



Comparative Evaluation of Four Side Daylighting Strategies

Prepared by LightLouver LLC (February 2011)

A number of criteria must be considered when selecting and designing a side-daylighting system. We have prepared the matrix below to compare the LightLouver Daylighting System against four other side-daylighting alternatives. Thirteen evaluation criteria are listed, representing the most common factors that designers and owners consider important when selecting a side-daylighting system. Because the LightLouver Daylighting System was developed to overcome many of the inherent limitations of conventional side-daylighting strategies, such as elimination of glare, deep and uniform daylight distribution, applicability to east and west facing facades, and ease of architectural integration, it is not surprising that the LightLouver Daylighting System is superior to the other side-daylighting alternatives. The LightLouver Daylighting System provides architects, daylighting / lighting designers with an easily integrated and specified daylighting design solution that provides daylighting and solar control in one remarkable product.

		Side-Daylighting Strategies				
		LightLower Daylighting System	Conventional Interior Lightshelf	Conventional Exterior Lightshelf	Automated Interior Shades	Automated Interior Blinds
Evaluation Criteria	Deep uniform daylight distribution	Yes	Partial (1)	Partial (1)	No	Yes (2)
	Self-shading design -- complete solar cutoff and glare control	Yes	Partial (3)	Partial (3)	No	Partial (2)
	No moving parts (passive optics) and no daily or seasonal adjustments	Yes	Yes	Yes	No	No
	Effective daylight distribution and solar control on east and west glazing	Yes	No	No	No	Yes (2)
	Custom fabrication to fit specified window dimensions	Yes	Yes	Yes	Yes	Yes
	Quick and easy installation (less than 10 minutes)	Yes	No	No	No	No
	Low lifetime maintenance costs	Yes	Partial (4)	Partial (4)	Varies (5)	Varies (5)
	Significant energy savings (when used in combination with effective lighting)	Yes	Partial	Partial	No	Partial
	Low initial and life cycle costs	Yes	No	No	No	No
	Made in the USA	Yes	Yes	Yes	Some	Some
	Unobtrusive architectural integration	Yes	No	No	No	No
	Minimizes building system integration impacts -- sprinkler, HVAC, and lighting	Yes	No	No	Partial (6)	Partial (6)
	Notes:					
1. Commercially available interior and exterior lightshelves are not designed / optimized to redirect incident sunlight deep onto the ceiling of the daylit space.						
2. Deep and uniform daylight distribution (and solar control) will only occur if an effective reflecting slat design and sophisticated automated rotational control of the slats are used.						
3. Interior and exterior lightshelves do not provide full solar cutoff; thus, during certain times of the day or year direct sunlight will miss the lightshelf and create glare and sunlight patches on work surfaces. An automated interior blind will only provide effective solar control if a sophisticated automated rotational control of the slats is used.						
4. Interior and exterior lightshelves, by their very nature, make it difficult to access the "daylight" window glazing for cleaning.						
5. Because these systems have numerous mechanical and electrical components, maintenance costs can be significant if and when there are problems.						
6. Because these systems are automated, electricity must be provided for the motors and controls which increase the integration impacts and costs.						