Table 24.1 | Lighting for Education Checklist

Topics
✔ **Criteria and Design Resources**
Accenting
Table 12.2 | Subjective Impressions
Table 15.2 | Accent Illuminance Ratios
Table 22.2 | Common Applications Illuminance Recommendations
Appearance
12.2 Spatial Factors
Color
12.5.6 Color Considerations
Controls
16 | LIGHTING CONTROLS
Daylighting
14 | DESIGNING DAYLIGHTING
Electric Lighting
15 | DESIGNING ELECTRIC LIGHTING
Flicker
4.6 Flicker and Temporal Contrast Sensitivity
Glare
4.10.1 Discomfort Glare
4.10.2 Disability Glare
Illuminance
This Chapter: Table 24.2
12.5.5.1 Applications and Tasks
Table 12.6 | Default Illuminance Ratio Recommendations
Figure 12.21 | Task Coverage Example
Light Distribution
12.3.2 Subjective Impressions
Table 12.5 | Default Luminance Ratio Recommendations
Luminances
12.5.2 Luminances
Systems Integration
12.6 Systems Factors
Veiling Reflections
This Chapter: Section 24.3.6
12.5.4 Veiling Reflections
Visual Tasks
This Chapter: Section 24.2
This Chapter: Table 24.2
Table 11.2 | Programming Inventory Scope and Specific Examples
12.5.1 Visual Tasks
Table 12.3 | Sample Visual Task Survey

24.2 Application Types

To develop lighting solutions that meet quality, quantity, and operational criteria, an inventory is made of the educational space types under consideration and the anticipated occupants, functions, and tasks (see Table 11.2 | Programming: Inventory Scope and Specific Examples and Table 12.3 | Sample Visual Task Survey). Otherwise, lighting cannot be best targeted to the users, their expectations, functions and tasks.

Space type definitions are necessary early in the project design for purposes of tracking design efforts that include inventorying project knowns and anticipated functions and tasks and for later calculations and energy compliance. Room names, from which functions can be deduced, and numbers for tracking should be clearly marked on architectural backgrounds. The applications and tasks cited in Table 24.2 | Educational Facilities Illuminance Recommendations should be reviewed against the project knowns and correlated with the named space types and functions to establish recommended illuminance criteria.

The following sections are keyed to the major application and task headings in Table 24.2. These discussions, those highlighted in Table 24.1, and material in Table 24.2 offer comprehensive qualitative and quantitative criteria.

24.2.1 Administration

Lighting for administrative areas is discussed in 22 | LIGHTING FOR COMMON APPLICATIONS. The architectural scheme and even task specifics may vary based on the associated educational facility, from K-12 to vocational technology to community college to college and university to adult education. These distinctions may affect lighting design—from kinds of lighting effects to lighting equipment styling to luminances and illuminances.

The administrative areas may be dispersed throughout an educational facility or campus or may be centralized into a single area, wing, or building. Depending on client wishes and architectural desires, this centralization or decentralization may affect the degree to which the lighting design in administrative areas is sympathetic to or different from that of the other applications and tasks at the educational facility in question.

24.2.2 Auditoria

Auditoria are typified by their flexibility in use. Functions are quite varied even within designations as lecture halls or multipurpose or performance spaces. This usually requires design of a controls system that may demand operators instructed in the use of the system. Additionally, in more intimate auditoria, simplified controls for speakers and students may be appropriate to accommodate small sessions without the need for additional staff.

Challenges include aisle lighting during dark-house performances as well as sound and light lock lighting. Sound and light locks serve as transitions from the auditorium to the adjacent lobby, concourse, or other transition space. The aisle lighting must function appropriately during various kinds of performances and their intermissions and pre- and post-performances. For example, during dark-house performances, people leaving or entering the auditorium should not create a visual distraction. Sound and light lock lighting should be designed to manage the luminance change from the auditorium aisles to the adjacent spaces. This may involve adjusting floor reflectances and illuminances between aisles, sound and light locks, and lobbies. Dimmed decorative lighting or optically-controlled architectural lighting or localized lighting from steplights or handrails are typically options.

24.2.3 Building Entries

Lighting for building entries is discussed in 22 | LIGHTING FOR COMMON APPLICATIONS. For building entries of educational facilities one distinct variable is time of need. Other variables demanding attention prior to recommending illuminance criteria include anticipated levels of activity and the lighting zone. Nighttime activity