

**Table C8. Consumption and Gross Energy Intensity by Year Constructed for Sum of Major Fuels, 1999**

	Sum of Major Fuel Consumption (trillion Btu)			Total Floorspace of Buildings (million square feet)			Energy Intensity for Sum of Major Fuels (thousand Btu/square foot)		
	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999
<b>All Buildings</b> .....	1,410	3,234	1,090	19,606	36,638	11,094	71.9	88.3	98.3
<b>Building Floorspace (Square Feet)</b>									
1,001 to 5,000 .....	218	406	148	2,478	3,137	1,159	88.0	129.4	128.0
5,001 to 10,000 .....	181	329	98	3,344	3,706	1,188	54.1	88.7	82.8
10,001 to 25,000 .....	243	423	77	3,965	6,079	1,110	61.3	69.5	69.5
25,001 to 50,000 .....	188	372	132	2,505	5,167	1,638	75.0	72.0	80.6
50,001 to 100,000 .....	166	504	195	2,463	5,786	1,862	67.3	87.2	104.9
100,001 to 200,000 .....	126	477	169	1,782	4,827	1,662	70.4	98.8	102.0
200,001 to 500,000 .....	125	371	Q	1,751	3,756	1,344	71.6	98.8	121.5
Over 500,000 .....	163	352	106	1,318	4,179	1,131	123.8	84.3	93.8
<b>Principal Building Activity</b>									
Education .....	250	307	92	3,247	4,165	1,239	77.0	73.7	74.1
Food Sales .....	Q	87	80	196	443	355	Q	196.9	224.3
Food Service .....	Q	229	Q	608	952	Q	Q	240.3	Q
Health Care .....	101	356	58	548	1,897	473	183.7	187.7	122.7
Inpatient .....	Q	307	Q	434	1,277	Q	Q	240.4	Q
Outpatient .....	Q	49	Q	Q	620	319	Q	79.0	Q
Lodging .....	85	300	65	808	2,996	716	104.9	100.2	90.3
Mercantile .....	165	391	169	2,582	5,786	2,030	63.8	67.5	83.1
Retail (Other Than Mall) .....	113	130	101	1,901	1,726	1,139	59.5	75.2	88.7
Enclosed and Strip Malls .....	52	261	68	681	4,060	891	75.7	64.2	76.0
Office .....	254	693	143	2,907	7,307	1,830	87.2	94.8	78.0
Public Assembly .....	108	180	72	1,395	2,262	736	77.4	79.4	97.2
Public Order and Safety .....	Q	38	Q	392	550	227	Q	68.5	Q
Religious Worship .....	42	57	Q	1,301	1,748	357	32.6	32.5	Q
Service .....	109	286	Q	1,283	1,768	336	84.8	161.9	Q
Warehouse and Storage .....	63	231	Q	2,738	5,660	2,079	22.9	40.8	Q
Other .....	Q	69	Q	247	607	367	Q	112.8	Q
Vacant .....	19	Q	Q	1,354	497	Q	14.2	Q	Q
<b>Floors</b>									
One .....	311	1,130	562	5,601	15,567	5,632	55.6	72.6	99.7
Two .....	335	763	233	5,218	9,110	2,657	64.2	83.7	87.6
Three .....	288	365	81	4,143	3,810	974	69.5	95.7	82.7
Four to Nine .....	335	706	176	3,520	5,341	1,319	95.2	132.3	133.4
Ten or More .....	140	270	39	1,124	2,809	512	124.8	96.1	76.7
<b>Census Region and Division</b>									
Northeast .....	432	536	148	5,041	5,944	1,376	85.6	90.2	107.8
New England .....	93	150	Q	1,316	1,986	433	71.0	75.4	Q
Middle Atlantic .....	338	386	113	3,725	3,957	943	90.8	97.6	119.5
Midwest .....	478	746	285	6,150	7,778	2,834	77.7	95.9	100.6
East North Central .....	338	456	215	4,481	4,842	1,882	75.4	94.3	114.1
West North Central .....	140	289	71	1,669	2,936	952	83.7	98.6	74.1
South .....	281	1,259	421	5,163	13,858	4,464	54.4	90.9	94.4
South Atlantic .....	113	581	222	2,055	6,639	2,306	55.1	87.5	96.1
East South Central .....	74	313	85	1,038	3,132	1,050	71.7	99.9	81.2
West South Central .....	93	365	114	2,070	4,087	1,107	45.1	89.4	103.3
West .....	219	692	235	3,252	9,059	2,420	67.5	76.4	97.3
Mountain .....	90	209	57	1,267	2,609	704	71.1	80.1	81.3
Pacific .....	129	483	178	1,986	6,450	1,716	65.1	74.9	103.8
<b>Climate Zone: 45-Year Average</b>									
Under 2,000 CDD and --									
More than 7,000 HDD .....	135	283	93	1,936	3,007	948	69.5	94.1	97.6
5,500-7,000 HDD .....	508	736	291	6,196	8,277	2,610	82.0	88.9	111.3
4,000-5,499 HDD .....	458	839	248	5,491	8,220	2,532	83.3	102.1	97.8
Fewer than 4,000 HDD .....	180	807	304	3,303	9,822	3,209	54.5	82.2	94.8
2,000 CDD or More and --									
Fewer than 4,000 HDD .....	129	568	155	2,680	7,313	1,794	48.3	77.7	86.5

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	Sum of Major Fuel Consumption (trillion Btu)			Total Floorspace of Buildings (million square feet)			Energy Intensity for Sum of Major Fuels (thousand Btu/square foot)		
	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999
<b>Workers (main shift)</b>									
Fewer than 5 .....	246	331	100	6,570	6,039	1,712	37.5	54.8	58.5
5 to 9 .....	148	256	61	2,027	3,470	829	72.9	73.8	73.8
10 to 19 .....	231	343	117	2,781	4,093	1,153	83.2	83.7	101.5
20 to 49 .....	233	584	200	2,953	5,772	2,089	78.7	101.1	95.6
50 to 99 .....	141	444	145	1,638	5,660	1,601	86.2	78.5	90.3
100 to 249 .....	157	502	205	1,580	4,990	1,786	99.6	100.6	115.0
250 or More .....	253	774	262	2,057	6,614	1,925	123.1	117.0	136.1
<b>Weekly Operating Hours</b>									
39 or Fewer .....	64	91	Q	3,277	2,809	511	19.7	32.4	Q
40 to 48 .....	263	385	98	4,942	6,392	1,771	53.3	60.2	55.4
49 to 60 .....	297	582	189	4,259	7,649	2,292	69.7	76.1	82.4
61 to 84 .....	276	631	143	2,850	7,422	2,186	97.0	85.0	65.5
85 to 167 .....	197	595	265	1,819	5,315	1,981	108.3	111.9	133.9
Open Continuously .....	312	950	386	2,460	7,051	2,352	126.7	134.8	164.1
<b>Ownership and Occupancy</b>									
Nongovernment Owned .....	1,026	2,655	884	15,321	30,535	9,138	67.0	86.9	96.7
Owner Occupied .....	795	1,936	609	10,934	20,654	6,198	72.7	93.8	98.3
Nonowner Occupied .....	225	707	275	3,546	9,233	2,817	63.5	76.6	97.5
Unoccupied .....	Q	Q	Q	842	649	Q	Q	Q	Q
Government Owned .....	384	579	206	4,285	6,102	1,956	89.6	94.8	105.4
Federal .....	102	86	Q	909	644	243	112.2	133.2	Q
State .....	123	190	64	1,181	1,655	554	103.8	114.5	116.0
Local .....	159	303	112	2,196	3,803	1,158	72.6	79.8	96.5
<b>Vacancy Status</b>									
Completely Vacant .....	Q	Q	Q	665	247	Q	Q	Q	Q
Mostly Vacant .....	Q	Q	Q	689	250	Q	Q	Q	Q
Partially Vacant .....	259	597	193	3,874	8,829	2,817	66.8	67.6	68.6
Not At All Vacant .....	1,132	2,626	896	14,378	27,312	8,219	78.7	96.1	109.0
<b>Number of Establishments</b>									
One .....	1,017	2,202	828	13,375	22,346	7,622	76.0	98.5	108.6
2 to 5 .....	209	428	125	3,372	5,464	1,745	61.9	78.2	71.5
6 to 10 .....	69	199	35	679	2,410	485	102.1	82.7	72.2
11 to 20 .....	Q	166	46	506	2,256	498	Q	73.6	92.3
More than 20 .....	68	225	Q	711	3,479	621	95.8	64.8	Q
Currently Unoccupied .....	Q	Q	Q	963	683	Q	Q	Q	Q
<b>Energy Sources (more than one may apply)</b>									
Electricity .....	1,409	3,234	1,090	18,788	35,920	11,007	75.0	90.0	99.0
Natural Gas .....	1,077	2,464	914	13,063	24,386	8,076	82.5	101.0	113.2
Fuel Oil .....	332	890	265	3,588	7,590	2,108	92.4	117.2	125.8
District Heat .....	320	467	Q	2,338	2,876	677	136.9	162.3	Q
District Chilled Water .....	107	246	Q	794	1,550	407	134.5	158.6	Q
Propane .....	63	246	Q	1,410	3,586	1,295	44.5	68.7	Q
Other .....	74	95	Q	765	1,204	353	96.6	78.7	Q
<b>Space-Heating Energy Sources (more than one may apply)</b>									
Electricity .....	550	1,531	552	7,313	19,045	5,933	75.2	80.4	93.1
Natural Gas .....	877	1,968	709	11,297	19,947	6,658	77.6	98.7	106.5
Fuel Oil .....	172	311	38	2,309	2,870	432	74.6	108.3	87.4
District Heat .....	317	420	Q	2,309	2,726	499	137.4	154.2	Q
Propane .....	24	75	Q	706	1,414	608	34.0	53.0	Q
Other .....	Q	Q	Q	382	474	Q	Q	Q	Q

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	Sum of Major Fuel Consumption (trillion Btu)			Total Floorspace of Buildings (million square feet)			Energy Intensity for Sum of Major Fuels (thousand Btu/square foot)		
	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999
<b>Primary Space-Heating</b>									
<b>Energy Source</b>									
Electricity .....	187	809	350	2,769	11,150	3,708	67.4	72.6	94.5
Natural Gas .....	791	1,675	597	10,205	16,847	5,677	77.5	99.4	105.2
Fuel Oil .....	114	137	Q	1,753	1,707	Q	65.2	80.5	Q
District Heat .....	283	385	Q	2,151	2,497	428	131.3	154.4	Q
Propane .....	12	48	Q	519	1,074	514	23.4	44.7	Q
Other .....	Q	Q	Q	Q	Q	Q	Q	Q	Q
<b>Cooling Energy Sources (more than one may apply)</b>									
Electricity .....	1,133	2,832	973	14,026	31,749	9,770	80.8	89.2	99.6
Natural Gas .....	Q	118	Q	470	1,028	416	Q	114.8	Q
District Chilled Water .....	107	246	Q	794	1,550	407	134.5	158.6	Q
<b>Water-Heating Energy Sources (more than one may apply)</b>									
Electricity .....	324	1,093	418	4,820	14,952	4,399	67.1	73.1	95.1
Natural Gas .....	713	1,657	591	8,411	15,573	5,211	84.7	106.4	113.4
Fuel Oil .....	77	135	Q	971	1,049	Q	79.3	128.3	Q
District Heat .....	229	366	Q	1,696	2,109	377	134.8	173.6	Q
Propane .....	Q	67	Q	Q	863	Q	Q	77.7	Q
<b>Cooking Energy Sources (more than one may apply)</b>									
Electricity .....	326	915	279	3,024	8,251	2,458	107.8	110.9	113.5
Natural Gas .....	499	1,035	394	4,690	9,030	3,065	106.3	114.6	128.6
Propane .....	Q	116	Q	287	1,137	330	Q	102.2	Q
<b>Energy End Uses (more than one may apply)</b>									
Buildings with Space Heating .....	1,393	3,065	1,070	17,554	33,448	10,600	79.4	91.6	101.0
Buildings with Cooling .....	1,230	3,053	1,061	14,895	33,224	10,355	82.6	91.9	102.5
Buildings with Water Heating .....	1,243	3,005	1,014	14,928	31,740	9,446	83.3	94.7	107.3
Buildings with Cooking .....	682	1,476	521	6,519	13,759	4,403	104.7	107.2	118.4
Buildings with Manufacturing .....	72	154	51	933	1,709	485	77.1	90.2	105.9
Buildings with Electricity Generation .....	254	890	349	1,992	7,149	2,741	127.7	124.4	127.5
<b>Percent of Floorspace Heated</b>									
Not Heated .....	17	168	Q	2,052	3,190	493	8.2	52.7	Q
1 to 50 .....	95	184	55	2,645	3,749	1,198	35.8	48.9	45.6
51 to 99 .....	235	547	197	3,226	5,742	1,777	72.9	95.3	110.8
100 .....	1,063	2,335	819	11,683	23,957	7,625	91.0	97.5	107.4
<b>Percent of Floorspace Cooled</b>									
Not Cooled .....	179	181	Q	4,711	3,414	739	38.1	52.9	Q
1 to 50 .....	379	528	215	6,241	8,052	2,553	60.7	65.6	84.2
51 to 99 .....	429	978	336	4,052	9,818	3,096	105.9	99.7	108.4
100 .....	423	1,547	510	4,603	15,354	4,706	91.8	100.7	108.4
<b>Percent Lit When Open</b>									
Zero .....	Q	Q	Q	Q	Q	Q	Q	Q	Q
1 to 50 .....	184	183	Q	4,301	3,928	957	42.8	46.7	Q
51 to 99 .....	564	1,162	266	6,025	11,398	3,242	93.6	101.9	82.2
100 .....	652	1,865	738	7,583	19,981	6,670	86.0	93.3	110.7
Building Never Open/ Electricity Not Used.....	9	Q	Q	1,681	1,220	Q	5.3	Q	Q

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	Sum of Major Fuel Consumption (trillion Btu)			Total Floorspace of Buildings (million square feet)			Energy Intensity for Sum of Major Fuels (thousand Btu/square foot)		
	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999
<b>Percent Lit When Closed</b>									
Zero .....	319	642	209	6,811	10,503	3,458	46.8	61.1	60.6
1 to 50 .....	727	1,512	365	9,247	17,259	4,444	78.6	87.6	82.2
51 to 100 .....	Q	129	129	272	1,134	753	Q	114.0	171.7
Building Never Closed/ Electricity Not Used.....	312	950	386	3,277	7,742	2,438	95.3	122.8	158.3
<b>Heating Equipment (more than one may apply)</b>									
Heat Pumps .....	148	527	187	1,764	5,363	1,796	83.8	98.3	104.2
Furnaces .....	294	569	218	4,847	7,215	2,387	60.7	78.9	91.5
Individual Space Heaters .....	375	766	233	5,366	9,268	2,715	70.0	82.6	85.8
District Heat .....	317	420	Q	2,309	2,726	499	137.4	154.2	Q
Boilers .....	533	1,083	295	6,424	10,620	2,479	83.0	102.0	118.9
Packaged Heating Units .....	358	1,404	606	4,820	15,239	5,684	74.4	92.1	106.6
Other .....	88	189	Q	1,030	2,257	786	85.3	83.6	Q
<b>Cooling Equipment (more than one may apply)</b>									
Residential-Type Central Air Conditioners .....	188	381	103	2,573	4,483	1,274	72.9	85.1	80.5
Heat Pumps .....	153	544	174	1,818	5,624	1,705	84.3	96.7	101.8
Individual Air Conditioners .....	489	572	135	6,113	6,687	1,476	80.1	85.5	91.5
District Chilled Water .....	107	246	Q	794	1,550	407	134.5	158.6	Q
Central Chillers .....	326	951	322	2,567	8,114	2,229	127.0	117.2	144.3
Packaged Air Conditioning Units .....	679	2,009	702	8,037	21,665	6,825	84.5	92.7	102.9
Swamp Coolers .....	Q	141	Q	509	1,371	339	Q	102.5	Q
Other .....	Q	89	Q	254	951	Q	Q	93.4	Q
<b>Main Equipment Replaced Since 1995 (more than one may apply)</b>									
Heating .....	306	702	76	4,160	8,266	794	73.7	85.0	95.5
Cooling .....	464	970	101	5,340	11,107	943	86.9	87.4	106.9
<b>Lighting Equipment Types (more than one may apply)</b>									
Incandescent .....	938	1,975	528	11,393	21,385	5,377	82.3	92.3	98.2
Standard Fluorescent .....	1,319	3,094	988	16,693	33,658	9,993	79.0	91.9	98.9
Compact Fluorescent .....	449	1,292	421	4,483	12,023	4,160	100.2	107.5	101.2
High Intensity Discharge .....	405	1,025	473	4,193	10,566	4,464	96.6	97.0	105.9
Halogen .....	378	1,058	368	3,653	10,699	3,574	103.6	98.9	103.0
Other .....	Q	Q	Q	Q	460	392	Q	Q	Q
<b>Water Heating Equipment</b>									
Centralized System .....	831	1,930	606	10,284	19,732	5,564	80.8	97.8	108.9
Distributed System .....	160	492	Q	2,269	6,505	2,125	70.4	75.6	103.7
Combination of Centralized and Distributed System .....	252	583	187	2,376	5,503	1,758	106.2	105.9	106.6
<b>Commercial Refrigeration Equipment (more than one may apply)</b>									
Any Equipment .....	643	1,645	586	6,180	14,877	4,595	104.1	110.6	127.5
Walk-In Units .....	496	1,407	503	4,071	11,957	3,685	121.9	117.7	136.5
Cases or Cabinets .....	573	1,415	493	5,580	12,458	3,963	102.7	113.6	124.4
None .....	766	1,589	504	13,427	21,761	6,498	57.1	73.0	77.6

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	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999	1959 or Before	1960 to 1989	1990 to 1999
<b>Personal Computers</b>									
None .....	166	233	Q	4,415	4,071	1,098	37.6	57.4	Q
1 to 4 .....	353	571	154	5,294	6,989	1,569	66.6	81.7	98.3
5 to 9 .....	101	335	148	1,534	3,803	1,191	65.9	88.1	124.4
10 to 19 .....	134	359	134	1,615	4,251	1,647	82.7	84.4	81.0
20 to 49 .....	156	353	145	2,103	4,183	1,801	74.4	84.5	80.4
50 to 99 .....	116	257	Q	1,349	3,243	1,276	86.0	79.2	124.7
100 to 249 .....	121	430	138	1,216	4,356	1,245	99.3	98.7	110.5
250 or More .....	263	695	154	2,079	5,741	1,267	126.7	121.1	121.6
<b>Photocopiers</b>									
None .....	420	834	268	8,278	10,663	2,690	50.8	78.2	99.5
One .....	308	512	217	3,928	6,643	2,358	78.5	77.1	92.1
2 to 4 .....	279	780	245	4,033	8,666	2,921	69.2	90.0	83.7
5 to 9 .....	59	315	157	620	3,390	1,373	95.2	92.8	114.1
10 or More .....	343	793	204	2,747	7,275	1,752	124.9	109.1	116.5
<b>Other Electronic Equipment (more than one may apply)</b>									
Laser Printers .....	983	2,472	901	11,145	26,657	8,765	88.2	92.8	102.8
FAX Machines .....	1,169	2,850	1,024	14,063	30,817	9,883	83.1	92.5	103.7
Medical Diagnostic Equipment .....	76	340	Q	374	1,731	388	202.7	196.4	Q
<b>Energy-Related Space Functions (more than one may apply)</b>									
Commercial Food Preparation .....	642	1,413	492	6,145	13,063	4,120	104.5	108.2	119.5
Activities with Large Amounts of Hot Water .....	578	1,510	452	5,274	12,776	3,743	109.6	118.1	120.8
<b>Building Shell Conservation Features (more than one may apply)</b>									
Multipaned Windows .....	787	2,030	765	9,567	20,611	8,016	82.3	98.5	95.5
Tinted, Reflective, or Shading Glass .....	456	1,772	608	5,252	18,328	6,335	86.7	96.7	95.9
<b>HVAC Conservation Features (more than one may apply)</b>									
Variable Air-Volume System .....	344	1,234	538	3,092	11,623	4,672	111.1	106.1	115.2
Economizer Cycle .....	392	1,439	556	3,541	13,151	4,563	110.6	109.5	121.9
HVAC Maintenance .....	1,167	2,889	1,008	13,569	30,161	9,665	86.0	95.8	104.3
Energy Management and Control System (EMCS) .....	479	1,332	580	4,318	12,221	5,074	111.0	109.0	114.4
<b>Lighting Conservation Features (more than one may apply)</b>									
Specular Reflectors .....	412	1,120	385	4,447	11,436	4,111	92.7	98.0	93.6
Electronic Ballasts .....	904	2,190	807	10,536	23,685	7,815	85.8	92.4	103.3
Skylights or Atriums .....	294	956	369	3,758	10,865	3,664	78.1	88.0	100.8

Q=Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or fewer than 20 buildings were sampled.

Notes: \* Statistics for the "energy end uses" represent consumption in buildings that have the end use, not consumption for a particular fuel for a particular end use. \* HVAC=Heating, Ventilation, and Air Conditioning. \* Due to rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A of the 1999 Commercial Buildings Energy Consumption Survey.