ERRATA NOTES
for *Principles of HVAC* (Howell et al. 2001) and *Solutions Manual*

p. 2.30, Equation (2-50). Add the subscript "*in*" after the first set of parentheses, and the subscript "*out*" after the second set.

p. 3.3, 2nd column. The first line of the first equation should be "$W_1 = 0.622 p_w / (p_1 - p_{w_1})$."

p. 4.17, Table 4-8. The entry under Missouri for "Kansas" should be for "Kansas City."

pp. 5.28-5.29, Examples 5-3 and 5-4. Please correct the table references for these components:

In Example 5-3,

Outside air	0.17	(Table 5-12)
Brick, 4-in. face	0.44	(Table 5-15)
Inside air	0.68	(Table 5-12)

In Example 5-4,

Inside air	0.61	(Table 5-12)
Outside air	0.17	(Table 5-12)

p. 5.42, Table 5-16. The units for the table should be W/(m^2·K).

p. 7.9, 2nd column. In the first and third equations, "*u*" should be "*U*."

p. 7.32, Table 7-29 *(Concluded)*. Please use the values in the corrected table on page 2.

p. 7.33, Table 7-30. The U-factor for Roof 7 should be 0.069.

p. 7.35, Table 7-32. Please correct the following table references:

External Cooling Load, roofs, walls, and conductance through glass,
CLTD = cooling load temperature difference, roof, wall, or glass, Tables 7-33, 7-35, and 7-38
Internal Cooling Load, people,
CLF = cooling load factor, by hour of occupancy, Table 7-41
Internal Cooling Load, lights,
CLF = cooling load factor, by hour of occupancy, Table 7-42
Internal Cooling Load, power,
CLF = cooling load factor, by hour of occupancy, Table 7-41
Internal Cooling Load, appliances,
q_{input} = rated energy input from appliances—Tables 7-17 through 7-27
CLF = cooling load factor, by scheduled hours and hooded or not; Tables 7-41 and 7-43

p. 7.82, Problem 7.37. "Tights" should be "lights."

p. 8.11, Table 8-2. The heating degree-day value for Charleston City, South Carolina, at 50°F base should be 412.

p. 8.13, Example 8-2. Please replace the solution equations with the following:

Table 8-2: Cooling degree-days = 2098

(a) Using cooling degree method,

$$\text{Cooling} = [36{,}500/(98 - 78)] \times 2098 \times 24$$
$$= 91{,}900{,}000 \text{ Btu}$$
$$E_C = (91{,}900{,}000)/(1000 \times 11.5) = 7{,}900 \text{ kWh}$$

(b) Cost = 7,900 kWh × \$0.069/kWh = \$551

p. 11.17, Problem 11.10. The air system is operating at 4 in. of water total pressure, and the water system has a pump head of 40 ft.

p. 12.13, 2nd column. The cold deck temperature should be 58°F.

p. 12.14. The 5th equation for Zone 1, Summer, should have a *Q*, not a *V*. In the 6th equation for System No. 2, "15960" should be "15,860."

p. 12.15. In the last equation for System No. 2, "0.00132" should be "0.0032." In the last equation for System No. 3., "800" should be "1800."

***Solutions Manual,* Example 3.26.** The units in the second line of (a) should be lb/h.

***Solutions Manual*, Example 7.11.** The solution for the pendant lamps should be

q = (wattage)(use factor)(3.413) = (50)(4)(40)(1)(3.413) = 27,304 Btu/h

Table 7-29 Wall Conduction Time Series (CTS), Layers, U-Factors, Mass and Thermal Capacity (*Concluded*)

(Table 20, Chapter 29, 2001 *ASHRAE Handbook—Fundamentals*)

	CONCRETE BLOCK WALL						PRECAST AND CAST-IN-PLACE CONCRETE WALLS								
Wall Number =	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
U-factor, Btu/h·ft²·°F	0.067	0.059	0.073	0.186	0.147	0.121	0.118	0.074	0.076	0.115	0.068	0.082	0.076	0.047	0.550
Total *R*	14.8	16.9	13.7	5.4	6.8	8.2	8.4	13.6	13.1	8.7	14.7	12.2	13.1	21.4	1.8
Mass, lb/ft²	22.3	22.3	46.0	19.3	21.9	34.6	29.5	29.6	53.8	59.8	56.3	100.0	96.3	143.2	140.0
Thermal Capacity, Btu/ft²·°F	4.8	4.8	10.0	4.1	4.7	7.4	6.1	6.1	10.8	12.1	11.4	21.6	20.8	30.9	30.1
Hour	**Conduction Time Factors, %**														
0	0	1	0	1	0	1	1	0	1	2	1	3	1	2	1
1	4	1	2	11	3	1	10	8	1	2	2	3	2	2	2
2	13	5	8	21	12	2	20	18	3	3	3	4	5	3	4
3	16	9	12	20	16	5	18	18	6	5	6	5	8	3	7
4	14	11	12	15	15	7	14	14	8	6	7	6	9	5	8
5	11	10	11	10	12	9	10	11	9	6	8	6	9	5	8
6	9	9	9	7	10	9	7	8	9	6	8	6	8	6	8
7	7	8	8	5	8	8	5	6	9	6	7	5	7	6	8
8	6	7	7	3	6	8	4	4	8	6	7	5	6	6	7
9	4	6	6	2	4	7	3	3	7	6	6	5	6	6	6
10	3	5	5	2	3	6	2	2	7	5	6	5	5	6	6
11	3	4	4	1	3	6	2	2	6	5	5	5	5	5	5
12	2	4	3	1	2	5	1	2	5	5	5	4	4	5	4
13	2	3	2	1	2	4	1	1	4	5	4	4	4	5	4
14	2	3	2	0	1	4	1	1	4	4	4	4	3	4	4
15	1	3	2	0	1	3	1	1	3	4	3	4	3	4	3
16	1	2	1	0	1	3	0	1	2	4	3	4	3	4	3
17	1	2	1	0	1	2	0	0	2	3	3	4	2	4	3
18	1	2	1	0	0	2	0	0	1	3	2	4	2	4	2
19	0	1	1	0	0	2	0	0	1	3	2	3	2	3	2
20	0	1	1	0	0	2	0	0	1	3	2	3	2	3	2
21	0	1	1	0	0	2	0	0	1	3	2	3	2	3	1
22	0	1	1	0	0	1	0	0	1	3	2	3	1	3	1
23	0	1	0	0	0	1	0	0	1	2	2	2	1	3	1
Total Percentage	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Layer ID from outside to inside (see Table 22)	F01	F01	F01	F01	F01	F01	F01	F01	F01	F01	F01	F01	F01	F01	F01
	M03	M08	F07	M08	M08	M09	M11	M11	M11	F06	M13	F06	M15	M16	M16
	I04	I04	M05	F02	F04	F04	I01	I04	I02	I01	I04	I02	I04	I05	F02
	G01	G01	I04	—	G01	G01	F04	G01	M11	M13	G01	M15	G01	G01	—
	F02	F02	G01	—	F02	F02	G01	F02	F02	G01	F02	G01	F02	F02	—
	—	—	F02	—	—	—	F02	—	—	F02	—	F02	—	—	—

Wall Number Descriptions

21. 8 in. LW CMU, R-11 batt insulation, gyp board
22. 8 in. LW CMU with fill insulation, R-11 batt insulation, gyp board
23. 1 in. stucco, 8 in. HW CMU, R-11 batt insulation, gyp board
24. 8 in. LW CMU with fill insulation
25. 8 in. LW CMU with fill insulation, gyp board
26. 12 in. LW CMU with fill insulation, gyp board
27. 4 in. LW concrete, R-5 board insulation, gyp board
28. 4 in. LW concrete, R-11 batt insulation, gyp board
29. 4 in. LW concrete, R-10 board insulation, 4 in. LW concrete
30. EIFS finish, R-5 insulation board, 8 in. LW concrete, gyp board
31. 8 in. LW concrete, R-11 batt insulation, gyp board
32. EIFS finish, R-10 insulation board, 8 in. HW concrete, gyp board
33. 8 in. HW concrete, R-11 batt insulation, gyp board
34. 12 in. HW concrete, R-19 batt insulation, gyp board
35. 12 in. HW concrete