

## 19.4 Lighting in large facilities

### 19.4.1 Multi-use sports halls

As its name implies, a multi-use sports hall is an indoor facility where many different sports are played, sometimes simultaneously and where there is only limited provision for spectators. The essential characteristics of the lighting of multi-use sports halls are enough illuminance provided uniformly without glare. Given the multiple uses of the sports hall, this implies some flexibility in the lighting through switching (Figure 19.6). The usual design approach is to first identify the sports that will need to be accommodated and the potential for non-sporting uses. The lighting requirements for each sport need to be established and the relative importance of the sports listed. The lighting approach most commonly used is a ceiling-mounted regular array general lighting system with switching arrangements for different activities, levels of play or simultaneous use. With such a system, the illuminance on the walls and ceiling should be at least 50 percent and 30 percent respectively of the illuminance on the playing area. It is important for the layout of the playing areas and the type and layout of the lighting to be planned together. Where the different sports have been prioritised, the lighting should be designed to meet the requirements of the highest priority sport while ensuring that, as far as possible, all other activities are catered for. Where there is limited information on expected usage or badminton is one of the sports to be catered for, the lighting should be designed to suit the layout of the badminton courts. Badminton has the most exacting visual requirements of the sports played in multi-use sports halls and a lighting scheme that satisfies the requirements for badminton and is matched to the court layouts will often cater adequately for a wide range of other sports.



**Figure 19.6**  
Lighting of a  
multi-sport hall

### 19.4.2 Small sports stadia

A small sports stadium is an outdoor sports ground consisting of a central field area surrounded by an athletics track and sometimes a cycle track. The central area may be used for field athletics and other sports such as football, rugby and hockey. The spectator capacity is typically less than 5,000, usually in a grandstand located on one side. The sports taking place in small sports stadia are usually at the level of lighting classes II and III. Floodlights mounted on masts either at the four corners of the stadium or located around the perimeter of the track, except in front of the grandstand, are the most common approaches. Floodlights can also be mounted on the grandstand provided care is taken to avoid casting shadows onto the track and central area. Care should also be taken to avoid glare to participants in field events involving throwing and jumping.