

STANDARD

**ANSI/ASHRAE/IES Addendum c to
ANSI/ASHRAE/IES Standard 100-2018**

Energy Efficiency in Existing Buildings

Approved by ASHRAE and the American National Standards Institute on December 30, 2022, and by the Illuminating Engineering Society on December 2, 2022.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30092. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

© 2022 ASHRAE

ISSN 1041-2336



ASHRAE Standing Standard Project Committee 100

Cognizant TC: 7.6, Building Energy Performance

SPLS Liaison: Justin Prosser ·

IES Staff Liaison: Mark Lien · ASHRAE Staff Liaison: Ryan Shanley

Wayne H. Stoppelmoor, Jr.*, Chair	Kyle W. Hasenkox*	Richard J. Liesen	Daniel G. Salinas*
Glenn Friedman, Vice-Chair/Secretary	Kinga Porst Hydras*	Andrew E. Pape-Salmon	Terry Sharp*
Jinen Adenwala	Harold Jepsen*	Jerry W. Phelan*	John M. Topmiller
Kara L. Brooks*	Jamie Kono*	Natasha A. Reynolds*	Cedric S. Trueman*
Robert E. Chase	Dennis R. Landsberg*	Daniel J. Rice	Ted A. Williams
Joseph T. Firrancello*	Toby K.W. Lau*	Steven Rosenstock*	Ayman Youssef*
Curtis Fong*	Neil P. Leslie*	Aniruddh Roy	Alexander M. Zhivov*

* Denotes members of voting status when the document was approved for publication

ASHRAE STANDARDS COMMITTEE 2022–2023

Susanna S. Hanson, Chair	Phillip A. Johnson	Julie Majurin	Christopher J. Seeton
Jonathan Humble, Vice-Chair	Srinivas Katipamula	Lawrence C. Markel	Christian R. Taber
William P. Bahnfleth	Gerald J. Kettler	Margret M. Mathison	Paolo M. Tronville
Thomas E. Cappellin	Essam E. Khalil	Kathleen Owen	William F. Walter
Douglas D. Fick	Jay A. Kohler	Gwelen Paliaqa	Steven C. Sill, BOD ExO
Patricia Graef	Cesar L. Lim	Karl L. Peterman	Sarah E. Maston, CO
Jaap Hogeling	Paul A. Lindahl, Jr.	Justin M. Prosser	
Jennifer A. Isenbeck	James D. Lutz	David Robin	

Connor Barbaree, Senior Manager of Standards

SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus Standard developed under the auspices of ASHRAE. Consensus is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this Standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this Standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Senior Manager of Standards of ASHRAE should be contacted for

- a. interpretation of the contents of this Standard,
- b. participation in the next review of the Standard,
- c. offering constructive criticism for improving the Standard, or
- d. permission to reprint portions of the Standard.

DISCLAIMER

ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS

ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Addendum c to Standard 100-2018 makes the following changes to the standard:

- *Moves Standard 100 from a basis of CBECS 2003/RECS 2005 to an updated basis on CBECS 2012/RECS 2015. As a result, EUI target values and many values in supporting tables throughout the standard have changed.*
- *Two new commercial building types were added to the CBECS survey in 2012 (Courthouse/Probation Office and Bar/Pub/Lounge). As a result, metrics for these two additional building types are included in the tables for the 2022 update.*
- *Targets for the building type of “hospital/inpatient health” were changed to be based on the subset of CBECS “hospital/inpatient health” buildings (CBECS variable PBAPLUS=35) located at a “hospital or other health care complex” (CBECS variable FacAct=8). This was done to ensure that targets used for hospitals would be based on a more homogeneous group of buildings representing hospitals (about 3/4 of the CBECS hospital/inpatient health observations were located on a hospital or other health care complex while the other 1/4 of these observations were mostly stand-alone buildings and believed to contain a large number of rehabilitation and psychiatric care buildings which could potentially affect the hospital/inpatient health target.*
- *Analysis showed the hospitals subset represented a population of 5589 buildings (which is similar to the 5723 reported by statista.com for 2012), and the resulting targets were more in line with American Society for Health Care Engineering findings. Further analysis showed that using the resulting hospital/inpatient health targets for other (nonhospital) inpatient health care facilities would be reliable (for source-energy-use based targets) and perhaps a bit generous (a little easier to meet the target) for other inpatient health care facilities*
- *This addendum uses a primary energy conversion factor of 2.74 for electricity (see Table 5-2b) reflecting continued growth in the percentage of renewable energy on the U.S. electricity grid.*
- *This differs from the 3.15 value used in Standard 100-2018. This causes primary-energy-based (source-energy-based) EUIs within the standard to decrease. When combined with gains in building efficiencies that occurred between 2003 and 2012, these should cause most primary-energy-based EUIs in this addendum to be significantly less than those in the 2018 standard. Users of the standard should note EUI changes here are not the sole effect of building efficiency gains.*
- *Adds in three new climate zones (zones 0A, 0B, and 1B) that represent hot and humid climate zones nearer the equator. Metrics for these climate zones are included in many tables for the update.*
- *Changes a calculation in the analysis procedure for the RECS database was undertaken in the update.*
- *To calculate the residential EUIs in Standard 100-2018, the difference between RECS 2005 variables for total floor area (sqft8) and garage floor area (totgargsqft) was used as the denominator for calculating EUIs. This was an attempt to remove unconditioned or semi-conditioned space from the EUI computation (the standard requires a EUI calculation to be made based on conditioned space). RECS 2015 does not report the garage floor area. As a result, this addendum used the difference between the RECS 2015 total floor area variable (totsgft_en) and assumed garage floor areas for 1-car, 2-car, and 3+-car garages as an approximation for the denominator in the EUI calculation. This provided an approximation for conditioned space to improve the consistency between EUI calculations for the 2018 standard.*

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum c to Standard 100-2018

Modify Section 5 as shown. The remainder of Section 5 is unchanged.

Table 5-2b Primary Energy Conversion Factors

Energy Form	Conversion Factor
Electricity	<u>2.743.15</u>
Natural gas	1.09
Fuel oil	1.19
LPG or propane	1.15
Other	1.10
Purchased district energy	
Hot water	1.35
Steam	1.45
Chilled water	1.04

Informative Note: Energy accounting and conversion factors shown in Table 5-2b are based on *site energy* using conversion factors in Table 5.2a converted to primary or source energy. Section 4.4.2 of the standard allows alternative *energy targets* established by the adopting AHJ. The AHJ may choose to use *site energy* to *source energy* conversion factors shown in Table 5-2b or may use other conversion factors following the process and procedures incorporated within ANSI/ASHRAE Standard 105, *Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions*. The AHJ may also choose to use locally appropriate factors for source (primary) energy.

Modify Section 7 as shown. The remainder of Section 7 is unchanged.

7. ENERGY-USE ANALYSIS AND TARGET REQUIREMENTS

7.1 Building Type and Energy Targets

7.1.1 Building Type. Buildings are divided into 5553 types with activities as shown in Table 7-1. Buildings with one or more activities listed in Table 7-1 have *energy targets* as shown in Table 7-2a or 7-2b.

7.1.2 Energy Targets. Site-based *energy targets* are shown in Tables 7-2a in both I-P and SI units, while source-based *energy targets* are shown in Tables 7-2b in both I-P and SI units. *Site energy* electricity use and fossil fuel use targets listed in Tables 7-2c and 7-2d are for use in target calculations by *authorities having jurisdiction*.

All *energy targets* were derived from Commercial Building Energy Consumption Survey (CBECS) 20122003 and Residential Energy Consumption Survey (RECS) 20152005 data by Oak Ridge National Laboratory (ORNL) and the U.S. Department of Energy (DOE) and represent the 25th bottom (low energy) percentile of energy use by each *building* category.

The median numbers for each *building* category from CBECS and RECS data representing all *buildings* in the *building* type/activity across all climatic conditions were extrapolated to 2047 USDOE climate zones using multipliers generated through simulation of a representative *building* for each group of *building* categories. Informative Annex J gives a detailed explanation of target table derivation.

Table 7-1 Commercial and Residential building Types/Activities

No.	Commercial Building Type	No.	Commercial Building Type
[...]		[...]	
[...]		<u>49</u>	<u>Bar/pub/lounge</u>
		<u>50</u>	<u>Courthouse/probation office</u>
No.			Residential Building Type
<u>5149</u>			Mobile home
<u>5250</u>			Single-family detached
<u>5354</u>			Single-family attached
<u>5452</u>			Apartment building (2 to 4 units)
<u>5453</u>			Apartment building (5+ units)

Replace Tables 7-2a through 7-2d with the following as shown.

Table 7-2a Building Activity Site Energy Targets (EUI₁₁) (I-P)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	44	44	38	41	38	36	37	29	35	31	39	35	34	40	37	34	45	41	50	60
2	<u>Bank/other financial</u>	74	75	64	70	64	61	64	50	59	53	67	60	58	68	64	57	78	69	86	103
3	<u>Government office</u>	48	49	42	46	42	40	42	33	39	35	43	39	38	45	42	37	51	45	56	67
4	<u>Medical office (nondiagnostic)</u>	43	44	37	41	37	35	37	29	34	31	39	35	34	40	37	33	45	40	50	60
5	<u>Mixed-use office</u>	38	39	33	36	33	31	33	26	31	27	35	31	30	35	33	30	40	36	44	53
6	<u>Other office</u>	37	37	32	35	32	30	31	25	29	26	33	30	29	34	31	28	38	34	42	51
7	<u>Laboratory</u>	125	124	109	118	109	103	111	90	104	93	119	108	106	125	116	107	142	129	157	189
8	<u>Distribution/shipping center</u>	8	12	8	12	11	13	19	11	16	12	28	22	21	37	31	24	51	41	64	86
9	<u>Nonrefrigerated warehouse</u>	5	7	5	7	7	8	12	7	10	7	17	13	13	22	19	15	31	25	39	52
10	<u>Convenience store</u>	145	145	132	143	143	136	155	136	145	136	171	154	162	184	169	170	203	186	222	259
11	<u>Convenience store with gas</u>	164	163	149	161	161	153	175	154	164	153	192	174	182	207	190	192	228	210	251	292
12	<u>Grocery store/food market</u>	132	131	120	129	129	123	140	123	132	123	155	140	147	167	153	154	184	169	202	235
13	<u>Other food sales</u>	145	144	131	142	142	135	154	135	145	135	170	153	161	183	168	169	201	185	221	257
14	<u>Fire station/police station</u>	45	45	39	43	40	37	40	33	38	34	43	39	39	45	42	39	51	47	57	69
15	<u>Other public order and safety</u>	95	94	82	90	83	78	84	68	79	70	90	82	81	95	88	81	108	98	119	144
16	<u>Medical office (diagnostic)</u>	43	41	41	41	39	40	40	36	40	34	40	39	36	40	40	34	43	43	45	49
17	<u>Clinic/other outpatient health</u>	48	45	46	45	43	44	45	40	44	38	45	44	40	45	45	38	48	48	50	54
18	<u>Refrigerated warehouse</u>	68	67	59	64	59	56	60	48	56	50	64	58	57	68	62	58	77	69	85	102
19	<u>Religious worship</u>	23	22	20	21	20	19	20	16	19	17	21	19	19	23	21	19	26	23	28	34
20	<u>Entertainment/culture</u>	36	35	31	34	31	30	32	26	30	26	34	31	30	36	33	31	41	37	45	54
21	<u>Library</u>	56	56	49	53	49	46	50	40	46	41	53	48	48	56	52	48	64	58	70	85
22	<u>Recreation</u>	41	40	35	38	35	34	36	29	34	30	39	35	35	41	38	35	46	42	51	62
23	<u>Social/meeting</u>	38	37	33	35	33	31	33	27	31	28	36	32	32	38	35	32	42	39	47	57
24	<u>Other public assembly</u>	45	45	39	42	39	37	40	32	37	33	43	39	38	45	42	39	51	46	57	68
25	<u>College/university</u>	79	74	59	71	60	55	61	42	56	45	71	60	62	79	67	64	94	81	108	141

4 **Table 7-2a Building Activity Site Energy Targets (EUI₁₁) (I-P) (Continued)**

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	39	38	32	36	32	31	33	26	30	27	36	32	32	38	35	31	43	39	49	63
27	High school	57	54	43	51	43	40	44	31	40	33	51	43	45	57	49	46	68	58	78	102
28	Preschool/daycare	54	53	45	51	45	43	46	36	42	37	50	45	44	53	48	44	60	54	68	88
29	Other classroom education	33	32	27	31	27	26	28	22	26	23	30	27	27	32	29	26	36	33	41	53
30	Fast food	286	282	264	278	269	269	285	247	274	256	312	289	293	339	314	306	375	346	413	482
31	Restaurant/cafeteria	205	199	184	197	188	186	201	169	191	177	223	206	211	241	223	222	265	246	291	338
32	Other food service	72	70	64	69	66	65	70	59	67	62	78	72	74	85	78	78	93	86	102	119
33	Hospital/inpatient health	181	185	169	177	178	158	174	156	160	162	175	159	164	168	156	154	175	165	181	192
34	Nursing home/assisted living	78	78	60	74	63	63	75	53	68	53	94	78	85	109	92	93	127	111	146	181
35	Dormitory/ fraternity/sorority	41	41	32	39	33	33	39	28	35	28	49	41	44	57	48	49	67	58	77	95
36	Hotel	48	46	43	44	45	41	46	42	43	41	50	46	47	54	51	49	60	56	65	74
37	Motel or inn	51	50	46	47	44	42	42	38	41	39	42	41	39	43	42	39	46	43	49	54
38	Other lodging	61	60	54	56	52	50	50	46	49	47	50	48	47	51	50	47	55	52	58	64
39	Vehicle dealership/ showroom	43	44	37	41	38	36	42	30	38	32	48	42	42	55	49	46	65	58	76	95
40	Retail store	36	36	30	34	31	30	35	25	32	26	40	35	35	46	41	38	54	48	63	79
41	Other retail	50	51	43	48	44	42	49	35	45	37	56	49	49	64	57	54	76	67	88	111
42	Post office/postal center	44	45	34	42	36	36	43	30	39	30	54	44	48	62	53	53	73	63	84	103
43	Repair shop	10	14	9	15	14	2.16	23	14	20	14	33	27	26	45	37	29	61	50	78	104
44	Vehicle service/repair shop	13	18	12	19	18	20	30	18	25	18	42	34	33	57	48	37	78	64	99	133
45	Vehicle storage/ maintenance	9	13	9	14	13	15	22	13	19	14	32	26	25	43	36	28	58	48	74	99
46	Other service	14	19	13	20	19	22	32	19	27	20	46	37	36	62	52	40	85	69	107	144
47	Strip shopping mall	78	79	67	75	66	64	73	52	67	56	84	73	75	97	85	81	114	101	132	167
48	Enclosed mall	47	48	40	45	40	39	44	31	40	34	51	44	45	58	51	48	69	61	80	100
49	Bar/pub/lounge	89	87	80	86	82	81	87	74	83	77	97	90	92	105	97	97	115	107	127	147
50	Courthouse/probation office	80	78	69	73	71	63	71	57	63	60	74	63	65	72	65	61	81	71	88	103

Table 7-2a Building Activity Site Energy Targets (EUI_{ST}) (I-P) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	37	37	29	36	30	30	36	26	32	25	45	37	41	52	44	49	61	53	70	87
52	Single-family detached	32	32	25	30	26	26	31	22	28	22	38	32	35	44	37	36	52	45	60	74
53	Single-family attached	30	30	23	28	24	24	29	20	26	20	36	29	32	41	35	42	48	42	56	69
54	Apartment (in 2 to 4 unit building)	35	35	27	33	28	28	33	24	30	24	42	34	38	48	41	61	56	49	65	80
55	Apartment (in 5+ unit building)	27	28	21	26	22	22	27	19	24	19	33	27	30	38	32	42	45	39	52	64

Table 7-2a Building Activity Site Energy Targets (EUI_{SI}) (SI)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	494	503	427	467	428	404	425	335	395	353	444	403	389	455	424	381	517	462	571	685
2	Bank/other financial	843	857	727	796	729	688	725	571	673	601	757	686	663	777	724	649	881	789	973	1168
3	Government office	550	559	475	520	476	449	473	372	439	392	494	448	433	507	472	423	575	514	635	762
4	Medical office (nondiagnostic)	488	497	421	461	422	399	420	331	390	348	438	398	384	450	419	376	510	457	564	677
5	Mixed-use office	437	444	377	413	378	357	376	296	349	312	392	356	344	403	375	336	457	409	504	606
6	Other office	415	422	358	392	359	339	357	281	331	296	372	338	326	382	356	319	433	388	479	575
7	Laboratory	1424	1409	1233	1340	1237	1173	1263	1020	1177	1052	1349	1224	1206	1424	1314	1216	1611	1462	1785	2150
8	Distribution/shipping center	93	131	89	138	130	150	219	129	187	136	313	253	244	422	352	274	577	469	730	981
9	Nonrefrigerated warehouse	56	79	54	83	78	91	132	78	113	82	188	153	147	254	212	165	347	283	440	590
10	Convenience store	1652	1645	1499	1621	1620	1542	1760	1547	1652	1543	1938	1753	1836	2090	1917	1932	2302	2118	2525	2939
11	Convenience store with gas	1862	1854	1690	1827	1826	1738	1984	1743	1862	1739	2184	1976	2070	2356	2161	2178	2595	2387	2847	3313
12	Grocery store/food market	1497	1491	1359	1469	1469	1398	1595	1402	1498	1398	1757	1589	1664	1894	1738	1751	2087	1919	2289	2664
13	Other food sales	1641	1634	1490	1610	1610	1532	1749	1537	1642	1533	1926	1742	1825	2077	1905	1920	2287	2104	2509	2920
14	Fire station/police station	517	511	447	486	449	425	458	370	427	382	489	444	438	517	477	441	584	530	647	780
15	Other public order and safety	1082	1070	937	1018	939	891	959	775	894	799	1024	929	916	1082	998	924	1223	1110	1355	1633
16	Medical office (diagnostic)	489	462	470	461	440	449	455	411	450	383	457	448	407	456	457	391	489	485	507	553
17	Clinic/other outpatient health	546	516	524	514	491	501	507	458	502	428	510	500	454	509	510	437	546	541	565	617
18	Refrigerated warehouse	768	760	665	723	667	633	681	550	635	568	727	660	651	768	709	656	869	788	963	1160
19	Religious worship	256	254	222	241	223	211	227	184	212	189	243	220	217	256	237	219	290	263	321	387
20	Entertainment/culture	407	403	353	383	354	335	361	292	336	301	386	350	345	407	376	348	461	418	510	615
21	Library	638	631	552	600	554	525	565	457	527	471	604	548	540	638	588	545	721	654	799	963
22	Recreation	464	459	402	437	403	382	411	332	383	343	439	399	393	464	428	396	525	476	581	701
23	Social/meeting	426	422	369	401	370	351	378	305	352	315	404	366	361	426	394	364	482	438	534	644
24	Other public assembly	513	507	444	482	445	422	454	367	423	379	485	440	434	513	473	438	580	526	642	774
25	College/university	898	842	673	802	680	629	698	482	630	514	801	678	700	895	766	725	1062	917	1224	1597

Table 7-2a Building Activity Site Energy Targets (EUI_{SI}) (SI) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	442	432	366	414	364	349	374	294	346	305	406	367	360	429	394	356	491	443	557	720
27	High school	649	609	486	579	491	455	504	348	455	371	579	490	506	647	553	524	767	662	884	1154
28	Preschool/daycare	616	602	510	577	507	487	521	410	482	426	566	512	502	597	549	496	684	618	777	1004
29	Other classroom education	373	364	309	349	307	295	315	248	292	258	342	310	304	362	332	300	414	374	470	608
30	Fast food	3245	3199	2994	3158	3060	3053	3234	2809	3108	2903	3546	3279	3325	3853	3569	3474	4260	3927	4685	5471
31	Restaurant/cafeteria	2327	2265	2087	2242	2131	2111	2278	1920	2171	2010	2528	2334	2396	2738	2531	2526	3008	2793	3302	3840
32	Other food service	816	794	732	786	747	740	799	673	761	705	886	819	840	960	887	886	1055	979	1158	1347
33	Hospital/inpatient health	2058	2097	1916	2013	2019	1791	1975	1774	1816	1843	1987	1805	1865	1906	1774	1755	1992	1878	2051	2186
34	Nursing home/assisted living	884	887	685	843	716	712	856	606	770	603	1072	881	964	1234	1046	1053	1446	1259	1663	2052
35	Dormitory/ fraternity/sorority	463	464	358	441	375	373	448	317	403	315	561	461	504	646	547	551	757	659	870	1074
36	Hotel	542	517	484	505	507	470	525	479	490	466	573	525	533	613	577	557	676	631	737	843
37	Motel or inn	576	567	517	537	499	480	477	435	465	444	477	462	443	488	472	445	525	491	553	610
38	Other lodging	687	676	617	641	596	573	569	519	555	529	570	551	529	582	563	531	627	586	660	728
39	Vehicle dealership/ showroom	493	495	416	468	431	412	480	339	435	360	547	481	479	625	558	522	742	655	859	1083
40	Retail store	408	411	345	388	357	342	398	281	360	298	453	398	397	518	463	433	615	543	712	897
41	Other retail	573	576	484	545	502	480	558	394	505	419	636	559	558	727	649	608	863	762	999	1259
42	Post office/postal center	505	507	391	482	409	407	489	346	440	344	613	503	551	705	597	601	826	719	950	1172
43	Repair shop	112	158	108	166	157	181	264	156	225	164	377	305	294	509	425	331	696	566	880	1182
44	Vehicle service/repair shop	144	202	137	212	201	232	338	199	288	209	482	391	376	651	543	423	890	723	1126	1512
45	Vehicle storage/ maintenance	107	151	103	158	150	173	252	149	215	156	360	292	281	486	405	316	664	540	841	1129
46	Other service	155	218	148	229	217	250	365	215	311	226	520	421	405	703	586	456	960	780	1215	1631
47	Strip shopping mall	888	897	755	851	751	727	830	587	760	641	955	834	848	1098	968	915	1298	1147	1503	1892
48	Enclosed mall	534	540	454	512	452	437	499	353	457	386	574	502	510	661	582	551	781	690	904	1138
49	Bar/pub/lounge	1014	987	910	977	929	920	993	837	946	876	1102	1017	1044	1193	1103	1101	1311	1217	1439	1674
50	Courthouse/probation office	904	885	786	835	808	711	802	650	710	683	844	719	741	822	742	692	920	811	999	1174

Table 7-2a Building Activity Site Energy Targets (EUI_{SI}) (SI) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	424	425	328	404	343	341	411	290	369	289	514	422	462	592	501	556	693	604	797	984
52	Single-family detached	360	361	279	343	292	290	349	247	313	245	437	359	392	502	426	409	589	513	677	835
53	Single-family attached	336	337	260	320	272	271	325	230	292	229	407	335	366	469	397	477	549	478	632	780
54	Apartment (in 2 to 4 unit building)	392	393	303	374	318	316	380	269	341	267	475	391	427	547	463	693	641	558	737	909
55	Apartment (in 5+ unit building)	312	313	242	297	253	251	302	214	272	213	378	311	340	435	369	477	510	444	587	724

Table 7-2b Building Activity Source Energy Targets (EUI_{sf}) (I-P)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	119	121	103	92	86	79	78	65	77	64	81	78	71	73	69	69	82	71	90	111
2	Bank/other financial	203	207	176	157	146	134	133	111	131	109	137	134	120	124	118	118	140	122	154	190
3	Government office	133	135	115	102	95	88	87	73	86	71	90	87	78	81	77	77	92	79	101	124
4	Medical office (nondiagnostic)	118	120	102	91	85	78	77	64	76	63	80	77	70	72	68	68	81	70	89	110
5	Mixed-use office	105	107	91	81	76	70	69	58	68	57	71	69	62	64	61	61	73	63	80	98
6	Other office	100	102	86	77	72	66	66	55	64	54	68	66	59	61	58	58	69	60	76	93
7	Laboratory	344	340	298	264	248	229	232	199	229	191	245	238	219	227	214	221	257	225	283	349
8	Distribution/shipping center	22	32	22	27	26	29	40	25	36	25	57	49	44	67	57	50	92	72	116	159
9	Nonrefrigerated warehouse	14	19	13	16	16	18	24	15	22	15	34	30	27	41	35	30	55	44	70	96
10	Convenience store	399	397	362	319	325	300	323	301	322	280	352	342	333	333	312	350	367	326	400	477
11	Convenience store with gas	449	447	408	360	367	339	364	340	363	315	397	385	375	375	352	395	413	368	451	538
12	Grocery store/food market	361	360	328	289	295	272	293	273	292	254	319	310	302	302	283	318	332	296	363	433
13	Other food sales	396	394	359	317	323	298	321	299	320	278	350	339	331	331	310	348	364	324	398	474
14	Fire station/police station	125	123	108	96	90	83	84	72	83	69	89	86	79	82	78	80	93	82	103	127
15	Other public order and safety	261	258	226	201	189	174	176	151	174	145	186	181	166	172	162	168	195	171	215	265
16	Medical office (diagnostic)	118	112	113	91	88	88	83	80	88	70	83	87	74	73	74	71	78	75	80	90
17	Clinic/other outpatient health	132	125	126	101	99	98	93	89	98	78	93	97	82	81	83	79	87	83	90	100
18	Refrigerated warehouse	185	183	161	142	134	123	125	107	124	103	132	129	118	122	115	119	138	121	153	188
19	Religious worship	62	61	54	48	45	41	42	36	41	34	44	43	39	41	39	40	46	41	51	63
20	Entertainment/culture	98	97	85	75	71	65	66	57	66	55	70	68	63	65	61	63	73	64	81	100
21	Library	154	152	133	118	111	102	104	89	103	85	110	107	98	102	96	99	115	101	127	156
22	Recreation	112	111	97	86	81	74	76	65	75	62	80	78	71	74	70	72	84	73	92	114
23	Social/meeting	103	102	89	79	74	68	69	60	69	57	73	71	66	68	64	66	77	67	85	105
24	Other public assembly	124	122	107	95	89	82	83	72	83	69	88	86	79	82	77	79	92	81	102	126
25	College/university	217	203	162	158	136	123	128	94	123	93	145	132	127	143	125	131	169	141	194	259

Table 7-2b Building Activity Source Energy Targets (EUI_{sf}) (I-P) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	107	104	88	82	73	68	69	57	67	55	74	72	65	68	64	65	78	68	88	117
27	High school	157	147	117	114	99	89	93	68	89	67	105	95	92	103	90	95	122	102	140	187
28	Preschool/daycare	149	145	123	114	102	95	96	80	94	77	103	100	91	95	89	90	109	95	123	163
29	Other classroom education	90	88	75	69	62	57	58	48	57	47	62	60	55	58	54	54	66	58	74	99
30	Fast food	783	772	722	622	615	595	594	547	606	526	644	639	603	614	581	630	678	605	742	889
31	Restaurant/cafeteria	561	547	504	442	428	411	418	374	423	364	459	455	434	436	412	458	479	430	523	624
32	Other food service	197	192	177	155	150	144	147	131	148	128	161	159	152	153	144	161	168	151	183	219
33	Hospital/inpatient health	497	506	462	397	405	349	363	346	354	334	361	352	338	304	289	318	317	289	325	355
34	Nursing home/assisted living	213	214	165	166	144	139	157	118	150	109	195	172	175	197	170	191	230	194	263	333
35	Dormitory/ fraternity/sorority	112	112	86	87	75	73	82	62	78	57	102	90	91	103	89	100	121	102	138	174
36	Hotel	131	125	117	100	102	91	96	93	95	85	104	102	97	98	94	101	108	97	117	137
37	Motel or inn	139	137	125	106	100	94	88	85	91	80	87	90	80	78	77	81	84	76	88	99
38	Other lodging	166	163	149	126	120	112	105	101	108	96	103	107	96	93	92	96	100	90	105	118
39	Vehicle dealership/ showroom	119	120	100	92	87	80	88	66	85	65	99	94	87	100	91	95	118	101	136	176
40	Retail store	99	99	83	76	72	67	73	55	70	54	82	78	72	83	75	79	98	84	113	146
41	Other retail	138	139	117	107	101	93	102	77	98	76	115	109	101	116	106	110	137	117	158	205
42	Post office/postal center	122	122	94	95	82	79	90	67	86	62	111	98	100	112	97	109	132	111	151	190
43	Repair shop	27	38	26	33	32	35	49	30	44	30	68	60	53	81	69	60	111	87	139	192
44	Vehicle service/repair shop	35	49	33	42	40	45	62	39	56	38	87	76	68	104	88	77	142	111	178	246
45	Vehicle storage/ maintenance	26	36	25	31	30	34	46	29	42	28	65	57	51	77	66	57	106	83	133	183
46	Other service	37	52	36	45	43	49	67	42	61	41	94	82	74	112	95	83	153	120	192	265
47	Strip shopping mall	214	216	182	168	151	142	152	114	148	116	173	162	154	175	157	166	207	177	238	307
48	Enclosed mall	129	130	110	101	91	85	92	69	89	70	104	98	92	105	95	100	124	106	143	185
49	Bar/pub/lounge	245	238	219	193	186	179	182	163	184	159	200	198	189	190	179	200	209	188	228	272
50	Courthouse/probation office	218	213	190	164	162	139	147	127	138	124	153	140	134	131	121	125	147	125	158	191

Table 7-2b Building Activity Source Energy Targets (EUI_{sf}) (I-P) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	102	103	79	80	69	67	75	57	72	52	93	82	84	94	82	101	110	93	126	160
52	Single-family detached	87	87	67	68	59	56	64	48	61	44	79	70	71	80	69	74	94	79	107	136
53	Single-family attached	81	81	63	63	55	53	60	45	57	42	74	65	66	75	65	86	87	74	100	127
54	Apartment (in 2 to 4 unit building)	95	95	73	74	64	62	70	52	66	48	86	76	77	87	75	126	102	86	117	148
55	Apartment (in 5+ unit building)	75	75	58	59	51	49	55	42	53	39	69	61	62	69	60	86	81	68	93	118

Table 7-2b Building Activity Source Energy Targets (EUI_{ft²}) (SI)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	1354	1378	1169	1045	975	893	887	741	873	726	915	891	801	824	784	934	809	1027	1264	
2	<u>Bank/other financial</u>	2309	2349	1993	1782	1662	1523	1513	1263	1489	1238	1560	1519	1366	1405	1338	1337	1593	1380	1751	2155
3	<u>Government office</u>	1506	1533	1300	1163	1084	994	987	824	971	808	1018	991	891	916	873	872	1039	900	1142	1406
4	<u>Medical office (nondiagnostic)</u>	1337	1361	1155	1032	963	882	876	732	862	717	904	880	791	814	775	774	923	799	1014	1248
5	<u>Mixed-use office</u>	1197	1218	1033	924	862	790	784	655	772	642	809	787	708	728	693	693	826	715	908	1117
6	<u>Other office</u>	1136	1156	981	877	818	750	744	622	732	609	768	747	672	691	658	658	784	679	862	1060
7	<u>Laboratory</u>	3903	3862	3380	2999	2820	2595	2634	2257	2603	2167	2780	2708	2485	2576	2429	2505	2914	2558	3211	3966
8	<u>Distribution/shipping center</u>	255	359	244	308	297	333	458	286	414	280	644	561	502	764	651	565	1044	821	1314	1809
9	<u>Nonrefrigerated warehouse</u>	154	216	147	185	179	200	275	172	249	168	388	337	302	460	392	340	628	494	791	1089
10	<u>Convenience store</u>	4526	4507	4108	3627	3695	3412	3671	3422	3656	3177	3995	3879	3781	3780	3543	3978	4164	3706	4544	5421
11	<u>Convenience store with gas</u>	5101	5080	4630	4088	4165	3845	4137	3858	4121	3581	4503	4372	4262	4261	3994	4484	4694	4177	5122	6111
12	<u>Grocery store/food market</u>	4103	4085	3724	3287	3349	3093	3327	3102	3314	2880	3621	3516	3428	3427	3212	3606	3775	3359	4119	4914
13	<u>Other food sales</u>	4497	4478	4082	3604	3671	3390	3647	3401	3633	3157	3970	3854	3757	3756	3520	3953	4138	3682	4515	5387
14	<u>Fire station/police station</u>	1416	1401	1226	1088	1023	941	955	819	944	786	1008	982	901	934	881	909	1057	928	1165	1439
15	<u>Other public order and safety</u>	2964	2933	2567	2277	2142	1971	2000	1714	1977	1645	2111	2056	1887	1956	1845	1902	2213	1942	2438	3012
16	<u>Medical office (diagnostic)</u>	1340	1267	1287	1031	1004	994	948	909	995	789	942	990	838	825	844	806	884	849	912	1019
17	<u>Clinic/other outpatient health</u>	1495	1414	1436	1151	1120	1110	1058	1014	1111	881	1052	1105	936	921	942	899	987	947	1017	1138
18	<u>Refrigerated warehouse</u>	2105	2083	1823	1618	1521	1400	1421	1217	1404	1169	1500	1461	1340	1390	1310	1351	1572	1380	1732	2139
19	<u>Religious worship</u>	703	695	608	540	508	467	474	406	469	390	500	487	447	464	437	451	524	460	578	714
20	<u>Entertainment/culture</u>	1116	1104	966	857	806	742	753	645	744	620	795	774	710	737	695	716	833	731	918	1134
21	<u>Library</u>	1747	1729	1513	1343	1263	1162	1179	1010	1166	970	1245	1212	1112	1153	1088	1122	1304	1145	1438	1776
22	<u>Recreation</u>	1271	1258	1101	977	919	845	858	735	848	706	906	882	809	839	791	816	949	833	1046	1292
23	<u>Social/meeting</u>	1169	1156	1012	898	845	777	789	676	780	649	832	811	744	771	727	750	872	766	962	1188
24	<u>Other public assembly</u>	1405	1390	1216	1079	1015	934	948	812	937	780	1001	975	894	927	874	902	1049	921	1156	1427
25	<u>College/university</u>	2461	2308	1845	1794	1550	1392	1456	1065	1395	1058	1651	1501	1442	1619	1415	1493	1921	1605	2202	2946
26	<u>Elementary/middle school</u>	1211	1183	1003	927	829	772	779	651	765	629	837	813	741	775	728	733	888	775	1003	1328

Table 7-2b Building Activity Source Energy Targets (EUI_{sf}) (SI) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
27	High school	1778	1667	1332	1296	1120	1006	1051	770	1008	764	1193	1084	1042	1169	1022	1078	1388	1159	1591	2128
28	Preschool/daycare	1688	1650	1398	1292	1156	1077	1086	907	1066	877	1166	1133	1033	1081	1015	1021	1237	1081	1398	1851
29	Other classroom education	1022	999	846	782	700	652	657	549	645	531	706	686	625	654	614	618	749	654	846	1121
30	Fast food	8891	8766	8202	7066	6979	6756	6745	6216	6877	5978	7309	7255	6847	6970	6597	7153	7705	6872	8430	10092
31	Restaurant/cafeteria	6376	6207	5719	5018	4860	4671	4751	4248	4804	4138	5211	5165	4933	4952	4677	5203	5441	4887	5941	7084
32	Other food service	2236	2176	2005	1760	1704	1638	1666	1490	1684	1451	1827	1811	1730	1737	1640	1824	1908	1714	2083	2484
33	Hospital/inpatient health	5640	5746	5249	4503	4604	3963	4120	3926	4018	3796	4095	3993	3841	3448	3278	3613	3604	3286	3690	4032
34	Nursing home/assisted living	2422	2430	1876	1887	1634	1576	1786	1340	1703	1241	2211	1949	1985	2232	1932	2168	2615	2203	2992	3784
35	Dormitory/ fraternity/sorority	1268	1272	982	988	855	825	935	702	891	650	1157	1020	1039	1168	1011	1135	1369	1153	1566	1981
36	Hotel	1486	1417	1327	1130	1155	1039	1095	1060	1084	960	1180	1162	1097	1109	1066	1147	1224	1103	1326	1556
37	Motel or inn	1578	1553	1417	1202	1138	1062	995	962	1030	913	984	1021	913	882	873	917	950	859	995	1126
38	Other lodging	1883	1853	1691	1434	1358	1268	1187	1148	1229	1090	1174	1219	1090	1053	1041	1095	1134	1025	1188	1343
39	Vehicle dealership/ showroom	1350	1357	1141	1047	983	912	1000	750	962	741	1127	1063	987	1131	1031	1076	1341	1147	1545	1997
40	Retail store	1119	1125	946	868	815	756	829	621	797	614	934	881	818	937	855	892	1112	951	1281	1655
41	Other retail	1570	1579	1327	1218	1144	1061	1164	872	1118	862	1311	1237	1148	1315	1200	1252	1560	1334	1797	2323
42	Post office/postal center	1384	1388	1072	1078	933	900	1020	766	973	709	1263	1114	1134	1275	1104	1239	1494	1259	1709	2162
43	Repair shop	308	432	295	371	358	401	552	345	499	337	777	676	605	921	785	681	1258	990	1584	2181
44	Vehicle service/repair shop	393	553	377	475	458	513	705	441	638	431	993	864	774	1178	1004	871	1609	1266	2026	2788
45	Vehicle storage/ maintenance	294	413	281	354	342	383	527	329	476	322	742	645	578	880	749	650	1201	945	1513	2082
46	Other service	424	596	406	512	494	554	761	475	688	465	1072	932	835	1271	1083	940	1736	1366	2185	3008
47	Strip shopping mall	2434	2458	2070	1905	1712	1609	1730	1299	1681	1321	1968	1845	1746	1987	1789	1885	2347	2007	2705	3491
48	Enclosed mall	1464	1479	1245	1146	1030	968	1041	781	1011	794	1184	1110	1050	1195	1076	1134	1412	1207	1627	2100
49	Bar/pub/lounge	2779	2705	2492	2187	2118	2035	2070	1851	2093	1803	2271	2251	2150	2158	2038	2267	2371	2130	2589	3087
50	Courthouse/probation office	2478	2424	2153	1867	1842	1574	1674	1438	1572	1406	1741	1590	1527	1487	1371	1425	1664	1419	1798	2166

Table 7-2b Building Activity Source Energy Targets (EUI_{sf}) (SI) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	424	425	328	404	343	341	411	290	369	289	514	422	462	592	501	556	693	604	797	984
52	Single-family detached	360	361	279	343	292	290	349	247	313	245	437	359	392	502	426	409	589	513	677	835
53	Single-family attached	336	337	260	320	272	271	325	230	292	229	407	335	366	469	397	477	549	478	632	780
54	Apartment (in 2 to 4 unit building)	392	393	303	374	318	316	380	269	341	267	475	391	427	547	463	693	641	558	737	909
55	Apartment (in 5+ unit building)	312	313	242	297	253	251	302	214	272	213	378	311	340	435	369	477	510	444	587	724

Table 7-2c Building Activity Electricity Site Energy Targets (EUI₁₁) (I-P)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	44	44	38	29	27	24	23	20	24	18	23	24	20	17	17	20	20	16	22	28
2	Bank/other financial	74	75	64	49	46	41	39	34	40	31	39	41	34	30	29	34	34	28	37	47
3	Government office	48	49	42	32	30	27	25	22	26	20	26	27	22	19	19	22	22	18	24	31
4	Medical office (nondiagnostic)	43	44	37	28	27	24	22	20	23	18	23	24	20	17	17	19	20	16	21	27
5	Mixed-use office	38	39	33	25	24	21	20	18	21	16	20	21	18	15	15	17	18	14	19	24
6	Other office	37	37	32	24	23	20	19	17	20	15	19	20	17	15	14	17	17	14	18	23
7	Laboratory	125	124	109	82	79	70	67	61	70	54	70	73	62	55	53	63	62	51	68	87
8	Distribution/shipping center	8	12	8	8	8	9	12	8	11	7	16	15	13	16	14	14	22	17	28	39
9	Nonrefrigerated warehouse	5	7	5	5	5	5	7	5	7	4	10	9	8	10	9	9	13	10	17	24
10	Convenience store	145	145	132	99	103	92	94	93	99	80	100	105	95	80	78	100	88	75	96	118
11	Convenience store with gas	164	163	149	112	116	104	105	104	112	90	113	118	107	90	87	113	100	84	108	133
12	Grocery store/food market	132	131	120	90	93	84	85	84	90	72	91	95	86	73	70	91	80	68	87	107
13	Other food sales	145	144	131	99	102	92	93	92	98	79	100	104	94	80	77	99	88	74	95	118
14	Fire station/police station	45	45	39	30	28	25	24	22	26	20	25	27	23	20	19	23	22	19	25	31
15	Other public order and safety	95	94	82	62	60	53	51	46	54	41	53	56	47	41	40	48	47	39	51	66
16	Medical office (diagnostic)	43	41	41	28	28	27	24	25	27	20	24	27	21	17	18	20	19	17	19	22
17	Clinic/other outpatient health	48	45	46	31	31	30	27	27	30	22	26	30	24	20	21	23	21	19	21	25
18	Refrigerated warehouse	68	67	59	44	42	38	36	33	38	29	38	40	34	29	29	34	33	28	36	47
19	Religious worship	23	22	20	15	14	13	12	11	13	10	13	13	11	10	10	11	11	9	12	16
20	Entertainment/culture	36	35	31	23	22	20	19	17	20	16	20	21	18	16	15	18	18	15	19	25
21	Library	56	56	49	37	35	31	30	27	32	24	31	33	28	24	24	28	28	23	30	39
22	Recreation	41	40	35	27	26	23	22	20	23	18	23	24	20	18	17	21	20	17	22	28
23	Social/meeting	38	37	33	25	24	21	20	18	21	16	21	22	19	16	16	19	19	15	20	26
24	Other public assembly	45	45	39	30	28	25	24	22	25	20	25	26	22	20	19	23	22	19	24	31
25	College/university	79	74	59	49	43	38	37	29	38	27	42	41	36	34	31	37	41	32	46	64

Table 7-2c Building Activity Electricity Site Energy Targets (EUI₁₁) (I-P) (Continued)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	<u>Elementary/middle school</u>	39	38	32	25	23	21	20	18	21	16	21	22	19	16	16	18	19	16	21	29
27	<u>High school</u>	57	54	43	35	31	27	27	21	27	19	30	29	26	25	22	27	29	23	33	46
28	<u>Preschool/daycare</u>	54	53	45	35	32	29	28	25	29	22	29	31	26	23	22	26	26	22	29	40
29	<u>Other classroom education</u>	33	32	27	21	19	18	17	15	17	13	18	19	16	14	13	16	16	13	18	24
30	<u>Fast food</u>	286	282	264	193	194	183	172	168	186	150	184	196	172	148	144	180	163	138	177	220
31	<u>Restaurant/cafeteria</u>	205	199	184	137	135	126	121	115	130	104	131	140	124	105	102	131	115	98	125	155
32	<u>Other food service</u>	72	70	64	48	47	44	42	40	46	36	46	49	43	37	36	46	40	34	44	54
33	<u>Hospital/inpatient health</u>	181	185	169	123	128	107	105	106	109	95	103	108	96	73	72	91	76	66	78	88
34	<u>Nursing home/assisted living</u>	78	78	60	52	46	43	46	36	46	31	56	53	50	47	42	54	55	44	63	83
35	<u>Dormitory/ fraternity/sorority</u>	41	41	32	27	24	22	24	19	24	16	29	28	26	25	22	29	29	23	33	43
36	<u>Hotel</u>	48	46	43	31	32	28	28	29	29	24	30	31	28	24	23	29	26	22	28	34
37	<u>Motel or inn</u>	51	50	46	33	32	29	25	26	28	23	25	28	23	19	19	23	20	17	21	25
38	<u>Other lodging</u>	61	60	54	39	38	34	30	31	33	27	30	33	27	22	23	27	24	21	25	29
39	<u>Vehicle dealership/ showroom</u>	43	44	37	29	27	25	25	20	26	19	28	29	25	24	23	27	28	23	32	44
40	<u>Retail store</u>	36	36	30	24	23	20	21	17	22	15	23	24	21	20	19	22	24	19	27	36
41	<u>Other retail</u>	50	51	43	33	32	29	30	24	30	22	33	33	29	28	26	31	33	27	38	51
42	<u>Post office/postal center</u>	44	45	34	30	26	24	26	21	26	18	32	30	28	27	24	31	32	25	36	47
43	<u>Repair shop</u>	10	14	9	10	10	11	14	9	14	8	20	18	15	20	17	17	27	20	33	48
44	<u>Vehicle service/repair shop</u>	13	18	12	13	13	14	18	12	17	11	25	23	19	25	22	22	34	25	43	61
45	<u>Vehicle storage/ maintenance</u>	9	13	9	10	10	10	13	9	13	8	19	17	15	19	16	16	25	19	32	45
46	<u>Other service</u>	14	19	13	14	14	15	19	13	19	12	27	25	21	27	24	24	37	27	46	66
47	<u>Strip shopping mall</u>	78	79	67	52	48	44	44	35	46	33	49	50	44	42	39	47	50	40	57	76
48	<u>Enclosed mall</u>	47	48	40	31	29	26	27	21	27	20	30	30	26	25	24	28	30	24	34	46
49	<u>Bar/pub/lounge</u>	89	87	80	60	59	55	53	50	57	45	57	61	54	46	45	57	50	43	54	67
50	<u>Courthouse/probation office</u>	80	78	69	51	51	43	43	39	43	35	44	43	38	32	30	36	35	29	38	47

Table 7-2c Building Activity Electricity Site Energy Targets (EUI₁₁) (I-P) (Continued)

Electricity Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																					
<u>No.</u>	<u>Residential Building Type</u>	ASHRAE Climate Zone																			
		<u>0A</u>	<u>0B</u>	<u>1A</u>	<u>1B</u>	<u>2A</u>	<u>2B</u>	<u>3A</u>	<u>3B Coast</u>	<u>3B Other</u>	<u>3C</u>	<u>4A</u>	<u>4B</u>	<u>4C</u>	<u>5A</u>	<u>5B</u>	<u>5C</u>	<u>6A</u>	<u>6B</u>	<u>7</u>	<u>8</u>
51	<u>Mobile home</u>	37	37	29	25	22	20	22	17	22	15	27	25	24	23	20	29	27	21	30	40
52	<u>Single-family detached</u>	32	32	25	21	19	17	19	15	19	13	23	21	20	19	17	21	23	18	26	34
53	<u>Single-family attached</u>	30	30	23	20	17	16	17	14	18	12	21	20	19	18	16	25	21	17	24	31
54	<u>Apartment (in 2 to 4 unit building)</u>	35	35	27	23	20	19	20	16	20	14	25	23	22	21	19	36	25	20	28	37
55	<u>Apartment (in 5+ unit building)</u>	27	28	21	18	16	15	16	13	16	11	20	19	18	17	15	25	20	16	22	29

Table 7-2c Building Activity Electricity Site Energy Targets (EUI₁₁) (SI)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	494	503	427	325	308	275	257	228	268	207	261	274	229	198	195	224	225	185	245	313
2	Bank/other financial	843	857	727	554	526	468	438	388	458	353	445	467	390	338	333	381	384	315	418	534
3	Government office	550	559	475	361	343	306	286	253	299	230	291	305	254	221	217	249	250	206	273	349
4	Medical office (nondiagnostic)	488	497	421	321	305	271	254	225	265	205	258	271	226	196	193	221	222	183	242	310
5	Mixed-use office	437	444	377	287	273	243	227	201	237	183	231	242	202	175	172	198	199	163	217	277
6	Other office	415	422	358	273	259	230	215	191	225	174	219	230	192	166	164	188	189	155	206	263
7	Laboratory	1424	1409	1233	932	892	798	762	694	801	618	794	833	709	620	604	715	702	585	767	983
8	Distribution/shipping center	93	131	89	96	94	102	132	88	127	80	184	172	143	184	162	161	251	188	314	448
9	Nonrefrigerated warehouse	56	79	54	58	57	62	80	53	77	48	111	104	86	111	97	97	151	113	189	270
10	Convenience store	1652	1645	1499	1127	1169	1049	1062	1052	1124	906	1141	1193	1079	910	881	1135	1003	847	1086	1344
11	Convenience store with gas	1862	1854	1690	1271	1318	1182	1197	1186	1267	1022	1286	1344	1216	1026	993	1279	1130	955	1224	1515
12	Grocery store/food market	1497	1491	1359	1022	1060	951	963	954	1019	822	1034	1081	978	825	799	1029	909	768	984	1218
13	Other food sales	1641	1634	1490	1120	1162	1042	1055	1046	1117	901	1134	1185	1072	905	875	1128	996	842	1079	1335
14	Fire station/police station	517	511	447	338	324	289	276	252	290	224	288	302	257	225	219	259	255	212	278	357
15	Other public order and safety	1082	1070	937	708	678	606	579	527	608	469	603	632	538	471	459	543	533	444	583	747
16	Medical office (diagnostic)	489	462	470	321	318	306	274	279	306	225	269	305	239	199	210	230	213	194	218	253
17	Clinic/other outpatient health	546	516	524	358	354	341	306	312	341	251	300	340	267	222	234	257	238	216	243	282
18	Refrigerated warehouse	768	760	665	503	481	430	411	374	432	333	428	449	382	335	326	385	378	315	414	530
19	Religious worship	256	254	222	168	161	144	137	125	144	111	143	150	128	112	109	129	126	105	138	177
20	Entertainment/culture	407	403	353	267	255	228	218	198	229	177	227	238	203	177	173	204	201	167	219	281
21	Library	638	631	552	417	399	357	341	311	358	277	355	373	317	278	270	320	314	262	343	440
22	Recreation	464	459	402	304	291	260	248	226	261	201	259	271	231	202	197	233	229	190	250	320
23	Social/meeting	426	422	369	279	267	239	228	208	240	185	238	249	212	186	181	214	210	175	230	294
24	Other public assembly	513	507	444	335	321	287	274	250	288	222	286	300	255	223	217	257	253	210	276	354
25	College/university	898	842	673	558	490	428	421	328	429	302	472	461	411	390	352	426	463	367	526	730

Table 7-2c Building Activity Electricity Site Energy Targets (EUI₁₁) (SI) (Continued)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	442	432	366	288	262	238	225	200	235	179	239	250	211	187	181	209	214	177	240	329
27	High school	649	609	486	403	354	309	304	237	310	218	341	333	297	282	254	308	334	265	380	528
28	Preschool/daycare	616	602	510	402	366	331	314	279	328	250	333	348	295	260	252	291	298	247	334	459
29	Other classroom education	373	364	309	243	221	200	190	169	198	151	202	211	178	158	153	176	180	150	202	278
30	Fast food	3245	3199	2994	2196	2208	2077	1952	1912	2115	1705	2087	2231	1953	1679	1640	2041	1856	1571	2014	2502
31	Restaurant/cafeteria	2327	2265	2087	1560	1537	1436	1375	1306	1477	1181	1488	1588	1407	1193	1163	1484	1310	1117	1419	1756
32	Other food service	816	794	732	547	539	504	482	458	518	414	522	557	494	418	408	520	460	392	498	616
33	Hospital/inpatient health	2058	2097	1916	1400	1456	1219	1192	1207	1236	1083	1170	1228	1096	830	815	1031	868	751	882	999
34	Nursing home/assisted living	884	887	685	586	517	485	517	412	524	354	631	599	566	537	480	619	630	504	715	938
35	Dormitory/ fraternity/sorority	463	464	358	307	271	254	271	216	274	185	330	314	296	281	251	324	330	264	374	491
36	Hotel	542	517	484	351	366	319	317	326	333	274	337	357	313	267	265	327	295	252	317	386
37	Motel or inn	576	567	517	374	360	327	288	296	317	261	281	314	261	213	217	262	229	196	238	279
38	Other lodging	687	676	617	446	430	390	343	353	378	311	335	375	311	254	259	312	273	234	284	333
39	Vehicle dealership/ showroom	493	495	416	326	311	281	289	231	296	211	322	327	282	272	256	307	323	262	369	495
40	Retail store	408	411	345	270	258	233	240	191	245	175	267	271	233	226	213	254	268	217	306	410
41	Other retail	573	576	484	379	362	326	337	268	344	246	374	380	328	317	298	357	376	305	429	576
42	Post office/postal center	505	507	391	335	295	277	295	235	299	202	361	342	323	307	274	353	360	288	408	536
43	Repair shop	112	158	108	115	113	123	160	106	153	96	222	208	173	222	195	194	303	226	378	541
44	Vehicle service/repair shop	144	202	137	148	145	158	204	135	196	123	284	266	221	284	250	248	388	289	484	691
45	Vehicle storage/ maintenance	107	151	103	110	108	118	152	101	146	92	212	198	165	212	186	186	289	216	361	516
46	Other service	155	218	148	159	156	170	220	146	212	133	306	287	238	306	269	268	418	312	522	746
47	Strip shopping mall	888	897	755	592	542	495	501	399	517	377	562	567	498	478	445	538	565	459	646	865
48	Enclosed mall	534	540	454	356	326	298	301	240	311	227	338	341	300	288	268	323	340	276	389	521
49	Bar/pub/lounge	1014	987	910	680	670	626	599	569	644	514	649	692	613	520	507	647	571	487	619	765
50	Courthouse/probation office	904	885	786	580	583	484	484	442	483	401	497	489	436	358	341	406	401	324	430	537

Table 7-2c Building Activity Electricity Site Energy Targets (EUI_{SI}) (SI) (Continued)

No.	Residential Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	424	425	328	281	248	232	248	198	251	170	303	287	271	258	230	327	302	241	343	450
52	Single-family detached	360	361	279	239	210	197	210	168	213	144	257	244	230	219	196	240	256	205	291	382
53	Single-family attached	336	337	260	223	196	184	196	157	199	135	240	228	215	204	183	280	239	191	272	356
54	Apartment (in 2 to 4 unit building)	392	393	303	260	229	215	229	183	232	157	280	266	251	238	213	407	279	223	317	416
55	Apartment (in 5+ unit building)	312	313	242	207	182	171	182	145	185	125	223	211	200	190	170	280	222	178	252	331

Table 7-2d Building Activity Fossil Fuel Site Energy Targets (FEUI_{eff}) (I-P)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	0	0	0	13	10	11	15	9	11	13	16	11	14	23	20	14	26	24	29	33
2	<u>Bank/other financial</u>	0	0	0	21	18	19	25	16	19	22	27	19	24	39	34	24	44	42	49	56
3	<u>Government office</u>	0	0	0	14	12	13	17	10	12	14	18	13	16	25	22	15	29	27	32	36
4	<u>Medical office (nondiagnostic)</u>	0	0	0	12	10	11	15	9	11	13	16	11	14	22	20	14	25	24	28	32
5	<u>Mixed-use office</u>	0	0	0	11	9	10	13	8	10	11	14	10	12	20	18	12	23	22	25	29
6	<u>Other office</u>	0	0	0	11	9	10	12	8	9	11	13	10	12	19	17	12	22	21	24	27
7	<u>Laboratory</u>	0	0	0	36	30	33	44	29	33	38	49	34	44	71	63	44	80	77	90	103
8	<u>Distribution/shipping center</u>	0	0	0	4	3	4	8	4	5	5	11	7	9	21	17	10	29	25	37	47
9	<u>Nonrefrigerated warehouse</u>	0	0	0	2	2	3	5	2	3	3	7	4	5	13	10	6	17	15	22	28
10	<u>Convenience store</u>	0	0	0	43	40	43	61	44	47	56	70	49	67	104	91	70	114	112	127	140
11	<u>Convenience store with gas</u>	0	0	0	49	45	49	69	49	52	63	79	56	75	117	103	79	129	126	143	158
12	<u>Grocery store/food market</u>	0	0	0	39	36	39	56	39	42	51	64	45	60	94	83	64	104	101	115	127
13	<u>Other food sales</u>	0	0	0	43	39	43	61	43	46	56	70	49	66	103	91	70	114	111	126	140
14	<u>Fire station/police station</u>	0	0	0	13	11	12	16	10	12	14	18	12	16	26	23	16	29	28	32	37
15	<u>Other public order and safety</u>	0	0	0	27	23	25	33	22	25	29	37	26	33	54	48	34	61	59	68	78
16	<u>Medical office (diagnostic)</u>	0	0	0	12	11	13	16	12	13	14	17	13	15	23	22	14	24	26	25	26
17	<u>Clinic/other outpatient health</u>	0	0	0	14	12	14	18	13	14	16	18	14	17	25	24	16	27	29	28	29
18	<u>Refrigerated warehouse</u>	0	0	0	19	16	18	24	15	18	21	26	19	24	38	34	24	43	42	48	55
19	<u>Religious worship</u>	0	0	0	6	5	6	8	5	6	7	9	6	8	13	11	8	14	14	16	18
20	<u>Entertainment/culture</u>	0	0	0	10	9	9	13	8	9	11	14	10	13	20	18	13	23	22	26	29
21	<u>Library</u>	0	0	0	16	14	15	20	13	15	17	22	15	20	32	28	20	36	35	40	46
22	<u>Recreation</u>	0	0	0	12	10	11	14	9	11	12	16	11	14	23	20	14	26	25	29	33
23	<u>Social/meeting</u>	0	0	0	11	9	10	13	9	10	11	15	10	13	21	19	13	24	23	27	31
24	<u>Other public assembly</u>	0	0	0	13	11	12	16	10	12	14	18	12	16	25	23	16	29	28	32	37
25	<u>College/university</u>	0	0	0	21	17	18	24	14	18	19	29	19	25	44	36	26	53	48	61	76

Table 7-2d Building Activity Fossil Fuel Site Energy Targets (FEUI_{t,f}) (I-P) (Continued)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	<u>Elementary/middle school</u>	0	0	0	11	9	10	13	8	10	11	15	10	13	21	19	13	24	23	28	34
27	<u>High school</u>	0	0	0	16	12	13	18	10	13	13	21	14	18	32	26	19	38	35	44	55
28	<u>Preschool/daycare</u>	0	0	0	15	12	14	18	12	14	15	20	14	18	30	26	18	34	33	39	48
29	<u>Other classroom education</u>	0	0	0	9	8	8	11	7	8	9	12	9	11	18	16	11	21	20	24	29
30	<u>Fast food</u>	0	0	0	85	75	86	113	79	87	105	128	92	121	191	170	126	212	207	235	261
31	<u>Restaurant/cafeteria</u>	0	0	0	60	52	59	80	54	61	73	92	66	87	136	120	92	149	148	166	184
32	<u>Other food service</u>	0	0	0	21	18	21	28	19	21	26	32	23	31	48	42	32	52	52	58	64
33	<u>Hospital/inpatient health</u>	0	0	0	54	50	50	69	50	51	67	72	51	68	95	84	64	99	99	103	104
34	<u>Nursing home/assisted living</u>	0	0	0	23	18	20	30	17	22	22	39	25	35	61	50	38	72	67	83	98
35	<u>Dormitory/ fraternity/sorority</u>	0	0	0	12	9	10	16	9	11	11	20	13	18	32	26	20	38	35	44	51
36	<u>Hotel</u>	0	0	0	14	12	13	18	13	14	17	21	15	19	30	27	20	34	33	37	40
37	<u>Motel or inn</u>	0	0	0	14	12	14	17	12	13	16	17	13	16	24	22	16	26	26	28	29
38	<u>Other lodging</u>	0	0	0	17	15	16	20	15	16	19	21	15	19	29	27	19	31	31	33	35
39	<u>Vehicle dealership/ showroom</u>	0	0	0	13	11	12	17	10	12	13	20	14	17	31	27	19	37	35	43	52
40	<u>Retail store</u>	0	0	0	10	9	10	14	8	10	11	16	11	14	26	22	16	31	29	36	43
41	<u>Other retail</u>	0	0	0	15	12	13	19	11	14	15	23	16	20	36	31	22	43	40	50	60
42	<u>Post office/postal center</u>	0	0	0	13	10	11	17	10	12	13	22	14	20	35	28	22	41	38	48	56
43	<u>Repair shop</u>	0	0	0	4	4	5	9	4	6	6	14	9	11	25	20	12	35	30	44	56
44	<u>Vehicle service/repair shop</u>	0	0	0	6	5	7	12	6	8	8	17	11	14	32	26	15	44	38	57	72
45	<u>Vehicle storage/ maintenance</u>	0	0	0	4	4	5	9	4	6	6	13	8	10	24	19	11	33	29	42	54
46	<u>Other service</u>	0	0	0	6	5	7	13	6	9	8	19	12	15	35	28	17	48	41	61	78
47	<u>Strip shopping mall</u>	0	0	0	23	18	20	29	17	21	23	35	23	31	55	46	33	64	61	75	90
48	<u>Enclosed mall</u>	0	0	0	14	11	12	17	10	13	14	21	14	19	33	28	20	39	36	45	54
49	<u>Bar/pub/lounge</u>	0	0	0	26	23	26	35	24	27	32	40	29	38	59	52	40	65	64	72	80
50	<u>Courthouse/probation office</u>	0	0	0	22	20	20	28	18	20	25	31	20	27	41	35	25	46	43	50	56

Table 7-2d Building Activity Fossil Fuel Site Energy Targets (FEUI_{ft²}) (I-P) (Continued)

No.	Residential Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	0	0	0	11	8	10	14	8	10	10	19	12	17	29	24	20	34	32	40	47
52	Single-family detached	0	0	0	9	7	8	12	7	9	9	16	10	14	25	20	15	29	27	34	40
53	Single-family attached	0	0	0	9	7	8	11	6	8	8	15	9	13	23	19	17	27	25	32	37
54	Apartment (in 2 to 4 unit building)	0	0	0	10	8	9	13	8	10	10	17	11	16	27	22	25	32	29	37	43
55	Apartment (in 5+ unit building)	0	0	0	8	6	7	11	6	8	8	14	9	12	22	18	17	25	23	29	35

Table 7-2d Building Activity Fossil Fuel Site Energy Targets (FEUI₁₁) (SI)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	0	0	0	142	119	129	169	107	126	145	183	129	160	257	229	157	292	277	325	372
2	Bank/other financial	0	0	0	242	203	220	288	182	215	248	311	219	274	438	391	268	497	473	555	634
3	Government office	0	0	0	158	132	144	188	119	140	162	203	143	178	286	255	175	324	309	362	414
4	Medical office (nondiagnostic)	0	0	0	140	118	127	167	106	125	144	180	127	159	254	227	155	288	274	321	367
5	Mixed-use office	0	0	0	126	105	114	149	95	111	129	161	114	142	227	203	139	258	245	288	329
6	Other office	0	0	0	119	100	108	142	90	106	122	153	108	135	216	192	132	245	233	273	312
7	Laboratory	0	0	0	408	345	375	501	326	376	434	555	391	498	804	710	502	909	877	1018	1167
8	Distribution/shipping center	0	0	0	42	36	48	87	41	60	56	129	81	101	238	190	113	326	282	416	532
9	Nonrefrigerated warehouse	0	0	0	25	22	29	52	25	36	34	77	49	61	144	115	68	196	170	251	320
10	Convenience store	0	0	0	493	451	493	698	494	528	636	797	560	757	1180	1036	797	1299	1271	1440	1595
11	Convenience store with gas	0	0	0	556	509	555	786	557	595	717	898	632	854	1330	1168	898	1464	1432	1623	1798
12	Grocery store/food market	0	0	0	447	409	447	632	448	479	577	723	508	687	1069	939	722	1178	1152	1305	1446
13	Other food sales	0	0	0	490	449	490	693	491	525	632	792	557	753	1172	1029	792	1291	1263	1431	1585
14	Fire station/police station	0	0	0	148	125	136	182	118	136	157	201	142	181	292	258	182	330	318	369	423
15	Other public order and safety	0	0	0	310	262	285	380	248	286	330	421	297	378	610	539	381	690	666	773	886
16	Medical office (diagnostic)	0	0	0	140	123	144	180	131	144	158	188	143	168	257	247	161	276	291	289	300
17	Clinic/other outpatient health	0	0	0	157	137	160	201	147	160	176	210	160	187	287	275	180	308	325	322	335
18	Refrigerated warehouse	0	0	0	220	186	202	270	176	203	234	299	211	268	434	383	271	490	473	549	629
19	Religious worship	0	0	0	73	62	67	90	59	68	78	100	70	90	145	128	90	164	158	183	210
20	Entertainment/culture	0	0	0	117	99	107	143	93	108	124	159	112	142	230	203	143	260	251	291	334
21	Library	0	0	0	183	154	168	224	146	168	194	248	175	223	360	318	225	407	393	456	523
22	Recreation	0	0	0	133	112	122	163	106	123	141	181	127	162	262	231	163	296	286	332	380
23	Social/meeting	0	0	0	122	103	112	150	98	113	130	166	117	149	241	213	150	272	263	305	349
24	Other public assembly	0	0	0	147	124	135	180	117	135	156	200	141	179	289	256	181	327	316	366	420
25	College/university	0	0	0	244	189	201	277	154	201	212	329	217	289	505	414	299	599	550	698	867

Table 7-2d Building Activity Fossil Fuel Site Energy Targets (FEUI_{eff}) (SI) (Continued)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	0	0	0	126	101	112	148	94	110	126	167	117	148	242	213	147	277	266	318	391
27	High school	0	0	0	176	137	145	200	111	146	153	238	157	209	365	299	216	433	398	504	626
28	Preschool/daycare	0	0	0	176	141	156	206	131	154	176	233	164	207	337	297	205	386	371	443	545
29	Other classroom education	0	0	0	106	86	94	125	79	93	106	141	99	125	204	180	124	234	224	268	330
30	Fast food	0	0	0	962	853	976	1282	898	993	1197	1458	1048	1372	2175	1929	1433	2404	2356	2671	2969
31	Restaurant/cafeteria	0	0	0	683	594	675	903	614	694	829	1040	746	988	1545	1368	1042	1698	1676	1883	2084
32	Other food service	0	0	0	239	208	237	317	215	243	291	365	262	347	542	480	365	595	588	660	731
33	Hospital/inpatient health	0	0	0	613	562	572	783	567	580	760	817	577	769	1076	959	724	1124	1127	1169	1186
34	Nursing home/assisted living	0	0	0	257	200	228	339	194	246	249	441	282	398	696	565	434	816	755	948	1113
35	Dormitory/ fraternity/sorority	0	0	0	134	104	119	178	101	129	130	231	147	208	364	296	227	427	395	496	583
36	Hotel	0	0	0	154	141	150	208	153	157	192	235	168	220	346	312	230	382	378	420	458
37	Motel or inn	0	0	0	164	139	153	189	139	149	183	196	148	183	275	255	184	296	295	315	331
38	Other lodging	0	0	0	195	166	183	226	166	178	218	234	176	218	329	304	219	354	352	376	395
39	Vehicle dealership/ showroom	0	0	0	143	120	132	190	108	139	148	225	154	198	353	302	216	419	393	490	588
40	Retail store	0	0	0	118	100	109	158	90	115	123	186	127	164	292	250	179	347	326	406	487
41	Other retail	0	0	0	166	140	153	221	126	162	173	262	179	230	410	351	251	487	457	569	683
42	Post office/postal center	0	0	0	147	114	130	194	111	141	142	252	161	227	398	323	248	466	432	542	636
43	Repair shop	0	0	0	50	44	58	105	50	72	68	155	98	121	287	229	136	393	339	502	642
44	Vehicle service/repair shop	0	0	0	65	56	74	134	64	92	86	198	125	155	367	293	174	502	434	642	820
45	Vehicle storage/ maintenance	0	0	0	48	42	55	100	48	69	64	148	93	116	274	219	130	375	324	479	613
46	Other service	0	0	0	70	60	80	145	69	99	93	214	135	167	396	317	188	542	468	693	885
47	Strip shopping mall	0	0	0	259	209	232	329	188	243	265	393	267	350	620	523	378	732	688	857	1027
48	Enclosed mall	0	0	0	156	126	140	198	113	146	159	236	160	210	373	315	227	441	414	516	618
49	Bar/pub/lounge	0	0	0	298	259	294	393	267	302	361	453	325	431	673	596	454	740	730	820	908
50	Courthouse/probation office	0	0	0	254	225	227	318	208	227	282	347	230	306	464	401	285	519	487	570	637

Table 7-2d Building Activity Fossil Fuel Site Energy Targets (FEUI_{ft}) (SI) (Continued)

No.	Residential Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	0	0	0	123	96	109	163	93	118	119	211	135	191	334	271	230	391	362	455	534
52	Single-family detached	0	0	0	105	81	93	138	79	100	101	180	115	162	283	230	169	332	308	386	453
53	Single-family attached	0	0	0	98	76	86	129	74	93	94	168	107	151	265	215	197	310	287	360	423
54	Apartment (in 2 to 4 unit building)	0	0	0	114	88	101	150	86	109	110	196	125	176	309	250	286	362	335	420	494
55	Apartment (in 5+ unit building)	0	0	0	91	70	80	120	68	87	88	156	99	140	246	199	197	288	267	335	393

Table 7-3 Building Operating Shifts Normalization Factor

No.	Building Activity/Type	Weekly Hours		
		50 or Less	51 to 167	168
[. . .]				
<u>49</u>	<u>Bar/pub/lounge</u>	1.0	1.0	1.4
<u>50</u>	<u>Courthouse/probation office</u>	1.0	1.0	1.4
[. . .]				
No.	Residential Building Activity/Type	Weekly Hours		
		50 or Less	51 to 167	168
<u>5149</u>	Mobile home	1.0	1.0	1.0
<u>5250</u>	Single-family detached	1.0	1.0	1.0
<u>5351</u>	Single-family attached	1.0	1.0	1.0
<u>5452</u>	Apartment building (2 to 4 units)	1.0	1.0	1.0
<u>5553</u>	Apartment building (5+ units)	1.0	1.0	1.0

Modify Section 10 as shown. The remainder of Section 10 is unchanged.

10. RESIDENTIAL BUILDINGS AND DWELLING UNITS

10.1 Compliance Requirements

10.1.1 This section applies to individual dwelling and housing units that are covered under the Residential Energy Consumption Survey (RECS) administered by the EIA and are identified by activities number 5149 through 5552 in Table 7-1.

[. . .]

10.3.5 The *EUI* and *energy target*...

[. . .]

Informative Note: Residential energy targets listed in Tables 7-2a through 7-2d10-2a and 10-2b were derived from RECS 2005 data and represent the 25th bottom (low energy) percentile of energy use by each *building* category. The median numbers for each *building* category from RECS data representing all *buildings* in the *building* type across all climatic conditions were extrapolated to 2017 USDOE climate zones using multipliers generated through simulation of a representative *building* for each group of *building* categories. Refer to Informative Annex J for more information.

10.3.6 Comparing Performance. Compare *building EUI* using the data from Form C with the *energy targets* listed in Tables 7-2a through 7-2d10-2a or Table 10-2b for single-use *buildings*.

[. . .]

Replace Tables A-1 through A-4 with the following as shown.

Table A-1 Alternative Building Activity Site Energy Targets (I-P)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	53	54	46	50	46	43	45	36	42	38	47	43	42	49	45	41	55	49	61	73
2	<u>Bank/other financial</u>	90	92	78	85	78	74	78	61	72	64	81	73	71	83	77	69	94	84	104	125
3	<u>Government office</u>	59	60	51	56	51	48	51	40	47	42	53	48	46	54	50	45	61	55	68	81
4	<u>Medical office (nondiagnostic)</u>	52	53	45	49	45	43	45	35	42	37	47	43	41	48	45	40	55	49	60	72
5	<u>Mixed-use office</u>	47	48	40	44	40	38	40	32	37	33	42	38	37	43	40	36	49	44	54	65
6	<u>Other office</u>	44	45	38	42	38	36	38	30	35	32	40	36	35	41	38	34	46	41	51	61
7	<u>Laboratory</u>	152	151	132	143	132	125	135	109	126	113	144	131	129	152	141	130	172	156	191	230
8	<u>Distribution/shipping center</u>	10	14	10	15	14	16	23	14	20	15	33	27	26	45	38	29	62	50	78	105
9	<u>Nonrefrigerated warehouse</u>	6	8	6	9	8	10	14	8	12	9	20	16	16	27	23	18	37	30	47	63
10	<u>Convenience store</u>	177	176	160	173	173	165	188	165	177	165	207	187	196	223	205	207	246	226	270	314
11	<u>Convenience store with gas</u>	199	198	181	195	195	186	212	186	199	186	234	211	221	252	231	233	277	255	304	354
12	<u>Grocery store/food market</u>	160	159	145	157	157	149	171	150	160	150	188	170	178	203	186	187	223	205	245	285
13	<u>Other food sales</u>	175	175	159	172	172	164	187	164	176	164	206	186	195	222	204	205	245	225	268	312
14	<u>Fire station/police station</u>	55	55	48	52	48	45	49	40	46	41	52	47	47	55	51	47	62	57	69	83
15	<u>Other public order and safety</u>	116	114	100	109	100	95	103	83	96	85	110	99	98	116	107	99	131	119	145	175
16	<u>Medical office (diagnostic)</u>	52	49	50	49	47	48	49	44	48	41	49	48	44	49	49	42	52	52	54	59
17	<u>Clinic/other outpatient health</u>	58	55	56	55	53	54	54	49	54	46	55	53	49	54	54	47	58	58	60	66
18	<u>Refrigerated warehouse</u>	82	81	71	77	71	68	73	59	68	61	78	71	70	82	76	70	93	84	103	124
19	<u>Religious worship</u>	27	27	24	26	24	23	24	20	23	20	26	24	23	27	25	23	31	28	34	41
20	<u>Entertainment/culture</u>	44	43	38	41	38	36	39	31	36	32	41	37	37	44	40	37	49	45	55	66
21	<u>Library</u>	68	67	59	64	59	56	60	49	56	50	65	59	58	68	63	58	77	70	85	103
22	<u>Recreation</u>	50	49	43	47	43	41	44	36	41	37	47	43	42	50	46	42	56	51	62	75
23	<u>Social/meeting</u>	46	45	39	43	40	38	40	33	38	34	43	39	39	46	42	39	52	47	57	69
24	<u>Other public assembly</u>	55	54	47	52	48	45	49	39	45	40	52	47	46	55	51	47	62	56	69	83
25	<u>College/university</u>	96	90	72	86	73	67	75	51	67	55	86	73	75	96	82	77	114	98	131	171

Table A-1 Alternative Building Activity Site Energy Targets (I-P) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	<u>Elementary/middle school</u>	47	46	39	44	39	37	40	31	37	33	43	39	38	46	42	38	52	47	60	77
27	High school	69	65	52	62	52	49	54	37	49	40	62	52	54	69	59	56	82	71	95	123
28	<u>Preschool/daycare</u>	66	64	55	62	54	52	56	44	52	46	60	55	54	64	59	53	73	66	83	107
29	<u>Other classroom education</u>	40	39	33	37	33	31	34	27	31	28	37	33	32	39	36	32	44	40	50	65
30	Fast food	347	342	320	338	327	326	346	300	332	310	379	351	355	412	382	371	455	420	501	585
31	<u>Restaurant/cafeteria</u>	249	242	223	240	228	226	244	205	232	215	270	250	256	293	271	270	322	299	353	411
32	<u>Other food service</u>	87	85	78	84	80	79	85	72	81	75	95	88	90	103	95	95	113	105	124	144
33	Hospital/inpatient health	220	224	205	215	216	192	211	190	194	197	212	193	199	204	190	188	213	201	219	234
34	<u>Nursing home/assisted living</u>	95	95	73	90	77	76	92	65	82	64	115	94	103	132	112	113	155	135	178	219
35	<u>Dormitory/ fraternity/sorority</u>	49	50	38	47	40	40	48	34	43	34	60	49	54	69	59	59	81	70	93	115
36	Hotel	58	55	52	54	54	50	56	51	52	50	61	56	57	66	62	60	72	67	79	90
37	Motel or inn	62	61	55	57	53	51	51	46	50	47	51	49	47	52	50	48	56	53	59	65
38	Other lodging	73	72	66	69	64	61	61	55	59	57	61	59	57	62	60	57	67	63	71	78
39	<u>Vehicle dealership/ showroom</u>	53	53	45	50	46	44	51	36	46	38	58	51	51	67	60	56	79	70	92	116
40	Retail store	44	44	37	41	38	37	43	30	39	32	48	43	42	55	49	46	66	58	76	96
41	<u>Other retail</u>	61	62	52	58	54	51	60	42	54	45	68	60	60	78	69	65	92	82	107	135
42	<u>Post office/postal center</u>	54	54	42	52	44	44	52	37	47	37	66	54	59	75	64	64	88	77	102	125
43	Repair shop	12	17	11	18	17	19	28	17	24	18	40	33	31	54	45	35	74	60	94	126
44	<u>Vehicle service/repair shop</u>	15	22	15	23	21	25	36	21	31	22	52	42	40	70	58	45	95	77	120	162
45	<u>Vehicle storage/ maintenance</u>	11	16	11	17	16	19	27	16	23	17	38	31	30	52	43	34	71	58	90	121
46	Other service	17	23	16	24	23	27	39	23	33	24	56	45	43	75	63	49	103	83	130	174
47	<u>Strip shopping mall</u>	95	96	81	91	80	78	89	63	81	69	102	89	91	117	103	98	139	123	161	202
48	Enclosed mall	57	58	49	55	48	47	53	38	49	41	61	54	55	71	62	59	83	74	97	122
49	Bar/pub/lounge	108	106	97	104	99	98	106	89	101	94	118	109	112	128	118	118	140	130	154	179
50	Courthouse/probation office	97	95	84	89	86	76	86	69	76	73	90	77	79	88	79	74	98	87	107	126

Table A-1 Alternative Building Activity Site Energy Targets (I-P) (Continued)

<u>No.</u>	<u>Residential Building Type</u>	<u>EUIs by Building Type by Climate Zone (kBtu/ft²·yr)</u>																			
		<u>ASHRAE Climate Zone</u>																			
<u>0A</u>	<u>0B</u>	<u>1A</u>	<u>1B</u>	<u>2A</u>	<u>2B</u>	<u>3A</u>	<u>3B Coast</u>	<u>3B Other</u>	<u>3C</u>	<u>4A</u>	<u>4B</u>	<u>4C</u>	<u>5A</u>	<u>5B</u>	<u>5C</u>	<u>6A</u>	<u>6B</u>	<u>7</u>	<u>8</u>		
51	<u>Mobile home</u>	45	45	35	43	37	37	44	31	39	31	55	45	49	63	54	60	74	65	85	105
52	<u>Single-family detached</u>	38	39	30	37	31	31	37	26	33	26	47	38	42	54	46	44	63	55	72	89
53	<u>Single-family attached</u>	36	36	28	34	29	29	35	25	31	24	44	36	39	50	42	51	59	51	68	83
54	<u>Apartment (in 2 to 4 unit building)</u>	42	42	32	40	34	34	41	29	36	29	51	42	46	58	50	74	69	60	79	97
55	<u>Apartment (in 5+ unit building)</u>	33	33	26	32	27	27	32	23	29	23	40	33	36	47	39	51	55	47	63	77

Table A-1 Alternative Building Activity Site Energy Targets (SI)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	600	611	518	567	519	490	517	407	479	428	539	489	472	553	515	462	627	562	693	832
2	Bank/other financial	1023	1041	883	967	885	836	881	693	817	730	919	834	805	943	879	788	1070	958	1182	1419
3	Government office	667	679	576	631	577	545	575	452	533	476	599	544	525	615	573	514	698	625	771	926
4	Medical office (nondiagnostic)	593	603	512	560	513	484	510	402	473	423	532	483	467	546	509	457	620	555	685	822
5	Mixed-use office	530	540	458	501	459	433	457	359	423	378	476	432	417	489	456	409	554	496	613	735
6	Other office	503	512	435	476	436	411	433	341	402	359	452	410	396	464	432	388	526	471	581	698
7	Laboratory	1730	1711	1498	1627	1502	1424	1533	1238	1429	1278	1638	1486	1465	1729	1596	1477	1956	1775	2167	2611
8	Distribution/shipping center	113	159	108	167	158	183	266	157	227	165	380	308	296	513	428	333	701	570	887	1191
9	Nonrefrigerated warehouse	68	96	65	101	95	110	160	94	137	99	229	185	178	309	258	201	422	343	534	717
10	Convenience store	2006	1997	1820	1968	1968	1872	2137	1878	2006	1873	2353	2129	2230	2538	2328	2346	2795	2571	3067	3569
11	Convenience store with gas	2261	2251	2052	2218	2218	2110	2409	2117	2261	2111	2653	2399	2513	2861	2624	2644	3151	2898	3457	4023
12	Grocery store/food market	1818	1811	1650	1784	1784	1697	1937	1703	1819	1698	2133	1930	2021	2300	2110	2126	2534	2331	2780	3235
13	Other food sales	1993	1985	1809	1956	1955	1860	2123	1866	1994	1861	2338	2115	2215	2522	2313	2331	2778	2555	3047	3546
14	Fire station/police station	627	621	543	590	545	517	556	449	518	463	594	539	531	627	579	536	709	644	786	947
15	Other public order and safety	1313	1300	1137	1236	1141	1082	1164	941	1085	970	1244	1128	1113	1313	1212	1122	1485	1348	1646	1983
16	Medical office (diagnostic)	594	561	570	560	535	546	552	499	546	465	555	543	494	554	554	475	594	589	615	671
17	Clinic/other outpatient health	663	627	637	625	597	609	616	557	609	520	620	607	552	618	619	530	663	657	687	749
18	Refrigerated warehouse	933	923	808	878	810	768	827	668	771	689	883	802	790	933	861	797	1055	957	1169	1408
19	Religious worship	311	308	270	293	270	256	276	223	257	230	295	267	264	311	287	266	352	320	390	470
20	Entertainment/culture	494	489	428	465	429	407	438	354	408	365	468	425	419	494	456	422	559	507	620	747
21	Library	774	766	671	729	672	638	686	554	640	572	733	665	656	774	715	661	876	795	970	1169
22	Recreation	563	558	488	530	489	464	499	403	465	416	534	484	477	563	520	481	637	578	706	851
23	Social/meeting	518	512	449	487	450	426	459	371	428	383	490	445	439	518	478	442	586	531	649	782
24	Other public assembly	622	616	539	586	541	513	552	446	514	460	589	535	527	622	574	532	704	639	780	940
25	College/university	1091	1023	817	974	825	764	847	585	765	624	973	824	850	1087	930	880	1290	1114	1486	1940

Table A-1 Alternative Building Activity Site Energy Targets (SI) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² .yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	537	524	444	503	442	424	454	357	420	371	493	446	437	520	478	432	596	538	677	874
27	High school	788	739	591	703	596	552	612	422	553	451	703	595	614	785	672	636	932	804	1073	1401
28	Preschool/daycare	748	731	619	701	616	591	632	498	585	517	687	622	609	725	667	602	831	750	943	1219
29	Other classroom education	453	443	375	424	373	358	383	301	354	313	416	376	369	439	404	365	503	454	571	738
30	Fast food	3940	3885	3635	3835	3716	3707	3926	3411	3774	3525	4305	3982	4037	4679	4334	4218	5173	4769	5689	6644
31	Restaurant/cafeteria	2826	2751	2534	2723	2588	2563	2766	2331	2636	2440	3070	2835	2909	3325	3073	3068	3653	3391	4010	4663
32	Other food service	991	965	889	955	907	899	970	817	924	856	1076	994	1020	1166	1078	1076	1281	1189	1406	1635
33	Hospital/inpatient health	2499	2547	2326	2444	2451	2175	2399	2154	2205	2238	2412	2192	2265	2315	2154	2131	2419	2280	2491	2654
34	Nursing home/assisted living	1074	1077	831	1024	870	865	1040	736	934	732	1302	1070	1170	1498	1270	1278	1755	1529	2019	2491
35	Dormitory/ fraternity/sorority	562	564	435	536	455	453	544	385	489	383	682	560	613	784	665	669	919	800	1057	1304
36	Hotel	658	628	588	613	615	570	637	582	595	566	695	638	647	744	701	676	821	766	895	1024
37	Motel or inn	699	688	628	652	606	583	579	528	565	539	580	560	539	592	573	541	638	596	672	741
38	Other lodging	835	821	749	778	723	696	691	630	674	643	692	669	643	707	684	645	761	711	802	884
39	Vehicle dealership/ showroom	598	601	506	568	524	501	582	411	528	437	664	583	582	759	678	634	900	796	1043	1315
40	Retail store	496	499	419	471	434	415	483	341	437	362	550	484	483	629	562	526	746	660	864	1090
41	Other retail	696	700	588	661	609	582	677	479	614	508	772	679	677	883	788	738	1047	926	1213	1529
42	Post office/postal center	613	615	475	585	497	494	594	420	534	418	744	611	669	856	725	730	1003	873	1154	1423
43	Repair shop	136	192	131	201	191	220	321	189	274	199	458	371	357	618	516	402	845	687	1069	1436
44	Vehicle service/repair shop	174	245	167	258	244	282	411	242	350	254	585	474	456	791	659	514	1080	878	1367	1836
45	Vehicle storage/ maintenance	130	183	125	192	182	210	307	181	261	190	437	354	341	590	492	383	807	656	1021	1371
46	Other service	188	264	180	278	263	304	443	261	378	274	631	512	492	853	711	554	1165	948	1475	1980
47	Strip shopping mall	1079	1089	917	1034	912	883	1007	713	923	779	1159	1013	1029	1334	1175	1111	1576	1393	1825	2298
48	Enclosed mall	649	655	552	622	548	531	606	429	555	468	697	609	619	802	707	669	948	838	1098	1382
49	Bar/pub/lounge	1231	1199	1104	1187	1128	1117	1205	1016	1149	1063	1338	1235	1268	1449	1339	1337	1592	1478	1747	2032
50	Courthouse/probation office	1098	1074	954	1013	981	864	974	789	863	829	1025	873	900	999	901	840	1117	985	1214	1426

Table A-1 Alternative Building Activity Site Energy Targets (SI) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	515	516	399	491	417	415	499	353	448	351	624	513	561	718	609	676	842	733	968	1194
52	Single-family detached	437	438	338	417	354	352	423	299	380	298	530	436	476	610	517	496	715	622	822	1014
53	Single-family attached	408	409	316	389	331	329	395	279	355	278	495	406	445	569	482	579	667	581	767	947
54	Apartment (in 2 to 4 unit building)	476	477	368	454	386	383	461	326	414	324	577	474	519	664	563	841	778	678	895	1104
55	Apartment (in 5+ unit building)	379	380	293	361	307	305	367	260	330	258	459	377	413	529	448	579	619	539	712	879

Table A-2 Alternative Building Activity Source Energy Targets (I-P)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	145	147	125	112	104	96	95	79	93	78	98	95	86	88	84	84	100	87	110	135
2	<u>Bank/other financial</u>	247	251	213	191	178	163	162	135	159	132	167	162	146	150	143	143	170	148	187	230
3	<u>Government office</u>	161	164	139	124	116	106	106	88	104	86	109	106	95	98	93	93	111	96	122	150
4	<u>Medical office (nondiagnostic)</u>	143	146	123	110	103	94	94	78	92	77	97	94	85	87	83	83	99	85	108	133
5	<u>Mixed-use office</u>	128	130	110	99	92	84	84	70	83	69	86	84	76	78	74	74	88	76	97	119
6	<u>Other office</u>	121	124	105	94	87	80	80	66	78	65	82	80	72	74	70	70	84	73	92	113
7	<u>Laboratory</u>	417	413	361	321	302	277	282	241	278	232	297	290	266	275	260	268	312	273	343	424
8	<u>Distribution/shipping center</u>	27	38	26	33	32	36	49	31	44	30	69	60	54	82	70	60	112	88	141	193
9	<u>Nonrefrigerated warehouse</u>	16	23	16	20	19	21	29	18	27	18	41	36	32	49	42	36	67	53	85	116
10	<u>Convenience store</u>	484	482	439	388	395	365	392	366	391	340	427	415	404	404	379	425	445	396	486	580
11	<u>Convenience store with gas</u>	545	543	495	437	445	411	442	412	441	383	481	467	456	456	427	479	502	447	548	653
12	<u>Grocery store/food market</u>	439	437	398	352	358	331	356	332	354	308	387	376	366	366	343	386	404	359	440	525
13	<u>Other food sales</u>	481	479	436	385	393	362	390	364	388	338	424	412	402	402	376	423	442	394	483	576
14	<u>Fire station/police station</u>	151	150	131	116	109	101	102	88	101	84	108	105	96	100	94	97	113	99	125	154
15	<u>Other public order and safety</u>	317	314	274	244	229	211	214	183	211	176	226	220	202	209	197	203	237	208	261	322
16	<u>Medical office (diagnostic)</u>	143	135	138	110	107	106	101	97	106	84	101	106	90	88	90	86	95	91	97	109
17	<u>Clinic/other outpatient health</u>	160	151	154	123	120	119	113	108	119	94	112	118	100	98	101	96	106	101	109	122
18	<u>Refrigerated warehouse</u>	225	223	195	173	163	150	152	130	150	125	160	156	143	149	140	144	168	148	185	229
19	<u>Religious worship</u>	75	74	65	58	54	50	51	43	50	42	54	52	48	50	47	48	56	49	62	76
20	<u>Entertainment/culture</u>	119	118	103	92	86	79	81	69	80	66	85	83	76	79	74	77	89	78	98	121
21	<u>Library</u>	187	185	162	144	135	124	126	108	125	104	133	130	119	123	116	120	139	122	154	190
22	<u>Recreation</u>	136	135	118	104	98	90	92	79	91	75	97	94	87	90	85	87	101	89	112	138
23	<u>Social/meeting</u>	125	124	108	96	90	83	84	72	83	69	89	87	80	82	78	80	93	82	103	127
24	<u>Other public assembly</u>	150	149	130	115	109	100	101	87	100	83	107	104	96	99	93	96	112	98	124	153
25	<u>College/university</u>	263	247	197	192	166	149	156	114	149	113	177	160	154	173	151	160	205	172	235	315

Table A-2 Alternative Building Activity Source Energy Targets (I-P) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	129	127	107	99	89	83	83	70	82	67	89	87	79	83	78	78	95	83	107	142
27	High school	190	178	142	139	120	108	112	82	108	82	128	116	111	125	109	115	148	124	170	228
28	Preschool/daycare	180	176	149	138	124	115	116	97	114	94	125	121	110	116	109	109	132	116	149	198
29	Other classroom education	109	107	90	84	75	70	70	59	69	57	75	73	67	70	66	66	80	70	90	120
30	Fast food	951	937	877	756	746	722	721	665	735	639	781	776	732	745	705	765	824	735	901	1079
31	Restaurant/cafeteria	682	664	611	537	520	499	508	454	514	442	557	552	527	530	500	556	582	523	635	757
32	Other food service	239	233	214	188	182	175	178	159	180	155	195	194	185	186	175	195	204	183	223	266
33	Hospital/inpatient health	603	614	561	482	492	424	441	420	430	406	438	427	411	369	350	386	385	351	395	431
34	Nursing home/assisted living	259	260	201	202	175	169	191	143	182	133	236	208	212	239	207	232	280	236	320	405
35	Dormitory/ fraternity/sorority	136	136	105	106	91	88	100	75	95	69	124	109	111	125	108	121	146	123	167	212
36	Hotel	159	151	142	121	124	111	117	113	116	103	126	124	117	119	114	123	131	118	142	166
37	Motel or inn	169	166	152	129	122	114	106	103	110	98	105	109	98	94	93	98	102	92	106	120
38	Other lodging	201	198	181	153	145	136	127	123	131	117	126	130	117	113	111	117	121	110	127	144
39	Vehicle dealership/ showroom	144	145	122	112	105	98	107	80	103	79	121	114	106	121	110	115	143	123	165	214
40	Retail store	120	120	101	93	87	81	89	66	85	66	100	94	87	100	91	95	119	102	137	177
41	Other retail	168	169	142	130	122	113	124	93	120	92	140	132	123	141	128	134	167	143	192	248
42	Post office/postal center	148	148	115	115	100	96	109	82	104	76	135	119	121	136	118	132	160	135	183	231
43	Repair shop	33	46	31	40	38	43	59	37	53	36	83	72	65	98	84	73	135	106	169	233
44	Vehicle service/repair shop	42	59	40	51	49	55	75	47	68	46	106	92	83	126	107	93	172	135	217	298
45	Vehicle storage/ maintenance	31	44	30	38	37	41	56	35	51	34	79	69	62	94	80	70	128	101	162	223
46	Other service	45	64	43	55	53	59	81	51	74	50	115	100	89	136	116	100	186	146	234	322
47	Strip shopping mall	260	263	221	204	183	172	185	139	180	141	210	197	187	212	191	202	251	215	289	373
48	Enclosed mall	157	158	133	123	110	103	111	84	108	85	127	119	112	128	115	121	151	129	174	225
49	Bar/pub/lounge	297	289	266	234	226	218	221	198	224	193	243	241	230	231	218	242	254	228	277	330
50	Courthouse/probation office	265	259	230	200	197	168	179	154	168	150	186	170	163	159	147	152	178	152	192	232

Table A-2 Alternative Building Activity Source Energy Targets (I-P) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	124	125	96	97	84	81	92	69	87	64	113	100	102	114	99	123	134	113	153	194
52	Single-family detached	105	106	82	82	71	69	78	58	74	54	96	85	86	97	84	90	114	96	130	165
53	Single-family attached	98	99	76	77	66	64	73	54	69	50	90	79	81	91	79	105	106	90	122	154
54	Apartment (in 2 to 4 unit building)	115	115	89	89	77	75	85	64	81	59	105	92	94	106	92	153	124	104	142	179
55	Apartment (in 5+ unit building)	91	92	71	71	62	59	67	51	64	47	83	74	75	84	73	105	99	83	113	143

Table A-2 Alternative Building Activity Source Energy Targets (SI)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	1644	1673	1419	1269	1184	1085	1077	900	1060	882	1111	1082	973	1000	953	952	1135	983	1247	1535
2	Bank/other financial	2803	2853	2420	2164	2019	1850	1837	1534	1808	1503	1894	1844	1659	1706	1624	1623	1935	1676	2126	2617
3	Government office	1829	1861	1579	1412	1317	1207	1199	1001	1179	981	1236	1203	1082	1113	1060	1059	1262	1093	1387	1707
4	Medical office (nondiagnostic)	1624	1653	1402	1254	1169	1072	1064	889	1047	871	1097	1068	961	988	941	940	1121	971	1232	1516
5	Mixed-use office	1453	1479	1255	1122	1046	959	952	795	937	779	982	956	860	884	842	841	1003	869	1102	1356
6	Other office	1379	1404	1191	1065	993	910	904	755	889	740	932	908	816	839	799	799	952	825	1046	1288
7	Laboratory	4739	4689	4104	3641	3425	3151	3198	2740	3161	2631	3376	3288	3017	3128	2950	3042	3538	3106	3899	4816
8	Distribution/shipping center	310	435	297	374	361	404	556	347	502	340	783	681	610	928	791	686	1268	997	1596	2197
9	Nonrefrigerated warehouse	187	262	179	225	217	243	334	209	302	204	471	410	367	559	476	413	763	600	961	1322
10	Convenience store	5496	5473	4988	4404	4487	4143	4457	4156	4439	3858	4851	4710	4592	4590	4302	4831	5056	4500	5518	6583
11	Convenience store with gas	6195	6169	5622	4964	5057	4670	5024	4684	5004	4348	5468	5309	5176	5174	4849	5445	5699	5072	6219	7420
12	Grocery store/food market	4982	4961	4521	3992	4067	3755	4040	3767	4024	3497	4397	4270	4162	4161	3900	4379	4583	4079	5002	5967
13	Other food sales	5461	5438	4956	4376	4458	4116	4429	4129	4411	3833	4820	4680	4562	4561	4275	4800	5024	4471	5483	6541
14	Fire station/police station	1719	1701	1489	1321	1242	1143	1160	994	1147	954	1224	1193	1094	1135	1070	1103	1283	1127	1414	1747
15	Other public order and safety	3599	3561	3117	2765	2601	2393	2429	2081	2401	1998	2564	2497	2291	2376	2240	2310	2687	2359	2961	3657
16	Medical office (diagnostic)	1627	1539	1563	1252	1219	1207	1151	1104	1208	959	1144	1202	1018	1002	1025	978	1074	1030	1107	1238
17	Clinic/other outpatient health	1816	1717	1744	1397	1361	1347	1285	1232	1349	1070	1277	1342	1136	1118	1144	1092	1199	1150	1235	1381
18	Refrigerated warehouse	2556	2529	2214	1964	1847	1700	1725	1478	1705	1419	1821	1774	1627	1687	1591	1641	1908	1675	2103	2598
19	Religious worship	853	844	739	656	617	567	576	493	569	474	608	592	543	563	531	548	637	559	702	867
20	Entertainment/culture	1355	1341	1173	1041	979	901	914	783	904	752	965	940	863	894	843	870	1012	888	1115	1377
21	Library	2122	2099	1837	1630	1533	1411	1432	1227	1415	1178	1511	1472	1351	1401	1321	1362	1584	1391	1746	2156
22	Recreation	1544	1528	1337	1186	1116	1027	1042	893	1030	857	1100	1071	983	1019	961	991	1153	1012	1270	1569
23	Social/meeting	1419	1404	1229	1090	1026	944	958	821	947	788	1011	985	903	937	883	911	1059	930	1168	1442
24	Other public assembly	1705	1688	1477	1311	1233	1134	1151	986	1138	947	1215	1183	1086	1126	1062	1095	1273	1118	1403	1733
25	College/university	2988	2803	2240	2178	1882	1691	1767	1294	1694	1284	2005	1822	1751	1966	1718	1812	2333	1949	2674	3578

Table A-2 Alternative Building Activity Source Energy Targets (SI) (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	1470	1437	1217	1125	1007	938	946	790	929	764	1016	987	900	941	884	890	1078	941	1217	1612
27	High school	2159	2025	1618	1574	1359	1221	1277	935	1223	928	1448	1316	1265	1420	1241	1309	1685	1408	1931	2584
28	Preschool/daycare	2050	2003	1697	1569	1404	1308	1319	1102	1295	1065	1416	1376	1254	1312	1232	1240	1503	1312	1697	2248
29	Other classroom education	1241	1213	1027	950	850	792	798	667	784	644	857	833	759	794	746	751	910	794	1027	1361
30	Fast food	10796	10644	9960	8581	8474	8203	8190	7548	8351	7259	8875	8810	8314	8463	8011	8686	9356	8345	10237	12254
31	Restaurant/cafeteria	7743	7536	6944	6093	5901	5672	5769	5158	5833	5025	6327	6272	5990	6013	5680	6317	6607	5935	7214	8602
32	Other food service	2715	2643	2435	2137	2069	1989	2023	1809	2045	1762	2219	2199	2101	2109	1992	2215	2317	2081	2530	3016
33	Hospital/inpatient health	6848	6978	6373	5468	5590	4812	5003	4767	4879	4610	4973	4849	4664	4187	3981	4388	4376	3991	4481	4895
34	Nursing home/assisted living	2942	2951	2278	2291	1984	1914	2169	1627	2068	1507	2684	2367	2410	2710	2346	2633	3175	2675	3633	4595
35	Dormitory/ fraternity/sorority	1540	1545	1192	1199	1038	1002	1135	852	1082	789	1405	1239	1261	1418	1228	1378	1662	1400	1902	2405
36	Hotel	1804	1720	1612	1372	1403	1262	1329	1287	1316	1166	1433	1411	1332	1346	1295	1392	1486	1340	1610	1889
37	Motel or inn	1916	1885	1721	1460	1382	1290	1208	1168	1251	1109	1195	1240	1109	1072	1060	1114	1154	1043	1209	1367
38	Other lodging	2287	2249	2053	1742	1649	1539	1441	1394	1492	1323	1426	1480	1323	1279	1264	1329	1376	1245	1442	1631
39	Vehicle dealership/ showroom	1639	1648	1386	1272	1194	1108	1215	910	1168	900	1369	1291	1199	1373	1252	1307	1629	1393	1876	2425
40	Retail store	1359	1366	1149	1054	990	918	1007	755	968	746	1135	1070	994	1138	1038	1083	1350	1154	1555	2010
41	Other retail	1906	1917	1612	1480	1389	1288	1413	1059	1358	1047	1592	1502	1394	1597	1457	1520	1895	1620	2182	2821
42	Post office/postal center	1680	1686	1301	1309	1133	1093	1239	930	1181	861	1534	1352	1377	1548	1341	1504	1814	1528	2076	2625
43	Repair shop	374	525	358	451	435	487	670	418	606	409	943	821	735	1118	953	827	1528	1202	1923	2648
44	Vehicle service/repair shop	478	671	457	576	556	623	856	535	774	523	1206	1049	939	1430	1219	1058	1954	1537	2460	3386
45	Vehicle storage/ maintenance	357	501	342	430	415	465	640	400	578	391	901	784	702	1068	910	790	1459	1148	1837	2528
46	Other service	515	724	494	622	600	672	924	577	835	565	1301	1132	1014	1543	1315	1141	2108	1658	2654	3653
47	Strip shopping mall	2956	2985	2514	2313	2079	1954	2101	1577	2041	1604	2389	2241	2120	2412	2172	2289	2850	2437	3284	4238
48	Enclosed mall	1778	1795	1512	1391	1251	1175	1264	949	1228	965	1437	1348	1275	1451	1307	1377	1714	1466	1976	2550
49	Bar/pub/lounge	3374	3284	3026	2655	2571	2472	2514	2248	2542	2190	2757	2733	2610	2621	2475	2753	2879	2586	3144	3748
50	Courthouse/probation office	3009	2943	2615	2268	2237	1911	2032	1746	1909	1707	2114	1931	1854	1806	1665	1730	2021	1723	2184	2630

Table A-2 Alternative Building Activity Source Energy Targets (SI) (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	1410	1415	1092	1098	951	918	1040	780	991	722	1287	1135	1156	1299	1125	1392	1522	1283	1742	2203
52	Single-family detached	1197	1201	927	933	808	779	883	663	842	613	1093	964	981	1103	955	1022	1293	1089	1479	1871
53	Single-family attached	1118	1121	865	871	754	727	824	618	786	573	1020	899	916	1030	892	1193	1206	1017	1380	1746
54	Apartment (in 2 to 4 unit building)	1304	1308	1010	1016	879	848	961	721	917	668	1190	1049	1068	1201	1040	1732	1408	1186	1611	2037
55	Apartment (in 5+ unit building)	1038	1041	804	808	700	675	765	574	730	532	947	835	850	956	828	1193	1120	944	1282	1621

Table A-3 Alternative Building Activity Electricity Site Energy Targets (I-P)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	53	54	46	35	33	29	27	24	29	22	28	29	24	21	21	24	24	20	26	34
2	<u>Bank/other financial</u>	90	92	78	59	56	50	47	42	49	38	48	50	42	36	36	41	41	34	45	57
3	<u>Government office</u>	59	60	51	39	37	33	31	27	32	25	31	33	27	24	23	27	27	22	29	37
4	<u>Medical office (nondiagnostic)</u>	52	53	45	34	33	29	27	24	28	22	28	29	24	21	21	24	24	20	26	33
5	<u>Mixed-use office</u>	47	48	40	31	29	26	24	22	25	20	25	26	22	19	18	21	21	17	23	30
6	<u>Other office</u>	44	45	38	29	28	25	23	20	24	19	23	25	21	18	17	20	20	17	22	28
7	<u>Laboratory</u>	152	151	132	100	95	85	81	74	86	66	85	89	76	66	65	76	75	63	82	105
8	<u>Distribution/shipping center</u>	10	14	10	10	10	11	14	9	14	9	20	18	15	20	17	17	27	20	34	48
9	<u>Nonrefrigerated warehouse</u>	6	8	6	6	6	7	9	6	8	5	12	11	9	12	10	10	16	12	20	29
10	<u>Convenience store</u>	177	176	160	121	125	112	114	113	120	97	122	128	115	97	94	121	107	91	116	144
11	<u>Convenience store with gas</u>	199	198	181	136	141	126	128	127	135	109	138	144	130	110	106	137	121	102	131	162
12	<u>Grocery store/food market</u>	160	159	145	109	113	102	103	102	109	88	111	116	105	88	85	110	97	82	105	130
13	<u>Other food sales</u>	175	175	159	120	124	111	113	112	119	96	121	127	115	97	94	121	107	90	115	143
14	<u>Fire station/police station</u>	55	55	48	36	35	31	30	27	31	24	31	32	27	24	23	28	27	23	30	38
15	<u>Other public order and safety</u>	116	114	100	76	72	65	62	56	65	50	64	68	58	50	49	58	57	47	62	80
16	<u>Medical office (diagnostic)</u>	52	49	50	34	34	33	29	30	33	24	29	33	26	21	22	25	23	21	23	27
17	<u>Clinic/other outpatient health</u>	58	55	56	38	38	36	33	33	37	27	32	36	29	24	25	27	25	23	26	30
18	<u>Refrigerated warehouse</u>	82	81	71	54	51	46	44	40	46	36	46	48	41	36	35	41	40	34	44	57
19	<u>Religious worship</u>	27	27	24	18	17	15	15	13	15	12	15	16	14	12	12	14	14	11	15	19
20	<u>Entertainment/culture</u>	44	43	38	28	27	24	23	21	24	19	24	25	22	19	18	22	21	18	23	30
21	<u>Library</u>	68	67	59	45	43	38	36	33	38	30	38	40	34	30	29	34	34	28	37	47
22	<u>Recreation</u>	50	49	43	32	31	28	27	24	28	22	28	29	25	22	21	25	24	20	27	34
23	<u>Social/meeting</u>	46	45	39	30	29	26	24	22	26	20	25	27	23	20	19	23	22	19	25	31
24	<u>Other public assembly</u>	55	54	47	36	34	31	29	27	31	24	31	32	27	24	23	28	27	22	30	38
25	<u>College/university</u>	96	90	72	60	52	46	45	35	46	32	50	49	44	42	38	46	49	39	56	78

Table A-3 Alternative Building Activity Electricity Site Energy Targets (I-P) (Continued)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	47	46	39	31	28	25	24	21	25	19	26	27	23	20	19	22	23	19	26	35
27	High school	69	65	52	43	38	33	33	25	33	23	36	36	32	30	27	33	36	28	41	56
28	Preschool/daycare	66	64	55	43	39	35	34	30	35	27	36	37	32	28	27	31	32	26	36	49
29	Other classroom education	40	39	33	26	24	21	20	18	21	16	22	23	19	17	16	19	19	16	22	30
30	Fast food	347	342	320	235	236	222	209	204	226	182	223	239	209	179	175	218	198	168	215	268
31	Restaurant/cafeteria	249	242	223	167	164	154	147	140	158	126	159	170	150	128	124	159	140	119	152	188
32	Other food service	87	85	78	58	58	54	52	49	55	44	56	60	53	45	44	56	49	42	53	66
33	Hospital/inpatient health	220	224	205	150	156	130	127	129	132	116	125	131	117	89	87	110	93	80	94	107
34	Nursing home/assisted living	95	95	73	63	55	52	55	44	56	38	68	64	61	57	51	66	67	54	76	100
35	Dormitory/ fraternity/sorority	49	50	38	33	29	27	29	23	29	20	35	34	32	30	27	35	35	28	40	53
36	Hotel	58	55	52	38	39	34	34	35	36	29	36	38	33	29	28	35	32	27	34	41
37	Motel or inn	62	61	55	40	38	35	31	32	34	28	30	34	28	23	23	28	24	21	25	30
38	Other lodging	73	72	66	48	46	42	37	38	40	33	36	40	33	27	28	33	29	25	30	36
39	Vehicle dealership/ showroom	53	53	45	35	33	30	31	25	32	23	34	35	30	29	27	33	35	28	39	53
40	Retail store	44	44	37	29	28	25	26	20	26	19	29	29	25	24	23	27	29	23	33	44
41	Other retail	61	62	52	40	39	35	36	29	37	26	40	41	35	34	32	38	40	33	46	62
42	Post office/postal center	54	54	42	36	32	30	32	25	32	22	39	37	35	33	29	38	38	31	44	57
43	Repair shop	12	17	11	12	12	13	17	11	16	10	24	22	18	24	21	21	32	24	40	58
44	Vehicle service/repair shop	15	22	15	16	15	17	22	14	21	13	30	28	24	30	27	27	41	31	52	74
45	Vehicle storage/ maintenance	11	16	11	12	12	13	16	11	16	10	23	21	18	23	20	20	31	23	39	55
46	Other service	17	23	16	17	17	18	24	16	23	14	33	31	25	33	29	29	45	33	56	80
47	Strip shopping mall	95	96	81	63	58	53	54	43	55	40	60	61	53	51	48	57	60	49	69	93
48	Enclosed mall	57	58	49	38	35	32	32	26	33	24	36	36	32	31	29	35	36	30	42	56
49	Bar/pub/lounge	108	106	97	73	72	67	64	61	69	55	69	74	66	56	54	69	61	52	66	82
50	Courthouse/probation office	97	95	84	62	62	52	52	47	52	43	53	52	47	38	36	43	43	35	46	57

Table A-3 Alternative Building Activity Electricity Site Energy Targets (I-P) (Continued)

Electricity Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																					
<u>No.</u>	<u>Residential Building Type</u>	ASHRAE Climate Zone																			
		<u>0A</u>	<u>0B</u>	<u>1A</u>	<u>1B</u>	<u>2A</u>	<u>2B</u>	<u>3A</u>	<u>3B Coast</u>	<u>3B Other</u>	<u>3C</u>	<u>4A</u>	<u>4B</u>	<u>4C</u>	<u>5A</u>	<u>5B</u>	<u>5C</u>	<u>6A</u>	<u>6B</u>	<u>7</u>	<u>8</u>
51	Mobile home	45	45	35	30	26	25	26	21	27	18	32	31	29	28	25	35	32	26	37	48
52	Single-family detached	38	39	30	26	22	21	22	18	23	15	27	26	25	23	21	26	27	22	31	41
53	Single-family attached	36	36	28	24	21	20	21	17	21	14	26	24	23	22	20	30	26	20	29	38
54	Apartment (in 2 to 4 unit building)	42	42	32	28	24	23	24	20	25	17	30	28	27	25	23	44	30	24	34	44
55	Apartment (in 5+ unit building)	33	33	26	22	19	18	19	16	20	13	24	23	21	20	18	30	24	19	27	35

Table A-3 Alternative Building Activity Electricity Site Energy Targets (SI)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	600	611	518	394	374	334	312	277	326	252	317	333	277	241	237	272	273	225	298	380
2	Bank/other financial	1023	1041	883	673	639	569	532	472	556	429	541	567	473	411	404	463	466	383	508	649
3	Government office	667	679	576	439	417	371	347	308	363	280	353	370	309	268	263	302	304	250	331	423
4	Medical office (nondiagnostic)	593	603	512	390	370	330	308	273	322	248	313	329	274	238	234	268	270	222	294	376
5	Mixed-use office	530	540	458	349	331	295	276	245	288	222	280	294	245	213	209	240	242	199	263	336
6	Other office	503	512	435	331	314	280	262	232	274	211	266	279	233	202	199	228	229	188	250	319
7	Laboratory	1730	1711	1498	1132	1083	969	925	843	972	751	964	1011	861	753	733	868	852	710	932	1194
8	Distribution/shipping center	113	159	108	116	114	124	161	107	154	97	224	209	174	223	197	196	305	228	381	545
9	Nonrefrigerated warehouse	68	96	65	70	69	75	97	64	93	58	135	126	105	135	118	118	184	137	230	328
10	Convenience store	2006	1997	1820	1369	1419	1274	1290	1278	1365	1101	1385	1448	1310	1106	1070	1378	1218	1028	1318	1632
11	Convenience store with gas	2261	2251	2052	1543	1600	1436	1454	1440	1539	1240	1562	1633	1476	1246	1206	1553	1373	1159	1486	1840
12	Grocery store/food market	1818	1811	1650	1241	1287	1155	1169	1158	1237	998	1256	1313	1187	1002	970	1249	1104	932	1195	1479
13	Other food sales	1993	1985	1809	1360	1410	1266	1282	1270	1356	1094	1377	1439	1302	1099	1063	1369	1210	1022	1310	1622
14	Fire station/police station	627	621	543	411	393	351	336	306	353	272	350	367	312	273	266	315	309	257	338	433
15	Other public order and safety	1313	1300	1137	860	823	736	703	640	738	570	732	768	654	572	557	659	647	539	707	907
16	Medical office (diagnostic)	594	561	570	389	386	371	333	339	372	273	327	370	290	241	255	279	259	236	264	307
17	Clinic/other outpatient health	663	627	637	434	430	414	372	379	415	305	365	413	324	269	284	312	289	263	295	342
18	Refrigerated warehouse	933	923	808	611	584	523	499	455	524	405	520	545	464	406	396	468	460	383	502	644
19	Religious worship	311	308	270	204	195	174	167	152	175	135	174	182	155	136	132	156	153	128	168	215
20	Entertainment/culture	494	489	428	324	310	277	265	241	278	215	276	289	246	215	210	248	244	203	266	341
21	Library	774	766	671	507	485	434	414	377	435	336	432	453	385	337	328	389	381	318	417	535
22	Recreation	563	558	488	369	353	316	301	275	317	245	314	329	280	245	239	283	278	231	303	389
23	Social/meeting	518	512	449	339	324	290	277	252	291	225	289	303	258	226	220	260	255	213	279	358
24	Other public assembly	622	616	539	407	390	349	333	303	350	270	347	364	310	271	264	312	307	255	335	430
25	College/university	1091	1023	817	677	595	520	511	398	521	366	573	560	500	473	427	517	562	445	639	887

Table A-3 Alternative Building Activity Electricity Site Energy Targets (SI) (Continued)

No.	Commercial Building Type	Electricity Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	537	524	444	350	319	288	274	243	286	218	290	303	257	227	220	254	260	215	291	400
27	High school	788	739	591	489	430	376	369	287	376	265	414	405	361	342	309	373	406	322	461	641
28	Preschool/daycare	748	731	619	488	444	402	382	339	398	304	404	423	358	316	306	354	362	300	405	557
29	Other classroom education	453	443	375	295	269	243	231	205	241	184	245	256	217	191	185	214	219	182	245	337
30	Fast food	3940	3885	3635	2667	2681	2523	2370	2321	2568	2071	2535	2709	2372	2038	1992	2478	2253	1907	2446	3038
31	Restaurant/cafeteria	2826	2751	2534	1894	1867	1744	1669	1586	1794	1434	1807	1929	1709	1448	1412	1802	1591	1356	1724	2132
32	Other food service	991	965	889	664	655	612	585	556	629	503	634	676	599	508	495	632	558	476	604	748
33	Hospital/inpatient health	2499	2547	2326	1700	1769	1480	1448	1466	1500	1315	1420	1491	1331	1008	990	1252	1054	912	1071	1214
34	Nursing home/assisted living	1074	1077	831	712	628	588	628	500	636	430	767	728	688	653	583	751	765	611	868	1139
35	Dormitory/ fraternity/sorority	562	564	435	373	328	308	328	262	333	225	401	381	360	342	305	393	400	320	454	596
36	Hotel	658	628	588	427	444	388	385	396	405	333	409	434	380	324	322	397	358	306	385	468
37	Motel or inn	699	688	628	454	437	397	349	359	385	316	341	381	316	258	263	318	278	238	289	339
38	Other lodging	835	821	749	541	522	473	417	429	459	378	407	455	378	308	314	379	332	285	345	404
39	Vehicle dealership/ showroom	598	601	506	395	378	341	352	280	359	257	391	397	342	331	311	373	392	318	448	601
40	Retail store	496	499	419	328	313	282	291	232	298	213	324	329	283	274	258	309	325	264	371	498
41	Other retail	696	700	588	460	439	396	409	326	418	299	455	462	398	385	362	434	456	370	521	699
42	Post office/postal center	613	615	475	407	359	336	359	286	363	246	438	416	393	373	333	429	437	349	496	651
43	Repair shop	136	192	131	140	138	150	194	129	186	117	269	252	210	269	237	236	368	275	460	656
44	Vehicle service/repair shop	174	245	167	179	176	192	248	165	238	149	345	323	268	344	303	302	471	351	588	839
45	Vehicle storage/ maintenance	130	183	125	134	131	143	185	123	178	112	257	241	200	257	226	225	351	262	439	627
46	Other service	188	264	180	193	190	207	267	178	257	161	372	348	289	372	327	326	508	379	634	906
47	Strip shopping mall	1079	1089	917	719	658	601	608	485	628	457	682	689	605	581	540	653	686	557	785	1051
48	Enclosed mall	649	655	552	432	396	361	366	292	378	275	410	414	364	350	325	393	413	335	472	632
49	Bar/pub/lounge	1231	1199	1104	825	814	760	727	691	782	625	787	840	745	631	615	785	693	591	751	929
50	Courthouse/probation office	1098	1074	954	705	708	588	588	537	587	487	604	594	529	435	414	494	487	394	522	652

Table A-3 Alternative Building Activity Electricity Site Energy Targets (SI) (Continued)

Electricity Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																					
<u>No.</u>	<u>Residential Building Type</u>	ASHRAE Climate Zone																			
		<u>0A</u>	<u>0B</u>	<u>1A</u>	<u>1B</u>	<u>2A</u>	<u>2B</u>	<u>3A</u>	<u>3B Coast</u>	<u>3B Other</u>	<u>3C</u>	<u>4A</u>	<u>4B</u>	<u>4C</u>	<u>5A</u>	<u>5B</u>	<u>5C</u>	<u>6A</u>	<u>6B</u>	<u>7</u>	<u>8</u>
51	Mobile home	515	516	399	341	301	282	301	240	305	206	368	349	330	313	280	397	367	293	416	546
52	Single-family detached	437	438	338	290	255	240	255	204	259	175	312	296	280	266	238	292	311	249	353	464
53	Single-family attached	408	409	316	271	238	224	238	190	242	163	291	277	261	248	222	340	291	232	330	433
54	Apartment (in 2 to 4 unit building)	476	477	368	316	278	261	278	222	282	191	340	323	305	289	259	494	339	271	385	505
55	Apartment (in 5+ unit building)	379	380	293	251	221	208	221	177	224	152	270	257	243	230	206	340	270	216	306	402

Table A-4 Alternative Building Activity Fossil Fuel Site Energy Targets (I-P)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	0	0	0	15	13	14	18	11	13	16	20	14	17	27	25	17	31	30	35	40
2	<u>Bank/other financial</u>	0	0	0	26	22	24	31	20	23	27	33	23	29	47	42	29	53	51	59	68
3	<u>Government office</u>	0	0	0	17	14	15	20	13	15	17	22	15	19	31	27	19	35	33	39	44
4	<u>Medical office (nondiagnostic)</u>	0	0	0	15	13	14	18	11	13	15	19	14	17	27	24	17	31	29	34	39
5	<u>Mixed-use office</u>	0	0	0	13	11	12	16	10	12	14	17	12	15	24	22	15	28	26	31	35
6	<u>Other office</u>	0	0	0	13	11	12	15	10	11	13	16	12	14	23	21	14	26	25	29	33
7	<u>Laboratory</u>	0	0	0	44	37	40	54	35	40	46	59	42	53	86	76	54	97	94	109	125
8	<u>Distribution/shipping center</u>	0	0	0	4	4	5	9	4	6	6	14	9	11	25	20	12	35	30	45	57
9	<u>Nonrefrigerated warehouse</u>	0	0	0	3	2	3	6	3	4	4	8	5	6	15	12	7	21	18	27	34
10	<u>Convenience store</u>	0	0	0	53	48	53	75	53	56	68	85	60	81	126	111	85	139	136	154	171
11	<u>Convenience store with gas</u>	0	0	0	59	54	59	84	60	64	77	96	68	91	142	125	96	157	153	174	192
12	<u>Grocery store/food market</u>	0	0	0	48	44	48	68	48	51	62	77	54	73	114	100	77	126	123	140	155
13	<u>Other food sales</u>	0	0	0	52	48	52	74	53	56	68	85	60	80	125	110	85	138	135	153	169
14	<u>Fire station/police station</u>	0	0	0	16	13	15	19	13	15	17	22	15	19	31	28	19	35	34	39	45
15	<u>Other public order and safety</u>	0	0	0	33	28	30	41	26	31	35	45	32	40	65	58	41	74	71	83	95
16	<u>Medical office (diagnostic)</u>	0	0	0	15	13	15	19	14	15	17	20	15	18	28	26	17	30	31	31	32
17	<u>Clinic/other outpatient health</u>	0	0	0	17	15	17	22	16	17	19	22	17	20	31	29	19	33	35	34	36
18	<u>Refrigerated warehouse</u>	0	0	0	24	20	22	29	19	22	25	32	23	29	46	41	29	52	51	59	67
19	<u>Religious worship</u>	0	0	0	8	7	7	10	6	7	8	11	8	10	15	14	10	17	17	20	22
20	<u>Entertainment/culture</u>	0	0	0	12	11	11	15	10	11	13	17	12	15	25	22	15	28	27	31	36
21	<u>Library</u>	0	0	0	20	16	18	24	16	18	21	27	19	24	38	34	24	44	42	49	56
22	<u>Recreation</u>	0	0	0	14	12	13	17	11	13	15	19	14	17	28	25	17	32	31	35	41
23	<u>Social/meeting</u>	0	0	0	13	11	12	16	10	12	14	18	13	16	26	23	16	29	28	33	37
24	<u>Other public assembly</u>	0	0	0	16	13	14	19	13	14	17	21	15	19	31	27	19	35	34	39	45
25	<u>College/university</u>	0	0	0	26	20	22	30	16	22	23	35	23	31	54	44	32	64	59	75	93

Table A-4 Alternative Building Activity Fossil Fuel Site Energy Targets (I-P) (Continued)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	0	0	0	13	11	12	16	10	12	13	18	13	16	26	23	16	30	28	34	42
27	High school	0	0	0	19	15	16	21	12	16	16	25	17	22	39	32	23	46	43	54	67
28	Preschool/daycare	0	0	0	19	15	17	22	14	16	19	25	17	22	36	32	22	41	40	47	58
29	Other classroom education	0	0	0	11	9	10	13	8	10	11	15	11	13	22	19	13	25	24	29	35
30	Fast food	0	0	0	103	91	104	137	96	106	128	156	112	147	233	206	153	257	252	286	317
31	Restaurant/cafeteria	0	0	0	73	63	72	97	66	74	89	111	80	106	165	146	111	182	179	201	223
32	Other food service	0	0	0	26	22	25	34	23	26	31	39	28	37	58	51	39	64	63	71	78
33	Hospital/inpatient health	0	0	0	66	60	61	84	61	62	81	87	62	82	115	102	77	120	120	125	127
34	Nursing home/assisted living	0	0	0	27	21	24	36	21	26	27	47	30	43	74	60	46	87	81	101	119
35	Dormitory/ fraternity/sorority	0	0	0	14	11	13	19	11	14	14	25	16	22	39	32	24	46	42	53	62
36	Hotel	0	0	0	16	15	16	22	16	17	21	25	18	23	37	33	25	41	40	45	49
37	Motel or inn	0	0	0	17	15	16	20	15	16	20	21	16	20	29	27	20	32	32	34	35
38	Other lodging	0	0	0	21	18	20	24	18	19	23	25	19	23	35	33	23	38	38	40	42
39	Vehicle dealership/ showroom	0	0	0	15	13	14	20	12	15	16	24	16	21	38	32	23	45	42	52	63
40	Retail store	0	0	0	13	11	12	17	10	12	13	20	14	18	31	27	19	37	35	43	52
41	Other retail	0	0	0	18	15	16	24	13	17	18	28	19	25	44	38	27	52	49	61	73
42	Post office/postal center	0	0	0	16	12	14	21	12	15	15	27	17	24	43	35	27	50	46	58	68
43	Repair shop	0	0	0	5	5	6	11	5	8	7	17	10	13	31	25	15	42	36	54	69
44	Vehicle service/repair shop	0	0	0	7	6	8	14	7	10	9	21	13	17	39	31	19	54	46	69	88
45	Vehicle storage/ maintenance	0	0	0	5	4	6	11	5	7	7	16	10	12	29	23	14	40	35	51	66
46	Other service	0	0	0	7	6	9	15	7	11	10	23	14	18	42	34	20	58	50	74	95
47	Strip shopping mall	0	0	0	28	22	25	35	20	26	28	42	28	37	66	56	40	78	74	92	110
48	Enclosed mall	0	0	0	17	13	15	21	12	16	17	25	17	22	40	34	24	47	44	55	66
49	Bar/pub/lounge	0	0	0	32	28	31	42	29	32	39	48	35	46	72	64	49	79	78	88	97
50	Courthouse/probation office	0	0	0	27	24	24	34	22	24	30	37	25	33	50	43	31	56	52	61	68

Table A-4 Alternative Building Activity Fossil Fuel Site Energy Targets (I-P) (Continued)

Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																					
<u>No.</u>	<u>Residential Building Type</u>	ASHRAE Climate Zone																			
		<u>0A</u>	<u>0B</u>	<u>1A</u>	<u>1B</u>	<u>2A</u>	<u>2B</u>	<u>3A</u>	<u>3B Coast</u>	<u>3B Other</u>	<u>3C</u>	<u>4A</u>	<u>4B</u>	<u>4C</u>	<u>5A</u>	<u>5B</u>	<u>5C</u>	<u>6A</u>	<u>6B</u>	<u>7</u>	<u>8</u>
51	Mobile home	0	0	0	13	10	12	17	10	13	13	23	14	20	36	29	25	42	39	49	57
52	Single-family detached	0	0	0	11	9	10	15	8	11	11	19	12	17	30	25	18	36	33	41	48
53	Single-family attached	0	0	0	10	8	9	14	8	10	10	18	11	16	28	23	21	33	31	39	45
54	Apartment (in 2 to 4 unit building)	0	0	0	12	9	11	16	9	12	12	21	13	19	33	27	31	39	36	45	53
55	Apartment (in 5+ unit building)	0	0	0	10	8	9	13	7	9	9	17	11	15	26	21	21	31	28	36	42

Table A-4 Alternative Building Activity Fossil Fuel Site Energy Targets (SI)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	Admin/professional office	0	0	0	173	145	157	205	130	153	177	222	156	195	312	279	191	354	337	395	452
2	Bank/other financial	0	0	0	294	247	267	349	222	261	301	378	266	332	532	475	325	604	575	674	770
3	Government office	0	0	0	192	161	174	228	145	170	196	247	174	217	347	310	212	394	375	440	502
4	Medical office (nondiagnostic)	0	0	0	171	143	155	202	128	151	174	219	154	192	308	275	188	350	333	390	446
5	Mixed-use office	0	0	0	153	128	138	181	115	135	156	196	138	172	276	246	169	313	298	349	399
6	Other office	0	0	0	145	121	131	172	109	128	148	186	131	163	262	234	160	297	283	332	379
7	Laboratory	0	0	0	495	418	455	608	396	457	527	674	475	604	976	863	609	1104	1065	1236	1417
8	Distribution/shipping center	0	0	0	51	44	58	106	50	73	68	156	98	122	290	231	137	395	342	506	646
9	Nonrefrigerated warehouse	0	0	0	31	27	35	64	30	44	41	94	59	74	174	139	83	238	206	304	389
10	Convenience store	0	0	0	599	548	598	847	600	641	773	968	680	920	1432	1258	968	1578	1543	1748	1937
11	Convenience store with gas	0	0	0	675	618	675	955	677	723	871	1091	767	1037	1614	1418	1091	1778	1739	1971	2183
12	Grocery store/food market	0	0	0	543	497	542	768	544	581	700	877	617	834	1298	1140	877	1430	1399	1585	1756
13	Other food sales	0	0	0	595	545	595	842	596	637	768	962	676	914	1423	1250	962	1568	1533	1737	1925
14	Fire station/police station	0	0	0	180	152	165	220	144	166	191	244	172	219	354	313	221	400	386	448	514
15	Other public order and safety	0	0	0	376	318	346	462	301	347	400	511	361	459	741	655	463	838	809	938	1076
16	Medical office (diagnostic)	0	0	0	170	149	174	219	159	175	192	228	174	204	313	300	196	335	353	351	364
17	Clinic/other outpatient health	0	0	0	190	166	195	244	178	195	214	255	194	228	349	334	219	374	394	391	406
18	Refrigerated warehouse	0	0	0	267	226	246	328	214	246	284	363	256	326	526	465	329	595	574	666	764
19	Religious worship	0	0	0	89	75	82	109	71	82	95	121	85	109	176	155	110	199	192	222	255
20	Entertainment/culture	0	0	0	142	120	130	174	113	131	151	193	136	173	279	247	174	316	304	353	405
21	Library	0	0	0	222	187	204	272	177	204	236	302	213	271	437	386	273	494	477	553	634
22	Recreation	0	0	0	161	136	148	198	129	149	172	219	155	197	318	281	199	360	347	403	462
23	Social/meeting	0	0	0	148	125	136	182	119	137	158	202	142	181	292	258	182	331	319	370	424
24	Other public assembly	0	0	0	178	151	164	219	142	164	190	242	171	217	351	310	219	397	383	445	510
25	College/university	0	0	0	296	230	244	336	187	245	257	400	263	351	613	502	363	728	668	847	1053

Table A-4 Alternative Building Activity Fossil Fuel Site Energy Targets (SI) (Continued)

No.	Commercial Building Type	Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
26	Elementary/middle school	0	0	0	153	123	135	180	114	134	153	203	143	180	294	259	178	336	323	386	474
27	High school	0	0	0	214	166	176	243	135	177	186	289	190	253	443	363	262	526	483	612	760
28	Preschool/daycare	0	0	0	213	172	189	251	159	187	213	283	199	251	409	360	248	469	450	538	661
29	Other classroom education	0	0	0	129	104	114	152	96	113	129	171	120	152	248	218	150	284	272	326	400
30	Fast food	0	0	0	1168	1035	1185	1557	1090	1206	1454	1771	1273	1665	2641	2343	1740	2919	2861	3244	3606
31	Restaurant/cafeteria	0	0	0	829	721	819	1096	745	843	1007	1262	906	1200	1876	1661	1265	2062	2035	2286	2531
32	Other food service	0	0	0	291	253	287	384	261	295	353	443	318	421	658	582	444	723	714	802	887
33	Hospital/inpatient health	0	0	0	744	683	695	951	689	705	923	992	700	934	1306	1164	879	1365	1368	1420	1440
34	Nursing home/assisted living	0	0	0	312	242	276	412	235	299	302	536	342	483	846	686	527	991	917	1151	1352
35	Dormitory/ fraternity/sorority	0	0	0	163	127	145	216	123	156	158	280	179	253	443	359	276	519	480	603	708
36	Hotel	0	0	0	187	171	182	253	186	190	233	286	204	267	420	379	279	464	459	510	556
37	Motel or inn	0	0	0	199	169	186	230	169	181	222	238	179	222	334	310	223	360	358	383	402
38	Other lodging	0	0	0	237	201	222	274	201	216	265	285	214	265	399	370	266	429	427	457	480
39	Vehicle dealership/ showroom	0	0	0	173	146	160	231	131	169	180	273	186	240	428	366	262	508	477	594	713
40	Retail store	0	0	0	143	121	133	191	109	140	149	226	155	199	355	304	217	421	396	493	591
41	Other retail	0	0	0	201	170	186	269	153	196	210	318	217	279	498	426	304	591	555	691	830
42	Post office/postal center	0	0	0	178	138	158	235	134	171	172	306	195	276	483	392	301	566	524	658	772
43	Repair shop	0	0	0	61	53	70	127	60	87	82	188	119	147	349	279	166	477	412	610	779
44	Vehicle service/repair shop	0	0	0	78	68	90	163	77	112	105	241	152	188	446	356	212	610	527	779	996
45	Vehicle storage/ maintenance	0	0	0	59	51	67	122	58	84	78	180	113	141	333	266	158	455	394	582	744
46	Other service	0	0	0	85	73	97	176	83	121	113	260	164	203	481	384	229	658	569	841	1075
47	Strip shopping mall	0	0	0	315	254	282	399	228	295	321	477	324	425	753	635	459	889	836	1041	1247
48	Enclosed mall	0	0	0	189	153	170	240	137	177	193	287	195	255	453	382	276	535	503	626	750
49	Bar/pub/lounge	0	0	0	361	314	357	478	325	367	439	550	395	523	818	724	551	898	887	996	1103
50	Courthouse/probation office	0	0	0	309	273	276	386	252	276	342	422	279	371	564	487	347	631	591	692	774

Table A-4 Alternative Building Activity Fossil Fuel Site Energy Targets (SI) (Continued)

Fossil Fuel Site Energy Use EUIs by Building Type by Climate Zone (MJ/m ² ·yr)																					
<u>No.</u>	<u>Residential Building Type</u>	ASHRAE Climate Zone																			
		<u>0A</u>	<u>0B</u>	<u>1A</u>	<u>1B</u>	<u>2A</u>	<u>2B</u>	<u>3A</u>	<u>3B Coast</u>	<u>3B Other</u>	<u>3C</u>	<u>4A</u>	<u>4B</u>	<u>4C</u>	<u>5A</u>	<u>5B</u>	<u>5C</u>	<u>6A</u>	<u>6B</u>	<u>7</u>	<u>8</u>
51	Mobile home	0	0	0	149	116	133	198	113	143	145	257	164	231	405	329	279	475	440	552	648
52	Single-family detached	0	0	0	127	99	113	168	96	122	123	218	139	197	344	279	205	403	373	469	550
53	Single-family attached	0	0	0	118	92	105	157	89	113	115	203	130	183	321	261	239	376	349	437	514
54	Apartment (in 2 to 4 unit building)	0	0	0	138	107	123	183	104	132	134	237	152	214	375	304	347	439	407	510	599
55	Apartment (in 5+ unit building)	0	0	0	110	86	98	145	83	105	106	189	121	170	298	242	239	350	324	406	477

Replace Tables J-1 through J-4 with the following as shown.

Table J-1 Ratios of Climate Zonal EUI to Average of All EUIs by Building Type

ASHRAE Climate Zone:	0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
Building Type	Climate Zone EUI Ratio																			
All Office	1.20	1.22	1.04	1.14	1.04	0.98	1.03	0.81	0.96	0.86	1.08	0.98	0.95	1.11	1.03	0.93	1.26	1.12	1.39	1.67
Large Office	1.22	1.20	1.06	1.13	1.09	0.96	1.08	0.88	0.96	0.92	1.14	0.97	1.00	1.11	1.00	0.94	1.24	1.10	1.35	1.59
Medium Office	1.22	1.25	1.06	1.17	1.04	1.03	1.02	0.80	0.97	0.83	1.04	0.97	0.91	1.06	1.01	0.89	1.20	1.09	1.31	1.57
Small Office	1.16	1.22	0.99	1.11	0.99	0.95	1.00	0.76	0.95	0.82	1.06	0.99	0.93	1.14	1.08	0.95	1.32	1.19	1.50	1.84
Warehouse	0.41	0.57	0.39	0.60	0.57	0.66	0.96	0.56	0.81	0.59	1.36	1.10	1.06	1.84	1.53	1.20	2.51	2.04	3.18	4.27
Stand-alone Retail	1.01	1.02	0.86	0.96	0.89	0.85	0.99	0.70	0.89	0.74	1.13	0.99	0.99	1.29	1.15	1.08	1.53	1.35	1.77	2.23
Strip Mall	1.08	1.09	0.92	1.03	0.91	0.88	1.01	0.71	0.92	0.78	1.16	1.01	1.03	1.33	1.18	1.11	1.58	1.39	1.83	2.30
Primary School	1.20	1.17	0.99	1.12	0.98	0.94	1.01	0.80	0.93	0.83	1.10	0.99	0.97	1.16	1.07	0.96	1.33	1.20	1.51	1.95
Secondary School	1.29	1.21	0.96	1.15	0.97	0.90	1.00	0.69	0.90	0.74	1.15	0.97	1.00	1.28	1.10	1.04	1.52	1.31	1.75	2.29
Supermarket	0.95	0.94	0.86	0.93	0.93	0.89	1.01	0.89	0.95	0.89	1.11	1.01	1.05	1.20	1.10	1.11	1.32	1.22	1.45	1.69
Fast Food	0.99	0.98	0.92	0.97	0.94	0.93	0.99	0.86	0.95	0.89	1.08	1.00	1.02	1.18	1.09	1.06	1.30	1.20	1.43	1.67
Restaurant	1.01	0.98	0.91	0.97	0.92	0.92	0.99	0.83	0.94	0.87	1.10	1.01	1.04	1.19	1.10	1.10	1.30	1.21	1.43	1.67
Hospital	1.12	1.14	1.04	1.10	1.10	0.98	1.08	0.97	0.99	1.00	1.08	0.98	1.02	1.04	0.97	0.96	1.08	1.02	1.12	1.19
Outpatient Health Care	1.09	1.03	1.04	1.02	0.98	1.00	1.01	0.91	1.00	0.85	1.01	0.99	0.90	1.01	1.01	0.87	1.09	1.08	1.12	1.23
Motel	1.21	1.19	1.09	1.13	1.05	1.01	1.01	0.92	0.98	0.93	1.01	0.97	0.93	1.03	1.00	0.94	1.11	1.03	1.17	1.29
Hotel	1.04	0.99	0.93	0.97	0.97	0.90	1.00	0.92	0.94	0.89	1.09	1.00	1.02	1.17	1.10	1.06	1.29	1.21	1.41	1.61
Mid-Rise Apartment	1.01	1.01	0.78	0.96	0.82	0.81	0.97	0.69	0.88	0.69	1.22	1.00	1.10	1.40	1.19	1.20	1.65	1.43	1.89	2.33

Table J-2 ASHRAE Climate Zones

Zone	Thermal Criteria	Representative City
<u>0A</u>	<u>$6000 < CDD10^{\circ}\text{C}$</u>	<u>Ho Chi Minh City (Vietnam)</u>
<u>0B</u>	<u>$6000 < CDD10^{\circ}\text{C}$</u>	<u>Dubai (United Arab Emirates)</u>
<u>1A</u>	<u>$5000 < CDD10^{\circ}\text{C} < 6000$</u>	<u>Miami (U.S.)</u>
<u>1B</u>	<u>$5000 < CDD10^{\circ}\text{C} \leq 6000$</u>	<u>New Delhi (India)</u>
<u>2A</u>	<u>$3500 < CDD10^{\circ}\text{C} < 5000$</u>	<u>Houston (U.S.)</u>
<u>2B</u>	<u>$3500 < CDD10^{\circ}\text{C} \leq 5000$</u>	<u>Phoenix (U.S.)</u>
<u>3A</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $HDD18.3^{\circ}\text{C} < 2000$</u>	<u>Atlanta (U.S.)</u>
<u>3B-Coast</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $HDD18.3^{\circ}\text{C} < 2000$</u>	<u>Los Angeles (U.S.)</u>
<u>3B-Other</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $HDD18.3^{\circ}\text{C} \leq 2000$</u>	<u>Las Vegas (U.S.)</u>
<u>3C</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $HDD18.3^{\circ}\text{C} \leq 2000$</u>	<u>San Francisco (U.S.)</u>
<u>4A</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $2000 < HDD18.3^{\circ}\text{C} < 3000$</u>	<u>Baltimore (U.S.)</u>
<u>4B</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $2000 < HDD18.3^{\circ}\text{C} \leq 3000$</u>	<u>Albuquerque (U.S.)</u>
<u>4C</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $2000 < HDD18.3^{\circ}\text{C} \leq 3000$</u>	<u>Seattle (U.S.)</u>
<u>5A</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $3000 < HDD18.3^{\circ}\text{C} \leq 4000$</u>	<u>Chicago (U.S.)</u>
<u>5B</u>	<u>$CDD10^{\circ}\text{C} < 3500$ and $3000 < HDD18.3^{\circ}\text{C} \leq 4000$</u>	<u>Denver (U.S.)</u>
<u>5C</u>	<u>$3000 < HDD18.3^{\circ}\text{C} < 4000$</u>	<u>Vancouver (Canada)</u>
<u>6A</u>	<u>$4000 < HDD18.3^{\circ}\text{C} \leq 5000$</u>	<u>Minneapolis (U.S.)</u>
<u>6B</u>	<u>$4000 < HDD18.3^{\circ}\text{C} < 5000$</u>	<u>Helena (U.S.)</u>
<u>7</u>	<u>$5000 < HDD18.3^{\circ}\text{C} < 7000$</u>	<u>Duluth (U.S.)</u>
<u>8</u>	<u>$7000 < HDD18.3^{\circ}\text{C}$</u>	<u>Fairbanks (U.S.)</u>

Notes:

1. Climate zones are more fully described in the references (Briggs, et al.; Deru, et al.).
2. Representative cities were used for simulation modeling.

Table J-3 CBECS/RECS Total Site-Based Energy-Use Intensities (2012 CBECS/2015 RECS)

		EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
Building Category	Commercial Building Type	0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
<u>Education</u>	<u>College/university</u>	113	106	85	101	85	79	88	61	79	65	101	85	88	113	96	91	134	115	154	201
<u>Education</u>	<u>Elementary/middle school</u>	56	54	46	52	46	44	47	37	43	38	51	46	45	54	50	45	62	56	70	91
<u>Education</u>	<u>High school</u>	82	77	61	73	62	57	63	44	57	47	73	62	64	81	70	66	97	83	111	145
<u>Education</u>	<u>Other classroom education</u>	47	46	39	44	39	37	40	31	37	32	43	39	38	45	42	38	52	47	59	76
<u>Education</u>	<u>Preschool/daycare</u>	77	76	64	73	64	61	66	52	61	54	71	64	63	75	69	62	86	78	98	126
<u>Enclosed mall</u>	<u>Enclosed mall</u>	67	68	57	64	57	55	63	44	57	49	72	63	64	83	73	69	98	87	114	143
<u>Food sales</u>	<u>Convenience store</u>	208	207	189	204	204	194	221	195	208	194	244	221	231	263	241	243	290	266	318	370
<u>Food sales</u>	<u>Convenience store with gas</u>	234	233	213	230	230	219	250	219	234	219	275	249	260	296	272	274	326	300	358	417
<u>Food sales</u>	<u>Grocery/food market</u>	188	188	171	185	185	176	201	176	188	176	221	200	209	238	219	220	262	241	288	335
<u>Food sales</u>	<u>Other food sales</u>	206	206	187	203	203	193	220	193	207	193	242	219	230	261	240	241	288	265	316	367
<u>Food service</u>	<u>Bar/pub/lounge</u>	128	124	114	123	117	116	125	105	119	110	139	128	131	150	139	138	165	153	181	211
<u>Food service</u>	<u>Fast food</u>	408	402	377	397	385	384	407	353	391	365	446	412	418	485	449	437	536	494	589	688
<u>Food service</u>	<u>Other food service</u>	103	100	92	99	94	93	100	85	96	89	112	103	106	121	112	111	133	123	146	169
<u>Food service</u>	<u>Restaurant/cafeteria</u>	293	285	263	282	268	266	287	241	273	253	318	294	301	344	318	318	378	351	415	483
<u>Hospital</u>	<u>Hospital/inpatient health</u>	259	264	241	253	254	225	248	223	228	232	250	227	235	240	223	221	251	236	258	275
<u>Laboratory</u>	<u>Laboratory</u>	179	177	155	169	156	148	159	128	148	132	170	154	152	179	165	153	203	184	224	270
<u>Lodging</u>	<u>Dormitory/fraternity/sorority</u>	58	58	45	56	47	47	56	40	51	40	71	58	63	81	69	69	95	83	109	135
<u>Lodging</u>	<u>Hotel</u>	68	65	61	64	64	59	66	60	62	59	72	66	67	77	73	70	85	79	93	106
<u>Lodging</u>	<u>Motel or inn</u>	72	71	65	68	63	60	60	55	59	56	60	58	56	61	59	56	66	62	70	77
<u>Lodging</u>	<u>Nursing home/assisted living</u>	111	112	86	106	90	90	108	76	97	76	135	111	121	155	132	132	182	158	209	258
<u>Lodging</u>	<u>Other lodging</u>	86	85	78	81	75	72	72	65	70	67	72	69	67	73	71	67	79	74	83	92
<u>Office</u>	<u>Admin/professional office</u>	62	63	54	59	54	51	54	42	50	44	56	51	49	57	53	48	65	58	72	86
<u>Office</u>	<u>Bank/other financial</u>	106	108	92	100	92	87	91	72	85	76	95	86	83	98	91	82	111	99	122	147
<u>Office</u>	<u>Courthouse/probation office</u>	114	111	99	105	102	89	101	82	89	86	106	90	93	103	93	87	116	102	126	148
<u>Office</u>	<u>Government office</u>	69	70	60	65	60	56	60	47	55	49	62	56	54	64	59	53	72	65	80	96
<u>Office</u>	<u>Medical office (nondiagnostic)</u>	61	62	53	58	53	50	53	42	49	44	55	50	48	57	53	47	64	57	71	85

Table J-3 CBECS/RECS Total Site-Based Energy-Use Intensities (2012 CBECS/2015 RECS) (Continued)

		EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
Building Category	Commercial Building Type	0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
Office	Mixed-use office	55	56	47	52	48	45	47	37	44	39	49	45	43	51	47	42	57	51	63	76
Office	Other office	52	53	45	49	45	43	45	35	42	37	47	42	41	48	45	40	55	49	60	72
Outpatient health care	Clinic/other outpatient health	69	65	66	65	62	63	64	58	63	54	64	63	57	64	64	55	69	68	71	78
Outpatient health care	Medical office (diagnostic)	62	58	59	58	55	57	57	52	57	48	58	56	51	57	57	49	62	61	64	70
Public assembly	Entertainment/culture	51	51	44	48	44	42	45	37	42	38	49	44	43	51	47	44	58	53	64	77
Public assembly	Library	80	79	69	75	70	66	71	57	66	59	76	69	68	80	74	69	91	82	101	121
Public assembly	Other public assembly	64	64	56	61	56	53	57	46	53	48	61	55	55	64	60	55	73	66	81	97
Public assembly	Recreation	58	58	51	55	51	48	52	42	48	43	55	50	49	58	54	50	66	60	73	88
Public assembly	Social/meeting	54	53	46	50	47	44	48	38	44	40	51	46	45	54	50	46	61	55	67	81
Public order	Fire/police station	65	64	56	61	56	54	58	47	54	48	62	56	55	65	60	56	73	67	81	98
Public order	Other public order/safety	136	135	118	128	118	112	121	97	112	101	129	117	115	136	126	116	154	140	170	205
Religious worship	Religious worship	32	32	28	30	28	27	29	23	27	24	31	28	27	32	30	28	36	33	40	49
Retail	Other retail	72	72	61	68	63	60	70	50	64	53	80	70	70	91	82	76	109	96	126	158
Retail	Retail store	51	52	43	49	45	43	50	35	45	38	57	50	50	65	58	54	77	68	90	113
Retail	Vehicle dealership/showroom	62	62	52	59	54	52	60	43	55	45	69	60	60	79	70	66	93	82	108	136
Service	Other service	19	27	19	29	27	31	46	27	39	28	65	53	51	88	74	57	121	98	153	205
Service	Post office/postal center	64	64	49	61	51	51	62	44	55	43	77	63	69	89	75	76	104	90	120	147
Service	Repair shop	14	20	14	21	20	23	33	20	28	21	47	38	37	64	53	42	88	71	111	149
Service	Vehicle service/repair shop	18	25	17	27	25	29	43	25	36	26	61	49	47	82	68	53	112	91	142	190
Service	Vehicle storage/maintenance	13	19	13	20	19	22	32	19	27	20	45	37	35	61	51	40	84	68	106	142
Strip mall	Strip shopping mall	112	113	95	107	94	91	104	74	96	81	120	105	107	138	122	115	163	144	189	238
Warehouse	Distribution/ship center	12	16	11	17	16	19	28	16	24	17	39	32	31	53	44	35	73	59	92	123
Warehouse	Non-refrigerated warehouse	7	10	7	10	10	11	17	10	14	10	24	19	18	32	27	21	44	36	55	74
Warehouse	Refrigerated warehouse	97	96	84	91	84	80	86	69	80	71	92	83	82	97	89	83	109	99	121	146
Residential	Apartment (in 2 to 4 unit building)	49	49	38	47	40	40	48	34	43	34	60	49	54	69	58	59	81	70	93	114

Table J-3 CBECS/RECS Total Site-Based Energy-Use Intensities (2012 CBECS/2015 RECS) (Continued)

Building Category	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft²·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
Residential	<u>Apartment</u> <i>(in 5+ unit building)</i>	39	39	30	37	32	32	38	27	34	27	48	39	43	55	46	47	64	56	74	91
Residential	Mobile/manufactured home	53	53	41	51	43	43	52	37	46	36	65	53	58	74	63	63	87	76	100	124
Residential	Single family-attached	42	42	33	40	34	34	41	29	37	29	51	42	46	59	50	50	69	60	79	98
Residential	Single family-detached	45	45	35	43	37	36	44	31	39	31	55	45	49	63	54	54	74	64	85	105

Table J-4 Energy Use Intensity Targets

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
1	<u>Admin/professional office</u>	44	44	38	41	38	36	37	29	35	31	39	35	34	40	37	34	45	41	50	60
2	<u>Bank/other financial</u>	74	75	64	70	64	61	64	50	59	53	67	60	58	68	64	57	78	69	86	103
3	<u>Government office</u>	48	49	42	46	42	40	42	33	39	35	43	39	38	45	42	37	51	45	56	67
4	<u>Medical office (nondiagnostic)</u>	43	44	37	41	37	35	37	29	34	31	39	35	34	40	37	33	45	40	50	60
5	<u>Mixed-use office</u>	38	39	33	36	33	31	33	26	31	27	35	31	30	35	33	30	40	36	44	53
6	<u>Other office</u>	37	37	32	35	32	30	31	25	29	26	33	30	29	34	31	28	38	34	42	51
7	<u>Laboratory</u>	125	124	109	118	109	103	111	90	104	93	119	108	106	125	116	107	142	129	157	189
8	<u>Distribution/shipping center</u>	8	12	8	12	11	13	19	11	16	12	28	22	21	37	31	24	51	41	64	86
9	<u>Nonrefrigerated warehouse</u>	5	7	5	7	7	8	12	7	10	7	17	13	13	22	19	15	31	25	39	52
10	<u>Convenience store</u>	145	145	132	143	143	136	155	136	145	136	171	154	162	184	169	170	203	186	222	259
11	<u>Convenience store with gas</u>	164	163	149	161	161	153	175	154	164	153	192	174	182	207	190	192	228	210	251	292
12	<u>Grocery store/food market</u>	132	131	120	129	129	123	140	123	132	123	155	140	147	167	153	154	184	169	202	235
13	<u>Other food sales</u>	145	144	131	142	142	135	154	135	145	135	170	153	161	183	168	169	201	185	221	257
14	<u>Fire station/police station</u>	45	45	39	43	40	37	40	33	38	34	43	39	39	45	42	39	51	47	57	69
15	<u>Other public order and safety</u>	95	94	82	90	83	78	84	68	79	70	90	82	81	95	88	81	108	98	119	144
16	<u>Medical office (diagnostic)</u>	43	41	41	41	39	40	40	36	40	34	40	39	36	40	40	34	43	43	45	49
17	<u>Clinic/other outpatient health</u>	48	45	46	45	43	44	45	40	44	38	45	44	40	45	45	38	48	48	50	54
18	<u>Refrigerated warehouse</u>	68	67	59	64	59	56	60	48	56	50	64	58	57	68	62	58	77	69	85	102
19	<u>Religious worship</u>	23	22	20	21	20	19	20	16	19	17	21	19	19	23	21	19	26	23	28	34
20	<u>Entertainment/culture</u>	36	35	31	34	31	30	32	26	30	26	34	31	30	36	33	31	41	37	45	54
21	<u>Library</u>	56	56	49	53	49	46	50	40	46	41	53	48	48	56	52	48	64	58	70	85
22	<u>Recreation</u>	41	40	35	38	35	34	36	29	34	30	39	35	35	41	38	35	46	42	51	62
23	<u>Social/meeting</u>	38	37	33	35	33	31	33	27	31	28	36	32	32	38	35	32	42	39	47	57
24	<u>Other public assembly</u>	45	45	39	42	39	37	40	32	37	33	43	39	38	45	42	39	51	46	57	68
25	<u>College/university</u>	79	74	59	71	60	55	61	42	56	45	71	60	62	79	67	64	94	81	108	141
26	<u>Elementary/middle school</u>	39	38	32	36	32	31	33	26	30	27	36	32	32	38	35	31	43	39	49	63

Table J-4 Energy Use Intensity Targets (Continued)

No.	Commercial Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
27	High school	57	54	43	51	43	40	44	31	40	33	51	43	45	57	49	46	68	58	78	102
28	Preschool/daycare	54	53	45	51	45	43	46	36	42	37	50	45	44	53	48	44	60	54	68	88
29	Other classroom education	33	32	27	31	27	26	28	22	26	23	30	27	27	32	29	26	36	33	41	53
30	Fast food	286	282	264	278	269	269	285	247	274	256	312	289	293	339	314	306	375	346	413	482
31	Restaurant/cafeteria	205	199	184	197	188	186	201	169	191	177	223	206	211	241	223	222	265	246	291	338
32	Other food service	72	70	64	69	66	65	70	59	67	62	78	72	74	85	78	78	93	86	102	119
33	Hospital/inpatient health	181	185	169	177	178	158	174	156	160	162	175	159	164	168	156	154	175	165	181	192
34	Nursing home/assisted living	78	78	60	74	63	63	75	53	68	53	94	78	85	109	92	93	127	111	146	181
35	Dormitory/ fraternity/sorority	41	41	32	39	33	33	39	28	35	28	49	41	44	57	48	49	67	58	77	95
36	Hotel	48	46	43	44	45	41	46	42	43	41	50	46	47	54	51	49	60	56	65	74
37	Motel or inn	51	50	46	47	44	42	42	38	41	39	42	41	39	43	42	39	46	43	49	54
38	Other lodging	61	60	54	56	52	50	50	46	49	47	50	48	47	51	50	47	55	52	58	64
39	Vehicle dealership/ showroom	43	44	37	41	38	36	42	30	38	32	48	42	42	55	49	46	65	58	76	95
40	Retail store	36	36	30	34	31	30	35	25	32	26	40	35	35	46	41	38	54	48	63	79
41	Other retail	50	51	43	48	44	42	49	35	45	37	56	49	49	64	57	54	76	67	88	111
42	Post office/postal center	44	45	34	42	36	36	43	30	39	30	54	44	48	62	53	53	73	63	84	103
43	Repair shop	10	14	9	15	14	16	23	14	20	14	33	27	26	45	37	29	61	50	78	104
44	Vehicle service/repair shop	13	18	12	19	18	20	30	18	25	18	42	34	33	57	48	37	78	64	99	133
45	Vehicle storage/ maintenance	9	13	9	14	13	15	22	13	19	14	32	26	25	43	36	28	58	48	74	99
46	Other service	14	19	13	20	19	22	32	19	27	20	46	37	36	62	52	40	85	69	107	144
47	Strip shopping mall	78	79	67	75	66	64	73	52	67	56	84	73	75	97	85	81	114	101	132	167
48	Enclosed mall	47	48	40	45	40	39	44	31	40	34	51	44	45	58	51	48	69	61	80	100
49	Bar/pub/lounge	89	87	80	86	82	81	87	74	83	77	97	90	92	105	97	97	115	107	127	147
50	Courthouse/probation office	80	78	69	73	71	63	71	57	63	60	74	63	65	72	65	61	81	71	88	103

Table J-4 Energy Use Intensity Targets (Continued)

No.	Residential Building Type	EUIs by Building Type by Climate Zone (kBtu/ft ² ·yr)																			
		ASHRAE Climate Zone																			
		0A	0B	1A	1B	2A	2B	3A	3B Coast	3B Other	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
51	Mobile home	37	37	29	36	30	30	36	26	32	25	45	37	41	52	44	49	61	53	70	87
52	Single-family detached	32	32	25	30	26	26	31	22	28	22	38	32	35	44	37	36	52	45	60	74
53	Single-family attached	30	30	23	28	24	24	29	20	26	20	36	29	32	41	35	42	48	42	56	69
54	Apartment (in 2 to 4 unit building)	35	35	27	33	28	28	33	24	30	24	42	34	38	48	41	61	56	49	65	80
55	Apartment (in 5+ unit building)	27	28	21	26	22	22	27	19	24	19	33	27	30	38	32	42	45	39	52	64

Table J-5 Operating Shift Multipliers

Operating Shift Multipliers				Operating Shift Multipliers					
Weekly Hours				Weekly Hours					
No.	Building Activity/Type	50 or less	51 to 167	168	No.	Building Activity/Type	50 or less	51 to 167	168
1	<u>Admin/professional office</u>	1.0	1.0	1.4	30	<u>Fast food</u>	0.4	1.1	2.1
2	<u>Bank/other financial</u>	1.0	1.0	1.4	31	<u>Restaurant/cafeteria</u>	0.4	1.1	2.1
3	<u>Government office</u>	1.0	1.0	1.4	32	<u>Other food service</u>	0.4	1.1	2.1
4	<u>Medical office (non-diagnostic)</u>	1.0	1.0	1.4	33	<u>Hospital/inpatient health</u>	1.0	1.0	1.0
5	<u>Mixed-use office</u>	1.0	1.0	1.4	34	<u>Nursing home/assisted living</u>	1.0	1.0	1.0
6	<u>Other office</u>	1.0	1.0	1.4	35	<u>Dormitory/fraternity/sorority</u>	1.0	1.0	1.0
7	<u>Laboratory</u>	1.0	1.0	1.0	36	<u>Hotel</u>	1.0	1.0	1.0
8	<u>Distribution/shipping center</u>	0.7	1.4	2.1	37	<u>Motel or inn</u>	1.0	1.0	1.0
9	<u>Non-refrigerated warehouse</u>	0.7	1.4	2.1	38	<u>Other lodging</u>	1.0	1.0	1.0
10	<u>Convenience store</u>	1.0	1.0	1.4	39	<u>Vehicle dealership/showroom</u>	0.8	1.2	1.8
11	<u>Convenience store with gas</u>	1.0	1.0	1.4	40	<u>Retail store</u>	0.8	1.2	1.8
12	<u>Grocery/food market</u>	1.0	1.0	1.4	41	<u>Other retail</u>	0.8	1.2	1.8
13	<u>Other food sales</u>	1.0	1.0	1.4	42	<u>Post office/postal center</u>	0.7	1.5	1.5
14	<u>Fire/police station</u>	0.8	0.8	1.1	43	<u>Repair shop</u>	0.7	1.5	1.5
15	<u>Other public order/safety</u>	0.8	0.8	1.1	44	<u>Vehicle service/repair shop</u>	0.7	1.5	1.5
16	<u>Medical office (diagnostic)</u>	1.0	1.0	1.5	45	<u>Vehicle storage/maintenance</u>	0.7	1.5	1.5
17	<u>Clinic/other outpatient health</u>	1.0	1.0	1.5	46	<u>Other service</u>	0.7	1.5	1.5
18	<u>Refrigerated warehouse</u>	1.0	1.0	1.0	47	<u>Strip shopping mall</u>	1.0	1.0	1.0
19	<u>Religious worship</u>	0.9	1.7	1.7	48	<u>Enclosed mall</u>	1.0	1.0	1.0
20	<u>Entertainment/culture</u>	0.8	1.5	1.5	49	<u>Bar/pub/lounge</u>	1.0	1.0	1.4
21	<u>Library</u>	0.8	1.5	1.5	50	<u>Courthouse/probation office</u>	1.0	1.0	1.4
22	<u>Recreation</u>	0.8	1.5	1.5	Residential Building Activity/Type				
23	<u>Social/meeting</u>	0.8	1.5	1.5	5149	<u>Mobile home</u>	1.0	1.0	1.0
24	<u>Other public assembly</u>	0.8	1.5	1.5	5250	<u>Single-family detached</u>	1.0	1.0	1.0
25	<u>College/university</u>	0.8	1.3	1.3	5351	<u>Single-family attached</u>	1.0	1.0	1.0
26	<u>Elementary/middle school</u>	0.8	1.3	1.3	5452	<u>Apartment building (2–4 units)</u>	1.0	1.0	1.0
27	<u>High school</u>	0.8	1.3	1.3	5553	<u>Apartment building (5+ units)</u>	1.0	1.0	1.0
28	<u>Preschool/daycare</u>	0.8	1.3	1.3					
29	<u>Other classroom education</u>	0.8	1.3	1.3					

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

ASHRAE · 180 Technology Parkway · Peachtree Corners, GA 30092 · www.ashrae.org

About ASHRAE

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards, and connect on LinkedIn, Facebook, Twitter, and YouTube.

Visit the ASHRAE Bookstore

ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous version. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at www.ashrae.org/bookstore.

IMPORTANT NOTICES ABOUT THIS STANDARD

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

Addenda, errata, and interpretations for ASHRAE Standards and Guidelines are no longer distributed with copies of the Standards and Guidelines. ASHRAE provides these addenda, errata, and interpretations only in electronic form to promote more sustainable use of resources.