

Errata for
ASHRAE GreenGuide:
The Design, Construction, and Operation of Sustainable Buildings
February 15, 2007

Page 14, fourth paragraph:

- The SI conversion for “123,000 ft²” in line 5 should not read “11,400 m²” but “**11,427 m²**.”
- The SI conversion for “\$1.00 per square foot” in line 9 should be listed as “**\$10.80 per square meter.**”

Page 28, last paragraph:

The SI conversions for the temperatures in lines 6, 7, and 8 should be listed as indicated:

70°F	21°C
100°F	38°C
200°F	93°C

Page 33:

- The first equation is listed in I-P units only. **It should also be listed in SI units:**

$$Q_s = (L/s)(4.187)\Delta T$$

- The second equation is listed in I-P units only. **It should also be listed in SI units:**

$$Q_s = (L/s)(1.21)\Delta T$$

- The fourth and fifth equations are listed in I-P units only. **They should also be listed in SI units:**

$$Q_L = (L/s)(2.97)\Delta W, \text{ where the units for } \Delta W \text{ are g/kg.}$$

- **The footnote should be deleted, as the formulas in SI units have been added.**

Page 36:

- The fourth equation is listed in I-P units only. **It should also be listed in SI units:**

$$\text{mkW} = \frac{(L/s)(\Delta P \text{ kPa})(\text{sg})}{(1000)\varepsilon_{Fan}\varepsilon_{Motor-Drive}} = \frac{(13215)(0.996 \text{ kPa})(1)}{(1000)(0.75)(0.95)} = 18.5 \text{ kW}$$

- In the numerator of the last fraction of the fifth equation, “2100” should read “**21000.**”
- The fifth, sixth, and seventh equations are listed in I-P units only. **They should also be listed in SI units:**

$$\frac{\text{mkW}_2}{\text{mkW}_1} = \left(\frac{\text{Flow}_2}{\text{Flow}_1}\right)^3 = \frac{\text{mkW}_2}{18.5 \text{ kW}} = \left(\frac{9910}{13215}\right)^3$$

$$\text{mkW}_2 = 7.8 \text{ kW}$$

$$\Delta \text{kW} = 18.5 - 7.8 = 10.7 \text{ kW}$$

Page 71, Figure 4.5:

The SI conversions for “70°F” and “82°F” should be listed as “**21°F**” and “**28°F**,” respectively.

Page 96, Table 5-1:

The SI units in row “System design” and column “Reality Checks” are listed as “L/min/m²” and “L/s/ton” but should be listed as “**L/s/m²**” and “**L/s/kWR**,” respectively.

Page 98, seventh item:

- The SI conversions for “60,000 square feet per acre” and “1/2 mile area” in the seventh item should be listed as “**13,779 square meter per hectare**” and “**0.8 kilometers**,” respectively.
- The SI conversions for “1/2 mile” and “1/4 mile” in the ninth item should be listed as “**0.80 km**” and “**0.40 km**,” respectively.

Page 104, Figure 6-3:

- The top half of the figure should list the SI conversion for “2000,000 Gallon” as “**757,000 Litre**.”
- The bottom half of the figure currently shows I-P units only. **It should also include SI units:**

Labels:

6.3 in./yr	160 mm/yr	0.23	5.84
2200,000 gal	832,700 L	0.10	2.54
~400,000 gal/yr	~1514 kL/yr	0.02	0.51
1.28	32.51	0.38	9.65
1.30	33.02	0.76	19.30
1.06	26.92		

Y-Axes:

350,000 gal	1,324,750 L	4.00 in.	101.6 mm
300,000 gal	1,135,500 L	3.50 in.	88.9 mm
250,000 gal	946,250 L	3.00 in.	76.2 mm
200,000 gal	757,000 L	2.50 in.	63.5 mm
150,000 gal	567,750 L	2.00 in.	50.8 mm
100,000 gal	378,500 L	1.50 in.	38.1 mm
50,000 gal	189,250 L	1.00 in.	25.4 mm
5.00 in.	127 mm	0.50 in.	12.7 mm
4.50 in.	114.3 mm		

Page 106, Figure 6-5:

The SI conversions for “3 million gal/yr” and “5.4 million gal/yr” should be listed as “**11,355 kL/yr**” and “**20,439 kL/yr**,” respectively.

Page 130, Figure 7-2:

The I-P R-value of “R-100” should be followed by the SI R-value of “**R-17.6**.”

Page 133:

The SI conversion for “15–18 ft” in the third bullet under “HVAC Zonation” should be listed as “**4.6–5.5 m.**”

Page 170, Table 9-1:

- The SI conversion for “216,000 gal” in row “Evaporation” and column “Total per Month” is listed as “818 m” but should be listed as “**817,560 L.**”
- The SI conversion for “72,000 gal” in row “Bleed at four cycles” and column “Total per Month” is listed as “273 m” but should be listed as “**272,520 L.**”
- The SI conversions for “0.060 gpm” and “0.012 gpm” in row “Drift” and column “Release Rate” should be listed as “**0.23 L/min**” and “**0.05 L/min,**” respectively.

Page 180, Potential GreenTip 1:

- The SI conversion for “10,000 cfm” in line 3 is listed as “4.72 m/s” but should be listed as “**4720 L/s.**”
- The SI conversion for “24 in.” in line 4 is listed as “61 cm” but should be listed as “**610 mm.**”
- The SI conversion for “22 in.” in line 5 is listed as “55.9 cm” but should be listed as “**559 mm.**”
- The SI conversions for “1610 rpm” and “1953 rpm” in lines 5 and 6 should be listed as “**26.8 rps**” and “**32.6 rps,**” respectively.

Page 191, paragraph 3:

In line 5, “Bacteria are encapsulated into this mineral power” should read “Bacteria are encapsulated into this mineral **powder.**”

Page 217, Figure 11-5:

The SI conversions for the temperatures in the figure should be listed as indicated:

120°F	49°C	215°F	102°C
160°F	71°C	232°F	111°C
177°F	80°C	350°F	177°C
190°F	88°C	850°F	454°C
207°F	97°C		

Page 222, second paragraph:

The SI conversion for 50°F in line 1 should be listed as “**10°C.**”

Page 248:

In the first item under “Con,” the airside pressure drop is listed as “typically 0.2 to 0.4 in. w.c. [50 to 100 kPa]” but should be listed as “typically 0.2 to 0.4 in. w.c. [50 to 100 **Pa**].”

Page 325, Figure 15-2:

The SI conversions for the temperatures in the figure should be listed as indicated:

59°F	15°C	74°F	23°C
71°F	22°C	79°F	26°C
73°F	23°C		

Page 327, Figure 15-4:

The SI conversions for the following values in the figure should be listed as indicated:

50.2°F	10°C	125 cfm	60 L/s
56.6°F	13.6°C	150 cfm	72 L/s
70.0°F	21.0°C	1000 cfm	473 L/s
70.2°F	21.1°C	5067 cfm	2392 L/s
67 cfm	33 L/s	3.0 in. w.g.	0.747 kPa
100 cfm	48 L/s		

List of Contributors (front of book):

Under Paul McGregor, McGregor & Associates should be listed not in Lake Cove but in **Lane Cove**.

Page 360, Afterword:

Acknowledgment should be made to the contributors to the first edition of the *ASHRAE GreenGuide*. **After the Afterword, add the following:**

ACKNOWLEDGMENTS

The following individuals contributed written materials on various topics for the first edition of the *ASHRAE GreenGuide*. All or portions of these contributions were incorporated, with editing.

James Benya
Benya Lighting Design, West Linn, OR

Stephen Carpenter
*Enermodal Engineering, Ltd.,
Kitchener, ON CAN*

Michael Deru
*National Renewable Energy Laboratory,
Golden, CO*

Kevin Dickens
Jacobs Facilities, Inc., St. Louis, MO

H. Jay Enck
*Commissioning + Green Building Services,
Atlanta, GA*

David L. Grumman
Grumman/Butkus Associates, Evanston, IL

Michael Haggans and Garrick Maine
Flad & Associates, Madison, WI

Jordan L. Heiman
St. Louis, MO

Mark Hydemann
Taylor Engineering, Alameda, CA

James Keller
Gausman & Moore, St. Paul, MN

John Kokko
*Enermodal Engineering, Ltd.,
Kitchener, ON CAN*

Nils L. Larsson
*CETC, National Resources Canada,
Ottawa, ON CAN*

Thomas Lawrence
Purdue University, West Lafayette, IN

Malcolm Lewis
*Constructive Technologies Group, Inc.,
Irvine, CA*

Blair McCarry
*Keen Engineering Co., Ltd.,
North Vancouver, BC CAN*

Ron Perkins
Supersymmetry USA, Navasota, TX

Douglas T. Reindl
University of Wisconsin-Madison, Madison, WI

Wayne Robertson
Energy Ace, Inc., Decatur, GA

Marc Rosenbaum
Energysmiths, Meriden, NH

Mick Schwedler
Trane, La Crosse, WI

Eugene Stamper
*New Jersey Institute of Technology (retired),
Newark, NJ*

Paul Torcellini
*National Renewable Energy Laboratory,
Golden, CO*

Stephen Turner
Brown University, Providence, RI

Charles Wilkin
*Hanson Professional Services, Inc.,
Springfield, IL*

The GreenGuide Subcommittee of ASHRAE Technical Committee (TC) 1.10, Energy Resources, was responsible for creating this guide. (Just prior to its completion, TC 1.10 merged with Task Group (TG) BIE, Buildings' Impact on the Environment, to form TC 2.8, Building Environmental Impact and Sustainability.) Members of that subcommittee were David L. Grumman, Fellow ASHRAE, chair; Jordan L. Heiman, Fellow ASHRAE; and Sheila Hayter, chair of TC 1.10. Sheila Hayter created the subcommittee and initiated the initial discussions and meetings. Jordan Heiman was responsible for identifying authors, carrying on most communications with them, and creating the Bibliography. David Grumman was responsible for creating the topic format, assembling the various chapters, and editing the document.

Prior to approval by TC 2.8, the document was reviewed by a three-person review panel consisting of Theodore Pannoke, P.E.; William Coad, P.E., Fellow ASHRAE, and Presidential Member; and Thomas Cappellin, P.E.—all members of TC 2.8.

The idea for this publication was initiated by 1999-2000 ASHRAE President Jim Wolf and carried forward by then President Elect (and subsequently President) William J. Coad.

All work performed—by the authors, editors, developing subcommittee, review panel, and TC participants—was voluntary

Errata to
ASHRAE GreenGuide:
The Design, Construction, and Operation of Sustainable Buildings
December 31, 2008

- Page 183:** In the next-to-last paragraph, the last sentence is repeated. Delete the first instance of the sentence: “For example, the city of Chicago has requirements for green roof or cool roof technologies that vary on the building type, if public assistance is provided for the development.”
- Page 238:** Line six of the first paragraph should read “use medium-pressure steam (60 psig...” instead of “use low-pressure steam (60 psig...”