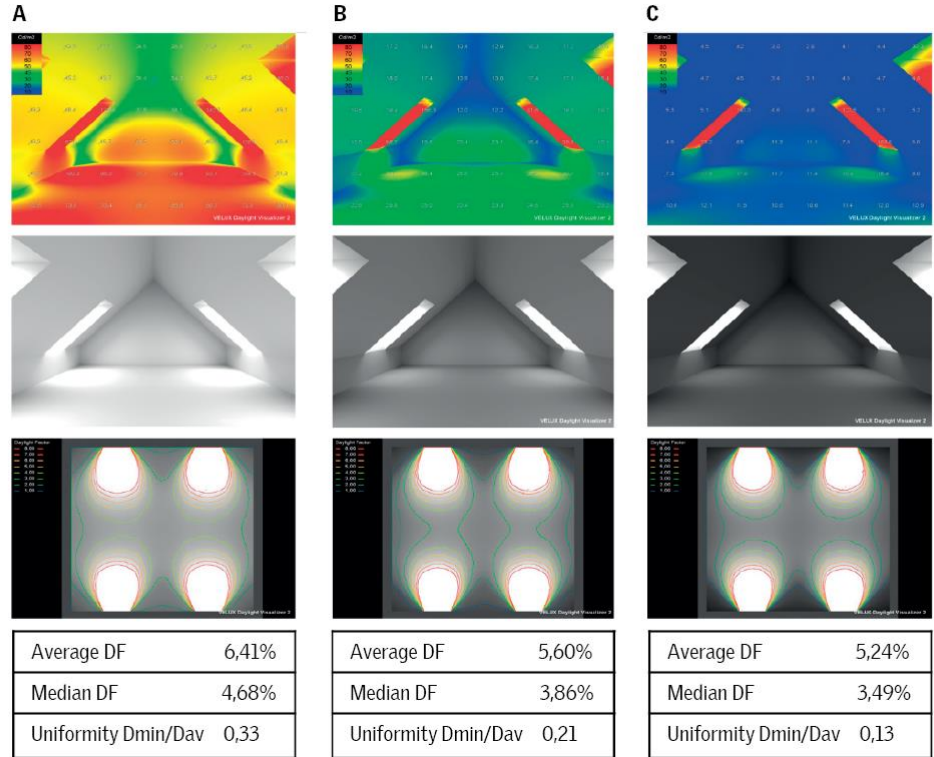
The colour and reflectance of room surfaces are part of the lighting system. Dark surfaces reflect less light than bright surfaces, and the result is likely to be an unsatisfactory luminous environment in which there is little indirect or reflected light. Bright vertical surfaces inside the room are generally preferred to dark ones, but shading devices used to control sunlight should use darker materials in order to limit the risk of glare (e.g. grey awning blinds).

Comparison

A Reflectance level: Ceiling 0,85, Wall 0,85, Floor 0,70

B Reflectance level: Ceiling 0,70, Wall 0,50, Floor 0,30

C Reflectance level: Ceiling 0,30, Wall 0,30, Floor 0,15

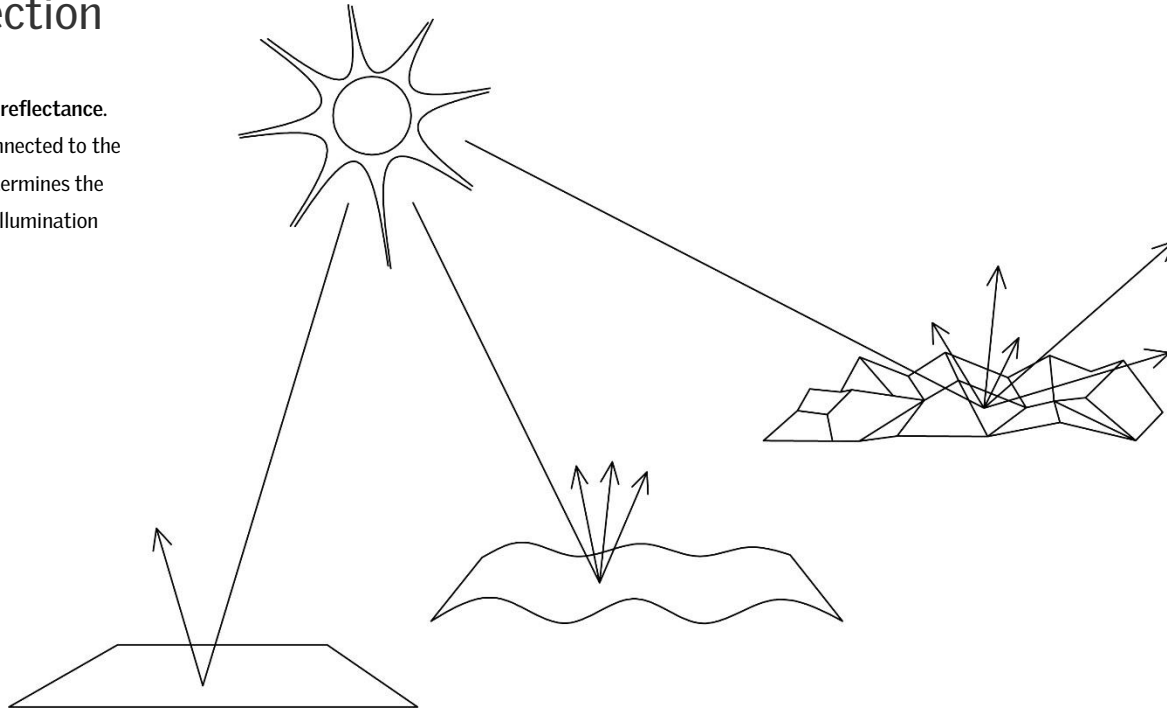


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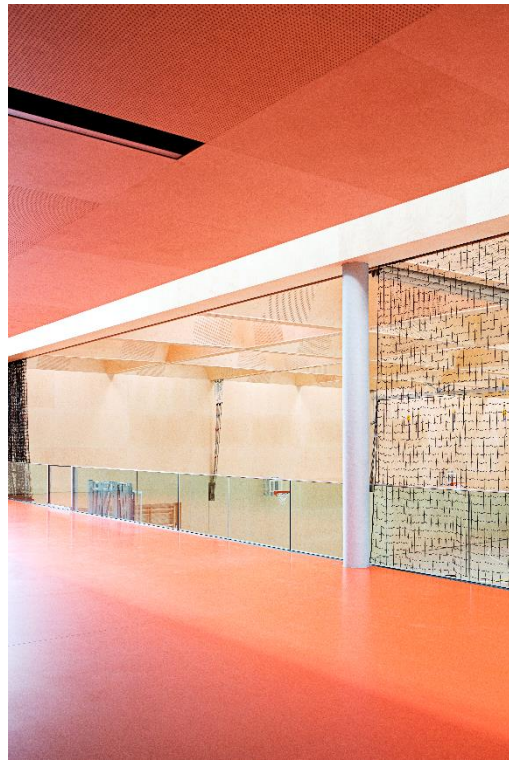
surface reflection

Every material has its own **reflectance**. The high of reflection is connected to the material properties and determines the viewer's perception of the illumination on the surface.



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Materials can also be chosen to mute the effects of light, to make dissimilar materials appear similar, or to make the light seem unchanging.



ReThink
Daylight

Initiated by the VELUX Group

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