two levels of book shelves stacked above them, are unlikely to exceed the 150 psf average floor loading unless all drawers and shelves are filled to capacity with maximum density paper. Such a condition is essentially an upper bound for which the normal load factors and safety factors applied to the 150 psf criterion should still provide a safe design.

If a library shelving installation does not fall within the parameter limits that are specified in footnote *c* of Table 4-1, then the design should account for the actual conditions. For example, the floor loading for storage of medical X-ray film may easily exceed 200 psf (9.58 kN/m^2), mainly because of the increased depth of the shelves. Mobile library shelving that rolls on rails should also be designed to meet the actual requirements of the specific installation, which may easily exceed 300 psf (14.4 kN/m^2). The rail support locations and deflection limits should be considered in the design, and the engineer should work closely with the system manufacturer to provide a serviceable structure.

The lateral loads of Table 4-1, footnote *k*, applies to "stadiums and arenas" and to "reviewing stands, grandstands, and bleachers." However, it does not apply to "gymnasiums—main floors and balconies." Consideration should be given to treating gymnasium balconies that have stepped floors for seating as arenas, and requiring the appropriate swaying forces.

For the 2010 version of the standard, the provision in the live load table for "Marquees" with its distributed load requirement of 75 psf has been removed, along with "Roofs used for promenade purposes" and its 60 psf loading. Both "marquee" and "promenade" are considered archaic terms that are not used elsewhere in the standard or in building codes, with the exception of the listings in the live load tables. "Promenade purposes" is essentially an assembly use and is more clearly identified as such.

"Marquee" has not been defined in ASCE 7 but has been defined in building codes as a roofed structure that projects into a public right-of-way. However, the relationship between a structure and a right-of-way does not control loads that are applied to a structure. The marquee should therefore be designed with all of the loads appropriate for a roofed structure. If the arrangement of the structure is such that it invites additional occupant loading (e.g., there is window access that might invite loading for spectators of a parade), balcony loading should be considered for the design.

Balconies and decks are recognized as often having distinctly different loading patterns than most interior rooms. They are often subjected to concentrated line loads from people congregating along the edge of the structure (e.g., for viewing vantage points). This loading condition is acknowledged in Table 4-1 as an increase of the live load for the area served, up to the point of satisfying the loading requirement for most assembly occupancies. As always, the designer should be aware of potential unusual loading patterns in their structure that are not covered by these minimum standards.

C4.3.2 Provision for Partitions

The 2005 version of the standard provides the minimum partition load for the first time, although the requirement for the load has been included for many years. Historically a value of 20 psf has been required by building codes. This load, however, has sometimes been treated as a dead load.

If we assume that a normal partition would be a stud wall with ½-in. gypsum board on each side (8 psf per Table C3-1), 10 ft high, we end up with a wall load on the floor of 80 lb/ft. If the partitions are spaced throughout the floor area creating rooms on a grid 10 ft on center, which would be an extremely dense spacing over a whole bay, the average distributed load would be 16 psf. A design value of 15 psf is judged to be reasonable in that the partitions are not likely to be spaced this closely over large areas. Designers should consider a larger design load for partitions if a high density of partitions is anticipated.

C4.3.3 Partial Loading

It is intended that the full intensity of the appropriately reduced live load over portions of the structure or member be considered, as well as a live load of the same intensity over the full length of the structure or member.

Partial-length loads on a simple beam or truss will produce higher shear on a portion of the span than a full-length load. "Checkerboard" loadings on multistoried, multipanel bents will produce higher positive moments than full loads, while loads on either side of a support will produce greater negative moments. Loads on the half span of arches and domes or on the two central quarters can be critical.

For roofs, all probable load patterns should be considered uniform for roof live loads that are reduced to less than 20 lb/ft^2 (0.96 kN/m^2) using Section 4.8. Where the full value of the roof live load (L_r) is used without reduction, it is considered that there is a low probability that the live load created by maintenance workers, equipment, and material could occur in a patterned arrangement. Where a uniform roof live load is caused by an occupancy, partial or