

Release date: September 2021

Revised date: December 2022

**Table B9. Year constructed, floorspace, 2018**

	Total floorspace (million square feet)								
	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>All buildings</b>	96,423	9,246	6,937	10,360	13,061	13,465	15,535	17,500	10,319
<b>Building floorspace (square feet)</b>									
1,001 to 5,000	8,025	1,129	748	919	1,088	1,067	1,167	1,183	725
5,001 to 10,000	10,204	1,091	808	1,288	1,536	1,509	1,559	1,318	1,097
10,001 to 25,000	15,838	1,721	1,325	1,797	2,029	1,844	2,782	3,272	1,068
25,001 to 50,000	13,957	1,162	953	1,698	1,954	1,928	2,734	2,212	1,315
50,001 to 100,000	15,302	1,247	1,339	1,257	1,926	2,263	2,259	3,168	1,842
100,001 to 200,000	13,003	1,045	977	1,058	1,573	1,774	2,192	2,570	1,813
200,001 to 500,000	11,776	897	612	1,478	1,697	1,649	1,663	2,242	1,538
Over 500,000	8,317	955	Q	864	1,258	1,431	1,179	1,535	920
<b>Principal building activity</b>									
Education	13,623	1,371	1,995	1,999	1,584	1,247	2,148	2,241	1,038
Food sales	1,006	Q	Q	Q	Q	Q	Q	Q	Q
Food service	1,385	254	Q	139	140	127	213	289	163
Health care	4,018	305	200	403	617	529	396	955	613
Inpatient	2,259	Q	151	323	421	258	168	486	285
Outpatient	1,760	Q	Q	Q	196	271	228	469	328
Lodging	6,976	333	357	874	762	1,389	880	1,205	1,178
Mercantile	10,781	401	606	1,108	1,288	1,541	1,799	2,767	1,269
Retail (other than mall)	5,193	306	Q	545	442	528	1,007	1,334	646
Enclosed and strip malls	5,588	Q	Q	564	846	1,013	793	1,433	623
Office	16,662	2,826	582	1,282	2,268	3,441	2,505	2,346	1,413
Public assembly	7,192	1,054	537	669	944	532	1,222	1,482	753
Public order and safety	1,538	Q	Q	Q	Q	Q	248	471	Q
Religious worship	5,471	775	498	816	696	595	898	906	Q
Service	6,240	411	455	1,040	1,042	680	970	986	656
Warehouse and storage	17,483	694	1,208	1,350	2,800	2,325	3,527	3,087	2,491
Other	2,435	Q	Q	296	Q	327	437	323	Q
Vacant	1,612	377	Q	188	Q	Q	Q	Q	Q
<b>Census region</b>									
Northeast	15,951	2,874	1,539	2,045	2,263	2,015	1,948	2,107	1,159
Midwest	25,932	3,027	1,714	2,806	3,889	2,933	4,110	4,846	2,609
South	34,907	2,041	2,420	3,758	4,243	5,244	6,158	7,050	3,994
West	19,633	1,304	1,264	1,752	2,666	3,272	3,320	3,497	2,557
<b>Climate zone<sup>a</sup></b>									
Cold or very cold	7,044	796	676	810	998	844	1,012	1,312	598
Cool	26,768	3,531	1,688	2,890	4,116	2,925	4,222	4,380	3,016
Mixed mild	25,096	3,128	2,017	2,485	2,842	3,553	4,062	4,436	2,572
Warm	25,085	1,449	1,853	3,192	3,545	3,840	3,917	4,667	2,622
Hot or very hot	12,429	342	702	983	1,560	2,303	2,322	2,706	1,511

**Table B9. Year constructed, floorspace, 2018**

**Total floorspace (million square feet)**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Number of floors</b>									
1	43,576	1,570	3,348	4,306	5,674	6,380	8,074	9,188	5,036
2	23,300	2,185	1,502	2,957	3,814	2,912	3,772	3,989	2,169
3	10,516	2,275	1,168	1,108	1,217	1,110	1,334	1,385	920
4 to 9	13,031	2,163	766	1,428	1,534	1,382	1,824	2,203	1,730
10 or more	6,000	1,052	154	561	821	1,681	532	735	464
<b>Elevators and escalators (more than one may apply)</b>									
Any elevators	36,501	4,973	2,040	3,691	4,588	5,181	5,300	6,650	4,077
1 elevator	14,215	2,130	1,102	1,534	1,608	1,227	2,303	2,825	1,487
2 to 5 elevators	13,316	1,689	695	1,317	1,557	2,038	1,789	2,490	1,740
6 or more elevators	8,970	1,155	243	840	1,423	1,916	1,208	1,335	850
Any escalators	3,753	Q	Q	366	576	933	703	450	Q
<b>Number of workers (main shift)</b>									
Fewer than 5	21,065	2,788	1,895	2,722	2,925	2,397	3,580	3,029	1,729
5 to 9	10,323	1,092	836	1,228	1,255	1,542	1,496	1,874	1,001
10 to 19	11,348	1,064	621	958	2,197	1,325	2,174	1,510	1,499
20 to 49	16,132	983	1,407	1,594	2,071	2,352	2,571	3,429	1,726
50 to 99	12,961	1,096	912	1,524	1,649	1,716	1,809	2,485	1,770
100 to 249	12,442	898	818	1,235	1,320	1,518	2,095	3,273	1,286
250 or more	12,152	1,326	449	1,100	1,644	2,616	1,810	1,900	1,308
<b>Weekly operating hours</b>									
Fewer than 40	10,766	1,855	1,018	1,347	1,418	1,415	1,393	1,505	815
40 to 48	18,826	1,510	1,920	2,205	2,664	2,429	3,097	3,272	1,728
49 to 60	22,845	2,832	1,837	2,391	3,333	3,182	3,921	3,387	1,963
61 to 84	14,736	1,135	778	1,525	1,899	2,381	2,192	3,029	1,797
85 to 167	10,038	391	536	785	1,313	1,062	1,990	2,500	1,460
Open continuously	19,213	1,523	848	2,108	2,434	2,995	2,943	3,807	2,555
<b>Ownership and occupancy</b>									
Nongovernment owned	74,728	6,537	4,584	7,492	10,354	11,390	12,124	13,822	8,425
Owner occupied	45,355	4,925	3,159	4,816	6,265	6,230	7,435	7,929	4,597
Leased to tenant or tenants	28,382	1,451	1,297	2,591	3,916	4,978	4,607	5,801	3,740
Unoccupied	990	Q	Q	Q	Q	Q	Q	Q	Q
Government owned	21,695	2,708	2,353	2,868	2,707	2,075	3,411	3,678	1,894
Federal	1,946	337	Q	361	241	Q	351	Q	Q
State	6,888	796	747	1,126	1,064	644	879	1,117	514
Local	12,861	1,575	1,456	1,381	1,402	1,344	2,181	2,339	1,183
<b>Party responsible for operation of energy systems</b>									
Building owner	79,282	8,244	6,090	8,585	10,605	10,877	12,701	14,008	8,171
Business owner or tenant	12,842	564	772	1,275	1,902	1,764	2,031	2,828	1,706
Property management	1,994	Q	Q	Q	Q	370	512	447	Q
Other	2,306	252	Q	Q	377	454	291	217	Q

**Table B9. Year constructed, floorspace, 2018**

**Total floorspace (million square feet)**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Provider of direct input on energy-related equipment purchases</b>									
Building owner	82,862	8,335	6,383	8,979	11,228	11,164	13,489	14,642	8,642
Business owner or tenant	7,585	365	304	772	852	1,312	1,130	1,876	974
Property management	1,072	Q	Q	Q	Q	Q	Q	Q	Q
Other	4,904	467	Q	561	907	893	567	734	554
<b>Number of establishments</b>									
1	65,391	6,383	5,300	7,346	8,327	7,887	10,787	11,532	7,829
2 to 5	16,431	1,454	988	1,570	2,777	2,289	2,720	3,220	1,414
6 to 10	5,539	409	329	622	759	885	873	1,314	347
11 to 20	3,894	Q	Q	301	352	1,032	524	864	Q
More than 20	3,999	416	Q	432	652	1,185	492	463	Q
Currently unoccupied	1,168	Q	Q	Q	Q	Q	Q	Q	Q
<b>Campus or complex activity</b>									
Not part of a campus or complex	56,609	5,820	4,121	6,066	8,173	8,040	8,928	9,617	5,845
Primary or secondary school	5,106	393	638	835	438	449	1,025	890	438
College or university	3,761	322	363	677	660	307	448	533	451
Office complex	3,823	393	Q	300	249	960	618	686	Q
Retail complex	4,573	Q	Q	Q	527	765	677	1,181	691
Storage complex	5,684	Q	Q	Q	528	579	1,526	1,543	714
Religious campus or complex	3,209	480	649	450	332	Q	328	631	Q
Health care complex	2,838	267	151	353	470	339	288	664	306
Lodging or resort complex	1,575	Q	Q	Q	Q	266	Q	Q	Q
Transportation complex	774	Q	Q	Q	Q	Q	Q	Q	Q
Government complex	1,706	317	Q	Q	Q	Q	Q	302	Q
Other	6,765	719	Q	529	919	1,183	959	1,121	1,077
<b>Predominant exterior wall material</b>									
Brick, stone, or stucco	46,134	6,688	4,204	5,782	5,199	6,019	6,279	7,958	4,005
Concrete (block or poured)	19,357	1,285	1,848	2,311	3,378	2,448	3,483	3,144	1,460
Concrete panels	8,331	Q	Q	420	1,120	1,220	1,512	1,852	1,994
Siding or shingles	5,992	789	302	572	855	1,017	816	993	648
Metal panels	12,198	Q	385	947	1,844	1,831	2,730	2,590	1,572
Window glass	2,192	N	Q	Q	306	545	359	372	443
Other	2,219	Q	Q	Q	358	385	357	591	Q
<b>Predominant roof material</b>									
Metal surfacing	20,936	983	862	1,495	2,556	2,930	4,890	4,596	2,624
Synthetic or rubber	31,563	2,312	2,318	3,179	4,576	4,006	4,925	5,875	4,371
Built-up	19,308	2,580	1,962	2,747	2,831	2,891	2,299	2,908	1,089
Slate or tile shingles	3,997	763	453	293	500	615	691	454	Q
Wooden materials (including shingles)	1,568	Q	Q	Q	Q	Q	Q	366	Q
Asphalt, fiberglass, or other shingles	14,058	1,818	991	1,926	1,872	1,673	1,752	2,616	1,411
Concrete	1,968	345	Q	Q	Q	493	Q	144	Q
Other	3,026	238	Q	382	402	556	520	541	Q



**Table B9. Year constructed, floorspace, 2018**

**Total floorspace (million square feet)**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Primary space-heating energy source</b>									
Electricity	27,618	1,520	1,422	2,117	3,720	4,880	5,017	5,365	3,576
Natural gas	50,060	4,844	4,023	6,141	6,509	6,284	7,641	9,318	5,300
Fuel oil	2,223	549	328	343	Q	Q	Q	Q	Q
District heat	6,090	1,290	577	1,068	912	637	477	709	419
Propane	2,290	394	Q	Q	Q	441	483	401	Q
Other sources <sup>b</sup>	380	Q	Q	Q	Q	Q	Q	Q	Q
<b>Cooling energy sources (more than one may apply)</b>									
Electricity	84,526	7,615	5,933	8,984	11,434	12,390	13,613	15,788	8,769
Natural gas	400	Q	Q	Q	Q	Q	Q	Q	Q
District chilled water	4,288	520	296	711	661	469	562	569	500
<b>Water-heating energy sources (more than one may apply)</b>									
Electricity	47,125	4,017	3,477	4,419	6,415	7,344	7,785	8,639	5,029
Natural gas	46,652	4,004	3,278	5,542	6,033	6,169	7,001	9,423	5,202
Fuel oil	1,807	350	Q	194	Q	Q	Q	304	Q
District heat	4,206	974	383	688	647	410	358	402	344
Propane	1,947	Q	Q	Q	Q	Q	279	Q	Q
<b>Cooking energy sources (more than one may apply)</b>									
Electricity	30,509	2,578	2,190	3,216	3,613	4,819	4,724	6,402	2,967
Natural gas	27,705	2,496	2,084	3,275	3,180	3,750	4,265	5,857	2,798
Propane	3,101	434	Q	302	569	343	373	619	204
<b>Energy end uses (more than one may apply)</b>									
Buildings with space heating	88,661	8,625	6,525	9,782	11,792	12,447	13,947	16,005	9,537
Buildings with cooling	87,506	8,061	6,151	9,369	11,888	12,648	13,966	16,243	9,180
Buildings with water heating	87,717	8,442	6,479	9,520	11,726	12,397	13,593	16,142	9,418
Buildings with cooking	43,580	4,294	3,401	5,017	5,196	6,230	6,542	8,800	4,101
Buildings with manufacturing	6,871	474	465	584	1,313	892	1,071	1,351	721
Buildings with electricity generation	29,457	2,365	1,526	2,737	3,892	4,234	4,337	6,243	4,123
Buildings with lighting	94,103	9,082	6,744	10,205	12,872	13,298	14,885	17,082	9,935
<b>Percentage of floorspace heated</b>									
Not heated	7,762	621	412	578	1,269	1,018	1,588	1,495	782
1 to 50%	10,620	962	917	1,156	1,298	1,604	1,886	1,706	1,092
51 to 99%	20,174	2,668	1,316	2,071	2,410	3,047	2,892	3,775	1,996
100%	57,867	4,995	4,292	6,556	8,084	7,797	9,170	10,524	6,449
<b>Percentage of floorspace cooled</b>									
Not cooled	8,917	1,184	785	991	1,173	817	1,569	1,257	1,139
1 to 50%	19,722	1,727	2,003	2,289	3,119	2,867	3,008	2,958	1,750
51 to 99%	26,277	3,442	1,667	2,994	3,005	3,428	4,134	4,850	2,756
100%	41,507	2,892	2,482	4,085	5,763	6,352	6,824	8,435	4,673

**Table B9. Year constructed, floorspace, 2018**

**Total floorspace (million square feet)**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Percentage lit when open</b>									
0%	Q	N	Q	Q	N	N	Q	Q	Q
1 to 50%	14,172	2,094	1,209	1,630	2,493	1,468	2,295	1,965	1,018
51 to 99%	38,847	3,723	2,810	4,478	4,564	5,840	5,861	7,665	3,906
100%	39,877	2,958	2,637	3,993	5,687	5,760	6,580	7,329	4,932
Building never open or electricity not used	2,998	471	Q	231	318	396	660	386	Q
<b>Percentage lit during off hours</b>									
0%	15,578	1,759	1,240	1,678	2,280	1,539	3,008	2,586	1,487
1 to 50%	69,800	6,780	4,948	7,407	9,302	10,327	10,819	12,674	7,544
51 to 100%	7,243	464	573	910	1,043	1,118	884	1,392	859
Building always open with no off hours	2,223	Q	Q	263	277	314	356	602	Q
Electricity not used	1,579	Q	Q	Q	Q	Q	Q	Q	Q
<b>Heating equipment (more than one may apply)</b>									
Packaged heating units	48,064	2,753	3,177	4,626	5,970	6,863	8,146	10,006	6,524
Furnaces	17,272	2,025	1,377	1,880	2,194	2,485	2,824	2,717	1,769
Individual space heaters	21,122	1,601	1,801	2,467	3,289	3,149	3,166	3,690	1,958
Boilers	28,831	3,808	2,406	3,651	3,551	3,714	4,062	4,790	2,850
Heat pumps	15,110	1,443	1,260	1,440	1,814	2,602	1,815	2,898	1,837
District heat	6,547	1,352	648	1,168	974	712	545	709	438
Duct reheat	7,418	288	266	684	851	1,689	1,182	1,715	743
Other	821	Q	Q	Q	Q	Q	Q	Q	Q
<b>Cooling equipment (more than one may apply)</b>									
Packaged air-conditioning units	56,290	3,609	3,920	5,945	7,532	7,910	9,450	11,588	6,336
Residential-type central air conditioners	18,270	2,217	1,372	1,926	2,477	2,386	2,920	3,069	1,904
Individual air conditioners	13,619	2,053	1,393	2,028	1,959	1,999	1,387	1,835	965
Central chillers	17,926	2,002	1,181	2,398	2,723	2,820	2,592	2,850	1,360
Heat pumps	11,098	897	1,039	1,200	1,399	1,856	1,487	1,687	1,533
District chilled water	4,288	520	296	711	661	469	562	569	500
Swamp coolers	2,070	Q	Q	Q	214	470	421	265	Q
Other	Q	Q	N	Q	N	Q	Q	Q	Q
<b>HVAC features (more than one may apply)</b>									
Economizer cycle	34,087	2,804	2,045	3,557	4,228	5,007	4,777	7,134	4,535
Variable air volume (VAV) system	29,268	2,673	1,753	2,542	3,907	4,268	4,656	5,971	3,498
Dedicated outside air system (DOAS)	9,027	681	829	1,112	1,239	1,119	1,107	1,739	1,200
Demand controlled ventilation (DCV)	10,474	803	1,055	1,086	1,360	1,217	1,759	1,673	1,519
Regular HVAC maintenance	78,015	7,168	5,527	7,859	10,715	10,829	12,294	14,834	8,789
Building automation system (BAS) controls heating or cooling	40,462	3,125	2,630	3,663	5,061	5,781	6,516	8,638	5,047
Internet-connected or smart thermostat	5,966	583	Q	516	799	770	881	1,147	960
Programmable thermostat	20,882	1,759	1,260	2,111	3,020	3,017	3,659	4,042	2,015

**Table B9. Year constructed, floorspace, 2018**

**Total floorspace (million square feet)**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Main equipment replaced since 2000 (more than one may apply)</b>									
Heating	32,451	4,048	3,354	5,357	6,267	7,060	6,365	N	N
Cooling	23,013	3,847	2,539	4,029	4,004	4,532	4,061	N	N
<b>Water-heating equipment</b>									
Centralized system	59,280	6,344	4,679	7,434	7,509	7,927	9,015	10,195	6,177
Distributed system	14,307	1,155	865	1,008	2,617	2,163	2,057	2,974	1,468
Combination of centralized and distributed systems	14,129	943	935	1,077	1,599	2,307	2,522	2,973	1,774
<b>Generation technologies (more than one may apply)</b>									
Reciprocating engine generators	25,163	2,082	1,342	2,384	3,189	3,593	3,617	5,360	3,595
Solar panels	3,750	396	Q	383	323	544	608	817	513
Other generation technology	2,055	Q	Q	Q	495	235	367	396	Q
<b>Lighting equipment types (more than one may apply)</b>									
Incandescent	21,081	2,940	1,466	2,707	2,790	3,640	2,548	3,517	1,473
Standard fluorescent	72,912	6,953	5,288	8,119	10,037	10,892	11,295	13,705	6,623
Compact fluorescent	33,691	3,553	1,976	3,851	4,571	5,284	4,842	6,374	3,239
High-intensity discharge (HID)	11,356	934	637	1,135	1,888	1,624	1,593	2,510	1,034
Halogen	15,012	990	842	1,609	2,299	2,542	2,306	3,174	1,251
LED	61,849	5,536	4,669	6,651	7,961	8,941	9,734	11,309	7,047
Other	Q	N	Q	N	Q	Q	Q	Q	Q
<b>Refrigeration equipment (more than one may apply)</b>									
Any refrigeration	77,589	7,101	5,637	8,512	10,145	10,770	12,087	14,893	8,443
Walk-in units	29,384	2,518	2,099	3,362	3,334	4,355	4,301	6,358	3,058
Cases or cabinets	28,517	2,245	1,853	2,866	3,223	3,904	4,428	6,439	3,560
Large cold storage areas	3,592	181	192	453	487	655	428	801	Q
Commercial ice makers	34,672	2,670	2,108	3,528	4,203	4,636	5,267	7,773	4,486
Residential-type or compact units	64,735	5,739	4,819	7,168	8,635	9,485	10,042	11,935	6,913
Vending machines	42,071	2,953	2,584	4,559	5,141	6,331	6,678	8,544	5,280
No refrigeration	18,834	2,145	1,300	1,848	2,917	2,695	3,448	2,606	1,876
<b>Office equipment (more than one may apply)</b>									
Desktop computers	82,012	7,315	5,647	8,908	11,086	11,274	13,118	15,395	9,269
With multiple monitors	50,844	4,583	3,204	5,334	6,555	7,517	7,950	9,919	5,781
Laptop computers	69,375	6,570	5,075	7,573	9,384	9,555	10,600	12,647	7,972
Dedicated servers	51,595	4,316	3,320	5,250	6,506	7,735	8,039	9,950	6,480
Tablets charged in building	48,778	4,085	3,449	5,090	6,372	6,661	7,779	9,695	5,647
Large floor-standing office devices <sup>c</sup>	54,088	4,958	3,495	5,716	7,291	7,865	8,517	10,073	6,173
Smaller desktop office devices <sup>c</sup>	74,467	6,713	5,323	8,112	9,789	10,560	11,546	14,100	8,325
Interactive whiteboards	16,939	1,661	1,910	1,989	1,778	2,367	2,891	2,869	1,473
Televisions or video displays	63,618	5,384	4,227	6,782	8,028	9,363	9,959	12,134	7,742
Point-of-sale devices or cash registers	33,606	2,675	2,378	4,118	3,952	4,670	5,450	6,763	3,600

**Table B9. Year constructed, floorspace, 2018**

	Total floorspace (million square feet)								
	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Food preparation or serving areas in non-food service buildings (more than one may apply)</b>									
Snack bar, concession stand, or coffee shop	10,361	1,033	595	1,280	1,249	1,639	1,438	1,868	1,258
Fast food or small restaurant	9,759	693	358	880	1,110	2,052	1,556	2,289	822
Cafeteria or large restaurant	14,531	1,390	1,499	2,103	1,899	1,916	2,050	2,308	1,367
Commercial kitchen or food preparation area	17,698	1,580	1,282	1,783	2,197	2,297	2,491	4,272	1,797
Small kitchen area	20,519	2,417	1,658	2,535	2,664	2,949	3,130	3,534	1,631
<b>Separate computer areas (more than one may apply)</b>									
Server closet	48,722	4,097	3,081	4,643	6,352	7,300	7,861	9,397	5,992
Data center	11,383	1,169	728	1,079	1,574	1,590	1,638	2,079	1,526
Computer-based training room	16,556	1,224	1,447	1,995	1,972	2,505	2,783	3,283	1,347
Student or public computer center	12,527	1,058	1,399	1,665	1,712	1,534	1,820	2,055	1,285
<b>Window and interior lighting features (more than one may apply)</b>									
Multipaned windows	72,694	6,405	4,750	6,774	9,350	10,225	11,824	14,316	9,050
Tinted window glass	44,363	2,494	2,564	3,939	6,453	7,466	6,594	9,054	5,799
Reflective window glass	17,929	1,484	659	1,293	1,840	3,291	2,526	4,139	2,696
External overhangs or awnings	28,718	2,032	2,172	2,977	3,280	3,974	4,146	6,069	4,069
Skylights or atriums	19,815	1,411	936	2,121	2,678	3,322	3,315	3,157	2,875
Light scheduling	33,552	2,665	1,805	2,652	3,876	5,645	5,140	7,430	4,340
Occupancy sensors	44,304	3,894	2,551	3,952	5,569	6,109	6,495	8,994	6,739
Multilevel lighting or dimming	14,424	1,399	742	1,342	1,611	2,303	2,086	2,908	2,033
Daylight harvesting	7,244	358	391	745	816	1,069	1,409	1,320	1,137
Plug-load control	1,961	Q	Q	Q	Q	187	377	374	440
Demand responsive lighting	2,045	Q	Q	Q	Q	Q	Q	340	Q
Building automation system (BAS) for lighting	16,645	850	490	872	1,841	2,417	2,873	4,430	2,872
<b>Electric vehicle (EV) charging</b>									
Charging stations associated with the building	10,165	684	388	932	981	1,674	1,688	1,980	1,838

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.

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

<sup>b</sup>Other sources includes wood, coal, solar, and all other energy sources.

<sup>c</sup>Office 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 B9. Year constructed, floorspace, 2018****RSEs for total floorspace**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>All buildings</b>	3.1	7.8	7.6	5.2	6.0	5.9	6.6	6.3	7.6
<b>Building floorspace (square feet)</b>									
1,001 to 5,000	5.3	11.9	13.4	10.0	12.6	12.8	11.5	11.8	15.8
5,001 to 10,000	5.8	15.0	18.9	15.6	15.9	13.3	17.2	16.2	18.9
10,001 to 25,000	6.1	14.6	17.7	14.5	13.9	14.3	15.1	13.3	19.7
25,001 to 50,000	5.6	16.3	16.7	14.4	16.5	13.7	14.8	13.9	14.5
50,001 to 100,000	5.3	19.0	17.1	13.4	12.2	11.6	11.4	9.8	13.7
100,001 to 200,000	5.5	16.3	21.9	14.6	15.4	12.5	10.0	11.0	16.1
200,001 to 500,000	5.0	12.7	19.1	12.4	15.4	9.9	8.9	10.5	16.7
Over 500,000	8.6	30.9	33.0	19.1	14.6	25.5	16.2	18.7	27.6
<b>Principal building activity</b>									
Education	5.3	17.6	14.1	11.4	11.8	16.3	12.1	11.2	17.0
Food sales	17.0	42.4	55.1	31.0	37.3	30.9	37.6	39.1	35.4
Food service	8.5	15.4	26.8	24.9	29.7	32.9	22.7	23.7	25.4
Health care	5.5	34.2	20.5	15.5	15.5	16.6	15.2	12.5	19.5
Inpatient	7.2	42.8	23.4	15.8	19.9	23.5	26.4	16.9	35.2
Outpatient	8.0	55.6	44.2	40.3	27.7	23.8	19.3	18.9	21.0
Lodging	8.3	25.4	33.4	17.3	24.8	26.7	17.6	15.0	15.5
Mercantile	6.0	27.8	26.2	19.5	16.6	13.6	10.6	10.5	14.7
Retail (other than mall)	8.6	32.5	32.5	32.5	29.1	18.8	14.9	13.7	20.3
Enclosed and strip malls	7.6	51.5	43.6	23.5	21.7	17.6	16.0	15.3	21.2
Office	5.5	16.7	21.1	13.2	10.9	8.8	10.3	12.4	19.2
Public assembly	5.8	15.0	22.0	19.9	17.0	20.8	16.5	14.4	17.1
Public order and safety	15.9	41.3	56.3	68.5	44.9	30.5	25.8	29.6	41.9
Religious worship	9.3	18.1	21.1	22.3	26.0	20.9	21.9	16.4	30.1
Service	8.1	23.8	22.3	19.5	17.9	24.1	33.8	15.3	26.1
Warehouse and storage	7.2	20.8	17.6	13.1	14.9	18.3	12.7	15.8	17.5
Other	15.1	34.1	40.9	32.9	37.1	25.8	38.0	31.2	50.1
Vacant	14.1	28.1	47.9	31.0	37.4	31.1	37.8	43.6	55.3
<b>Census region</b>									
Northeast	7.2	14.6	17.3	11.8	15.9	10.2	13.5	16.0	16.8
Midwest	7.4	15.8	18.9	12.2	10.9	12.7	16.4	11.1	16.1
South	6.1	13.7	14.6	8.1	10.3	9.6	9.5	11.5	12.9
West	7.1	22.1	13.0	14.5	17.1	14.3	12.0	11.3	16.8
<b>Climate zone<sup>a</sup></b>									
Cold or very cold	17.0	32.5	27.2	21.2	20.6	17.3	21.7	27.8	22.5
Cool	8.3	13.2	18.1	14.9	12.9	14.4	16.6	11.4	15.6
Mixed mild	10.5	17.2	16.7	11.8	12.2	15.5	14.8	13.4	19.0
Warm	10.0	17.6	18.1	10.6	15.9	13.2	13.8	16.6	15.8
Hot or very hot	14.1	30.4	25.5	19.9	19.1	13.3	22.2	18.4	21.0

Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018

RSEs for total floorspace

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Number of floors</b>									
1	4.5	12.3	11.5	8.5	9.1	8.9	8.7	8.2	10.1
2	4.4	13.5	12.1	10.8	10.2	8.7	11.6	10.6	13.6
3	7.6	15.5	18.0	18.4	18.4	17.6	17.0	15.0	16.9
4 to 9	6.3	14.2	19.8	18.6	13.3	13.4	11.8	12.0	18.8
10 or more	11.0	30.8	33.0	17.2	20.2	22.5	19.7	22.4	34.4
<b>Elevators and escalators (more than one may apply)</b>									
Any elevators	4.5	11.5	11.3	9.3	7.4	10.2	8.6	6.9	11.4
1 elevator	6.0	15.1	16.1	13.8	12.6	13.5	13.4	11.2	15.7
2 to 5 elevators	5.2	15.4	19.5	13.6	12.4	13.5	11.7	10.1	14.3
6 or more elevators	8.4	26.7	25.4	12.8	14.4	19.6	15.1	12.4	26.0
Any escalators	13.7	39.8	50.6	25.5	24.7	38.6	22.7	23.1	56.1
<b>Number of workers (main shift)</b>									
Fewer than 5	5.9	10.0	13.8	12.1	13.4	14.4	12.0	10.7	14.9
5 to 9	6.9	15.7	16.0	15.2	17.3	15.6	13.8	19.2	19.5
10 to 19	7.4	17.0	22.6	17.6	13.3	14.1	22.1	13.2	13.9
20 to 49	4.8	17.9	16.2	13.8	11.7	11.2	11.9	12.0	14.7
50 to 99	5.9	16.5	16.9	13.4	13.7	13.4	13.0	10.8	16.6
100 to 249	5.6	16.8	19.3	14.2	14.4	13.2	9.9	9.8	14.4
250 or more	6.4	23.4	23.5	13.0	10.7	14.2	12.2	11.3	21.0
<b>Weekly operating hours</b>									
Fewer than 40	6.6	11.6	16.6	16.6	16.5	17.3	17.3	15.1	22.5
40 to 48	5.1	14.2	15.0	13.5	11.0	10.7	10.2	13.2	14.5
49 to 60	4.3	12.5	15.2	9.7	11.9	7.8	10.7	9.5	12.0
61 to 84	5.3	18.9	16.0	14.6	12.7	13.0	11.8	12.1	15.9
85 to 167	6.2	20.6	21.3	18.6	16.7	14.9	12.2	12.8	19.2
Open continuously	5.0	17.8	18.3	11.7	11.8	14.6	11.6	8.2	12.3
<b>Ownership and occupancy</b>									
Nongovernment owned	3.3	8.2	9.3	6.3	7.1	6.2	7.6	7.0	8.8
Owner occupied	3.3	9.4	10.2	8.1	7.8	9.2	9.0	7.6	10.4
Leased to tenant or tenants	4.8	11.5	18.9	10.3	10.4	8.1	9.9	10.4	12.0
Unoccupied	19.2	54.3	52.4	46.8	43.5	44.4	62.5	49.4	59.7
Government owned	6.0	16.0	11.9	11.4	9.8	11.4	9.6	10.5	12.9
Federal	16.1	39.7	41.2	28.0	28.6	40.7	21.3	30.2	72.2
State	11.8	34.0	20.1	21.6	15.0	21.0	20.3	18.2	21.0
Local	6.0	15.0	16.0	13.0	12.7	15.1	12.3	10.1	16.2
<b>Party responsible for operation of energy systems</b>									
Building owner	3.2	8.2	7.6	5.9	6.5	6.7	6.9	6.1	7.9
Business owner or tenant	7.2	17.9	29.2	17.1	15.3	13.1	15.9	16.1	18.5
Property management	11.7	45.4	69.1	37.2	37.1	23.0	25.1	24.1	35.1
Other	11.1	29.8	65.2	29.8	27.7	25.1	32.6	27.4	34.6

Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018

RSEs for total floorspace

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Provider of direct input on energy-related equipment purchases</b>									
Building owner	3.1	8.0	7.9	5.9	6.4	6.2	7.2	6.1	7.4
Business owner or tenant	8.8	20.1	28.3	20.8	17.6	18.4	18.2	19.4	22.3
Property management	16.2	56.2	78.9	52.3	44.2	40.9	32.3	29.3	43.6
Other	8.1	23.6	44.3	23.2	19.9	17.3	18.8	24.3	33.2
<b>Number of establishments</b>									
1	3.6	9.2	8.5	6.8	6.9	6.9	8.0	6.7	8.9
2 to 5	5.5	16.7	22.4	14.2	11.0	16.9	10.8	10.8	14.7
6 to 10	7.9	26.5	28.7	19.1	27.8	15.1	19.6	14.4	27.8
11 to 20	8.9	27.0	31.4	28.2	25.1	14.0	19.8	21.4	28.5
More than 20	10.1	26.8	49.8	20.1	21.1	16.7	18.4	26.9	49.9
Currently unoccupied	16.5	41.3	52.4	44.7	39.8	43.5	41.3	45.2	59.7
<b>Campus or complex activity</b>									
Not part of a campus or complex	3.7	9.2	10.5	6.2	7.2	6.8	7.2	7.9	9.5
Primary or secondary school	9.4	21.4	17.9	19.1	25.0	22.7	19.3	19.1	29.5
College or university	15.9	43.7	21.3	24.4	19.6	30.7	24.6	24.4	27.8
Office complex	10.0	34.0	46.4	22.1	25.6	15.2	22.7	20.5	37.3
Retail complex	9.2	54.7	43.0	28.6	24.5	20.6	20.1	16.5	23.3
Storage complex	11.0	38.0	38.2	24.5	21.0	40.5	20.9	20.4	27.6
Religious campus or complex	12.0	25.5	23.0	29.5	26.2	29.7	27.7	27.0	49.0
Health care complex	8.2	39.3	23.4	19.2	17.7	22.2	19.9	13.9	33.5
Lodging or resort complex	13.7	44.1	65.3	32.5	38.6	30.5	32.5	48.7	44.6
Transportation complex	33.2	49.8	53.3	68.0	93.2	39.3	36.3	34.3	77.6
Government complex	17.0	47.3	41.6	36.8	29.7	36.1	29.6	23.7	30.9
Other	7.4	23.7	36.4	24.2	19.7	19.5	25.5	15.4	21.0
<b>Predominant exterior wall material</b>									
Brick, stone, or stucco	3.9	9.6	10.4	7.1	7.7	9.3	7.9	7.6	9.4
Concrete (block or poured)	4.8	21.1	12.3	11.8	11.0	10.3	12.4	10.4	16.3
Concrete panels	8.4	45.7	57.2	29.2	20.0	12.5	16.4	16.1	16.7
Siding or shingles	9.3	15.9	24.5	28.7	32.2	13.2	18.8	20.2	23.0
Metal panels	6.0	32.8	27.7	18.7	13.4	17.7	14.8	14.1	19.5
Window glass	11.4	0.0	37.2	28.9	35.0	17.9	23.8	19.5	27.1
Other	13.7	41.5	51.0	47.3	37.4	34.2	24.6	28.2	32.8
<b>Predominant roof material</b>									
Metal surfacing	5.6	15.5	17.6	17.1	13.6	13.5	11.9	12.0	14.6
Synthetic or rubber	4.1	12.8	13.7	7.7	9.0	8.7	9.4	7.4	9.7
Built-up	4.8	14.1	12.5	9.6	10.7	13.5	11.7	12.3	16.7
Slate or tile shingles	10.1	19.4	25.7	27.4	31.4	19.1	21.0	20.0	33.1
Wooden materials (including shingles)	17.8	51.3	58.7	58.0	31.5	31.6	42.2	40.6	51.1
Asphalt, fiberglass, or other shingles	5.6	13.1	16.9	13.5	15.3	11.6	13.6	11.3	20.8
Concrete	11.9	23.1	38.0	28.0	26.9	19.7	48.1	34.2	41.2
Other	9.8	33.2	36.2	29.1	20.0	24.2	20.6	25.1	38.1

Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018

RSEs for total floorspace

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Roof tilt</b>									
Flat	3.3	11.3	9.5	6.2	6.4	7.5	7.9	6.0	9.4
Shallow pitch	4.8	12.3	13.0	11.6	11.6	10.7	11.4	10.7	12.9
Steeper pitch	5.7	10.6	15.0	17.6	14.6	11.1	9.9	10.3	16.0
<b>Cool roof characteristics (more than one may apply)</b>									
White or reflective coating or paint	4.4	11.9	11.8	8.1	9.4	10.8	11.3	7.7	11.1
White or reflective tiles or shingles	10.4	29.0	45.0	30.0	32.2	25.5	31.2	16.0	29.0
Aluminum coating	9.2	21.3	31.3	26.7	23.8	19.9	19.0	17.8	19.8
Ballasted roof system	9.5	19.5	23.2	20.3	20.9	27.4	12.6	14.4	28.5
Other cool roof property	19.2	46.7	71.8	52.4	48.9	49.8	33.5	28.4	51.0
<b>Renovations since 2000 (more than one may apply)</b>									
Any type of renovation	3.4	9.9	10.0	6.7	7.3	7.2	7.3	8.9	20.3
Addition or annex	6.0	18.2	15.5	14.1	14.0	12.1	14.1	12.6	27.1
Reduction in floorspace	13.2	34.0	34.5	32.1	20.3	40.5	41.1	28.8	69.7
Roof replacement	4.3	10.3	11.7	8.4	10.7	11.0	11.6	13.7	39.5
Interior wall reconfiguration	4.2	14.7	13.7	9.8	8.7	10.5	10.2	10.8	28.2
Window replacement	5.8	16.2	15.0	11.8	13.6	20.6	16.1	15.8	43.8
HVAC equipment upgrade	4.2	12.6	11.6	8.1	8.6	9.0	7.5	11.2	33.1
Lighting upgrade	3.9	11.5	12.3	8.1	9.1	9.2	9.1	9.4	25.0
Electrical upgrade	5.6	14.0	14.8	10.7	11.9	14.2	12.6	12.7	38.9
Plumbing system upgrade	5.2	15.3	14.3	11.5	11.4	12.6	10.7	12.5	33.8
Insulation upgrade	7.8	19.5	16.3	16.2	15.7	25.0	18.9	17.2	46.7
Fire, safety, or security upgrade	4.4	13.7	12.7	9.0	10.8	10.5	9.2	11.5	40.2
Structural upgrade	10.2	27.1	31.8	19.3	19.3	38.1	22.5	27.4	49.6
Other	14.9	44.2	47.4	39.6	51.1	42.5	23.6	23.7	49.4
No renovations	3.9	8.7	13.3	7.5	8.4	8.4	8.6	7.7	11.5
Buildings constructed 2013 or later	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3
<b>Energy sources (more than one may apply)</b>									
Electricity	3.0	7.9	7.8	5.2	5.8	5.9	6.5	6.4	7.7
Natural gas	3.4	9.5	9.4	6.2	6.5	6.9	7.0	6.4	9.0
Fuel oil	5.4	17.8	16.9	10.3	10.7	13.9	11.1	9.2	14.5
District heat	11.4	25.7	23.5	22.8	14.9	16.2	20.2	16.7	30.4
District chilled water	13.7	33.6	34.6	30.8	19.4	20.3	26.2	20.4	26.4
Propane	7.6	18.1	17.8	15.9	14.7	21.4	15.8	13.8	20.3
Solar	11.5	37.2	26.7	22.6	25.2	22.4	19.7	19.4	16.4
Wood, coal, and other	14.0	47.3	34.0	38.7	29.8	37.7	29.7	32.9	36.6
<b>Space-heating energy sources (more than one may apply)</b>									
Electricity	3.7	12.5	11.5	7.1	8.2	7.0	7.7	7.9	9.7
Natural gas	3.6	9.5	9.7	6.4	7.2	7.7	7.4	6.8	9.6
Fuel oil	11.6	23.8	25.9	17.0	24.4	29.9	37.1	25.1	48.3
District heat	11.6	25.8	24.3	23.0	14.7	16.3	20.8	16.8	30.4
Propane	13.1	21.2	26.6	35.2	23.9	36.2	25.8	27.3	31.5
Other sources <sup>b</sup>	19.6	58.9	35.6	56.8	47.3	58.2	35.4	76.3	68.9

Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018

RSEs for total floorspace

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Primary space-heating energy source</b>									
Electricity	5.5	12.4	19.7	11.6	10.7	8.2	9.3	9.6	12.0
Natural gas	4.1	9.6	9.5	6.8	7.7	8.8	8.0	7.3	10.2
Fuel oil	15.3	26.8	31.2	27.7	39.0	37.5	35.1	47.9	58.6
District heat	12.6	26.3	25.7	24.5	15.1	17.4	23.7	16.8	31.2
Propane	16.9	27.4	34.8	42.1	31.8	28.4	29.1	30.6	40.0
Other sources <sup>b</sup>	30.3	52.1	61.1	50.4	53.4	67.1	43.1	74.9	70.9
<b>Cooling energy sources (more than one may apply)</b>									
Electricity	3.0	8.4	7.8	5.0	5.9	6.0	6.0	6.5	7.7
Natural gas	24.2	64.2	50.2	76.3	39.7	61.9	48.0	58.5	54.1
District chilled water	13.7	33.6	34.6	30.8	19.4	20.3	26.2	20.4	26.4
<b>Water-heating energy sources (more than one may apply)</b>									
Electricity	3.6	10.0	10.9	7.3	7.7	7.2	6.9	7.6	9.3
Natural gas	3.7	8.7	10.0	7.6	7.4	8.8	7.5	7.3	10.8
Fuel oil	15.4	34.0	33.9	30.1	36.8	37.9	37.9	29.8	77.6
District heat	12.8	32.6	21.2	20.6	15.3	25.2	30.0	21.5	33.5
Propane	14.7	39.2	42.4	37.8	38.4	28.5	31.6	38.4	33.2
<b>Cooking energy sources (more than one may apply)</b>									
Electricity	3.9	13.9	12.2	8.8	9.2	9.8	9.2	8.1	8.9
Natural gas	3.4	10.7	11.3	9.9	9.9	11.7	8.2	7.3	10.5
Propane	11.7	30.9	36.4	17.9	26.8	29.6	24.8	25.3	34.9
<b>Energy end uses (more than one may apply)</b>									
Buildings with space heating	3.0	8.2	8.1	5.1	5.7	5.9	6.1	6.4	7.9
Buildings with cooling	3.0	8.4	8.0	4.9	5.7	5.9	5.9	6.4	7.5
Buildings with water heating	2.9	7.9	7.9	5.0	5.7	6.0	5.7	6.5	7.9
Buildings with cooking	3.1	10.8	9.7	7.5	7.7	8.1	7.3	6.5	8.2
Buildings with manufacturing	7.9	21.2	25.2	17.4	16.3	21.8	23.5	20.7	21.9
Buildings with electricity generation	4.4	15.7	12.5	9.2	9.9	11.4	8.8	7.7	11.4
Buildings with lighting	3.0	8.0	7.8	5.2	5.8	5.9	6.3	6.4	7.7
<b>Percentage of floorspace heated</b>									
Not heated	10.0	20.7	24.1	18.4	28.1	20.5	21.8	17.7	20.6
1 to 50%	7.1	17.8	16.1	17.5	17.1	15.7	14.8	18.9	19.9
51 to 99%	5.3	15.9	15.6	13.4	12.3	8.8	10.0	10.1	16.4
100%	3.2	9.4	8.9	6.6	6.6	7.9	7.0	6.4	9.2
<b>Percentage of floorspace cooled</b>									
Not cooled	8.0	15.1	22.8	20.2	28.9	23.7	23.0	18.1	21.0
1 to 50%	5.2	13.0	12.8	11.4	10.8	12.3	11.5	14.3	18.1
51 to 99%	5.1	13.2	14.7	11.0	8.9	8.7	9.7	9.7	13.1
100%	3.5	12.3	11.0	7.8	7.7	9.0	7.2	6.4	9.0

Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018

RSEs for total floorspace

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Percentage lit when open</b>									
0%	38.5	0.0	93.6	77.9	0.0	0.0	99.9	41.3	65.8
1 to 50%	6.0	12.8	19.3	15.3	15.6	20.0	17.6	15.8	18.6
51 to 99%	3.6	11.1	10.6	8.1	7.8	8.3	8.2	8.2	9.7
100%	3.8	12.0	10.7	8.3	7.1	7.1	7.9	8.3	11.0
Building never open or electricity not used	12.1	24.8	32.5	32.1	36.1	25.2	30.3	31.3	25.6
<b>Percentage lit during off hours</b>									
0%	6.7	13.7	18.6	12.9	15.5	16.9	15.0	13.3	16.5
1 to 50%	3.0	8.7	8.8	5.6	6.2	6.5	6.7	6.2	7.8
51 to 100%	6.7	22.8	25.1	17.3	15.7	15.4	13.2	15.5	23.8
Building always open with no off hours	11.6	40.4	49.5	39.5	35.1	30.0	27.9	19.3	45.7
Electricity not used	17.6	47.5	56.8	52.2	48.4	37.9	39.1	41.1	33.0
<b>Heating equipment (more than one may apply)</b>									
Packaged heating units	3.6	11.8	9.9	7.8	7.9	8.0	8.0	7.2	9.6
Furnaces	5.7	14.3	17.0	11.9	13.6	11.9	13.0	13.9	15.5
Individual space heaters	4.8	14.7	13.5	11.5	11.2	13.0	11.0	9.0	14.0
Boilers	4.0	9.1	11.6	8.4	10.2	12.9	8.5	9.0	10.3
Heat pumps	5.4	19.0	16.3	12.0	13.1	13.5	11.7	10.5	12.5
District heat	11.6	25.8	24.3	23.0	14.7	16.3	20.8	16.8	30.4
Duct reheat	7.0	27.4	36.7	20.1	17.4	12.6	18.3	14.1	21.3
Other	24.1	87.8	82.6	50.5	62.6	41.1	44.6	45.0	49.8
<b>Cooling equipment (more than one may apply)</b>									
Packaged air-conditioning units	3.4	9.4	9.6	6.4	7.3	6.6	7.4	7.5	9.1
Residential-type central air conditioners	5.2	13.8	14.2	11.2	12.7	10.1	11.7	12.7	13.4
Individual air conditioners	5.3	12.6	14.0	10.6	15.8	12.4	12.2	12.1	19.2
Central chillers	5.0	16.8	15.3	10.3	11.2	8.1	9.2	10.0	16.3
Heat pumps	6.8	17.7	19.7	15.2	14.0	19.5	12.2	12.3	13.7
District chilled water	13.7	33.6	34.6	30.8	19.4	20.3	26.2	20.4	26.4
Swamp coolers	13.1	39.6	51.0	18.4	21.7	30.5	24.8	27.9	25.8
Other	36.4	78.7	0.0	50.9	0.0	56.5	81.6	50.8	61.3
<b>HVAC features (more than one may apply)</b>									
Economizer cycle	3.9	15.2	11.6	8.7	7.6	10.7	7.7	7.3	9.8
Variable air volume (VAV) system	4.9	15.3	14.6	11.0	8.9	10.3	8.5	7.9	10.5
Dedicated outside air system (DOAS)	7.8	17.5	21.4	16.5	13.7	30.9	17.5	13.7	16.2
Demand controlled ventilation (DCV)	5.5	21.1	20.3	11.4	16.9	16.6	13.2	13.8	15.4
Regular HVAC maintenance	3.2	8.9	8.4	5.4	6.1	6.3	6.0	6.3	8.2
Building automation system (BAS) controls heating or cooling	3.7	12.2	10.0	8.4	7.7	9.8	6.7	6.9	9.8
Internet-connected or smart thermostat	10.5	39.7	30.0	25.7	20.1	21.8	23.3	16.9	23.2
Programmable thermostat	5.4	11.7	14.3	12.0	11.1	9.5	12.8	10.6	13.7

Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018

RSEs for total floorspace

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Main equipment replaced since 2000 (more than one may apply)</b>									
Heating	3.8	9.5	10.7	7.7	7.6	7.0	8.4	0.0	0.0
Cooling	4.3	11.5	12.0	7.8	10.3	10.8	8.6	0.0	0.0
<b>Water-heating equipment</b>									
Centralized system	3.4	9.4	8.7	6.0	6.0	8.0	6.8	7.4	9.2
Distributed system	6.4	16.2	22.7	14.4	12.8	11.8	15.9	13.4	13.5
Combination of centralized and distributed systems	5.2	14.3	19.8	12.5	13.9	10.0	11.1	9.5	15.5
<b>Generation technologies (more than one may apply)</b>									
Reciprocating engine generators	4.8	16.8	13.9	9.9	10.8	12.0	9.4	8.5	12.7
Solar panels	11.5	37.7	26.8	25.7	25.2	22.4	20.1	19.4	16.5
Other generation technology	14.4	58.6	55.8	38.2	29.9	30.5	32.2	32.8	29.9
<b>Lighting equipment types (more than one may apply)</b>									
Incandescent	4.5	10.4	14.6	9.9	12.6	11.3	8.9	9.7	14.9
Standard fluorescent	3.4	9.5	8.2	5.7	6.1	6.7	6.3	7.5	8.4
Compact fluorescent	4.2	12.7	12.1	8.8	8.6	8.5	8.1	7.4	9.7
High-intensity discharge (HID)	7.1	15.6	25.2	17.0	15.0	22.2	12.9	11.7	16.8
Halogen	4.2	15.3	15.1	13.6	12.7	13.7	11.5	9.6	14.6
LED	2.9	9.6	9.3	6.1	6.6	6.7	6.4	6.6	8.9
Other	24.1	0.0	91.3	0.0	101.0	10.2	70.9	70.9	51.8
<b>Refrigeration equipment (more than one may apply)</b>									
Any refrigeration	3.0	8.5	8.2	5.2	6.2	6.3	5.9	6.6	8.3
Walk-in units	3.4	13.7	10.5	8.7	9.7	9.6	7.1	7.1	11.0
Cases or cabinets	3.7	12.4	13.6	9.6	10.1	10.4	7.5	6.8	9.6
Large cold storage areas	11.3	40.6	30.9	28.2	23.1	43.3	24.6	21.6	28.1
Commercial ice makers	3.5	13.2	11.6	8.5	8.6	9.2	6.4	6.4	10.0
Residential-type or compact units	3.2	9.5	8.4	5.9	7.0	6.6	6.7	7.5	9.1
Vending machines	3.8	13.0	11.8	6.6	7.2	8.1	5.9	7.6	10.0
No refrigeration	5.3	11.8	14.4	11.6	13.4	12.9	14.6	11.8	14.9
<b>Office equipment (more than one may apply)</b>									
Desktop computers	2.9	8.6	8.5	5.4	6.0	6.1	6.3	6.4	7.8
With multiple monitors	3.5	11.3	10.5	7.5	6.4	7.7	7.1	6.9	10.0
Laptop computers	3.0	9.0	9.2	5.6	6.6	6.8	6.1	6.3	8.1
Dedicated servers	3.3	11.0	9.5	6.2	7.3	7.5	7.0	7.4	9.1
Tablets charged in building	3.3	10.5	10.3	7.4	7.7	7.1	5.9	6.5	8.9
Large floor-standing office devices <sup>c</sup>	3.0	10.5	9.5	6.1	7.1	7.2	6.4	6.4	9.8
Smaller desktop office devices <sup>c</sup>	3.1	8.7	8.1	5.6	6.3	6.2	6.3	6.6	8.1
Interactive whiteboards	4.5	17.1	12.2	10.0	10.6	16.2	9.8	10.5	13.8
Televisions or video displays	3.0	9.8	9.5	6.4	6.9	6.6	5.7	6.0	8.0
Point-of-sale devices or cash registers	3.4	13.3	12.0	8.2	8.3	9.9	7.7	7.0	10.0

**Relative Standard Errors (RSEs) for Table B9. Year constructed, floorspace, 2018**

**RSEs for total floorspace**

	Year constructed								
	All buildings	Before 1946	1946 to 1959	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009	2010 to 2018
<b>Food preparation or serving areas in non-food service buildings (more than one may apply)</b>									
Snack bar, concession stand, or coffee shop	6.7	26.3	19.1	12.9	14.6	21.2	14.3	11.7	16.7
Fast food or small restaurant	5.9	21.0	31.4	17.5	15.4	17.6	12.2	10.7	21.1
Cafeteria or large restaurant	4.6	19.1	15.4	9.7	11.2	18.3	12.3	9.9	14.3
Commercial kitchen or food preparation area	4.4	20.8	14.4	13.2	12.7	15.3	10.4	8.0	12.1
Small kitchen area	4.7	13.8	13.8	10.8	11.1	13.7	11.1	10.5	12.3
<b>Separate computer areas (more than one may apply)</b>									
Server closet	3.4	11.0	9.6	6.6	7.2	7.7	7.3	7.0	9.4
Data center	6.7	23.5	20.5	12.5	14.6	24.1	12.8	14.2	16.7
Computer-based training room	4.6	16.4	13.6	9.5	10.7	16.5	10.2	10.6	15.2
Student or public computer center	4.6	14.5	12.5	11.6	12.2	22.5	10.9	9.4	18.5
<b>Window and interior lighting features (more than one may apply)</b>									
Multipaned windows	3.2	9.4	8.6	6.4	6.0	7.0	7.1	6.4	8.0
Tinted window glass	3.4	11.7	11.3	8.0	7.2	7.9	6.5	7.5	9.4
Reflective window glass	5.6	21.8	20.1	13.0	12.1	12.5	10.6	9.0	12.5
External overhangs or awnings	4.5	13.5	11.6	10.8	9.7	12.2	9.8	8.0	10.1
Skylights or atriums	4.5	16.1	18.7	9.5	10.2	13.5	9.4	9.4	14.2
Light scheduling	4.1	14.6	12.7	11.1	8.8	8.8	8.0	7.2	9.3
Occupancy sensors	3.8	13.2	10.5	7.4	8.4	8.0	7.7	6.8	9.1
Multilevel lighting or dimming	6.6	23.0	18.9	18.0	13.1	16.9	10.9	10.7	10.7
Daylight harvesting	6.3	24.4	24.1	17.3	23.4	13.9	14.4	13.3	18.3
Plug-load control	12.2	41.5	34.8	27.9	35.1	23.3	28.4	25.0	31.7
Demand responsive lighting	15.2	46.3	41.5	30.6	45.7	36.3	42.3	19.5	27.8
Building automation system (BAS) for lighting	5.2	21.3	21.4	15.4	14.3	16.5	9.8	8.1	13.0
<b>Electric vehicle (EV) charging</b>									
Charging stations associated with the building	7.2	37.0	26.9	15.7	19.1	19.9	14.6	13.2	16.5

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>.

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

<sup>b</sup>Other sources includes wood, coal, solar, and all other energy sources.

<sup>c</sup>Office devices refers to any combination of printers, copiers, scanners, or FAX machines.