

ATRIUM

Atrium Evaluation Criteria: While providing gathering spaces which are attractive to many users, atriums come at a high cost to the building. Before deciding to incorporate an atrium, the users and AE team need to evaluate some basic criteria:

- A net to gross analysis.
- Energy consumption evaluation for the increased volume.
- Maintenance of high areas and equipment.
- Natural lighting.
- Smoke evacuation

Net to Gross Evaluation: Atriums add significant cost to a building by dramatically increasing the gross square footage without providing net assignable area.

Energy Consumption: Increased energy use for the space must be included in the energy model.

Maintenance: When atriums and other areas with high ceilings are incorporated, light fixtures and other devices requiring periodic maintenance shall be installed at lower elevations (e.g. by wall mounting) so as to be easily maintainable. If wall mounting is not feasible, then lighting may be accessed by the use of winches to lower the fixtures to a workable location. High ceilings and walls shall be as maintenance-free and as accessible for maintenance as possible. If there is any equipment or fixture that cannot be accessed by the above described means, then the project shall pay for a lift. An appropriate storage location shall also be provided for the lift.

Natural Lighting: Use of skylights shall be avoided or minimized due to their propensity to leak. The sill of the glazed opening shall be located high enough above the adjacent roof membrane that the flashing complies with the roofing and flashing requirements listed in these Standards. Curtain walls are a weak link in the thermal envelope of the building. Consistent with the Design Guidelines, the use of curtain walls should be avoided. Where used, the interior thermal transmission performance of a large glazed opening shall be incorporated into the energy model. Glass and glazing systems shall comply with the glass and glazing requirements listed in these Standards in all regards, including but not limited to:

- All mullions shall feature pressure plates with snap on mullion covers. No structural sealant or exposed sealant is permitted.
- Size of the individual units of glass is limited by the size of glass that can be handled by a two-person crew. See Section 08 81 00 – Glass Glazing in these Standards for specific information.
- Glass shall be a standard color readily and reasonably available from a variety of manufacturers. While the cost of specialty colors may seem insignificant in the overall cost of a large project, replacement costs can be burdensome.

Fire/Smoke Protection: Consideration shall be given to limiting the height of the space to avoid special or additional requirements for fire and smoke protection systems. Atrium smoke control systems shall be designed in accordance with the most current adopted editions of the NFPA Life Safety Code and the International Building Code.