experimental study advanced very slowly, and was too dependent to the highly variable environmental conditions (i.e. cloud cover), we set to study the modification of the upper opening and its light shelf, with the use of photometric simulation tools: specifically the combination of analysis programs Autodesk Ecotect + LBNL Radiance. Four dimensioning possibilities for the upper opening were tested: the original 30 cm height, plus another three: 35, 40, and 45 cm. The four options provided a protection of 100% from solar direct radiation during the first three months of the overheated period (May, June, July), however the 45 cm opening considerably lost its protective effectiveness during the months of August and September, at a monthly rate slightly superior to 15 %. In a similar way, but during the underheated period, the 30 cm opening was too limiting on the required solar heat reception, as its shading coefficient didn't go under the 30 % value during any month of the year. A very similar behavior was appreciated with the 35 and 40 cm openings. Nonetheless, and although it was only by a small difference, the 40 cm opening performed 3 % better to the thermal requirements of the cold period. Taking into account the balance between solar heat profiting, and excess direct radiation shading, during the two annual periods with heating and cooling requirements, the analysis results are that the 40 cm opening performed better, hence, it has been proposed as the new dimension to use with the Optimized Modular window design. It has been demonstrated that the Optimized Modular window produces the best overall daylight conditions in the interior of the room, because it improves the illuminance levels on the deeper area (far from the window), contributes to a more uniform light distribution, and at the same time protects from overheating and potential glare effect.

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