

Table B23. Climate zone^a, number of buildings and floorspace, 2018

	Number of buildings (thousand)						Total floorspace (million square feet)					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Building floorspace (square feet)												
1,001 to 5,000	2,833	270	812	578	754	419	8,025	768	2,451	1,581	2,027	1,198
5,001 to 10,000	1,359	115	420	247	390	187	10,204	813	3,111	1,844	3,039	1,397
10,001 to 25,000	981	100	271	208	266	136	15,838	1,619	4,273	3,180	4,553	2,213
25,001 to 50,000	386	29	131	84	99	42	13,957	1,036	4,770	3,051	3,579	1,521
50,001 to 100,000	218	14	58	55	61	30	15,302	984	3,950	3,893	4,352	2,123
100,001 to 200,000	93	7	23	28	24	11	13,003	870	3,162	4,045	3,320	1,605
200,001 to 500,000	40	2	11	12	10	5	11,776	701	3,254	3,640	2,863	1,319
Over 500,000	9	Q	2	4	2	1	8,317	Q	1,797	3,863	1,351	1,054
Principal building activity												
Education	437	35	101	76	143	82	13,623	1,279	3,748	3,931	2,947	1,718
Food sales	163	Q	36	Q	45	Q	1,006	Q	291	Q	202	Q
Food service	286	28	78	68	70	42	1,385	131	337	318	402	197
Health care	137	9	28	31	49	20	4,018	246	1,200	1,173	961	438
Inpatient	9	Q	3	1	2	1	2,259	Q	725	647	494	268
Outpatient	129	Q	25	30	46	19	1,760	Q	475	526	467	170
Lodging	207	24	71	43	47	22	6,976	416	1,944	1,860	1,879	877
Mercantile	517	37	147	99	155	80	10,781	742	2,884	2,050	3,295	1,810
Retail (other than mall)	350	30	101	74	99	47	5,193	505	1,424	1,017	1,354	892
Enclosed and strip malls	167	Q	46	25	56	33	5,588	Q	1,459	1,033	1,941	918
Office	970	83	239	215	285	149	16,662	1,252	4,442	5,307	3,648	2,013
Public assembly	488	24	157	118	122	68	7,192	435	2,046	1,695	1,829	1,187
Public order and safety	81	Q	26	20	19	Q	1,538	Q	354	547	421	Q
Religious worship	439	Q	115	98	136	60	5,471	Q	1,453	1,070	1,797	814
Service	867	111	330	131	206	90	6,240	586	2,762	953	1,418	522
Warehouse and storage	1,004	117	288	220	239	140	17,483	1,219	3,896	4,829	5,314	2,226
Other	113	Q	37	29	27	Q	2,435	Q	853	769	637	Q
Vacant	208	Q	75	27	64	31	1,612	Q	558	423	335	262
Year constructed												
Before 1920	329	42	157	80	43	Q	3,600	419	1,560	1,162	407	Q
1920 to 1945	379	44	109	100	89	37	5,646	376	1,972	1,966	1,043	289
1946 to 1959	517	61	127	119	136	74	6,937	676	1,688	2,017	1,853	702
1960 to 1969	685	54	219	128	213	71	10,360	810	2,890	2,485	3,192	983
1970 to 1979	831	72	253	133	244	128	13,061	998	4,116	2,842	3,545	1,560
1980 to 1989	794	65	190	155	249	134	13,465	844	2,925	3,553	3,840	2,303
1990 to 1999	921	65	235	214	239	169	15,535	1,012	4,222	4,062	3,917	2,322
2000 to 2009	924	93	247	193	281	111	17,500	1,312	4,380	4,436	4,667	2,706
2010 to 2018	537	42	190	94	111	101	10,319	598	3,016	2,572	2,622	1,511
Census region												
Northeast	793	117	393	283	N	N	15,951	1,099	6,984	7,868	N	N
Midwest	1,719	326	1,019	374	N	N	25,932	4,814	15,176	5,942	N	N
South	2,143	N	N	386	1,109	648	34,907	N	N	7,660	17,361	9,886
West	1,264	95	315	Q	497	183	19,633	1,131	4,608	3,626	7,725	2,543
Number of floors												
1	4,106	346	1,076	748	1,261	675	43,576	3,109	11,169	8,450	13,741	7,108
2	1,286	146	455	300	256	128	23,300	2,242	6,704	6,184	5,552	2,618
3	370	38	141	113	62	16	10,516	1,006	3,641	2,845	2,321	703
4 to 9	142	8	51	47	24	11	13,031	515	3,695	4,779	2,629	1,413
10 or more	16	1	4	8	2	1	6,000	173	1,559	2,839	843	586

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All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Elevators and escalators (more than one may apply)												
Any elevators	503	39	164	146	103	52	36,501	2,095	10,359	12,849	7,125	4,074
1 elevator	366	33	122	102	72	38	14,215	1,080	4,278	4,523	2,747	1,587
2 to 5 elevators	121	5	38	37	28	13	13,316	687	4,050	4,323	2,938	1,317
6 or more elevators	16	1	4	7	3	2	8,970	327	2,030	4,003	1,440	1,170
Any escalators	14	Q	Q	4	3	2	3,753	Q	732	1,769	439	709
Number of workers (main shift)												
Fewer than 5	3,270	323	1,022	647	877	400	21,065	1,606	6,460	4,173	6,366	2,461
5 to 9	1,116	92	270	235	339	180	10,323	1,099	2,549	2,622	2,900	1,152
10 to 19	713	62	218	134	178	121	11,348	1,065	3,775	2,000	2,887	1,621
20 to 49	492	44	135	111	128	73	16,132	1,293	4,518	3,796	4,604	1,921
50 to 99	201	12	48	51	52	38	12,961	897	3,237	3,628	3,276	1,922
100 to 249	90	3	26	26	23	12	12,442	594	3,329	4,159	2,821	1,540
250 or more	37	2	8	12	9	6	12,152	490	2,900	4,717	2,232	1,813
Weekly operating hours												
Fewer than 40	1,370	114	443	321	355	137	10,766	747	3,283	2,267	3,211	1,258
40 to 48	1,483	121	397	236	504	227	18,826	1,503	4,960	3,709	6,076	2,578
49 to 60	1,250	135	357	270	302	186	22,845	1,814	6,187	6,437	5,363	3,043
61 to 84	645	45	181	134	175	109	14,736	1,022	4,354	4,235	3,194	1,932
85 to 167	465	33	128	122	115	67	10,038	761	2,910	2,608	2,401	1,358
Open continuously	705	91	220	134	155	105	19,213	1,198	5,073	5,841	4,841	2,259
Ownership and occupancy												
Nongovernment owned	4,982	478	1,481	1,040	1,291	691	74,728	5,422	21,279	19,123	19,442	9,462
Owner occupied	3,249	331	1,020	661	826	411	45,355	3,703	13,668	11,102	11,694	5,187
Leased to tenant or tenants	1,581	145	409	355	412	260	28,382	1,713	7,273	7,768	7,489	4,139
Unoccupied	152	Q	Q	Q	53	Q	990	Q	Q	Q	258	Q
Government owned	937	61	246	176	314	140	21,695	1,622	5,490	5,973	5,644	2,967
Federal	70	Q	9	Q	22	Q	1,946	Q	451	715	495	Q
State	256	Q	61	39	90	53	6,888	362	1,387	1,920	2,275	946
Local	610	33	176	121	202	79	12,861	1,124	3,652	3,338	2,875	1,872
Party responsible for operation of energy systems												
Building owner	4,872	473	1,447	994	1,327	631	79,282	6,101	22,841	20,773	20,140	9,426
Business owner or tenant	831	56	203	189	231	154	12,842	734	2,740	3,335	3,764	2,269
Property management	97	Q	32	18	27	16	1,994	Q	531	459	534	323
Other	118	Q	45	15	21	30	2,306	Q	656	529	648	411
Provider of direct input on energy-related equipment purchases												
Building owner	5,127	477	1,510	1,060	1,399	680	82,862	6,262	23,703	21,456	21,087	10,354
Business owner or tenant	483	34	101	106	142	100	7,585	400	1,510	2,025	2,362	1,288
Property management	49	Q	Q	18	Q	Q	1,072	Q	Q	365	Q	Q
Other	260	27	100	32	53	47	4,904	304	1,283	1,250	1,371	697
Number of establishments												
1	4,719	432	1,382	965	1,284	656	65,391	5,103	18,515	16,144	17,250	8,378
2 to 5	811	84	217	178	203	128	16,431	1,274	4,120	4,598	4,434	2,005
6 to 10	135	Q	46	32	36	12	5,539	Q	1,619	1,691	1,348	631
11 to 20	63	Q	18	12	20	Q	3,894	Q	1,086	1,109	1,031	484
More than 20	19	Q	Q	4	5	5	3,999	Q	1,018	1,234	746	791
Currently unoccupied	170	Q	59	25	56	Q	1,168	Q	409	321	276	Q

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All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Campus or complex activity												
Not part of a campus or complex	3,622	331	1,059	745	1,005	483	56,609	4,647	16,769	14,285	14,207	6,702
Primary or secondary school	247	14	35	26	107	66	5,106	301	1,118	1,095	1,573	1,019
College or university	103	Q	Q	24	21	28	3,761	Q	760	1,493	983	Q
Office complex	141	Q	38	34	46	15	3,823	Q	814	1,453	946	458
Retail complex	250	Q	79	53	56	27	4,573	322	1,291	1,045	1,197	718
Storage complex	418	59	126	72	96	65	5,684	492	1,244	1,684	1,513	750
Religious campus or complex	253	Q	48	67	92	34	3,209	Q	477	720	1,323	525
Health care complex	60	5	18	9	18	Q	2,838	170	937	854	625	251
Lodging or resort complex	102	Q	25	33	20	12	1,575	Q	335	297	430	394
Transportation complex	36	Q	Q	Q	Q	Q	774	Q	Q	Q	Q	Q
Government complex	124	Q	46	22	32	Q	1,706	Q	428	630	421	Q
Other	563	41	204	126	108	84	6,765	403	2,339	1,448	1,560	1,016
Predominant exterior wall material												
Brick, stone, or stucco	2,490	148	564	560	825	393	46,134	2,571	11,711	13,008	12,843	6,001
Concrete (block or poured)	935	77	306	171	214	167	19,357	1,714	5,459	4,886	4,403	2,896
Concrete panels	137	7	28	22	42	39	8,331	319	1,957	2,265	2,569	1,220
Siding or shingles	948	109	390	218	160	71	5,992	856	2,619	1,135	1,008	375
Metal panels	1,250	164	408	224	315	138	12,198	1,225	3,844	2,547	3,307	1,274
Window glass	19	Q	4	5	7	2	2,192	Q	550	679	485	375
Other	139	Q	27	17	43	20	2,219	Q	629	576	470	288
Predominant roof material												
Metal surfacing	2,198	246	585	417	622	327	20,936	1,924	5,164	4,387	6,363	3,098
Synthetic or rubber	940	77	322	240	185	116	31,563	2,285	9,983	9,477	6,574	3,244
Built-up	708	51	156	131	256	114	19,308	1,254	4,602	5,656	5,527	2,269
Slate or tile shingles	376	Q	90	95	119	67	3,997	Q	1,010	946	1,256	740
Wooden materials (including shingles)	166	Q	61	Q	46	33	1,568	Q	540	Q	446	335
Asphalt, fiberglass, or other shingles	1,311	134	487	271	315	104	14,058	1,193	4,733	3,109	3,568	1,454
Concrete	83	Q	18	11	14	31	1,968	Q	271	613	527	496
Other	136	Q	Q	36	47	39	3,026	Q	465	785	824	792
Roof tilt												
Flat	1,914	126	460	399	568	361	54,253	3,417	14,113	15,870	13,253	7,600
Shallow pitch	2,313	210	702	478	619	303	27,609	2,012	8,175	5,997	8,029	3,397
Steeper pitch	1,691	202	565	339	418	166	14,561	1,616	4,480	3,230	3,803	1,432
Cool roof characteristics (more than one may apply)												
White or reflective coating or paint	1,285	101	331	247	342	264	32,799	1,559	7,253	9,056	9,492	5,438
White or reflective tiles or shingles	140	Q	23	33	42	34	2,713	Q	558	654	925	341
Aluminum coating	528	47	117	72	190	102	6,149	469	1,411	1,075	2,200	995
Ballasted roof system	114	8	41	27	33	5	6,277	747	2,260	2,085	902	283
Other cool roof property	35	Q	Q	3	Q	Q	1,603	Q	522	583	Q	Q

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All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Renovations since 2000 (more than one may apply)												
Any type of renovation	2,032	191	642	443	485	270	45,165	3,355	13,300	12,545	10,516	5,449
Addition or annex	327	38	102	62	68	58	10,854	1,330	3,345	2,821	1,937	1,421
Reduction in floorspace	35	Q	5	7	13	Q	1,784	Q	505	677	425	Q
Roof replacement	847	70	254	181	223	120	20,862	1,363	6,353	6,020	4,632	2,495
Interior wall reconfiguration	709	58	232	159	186	74	21,283	1,564	6,274	6,875	4,448	2,121
Window replacement	484	59	188	115	84	38	10,977	862	3,690	3,529	1,890	1,005
HVAC equipment upgrade	1,006	98	295	218	278	117	27,575	1,916	8,035	7,911	6,425	3,288
Lighting upgrade	1,012	97	372	218	219	107	29,098	2,109	9,260	8,356	6,309	3,064
Electrical upgrade	565	34	198	132	133	68	15,761	806	5,266	5,099	3,059	1,530
Plumbing system upgrade	584	50	188	130	156	60	15,537	894	5,019	4,857	3,343	1,424
Insulation upgrade	307	39	106	83	48	32	7,980	572	2,672	2,555	1,375	806
Fire, safety, or security upgrade	570	39	203	134	129	66	19,985	1,358	6,148	6,126	4,006	2,347
Structural upgrade	147	Q	65	26	39	12	4,203	Q	1,569	1,433	823	229
Other	43	Q	Q	9	13	1	1,168	Q	326	315	363	151
No renovations	3,530	318	956	712	1,043	501	43,832	3,271	11,149	10,836	12,629	5,947
Buildings constructed 2013 or later	357	30	129	62	77	59	7,426	419	2,320	1,715	1,940	1,033
Energy sources (more than one may apply)												
Electricity	5,613	511	1,644	1,169	1,495	794	94,844	6,934	26,339	24,731	24,605	12,235
Natural gas	2,974	249	972	634	869	251	67,722	4,971	20,476	18,756	17,686	5,833
Fuel oil	583	65	239	146	86	48	21,185	1,624	5,783	7,834	3,526	2,418
District heat	86	9	22	26	25	4	6,745	372	1,677	2,747	1,588	360
District chilled water	55	Q	5	13	23	13	4,288	Q	838	1,273	1,344	731
Propane	676	135	225	140	105	71	10,157	1,339	2,725	2,853	1,867	1,374
Solar	99	Q	15	26	31	22	3,820	Q	698	1,614	753	578
Wood, coal, and other	180	Q	85	24	38	Q	2,113	Q	781	406	459	Q
Space-heating energy sources (more than one may apply)												
Electricity	2,563	177	537	571	842	437	45,603	2,549	10,464	11,548	13,629	7,412
Natural gas	2,587	229	921	542	741	154	58,042	4,639	18,890	15,512	14,864	4,139
Fuel oil	266	50	119	70	23	Q	4,134	721	1,648	1,423	300	Q
District heat	83	9	22	26	24	1	6,547	372	1,561	2,730	1,579	305
Propane	431	106	142	101	63	19	3,896	738	1,075	1,254	600	228
Other sources ^b	127	Q	62	Q	Q	N	927	Q	412	Q	Q	N
Primary space-heating energy source												
Electricity	1,856	91	309	401	643	412	27,618	1,060	5,143	5,914	9,204	6,297
Natural gas	2,344	228	855	503	635	123	50,060	4,422	16,654	14,053	11,979	2,952
Fuel oil	222	43	101	59	Q	Q	2,223	351	912	728	Q	Q
District heat	78	Q	22	26	21	1	6,090	317	1,536	2,587	1,345	305
Propane	338	76	132	79	Q	Q	2,290	406	800	735	Q	Q
Other sources ^b	63	Q	Q	Q	Q	N	380	Q	Q	Q	Q	N
Cooling energy sources (more than one may apply)												
Electricity	4,584	320	1,205	989	1,343	727	84,526	5,656	22,505	22,669	22,393	11,303
Natural gas	4	Q	Q	Q	Q	Q	400	Q	Q	Q	Q	Q
District chilled water	55	Q	5	13	23	13	4,288	Q	838	1,273	1,344	731

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All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Water-heating energy sources (more than one may apply)												
Electricity	2,785	223	738	622	786	417	47,125	3,072	11,466	12,272	13,163	7,152
Natural gas	1,885	144	606	404	531	199	46,652	3,338	14,125	12,641	12,131	4,417
Fuel oil	72	25	Q	12	Q	Q	1,807	317	662	670	Q	Q
District heat	38	Q	10	12	Q	Q	4,206	Q	1,183	1,862	724	Q
Propane	145	Q	33	42	Q	19	1,947	Q	381	542	Q	462
Cooking energy sources (more than one may apply)												
Electricity	1,216	94	396	266	292	167	30,509	2,528	9,718	8,049	6,117	4,097
Natural gas	727	40	223	143	232	90	27,705	1,928	8,124	7,959	6,573	3,121
Propane	159	26	42	26	22	43	3,101	396	677	756	387	885
Energy end uses (more than one may apply)												
Buildings with space heating	4,901	456	1,442	1,080	1,373	551	88,661	6,641	25,143	24,088	23,099	9,690
Buildings with cooling	4,631	321	1,211	998	1,360	740	87,506	5,725	23,165	23,604	23,176	11,837
Buildings with water heating	4,595	405	1,325	1,021	1,250	594	87,717	6,499	24,430	23,820	22,553	10,415
Buildings with cooking	1,738	128	545	369	452	244	43,580	3,354	13,086	11,957	9,485	5,698
Buildings with manufacturing	322	31	106	51	79	54	6,871	876	2,007	1,420	1,684	884
Buildings with electricity generation	706	59	242	144	169	92	29,457	1,791	8,415	9,839	6,079	3,334
Buildings with lighting	5,503	499	1,603	1,141	1,474	787	94,103	6,884	26,134	24,577	24,307	12,202
Percentage of floorspace heated												
Not heated	1,017	83	285	136	233	280	7,762	403	1,626	1,008	1,986	2,739
1 to 50%	693	61	170	109	246	107	10,620	632	1,669	2,031	4,219	2,069
51 to 99%	905	63	212	215	303	112	20,174	1,105	5,072	5,211	6,383	2,403
100%	3,303	332	1,059	756	824	332	57,867	4,903	18,402	16,846	12,498	5,218
Percentage of floorspace cooled												
Not cooled	1,288	218	516	218	245	91	8,917	1,320	3,604	1,492	1,909	592
1 to 50%	1,111	117	338	216	291	149	19,722	1,822	5,554	5,088	5,026	2,231
51 to 99%	998	66	257	220	297	157	26,277	1,488	7,350	7,569	6,684	3,187
100%	2,522	137	616	562	772	434	41,507	2,415	10,260	10,947	11,466	6,419
Percentage lit when open												
0%	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
1 to 50%	1,280	130	433	251	288	177	14,172	1,352	4,248	2,949	3,789	1,834
51 to 99%	1,784	181	511	364	469	258	38,847	3,126	11,162	9,915	9,784	4,860
100%	2,272	180	574	486	698	335	39,877	2,385	10,183	11,360	10,602	5,346
Building never open or electricity not used	513	Q	178	98	135	Q	2,998	Q	1,027	781	664	388
Percentage lit during off hours												
0%	2,062	210	628	431	566	227	15,578	1,272	4,419	3,119	5,011	1,757
1 to 50%	3,246	277	934	663	843	529	69,800	5,208	19,526	18,918	16,945	9,203
51 to 100%	240	Q	64	60	64	31	7,243	403	1,925	1,988	1,922	1,004
Building always open with no off hours	64	Q	18	16	21	6	2,223	Q	468	705	728	271
Electricity not used	305	Q	83	Q	111	Q	1,579	Q	430	Q	480	Q

Table B23. Climate zone^a, number of buildings and floorspace, 2018

	Number of buildings (thousand)						Total floorspace (million square feet)					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Heating equipment (more than one may apply)												
Packaged heating units	2,187	125	449	432	796	386	48,064	2,789	12,408	11,945	14,469	6,452
Furnaces	1,621	202	682	336	313	86	17,272	1,782	6,991	3,561	3,706	1,232
Individual space heaters	1,246	162	401	273	333	77	21,122	2,096	6,458	5,855	5,354	1,359
Boilers	703	99	285	170	110	39	28,831	2,841	9,879	8,892	5,040	2,179
Heat pumps	673	32	158	187	231	65	15,110	780	3,663	4,421	4,766	1,479
District heat	83	9	22	26	24	1	6,547	372	1,561	2,730	1,579	305
Duct reheat	134	Q	37	32	32	27	7,418	Q	1,941	2,347	1,558	1,402
Other	17	Q	Q	Q	Q	Q	821	Q	Q	Q	Q	Q
Cooling equipment (more than one may apply)												
Packaged air-conditioning units	2,565	153	554	509	861	488	56,290	3,472	14,245	14,769	16,089	7,714
Residential-type central air conditioners	1,309	120	473	294	296	126	18,270	1,723	6,057	4,709	4,000	1,781
Individual air conditioners	735	65	204	194	161	111	13,619	991	3,881	4,178	3,336	1,232
Central chillers	202	19	63	53	47	20	17,926	1,270	4,657	6,203	3,778	2,017
Heat pumps	492	29	127	130	160	46	11,098	519	2,966	3,690	2,879	1,044
District chilled water	55	Q	5	13	23	13	4,288	Q	838	1,273	1,344	731
Swamp coolers	85	Q	23	14	27	Q	2,070	Q	498	566	673	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
HVAC features (more than one may apply)												
Economizer cycle	747	60	217	175	203	92	34,087	2,788	10,127	11,271	7,061	2,839
Variable air volume (VAV) system	698	54	202	170	144	127	29,268	1,977	7,712	9,977	5,664	3,938
Dedicated outside air system (DOAS)	249	24	77	42	79	28	9,027	894	1,999	3,165	1,985	984
Demand controlled ventilation (DCV)	349	23	92	95	96	42	10,474	671	2,662	3,591	2,397	1,152
Regular HVAC maintenance	3,554	316	917	763	1,011	547	78,015	5,611	20,391	21,878	19,936	10,199
Building automation system (BAS) controls heating or cooling	933	67	249	230	231	156	40,462	2,651	10,817	13,056	8,737	5,201
Internet-connected or smart thermostat	325	Q	71	61	100	69	5,966	Q	1,171	1,376	1,927	1,112
Programmable thermostat	1,545	124	451	333	444	194	20,882	1,504	6,346	4,892	5,638	2,502
Main equipment replaced since 2000 (more than one may apply)												
Heating	1,937	170	601	391	561	215	32,451	2,448	10,206	7,805	8,479	3,512
Cooling	1,269	120	407	298	261	182	23,013	1,889	6,812	6,772	4,723	2,816
Water-heating equipment												
Centralized system	3,538	345	1,035	822	929	407	59,280	5,168	17,527	15,889	14,838	5,859
Distributed system	782	46	213	145	228	150	14,307	685	3,389	3,797	3,767	2,669
Combination of centralized and distributed systems	274	14	76	54	94	36	14,129	646	3,514	4,134	3,948	1,886
Generation technologies (more than one may apply)												
Reciprocating engine generators	580	51	208	119	132	70	25,163	1,594	7,230	8,523	5,042	2,774
Solar panels	94	Q	15	26	31	18	3,750	Q	694	1,586	741	555
Other generation technology	43	Q	24	3	Q	Q	2,055	Q	822	543	421	Q

Table B23. Climate zone^a, number of buildings and floorspace, 2018

	Number of buildings (thousand)						Total floorspace (million square feet)					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Lighting equipment types (more than one may apply)												
Incandescent	1,100	114	383	250	242	111	21,081	1,561	6,329	5,959	4,882	2,349
Standard fluorescent	4,012	342	1,113	889	1,074	593	72,912	5,268	19,321	20,105	18,510	9,709
Compact fluorescent	1,130	114	383	233	240	161	33,691	2,526	9,402	9,579	7,702	4,482
High-intensity discharge (HID)	238	23	75	59	64	18	11,356	600	3,260	3,407	2,644	1,445
Halogen	552	41	134	124	124	129	15,012	848	3,609	4,310	3,740	2,505
LED	2,593	262	815	480	713	323	61,849	4,406	18,286	16,306	15,653	7,199
Other	Q	Q	Q	Q	N	Q	Q	Q	Q	Q	N	Q
Refrigeration equipment (more than one may apply)												
Any refrigeration	3,850	305	1,096	833	1,062	553	77,589	5,567	21,218	21,171	19,741	9,892
Walk-in units	706	60	222	156	167	99	29,384	2,138	8,523	8,628	6,162	3,933
Cases or cabinets	837	73	229	201	227	107	28,517	2,055	8,017	8,345	6,713	3,386
Large cold storage areas	69	Q	18	12	15	14	3,592	313	641	1,036	895	707
Commercial ice makers	872	68	235	192	237	140	34,672	2,223	8,776	10,082	8,685	4,907
Residential-type or compact units	3,321	268	956	722	908	467	64,735	4,571	17,938	17,835	16,301	8,090
Vending machines	800	54	223	168	236	119	42,071	2,725	11,216	12,494	10,402	5,234
No refrigeration	2,068	233	631	384	543	277	18,834	1,477	5,550	3,925	5,345	2,537
Office equipment (more than one may apply)												
Desktop computers	3,804	285	1,027	815	1,079	597	82,012	5,601	22,212	22,354	20,947	10,897
With multiple monitors	1,504	140	427	343	391	204	50,844	3,674	13,454	15,082	12,516	6,118
Laptop computers	2,786	233	823	583	747	400	69,375	4,839	19,621	19,223	17,086	8,606
Dedicated servers	1,400	131	380	280	394	216	51,595	3,717	14,203	15,283	11,947	6,446
Tablets charged in building	1,556	138	448	318	425	227	48,778	3,645	13,511	13,319	12,072	6,231
Large floor-standing office devices ^c	1,456	108	403	318	419	208	54,088	3,419	14,662	16,048	13,228	6,732
Smaller desktop office devices ^c	3,560	298	983	764	985	530	74,467	5,270	20,321	20,338	19,003	9,534
Interactive whiteboards	262	22	63	58	78	41	16,939	1,234	4,771	5,578	3,412	1,944
Televisions or video displays	2,451	200	672	543	641	396	63,618	4,302	17,059	17,956	15,866	8,436
Point-of-sale devices or cash registers	1,420	115	393	323	371	218	33,606	2,655	9,928	9,246	7,405	4,372
Food preparation or serving areas in non-food service buildings (more than one may apply)												
Snack bar, concession stand, or coffee shop	144	11	44	27	32	30	10,361	873	3,101	2,904	2,096	1,387
Fast food or small restaurant	160	9	57	38	39	17	9,759	475	3,035	2,897	1,951	1,401
Cafeteria or large restaurant	129	18	38	33	25	15	14,531	1,198	4,245	4,782	2,564	1,741
Commercial kitchen or food preparation area	284	25	74	57	81	47	17,698	1,133	5,251	4,874	3,695	2,745
Small kitchen area	1,018	67	340	209	268	134	20,519	1,598	6,536	5,550	4,245	2,589
Separate computer areas (more than one may apply)												
Server closet	1,237	119	313	254	362	190	48,722	3,560	12,941	14,239	11,581	6,401
Data center	116	4	35	27	25	24	11,383	576	3,036	4,448	2,041	1,283
Computer-based training room	228	21	44	52	63	47	16,556	1,332	4,318	5,297	3,287	2,321
Student or public computer center	236	16	55	60	71	35	12,527	818	3,499	4,050	2,704	1,457

Table B23. Climate zone^a, number of buildings and floorspace, 2018

	Number of buildings (thousand)						Total floorspace (million square feet)					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	5,918	539	1,727	1,216	1,606	831	96,423	7,044	26,768	25,096	25,085	12,429
Window and interior lighting features (more than one may apply)												
Multipaned windows	3,527	365	1,130	752	891	389	72,694	5,850	21,677	19,634	17,628	7,905
Tinted window glass	1,679	82	337	351	586	323	44,363	2,216	10,227	12,476	12,869	6,576
Reflective window glass	497	34	139	89	160	75	17,929	1,206	4,776	4,827	4,530	2,590
External overhangs or awnings	1,513	105	386	297	506	219	28,718	1,695	7,420	6,893	9,005	3,705
Skylights or atriums	509	32	116	121	147	94	19,815	1,364	5,023	6,131	4,605	2,692
Light scheduling	910	66	276	188	229	151	33,552	2,374	9,406	9,557	7,411	4,804
Occupancy sensors	1,025	81	343	209	249	143	44,304	3,174	12,882	13,547	9,850	4,850
Multilevel lighting or dimming	332	26	127	59	69	51	14,424	1,028	4,482	4,056	2,868	1,990
Daylight harvesting	138	3	37	39	43	16	7,244	307	1,978	2,273	1,505	1,181
Plug-load control	58	Q	Q	16	17	13	1,961	Q	519	615	353	354
Demand responsive lighting	98	Q	45	30	Q	Q	2,045	Q	583	915	Q	212
Building automation system (BAS) for lighting	317	22	66	64	97	67	16,645	1,202	4,241	4,595	3,754	2,852
Electric vehicle (EV) charging												
Charging stations associated with the building	132	Q	40	29	32	20	10,165	486	2,501	3,252	2,433	1,493

Data source: U.S. Energy Information Administration, Form EIA-871A of the 2018 *Commercial Buildings Energy Consumption Survey*

Notes: Because of rounding, data may not sum to totals. The *Guide to the 2018 CBECS Tables* and *CBECS Terminology* contain definitions of terms used in these tables and comparisons between previous CBECS tables. You can access both references from <http://www.eia.gov/consumption/commercial/data/2018/>.

Data are sample survey estimates with relative standard errors published in a tab on the Excel worksheet for this table.

^aClimate zones are based on ASHRAE Standard 169-2021; see <https://www.eia.gov/consumption/commercial/maps.php#defined>.

^bOther sources includes wood, coal, solar, and all other energy sources.

^cOffice devices refers to any combination of printers, copiers, scanners, or FAX machines.

Q = Data withheld either because the relative standard error was greater than 50% or the reporting sample had fewer than 20 buildings.

N = No buildings in reporting sample.

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings						RSEs for total floorspace					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Building floorspace (square feet)												
1,001 to 5,000	4.9	23.2	13.9	17.3	13.3	21.3	5.3	22.0	14.6	17.5	13.2	19.9
5,001 to 10,000	5.9	23.7	18.0	20.3	13.7	21.2	5.8	21.9	17.4	20.5	14.2	21.8
10,001 to 25,000	5.6	20.4	10.5	17.2	11.4	22.0	6.1	20.9	10.9	17.2	12.6	24.5
25,001 to 50,000	5.6	32.0	12.2	14.5	12.3	21.8	5.6	31.6	12.5	14.2	11.8	20.4
50,001 to 100,000	5.3	17.6	15.0	15.1	14.7	14.5	5.3	16.2	14.5	14.9	14.8	15.0
100,001 to 200,000	5.6	25.1	11.2	12.6	16.5	15.0	5.5	24.8	10.8	12.5	16.1	16.1
200,001 to 500,000	5.0	25.1	13.7	10.6	10.9	14.1	5.0	26.2	13.7	10.5	10.3	14.2
Over 500,000	7.8	35.9	13.5	14.1	22.1	16.1	8.6	35.2	15.9	16.0	20.8	14.5
Principal building activity												
Education	7.8	30.0	19.3	21.6	15.7	24.4	5.3	20.9	13.2	15.4	13.0	18.0
Food sales	14.3	47.6	28.2	32.2	26.9	42.2	17.0	52.5	25.3	31.5	36.1	36.4
Food service	7.7	24.4	16.8	20.4	16.1	30.5	8.5	26.0	19.5	23.9	18.2	23.8
Health care	9.8	41.3	18.3	28.5	17.5	16.8	5.5	18.0	13.9	16.6	12.6	12.5
Inpatient	19.4	29.2	45.8	20.5	34.2	31.2	7.2	22.3	18.0	20.1	14.6	19.1
Outpatient	10.3	43.5	20.3	29.2	17.7	18.0	8.0	38.0	17.1	18.0	16.0	13.0
Lodging	9.4	25.5	22.5	30.2	20.9	26.4	8.3	20.6	15.8	21.9	18.9	19.2
Mercantile	7.3	31.4	18.2	21.3	15.2	17.5	6.0	24.7	13.1	16.0	14.5	17.2
Retail (other than mall)	10.1	33.4	23.5	23.6	20.5	29.5	8.6	28.4	18.2	20.3	20.0	20.7
Enclosed and strip malls	7.6	63.5	20.8	35.0	20.1	23.3	7.6	34.3	15.8	22.7	16.3	23.5
Office	7.2	17.9	20.9	18.7	14.3	26.5	5.5	17.2	13.3	13.6	11.4	14.8
Public assembly	9.1	21.7	18.2	20.5	23.9	20.5	5.8	23.7	12.9	15.6	17.3	15.4
Public order and safety	20.2	84.3	29.9	49.0	40.2	51.3	15.9	54.4	23.5	35.0	32.3	33.3
Religious worship	9.5	31.8	21.4	19.0	21.5	21.2	9.3	35.3	22.7	15.1	19.7	18.8
Service	7.4	36.2	14.0	19.3	18.3	23.7	8.1	31.3	13.5	21.0	22.9	22.3
Warehouse and storage	7.4	24.5	18.7	19.8	15.4	35.8	7.2	30.9	14.5	13.6	15.0	30.4
Other	17.1	69.2	34.4	24.4	32.6	85.2	15.1	37.1	29.4	22.4	30.0	59.4
Vacant	17.2	82.5	32.1	36.3	35.2	40.3	14.1	67.8	28.0	25.2	24.6	35.4
Year constructed												
Before 1920	12.8	27.5	23.2	19.3	23.6	63.1	10.8	31.1	16.8	20.3	25.6	72.5
1920 to 1945	10.7	44.8	18.0	26.7	17.9	40.3	8.8	38.9	15.9	18.5	19.7	30.0
1946 to 1959	8.1	30.5	19.5	19.5	19.9	25.8	7.6	27.2	18.1	16.7	18.1	25.5
1960 to 1969	6.4	23.0	15.2	17.9	13.7	15.0	5.2	21.2	14.9	11.8	10.6	19.9
1970 to 1979	7.4	28.9	16.1	19.2	17.5	27.7	6.0	20.6	12.9	12.2	15.9	19.1
1980 to 1989	7.0	15.8	18.1	17.2	15.9	20.8	5.9	17.3	14.4	15.5	13.2	13.3
1990 to 1999	7.5	32.6	17.0	20.5	16.8	26.0	6.6	21.7	16.6	14.8	13.8	22.2
2000 to 2009	8.0	21.8	17.2	21.0	18.7	23.0	6.3	27.8	11.4	13.4	16.6	18.4
2010 to 2018	11.0	19.6	25.3	26.2	16.8	32.5	7.6	22.5	15.6	19.0	15.8	21.0
Census region												
Northeast	9.9	27.6	14.6	16.2	0.0	0.0	7.2	16.8	13.7	12.3	0.0	0.0
Midwest	10.9	26.6	18.7	27.9	0.0	0.0	7.4	22.1	12.4	23.0	0.0	0.0
South	7.7	0.0	0.0	28.7	15.0	21.4	6.1	0.0	0.0	20.8	13.8	15.1
West	8.1	43.7	19.2	57.4	16.7	38.4	7.1	44.5	16.5	39.9	10.7	33.9
Number of floors												
1	4.3	18.6	13.7	18.2	12.0	20.8	4.5	15.8	11.1	14.9	11.6	18.5
2	5.8	21.9	11.8	15.6	12.6	18.7	4.4	21.6	10.4	12.3	10.9	14.9
3	10.5	29.6	18.8	15.0	26.3	29.3	7.6	26.6	13.6	15.9	18.0	27.9
4 to 9	9.4	24.9	21.2	16.2	21.9	17.4	6.3	23.3	12.0	14.5	19.1	11.8
10 or more	9.8	45.3	23.5	15.9	18.3	33.8	11.0	20.9	22.1	19.8	17.4	21.3

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings					RSEs for total floorspace						
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Elevators and escalators (more than one may apply)												
Any elevators	6.5	23.4	13.3	13.3	17.0	16.6	4.5	19.9	9.1	11.4	12.7	11.0
1 elevator	7.7	26.1	16.1	14.4	21.0	20.9	6.0	24.6	11.9	12.2	18.9	17.2
2 to 5 elevators	6.7	20.5	13.3	15.0	16.2	14.5	5.2	21.4	11.3	13.9	13.5	12.7
6 or more elevators	7.8	21.9	18.2	15.7	15.3	18.8	8.4	20.3	15.3	17.2	13.7	15.4
Any escalators	28.9	13.3	82.9	24.1	12.4	43.2	13.7	25.0	21.0	26.9	21.5	15.6
Number of workers (main shift)												
Fewer than 5	5.5	24.4	15.6	16.3	13.4	24.3	5.9	22.9	14.5	15.5	14.4	22.1
5 to 9	6.1	26.7	14.7	16.1	12.6	24.9	6.9	30.6	15.6	15.8	14.8	20.2
10 to 19	6.5	19.2	12.6	22.8	14.0	25.0	7.4	21.8	16.7	20.5	13.0	24.8
20 to 49	6.3	29.6	15.2	21.8	13.3	19.5	4.8	19.1	12.5	15.9	13.5	18.8
50 to 99	6.7	19.8	14.2	19.4	15.2	18.8	5.9	20.1	12.8	14.2	14.1	18.1
100 to 249	7.1	27.9	17.4	11.7	15.3	17.6	5.6	27.2	12.6	11.3	13.0	14.4
250 or more	7.2	26.1	13.6	14.6	20.8	18.1	6.4	19.7	12.6	14.2	12.7	12.4
Weekly operating hours												
Fewer than 40	6.1	23.2	15.7	20.7	17.0	27.5	6.6	24.8	12.2	17.3	16.7	23.8
40 to 48	6.2	20.3	16.4	19.7	13.0	22.9	5.1	18.9	13.0	13.9	12.0	21.4
49 to 60	5.2	24.1	12.5	14.4	11.5	19.2	4.3	23.9	11.1	11.8	11.5	16.5
61 to 84	7.6	24.9	19.4	19.3	11.8	25.5	5.3	18.7	11.0	14.3	11.7	17.1
85 to 167	8.6	29.6	15.8	21.0	24.6	25.6	6.2	27.8	12.1	15.6	14.4	18.2
Open continuously	8.1	27.8	17.7	20.1	17.7	22.0	5.0	18.4	11.3	12.6	14.1	15.9
Ownership and occupancy												
Nongovernment owned	3.8	18.5	11.3	15.7	11.8	18.0	3.3	17.7	8.5	10.3	10.6	13.3
Owner occupied	4.3	21.3	12.9	17.2	12.2	21.2	3.3	18.8	8.9	12.1	11.6	14.9
Leased to tenant or tenants	5.5	19.0	13.0	16.4	10.9	18.4	4.8	22.6	11.3	10.5	10.6	15.6
Unoccupied	20.3	71.7	33.9	41.7	41.8	52.9	19.2	71.7	35.6	33.2	32.5	55.5
Government owned	9.5	28.8	21.1	17.0	20.7	26.8	6.0	19.7	11.5	13.7	18.4	19.0
Federal	26.0	66.7	35.7	51.6	47.6	97.4	16.1	39.1	23.4	32.8	30.9	45.6
State	12.9	61.1	26.0	28.2	22.8	35.4	11.8	25.7	17.5	21.4	28.9	31.2
Local	10.1	32.8	22.3	18.3	20.9	26.9	6.0	21.8	13.6	15.8	15.9	17.6
Party responsible for operation of energy systems												
Building owner	4.4	20.3	13.0	15.6	12.1	20.6	3.2	17.5	8.6	10.7	10.7	15.9
Business owner or tenant	6.5	18.0	15.7	18.8	15.1	20.2	7.2	23.8	15.8	15.2	12.3	21.0
Property management	20.7	105.0	47.4	32.2	29.8	46.9	11.7	29.3	28.1	22.1	21.1	28.8
Other	18.8	106.0	32.4	36.2	33.9	35.0	11.1	34.3	20.0	28.6	22.6	23.2
Provider of direct input on energy-related equipment purchases												
Building owner	4.4	20.2	12.7	16.0	12.1	20.7	3.1	17.3	8.4	11.2	10.6	15.1
Business owner or tenant	8.9	25.4	17.0	17.5	19.5	27.7	8.8	23.5	16.2	16.1	15.6	29.0
Property management	25.5	32.2	45.6	30.4	71.0	70.0	16.2	72.9	33.6	24.6	30.5	52.3
Other	10.5	42.6	19.5	24.3	20.6	14.1	8.1	46.0	17.2	16.2	14.9	14.3
Number of establishments												
1	4.6	20.8	13.1	15.9	12.4	21.1	3.6	16.7	9.1	12.0	11.0	17.0
2 to 5	6.0	25.3	11.3	19.7	10.2	19.9	5.5	22.3	10.0	15.7	13.1	14.1
6 to 10	11.5	42.7	24.2	28.4	25.7	37.9	7.9	24.1	19.2	15.2	16.0	20.6
11 to 20	18.0	78.8	46.6	28.0	23.1	51.1	8.9	47.9	19.3	17.6	14.6	25.6
More than 20	18.6	52.5	57.0	16.2	30.0	28.8	10.1	36.2	27.7	18.0	20.1	16.5
Currently unoccupied	18.7	87.7	31.4	39.1	40.0	52.1	16.5	83.4	31.0	26.1	30.4	54.2

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings					RSEs for total floorspace						
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Campus or complex activity												
Not part of a campus or complex	4.3	18.7	11.3	14.2	12.0	18.8	3.7	17.5	9.0	9.6	11.0	16.1
Primary or secondary school	12.1	40.7	32.0	38.2	21.9	34.3	9.4	40.5	18.0	23.7	21.5	25.0
College or university	21.8	75.5	54.7	35.7	31.4	49.4	15.9	58.3	24.3	31.3	33.5	50.7
Office complex	12.7	38.8	31.4	29.2	23.5	44.8	10.0	40.4	21.2	21.6	13.6	24.5
Retail complex	13.2	62.5	27.0	20.9	27.3	31.0	9.2	32.9	21.2	19.7	20.3	21.6
Storage complex	14.4	38.3	24.4	32.3	30.8	41.5	11.0	36.4	20.9	20.0	23.0	30.2
Religious campus or complex	11.5	47.6	24.5	27.9	22.4	26.8	12.0	47.3	29.4	24.6	23.0	25.5
Health care complex	18.0	48.4	36.2	28.2	35.0	55.2	8.2	32.2	18.7	20.0	14.7	24.4
Lodging or resort complex	15.1	52.9	28.3	36.8	45.8	33.5	13.7	44.7	32.9	34.0	30.3	26.5
Transportation complex	34.3	101.6	53.3	42.3	61.8	97.3	33.2	57.4	24.9	36.0	81.0	33.1
Government complex	18.1	41.2	32.1	34.4	42.7	59.1	17.0	40.9	20.7	33.9	32.1	38.2
Other	9.2	39.1	21.0	23.6	18.1	30.9	7.4	17.6	15.8	19.0	14.1	22.6
Predominant exterior wall material												
Brick, stone, or stucco	5.3	24.3	13.4	14.9	12.8	24.3	3.9	17.0	10.2	11.7	11.5	17.0
Concrete (block or poured)	5.3	25.9	13.4	19.0	15.6	13.9	4.8	19.1	11.8	14.5	12.9	12.1
Concrete panels	12.1	43.0	23.7	24.2	18.5	29.8	8.4	22.6	21.0	16.9	14.2	25.1
Siding or shingles	7.3	18.3	15.7	21.7	18.9	31.5	9.3	18.8	18.0	19.3	31.3	34.9
Metal panels	7.6	27.9	18.5	24.4	17.4	31.6	6.0	30.3	14.3	18.0	14.4	23.7
Window glass	21.3	54.5	41.4	28.0	49.6	43.5	11.4	27.5	22.4	18.9	23.9	27.7
Other	14.7	32.5	29.5	32.1	26.7	46.7	13.7	41.7	33.2	22.7	18.3	33.3
Predominant roof material												
Metal surfacing	6.2	25.3	15.0	20.6	16.8	24.6	5.6	26.1	11.5	17.7	14.6	23.8
Synthetic or rubber	6.0	25.8	14.7	16.6	13.6	21.8	4.1	15.7	8.9	10.6	12.4	13.7
Built-up	7.7	21.2	21.9	16.8	16.1	23.2	4.8	22.4	14.3	12.9	10.3	15.6
Slate or tile shingles	10.1	41.4	19.5	19.6	19.4	31.9	10.1	40.4	22.9	21.3	22.3	21.3
Wooden materials (including shingles)	12.9	50.9	24.3	40.5	27.1	22.2	17.8	45.7	36.9	38.4	28.5	32.1
Asphalt, fiberglass, or other shingles	6.2	20.1	15.8	17.6	15.7	21.9	5.6	20.3	14.6	14.0	14.6	18.6
Concrete	20.6	94.8	33.8	40.5	35.2	35.5	11.9	51.9	28.1	18.6	27.8	24.0
Other	15.6	51.5	56.4	28.7	22.5	37.6	9.8	29.9	16.8	19.0	20.9	28.4
Roof tilt												
Flat	4.9	24.8	10.9	14.6	11.0	21.6	3.3	14.4	8.5	9.9	8.6	14.2
Shallow pitch	5.0	22.8	14.6	17.0	14.3	16.7	4.8	26.8	10.4	14.7	13.6	16.7
Steeper pitch	7.5	22.3	15.7	20.1	18.9	29.5	5.7	19.0	13.4	17.5	15.0	23.9
Cool roof characteristics (more than one may apply)												
White or reflective coating or paint	5.8	23.6	13.5	18.1	14.1	20.6	4.4	21.0	10.3	12.6	10.2	14.4
White or reflective tiles or shingles	15.4	63.3	26.7	26.7	28.5	43.8	10.4	40.9	23.4	21.5	21.6	28.5
Aluminum coating	8.8	27.9	24.5	22.2	19.2	23.0	9.2	39.3	21.6	19.4	19.2	22.1
Ballasted roof system	14.8	22.9	24.7	30.7	38.2	45.4	9.5	27.3	16.9	19.4	17.7	26.4
Other cool roof property	29.3	27.1	52.1	39.7	46.7	63.0	19.2	26.2	28.0	38.7	35.1	49.9

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings					RSEs for total floorspace						
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Renovations since 2000 (more than one may apply)												
Any type of renovation	5.0	23.7	11.2	15.9	14.3	17.9	3.4	20.3	8.7	10.5	12.3	13.6
Addition or annex	9.4	26.6	19.9	22.0	21.8	17.3	6.0	25.7	11.4	14.8	15.6	16.4
Reduction in floorspace	22.2	67.3	41.9	35.9	40.5	71.9	13.2	60.4	27.6	18.9	27.4	41.5
Roof replacement	6.8	23.1	14.7	16.3	16.2	29.9	4.3	19.0	9.8	11.5	13.5	21.1
Interior wall reconfiguration	6.0	21.2	13.5	19.2	16.8	22.9	4.2	22.2	10.4	12.7	12.3	12.9
Window replacement	9.5	44.0	16.3	21.3	25.1	26.3	5.8	24.2	11.9	13.3	19.5	23.7
HVAC equipment upgrade	7.0	41.3	13.7	17.0	16.9	20.3	4.2	20.2	10.5	10.6	13.2	15.4
Lighting upgrade	5.9	31.2	11.8	16.1	14.3	18.2	3.9	23.3	9.1	10.2	12.4	12.6
Electrical upgrade	7.1	44.4	15.7	16.8	17.8	17.5	5.6	25.7	11.9	10.2	19.3	14.3
Plumbing system upgrade	7.8	47.3	14.7	19.9	16.5	19.2	5.2	22.2	12.2	11.6	15.2	15.5
Insulation upgrade	9.2	35.4	17.8	21.3	21.3	34.1	7.8	20.7	14.9	17.2	20.1	22.8
Fire, safety, or security upgrade	6.2	25.4	14.3	13.8	15.7	17.0	4.4	22.5	10.9	11.1	14.2	14.2
Structural upgrade	13.9	50.3	19.3	21.1	37.7	46.0	10.2	33.0	16.0	22.8	22.9	28.9
Other	29.5	99.4	52.3	45.3	42.3	50.0	14.9	95.2	35.6	26.1	27.5	38.1
No renovations	4.3	19.6	12.4	15.1	11.5	22.6	3.9	16.1	9.0	11.1	10.1	18.3
Buildings constructed 2013 or later	11.9	25.6	28.9	24.8	18.3	27.5	8.3	25.4	17.1	20.8	17.1	21.6
Energy sources (more than one may apply)												
Electricity	3.9	20.4	11.6	15.4	11.1	17.4	3.0	17.3	8.2	10.6	10.0	13.6
Natural gas	4.8	27.9	12.0	16.0	12.2	21.4	3.4	23.3	8.9	10.8	11.1	13.3
Fuel oil	9.7	26.3	20.4	19.5	17.8	21.1	5.4	16.4	11.1	12.4	11.1	13.6
District heat	14.7	47.6	31.4	24.8	35.3	31.0	11.4	24.8	20.6	17.9	31.8	25.5
District chilled water	20.1	47.7	29.0	42.4	38.6	29.3	13.7	44.4	21.4	31.8	31.2	17.0
Propane	10.0	27.1	19.0	26.7	20.2	25.3	7.6	15.8	14.2	21.5	17.3	15.5
Solar	15.5	52.8	35.5	33.0	27.0	37.0	11.5	42.5	21.4	23.3	12.7	27.5
Wood, coal, and other	17.3	61.0	27.8	31.5	29.8	63.9	14.0	43.2	26.3	35.6	21.6	39.4
Space-heating energy sources (more than one may apply)												
Electricity	4.7	21.6	14.8	15.4	11.6	21.2	3.7	21.0	9.6	10.6	9.8	15.6
Natural gas	5.2	27.3	12.3	15.8	12.1	25.5	3.6	23.4	9.0	11.1	11.2	13.1
Fuel oil	13.9	29.5	24.8	24.0	36.8	89.6	11.6	19.8	20.9	21.2	32.4	69.1
District heat	15.4	47.6	31.6	24.8	36.0	33.6	11.6	24.8	20.5	18.0	32.0	25.0
Propane	13.5	29.7	27.9	29.7	31.2	41.2	13.1	21.5	24.7	33.3	23.1	33.2
Other sources ^b	21.3	63.0	32.0	34.6	40.7	0.0	19.6	48.5	29.7	38.9	55.5	0.0
Primary space-heating energy source												
Electricity	6.4	36.1	24.0	16.4	13.0	22.0	5.5	42.7	15.3	12.7	11.2	17.1
Natural gas	5.5	27.4	12.4	16.4	12.8	26.8	4.1	23.6	9.0	11.3	12.2	14.3
Fuel oil	16.1	31.9	29.4	27.8	55.8	90.2	15.3	28.2	29.0	21.8	48.4	83.3
District heat	15.8	50.6	31.7	25.5	38.4	33.6	12.6	25.7	20.7	19.1	35.1	25.0
Propane	17.5	48.9	29.4	33.4	50.8	48.5	16.9	30.6	29.9	38.5	45.8	45.7
Other sources ^b	22.4	48.7	33.5	42.0	49.6	0.0	30.3	47.2	32.5	70.5	72.3	0.0
Cooling energy sources (more than one may apply)												
Electricity	3.9	18.2	11.9	14.7	11.6	16.5	3.0	16.9	8.5	10.0	10.4	13.2
Natural gas	37.3	69.6	47.4	52.0	53.4	50.3	24.2	69.6	52.1	30.4	53.2	50.3
District chilled water	20.1	47.7	29.0	42.4	38.6	29.3	13.7	44.4	21.4	31.8	31.2	17.0

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings					RSEs for total floorspace						
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Water-heating energy sources (more than one may apply)												
Electricity	4.0	20.2	13.6	15.8	12.7	17.7	3.6	18.0	10.2	9.9	10.8	13.8
Natural gas	5.5	26.2	11.2	17.0	11.4	24.0	3.7	23.0	9.2	12.1	10.7	14.4
Fuel oil	24.0	25.8	51.6	33.3	51.7	81.5	15.4	18.8	29.8	29.1	38.6	70.7
District heat	17.4	48.6	34.0	31.5	50.5	36.3	12.8	28.3	27.2	19.6	33.4	22.1
Propane	15.8	27.1	32.7	35.8	45.4	34.8	14.7	35.0	27.0	36.4	47.8	25.3
Cooking energy sources (more than one may apply)												
Electricity	5.7	22.3	12.8	18.7	14.5	16.8	3.9	19.3	9.7	12.0	11.9	13.5
Natural gas	5.4	28.6	11.4	17.2	12.4	23.6	3.4	21.6	8.7	10.7	11.7	11.7
Propane	14.8	26.6	27.6	43.4	28.8	36.2	11.7	24.2	21.8	30.9	20.2	24.0
Energy end uses (more than one may apply)												
Buildings with space heating	4.1	20.5	11.6	15.1	11.6	19.5	3.0	16.9	8.4	10.6	10.3	14.1
Buildings with cooling	3.9	18.2	11.9	14.9	11.4	16.4	3.0	17.3	8.4	10.4	10.3	13.0
Buildings with water heating	3.9	18.7	11.3	15.0	11.6	17.6	2.9	17.1	8.4	10.4	10.1	13.1
Buildings with cooking	5.0	18.1	11.1	17.4	12.4	16.5	3.1	16.8	8.7	10.2	11.4	11.6
Buildings with manufacturing	11.3	34.8	18.3	26.4	25.7	35.3	7.9	29.1	13.8	18.7	13.3	24.5
Buildings with electricity generation	7.4	19.1	18.9	19.6	14.6	20.2	4.4	19.2	9.6	11.8	10.3	13.2
Buildings with lighting	3.9	20.6	11.5	15.3	11.2	17.2	3.0	17.1	8.1	10.6	9.9	13.5
Percentage of floorspace heated												
Not heated	8.2	21.2	19.5	23.4	16.4	24.5	10.0	31.6	22.1	24.4	15.7	22.4
1 to 50%	8.5	32.4	24.4	20.3	14.8	26.7	7.1	32.9	16.8	17.1	11.9	20.8
51 to 99%	6.7	34.9	13.6	17.7	14.1	20.1	5.3	28.4	10.1	11.5	12.5	18.7
100%	4.1	20.1	11.5	15.3	12.5	21.2	3.2	17.2	8.8	11.6	10.6	14.0
Percentage of floorspace cooled												
Not cooled	7.1	22.1	14.6	22.8	15.4	43.0	8.0	25.1	12.2	22.7	16.0	42.8
1 to 50%	5.9	18.3	14.9	15.5	15.5	20.2	5.2	21.0	10.8	12.5	11.4	24.0
51 to 99%	6.6	26.6	12.9	15.2	13.7	20.6	5.1	21.3	10.8	10.1	14.2	13.4
100%	4.3	28.6	13.0	16.7	12.3	17.2	3.5	21.0	9.1	13.8	10.1	13.6
Percentage lit when open												
0%	35.1	50.4	64.5	46.0	48.3	49.2	38.5	50.4	71.5	50.5	60.6	49.2
1 to 50%	6.7	28.4	16.3	17.1	15.8	22.8	6.0	25.9	13.2	16.0	14.3	23.0
51 to 99%	4.8	19.9	12.2	17.2	11.8	17.0	3.6	18.3	9.2	11.5	10.4	13.3
100%	4.7	24.7	13.4	15.5	12.9	19.7	3.8	15.1	9.2	10.8	11.4	14.1
Building never open or electricity not used	11.6	32.5	23.2	22.1	24.4	52.7	12.1	32.6	22.9	23.5	25.2	41.2
Percentage lit during off hours												
0%	6.5	23.7	16.4	20.0	15.1	23.3	6.7	25.3	12.1	17.1	15.5	27.6
1 to 50%	3.8	19.8	11.3	14.3	10.8	16.2	3.0	17.5	8.7	10.3	10.1	12.5
51 to 100%	10.6	51.0	25.8	24.1	16.8	31.1	6.7	25.9	15.5	15.1	13.1	20.9
Building always open with no off hours	15.2	63.9	28.6	25.9	30.9	34.1	11.6	28.9	20.2	24.9	21.1	28.4
Electricity not used	16.0	48.0	33.6	37.4	28.4	62.8	17.6	40.3	38.8	44.3	25.7	61.2

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings					RSEs for total floorspace						
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Heating equipment (more than one may apply)												
Packaged heating units	4.0	22.4	9.4	13.8	11.2	19.2	3.6	18.0	8.3	11.8	11.2	14.2
Furnaces	7.2	26.4	14.2	20.1	20.2	20.8	5.7	26.0	10.5	16.6	14.1	25.4
Individual space heaters	5.9	23.6	11.7	18.6	14.5	26.8	4.8	21.1	10.0	11.1	12.0	17.9
Boilers	6.2	18.8	11.7	13.7	16.0	23.0	4.0	16.4	8.3	11.1	10.8	14.9
Heat pumps	7.7	36.9	28.5	19.9	11.8	35.3	5.4	32.8	15.8	13.0	9.5	24.1
District heat	15.4	47.6	31.6	24.8	36.0	33.6	11.6	24.8	20.5	18.0	32.0	25.0
Duct reheat	12.6	56.3	27.6	24.8	25.5	35.0	7.0	49.7	16.0	14.5	18.2	17.3
Other	46.4	72.8	73.9	46.4	52.7	72.8	24.1	56.8	36.8	45.4	42.5	70.7
Cooling equipment (more than one may apply)												
Packaged air-conditioning units	4.3	23.3	9.8	12.9	11.8	18.1	3.4	17.1	7.9	9.0	10.7	14.2
Residential-type central air conditioners	7.6	20.9	14.9	20.1	25.6	16.3	5.2	23.8	10.4	14.6	16.2	18.4
Individual air conditioners	6.6	16.6	16.2	16.5	16.4	15.5	5.3	22.7	10.7	11.8	14.7	18.6
Central chillers	9.0	30.7	26.0	15.4	14.5	17.2	5.0	20.3	12.8	11.6	13.3	12.0
Heat pumps	11.0	40.5	33.9	22.4	17.8	43.8	6.8	32.4	17.9	15.2	9.5	34.4
District chilled water	20.1	47.7	29.0	42.4	38.6	29.3	13.7	44.4	21.4	31.8	31.2	17.0
Swamp coolers	12.8	41.0	18.2	42.9	22.0	25.3	13.1	57.1	17.2	34.3	23.8	29.5
Other	53.2	99.9	94.0	75.8	68.8	108.6	36.4	99.9	70.1	59.7	57.7	91.2
HVAC features (more than one may apply)												
Economizer cycle	5.6	18.7	11.5	15.6	16.5	27.5	3.9	18.2	8.8	11.8	10.2	12.9
Variable air volume (VAV) system	8.4	17.6	15.3	19.0	17.8	31.1	4.9	18.2	9.7	11.6	13.3	16.9
Dedicated outside air system (DOAS)	11.0	26.9	23.4	18.6	23.7	48.4	7.8	19.9	15.3	15.9	22.6	19.2
Demand controlled ventilation (DCV)	8.8	33.9	17.6	19.9	19.0	27.9	5.5	24.8	14.0	11.4	14.5	19.2
Regular HVAC maintenance	4.2	17.6	10.4	14.8	11.4	19.4	3.2	16.4	8.4	10.6	10.6	13.3
Building automation system (BAS) controls heating or cooling	6.4	16.1	12.6	20.0	14.0	23.6	3.7	16.1	8.0	12.0	8.3	12.8
Internet-connected or smart thermostat	12.2	43.3	23.0	23.5	16.6	47.4	10.5	42.7	23.9	16.3	18.5	36.6
Programmable thermostat	4.7	22.4	11.9	15.4	12.8	20.5	5.4	26.6	11.1	13.4	14.8	20.0
Main equipment replaced since 2000 (more than one may apply)												
Heating	4.9	31.1	12.0	13.9	12.0	21.9	3.8	22.1	10.1	10.4	11.4	17.7
Cooling	4.8	25.2	13.2	16.0	12.5	11.6	4.3	19.8	11.0	12.7	11.8	12.1
Water-heating equipment												
Centralized system	4.4	18.1	12.0	15.8	12.4	18.5	3.4	16.3	8.9	11.5	11.3	13.9
Distributed system	8.9	23.6	20.2	16.6	17.8	30.8	6.4	23.7	14.4	11.3	12.0	25.5
Combination of centralized and distributed systems	8.8	49.4	13.5	24.7	21.5	31.4	5.2	27.0	9.7	12.6	14.7	14.6
Generation technologies (more than one may apply)												
Reciprocating engine generators	8.8	19.6	22.2	22.0	17.0	22.9	4.8	18.6	10.0	12.3	11.5	13.8
Solar panels	15.4	52.9	35.5	32.3	27.0	38.0	11.5	43.2	21.5	23.1	13.0	28.9
Other generation technology	21.4	60.5	29.5	32.7	53.8	64.8	14.4	46.6	26.6	27.9	27.5	36.0

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings						RSEs for total floorspace					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Lighting equipment types (more than one may apply)												
Incandescent	7.8	22.1	19.6	18.6	16.4	15.8	4.5	18.7	10.6	12.3	11.9	14.8
Standard fluorescent	4.2	22.0	11.1	15.1	11.5	17.0	3.4	17.7	8.8	10.1	10.7	13.6
Compact fluorescent	5.2	20.3	11.9	18.6	13.0	21.2	4.2	18.0	10.6	11.8	11.7	12.7
High-intensity discharge (HID)	9.8	30.2	18.6	22.8	22.5	18.7	7.1	21.5	12.4	14.7	20.6	13.2
Halogen	8.0	32.5	22.9	22.5	18.7	18.1	4.2	17.5	11.8	12.1	13.0	14.0
LED	3.6	18.8	12.0	14.8	10.7	16.2	2.9	15.6	8.6	10.4	9.4	13.0
Other	57.3	51.8	64.7	70.9	0.0	70.9	24.1	51.8	26.0	70.9	0.0	70.9
Refrigeration equipment (more than one may apply)												
Any refrigeration	4.1	18.7	11.4	15.6	11.8	17.6	3.0	17.2	8.8	10.9	10.4	13.0
Walk-in units	5.4	20.1	12.3	14.2	12.5	20.0	3.4	18.3	9.1	10.7	10.9	11.4
Cases or cabinets	5.8	26.4	13.9	17.6	15.5	21.9	3.7	18.7	8.8	10.4	11.8	11.5
Large cold storage areas	17.2	50.3	39.2	34.8	37.8	29.2	11.3	35.7	16.8	30.8	15.1	25.0
Commercial ice makers	5.5	19.1	12.9	16.5	13.7	19.1	3.5	17.6	8.7	10.7	12.1	11.2
Residential-type or compact units	4.3	18.8	11.6	16.5	11.5	19.4	3.2	17.1	9.2	11.2	10.3	14.8
Vending machines	6.1	26.0	14.9	15.0	15.6	13.1	3.8	19.6	9.4	11.1	12.1	12.0
No refrigeration	5.3	22.2	14.7	16.0	13.7	25.4	5.3	19.6	10.3	11.6	12.3	22.0
Office equipment (more than one may apply)												
Desktop computers	4.0	18.1	11.5	14.2	10.6	17.9	2.9	16.6	8.5	10.5	9.8	13.1
With multiple monitors	5.0	19.4	11.8	18.3	11.5	14.3	3.5	15.1	8.8	11.3	10.7	10.0
Laptop computers	4.0	17.3	12.7	15.4	10.5	15.5	3.0	17.9	9.3	10.8	9.8	11.5
Dedicated servers	4.9	16.8	10.3	16.8	13.2	18.3	3.3	16.7	8.8	11.2	10.1	12.4
Tablets charged in building	4.4	18.9	12.3	18.1	10.9	18.5	3.3	17.3	9.0	12.0	10.4	10.6
Large floor-standing office devices ^c	4.4	15.2	12.4	16.5	10.7	16.9	3.0	16.1	9.1	10.9	9.6	11.2
Smaller desktop office devices ^c	4.1	20.6	11.0	15.2	11.0	17.3	3.1	16.5	8.4	10.8	10.1	12.7
Interactive whiteboards	8.7	26.6	24.0	15.2	17.6	24.8	4.5	22.4	10.8	13.6	11.0	12.4
Televisions or video displays	3.8	15.7	11.2	14.8	11.4	16.4	3.0	16.5	8.7	10.8	10.1	12.1
Point-of-sale devices or cash registers	5.2	24.4	13.3	13.6	15.1	14.4	3.4	19.5	8.1	10.6	11.7	11.4
Food preparation or serving areas in non-food service buildings (more than one may apply)												
Snack bar, concession stand, or coffee shop	11.0	33.3	22.7	23.6	20.0	29.3	6.7	21.1	13.9	17.6	14.7	10.9
Fast food or small restaurant	9.4	35.5	15.6	27.0	25.2	34.8	5.9	25.4	11.5	14.0	14.6	13.0
Cafeteria or large restaurant	7.7	26.0	16.9	15.4	22.0	16.9	4.6	23.3	9.5	12.9	11.7	14.4
Commercial kitchen or food preparation area	8.5	29.1	17.3	18.5	18.5	20.4	4.4	19.6	11.6	11.3	11.5	13.4
Small kitchen area	6.5	25.8	12.7	18.2	14.5	19.5	4.7	22.2	10.4	11.9	14.2	14.3
Separate computer areas (more than one may apply)												
Server closet	5.3	15.9	11.2	17.6	12.2	19.2	3.4	17.1	8.9	11.5	9.9	11.4
Data center	13.1	33.4	24.0	15.5	27.7	42.2	6.7	22.8	12.2	14.8	17.2	15.0
Computer-based training room	8.4	27.6	13.3	18.9	19.5	23.9	4.6	13.2	8.6	14.8	11.4	11.5
Student or public computer center	8.0	37.7	12.7	24.4	16.1	25.0	4.6	20.1	10.4	14.5	12.6	16.8

Relative standard errors (RSEs) for Table B23. Climate zone^a, number of buildings and floorspace, 2018

	RSEs for number of buildings						RSEs for total floorspace					
	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot	All buildings	Cold or very cold	Cool	Mixed mild	Warm	Hot or very hot
All buildings	3.9	18.8	11.8	15.1	11.4	18.8	3.1	17.0	8.3	10.5	10.0	14.1
Window and interior lighting features (more than one may apply)												
Multipaned windows	4.2	18.8	11.7	16.0	12.3	20.0	3.2	16.7	8.2	11.1	11.1	13.8
Tinted window glass	4.2	15.3	13.2	15.5	11.2	16.7	3.4	16.8	9.6	10.7	10.1	13.2
Reflective window glass	7.0	28.0	18.2	22.4	11.4	20.7	5.6	25.3	12.0	16.5	9.6	16.7
External overhangs or awnings	5.0	19.3	13.5	16.9	13.7	20.1	4.5	20.5	10.2	14.0	12.7	15.2
Skylights or atriums	7.1	21.1	18.6	16.6	11.6	28.7	4.5	15.5	12.1	12.1	9.7	14.0
Light scheduling	5.2	21.3	9.6	18.8	10.1	19.6	4.1	21.9	8.3	11.9	10.6	12.6
Occupancy sensors	6.5	24.0	14.9	18.9	9.9	23.2	3.8	20.3	9.4	11.2	9.7	11.3
Multilevel lighting or dimming	10.0	23.2	19.1	17.5	22.4	25.1	6.6	19.5	11.1	15.5	18.8	12.7
Daylight harvesting	12.0	33.4	29.1	22.5	19.7	36.8	6.3	23.2	14.1	12.9	13.0	15.7
Plug-load control	18.4	60.1	55.2	36.6	42.6	36.1	12.2	53.6	32.4	22.7	29.8	31.3
Demand responsive lighting	30.7	80.1	46.2	44.1	51.3	51.2	15.2	43.8	27.5	25.5	36.8	28.5
Building automation system (BAS) for lighting	9.3	30.1	19.4	24.2	14.3	25.0	5.2	19.5	10.0	15.2	9.8	13.1
Electric vehicle (EV) charging												
Charging stations associated with the building	11.5	52.1	22.9	33.3	19.5	29.2	7.2	25.5	17.3	17.5	10.7	12.8

Data source: U.S. Energy Information Administration, Forms EIA-871A of the 2018 Commercial Buildings Energy Consumption Survey

Note: RSE is a measure of the reliability or precision of a survey statistic. Variability occurs in survey statistics because the different samples that could be drawn would each produce different values for the survey statistics. Estimation of Standard Errors and What is a Relative Standard Error (RSE)? contain more information on how RSEs are estimated and used.

Both references can be accessed from <https://www.eia.gov/consumption/commercial/survey-background-technical-information.php>.

^aClimate zones are based on ASHRAE Standard 169-2021; see <https://www.eia.gov/consumption/commercial/maps.php#defined>.

^bOther sources includes wood, coal, solar, and all other energy sources.

^cOffice devices refers to any combination of printers, copiers, scanners, or FAX machines.