$h_c/h_b = 8.6/1.4 = 6.1$
(in SI: $h_c/h_b = 2.62/0.43 = 6.1$)

Because $h_c/h_b \geq 0.2$ drift loads must be considered (see Section 7.7.1).

h_d (leeward step) = 3.8 ft (1.16 m)
(Fig. 7-9 with p_g = 40 lb/ft^2 (1.92 kN/m^2)
and l_u = 100 ft [30.5 m])

h_d (windward step) = 3/4 × 4.8 ft (1.5 m)
= 3.6 ft (1.1 m) (4.8 ft [1.5 m]
from Fig. 7-9 with p_g = 40 lb/ft^2 [1.92 kN/m^2]
and l_u = length of lower roof = 170 ft [52 m])

Leeward drift governs, use h_d = 3.8 ft (1.16 m)
Because $h_d < h_c$,

h_d = 3.8 ft (1.16 m)
$w = 4h_d$ = 15.2 ft (4.64 m), say 15 ft (4.6 m)
$p_d = h_d\gamma = 3.8(19) = 72$ lb/ft^2
(in SI: $p_d = 1.16(3.02) = 3.50$ kN/m^2)

Rain on Snow Surcharge: A rain-on-snow surcharge load need not be considered because p_g is greater than 20 lb/ft^2 (0.96 kN/m^2). See Fig. C7-7 for snow loads on both roofs.

REFERENCES

Air Structures Institute. (1977). "Design and standards manual." Air Structures Institute, St. Paul, Minn., ASI-77 (available from the Industrial Fabrics Assn. International, , 1977).

American Society of Civil Engineers. (1994). *Air supported structures*, American Society of Civil Engineers, New York.

Brown, J. (1970). "An approach to snow load evaluation." In *Proceedings of the 38th Western Snow Conference*.

Colbeck, S. C. (1977a). "Roof loads resulting from rain-on-snow: Results of a physical model." *Can. J. Civil Engrg*., 4, 482–490.

Colbeck, S. C. (1977b). "Snow loads resulting from rain-on-snow." U.S. Dept. of the Army, Cold Regions Research and Engineering Laboratory, Hanover, N.H., CRREL Report 77-12.

Corotis, R. B., Dowding, C. H., and Rossow, E. C. (1979). "Snow and ice accumulation at solar collector installations in the Chicago metropolitan area." U.S. Dept. of Commerce, National Bureau of Standards, Washington, D.C., NBS-GCR-79 181.

de Marne, H. (1988). "Field experience in control and prevention of leaking from ice dams in New England." In *Proceedings of the First International Conference on Snow Engineering*. Santa Barbara, Calif., 473–482.

Ellingwood, B., and Redfield, R. (1983). "Ground snow loads for structural design." *J. Struct. Engrg.* (*ASCE*), 109(4), 950–964.

Elliott, M. (1975). "Snow load criteria for western United States, case histories and state-of-the-art." In *Proceedings of the First Western States Conference of Structural Engineer Associations*. Sun River, Ore.

Finney, E. (1939). "Snow drift control by highway design." *Bulletin 86*, Michigan State College Engineering Station, Lansing, Mich.

Grange, H. L., and Hendricks, L. T. (1976). *Roof-snow behavior and ice-dam prevention in residential housing*, University of Minnesota, Agricultural Extension Service, St. Paul, Minn., Extension Bulletin 399.

Irwin, P., William, C., Gamle, S., and Retzriaff, R. (1992). "Snow prediction in Toronto and the Andes Mountains; FAE simulation capabilities." In *Proceedings of the 2nd International Conference on Snow Engineering*, Santa Barbara, Calif.

Isyumov, N., and Mikitiuk, M. (1992). "Wind tunnel modeling of snow accumulation on large roofs." In *Proceedings of the 2nd International Conference on Snow Engineering,* Santa Barbara, Calif.

Kennedy, D., Isyumov, M., and Mikitiuk, M. (1992). "The effectiveness of code provisions for snow accumulations on stepped roofs." In *Proceedings of the 2nd International Conference on Snow Engineering,* Santa Barbara, Calif.

Klinge, A. F. (1978). "Ice dams." *Popular Science*, 119–120.

Lorenzen, R. T. (1970). "Observations of snow and wind loads precipitant to building failures in New York State, 1969–1970." American Society of Agricultural Engineers North Atlantic Region meeting, Paper NA 70-305, Newark, Del. [available from American Society of Agricultural Engineers, St. Joseph, MO].

Lutes, D. A., and Schriever, W. R. (1971). "Snow accumulation in Canada: Case histories: II. Ottawa, Ontario, Canada." National Research Council of Canada, DBR Technical Paper 339, NRCC 11915.

Mackinlay, I. (1988). "Architectural design in regions of snow and ice." In *Proceedings of the First International Conference on Snow Engineering*. Santa Barbara, Calif., 441–455.

MacKinlay, I., and Willis, W. E. (1965). *Snow country design*, National Endowment for the Arts, Washington, D.C.