

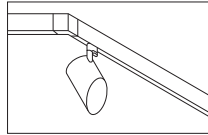
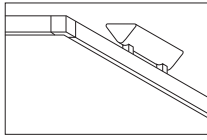
#### 4.15 Museums, galleries

In contrast to museums which primarily exhibit objects in showcases, in galleries where paintings and sculptures are on display architectural lighting is also an essential part of the lighting design concept. In both historical buildings and modern museums the architecture is frequently in competition with the exhibits. The objective of the lighting design concept will usually be to continue to balance the importance of the art to the architecture.

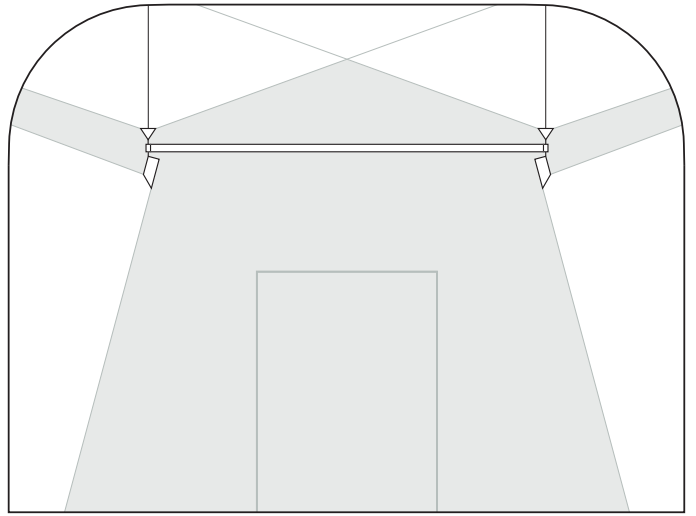
Museums frequently also use daylight as well as artificial lighting. The lighting design concept must aim to control the daylight and coordinate the natural light with the artificial lighting. Daylight can be controlled by the architecture to a certain extent; supplementary devices and equipment may be necessary to control illuminance in accordance with specific curatorial stipulations. Electronic control systems are now available that allow combined control of incident daylight using adjustable louvres as well as the artificial lighting, when daylight is excessive or inadequate. The lighting system should provide appropriate levels of illuminance at all times of day and night.

The exhibits to be illuminated are mainly paintings and drawings on the walls and sculptures in the centre of the spaces. The works of art on the walls can be illuminated by wallwashers or accent lighting using spotlights. In both cases it is imperative to make sure that the angle of incidence has been calculated correctly to avoid disturbing reflections on glass or shiny surfaces. An angle of incidence of  $30^\circ$  to the vertical (angle of incidence for museums) has been proven to be a good guideline, because it handles reflected glare, illuminance and frame shadows optimally. Sculptures generally require directed light to reveal their three-dimensional quality and surface structure. They are usually illuminated by spotlights or recessed directional spotlights.

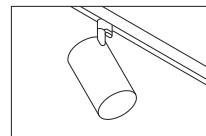
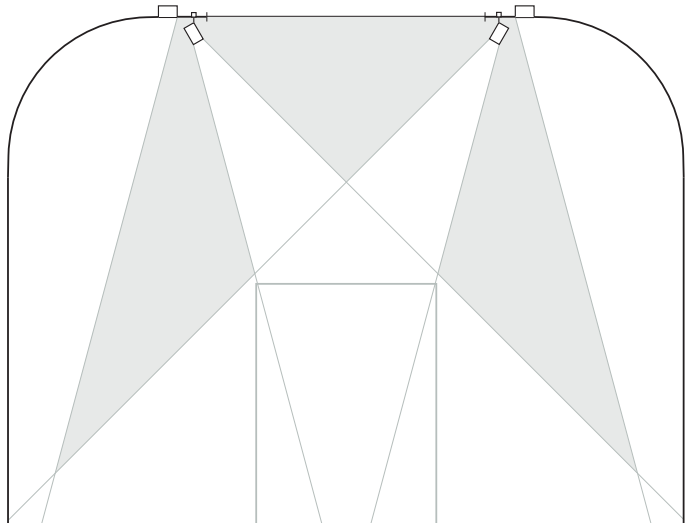
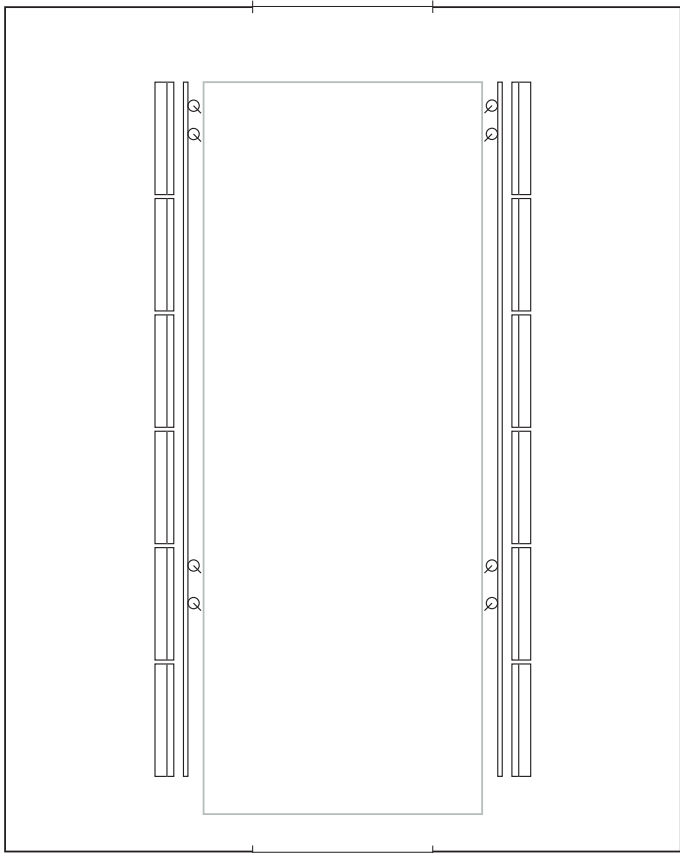
The lighting installation consists of a suspended light structure with uplights providing indirect ambient lighting and wallwashers providing direct lighting of the walls.



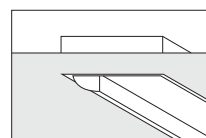
Light structure with uplights for compact fluorescent lamps or halogen lamps and wallwashers for PAR38 reflector lamps.



Daylit museum with a luminous ceiling. Wallwashers mounted parallel to the luminous ceiling supplement daylight and provide lighting in the hours after dark. Track-mounted spotlights allow additional accent lighting.



Track with spotlights.



Wallwasher for fluorescent lamps.