



**LIGHTING FIXTURES AND  
CIRCUITRY & SWITCHING**  
Elementary Schools

## 1. GENERAL

- 1.1.1. Consultants MUST prepare a *Summary of Fixtures* which will include catalogue cuts, schedules, and cost summaries for all fixtures to be utilized on a project. Catalogue cuts are to include a minimum of 3 comparative and cost competitive types for each fixture.
- 1.1.2. For Theatrical; Lighting Fixtures, refer to Elementary School Performing Arts Guideline for details, but include the competitive types of fixtures in the *Summary of Fixtures*.
- 1.1.3. Other than Theatrical Lighting Fixtures, there are to be no dimmable or accent lighting fixtures in Elementary Schools. All fixtures are to be fluorescent, either 600 mm x 1200 mm or 300 mm x 1200 mm. All fluorescent tubes are to be 1200 mm without exception.
- 1.1.4. Generally, all tubes are to be T8 in the G.P Room but consideration may be given to T5 tubes. Review with the Design Department.
  - 1.1.4.1. Design G. P Room lighting to 75 foot candles at desk height.
- 1.1.5. The list below is not comprehensive, but identifies fixtures most commonly used on Secondary School projects.

## 2. LIGHTING FIXTURES

### 2.1. MAJORITY OF FIXTURES TYPES

- 2.1.1. 600 mm x 1,200 mm (2 ft. x 4 ft.) 2 @ T8 tube light fixtures with reflectors, flush mounted hinged frame, non parabolic type lenses. Design layouts to achieve approximately 60 ft. candles. Typically, these fixtures are to be located in such spaces as:
  - ALL CLASSROOMS
  - ALL KINDERGARTENS
  - PIP ROOM
  - SPECIAL EDUCATION ROOMS
  - SCIENCE ROOM
  - ALL SEMINAR ROOMS
- 2.1.2. Same as Item 2.1.1 above, except without reflector. Design layouts to achieve 50 ft. candles. Typically, these fixtures are to be located in such spaces as:
  - COMPUTER ROOM OFF LIBRARY
  - STAFF WORK ROOMS
  - ADMINISTRATION AREA
  - GUIDANCE AREAS
- 2.1.3. Same as Item 2.1.1 above, except without reflector. Design layouts to achieve 30 ft. candles. Typically, these fixtures are to be located in such spaces as:
  - TOP LANDINGS OF STAIRWELLS
  - STAFF WASHROOMS
  - BARRIER FREE WASHROOMS
  - STORAGE/CUSTODIAN ROOMS
  - KINDERGARTEN WASHROOMS
  - SERVER ROOM

- 2.1.4. 300 mm x 1,200 mm (1 ft. x 4 ft.) or 600 mm x 1,200 mm (2 ft. x 4 ft.) 2 @ T8 tube light fixtures without reflectors, vandal proof, flush mounted hinged frame in a drywall ceilings, non parabolic type lenses. Cove lighting in washrooms is unacceptable. Design layouts to achieve approximately 30 ft. candles. Generally these fixtures are to be located in such spaces as:
- ALL STUDENT WASHROOMS
  - ALL STUDENT CHANGE ROOMS
- 2.1.5. Generally, corridor fixtures are to be 300 mm x 1,200 mm (1 ft. x 4 ft.) or 600 mm x 1,200 mm (2 ft. x 4 ft.) 2 @ T8 tube light fixtures without reflectors, in T bar ceilings, non parabolic type lenses. Design corridors to achieve approximately 30 ft. candles.
- 2.1.6. Wall mounted fixtures are to be 1,200 mm (4 ft.) long fixtures. Typically, these fixtures are to be located in such spaces as:
- HEAT PUMP CLOSETS (ABOVE DOOR)
  - MID LANDING OF STAIRWELLS (BOTH SIDES)
- 2.1.7. Mechanical/Electrical Room fixtures are to 1,200 mm (4.ft) long tubes with safety sleeves and protective wire cages, pendant type. Design layout to approximately 30 foot candles.
- 2.1.8. Library fixtures are to be identical to classroom type fixtures. Design layout to achieve approximately 60 ft. candles.
- 2.1.8.1. Depending of the ceiling heights in the Library fluorescent pendant light fixtures may be considered. Review with the Design Department fixture design.

### **3. CIRCUITRY AND SWITCHING**

- 3.1.1. Lighting in all teaching spaces, should be 347 volt with 347 volt switches. Switch plates are to be metal with 347 Volt stamping.
- 3.1.2. Fixtures in all classrooms, science and special education rooms, will be on one circuit, manually switched.
- 3.1.2.1. Consideration may be given to a separate circuit controlled by a light sensor for a row of fixtures closest to the windows.
- 3.1.2.2. In windowless classroom/staff areas provide one row of lights on one switch, the remaining rows on another switch.
- 3.1.3. Fixtures in Kindergartens and PIP Room may be controlled by two manual switches.
- 3.1.3.1. Consideration may be given to a separate circuit controlled by a light sensor for a row of fixtures closest to the windows
- 3.1.4. Seminar Rooms and staff workrooms will be on one circuit, controlled by a motion sensor.
- 3.1.5. Staff & student washrooms, change rooms, and unisex barrier free washrooms are to be controlled by an Ultrasonic/Passive Infrared system. Key switches are unacceptable.
- 3.1.6. Academic & Custodian Storage rooms, Server Room, Mechanical and Service rooms & Closets will be on one circuit, controlled by a motion sensor.

3.1.7. G.P. Room:

- 3.1.7.1. Row of fixtures furthest from the stage and fans are to be controlled by a occupancy sensor. (In each half of the G. P Room if double.) Remaining rows of fixtures are to be by switches at the stage access and controlled by the BM system. Key switches are unacceptable.

3.1.8. In Elementary School corridors:

- 3.1.8.1. A separate circuit(s) for ONE ceiling mounted fixture in each of the main ground vestibules. These fixtures are to be continuously ON. Other corridor night lights are unnecessary.
- 3.1.8.2. Remaining corridor fixtures, are to be controlled by the BM System, and switched on/off at breaker panel(s).
- 3.1.8.3. For interconnection between the Intrusion Alarm System and lighting fixtures in corridors, refer to below.

**4. INTERCONNECTION OF FIXTURES WITH INTRUSION ALARM SYSTEM**

- 4.1.1. The interconnection between corridor/stairwell fixtures and this System is to be as follows:

Intrusion Alarm turned ACTIVE	All fixtures except 1 fixture in lower vestibules OFF
Intrusion Alarm BREACHED	Siren sounds & ground floor corridor & stairwell fixtures ON
Intrusion Alarm System turned OFF	Ground floor corridor fixtures automatically come ON

**1. EXTERIOR LIGHTING**

- 1.1.1. It is preferred to have fewer light standards with multiple heads.
- 1.1.2. Exterior lighting fixtures should be metal halide, or compact fluorescent.
- 1.1.3. Design adequate security lighting around the perimeter of the building, located on the walls as high as possible.
- 1.1.4. Use of short light poles, lights that illuminate the school sign only, or lights installed at grade level to illuminate the building, are not acceptable.
- 1.1.5. Each light standard, regardless of location, must be mounted on a minimum of 1000 mm (36") concrete base. The Design Department must approve any exceptions to this requirement.
- 1.1.6. Light standards must be a minimum of 6,100 mm (20 ft.) but not exceed 9,100 mm (30 ft.) in height and illumination must not interfere with neighbouring properties.
- 1.1.7. Locate light standards 600 mm (2 ft.) from curbs.
- 1.1.8. Light standards and heads are to be anodized aluminium with connection access at the base.
  - 1.1.8.1. Do not specify "decorative" heads or globes.