Table B1. Consumption of All Major Fuels by End Use, 1989

Building Characteristics	Sum of Major Fuel Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
All Buildings	5,788	2,017	303	278	499	1,023	271	187	379	832	6.11
Building Floorspace (Square Feet)											
1,001 to 5,000	692	256	44	29	76	96	50	33	52	56	6.01
5,001 to 10,000	567	229	33	21	53	83	17	16	41	75	9.94
10,001 to 25,000	791	327	40	27	57	124	20	30	73	93	8.17
25,001 to 50,000	756	319	34	26	43	127	22	27	46	113	10.13
50,001 to 100,000	855	299	37	40	70	161	24	31	44	149	13.81
100,001 to 200,000	777	266	36	43	65	153	37	19	47	109	13.60
200,001 to 500,000	698	200	36	50	57	151	22	15	39	128	20.86
Over 500,000	652	121	43	43	78	126	Q	15	37	109	27.21
Year Constructed											
1899 or Before	128	87	2	3	12	8	4	3	3	7	19.55
1900 to 1919	239	111	5	7	16	29	9	4	10	Q	19.01
1920 to 1945	636	285	26	29	64	76	28	14	23	89	19.00
1946 to 1959	988	395	46	42	91	158	Q	21	53	114	15.54
1960 to 1969	1,275	469	65	55	115	219	38	32	72	210	11.41
1970 to 1979	1,342	399	85	70	117	276	71	51	93	179	8.91
1980 to 1983	432	92	31	23	26	98	17	16	47	82	14.15
1984 to 1986	464	102	29	37	38	104	21	25	50	59	11.59
1987 to 1989	284	77	15	12	21	55	13	21	28	41	20.61
BUILDING USE											
Principal Building Activity											
Assembly	441	227	25	25	20	63	18	11	6	44	12.63
Education	704	377	26	24	40	114	Q	10	10	49	17.15
Food Sales	139	20	16	8	2	19	21	45	1	7	21.52
Food Service	255	48	19	13	49	27	59	16	2	21	9.41
Health Care	449	79	33	21	123	68	45	6	5	Q	25.01
Lodging	425	137	17	20	125	47	32	16	1	31	13.24
Mercantile and Service	1,048	358	53	26	56	201	23	12	115	204	10.23
Office	1,230	363	89	133	47	272	8	35	165	117	5.01
Parking Garage	42	Q	*	*	Q	8	Q	1	1	7	25.95
Public Order and Safety	78	42	1	2	Q	13	1	2	1	11	37.76
Warehouse	536	221	6	3	6	102	1	24	57	114	18.24
Other	344	86	14	1	15	76	Q	7	Q	126	34.71
Vacant	98	40	3	*	Q	13	1	2	2	30	29.15
Weekly Operating Hours											
39 or Fewer	203	121	7	10	10	23	3	6	7	17	8.37
40 to 48	998	466	48	43	38	158	10	27	71	136	7.77
49 to 60	925	371	46	52	32	169	15	24	93	122	6.94
61 to 84	991	325	57	52	76	189	42	31	71	149	7.89
85 to 167	998	324	58	38	62	196	101	44	56	119	15.24
168 (Open Continuously)	1,673	410	87	83	280	289	99	54	81	289	11.65
Workers											
4 or Fewer	697	321	34	28	68	88	23	30	44	61	4.94
5 to 9	534	205	30	21	50	83	26	17	42	61	8.35
10 to 19	540	215	30	20	47	74	26	20	42	67	7.34
20 to 49	939	395	41	27	82	156	31	33	56	117	7.84
50 to 99	701	277	37	25	28	133	21	28	39	112	11.18
100 to 249	992	321	42	43	68	201	39	29	58	190	16.04
250 or More	1,386	281	89	113	155	288	105	31	99	225	18.30

See footnotes at end of table.

Table B1. Consumption of All Major Fuels by End Use, 1989 (Continued)

Building Characteristics	Sum of Major Fuel Consumption (trillion Btu)										RSE Row Factor
	Total	**Space** Heating	Cooling	**Ventil-** ation	**Water** Heating	Lighting	Cooking	**Refrig-** eration	**Office Equip-** ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Ownership and Occupancy											
Nongovernment Owned	4,239	1,364	238	209	374	757	190	154	311	642	6.39
Owner Occupied	3,331	1,102	182	166	321	566	150	121	211	512	7.35
Single Establishment	2,668	919	136	114	276	419	126	105	150	423	9.03
Multiple Establishment	663	184	46	51	45	146	24	16	61	89	7.87
Nonowner Occupied	908	262	56	44	53	192	40	33	100	130	9.17
Single Establishment	471	147	25	21	23	98	24	22	51	60	14.66
Multiple Establishment	394	94	30	22	25	91	15	11	48	57	11.59
Vacant	Q	21	1	*	Q	3	Q	*	*	Q	NF
Government Owned	1,549	652	65	69	125	266	Q	33	68	190	12.24
Federal	Q	Q	Q	17	11	60	Q	5	16	28	NF
State	585	255	20	22	56	83	13	14	29	93	20.97
Local	692	327	27	31	58	122	20	15	23	69	11.73
Multibuilding Facility											
Not on Multibuilding Facility	2,887	1,055	153	146	219	510	116	114	213	361	4.76
Part of Multibuilding Facility	2,901	961	150	132	280	513	154	73	166	471	11.23
On Facility with Central Plant	1,593	510	72	67	183	250	111	38	64	298	19.56
Percent Vacant at Least Three Months											
0	4,320	1,561	216	194	373	756	178	151	287	604	6.12
1 to 50	1,086	302	69	71	95	217	39	25	80	188	12.86
51 to 99	218	84	Q	7	11	28	Q	4	6	16	47.15
100	164	70	6	6	21	21	3	6	6	24	17.52
Months in Use Out of Past 12 Months											
0 to 8	174	61	8	7	21	25	12	8	10	22	13.35
9 to 11	272	162	7	11	22	32	3	4	4	26	14.63
12	5,342	1,793	288	260	456	966	256	175	365	784	6.35
LOCATION											
Census Region											
Northeast	1,354	567	42	57	115	227	47	35	92	172	11.10
Midwest	1,659	733	56	59	166	241	69	48	79	209	11.11
South	1,648	423	136	93	113	341	63	65	122	291	11.08
West	1,126	294	69	69	104	214	Q	38	86	159	12.95
Census Division											
Northeast											
New England	298	126	8	13	36	46	11	8	16	36	19.75
Middle Atlantic	1,056	441	34	44	80	182	36	28	76	137	13.34
Midwest											
East North Central	1,086	494	30	37	106	160	47	34	54	125	12.70
West North Central	573	240	26	22	60	80	22	14	25	84	22.14
South											
South Atlantic	682	164	61	43	36	147	21	25	55	130	16.43
East South Central	373	100	20	17	30	71	15	15	30	73	22.17
West South Central	594	158	54	33	48	123	26	25	37	88	15.12
West											
Mountain	450	159	28	24	37	66	Q	12	24	38	28.59
Pacific	676	135	41	45	67	148	30	26	62	121	14.44
Metropolitan Status											
Metropolitan	4,780	1,561	266	244	418	873	236	156	324	701	6.53
Nonmetropolitan	1,008	456	37	34	81	149	34	31	55	131	14.99

See footnotes at end of table.

Table B1. Consumption of All Major Fuels by End Use, 1989 (Continued)

Building Characteristics	Sum of Major Fuel Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Climate Zone: 45-Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD	617	298	10	16	67	84	18	23	30	70	20.74
5,500-7,000 HDD	1,855	837	57	70	146	266	121	47	93	217	12.64
4,000-5,499 HDD	1,393	452	67	72	128	279	52	42	102	198	13.62
Under 4,000 HDD	1,115	271	71	67	88	225	45	38	93	216	14.43
2,000 CDD or More and --											
Under 4,000 HDD	809	158	98	52	70	169	34	37	60	130	13.86
1989 Degree-Days											
Under 2,000 CDD and --											
Over 7,000 HDD	875	448	14	23	78	117	30	29	38	98	18.16
5,500-7,000 HDD	2,206	891	82	91	205	335	128	55	119	301	13.48
4,000-5,499 HDD	917	280	45	54	69	212	41	34	81	102	10.88
Under 4,000 HDD	1,020	250	68	60	80	197	41	34	83	207	15.78
2,000 CDD or More and --											
Under 4,000 HDD	770	148	95	50	67	162	31	36	58	124	14.30
STRUCTURE											
Floors											
1	1,806	637	110	71	123	322	77	74	142	251	7.09
2	1,532	530	70	58	94	298	44	59	114	264	9.40
3	765	340	30	35	63	107	18	15	38	120	12.93
4 to 6	893	322	45	42	111	144	Q	20	35	88	17.64
7 or More	791	187	48	73	107	151	46	19	51	109	18.31
Wall Materials											
Masonry	3,919	1,466	200	168	381	634	174	127	230	539	6.15
Siding or Shingles	325	118	15	12	37	56	14	10	22	40	9.21
Metal Panels	457	162	21	19	18	97	6	15	42	79	23.07
Concrete Panels	706	172	46	38	36	144	Q	24	46	134	20.16
Window Glass	224	53	13	26	17	54	Q	7	24	20	21.66
Other	156	46	7	14	9	39	3	4	15	20	20.34
Roof Materials											
Built-Up	3,019	1,019	172	152	246	556	155	92	191	435	7.81
Shingles (Not Wood)	794	327	40	35	76	119	36	31	45	86	9.59
Metal Surfacing	597	218	21	17	23	118	12	20	59	107	17.08
Synthetic or Rubber	850	288	42	45	77	151	30	30	57	131	15.49
Slate or Tile	206	95	8	8	20	23	19	6	Q	19	15.71
Concrete	111	20	8	12	14	28	Q	3	10	11	29.02
Wooden Materials	63	24	4	4	7	9	4	2	3	7	17.97
Other	Q	27	Q	6	Q	19	Q	2	5	Q	NF
Building Shell Conservation Features (Solely or in Combination)											
Roof or Ceiling Insulation	4,486	1,500	252	223	407	820	221	149	306	608	7.23
Wall Insulation	3,056	941	176	148	272	585	166	105	216	445	9.25
Storm or Multiple Glazing	2,557	848	130	128	287	455	126	92	180	310	7.91
Tinted, Reflective, or Shading Glass	2,385	657	150	143	193	490	135	76	189	352	9.87
Exterior or Interior Shadings or Awnings	2,720	848	158	149	230	496	162	82	195	399	9.18
Weather Stripping or Caulking	4,549	1,529	251	229	404	829	233	145	310	621	6.66
None of the Above	335	126	12	12	28	51	12	11	19	64	15.41

See footnotes at end of table.

Table B1. Consumption of All Major Fuels by End Use, 1989 (Continued)

Building Characteristics	Sum of Major Fuel Consumption (trillion Btu)										RSE Row Factor
	Total	**Space** Heating	Cooling	**Ventil-** ation	**Water** Heating	Lighting	Cooking	**Refrig-** eration	**Office Equip-** ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
ENERGY SOURCES AND END USES											
Energy Sources (Solely or in Combination)											
Electricity	5,782	2,013	303	278	498	1,023	271	187	379	830	5.86
Natural Gas	4,336	1,570	205	195	429	689	253	122	237	636	7.27
Fuel Oil	1,589	572	71	85	186	263	65	40	91	214	13.31
District Heat	1,207	419	51	56	144	165	Q	21	46	217	24.84
Other	873	284	38	34	73	152	Q	33	42	148	23.78
Energy End Uses (Solely or in Combination)											
Heated Buildings	5,667	2,013	288	268	484	993	265	179	369	807	6.16
Air-Conditioned Buildings	5,101	1,659	303	256	436	933	258	172	342	742	6.12
Buildings with Water Heating	5,462	1,877	284	263	499	958	267	179	347	788	6.37
Buildings with Cooking	2,755	800	159	150	301	502	256	96	130	361	9.05
Buildings with Manufacturing	709	236	26	15	18	112	Q	19	38	195	22.68
Space-Heating Energy Source (Solely or in Combination)											
Electricity	1,499	335	114	83	107	355	58	70	144	232	6.99
Natural Gas	3,418	1,331	150	140	326	529	144	93	177	527	7.46
Fuel Oil	1,305	511	55	61	160	201	51	33	66	166	13.51
District Heat	999	396	42	50	89	141	Q	19	38	143	20.27
Other	164	48	7	8	14	36	7	Q	12	17	35.97
Main Space-Heating Energy Source											
Electricity	978	132	93	68	68	263	46	59	120	130	6.01
Natural Gas	3,192	1,252	140	134	309	489	133	81	169	485	7.74
Fuel Oil	498	264	11	16	34	72	13	11	35	42	14.39
District Heat	979	385	41	49	88	139	Q	18	37	142	20.80
Other	87	21	3	5	2	23	Q	Q	9	9	40.87
Air-Conditioning Energy Source (Solely or in Combination)											
Electricity	4,580	1,494	283	230	379	848	193	161	321	671	6.08
Other	713	222	32	33	72	116	Q	16	32	119	22.80
Water-Heating Energy Source (Solely or in Combination)											
Electricity	1,761	537	123	100	36	381	42	74	175	291	7.58
Natural Gas	2,706	1,014	120	121	331	436	136	75	141	332	6.78
Fuel Oil	233	115	7	8	33	31	7	4	6	23	20.37
District Heat	890	277	38	38	130	114	Q	16	32	161	26.77
Other	108	29	6	5	Q	27	5	Q	Q	12	42.83
HEATING AND COOLING											
Percent Heated											
Not Heated	126	6	15	10	16	30	5	8	10	25	18.78
1 to 50	371	112	15	11	22	76	8	24	41	61	13.48
51 to 99	892	275	52	54	59	178	28	28	77	141	12.36
100	4,399	1,622	221	203	402	739	229	127	250	605	7.04
Percent Cooled											
Not Cooled	687	358	NC	22	63	90	12	15	37	90	16.76
1 to 50	1,336	661	31	29	74	172	26	34	75	234	10.18
51 to 99	1,409	393	94	88	130	295	77	55	101	176	8.80
100	2,356	605	178	138	232	466	155	83	166	332	8.98

See footnotes at end of table.

Table B1. Consumption of All Major Fuels by End Use, 1989 (Continued)

Building Characteristics	Sum of Major Fuel Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)											
Furnaces	1,387	562	55	45	95	219	52	52	99	207	9.81
Boilers	2,249	955	89	108	212	354	77	56	103	297	8.03
Individual Space Heaters	2,032	709	92	82	163	358	105	54	133	335	10.89
Packaged Heating Units	1,549	416	103	68	100	316	76	50	117	302	9.73
Heat Pumps	730	189	50	43	55	148	28	31	57	130	11.97
Air Ducts	3,982	1,237	224	205	347	753	214	125	275	603	8.05
Heating or Reheating Coils	2,098	603	115	127	204	401	127	52	123	345	13.47
Fan-Coil Units	1,578	514	75	79	173	273	113	34	77	240	14.15
Steam or Hot Water Radiators or Baseboards	1,973	858	62	77	212	256	125	34	71	278	12.30
Other	258	59	14	Q	Q	41	8	9	14	Q	41.29
Cooling Equipment (Solely or in Combination)											
Central Chillers	1,775	441	122	132	183	344	136	42	108	268	13.51
Individual Air Conditioners	1,839	747	80	70	181	269	71	52	87	283	7.64
Packaged Cooling Units	3,468	1,091	219	170	260	655	202	122	244	505	6.82
Heat Pumps	773	190	49	40	50	152	31	30	64	166	15.26
Air Ducts	3,669	1,109	223	195	337	696	208	116	246	537	7.24
Fan-Coil Units	1,527	385	94	108	177	288	122	35	89	229	15.03
Other	Q	Q	Q	5	12	29	Q	3	8	12	NF
Year Main Central Chiller Installed											
1959 or Before	175	54	12	16	20	32	Q	4	10	18	22.39
1960 to 1969	525	148	40	29	28	90	Q	9	26	92	30.60
1970 to 1979	413	99	26	32	54	89	22	10	29	50	12.29
1980 to 1986	462	101	29	41	60	93	19	12	30	75	25.31
1987 to 1989	200	39	14	14	20	40	21	6	12	33	20.91
Year Packaged Cooling System Installed											
1959 or Before	172	65	11	9	14	36	3	3	9	23	15.62
1960 to 1969	608	199	34	21	35	98	Q	13	36	109	22.64
1970 to 1979	1,042	330	69	53	90	205	62	36	73	125	8.08
1980 to 1986	1,002	278	65	55	73	213	40	47	88	142	9.38
1987 to 1989	643	219	40	31	48	104	33	23	38	106	12.80
Computer Area with Separate Air-Conditioning System											
Present in Building	2,274	619	133	145	189	452	119	63	181	374	11.02
Not Present	3,514	1,398	171	133	310	570	152	124	198	458	5.73
LIGHTING AND REFRIGERATION Percent Lit When Open											
Not Lit	22	12	*	*	Q	2	*	1	Q	4	25.96
1 to 50	533	271	20	22	51	48	19	15	32	57	7.42
51 to 99	1,625	565	83	85	125	293	64	43	114	252	8.79
100	3,608	1,168	200	171	322	680	187	129	232	519	8.67
Percent Lit When Closed											
Not Lit	2,146	845	105	85	196	309	79	63	135	329	6.45
1 to 50	3,147	1,063	163	160	225	613	154	102	220	449	8.49
51 to 99	408	89	25	27	72	81	32	13	22	47	18.91
100	87	20	10	7	6	20	6	Q	2	7	29.88
Lighting Equipment (Solely or in Combination)											
Incandescent Lamps	3,786	1,311	198	183	388	685	219	115	206	482	7.03
Fluorescent Lamps	5,683	1,968	300	274	485	1,008	268	185	375	820	6.12
High-Intensity Discharge Lamps	1,980	626	102	95	129	396	112	63	122	335	11.76
Other Lamps	51	11	4	4	6	12	3	Q	3	7	20.91
High-Efficiency Ballasts	2,730	858	148	152	227	490	109	99	213	434	9.71

See footnotes at end of table.

Table B1. Consumption of All Major Fuels by End Use, 1989 (Continued)

Building Characteristics	Sum of Major Fuel Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Refrigeration Equipment (Solely or in Combination)											
Commercial											
Refrigeration Units	2,974	832	174	160	318	552	251	128	158	401	8.57
Freezers	2,802	750	167	150	309	526	244	124	148	383	8.70
Residential											
Refrigerators	4,411	1,551	222	215	382	794	189	117	292	649	7.40
Freezers	1,479	448	84	63	172	248	129	42	65	227	13.72
Ice-Making Machines	2,988	757	192	177	340	562	242	111	164	444	8.67
Refrigerated Vending Machines	4,347	1,388	234	222	391	816	224	141	283	651	7.38
Water Coolers	4,454	1,513	236	224	365	811	193	124	289	699	8.01
Other	346	59	22	14	Q	55	17	10	22	103	35.63
ENERGY MANAGEMENT											
Occupant Control											
Any Control of Heating	2,331	805	126	97	251	393	110	67	147	334	7.04
With Thermostats	2,158	739	115	89	238	362	100	58	135	321	7.84
Any Control of Cooling	2,320	783	137	100	248	394	112	68	148	329	7.17
With Thermostats	2,115	691	127	91	225	363	105	62	135	315	8.28
Reduced Use During Off-Hours											
Heating Only	649	333	9	21	60	85	16	15	33	78	16.76
Cooling Only	429	119	26	18	28	69	21	11	30	106	14.79
Heating and Cooling	3,347	1,173	190	178	229	616	161	98	233	467	7.42
Computerized Energy Management and Control System											
Present in Building	1,714	458	109	115	164	356	108	56	99	248	12.73
Controls Heating and Cooling	1,668	453	107	113	159	344	104	53	96	239	13.31
Controls Lighting	431	96	30	22	20	88	Q	16	26	70	29.23
Controls Other	336	67	23	19	Q	62	14	10	16	74	35.31
Other Energy Management											
Regular HVAC Maintenance	4,773	1,594	255	241	413	870	221	153	307	717	6.86
Participated in Utility Conservation Program	1,206	412	66	75	115	214	53	40	71	160	9.79

* = Value rounds to zero in the units displayed.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B2. Energy End-Use Intensities for All Major Fuels, 1989

Building Characteristics	Energy Intensity for Major Fuels (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
All Buildings	91.6	31.9	4.8	4.4	7.9	16.2	4.3	3.0	6.0	13.2	4.95
Building Floorspace (Square Feet)											
1,001 to 5,000	101.9	37.7	6.5	4.2	11.1	14.2	7.3	4.9	7.7	8.3	4.76
5,001 to 10,000	86.8	35.1	5.0	3.2	8.1	12.7	2.6	2.5	6.3	11.4	8.36
10,001 to 25,000	76.1	31.5	3.9	2.6	5.5	12.0	2.0	2.9	7.0	8.9	5.88
25,001 to 50,000	85.9	36.2	3.9	2.9	4.8	14.4	2.5	3.1	5.2	12.9	8.54
50,001 to 100,000	93.7	32.8	4.0	4.3	7.7	17.7	2.7	3.4	4.9	16.3	12.68
100,001 to 200,000	93.9	32.2	4.4	5.2	7.9	18.5	4.5	2.3	5.6	13.2	9.73
200,001 to 500,000	99.4	28.5	5.1	7.1	8.1	21.5	3.1	2.2	5.6	18.2	16.68
Over 500,000	104.5	19.4	6.9	6.9	12.6	20.2	Q	2.5	6.0	17.5	20.20
Year Constructed											
1899 or Before	77.2	52.7	1.1	1.5	7.2	5.1	2.2	1.5	1.8	4.0	12.85
1900 to 1919	56.4	26.1	1.2	1.5	3.7	6.7	2.0	.9	2.3	11.9	25.02
1920 to 1945	78.5	35.2	3.2	3.6	7.9	9.4	3.5	1.7	2.9	11.0	15.75
1946 to 1959	94.0	37.5	4.4	4.0	8.6	15.0	Q	2.0	5.1	10.8	11.13
1960 to 1969	104.8	38.6	5.3	4.5	9.5	18.0	3.1	2.7	5.9	17.3	10.07
1970 to 1979	100.7	29.9	6.4	5.3	8.8	20.7	5.3	3.9	7.0	13.4	7.18
1980 to 1983	101.2	21.5	7.3	5.3	6.1	22.9	4.0	3.8	10.9	19.3	9.80
1984 to 1986	81.9	18.0	5.1	6.5	6.6	18.3	3.7	4.5	8.9	10.3	10.75
1987 to 1989	87.7	23.7	4.5	3.8	6.4	17.1	4.1	6.5	8.7	12.8	16.22
BUILDING USE											
Principal Building Activity											
Assembly	63.8	32.9	3.7	3.7	2.9	9.1	2.6	1.6	.9	6.4	10.48
Education	87.2	46.7	3.2	3.0	5.0	14.1	Q	1.3	1.3	6.1	12.03
Food Sales	175.6	25.5	20.0	10.1	2.8	23.4	27.0	56.5	1.3	9.0	16.05
Food Service	218.4	41.5	16.5	11.0	42.4	23.0	50.5	13.7	1.5	18.3	12.02
Health Care	218.7	38.3	16.1	10.2	59.9	33.0	21.9	3.0	2.6	33.5	10.85
Lodging	122.4	39.3	4.9	5.8	35.9	13.5	9.2	4.5	.4	8.8	12.24
Mercantile and Service	84.8	28.9	4.3	2.1	4.5	16.2	1.9	1.0	9.3	16.5	8.37
Office	104.2	30.7	7.5	11.3	4.0	23.1	.7	2.9	13.9	9.9	6.82
Parking Garage	42.6	19.9	.4	.4	Q	8.4	Q	.9	1.1	7.6	23.00
Public Order and Safety	127.0	67.6	2.3	3.7	Q	20.5	1.3	2.9	2.2	18.6	33.18
Warehouse	57.9	23.9	.6	.4	.7	11.1	.1	2.6	6.2	12.3	14.29
Other	224.8	56.0	9.4	.4	9.7	49.4	Q	4.5	Q	82.7	28.47
Vacant	23.5	9.6	.6	.1	Q	3.2	Q	.5	.5	7.2	33.85
Weekly Operating Hours											
39 or Fewer	33.5	19.9	1.2	1.6	1.7	3.8	.5	1.0	1.1	2.8	6.43
40 to 48	71.8	33.5	3.5	3.1	2.8	11.3	.7	2.0	5.1	9.8	5.65
49 to 60	68.6	27.6	3.4	3.9	2.4	12.5	1.1	1.8	6.9	9.1	6.68
61 to 84	92.0	30.1	5.3	4.8	7.0	17.6	3.9	2.9	6.6	13.8	6.86
85 to 167	106.3	34.5	6.2	4.0	6.6	20.8	10.8	4.7	6.0	12.7	11.77
168 (Open Continuously)	174.8	42.8	9.1	8.7	29.3	30.2	10.4	5.6	8.5	30.2	8.71
Workers											
4 or Fewer	46.0	21.2	2.2	1.9	4.5	5.8	1.5	2.0	2.9	4.0	7.15
5 to 9	67.3	25.8	3.8	2.6	6.3	10.4	3.3	2.2	5.3	7.7	7.34
10 to 19	83.8	33.4	4.6	3.0	7.3	11.5	4.0	3.1	6.6	10.3	7.59
20 to 49	97.2	40.9	4.3	2.8	8.5	16.2	3.2	3.4	5.8	12.1	6.65
50 to 99	94.8	37.5	5.0	3.4	3.8	18.0	2.8	3.8	5.2	15.1	9.85
100 to 249	146.5	47.4	6.3	6.4	10.1	29.7	5.8	4.2	8.6	28.0	11.25
250 or More	141.0	28.6	9.1	11.5	15.7	29.3	10.7	3.1	10.1	22.9	10.67

See footnote at end of table.

Table B2. Energy End-Use Intensities for All Major Fuels, 1989 (Continued)

Building Characteristics	Energy Intensity for Major Fuels (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Ownership and Occupancy											
Nongovernment Owned	86.8	27.9	4.9	4.3	7.7	15.5	3.9	3.1	6.4	13.1	5.15
Owner Occupied	92.6	30.7	5.1	4.6	8.9	15.7	4.2	3.4	5.9	14.2	5.92
Single Establishment	98.5	33.9	5.0	4.2	10.2	15.5	4.6	3.9	5.5	15.6	7.47
Multiple Establishment	74.7	20.7	5.2	5.8	5.0	16.5	2.7	1.8	6.8	10.1	3.84
Nonowner Occupied	70.5	20.3	4.3	3.4	4.1	14.9	3.1	2.5	7.8	10.1	6.65
Single Establishment	75.4	23.6	4.0	3.4	3.7	15.6	3.9	3.4	8.2	9.6	9.70
Multiple Establishment	75.2	17.9	5.8	4.2	4.7	17.4	2.9	2.0	9.2	11.0	9.26
Vacant	Q	14.9	.6	.1	Q	2.2	Q	.4	.3	Q	NF
Government Owned	108.0	45.5	4.5	4.8	8.7	18.5	Q	2.3	4.8	13.3	9.84
Federal	142.1	36.9	9.1	8.7	5.7	31.2	Q	2.6	8.5	14.4	34.01
State	149.8	65.3	5.2	5.5	14.3	21.3	3.2	3.5	7.5	23.9	18.14
Local	81.2	38.3	3.2	3.6	6.8	14.4	2.4	1.7	2.7	8.1	8.90
Multibuilding Facility											
Not on Multibuilding Facility	77.5	28.3	4.1	3.9	5.9	13.7	3.1	3.1	5.7	9.7	4.11
Part of Multibuilding Facility	111.8	37.0	5.8	5.1	10.8	19.8	5.9	2.8	6.4	18.2	8.09
On Facility with Central Plant	190.9	61.1	8.6	8.0	21.9	30.0	13.3	4.6	7.7	35.7	11.24
Percent Vacant at Least Three Months											
0	100.3	36.2	5.0	4.5	8.6	17.6	4.1	3.5	6.7	14.0	5.35
1 to 50	87.3	24.3	5.6	5.7	7.6	17.4	3.2	2.0	6.4	15.1	8.84
51 to 99	62.1	24.0	Q	1.9	3.1	8.0	Q	1.2	1.8	4.4	35.57
100	39.5	16.8	1.5	1.5	5.0	5.2	.7	1.5	1.4	5.9	17.47
Months in Use Out of Past 12 Months											
0 to 8	38.2	13.5	1.7	1.5	4.6	5.6	2.5	1.7	2.1	4.9	14.71
9 to 11	72.0	43.0	1.9	3.0	5.8	8.4	.8	1.1	1.1	6.9	13.70
12	97.4	32.7	5.3	4.7	8.3	17.6	4.7	3.2	6.7	14.3	5.47
LOCATION											
Census Region											
Northeast	99.8	41.8	3.1	4.2	8.5	16.8	3.5	2.6	6.8	12.7	10.72
Midwest	104.0	46.0	3.5	3.7	10.4	15.1	4.3	3.0	4.9	13.1	8.40
South	74.8	19.2	6.2	4.2	5.1	15.5	2.8	3.0	5.5	13.2	7.20
West	96.9	25.3	6.0	6.0	8.9	18.4	Q	3.3	7.4	13.7	11.61
Census Division											
Northeast											
New England	94.0	39.6	2.6	4.0	11.2	14.4	3.5	2.4	5.1	11.2	18.57
Middle Atlantic	101.6	42.4	3.3	4.2	7.7	17.5	3.4	2.7	7.3	13.1	12.82
Midwest											
East North Central	101.7	46.2	2.8	3.4	9.9	15.0	4.4	3.2	5.0	11.7	10.95
West North Central	108.7	45.4	5.0	4.2	11.5	15.2	4.2	2.7	4.7	16.0	12.60
South											
South Atlantic	67.6	16.3	6.1	4.3	3.5	14.5	2.1	2.5	5.5	12.9	12.26
East South Central	86.8	23.4	4.8	4.0	6.9	16.6	3.5	3.5	7.0	17.1	13.77
West South Central	77.6	20.7	7.1	4.3	6.3	16.1	3.5	3.3	4.9	11.5	8.12
West											
Mountain	102.5	36.3	6.3	5.5	8.4	15.0	Q	2.7	5.6	8.7	18.04
Pacific	93.4	18.6	5.7	6.3	9.3	20.5	4.2	3.6	8.6	16.8	12.01
Metropolitan Status											
Metropolitan	94.1	30.7	5.2	4.8	8.2	17.2	4.7	3.1	6.4	13.8	5.28
Nonmetropolitan	81.5	36.8	3.0	2.7	6.6	12.1	2.8	2.5	4.5	10.6	11.42

See footnote at end of table.

Table B2. Energy End-Use Intensities for All Major Fuels, 1989 (Continued)

Building Characteristics	Energy Intensity for Major Fuels (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Climate Zone: 45-Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD	121.8	58.9	2.0	3.2	13.2	16.6	3.6	4.5	6.0	13.9	13.94
5,500-7,000 HDD	103.3	46.6	3.2	3.9	8.1	14.8	6.8	2.6	5.2	12.1	9.27
4,000-5,499 HDD	90.5	29.4	4.3	4.7	8.3	18.1	3.4	2.8	6.6	12.9	9.34
Under 4,000 HDD	86.4	21.0	5.5	5.2	6.8	17.4	3.5	3.0	7.2	16.8	8.37
2,000 CDD or More and --											
Under 4,000 HDD	68.1	13.3	8.3	4.4	5.9	14.2	2.8	3.1	5.1	11.0	8.70
1989 Degree-Days											
Under 2,000 CDD and --											
Over 7,000 HDD	114.3	58.5	1.9	3.0	10.2	15.3	3.9	3.7	5.0	12.8	12.22
5,500-7,000 HDD	100.3	40.5	3.7	4.1	9.3	15.2	5.8	2.5	5.4	13.7	8.10
4,000-5,499 HDD	87.9	26.8	4.3	5.2	6.6	20.3	3.9	3.2	7.8	9.8	8.07
Under 4,000 HDD	84.7	20.8	5.6	5.0	6.6	16.3	3.4	2.8	6.9	17.2	9.50
2,000 CDD or More and --											
Under 4,000 HDD	69.6	13.4	8.6	4.5	6.0	14.6	2.8	3.2	5.2	11.2	8.66
STRUCTURE											
Floors											
1	76.0	26.8	4.6	3.0	5.2	13.6	3.2	3.1	6.0	10.5	5.52
2	95.1	32.9	4.4	3.6	5.9	18.5	2.7	3.7	7.1	16.4	7.35
3	88.9	39.5	3.5	4.0	7.3	12.4	2.1	1.8	4.4	13.9	13.73
4 to 6	107.5	38.7	5.4	5.1	13.4	17.3	Q	2.4	4.2	10.6	11.16
7 or More	123.7	29.2	7.5	11.4	16.8	23.7	7.2	3.0	7.9	17.0	11.84
Wall Materials											
Masonry	93.2	34.8	4.7	4.0	9.1	15.1	4.1	3.0	5.5	12.8	4.96
Siding or Shingles	68.0	24.7	3.2	2.6	7.7	11.6	2.9	2.1	4.7	8.4	9.84
Metal Panels	80.4	28.4	3.8	3.3	3.2	17.0	1.0	2.6	7.3	13.8	20.05
Concrete Panels	97.7	23.8	6.4	5.3	5.0	20.0	Q	3.3	6.4	18.5	15.57
Window Glass	116.4	27.7	6.9	13.6	9.0	27.9	Q	3.8	12.6	10.2	14.95
Other	105.1	30.8	5.0	9.6	5.9	25.9	2.0	2.4	9.8	13.6	25.71
Roof Materials											
Built-Up	97.2	32.8	5.5	4.9	7.9	17.9	5.0	3.0	6.2	14.0	7.03
Shingles (Not Wood)	72.8	29.9	3.7	3.2	7.0	10.9	3.3	2.9	4.1	7.9	6.79
Metal Surfacing	72.8	26.6	2.6	2.1	2.8	14.4	1.5	2.4	7.2	13.1	16.25
Synthetic or Rubber	123.0	41.6	6.0	6.5	11.2	21.8	4.4	4.4	8.2	18.9	10.56
Slate or Tile	79.8	36.6	3.3	3.0	7.6	8.8	7.3	2.2	Q	7.2	15.64
Concrete	57.4	10.3	4.4	6.2	7.3	14.3	Q	1.7	5.0	5.5	13.60
Wooden Materials	87.2	32.4	6.0	4.9	9.5	12.7	5.7	3.3	3.5	9.0	11.88
Other	172.1	31.4	8.2	7.2	40.9	22.5	10.0	2.4	5.8	Q	28.73
Building Shell Conservation Features (Solely or in Combination)											
Roof or Ceiling Insulation	99.5	33.3	5.6	4.9	9.0	18.2	4.9	3.3	6.8	13.5	5.47
Wall Insulation	102.9	31.7	5.9	5.0	9.2	19.7	5.6	3.5	7.3	15.0	6.77
Storm or Multiple Glazing	106.2	35.2	5.4	5.3	11.9	18.9	5.2	3.8	7.5	12.9	5.24
Tinted, Reflective, or Shading Glass	108.2	29.8	6.8	6.5	8.8	22.2	6.1	3.4	8.6	16.0	7.29
Exterior or Interior Shadings or Awnings	103.9	32.4	6.1	5.7	8.8	18.9	6.2	3.1	7.5	15.3	6.84
Weather Stripping or Caulking	101.8	34.2	5.6	5.1	9.0	18.5	5.2	3.2	6.9	13.9	4.76
None of the Above	43.2	16.2	1.6	1.6	3.6	6.6	1.5	1.5	2.5	8.2	16.63

See footnote at end of table.

Table B2. Energy End-Use Intensities for All Major Fuels, 1989 (Continued)

Building Characteristics	Energy Intensity for Major Fuels (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
ENERGY SOURCES AND END USES											
Energy Sources (Solely or in Combination)											
Electricity	93.9	32.7	4.9	4.5	8.1	16.6	4.4	3.0	6.2	13.5	4.52
Natural Gas	105.4	38.1	5.0	4.7	10.4	16.8	6.2	3.0	5.8	15.5	5.19
Fuel Oil	126.1	45.4	5.6	6.7	14.8	20.9	5.2	3.2	7.2	17.0	10.84
District Heat	183.5	63.6	7.7	8.5	21.9	25.0	13.6	3.2	7.0	32.9	13.79
Other	108.9	35.4	4.8	4.2	9.1	19.0	Q	4.1	5.3	18.4	17.31
Energy End Uses (Solely or in Combination)											
Heated Buildings	97.9	34.8	5.0	4.6	8.4	17.2	4.6	3.1	6.4	13.9	4.91
Air-Conditioned Buildings	98.5	32.0	5.9	4.9	8.4	18.0	5.0	3.3	6.6	14.3	4.92
Buildings with Water Heating	101.9	35.0	5.3	4.9	9.3	17.9	5.0	3.3	6.5	14.7	5.05
Buildings with Cooking	116.4	33.8	6.7	6.4	12.7	21.2	10.8	4.1	5.5	15.2	6.63
Buildings with Manufacturing	126.5	42.1	4.7	2.7	3.2	20.0	Q	3.4	6.7	34.7	16.09
Space-Heating Energy Source (Solely or in Combination)											
Electricity	80.1	17.9	6.1	4.5	5.7	19.0	3.1	3.7	7.7	12.4	5.43
Natural Gas	103.5	40.3	4.6	4.2	9.9	16.0	4.4	2.8	5.4	16.0	6.03
Fuel Oil	124.0	48.6	5.3	5.8	15.2	19.1	4.9	3.1	6.3	15.8	10.75
District Heat	164.7	65.3	6.9	8.3	14.7	23.3	Q	3.1	6.3	23.5	11.29
Other	60.0	17.8	2.5	2.9	5.3	13.0	2.7	Q	4.4	6.2	30.29
Main Space-Heating Energy Source											
Electricity	72.7	9.8	6.9	5.1	5.0	19.6	3.4	4.4	8.9	9.7	4.84
Natural Gas	102.6	40.2	4.5	4.3	9.9	15.7	4.3	2.6	5.4	15.6	6.28
Fuel Oil	88.9	47.1	1.9	2.9	6.0	12.9	2.3	2.0	6.2	7.5	10.79
District Heat	164.2	64.6	6.9	8.2	14.8	23.3	Q	3.1	6.2	23.8	11.20
Other	43.7	10.3	1.7	2.4	1.0	11.4	Q	Q	4.6	4.6	36.22
Air-Conditioning Energy Source (Solely or in Combination)											
Electricity	95.6	31.2	5.9	4.8	7.9	17.7	4.0	3.4	6.7	14.0	4.74
Other	147.6	45.9	6.7	6.9	14.9	24.0	Q	3.4	6.6	24.6	13.60
Water-Heating Energy Source (Solely or in Combination)											
Electricity	82.0	25.0	5.7	4.7	1.7	17.7	2.0	3.5	8.2	13.6	6.24
Natural Gas	104.4	39.1	4.6	4.7	12.8	16.8	5.3	2.9	5.4	12.8	5.46
Fuel Oil	102.2	50.3	2.9	3.6	14.6	13.7	2.9	1.7	2.5	10.1	14.40
District Heat	189.8	59.2	8.0	8.0	27.8	24.3	17.9	3.5	6.8	34.3	16.20
Other	76.1	20.4	3.9	3.7	Q	18.8	3.4	Q	5.4	8.3	34.01
HEATING AND COOLING											
Percent Heated											
Not Heated	23.3	1.2	2.7	1.8	2.9	5.6	1.0	1.5	1.9	4.7	14.83
1 to 50	39.8	12.1	1.6	1.2	2.4	8.1	.9	2.6	4.5	6.5	12.68
51 to 99	102.8	31.7	6.0	6.2	6.8	20.5	3.2	3.2	8.9	16.3	9.19
100	110.6	40.8	5.6	5.1	10.1	18.6	5.8	3.2	6.3	15.2	5.23
Percent Cooled											
Not Cooled	60.2	31.3	NC	2.0	5.5	7.9	1.1	1.3	3.3	7.9	16.82
1 to 50	75.0	37.1	1.8	1.6	4.2	9.6	1.5	1.9	4.2	13.1	9.13
51 to 99	107.2	29.9	7.1	6.7	9.9	22.4	5.8	4.2	7.7	13.4	6.40
100	113.2	29.1	8.6	6.6	11.1	22.4	7.5	4.0	8.0	16.0	6.25

See footnotes at end of table.

Table B2. Energy End-Use Intensities for All Major Fuels, 1989 (Continued)

Building Characteristics	Energy Intensity for Major Fuels (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)											
Furnaces	89.0	36.1	3.6	2.9	6.1	14.1	3.4	3.4	6.4	13.3	7.95
Boilers	113.0	48.0	4.5	5.4	10.6	17.8	3.8	2.8	5.2	14.9	5.63
Individual Space Heaters	90.1	31.4	4.1	3.6	7.2	15.9	4.6	2.4	5.9	14.9	7.90
Packaged Heating Units	99.3	26.7	6.6	4.4	6.4	20.3	4.9	3.2	7.5	19.4	7.53
Heat Pumps	87.4	22.6	6.0	5.1	6.5	17.7	3.3	3.7	6.9	15.6	9.94
Air Ducts	106.8	33.2	6.0	5.5	9.3	20.2	5.7	3.4	7.4	16.2	5.41
Heating or Reheating Coils	133.7	38.4	7.3	8.1	13.0	25.6	8.1	3.3	7.9	22.0	7.57
Fan-Coil Units	133.3	43.4	6.4	6.7	14.6	23.0	9.5	2.9	6.5	20.3	9.53
Steam or Hot Water Radiators or Baseboards	124.7	54.2	3.9	4.9	13.4	16.2	7.9	2.2	4.5	17.6	9.10
Other	174.6	39.7	9.4	12.2	27.6	27.8	5.7	6.0	9.3	36.9	20.74
Cooling Equipment (Solely or in Combination)											
Central Chillers	126.4	31.4	8.6	9.4	13.0	24.5	9.7	3.0	7.7	19.1	9.05
Individual Air Conditioners	95.6	38.8	4.1	3.6	9.4	14.0	3.7	2.7	4.5	14.7	8.69
Packaged Cooling Units	99.8	31.4	6.3	4.9	7.5	18.9	5.8	3.5	7.0	14.5	5.15
Heat Pumps	98.7	24.3	6.2	5.1	6.4	19.4	4.0	3.9	8.1	21.3	13.69
Air Ducts	107.2	32.4	6.5	5.7	9.9	20.3	6.1	3.4	7.2	15.7	4.96
Fan-Coil Units	141.5	35.7	8.7	10.0	16.4	26.7	11.3	3.2	8.3	21.3	9.52
Other	118.9	24.5	11.3	3.3	Q	19.7	35.7	1.8	5.7	8.3	24.32
Year Main Central Chiller Installed											
1959 or Before	118.5	36.8	8.2	10.8	13.6	21.7	6.1	2.5	7.0	12.0	13.11
1960 to 1969	141.3	39.8	10.7	7.7	7.4	24.2	Q	2.6	7.0	24.7	22.49
1970 to 1979	116.6	28.0	7.4	9.2	15.3	25.2	6.2	3.0	8.1	14.2	9.02
1980 to 1986	131.5	28.6	8.4	11.8	17.2	26.5	5.5	3.5	8.7	21.4	15.28
1987 to 1989	111.3	21.9	7.7	7.8	11.3	22.1	11.9	3.6	6.6	18.4	19.39
Year Packaged Cooling System Installed											
1959 or Before	99.3	37.2	6.1	5.3	7.9	20.7	2.0	1.8	5.3	13.1	12.62
1960 to 1969	125.5	41.1	7.1	4.4	7.1	20.3	Q	2.6	7.5	22.5	16.95
1970 to 1979	99.5	31.5	6.6	5.0	8.6	19.5	5.9	3.4	6.9	12.0	6.40
1980 to 1986	88.4	24.5	5.8	4.9	6.4	18.8	3.6	4.2	7.8	12.5	8.17
1987 to 1989	101.2	34.5	6.3	4.9	7.6	16.3	5.3	3.7	5.9	16.7	11.70
Computer Area with Separate Air-Conditioning System											
Present in Building	136.3	37.1	7.9	8.7	11.3	27.1	7.1	3.8	10.9	22.4	7.24
Not Present	75.6	30.1	3.7	2.9	6.7	12.3	3.3	2.7	4.3	9.9	5.15
LIGHTING AND REFRIGERATION Percent Lit When Open											
Not Lit	9.1	4.9	.2	.2	Q	.8	*	.3	.5	1.9	22.17
1 to 50	49.1	25.0	1.8	2.0	4.7	4.4	1.7	1.4	2.9	5.2	8.38
51 to 99	95.9	33.4	4.9	5.0	7.4	17.3	3.8	2.5	6.7	14.9	7.53
100	109.3	35.4	6.0	5.2	9.8	20.6	5.7	3.9	7.0	15.7	5.76
Percent Lit When Closed											
Not Lit	76.5	30.1	3.8	3.0	7.0	11.0	2.8	2.2	4.8	11.7	6.47
1 to 50	98.9	33.4	5.1	5.0	7.1	19.3	4.8	3.2	6.9	14.1	6.04
51 to 99	176.5	38.4	10.7	11.5	31.1	35.0	14.0	5.7	9.7	20.4	14.68
100	87.3	20.1	10.2	6.6	5.9	20.0	5.8	Q	1.8	7.4	23.17
Lighting Equipment (Solely or in Combination)											
Incandescent Lamps	97.6	33.8	5.1	4.7	10.0	17.7	5.6	3.0	5.3	12.4	5.53
Fluorescent Lamps	96.5	33.4	5.1	4.7	8.2	17.1	4.5	3.1	6.4	13.9	4.87
High-Intensity Discharge Lamps	108.9	34.4	5.6	5.2	7.1	21.7	6.2	3.5	6.7	18.4	7.76
Other Lamps	98.5	21.3	7.4	7.0	11.9	22.7	5.3	Q	5.2	13.4	16.93
High-Efficiency Ballasts	112.7	35.4	6.1	6.3	9.4	20.2	4.5	4.1	8.8	17.9	6.61

See footnotes at end of table.

Table B2. Energy End-Use Intensities for All Major Fuels, 1989 (Continued)

Building Characteristics	Energy Intensity for Major Fuels (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Refrigeration Equipment (Solely or in Combination)											
Commercial											
Refrigeration Units	120.6	33.8	7.0	6.5	12.9	22.4	10.2	5.2	6.4	16.3	5.99
Freezers	129.3	34.6	7.7	6.9	14.3	24.3	11.2	5.7	6.8	17.7	5.62
Residential											
Refrigerators	99.6	35.0	5.0	4.9	8.6	17.9	4.3	2.6	6.6	14.7	6.13
Freezers	119.0	36.1	6.8	5.1	13.9	20.0	10.4	3.4	5.2	18.2	10.67
Ice-Making Machines	127.5	32.3	8.2	7.6	14.5	24.0	10.3	4.7	7.0	18.9	5.94
Refrigerated Vending Machines	111.9	35.7	6.0	5.7	10.0	21.0	5.8	3.6	7.3	16.7	5.22
Water Coolers	103.9	35.3	5.5	5.2	8.5	18.9	4.5	2.9	6.7	16.3	5.65
Other	245.4	42.0	15.6	9.8	31.1	39.0	12.3	7.3	15.5	72.8	22.72
ENERGY MANAGEMENT											
Occupant Control											
Any Control of Heating	86.2	29.8	4.6	3.6	9.3	14.5	4.1	2.5	5.4	12.4	7.08
With Thermostats	87.1	29.8	4.7	3.6	9.6	14.6	4.0	2.4	5.5	13.0	7.65
Any Control of Cooling	88.2	29.8	5.2	3.8	9.4	15.0	4.3	2.6	5.6	12.5	6.94
With Thermostats	87.9	28.8	5.3	3.8	9.4	15.1	4.4	2.6	5.6	13.1	7.48
Reduced Use During Off-Hours											
Heating Only	90.8	46.6	1.3	2.9	8.3	11.9	2.2	2.1	4.6	10.9	15.32
Cooling Only	104.3	29.0	6.4	4.3	6.8	16.8	5.1	2.7	7.4	25.8	17.11
Heating and Cooling	86.5	30.3	4.9	4.6	5.9	15.9	4.2	2.5	6.0	12.1	6.66
Computerized Energy Management and Control System											
Present in Building	119.5	32.0	7.6	8.0	11.4	24.8	7.5	3.9	6.9	17.3	8.29
Controls Heating and Cooling	120.9	32.8	7.7	8.2	11.6	24.9	7.6	3.9	6.9	17.3	8.63
Controls Lighting	111.9	24.8	7.8	5.7	5.2	22.9	Q	4.1	6.7	18.2	13.87
Controls Other	145.1	29.0	9.9	8.2	21.5	27.0	6.0	4.4	7.0	32.0	21.81
Other Energy Management											
Regular HVAC Maintenance	111.0	37.1	5.9	5.6	9.6	20.2	5.1	3.6	7.1	16.7	5.04
Participated in Utility Conservation Program	111.4	38.0	6.1	7.0	10.7	19.7	4.9	3.7	6.5	14.8	7.95

* = Value rounds to zero in the units displayed.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B3. End-Use Consumption Percentages for All Major Fuels, 1989

Building Characteristics	Percent of Major Fuel Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
All Buildings	100	35	5	5	9	18	5	3	7	14
Building Floorspace (Square Feet)										
1,001 to 5,000	100	37	6	4	11	14	7	5	8	8
5,001 to 10,000	100	40	6	4	9	15	3	3	7	13
10,001 to 25,000	100	41	5	3	7	16	3	4	9	12
25,001 to 50,000	100	42	5	3	6	17	3	4	6	15
50,001 to 100,000	100	35	4	5	8	19	3	4	5	17
100,001 to 200,000	100	34	5	6	8	20	5	2	6	14
200,001 to 500,000	100	29	5	7	8	22	3	2	6	18
Over 500,000	100	19	7	7	12	19	12	2	6	17
Year Constructed										
1899 or Before	100	68	1	2	9	7	3	2	2	5
1900 to 1919	100	46	2	3	7	12	4	2	4	21
1920 to 1945	100	45	4	5	10	12	4	2	4	14
1946 to 1959	100	40	5	4	9	16	Q	2	5	12
1960 to 1969	100	37	5	4	9	17	3	3	6	16
1970 to 1979	100	30	6	5	9	21	5	4	7	13
1980 to 1983	100	21	7	5	6	23	4	4	11	19
1984 to 1986	100	22	6	8	8	22	5	5	11	13
1987 to 1989	100	27	5	4	7	19	5	7	10	15
BUILDING USE										
Principal Building Activity										
Assembly	100	52	6	6	5	14	4	3	1	10
Education	100	54	4	3	6	16	Q	1	1	7
Food Sales	100	15	11	6	2	13	15	32	1	5
Food Service	100	19	8	5	19	11	23	6	1	8
Health Care	100	18	7	5	27	15	10	1	1	15
Lodging	100	32	4	5	29	11	8	4	*	7
Mercantile and Service	100	34	5	2	5	19	2	1	11	20
Office	100	30	7	11	4	22	1	3	13	10
Parking Garage	100	47	1	Q	Q	20	Q	2	3	18
Public Order and Safety	100	53	2	3	6	16	1	2	2	15
Warehouse	100	41	1	1	1	19	*	5	11	21
Other	100	25	4	*	4	22	2	2	4	37
Vacant	100	41	3	1	6	14	Q	2	2	30
Weekly Operating Hours										
39 or Fewer	100	60	3	5	5	11	2	3	3	8
40 to 48	100	47	5	4	4	16	1	3	7	14
49 to 60	100	40	5	6	3	18	2	3	10	13
61 to 84	100	33	6	5	8	19	4	3	7	15
85 to 167	100	32	6	4	6	20	10	4	6	12
168 (Open Continuously)	100	24	5	5	17	17	6	3	5	17
Workers										
4 or Fewer	100	46	5	4	10	13	3	4	6	9
5 to 9	100	38	6	4	9	16	5	3	8	11
10 to 19	100	40	6	4	9	14	5	4	8	12
20 to 49	100	42	4	3	9	17	3	4	6	12
50 to 99	100	40	5	4	4	19	3	4	6	16
100 to 249	100	32	4	4	7	20	4	3	6	19
250 or More	100	20	6	8	11	21	8	2	7	16

See footnotes at end of table.

Table B3. End-Use Consumption Percentages for All Major Fuels, 1989 (Continued)

Building Characteristics	Percent of Major Fuel Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Ownership and Occupancy										
Nongovernment Owned	100	32	6	5	9	18	4	4	7	15
Owner Occupied	100	33	5	5	10	17	5	4	6	15
Single Establishment	100	34	5	4	10	16	5	4	6	16
Multiple Establishment	100	28	7	8	7	22	4	2	9	13
Nonowner Occupied	100	29	6	5	6	21	4	4	11	14
Single Establishment	100	31	5	4	5	21	5	5	11	13
Multiple Establishment	100	24	8	6	6	23	4	3	12	15
Vacant	100	48	2	*	12	7	Q	1	1	28
Government Owned	100	42	4	4	8	17	5	2	4	12
Federal	100	26	6	6	4	22	18	2	6	10
State	100	44	3	4	10	14	2	2	5	16
Local	100	47	4	4	8	18	3	2	3	10
Multibuilding Facility										
Not on Multibuilding Facility	100	37	5	5	8	18	4	4	7	13
Part of Multibuilding Facility	100	33	5	5	10	18	5	3	6	16
On Facility with Central Plant	100	32	5	4	11	16	7	2	4	19
Percent Vacant at Least Three Months										
0	100	36	5	4	9	18	4	4	7	14
1 to 50	100	28	6	7	9	20	4	2	7	17
51 to 99	100	39	5	3	5	13	23	2	3	7
100	100	43	4	4	13	13	2	4	4	15
Months in Use Out of Past 12 Months										
0 to 8	100	35	4	4	12	15	7	5	6	13
9 to 11	100	60	3	4	8	12	1	2	1	10
12	100	34	5	5	9	18	5	3	7	15
LOCATION										
Census Region										
Northeast	100	42	3	4	9	17	3	3	7	13
Midwest	100	44	3	4	10	14	4	3	5	13
South	100	26	8	6	7	21	4	4	7	18
West	100	26	6	6	9	19	8	3	8	14
Census Division										
Northeast										
New England	100	42	3	4	12	15	4	3	5	12
Middle Atlantic	100	42	3	4	8	17	3	3	7	13
Midwest										
East North Central	100	45	3	3	10	15	4	3	5	11
West North Central	100	42	5	4	11	14	4	2	4	15
South										
South Atlantic	100	24	9	6	5	22	3	4	8	19
East South Central	100	27	5	5	8	19	4	4	8	20
West South Central	100	27	9	6	8	21	4	4	6	15
West										
Mountain	100	35	6	5	8	15	14	3	5	8
Pacific	100	20	6	7	10	22	4	4	9	18
Metropolitan Status										
Metropolitan	100	33	6	5	9	18	5	3	7	15
Nonmetropolitan	100	45	4	3	8	15	3	3	5	13

See footnotes at end of table.

Table B3. End-Use Consumption Percentages for All Major Fuels, 1989 (Continued)

Building Characteristics	Percent of Major Fuel Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Climate Zone: 45-Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD	100	48	2	3	11	14	3	4	5	11
5,500-7,000 HDD	100	45	3	4	8	14	7	3	5	12
4,000-5,499 HDD	100	32	5	5	9	20	4	3	7	14
Under 4,000 HDD	100	24	6	6	8	20	4	3	8	19
2,000 CDD or More and --										
Under 4,000 HDD	100	20	12	6	9	21	4	5	7	16
1989 Degree-Days										
Under 2,000 CDD and --										
Over 7,000 HDD	100	51	2	3	9	13	3	3	4	11
5,500-7,000 HDD	100	40	4	4	9	15	6	3	5	14
4,000-5,499 HDD	100	30	5	6	8	23	4	4	9	11
Under 4,000 HDD	100	25	7	6	8	19	4	3	8	20
2,000 CDD or More and --										
Under 4,000 HDD	100	19	12	7	9	21	4	5	8	16
STRUCTURE										
Floors										
1	100	35	6	4	7	18	4	4	8	14
2	100	35	5	4	6	19	3	4	7	17
3	100	44	4	5	8	14	2	2	5	16
4 to 6	100	36	5	5	12	16	10	2	4	10
7 or More	100	24	6	9	14	19	6	2	6	14
Wall Materials										
Masonry	100	37	5	4	10	16	4	3	6	14
Siding or Shingles	100	36	5	4	11	17	4	3	7	12
Metal Panels	100	35	5	4	4	21	1	3	9	17
Concrete Panels	100	24	7	5	5	20	Q	3	7	19
Window Glass	100	24	6	12	8	24	4	3	11	9
Other	100	29	5	9	6	25	2	2	9	13
Roof Materials										
Built-Up	100	34	6	5	8	18	5	3	6	14
Shingles (Not Wood)	100	41	5	4	10	15	5	4	6	11
Metal Surfacing	100	37	4	3	4	20	2	3	10	18
Synthetic or Rubber	100	34	5	5	9	18	4	4	7	15
Slate or Tile	100	46	4	4	10	11	9	3	5	9
Concrete	100	18	8	11	13	25	Q	3	9	10
Wooden Materials	100	37	7	6	11	15	7	4	4	10
Other	100	18	5	4	24	13	6	1	Q	25
Building Shell Conservation Features (Solely or in Combination)										
Roof or Ceiling Insulation	100	33	6	5	9	18	5	3	7	14
Wall Insulation	100	31	6	5	9	19	5	3	7	15
Storm or Multiple Glazing	100	33	5	5	11	18	5	4	7	12
Tinted, Reflective, or Shading Glass	100	28	6	6	8	21	6	3	8	15
Exterior or Interior Shadings or Awnings	100	31	6	5	8	18	6	3	7	15
Weather Stripping or Caulking	100	34	6	5	9	18	5	3	7	14
None of the Above	100	38	4	4	8	15	3	3	6	19

See footnotes at end of table.

Table B3. End-Use Consumption Percentages for All Major Fuels, 1989 (Continued)

Building Characteristics	Percent of Major Fuel Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
ENERGY SOURCES AND END USES										
Energy Sources (Solely or in Combination)										
Electricity	100	35	5	5	9	18	5	3	7	14
Natural Gas	100	36	5	5	10	16	6	3	5	15
Fuel Oil	100	36	4	5	12	17	4	3	6	13
District Heat	100	35	4	5	12	14	7	2	4	18
Other	100	33	4	4	8	17	Q	4	5	17
Energy End Uses (Solely or in Combination)										
Heated Buildings	100	36	5	5	9	18	5	3	7	14
Air-Conditioned Buildings	100	33	6	5	9	18	5	3	7	15
Buildings with Water Heating	100	34	5	5	9	18	5	3	6	14
Buildings with Cooking	100	29	6	5	11	18	9	3	5	13
Buildings with Manufacturing	100	33	4	2	3	16	Q	3	5	27
Space-Heating Energy Source (Solely or in Combination)										
Electricity	100	22	8	6	7	24	4	5	10	15
Natural Gas	100	39	4	4	10	15	4	3	5	15
Fuel Oil	100	39	4	5	12	15	4	3	5	13
District Heat	100	40	4	5	9	14	8	2	4	14
Other	100	30	4	5	9	22	5	8	7	10
Main Space-Heating Energy Source										
Electricity	100	13	9	7	7	27	5	6	12	13
Natural Gas	100	39	4	4	10	15	4	3	5	15
Fuel Oil	100	53	2	3	7	15	3	2	7	8
District Heat	100	39	4	5	9	14	8	2	4	14
Other	100	24	4	6	2	26	4	14	10	11
Air-Conditioning Energy Source (Solely or in Combination)										
Electricity	100	33	6	5	8	19	4	4	7	15
Other	100	31	5	5	10	16	10	2	4	17
Water-Heating Energy Source (Solely or in Combination)										
Electricity	100	30	7	6	2	22	2	4	10	17
Natural Gas	100	37	4	4	12	16	5	3	5	12
Fuel Oil	100	49	3	3	14	13	3	2	2	10
District Heat	100	31	4	4	15	13	9	2	4	18
Other	100	27	5	5	Q	25	4	14	7	11
HEATING AND COOLING										
Percent Heated										
Not Heated	100	5	12	8	12	24	4	6	8	20
1 to 50	100	30	4	3	6	20	2	7	11	16
51 to 99	100	31	6	6	7	20	3	3	9	16
100	100	37	5	5	9	17	5	3	6	14
Percent Cooled										
Not Cooled	100	52	NC	3	9	13	2	2	5	13
1 to 50	100	49	2	2	6	13	2	3	6	17
51 to 99	100	28	7	6	9	21	5	4	7	12
100	100	26	8	6	10	20	7	4	7	14

See footnotes at end of table.

Table B3. End-Use Consumption Percentages for All Major Fuels, 1989 (Continued)

Building Characteristics	Percent of Major Fuel Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Heating Equipment (Solely or in Combination)										
Furnaces	100	41	4	3	7	16	4	4	7	15
Boilers	100	42	4	5	9	16	3	2	5	13
Individual Space Heaters	100	35	5	4	8	18	5	3	7	17
Packaged Heating Units	100	27	7	4	6	20	5	3	8	20
Heat Pumps	100	26	7	6	7	20	4	4	8	18
Air Ducts	100	31	6	5	9	19	5	3	7	15
Heating or Reheating Coils	100	29	5	6	10	19	6	2	6	16
Fan-Coil Units	100	33	5	5	11	17	7	2	5	15
Steam or Hot Water Radiators or Baseboards	100	43	3	4	11	13	6	2	4	14
Other	100	23	5	7	16	16	3	3	5	21
Cooling Equipment (Solely or in Combination)										
Central Chillers	100	25	7	7	10	19	8	2	6	15
Individual Air Conditioners	100	41	4	4	10	15	4	3	5	15
Packaged Cooling Units	100	31	6	5	7	19	6	4	7	15
Heat Pumps	100	25	6	5	6	20	4	4	8	22
Air Ducts	100	30	6	5	9	19	6	3	7	15
Fan-Coil Units	100	25	6	7	12	19	8	2	6	15
Other	100	21	10	3	7	17	30	2	5	7
Year Main Central Chiller Installed										
1959 or Before	100	31	7	9	11	18	5	2	6	10
1960 to 1969	100	28	8	5	5	17	12	2	5	17
1970 to 1979	100	24	6	8	13	22	5	3	7	12
1980 to 1986	100	22	6	9	13	20	4	3	7	16
1987 to 1989	100	20	7	7	10	20	11	3	6	17
Year Packaged Cooling System Installed										
1959 or Before	100	37	6	5	8	21	2	2	5	13
1960 to 1969	100	33	6	3	6	16	Q	2	6	18
1970 to 1979	100	32	7	5	9	20	6	3	7	12
1980 to 1986	100	28	7	6	7	21	4	5	9	14
1987 to 1989	100	34	6	5	7	16	5	4	6	17
Computer Area with Separate Air-Conditioning System										
Present in Building	100	27	6	6	8	20	5	3	8	16
Not Present	100	40	5	4	9	16	4	4	6	13
LIGHTING AND REFRIGERATION Percent Lit When Open										
Not Lit	100	54	2	2	Q	9	*	3	5	20
1 to 50	100	51	4	4	10	9	4	3	6	11
51 to 99	100	35	5	5	8	18	4	3	7	16
100	100	32	6	5	9	19	5	4	6	14
Percent Lit When Closed										
Not Lit	100	39	5	4	9	14	4	3	6	15
1 to 50	100	34	5	5	7	19	5	3	7	14
51 to 99	100	22	6	7	18	20	8	3	6	12
100	100	23	12	8	7	23	7	Q	2	8
Lighting Equipment (Solely or in Combination)										
Incandescent Lamps	100	35	5	5	10	18	6	3	5	13
Fluorescent Lamps	100	35	5	5	9	18	5	3	7	14
High-Intensity Discharge Lamps	100	32	5	5	7	20	6	3	6	17
Other Lamps	100	22	8	7	12	23	5	Q	5	14
High-Efficiency Ballasts	100	31	5	6	8	18	4	4	8	16

See footnotes at end of table.

Table B3. End-Use Consumption Percentages for All Major Fuels, 1989 (Continued)

Building Characteristics	Percent of Major Fuel Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Refrigeration Equipment (Solely or in Combination)										
Commercial										
Refrigeration Units	100	28	6	5	11	19	8	4	5	13
Freezers	100	27	6	5	11	19	9	4	5	14
Residential										
Refrigerators	100	35	5	5	9	18	4	3	7	15
Freezers	100	30	6	4	12	17	9	3	4	15
Ice-Making Machines	100	25	6	6	11	19	8	4	5	15
Refrigerated Vending Machines	100	32	5	5	9	19	5	3	7	15
Water Coolers	100	34	5	5	8	18	4	3	6	16
Other	100	17	6	4	13	16	5	3	6	30
ENERGY MANAGEMENT										
Occupant Control										
Any Control of Heating	100	35	5	4	11	17	5	3	6	14
With Thermostats	100	34	5	4	11	17	5	3	6	15
Any Control of Cooling	100	34	6	4	11	17	5	3	6	14
With Thermostats	100	33	6	4	11	17	5	3	6	15
Reduced Use During Off-Hours										
Heating Only	100	51	1	3	9	13	2	2	5	12
Cooling Only	100	28	6	4	7	16	5	3	7	25
Heating and Cooling	100	35	6	5	7	18	5	3	7	14
Computerized Energy Management and Control System										
Present in Building	100	27	6	7	10	21	6	3	6	14
Controls Heating and Cooling	100	27	6	7	10	21	6	3	6	14
Controls Lighting	100	22	7	5	5	20	15	4	6	16
Controls Other	100	20	7	6	15	19	4	3	5	22
Other Energy Management										
Regular HVAC Maintenance	100	33	5	5	9	18	5	3	6	15
Participated in Utility Conservation Program	100	34	5	6	10	18	4	3	6	13

* = Value rounds to zero in the units displayed.
NC = No cases in responding sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B4. Consumption of Electricity by End Use, 1989

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
All Buildings	2,773	96	282	278	24	1,023	56	187	379	449	5.91
Building Floorspace (Square Feet)											
1,001 to 5,000	326	15	44	29	8	96	15	33	52	33	6.53
5,001 to 10,000	246	9	33	21	3	83	6	16	41	34	12.33
10,001 to 25,000	381	25	39	27	4	124	8	30	73	52	10.32
25,001 to 50,000	331	Q	34	26	2	127	6	27	46	46	10.91
50,001 to 100,000	433	9	36	40	2	161	6	31	44	104	16.23
100,001 to 200,000	387	12	35	43	2	153	5	19	47	71	12.79
200,001 to 500,000	366	7	35	50	2	151	5	15	39	62	17.96
Over 500,000	303	3	26	43	1	126	4	15	37	46	17.56
Year Constructed											
1899 or Before	25	1	2	3	Q	8	1	3	3	4	17.03
1900 to 1919	75	2	5	7	1	29	1	4	10	18	16.56
1920 to 1945	211	Q	24	29	1	76	5	14	23	25	12.34
1946 to 1959	379	5	35	42	2	158	6	21	53	56	13.12
1960 to 1969	589	15	60	55	5	219	10	32	72	121	15.03
1970 to 1979	730	31	83	70	9	276	16	51	93	101	7.28
1980 to 1983	295	15	30	23	3	98	7	16	47	56	16.84
1984 to 1986	303	11	29	37	2	104	7	25	50	39	12.71
1987 to 1989	167	4	14	12	1	55	3	21	28	28	19.81
BUILDING USE											
Principal Building Activity											
Assembly	186	19	25	25	1	63	1	11	6	35	17.84
Education	217	10	17	24	2	114	1	10	10	28	9.30
Food Sales	105	*	16	8	1	19	9	45	1	7	22.55
Food Service	113	1	19	13	3	27	17	16	2	15	11.37
Health Care	154	3	31	21	2	68	5	6	5	12	13.95
Lodging	138	11	17	20	5	47	14	16	1	6	11.61
Mercantile and Service	550	12	51	26	4	201	4	12	115	124	10.77
Office	781	27	81	133	4	272	3	35	165	62	6.40
Parking Garage	18	Q	*	*	*	8	*	1	1	7	25.81
Public Order and Safety	29	Q	1	2	*	13	*	2	1	8	28.04
Warehouse	243	Q	6	3	1	102	1	24	57	39	18.91
Other	201	Q	14	1	Q	76	1	7	Q	Q	41.44
Vacant	39	1	3	*	*	13	*	2	2	18	19.68
Weekly Operating Hours											
39 or Fewer	71	5	7	10	1	23	1	6	7	12	11.94
40 to 48	440	16	47	43	3	158	2	27	71	73	9.57
49 to 60	478	22	44	52	3	169	3	24	93	69	7.93
61 to 84	522	14	54	52	3	189	7	31	71	100	10.12
85 to 167	485	12	47	38	4	196	14	44	56	72	10.27
168 (Open Continuously)	779	27	83	83	9	289	28	54	81	123	13.40
Workers											
4 or Fewer	294	15	34	28	6	88	11	30	44	39	5.56
5 to 9	258	16	30	21	4	83	8	17	42	37	8.81
10 to 19	238	11	30	20	3	74	8	20	42	31	11.44
20 to 49	401	14	40	27	4	156	9	33	56	61	9.28
50 to 99	348	17	36	25	2	133	7	28	39	60	10.76
100 to 249	478	9	42	43	3	201	6	29	58	87	15.02
250 or More	758	13	71	113	2	288	8	31	99	133	17.20

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Ownership and Occupancy											
Nongovernment Owned	2,113	76	228	209	21	757	48	154	311	310	5.71
Owner Occupied	1,575	58	173	166	16	566	38	121	211	227	6.90
Single Establishment	1,182	45	133	114	14	419	34	105	150	168	8.22
Multiple Establishment	393	14	40	51	2	146	4	16	61	59	10.38
Nonowner Occupied	537	17	54	44	5	192	10	33	100	83	9.12
Single Establishment	265	7	25	21	3	98	6	22	51	32	13.09
Multiple Establishment	265	10	29	22	2	91	Q	11	48	48	12.80
Vacant	8	*	1	*	*	3	*	*	*	3	25.16
Government Owned	660	20	54	69	3	266	8	33	68	139	14.93
Federal	132	3	8	17	1	60	1	5	16	21	35.56
State	240	Q	19	22	1	83	5	14	29	Q	28.90
Local	288	12	27	31	2	122	3	15	23	54	13.95
Multibuilding Facility											
Not on Multibuilding Facility	1,428	46	148	146	16	510	36	114	213	199	4.25
Part of Multibuilding Facility	1,345	50	134	132	8	513	20	73	166	249	11.09
On Facility with Central Plant	635	13	57	67	3	250	11	38	64	132	20.83
Percent Vacant at Least Three Months											
0	2,062	75	210	194	20	756	47	151	287	322	6.35
1 to 50	583	16	62	71	3	217	6	25	80	103	8.92
51 to 99	64	2	3	7	*	28	Q	4	6	12	33.39
100	63	3	6	6	1	21	2	6	6	12	11.17
Months in Use Out of Past 12 Months											
0 to 8	81	3	8	7	1	25	2	8	10	17	14.45
9 to 11	76	5	7	11	1	32	1	4	4	10	9.75
12	2,616	87	267	260	22	966	53	175	365	422	6.20
LOCATION											
Census Region											
Northeast	586	23	35	57	3	227	11	35	92	102	13.99
Midwest	609	26	51	59	6	241	14	48	79	85	9.11
South	975	31	135	93	12	341	20	65	122	155	8.65
West	604	15	61	69	4	214	11	38	86	106	12.01
Census Division											
Northeast											
New England	115	4	7	13	1	46	3	8	16	19	14.84
Middle Atlantic	470	19	27	44	2	182	8	28	76	84	16.91
Midwest											
East North Central	399	17	28	37	4	160	9	34	54	56	11.91
West North Central	210	10	24	22	2	80	5	14	25	29	15.15
South											
South Atlantic	416	13	61	43	6	147	7	25	55	60	11.69
East South Central	215	11	20	17	3	71	6	15	30	41	19.47
West South Central	344	8	54	33	3	123	7	25	37	54	15.08
West											
Mountain	179	5	20	24	1	66	4	12	24	23	29.65
Pacific	425	10	41	45	2	148	7	26	62	83	16.21
Metropolitan Status											
Metropolitan	2,366	71	245	244	17	873	44	156	324	390	6.46
Nonmetropolitan	407	24	37	34	7	149	12	31	55	58	13.40

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Climate Zone: 45-Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD	211	10	10	16	2	84	6	23	30	31	17.08
5,500-7,000 HDD	668	25	45	70	5	266	16	47	93	102	14.48
4,000-5,499 HDD	706	33	59	72	7	279	11	42	102	101	10.12
Under 4,000 HDD	663	17	70	67	5	225	12	38	93	135	16.48
2,000 CDD or More and --											
Under 4,000 HDD	525	11	98	52	6	169	12	37	60	80	11.41
1989 Degree-Days											
Under 2,000 CDD and --											
Over 7,000 HDD	286	10	14	23	2	117	8	29	38	44	15.40
5,500-7,000 HDD	852	34	67	91	7	335	18	55	119	126	13.17
4,000-5,499 HDD	539	28	38	54	5	212	9	34	81	79	13.41
Under 4,000 HDD	594	13	67	60	4	197	10	34	83	126	16.04
2,000 CDD or More and --											
Under 4,000 HDD	503	11	94	50	6	162	11	36	58	75	11.76
STRUCTURE											
Floors											
1	922	31	110	71	11	322	23	74	142	138	6.91
2	793	29	69	58	5	298	13	59	114	148	10.14
3	320	17	29	35	3	107	5	15	38	Q	21.45
4 to 6	342	9	34	42	2	144	8	20	35	47	13.89
7 or More	396	10	39	73	2	151	7	19	51	44	11.85
Wall Materials											
Masonry	1,740	54	191	168	16	634	40	127	230	279	6.33
Siding or Shingles	150	9	15	12	3	56	4	10	22	19	11.52
Metal Panels	246	10	21	19	2	97	2	15	42	40	19.67
Concrete Panels	397	15	36	38	2	144	6	24	46	84	15.84
Window Glass	146	6	12	26	1	54	Q	7	24	13	22.39
Other	94	2	6	14	*	39	1	4	15	13	22.18
Roof Materials											
Built-Up	1,484	48	154	152	12	556	29	92	191	249	8.05
Shingles (Not Wood)	341	14	40	35	5	119	10	31	45	43	8.20
Metal Surfacing	314	10	21	17	3	118	4	20	59	61	15.58
Synthetic or Rubber	416	16	40	45	2	151	6	30	57	68	15.18
Slate or Tile	70	3	8	8	1	23	3	6	Q	9	23.25
Concrete	71	2	6	12	Q	28	1	3	10	9	32.42
Wooden Materials	29	1	4	4	*	9	1	2	3	4	18.89
Other	48	Q	7	Q	Q	19	1	2	Q	5	38.31
Building Shell Conservation Features (Solely or in Combination)											
Roof or Ceiling Insulation	2,201	79	234	223	19	820	45	149	306	326	5.92
Wall Insulation	1,547	56	162	148	14	585	30	105	216	229	7.36
Storm or Multiple Glazing	1,225	43	123	128	12	455	28	92	180	163	7.24
Tinted, Reflective, or Shading Glass	1,295	39	132	143	9	490	20	76	189	198	7.35
Exterior or Interior Shadings or Awnings	1,381	41	140	149	12	496	27	82	195	239	8.24
Weather Stripping or Caulking	2,257	80	230	229	20	829	44	145	310	371	6.64
None of the Above	134	4	12	12	1	51	3	11	19	20	10.78

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
ENERGY SOURCES AND END USES											
Energy Sources (Solely or in Combination)											
Electricity	2,773	96	282	278	24	1,023	56	187	379	449	5.91
Natural Gas	1,824	29	187	195	10	689	41	122	237	313	8.39
Fuel Oil	662	10	66	85	5	263	11	40	91	90	15.56
District Heat	444	Q	34	56	Q	165	8	21	46	98	20.92
Other	402	9	30	34	4	152	9	33	42	89	15.70
Energy End Uses (Solely or in Combination)											
Heated Buildings	2,676	96	267	268	23	993	54	179	369	427	5.99
Air-Conditioned Buildings	2,555	91	282	256	23	933	51	172	342	406	5.78
Buildings with Water Heating	2,602	90	263	263	24	958	54	179	347	422	6.17
Buildings with Cooking	1,331	32	142	150	12	502	41	96	130	226	9.79
Buildings with Manufacturing	291	Q	17	15	1	112	1	19	38	81	17.76
Space-Heating Energy Source											
Electricity	1,039	96	112	83	15	355	20	70	144	144	6.02
Main	800	75	92	68	13	263	17	59	120	92	5.83
With Secondary	118	9	13	10	2	37	3	Q	14	16	21.04
Natural Gas Only	57	3	6	3	*	18	Q	Q	6	8	30.58
Other Energy Sources or Combinations	54	6	5	Q	2	18	1	2	Q	7	38.11
With No Secondary	682	66	78	58	11	226	14	46	106	76	5.36
Secondary	239	21	20	15	1	92	3	11	24	52	15.24
Other Excluding Electricity	1,637	NC	155	185	8	637	34	109	225	284	8.50
Building Not Heated	97	NC	15	10	2	30	2	8	10	21	22.85
Main Space-Heating Energy Source											
Electricity	800	75	92	68	13	263	17	59	120	92	5.83
Natural Gas	1,287	9	136	134	6	489	26	81	169	237	8.70
Fuel Oil	182	1	11	16	2	72	4	11	35	30	18.86
District Heat	349	Q	25	49	1	139	7	18	37	60	17.80
Other	62	Q	3	5	1	23	Q	Q	9	8	41.49
Air-Conditioning Energy Source											
Electricity	2,373	86	282	230	22	848	47	161	321	376	5.81
Other Excluding Electricity	182	Q	NC	26	1	85	5	11	21	30	17.62
Air-Conditioning Not Performed	218	5	NC	22	1	90	4	15	37	43	17.62
Water-Heating Energy Source											
Electricity	1,135	65	122	100	24	381	15	74	175	178	6.36
Other Excluding Electricity	1,466	25	141	163	NC	577	39	105	172	245	8.57
Water Heating Not Performed	171	6	18	15	NC	65	1	8	32	26	9.30
HEATING AND COOLING											
Percent Heated											
Not Heated	98	Q	15	10	2	30	2	8	10	21	22.55
1 to 50	210	4	15	11	2	76	3	24	41	33	15.51
51 to 99	496	13	51	54	4	178	9	28	77	83	11.17
100	1,969	79	201	203	17	739	42	127	250	310	7.68
Percent Cooled											
Not Cooled	218	5	NC	22	1	90	4	15	37	43	17.62
1 to 50	461	16	31	29	3	172	8	34	75	93	9.26
51 to 99	783	22	91	88	7	295	16	55	101	109	7.78
100	1,311	53	161	138	13	466	28	83	166	204	9.51

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)											
Furnaces	608	22	55	45	6	219	15	52	99	95	8.80
Boilers	874	19	85	108	5	354	14	56	103	131	9.13
Individual Space Heaters	942	50	80	82	9	358	15	54	133	160	9.04
Packaged Heating Units	878	31	100	68	7	316	18	50	117	171	10.89
Heat Pumps	426	26	49	43	4	148	8	31	57	60	10.47
Air Ducts	2,004	58	205	205	15	753	37	125	275	330	7.44
Heating or Reheating Coils	1,040	28	97	127	5	401	16	52	123	191	13.64
Fan-Coil Units	682	Q	59	79	3	273	10	34	77	129	15.07
Steam or Hot Water Radiators or Baseboards	603	12	45	77	3	256	12	34	71	93	10.51
Other	117	Q	14	Q	1	41	2	9	14	14	29.18
Cooling Equipment (Solely or in Combination)											
Central Chillers	922	28	101	132	5	344	13	42	108	150	13.05
Individual Air Conditioners	754	28	75	70	9	269	15	52	87	150	10.36
Packaged Cooling Units	1,804	53	203	170	15	655	37	122	244	305	7.32
Heat Pumps	467	26	48	40	5	152	7	30	64	96	16.32
Air Ducts	1,877	63	205	195	14	696	36	116	246	305	7.31
Fan-Coil Units	753	22	76	108	3	288	10	35	89	121	14.29
Other	63	1	8	5	*	29	1	3	8	8	33.67
Year Main Central Chiller Installed											
1959 or Before	91	Q	11	16	1	32	1	4	10	8	24.98
1960 to 1969	252	3	26	29	*	90	2	9	26	Q	31.68
1970 to 1979	231	5	24	32	2	89	3	10	29	36	15.03
1980 to 1986	245	9	28	41	1	93	4	12	30	26	21.11
1987 to 1989	103	2	12	14	Q	40	2	6	12	13	22.77
Year Packaged Cooling System Installed											
1959 or Before	79	1	8	9	*	36	1	3	9	11	18.32
1960 to 1969	276	6	25	21	1	98	3	13	36	Q	25.88
1970 to 1979	547	24	67	53	6	205	12	36	73	73	8.37
1980 to 1986	599	19	64	55	5	213	14	47	88	93	10.44
1987 to 1989	303	5	37	31	2	104	7	23	38	56	10.68
Computer Area with Separate Air-Conditioning System											
Present in Building	1,194	24	114	145	5	452	13	63	181	198	10.59
Not Present	1,579	72	168	133	20	570	43	124	198	250	5.77
LIGHTING AND REFRIGERATION Percent Lit When Open											
Not Lit	8	Q	*	*	*	2	*	1	Q	3	30.06
1 to 50	192	14	20	22	4	48	5	15	32	35	9.45
51 to 99	813	22	80	85	6	293	12	43	114	157	9.92
100	1,760	59	182	171	14	680	39	129	232	253	7.78
Percent Lit When Closed											
Not Lit	947	52	100	85	10	309	22	63	135	172	8.73
1 to 50	1,566	42	149	160	11	613	25	102	220	244	6.46
51 to 99	203	2	23	27	2	81	6	13	22	28	25.13
100	57	Q	10	7	Q	20	Q	Q	2	5	36.11
Lighting Equipment (Solely or in Combination)											
Incandescent Lamps	1,747	62	180	183	15	685	38	115	206	265	7.40
Fluorescent Lamps	2,735	94	279	274	24	1,008	55	185	375	440	5.93
High-Intensity Discharge Lamps	982	31	85	95	5	396	13	63	122	173	10.04
Other Lamps	28	Q	4	4	*	12	Q	Q	3	3	24.45
High-Efficiency Ballasts	1,415	53	141	152	11	490	28	99	213	228	8.82

See footnotes at end of table.

Table B4. Consumption of Electricity by End Use, 1989 (Continued)

Building Characteristics	Electricity Consumption (trillion Btu)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Refrigeration Equipment (Solely or in Combination)											
Commercial											
Refrigeration Units	1,495	31	155	160	13	552	44	128	158	253	8.76
Freezers	1,424	29	148	150	12	526	43	124	148	244	8.92
Residential											
Refrigerators	2,054	61	202	215	15	794	30	117	292	328	6.59
Freezers	651	17	71	63	6	248	17	42	65	121	12.78
Ice-Making Machines	1,540	44	173	177	13	562	43	111	164	254	8.62
Refrigerated Vending Machines	2,122	64	213	222	16	816	42	141	283	325	6.03
Water Coolers	2,147	70	215	224	14	811	31	124	289	369	7.52
Other	186	Q	21	14	2	55	3	10	22	Q	31.51
ENERGY MANAGEMENT											
Occupant Control											
Any Control of Heating	1,074	42	120	97	13	393	24	67	147	170	6.04
With Thermostats	986	39	110	89	12	362	22	58	135	160	6.88
Any Control of Cooling	1,094	44	130	100	14	394	25	68	148	171	6.20
With Thermostats	1,010	42	120	91	12	363	23	62	135	161	7.31
Reduced Use During Off-Hours											
Heating Only	216	7	8	21	2	85	5	15	33	40	18.35
Cooling Only	202	Q	24	18	2	69	5	11	30	36	14.97
Heating and Cooling	1,671	62	174	178	13	616	27	98	233	270	6.73
Computerized Energy Management and Control System											
Present in Building	896	19	93	115	4	356	14	56	99	139	9.52
Controls Heating and Cooling	866	19	90	113	3	344	14	53	96	133	9.73
Controls Lighting	223	4	21	22	1	88	4	16	26	42	18.15
Controls Other	160	3	22	19	1	62	3	10	16	25	15.51
Other Energy Management											
Regular HVAC Maintenance	2,328	77	234	241	18	870	44	153	307	383	6.59
Participated in Utility Conservation Program	584	27	60	75	4	214	11	40	71	83	7.74

* = Value rounds to zero in the units displayed.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B5. Energy End-Use Intensities for Electricity, 1989

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	**Space** Heating	Cooling	**Ventil-** ation	**Water** Heating	Lighting	Cooking	**Refrig-** eration	**Office Equip-** ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
All Buildings	45.0	1.6	4.6	4.5	0.4	16.6	0.9	3.0	6.2	7.3	4.56
Building Floorspace (Square Feet)											
1,001 to 5,000	50.8	2.4	6.8	4.5	1.3	15.0	2.3	5.2	8.1	5.1	5.81
5,001 to 10,000	39.1	1.5	5.2	3.3	.5	13.2	.9	2.6	6.5	5.4	11.89
10,001 to 25,000	38.2	2.5	3.9	2.7	.4	12.5	.8	3.0	7.3	5.2	7.99
25,001 to 50,000	38.2	1.9	3.9	3.0	.3	14.7	.7	3.1	5.3	5.3	8.59
50,001 to 100,000	48.6	1.0	4.0	4.4	.2	18.1	.7	3.4	5.0	11.7	15.70
100,001 to 200,000	47.1	1.4	4.2	5.3	.2	18.7	.7	2.3	5.7	8.6	9.75
200,001 to 500,000	52.3	1.0	5.0	7.1	.2	21.6	.7	2.2	5.6	8.8	14.99
Over 500,000	50.0	.5	4.4	7.1	.1	20.8	.7	2.5	6.2	7.6	11.45
Year Constructed											
1899 or Before	15.9	.7	1.1	1.6	Q	5.4	.7	1.6	1.9	2.4	10.91
1900 to 1919	19.5	.5	1.2	1.7	.2	7.4	.3	1.0	2.5	4.6	20.87
1920 to 1945	26.7	Q	3.0	3.7	.2	9.7	.7	1.7	3.0	3.2	11.35
1946 to 1959	37.2	.5	3.5	4.2	.2	15.5	.6	2.0	5.2	5.5	11.53
1960 to 1969	49.4	1.3	5.1	4.6	.4	18.3	.8	2.7	6.0	10.2	12.55
1970 to 1979	55.4	2.4	6.3	5.3	.7	20.9	1.2	3.9	7.1	7.7	5.02
1980 to 1983	70.0	3.6	7.1	5.4	.7	23.2	1.6	3.9	11.1	13.4	11.14
1984 to 1986	53.8	1.9	5.1	6.6	.3	18.5	1.3	4.5	8.9	6.8	11.26
1987 to 1989	53.1	1.2	4.6	3.9	.3	17.5	.9	6.7	9.0	9.0	14.96
BUILDING USE											
Principal Building Activity											
Assembly	27.2	2.8	3.6	3.7	.2	9.2	.1	1.6	.9	5.0	16.14
Education	26.9	1.3	2.2	3.0	.2	14.2	.1	1.3	1.3	3.4	5.96
Food Sales	133.0	.3	20.0	10.1	1.7	23.4	11.4	56.5	1.3	8.3	12.75
Food Service	96.5	1.2	16.4	11.0	2.4	23.0	14.9	13.7	1.5	12.5	11.87
Health Care	74.9	1.4	15.1	10.2	1.2	33.0	2.3	3.0	2.6	6.0	5.63
Lodging	39.7	3.3	4.9	5.8	1.5	13.5	4.0	4.5	.4	1.8	10.87
Mercantile and Service	44.5	1.0	4.1	2.1	.3	16.2	.3	1.0	9.3	10.0	7.28
Office	66.2	2.3	6.9	11.3	.3	23.1	.2	2.9	14.0	5.2	6.11
Parking Garage	18.2	Q	.4	.4	.1	8.4	.1	.9	1.1	6.9	14.65
Public Order and Safety	47.0	Q	2.4	3.7	.1	20.8	.2	3.0	2.2	13.8	25.33
Warehouse	27.4	.9	.7	.4	.1	11.6	.1	2.7	6.5	4.5	14.74
Other	131.3	Q	9.1	.4	.3	49.4	.4	4.5	Q	57.7	34.69
Vacant	12.9	.2	.8	.2	.1	4.4	*	.7	.6	5.8	24.40
Weekly Operating Hours											
39 or Fewer	14.9	1.0	1.5	2.1	.2	4.8	.1	1.3	1.4	2.5	10.67
40 to 48	31.8	1.1	3.4	3.1	.2	11.4	.2	2.0	5.1	5.3	5.80
49 to 60	35.8	1.6	3.3	3.9	.2	12.6	.2	1.8	6.9	5.1	7.84
61 to 84	48.5	1.3	5.1	4.8	.3	17.6	.7	2.9	6.6	9.3	8.05
85 to 167	51.7	1.3	5.0	4.1	.5	20.9	1.5	4.7	6.0	7.7	9.14
168 (Open Continuously)	81.7	2.9	8.7	8.7	1.0	30.3	3.0	5.6	8.5	12.9	11.68
Workers											
4 or Fewer	21.7	1.1	2.5	2.1	.4	6.5	.8	2.2	3.2	2.9	7.50
5 to 9	32.5	2.1	3.7	2.6	.6	10.4	1.0	2.2	5.3	4.7	8.27
10 to 19	36.9	1.6	4.6	3.0	.5	11.5	1.2	3.1	6.6	4.8	11.10
20 to 49	41.5	1.5	4.1	2.8	.4	16.2	.9	3.4	5.8	6.4	7.28
50 to 99	47.0	2.3	4.9	3.4	.3	18.0	.9	3.8	5.2	8.1	9.37
100 to 249	70.6	1.4	6.1	6.4	.4	29.7	.9	4.2	8.6	12.9	8.96
250 or More	77.2	1.3	7.2	11.5	.2	29.3	.8	3.1	10.1	13.6	8.56

See footnote at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	**Space** Heating	Cooling	**Ventil-** ation	**Water** Heating	Lighting	Cooking	**Refrig-** eration	**Office Equip-** ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Ownership and Occupancy											
Nongovernment Owned	44.4	1.6	4.8	4.4	0.4	15.9	1.0	3.2	6.5	6.5	4.17
Owner Occupied	44.5	1.6	4.9	4.7	.4	16.0	1.1	3.4	5.9	6.4	4.96
Single Establishment	44.5	1.7	5.0	4.3	.5	15.8	1.3	3.9	5.7	6.3	6.69
Multiple Establishment	44.4	1.6	4.6	5.8	.2	16.6	.4	1.8	6.8	6.7	4.71
Nonowner Occupied	44.4	1.4	4.5	3.6	.4	15.8	.8	2.7	8.3	6.8	7.03
Single Establishment	42.8	1.1	4.0	3.4	.5	15.8	1.0	3.5	8.3	5.2	11.25
Multiple Establishment	50.6	2.0	5.5	4.3	.3	17.4	.7	2.0	9.2	9.2	7.76
Vacant	11.2	.2	1.1	.3	.1	4.4	*	.7	.6	3.7	23.46
Government Owned	47.1	1.4	3.9	4.9	.2	19.0	.6	2.4	4.9	9.9	13.06
Federal	69.4	1.7	4.2	8.7	.5	31.5	.4	2.6	8.5	11.3	17.87
State	62.1	1.1	4.9	5.6	.2	21.5	1.2	3.6	7.5	Q	27.97
Local	35.0	1.5	3.3	3.7	.2	14.8	.3	1.8	2.8	6.5	10.86
Multibuilding Facility											
Not on Multibuilding Facility	39.1	1.3	4.0	4.0	.4	14.0	1.0	3.1	5.8	5.5	3.49
Part of Multibuilding Facility	53.7	2.0	5.4	5.3	.3	20.5	.8	2.9	6.6	10.0	8.23
On Facility with Central Plant	76.5	1.5	6.9	8.0	.3	30.2	1.4	4.6	7.7	15.9	15.60
Percent Vacant at Least Three Months											
0	48.3	1.7	4.9	4.5	.5	17.7	1.1	3.5	6.7	7.5	5.74
1 to 50	47.0	1.3	5.0	5.7	.2	17.5	.5	2.0	6.4	8.3	4.89
51 to 99	18.6	Q	1.0	1.9	.1	8.2	Q	1.3	1.8	3.4	24.80
100	21.1	1.0	2.0	2.1	.4	7.1	.5	2.1	1.9	3.9	9.94
Months in Use Out of Past 12 Months											
0 to 8	24.4	1.0	2.3	2.1	.3	7.7	.7	2.4	2.9	5.0	15.78
9 to 11	20.2	1.4	1.9	3.0	.2	8.4	.3	1.1	1.1	2.8	7.80
12	48.0	1.6	4.9	4.8	.4	17.7	1.0	3.2	6.7	7.7	4.88
LOCATION											
Census Region											
Northeast	43.9	1.7	2.6	4.3	.2	17.1	.8	2.6	6.9	7.7	11.20
Midwest	38.8	1.7	3.3	3.7	.4	15.3	.9	3.1	5.0	5.4	6.11
South	45.9	1.5	6.4	4.4	.6	16.1	.9	3.1	5.8	7.3	4.32
West	53.3	1.4	5.4	6.1	.3	18.9	1.0	3.4	7.6	9.4	11.62
Census Division											
Northeast											
New England	36.9	1.2	2.4	4.0	.2	14.6	.9	2.4	5.1	6.0	9.87
Middle Atlantic	46.1	1.9	2.7	4.3	.2	17.8	.8	2.7	7.4	8.2	13.83
Midwest											
East North Central	37.9	1.6	2.6	3.5	.4	15.2	.9	3.3	5.1	5.4	8.31
West North Central	40.5	1.8	4.6	4.2	.3	15.5	1.0	2.7	4.8	5.6	8.46
South											
South Atlantic	43.2	1.3	6.3	4.5	.6	15.2	.7	2.6	5.7	6.2	6.69
East South Central	51.0	2.6	4.8	4.1	.8	16.9	1.4	3.6	7.1	9.8	15.25
West South Central	46.7	1.0	7.3	4.5	.4	16.7	1.0	3.4	5.1	7.3	8.48
West											
Mountain	42.8	1.3	4.7	5.8	.3	15.8	.9	2.8	5.8	5.5	14.73
Pacific	59.5	1.4	5.7	6.3	.3	20.7	1.0	3.7	8.7	11.6	15.04
Metropolitan Status											
Metropolitan	47.5	1.4	4.9	4.9	.3	17.5	.9	3.1	6.5	7.8	5.01
Nonmetropolitan	34.7	2.1	3.1	2.9	.6	12.7	1.0	2.6	4.7	5.0	10.12

See footnote at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	**Space** Heating	Cooling	**Ventil-** ation	**Water** Heating	Lighting	Cooking	**Refrig-** eration	**Office Equip-** ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Climate Zone: 45-Year Average											
Under 2,000 CDD and --											
Over 7,000 HDD	42.4	1.9	2.0	3.3	0.4	16.9	1.1	4.6	6.1	6.2	10.51
5,500-7,000 HDD	38.2	1.4	2.5	4.0	.3	15.2	.9	2.7	5.3	5.8	9.21
4,000-5,499 HDD	46.9	2.2	3.9	4.8	.4	18.6	.7	2.8	6.8	6.7	8.21
Under 4,000 HDD	52.7	1.3	5.6	5.3	.4	17.9	1.0	3.0	7.4	10.7	12.65
2,000 CDD or More and --											
Under 4,000 HDD	45.7	1.0	8.5	4.5	.5	14.7	1.0	3.2	5.3	7.0	8.02
1989 Degree-Days											
Under 2,000 CDD and --											
Over 7,000 HDD	38.1	1.4	1.9	3.1	.3	15.6	1.0	3.8	5.1	5.8	10.86
5,500-7,000 HDD	39.5	1.6	3.1	4.2	.3	15.6	.8	2.6	5.5	5.8	7.07
4,000-5,499 HDD	53.3	2.7	3.8	5.3	.5	21.0	.8	3.3	8.0	7.8	8.61
Under 4,000 HDD	50.6	1.1	5.7	5.1	.4	16.8	.9	2.9	7.1	10.7	13.48
2,000 CDD or More and --											
Under 4,000 HDD	47.1	1.0	8.8	4.7	.5	15.1	1.1	3.4	5.4	7.0	7.50
STRUCTURE											
Floors											
1	40.8	1.4	4.9	3.1	.5	14.3	1.0	3.3	6.3	6.1	4.77
2	50.1	1.8	4.4	3.6	.3	18.8	.8	3.7	7.2	9.4	7.48
3	37.6	2.0	3.5	4.1	.4	12.6	.5	1.8	4.4	Q	22.47
4 to 6	41.6	1.1	4.1	5.1	.3	17.5	1.0	2.4	4.3	5.8	9.33
7 or More	61.9	1.5	6.2	11.4	.3	23.7	1.0	3.0	7.9	6.9	5.70
Wall Materials											
Masonry	42.3	1.3	4.6	4.1	.4	15.4	1.0	3.1	5.6	6.8	5.31
Siding or Shingles	33.2	1.9	3.4	2.7	.7	12.3	.9	2.2	5.0	4.2	11.44
Metal Panels	45.7	1.8	3.8	3.5	.3	18.0	.4	2.8	7.8	7.4	15.92
Concrete Panels	55.7	2.1	5.1	5.4	.3	20.3	.9	3.4	6.5	11.8	10.31
Window Glass	76.2	3.2	6.5	13.7	.3	28.0	Q	3.9	12.7	6.9	12.51
Other	63.5	1.6	4.3	9.7	.2	26.0	.5	2.5	9.8	8.9	12.78
Roof Materials											
Built-Up	49.0	1.6	5.1	5.0	.4	18.4	1.0	3.0	6.3	8.2	6.80
Shingles (Not Wood)	32.2	1.3	3.7	3.3	.5	11.2	1.0	3.0	4.2	4.1	5.48
Metal Surfacing	40.3	1.3	2.7	2.2	.3	15.1	.5	2.5	7.6	7.9	14.77
Synthetic or Rubber	60.2	2.4	5.8	6.5	.3	21.8	.9	4.4	8.3	9.9	9.42
Slate or Tile	27.3	1.1	3.3	3.0	.3	8.9	1.1	2.2	Q	3.5	23.08
Concrete	38.0	Q	3.4	6.4	Q	14.7	.5	1.8	5.1	4.9	12.65
Wooden Materials	41.8	1.6	6.3	5.2	.4	13.4	1.6	3.5	3.7	6.1	13.50
Other	56.7	Q	8.2	7.3	Q	22.7	1.5	2.5	5.9	5.5	23.33
Building Shell Conservation Features (Solely or in Combination)											
Roof or Ceiling Insulation	49.4	1.8	5.3	5.0	.4	18.4	1.0	3.3	6.9	7.3	4.02
Wall Insulation	52.6	1.9	5.5	5.0	.5	19.9	1.0	3.6	7.4	7.8	4.74
Storm or Multiple Glazing	51.1	1.8	5.1	5.3	.5	19.0	1.2	3.8	7.5	6.8	4.88
Tinted, Reflective, or Shading Glass	59.1	1.8	6.0	6.5	.4	22.4	.9	3.4	8.6	9.0	5.20
Exterior or Interior Shadings or Awnings	53.1	1.6	5.4	5.7	.5	19.0	1.0	3.1	7.5	9.2	5.95
Weather Stripping or Caulking	50.9	1.8	5.2	5.2	.5	18.7	1.0	3.3	7.0	8.4	5.05
None of the Above	19.5	.7	1.7	1.8	.2	7.4	.5	1.7	2.8	2.9	13.74

See footnote at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
ENERGY SOURCES AND END USES											
Energy Sources (Solely or in Combination)											
Electricity	45.0	1.6	4.6	4.5	0.4	16.6	0.9	3.0	6.2	7.3	4.56
Natural Gas	44.4	.7	4.6	4.7	.2	16.8	1.0	3.0	5.8	7.6	6.03
Fuel Oil	52.6	.8	5.2	6.7	.4	20.9	.9	3.2	7.2	7.2	13.24
District Heat	67.5	Q	5.1	8.5	Q	25.0	1.3	3.2	7.0	15.0	15.74
Other	50.2	1.2	3.7	4.2	.4	19.0	1.1	4.1	5.3	11.1	11.91
Energy End Uses (Solely or in Combination)											
Heated Buildings	46.3	1.7	4.6	4.6	.4	17.2	.9	3.1	6.4	7.4	4.59
Air-Conditioned Buildings	49.4	1.8	5.4	4.9	.4	18.0	1.0	3.3	6.6	7.8	4.44
Buildings with Water Heating	48.6	1.7	4.9	4.9	.5	17.9	1.0	3.3	6.5	7.9	4.69
Buildings with Cooking	56.3	1.4	6.0	6.4	.5	21.2	1.7	4.1	5.5	9.6	6.94
Buildings with Manufacturing	52.1	Q	3.0	2.7	.2	20.1	.2	3.4	6.7	14.5	11.71
Space-Heating Energy Source											
Electricity	55.6	5.1	6.0	4.5	.8	19.0	1.1	3.7	7.7	7.7	4.12
Main	59.5	5.6	6.8	5.1	1.0	19.6	1.3	4.4	8.9	6.8	4.80
With Secondary	59.0	4.5	6.7	5.1	1.1	18.5	1.6	Q	7.3	7.9	12.17
Natural Gas Only	50.0	2.7	5.5	2.6	.4	15.6	Q	Q	4.9	7.1	22.27
Other Energy Sources or Combinations	69.0	7.4	7.0	6.8	2.2	22.4	1.0	2.8	10.1	9.4	12.16
With No Secondary	59.6	5.8	6.8	5.1	1.0	19.8	1.2	4.0	9.2	6.7	5.21
Secondary	45.5	3.9	3.8	2.9	.3	17.5	.5	2.1	4.5	9.9	12.13
Other Excluding Electricity	41.8	NC	4.0	4.7	.2	16.3	.9	2.8	5.8	7.2	6.70
Building Not Heated	26.0	NC	3.9	2.6	.4	8.0	.5	2.1	2.7	5.6	21.16
Main Space-Heating Energy Source											
Electricity	59.5	5.6	6.8	5.1	1.0	19.6	1.3	4.4	8.9	6.8	4.80
Natural Gas	41.4	.3	4.4	4.3	.2	15.7	.8	2.6	5.4	7.6	7.13
Fuel Oil	32.6	.2	1.9	2.9	.3	12.9	.7	2.0	6.3	5.3	15.62
District Heat	58.6	Q	4.2	8.2	.2	23.3	1.2	3.1	6.2	10.0	12.47
Other	31.4	Q	1.7	2.4	.3	11.5	Q	Q	4.6	3.9	35.83
Air-Conditioning Energy Source											
Electricity	49.5	1.8	5.9	4.8	.5	17.7	1.0	3.4	6.7	7.9	4.66
Other Excluding Electricity	47.2	Q	NC	6.7	.1	22.0	1.3	2.9	5.4	7.7	9.25
Air-Conditioning Not Performed	22.3	.5	NC	2.3	.2	9.2	.4	1.5	3.8	4.4	17.27
Water-Heating Energy Source											
Electricity	52.8	3.0	5.7	4.7	1.1	17.7	.7	3.5	8.2	8.3	4.85
Other Excluding Electricity	45.7	.8	4.4	5.1	NC	18.0	1.2	3.3	5.4	7.6	7.58
Water Heating Not Performed	21.4	.7	2.3	1.9	NC	8.1	.2	1.0	4.0	3.3	8.70
HEATING AND COOLING											
Percent Heated											
Not Heated	25.6	Q	3.8	2.6	.4	7.9	.5	2.1	2.7	5.6	21.16
1 to 50	22.5	.4	1.6	1.2	.2	8.1	.3	2.6	4.5	3.6	13.82
51 to 99	57.3	1.5	5.8	6.2	.5	20.5	1.0	3.2	8.9	9.6	6.67
100	49.5	2.0	5.1	5.1	.4	18.6	1.0	3.2	6.3	7.8	5.50
Percent Cooled											
Not Cooled	22.3	.5	NC	2.3	.2	9.2	.4	1.5	3.8	4.4	17.27
1 to 50	25.9	.9	1.7	1.6	.2	9.6	.4	1.9	4.2	5.2	7.78
51 to 99	59.6	1.7	6.9	6.7	.5	22.5	1.2	4.2	7.7	8.3	5.51
100	63.0	2.5	7.7	6.6	.6	22.4	1.3	4.0	8.0	9.8	6.82

See footnotes at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)											
Furnaces	39.0	1.4	3.5	2.9	0.4	14.1	0.9	3.4	6.4	6.1	6.69
Boilers	44.0	.9	4.3	5.5	.2	17.8	.7	2.8	5.2	6.6	7.21
Individual Space Heaters	41.8	2.2	3.5	3.6	.4	15.9	.7	2.4	5.9	7.1	5.96
Packaged Heating Units	56.3	2.0	6.4	4.4	.5	20.3	1.1	3.2	7.5	10.9	8.36
Heat Pumps	51.0	3.1	5.9	5.1	.5	17.7	1.0	3.7	6.9	7.2	7.31
Air Ducts	53.8	1.6	5.5	5.5	.4	20.2	1.0	3.4	7.4	8.9	5.08
Heating or Reheating Coils	66.3	1.8	6.2	8.1	.3	25.6	1.0	3.3	7.9	12.2	7.39
Fan-Coil Units	57.6	Q	5.0	6.7	.3	23.0	.9	2.9	6.5	10.9	12.44
Steam or Hot Water Radiators or Baseboards	38.2	.8	2.9	4.9	.2	16.2	.7	2.2	4.5	5.9	8.42
Other	79.5	Q	9.2	12.2	.6	27.8	1.6	6.0	9.3	9.3	19.54
Cooling Equipment (Solely or in Combination)											
Central Chillers	65.7	2.0	7.2	9.4	.3	24.5	.9	3.0	7.7	10.7	8.69
Individual Air Conditioners	39.2	1.5	3.9	3.6	.5	14.0	.8	2.7	4.5	7.8	10.70
Packaged Cooling Units	51.9	1.5	5.8	4.9	.4	18.9	1.1	3.5	7.0	8.8	4.63
Heat Pumps	59.7	3.3	6.1	5.1	.6	19.4	.9	3.9	8.1	12.2	16.07
Air Ducts	54.9	1.9	6.0	5.7	.4	20.4	1.0	3.4	7.2	8.9	4.98
Fan-Coil Units	69.8	2.1	7.0	10.0	.3	26.7	1.0	3.2	8.3	11.2	10.01
Other	43.2	.6	5.5	3.3	.3	19.7	.4	1.8	5.7	5.8	15.18
Year Main Central Chiller Installed											
1959 or Before	61.8	Q	7.1	10.8	.3	21.7	.8	2.5	7.0	5.6	17.17
1960 to 1969	67.8	.9	7.0	7.7	.1	24.3	.6	2.6	7.0	Q	29.29
1970 to 1979	65.4	1.4	6.9	9.2	.5	25.2	.9	3.0	8.2	10.3	12.80
1980 to 1986	69.6	2.6	7.9	11.8	.3	26.5	1.1	3.5	8.7	7.4	11.59
1987 to 1989	57.1	1.0	6.8	7.8	Q	22.1	1.1	3.6	6.6	7.5	16.61
Year Packaged Cooling System Installed											
1959 or Before	45.4	.4	4.9	5.3	.1	20.7	.3	1.8	5.3	6.6	14.05
1960 to 1969	57.0	1.1	5.2	4.4	.3	20.3	.7	2.6	7.5	Q	22.69
1970 to 1979	52.3	2.2	6.4	5.0	.5	19.5	1.2	3.4	6.9	7.0	6.37
1980 to 1986	52.9	1.7	5.7	4.9	.4	18.8	1.2	4.2	7.8	8.2	8.89
1987 to 1989	47.7	.7	5.8	4.9	.4	16.3	1.1	3.7	5.9	8.8	8.70
Computer Area with Separate Air-Conditioning System											
Present in Building	71.6	1.4	6.8	8.7	.3	27.1	.8	3.8	10.9	11.9	6.79
Not Present	35.2	1.6	3.7	3.0	.4	12.7	1.0	2.8	4.4	5.6	4.58
LIGHTING AND REFRIGERATION Percent Lit When Open											
Not Lit	10.5	Q	.6	.5	.1	2.5	.1	.8	1.6	4.3	26.00
1 to 50	17.7	1.3	1.8	2.0	.3	4.4	.4	1.4	2.9	3.2	9.47
51 to 99	48.0	1.3	4.7	5.0	.4	17.3	.7	2.5	6.7	9.3	7.88
100	53.3	1.8	5.5	5.2	.4	20.6	1.2	3.9	7.0	7.7	4.72
Percent Lit When Closed											
Not Lit	35.8	1.9	3.8	3.2	.4	11.7	.8	2.4	5.1	6.5	8.84
1 to 50	49.2	1.3	4.7	5.0	.4	19.3	.8	3.2	6.9	7.7	4.53
51 to 99	88.1	Q	10.1	11.5	.7	35.0	2.5	5.7	9.7	12.0	18.57
100	57.0	.3	10.2	6.6	Q	20.0	Q	Q	1.8	5.2	29.63
Lighting Equipment (Solely or in Combination)											
Incandescent Lamps	45.1	1.6	4.6	4.7	.4	17.7	1.0	3.0	5.3	6.8	5.60
Fluorescent Lamps	46.4	1.6	4.7	4.7	.4	17.1	.9	3.1	6.4	7.5	4.57
High-Intensity Discharge Lamps	54.0	1.7	4.7	5.2	.2	21.8	.7	3.5	6.7	9.5	7.76
Other Lamps	55.1	Q	7.2	7.0	.6	22.7	Q	Q	5.2	5.9	15.06
High-Efficiency Ballasts	58.6	2.2	5.8	6.3	.4	20.3	1.2	4.1	8.8	9.5	6.27

See footnotes at end of table.

Table B5. Energy End-Use Intensities for Electricity, 1989 (Continued)

Building Characteristics	Energy Intensity for Electricity (thousand Btu per sq. ft.)										RSE Row Factor
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other	
RSE Column Factor:	1.0	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Refrigeration Equipment (Solely or in Combination)											
Commercial											
Refrigeration Units	60.7	1.3	6.3	6.5	0.5	22.4	1.8	5.2	6.4	10.3	5.61
Freezers	65.9	1.3	6.8	6.9	.6	24.3	2.0	5.7	6.9	11.3	4.61
Residential											
Refrigerators	46.5	1.4	4.6	4.9	.3	18.0	.7	2.6	6.6	7.4	5.31
Freezers	52.4	1.4	5.7	5.1	.5	20.0	1.4	3.4	5.3	9.8	11.74
Ice-Making Machines	65.8	1.9	7.4	7.6	.6	24.0	1.9	4.8	7.0	10.8	5.73
Refrigerated Vending Machines	54.7	1.6	5.5	5.7	.4	21.0	1.1	3.6	7.3	8.4	3.80
Water Coolers	50.2	1.6	5.0	5.2	.3	19.0	.7	2.9	6.7	8.6	5.26
Other	132.0	Q	14.9	9.8	1.4	39.0	2.3	7.4	15.5	Q	33.37
ENERGY MANAGEMENT											
Occupant Control											
Any Control of Heating	39.7	1.5	4.4	3.6	.5	14.5	.9	2.5	5.4	6.3	4.79
With Thermostats	39.8	1.6	4.4	3.6	.5	14.6	.9	2.4	5.5	6.4	5.75
Any Control of Cooling	41.6	1.7	5.0	3.8	.5	15.0	.9	2.6	5.6	6.5	4.68
With Thermostats	42.0	1.7	5.0	3.8	.5	15.1	.9	2.6	5.6	6.7	5.30
Reduced Use During Off-Hours											
Heating Only	30.3	1.0	1.1	2.9	.3	12.0	.7	2.1	4.6	5.5	17.47
Cooling Only	49.1	Q	5.7	4.3	.6	16.8	1.1	2.7	7.4	8.8	16.60
Heating and Cooling	43.2	1.6	4.5	4.6	.3	15.9	.7	2.5	6.0	7.0	5.61
Computerized Energy Management and Control System											
Present in Building	62.6	1.4	6.5	8.1	.3	24.9	1.0	3.9	6.9	9.7	4.49
Controls Heating and Cooling	62.9	1.4	6.6	8.2	.2	25.0	1.0	3.9	7.0	9.7	4.47
Controls Lighting	58.3	1.0	5.5	5.7	.1	23.0	1.1	4.1	6.7	10.9	9.28
Controls Other	69.2	1.1	9.3	8.2	.3	27.0	1.3	4.4	7.0	10.6	6.57
Other Energy Management											
Regular HVAC Maintenance	54.2	1.8	5.5	5.6	.4	20.3	1.0	3.6	7.2	8.9	4.76
Participated in Utility Conservation Program	53.9	2.5	5.5	7.0	.4	19.7	1.0	3.7	6.5	7.7	5.69

* = Value rounds to zero in the units displayed.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B6. End-Use Consumption Percentages for Electricity, 1989

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
All Buildings	100	3	10	10	1	37	2	7	14	16
Building Floorspace (Square Feet)										
1,001 to 5,000	100	5	13	9	3	30	5	10	16	10
5,001 to 10,000	100	4	13	9	1	34	2	7	17	14
10,001 to 25,000	100	6	10	7	1	33	2	8	19	14
25,001 to 50,000	100	5	10	8	1	38	2	8	14	14
50,001 to 100,000	100	2	8	9	*	37	1	7	10	24
100,001 to 200,000	100	3	9	11	1	40	1	5	12	18
200,001 to 500,000	100	2	10	14	*	41	1	4	11	17
Over 500,000	100	1	9	14	*	42	1	5	12	15
Year Constructed										
1899 or Before	100	4	7	10	3	34	4	10	12	15
1900 to 1919	100	3	6	9	1	38	1	5	13	24
1920 to 1945	100	Q	11	14	1	36	3	6	11	12
1946 to 1959	100	1	9	11	1	42	1	5	14	15
1960 to 1969	100	3	10	9	1	37	2	5	12	21
1970 to 1979	100	4	11	10	1	38	2	7	13	14
1980 to 1983	100	5	10	8	1	33	2	6	16	19
1984 to 1986	100	4	9	12	1	34	2	8	17	13
1987 to 1989	100	2	9	7	1	33	2	13	17	17
BUILDING USE										
Principal Building Activity										
Assembly	100	10	13	14	1	34	*	6	3	19
Education	100	5	8	11	1	53	*	5	5	13
Food Sales	100	*	15	8	1	18	9	42	1	6
Food Service	100	1	17	11	2	24	15	14	2	13
Health Care	100	2	20	14	2	44	3	4	4	8
Lodging	100	8	12	15	4	34	10	11	1	5
Mercantile and Service	100	2	9	5	1	37	1	2	21	23
Office	100	3	10	17	*	35	*	4	21	8
Parking Garage	100	Q	2	2	1	46	*	5	6	38
Public Order and Safety	100	Q	5	8	*	44	*	6	5	29
Warehouse	100	3	2	1	*	42	1	10	24	16
Other	100	Q	7	*	*	38	*	3	6	44
Vacant	100	2	6	1	*	34	*	6	5	45
Weekly Operating Hours										
39 or Fewer	100	7	10	14	2	32	1	9	9	17
40 to 48	100	4	11	10	1	36	1	6	16	17
49 to 60	100	5	9	11	1	35	1	5	19	14
61 to 84	100	3	10	10	1	36	1	6	14	19
85 to 167	100	3	10	8	1	40	3	9	12	15
168 (Open Continuously)	100	4	11	11	1	37	4	7	10	16
Workers										
4 or Fewer	100	5	11	10	2	30	4	10	15	13
5 to 9	100	6	11	8	2	32	3	7	16	14
10 to 19	100	4	13	8	1	31	3	8	18	13
20 to 49	100	4	10	7	1	39	2	8	14	15
50 to 99	100	5	10	7	1	38	2	8	11	17
100 to 249	100	2	9	9	1	42	1	6	12	18
250 or More	100	2	9	15	*	38	1	4	13	18

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Ownership and Occupancy										
Nongovernment Owned	100	4	11	10	1	36	2	7	15	15
Owner Occupied	100	4	11	11	1	36	2	8	13	14
Single Establishment	100	4	11	10	1	35	3	9	13	14
Multiple Establishment	100	4	10	13	*	37	1	4	15	15
Nonowner Occupied	100	3	10	8	1	36	2	6	19	15
Single Establishment	100	3	9	8	1	37	2	8	19	12
Multiple Establishment	100	4	11	8	1	34	1	4	18	18
Vacant	100	2	10	2	1	39	*	6	6	33
Government Owned	100	3	8	10	1	40	1	5	10	21
Federal	100	Q	6	13	Q	45	1	4	12	16
State	100	2	8	9	*	35	2	6	12	26
Local	100	4	9	11	1	42	1	5	8	19
Multibuilding Facility										
Not on Multibuilding Facility	100	3	10	10	1	36	3	8	15	14
Part of Multibuilding Facility	100	4	10	10	1	38	1	5	12	19
On Facility with Central Plant	100	2	9	11	*	39	2	6	10	21
Percent Vacant at Least Three Months										
0	100	4	10	9	1	37	2	7	14	16
1 to 50	100	3	11	12	1	37	1	4	14	18
51 to 99	100	3	5	10	*	44	Q	7	10	18
100	100	5	10	10	2	34	3	10	9	19
Months in Use Out of Past 12 Months										
0 to 8	100	4	10	9	1	31	3	10	12	20
9 to 11	100	7	9	15	1	42	1	6	5	14
12	100	3	10	10	1	37	2	7	14	16
LOCATION										
Census Region										
Northeast	100	4	6	10	1	39	2	6	16	17
Midwest	100	4	8	10	1	39	2	8	13	14
South	100	3	14	10	1	35	2	7	13	16
West	100	3	10	11	1	35	2	6	14	18
Census Division										
Northeast										
New England	100	3	6	11	1	40	2	7	14	16
Middle Atlantic	100	4	6	9	1	39	2	6	16	18
Midwest										
East North Central	100	4	7	9	1	40	2	9	13	14
West North Central	100	5	11	10	1	38	2	7	12	14
South										
South Atlantic	100	3	15	10	1	35	2	6	13	14
East South Central	100	5	9	8	2	33	3	7	14	19
West South Central	100	2	16	10	1	36	2	7	11	16
West										
Mountain	100	3	11	13	1	37	2	7	14	13
Pacific	100	2	10	11	1	35	2	6	15	20
Metropolitan Status										
Metropolitan	100	3	10	10	1	37	2	7	14	17
Nonmetropolitan	100	6	9	8	2	37	3	8	14	14

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Climate Zone: 45-Year Average										
Under 2,000 CDD and --										
Over 7,000 HDD	100	5	5	8	1	40	3	11	14	15
5,500-7,000 HDD	100	4	7	11	1	40	2	7	14	15
4,000-5,499 HDD	100	5	8	10	1	40	2	6	14	14
Under 4,000 HDD	100	2	11	10	1	34	2	6	14	20
2,000 CDD or More and --										
Under 4,000 HDD	100	2	19	10	1	32	2	7	12	15
1989 Degree-Days										
Under 2,000 CDD and --										
Over 7,000 HDD	100	4	5	8	1	41	3	10	13	15
5,500-7,000 HDD	100	4	8	11	1	39	2	6	14	15
4,000-5,499 HDD	100	5	7	10	1	39	2	6	15	15
Under 4,000 HDD	100	2	11	10	1	33	2	6	14	21
2,000 CDD or More and --										
Under 4,000 HDD	100	2	19	10	1	32	2	7	12	15
STRUCTURE										
Floors										
1	100	3	12	8	1	35	3	8	15	15
2	100	4	9	7	1	38	2	7	14	19
3	100	5	9	11	1	33	1	5	12	22
4 to 6	100	3	10	12	1	42	2	6	10	14
7 or More	100	2	10	18	1	38	2	5	13	11
Wall Materials										
Masonry	100	3	11	10	1	36	2	7	13	16
Siding or Shingles	100	6	10	8	2	37	3	7	15	13
Metal Panels	100	4	8	8	1	39	1	6	17	16
Concrete Panels	100	4	9	10	1	36	2	6	12	21
Window Glass	100	4	9	18	*	37	Q	5	17	9
Other	100	3	7	15	*	41	1	4	15	14
Roof Materials										
Built-Up	100	3	10	10	1	38	2	6	13	17
Shingles (Not Wood)	100	4	12	10	2	35	3	9	13	13
Metal Surfacing	100	3	7	6	1	38	1	6	19	20
Synthetic or Rubber	100	4	10	11	1	36	1	7	14	16
Slate or Tile	100	4	12	11	1	33	4	8	14	13
Concrete	100	Q	9	17	Q	39	1	5	13	13
Wooden Materials	100	4	15	12	1	32	4	8	9	15
Other	100	Q	14	13	Q	40	3	4	10	10
Building Shell Conservation Features (Solely or in Combination)										
Roof or Ceiling Insulation	100	4	11	10	1	37	2	7	14	15
Wall Insulation	100	4	10	10	1	38	2	7	14	15
Storm or Multiple Glazing	100	4	10	10	1	37	2	8	15	13
Tinted, Reflective, or Shading Glass	100	3	10	11	1	38	2	6	15	15
Exterior or Interior Shadings or Awnings	100	3	10	11	1	36	2	6	14	17
Weather Stripping or Caulking	100	4	10	10	1	37	2	6	14	16
None of the Above	100	3	9	9	1	38	2	9	14	15

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
ENERGY SOURCES AND END USES										
Energy Sources (Solely or in Combination)										
Electricity	100	3	10	10	1	37	2	7	14	16
Natural Gas	100	2	10	11	1	38	2	7	13	17
Fuel Oil	100	2	10	13	1	40	2	6	14	14
District Heat	100	Q	8	13	*	37	2	5	10	22
Other	100	2	7	8	1	38	2	8	10	22
Energy End Uses (Solely or in Combination)										
Heated Buildings	100	4	10	10	1	37	2	7	14	16
Air-Conditioned Buildings	100	4	11	10	1	37	2	7	13	16
Buildings with Water Heating	100	3	10	10	1	37	2	7	13	16
Buildings with Cooking	100	2	11	11	1	38	3	7	10	17
Buildings with Manufacturing	100	3	6	5	*	38	*	7	13	28
Space-Heating Energy Source										
Electricity	100	9	11	8	1	34	2	7	14	14
Main	100	9	11	9	2	33	2	7	15	12
With Secondary	100	8	11	9	2	31	3	11	12	13
Natural Gas Only	100	5	11	5	1	31	Q	18	10	14
Other Energy Sources or Combinations	100	11	10	10	3	32	2	4	15	14
With No Secondary	100	10	11	8	2	33	2	7	15	11
Secondary	100	9	8	6	1	39	1	5	10	22
Other Excluding Electricity	100	NC	9	11	*	39	2	7	14	17
Building Not Heated	100	NC	15	10	2	31	2	8	10	22
Main Space-Heating Energy Source										
Electricity	100	9	11	9	2	33	2	7	15	12
Natural Gas	100	1	11	10	*	38	2	6	13	18
Fuel Oil	100	1	6	9	1	40	2	6	19	16
District Heat	100	Q	7	14	*	40	2	5	11	17
Other	100	Q	5	8	1	36	Q	19	15	13
Air-Conditioning Energy Source										
Electricity	100	4	12	10	1	36	2	7	14	16
Other Excluding Electricity	100	2	NC	14	*	47	3	6	11	16
Air-Conditioning Not Performed	100	2	NC	10	1	41	2	7	17	20
Water-Heating Energy Source										
Electricity	100	6	11	9	2	34	1	7	15	16
Other Excluding Electricity	100	2	10	11	NC	39	3	7	12	17
Water Heating Not Performed	100	3	11	9	NC	38	1	5	19	15
HEATING AND COOLING										
Percent Heated										
Not Heated	100	Q	15	10	2	31	2	8	11	22
1 to 50	100	2	7	5	1	36	2	12	20	16
51 to 99	100	3	10	11	1	36	2	6	16	17
100	100	4	10	10	1	38	2	6	13	16
Percent Cooled										
Not Cooled	100	2	NC	10	1	41	2	7	17	20
1 to 50	100	3	7	6	1	37	2	7	16	20
51 to 99	100	3	12	11	1	38	2	7	13	14
100	100	4	12	11	1	36	2	6	13	16

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Heating Equipment (Solely or in Combination)										
Furnaces	100	4	9	7	1	36	2	9	16	16
Boilers	100	2	10	12	1	41	2	6	12	15
Individual Space Heaters	100	5	8	9	1	38	2	6	14	17
Packaged Heating Units	100	3	11	8	1	36	2	6	13	19
Heat Pumps	100	6	12	10	1	35	2	7	13	14
Air Ducts	100	3	10	10	1	38	2	6	14	16
Heating or Reheating Coils	100	3	9	12	*	39	1	5	12	18
Fan-Coil Units	100	2	9	12	*	40	1	5	11	19
Steam or Hot Water Radiators or Baseboards	100	2	7	13	*	42	2	6	12	15
Other	100	Q	12	15	1	35	2	8	12	12
Cooling Equipment (Solely or in Combination)										
Central Chillers	100	3	11	14	1	37	1	5	12	16
Individual Air Conditioners	100	4	10	9	1	36	2	7	12	20
Packaged Cooling Units	100	3	11	9	1	36	2	7	14	17
Heat Pumps	100	6	10	9	1	32	2	7	14	20
Air Ducts	100	3	11	10	1	37	2	6	13	16
Fan-Coil Units	100	3	10	14	*	38	1	5	12	16
Other	100	1	13	8	1	46	1	4	13	13
Year Main Central Chiller Installed										
1959 or Before	100	Q	12	18	1	35	1	4	11	9
1960 to 1969	100	1	10	11	*	36	1	4	10	26
1970 to 1979	100	2	11	14	1	39	1	5	12	16
1980 to 1986	100	4	11	17	*	38	2	5	12	11
1987 to 1989	100	2	12	14	Q	39	2	6	12	13
Year Packaged Cooling System Installed										
1959 or Before	100	Q	11	12	Q	45	1	4	12	15
1960 to 1969	100	2	9	8	1	36	1	5	13	26
1970 to 1979	100	4	12	10	1	37	2	7	13	13
1980 to 1986	100	3	11	9	1	36	2	8	15	16
1987 to 1989	100	1	12	10	1	34	2	8	12	18
Computer Area with Separate Air-Conditioning System										
Present in Building	100	2	10	12	*	38	1	5	15	17
Not Present	100	5	11	8	1	36	3	8	13	16
LIGHTING AND REFRIGERATION Percent Lit When Open										
Not Lit	100	Q	5	5	1	24	1	8	15	41
1 to 50	100	7	10	11	2	25	2	8	16	18
51 to 99	100	3	10	10	1	36	2	5	14	19
100	100	3	10	10	1	39	2	7	13	14
Percent Lit When Closed										
Not Lit	100	5	11	9	1	33	2	7	14	18
1 to 50	100	3	9	10	1	39	2	7	14	16
51 to 99	100	1	11	13	1	40	3	6	11	14
100	100	Q	18	12	Q	35	5	Q	3	9
Lighting Equipment (Solely or in Combination)										
Incandescent Lamps	100	4	10	10	1	39	2	7	12	15
Fluorescent Lamps	100	3	10	10	1	37	2	7	14	16
High-Intensity Discharge Lamps	100	3	9	10	*	40	1	6	12	18
Other Lamps	100	2	13	13	1	41	2	8	9	11
High-Efficiency Ballasts	100	4	10	11	1	35	2	7	15	16

See footnotes at end of table.

Table B6. End-Use Consumption Percentages for Electricity, 1989 (Continued)

Building Characteristics	Percent of Electricity Consumption									
	Total	Space Heating	Cooling	Ventil-ation	Water Heating	Lighting	Cooking	Refrig-eration	Office Equip-ment	Other
Refrigeration Equipment (Solely or in Combination)										
Commercial										
Refrigeration Units	100	2	10	11	1	37	3	9	11	17
Freezers	100	2	10	11	1	37	3	9	10	17
Residential										
Refrigerators	100	3	10	10	1	39	1	6	14	16
Freezers	100	3	11	10	1	38	3	6	10	19
Ice-Making Machines	100	3	11	11	1	36	3	7	11	16
Refrigerated Vending Machines	100	3	10	10	1	38	2	7	13	15
Water Coolers	100	3	10	10	1	38	1	6	13	17
Other	100	Q	11	7	1	30	2	6	12	Q
ENERGY MANAGEMENT										
Occupant Control										
Any Control of Heating	100	4	11	9	1	37	2	6	14	16
With Thermostats	100	4	11	9	1	37	2	6	14	16
Any Control of Cooling	100	4	12	9	1	36	2	6	14	16
With Thermostats	100	4	12	9	1	36	2	6	13	16
Reduced Use During Off-Hours										
Heating Only	100	3	4	10	1	40	2	7	15	18
Cooling Only	100	4	12	9	1	34	2	5	15	18
Heating and Cooling	100	4	10	11	1	37	2	6	14	16
Computerized Energy Management and Control System										
Present in Building	100	2	10	13	*	40	2	6	11	15
Controls Heating and Cooling	100	2	10	13	*	40	2	6	11	15
Controls Lighting	100	2	9	10	*	40	2	7	11	19
Controls Other	100	2	13	12	*	39	2	6	10	15
Other Energy Management										
Regular HVAC Maintenance	100	3	10	10	1	37	2	7	13	16
Participated in Utility Conservation Program	100	5	10	13	1	37	2	7	12	14

* = Value rounds to zero in the units displayed.
NC = No cases in responding sample.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.
Notes: • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B7. Consumption of Natural Gas by End Use, 1989

Building Characteristics	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
All Buildings	2,073	1,265	320	198	290	7.27
Building Floorspace (Square Feet)						
1,001 to 5,000	302	183	62	35	23	7.78
5,001 to 10,000	265	174	43	11	37	12.17
10,001 to 25,000	278	200	43	12	24	8.90
25,001 to 50,000	309	207	31	15	56	12.87
50,001 to 100,000	249	186	31	12	20	12.43
100,001 to 200,000	238	153	42	28	16	18.86
200,001 to 500,000	228	110	43	17	Q	31.35
Over 500,000	203	53	26	Q	Q	37.56
Year Constructed						
1899 or Before	53	43	5	2	2	27.79
1900 to 1919	123	74	12	Q	Q	26.02
1920 to 1945	244	155	20	19	Q	20.89
1946 to 1959	411	234	71	Q	46	16.84
1960 to 1969	458	309	62	25	62	13.09
1970 to 1979	441	261	87	50	44	13.05
1980 to 1983	117	61	21	10	25	14.15
1984 to 1986	141	79	29	14	19	15.60
1987 to 1989	85	50	14	10	Q	22.82
BUILDING USE						
Principal Building Activity						
Assembly	174	135	13	17	8	9.72
Education	323	237	15	Q	20	19.04
Food Sales	27	14	1	12	1	23.80
Food Service	128	37	44	41	7	11.93
Health Care	186	45	71	29	Q	25.43
Lodging	187	78	84	17	9	13.83
Mercantile and Service	417	275	47	19	76	12.80
Office	238	171	27	4	36	11.63
Parking Garage	Q	Q	Q	Q	Q	NF
Public Order and Safety	25	21	1	Q	1	33.20
Warehouse	206	156	4	Q	Q	24.47
Other	102	57	6	Q	34	33.01
Vacant	49	31	Q	Q	Q	45.09
Weekly Operating Hours						
39 or Fewer	100	85	8	2	5	10.94
40 to 48	388	309	28	7	44	8.24
49 to 60	326	245	23	Q	46	10.76
61 to 84	342	212	47	34	49	10.77
85 to 167	360	193	44	Q	37	20.22
168 (Open Continuously)	557	222	171	56	108	13.40
Workers						
4 or Fewer	300	220	51	12	16	8.34
5 to 9	218	145	38	18	17	8.16
10 to 19	248	157	40	18	33	8.65
20 to 49	332	228	49	22	34	9.18
50 to 99	253	179	19	14	42	16.71
100 to 249	358	216	38	29	75	20.83
250 or More	364	121	85	Q	73	23.29

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
Ownership and Occupancy						
Nongovernment Owned	1,601	950	257	130	264	8.01
Owner Occupied	1,292	749	213	103	228	8.64
Single Establishment	1,083	622	181	83	197	10.40
Multiple Establishment	210	127	32	20	31	11.20
Nonowner Occupied	309	201	44	27	36	14.72
Single Establishment	176	123	18	15	20	22.17
Multiple Establishment	102	62	21	12	7	16.89
Vacant	Q	17	Q	Q	Q	NF
Government Owned	472	315	63	Q	26	15.34
Federal	Q	16	5	Q	Q	NF
State	112	79	18	4	11	21.52
Local	290	220	40	17	13	12.64
Multibuilding Facility						
Not on Multibuilding Facility	1,168	765	175	80	147	7.35
Part of Multibuilding Facility	905	500	145	118	143	12.68
On Facility with Central Plant	423	182	66	Q	90	24.78
Percent Vacant at Least Three Months						
0	1,562	988	257	119	198	7.65
1 to 50	324	178	41	29	76	17.42
51 to 99	Q	47	5	Q	4	NF
100	82	52	16	1	Q	29.05
Months in Use Out of Past 12 Months						
0 to 8	72	42	16	9	4	18.41
9 to 11	138	106	16	2	Q	21.43
12	1,863	1,117	288	187	271	7.43
LOCATION						
Census Region						
Northeast	353	235	52	30	Q	17.15
Midwest	831	579	101	46	105	10.12
South	498	263	84	42	108	17.83
West	391	189	82	Q	41	14.77
Census Division						
Northeast						
New England	39	19	Q	Q	4	22.84
Middle Atlantic	314	215	40	26	Q	19.38
Midwest						
East North Central	561	398	73	36	54	12.18
West North Central	270	180	28	11	Q	20.01
South						
South Atlantic	198	106	24	15	Q	31.50
East South Central	126	64	Q	9	28	29.22
West South Central	174	94	34	19	27	19.57
West						
Mountain	197	97	28	Q	13	25.75
Pacific	195	91	54	21	28	14.77
Metropolitan Status						
Metropolitan	1,608	939	254	176	239	7.68
Nonmetropolitan	465	326	66	22	51	18.83

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
Climate Zone: 45-Year Average						
Under 2,000 CDD and --						
Over 7,000 HDD	252	178	39	11	25	21.64
5,500-7,000 HDD	850	579	94	Q	81	12.19
4,000-5,499 HDD	407	224	67	38	Q	19.13
Under 4,000 HDD	350	189	67	31	63	20.00
2,000 CDD or More and --						
Under 4,000 HDD	213	96	54	22	42	20.93
1989 Degree-Days						
Under 2,000 CDD and --						
Over 7,000 HDD	375	279	44	21	32	19.70
5,500-7,000 HDD	953	593	123	Q	139	13.89
4,000-5,499 HDD	209	124	39	31	16	14.77
Under 4,000 HDD	339	184	64	28	63	22.18
2,000 CDD or More and --						
Under 4,000 HDD	197	85	50	20	41	21.84
STRUCTURE						
Floors						
1	732	485	104	53	90	9.75
2	560	360	75	31	95	12.14
3	252	192	26	11	24	8.21
4 to 6	331	161	70	Q	32	22.31
7 or More	197	68	46	34	Q	26.51
Wall Materials						
Masonry	1,509	943	238	122	205	7.85
Siding or Shingles	120	73	26	10	11	12.43
Metal Panels	185	129	15	3	38	30.61
Concrete Panels	180	75	22	Q	30	31.77
Window Glass	49	28	Q	Q	4	34.55
Other	30	17	Q	2	Q	41.46
Roof Materials						
Built-Up	1,052	630	164	121	137	10.12
Shingles (Not Wood)	333	216	56	25	35	13.38
Metal Surfacing	226	160	16	7	43	25.15
Synthetic or Rubber	259	155	50	20	35	15.37
Slate or Tile	86	51	15	16	5	17.67
Concrete	23	12	9	1	1	29.11
Wooden Materials	29	19	5	3	2	24.30
Other	Q	22	Q	Q	Q	NF
Building Shell Conservation Features (Solely or in Combination)						
Roof or Ceiling Insulation	1,571	943	257	161	209	8.65
Wall Insulation	1,096	629	170	127	170	10.85
Storm or Multiple Glazing	959	577	181	85	116	8.43
Tinted, Reflective, or Shading Glass	769	414	119	Q	130	12.15
Exterior or Interior Shadings or Awnings	878	498	136	124	119	10.00
Weather Stripping or Caulking	1,553	950	251	173	179	7.32
None of the Above	141	76	23	9	Q	21.93

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
ENERGY SOURCES AND END USES						
Energy Sources (Solely or in Combination)						
Electricity	2,068	1,264	319	198	288	7.38
Natural Gas	2,073	1,265	320	198	290	7.27
Fuel Oil	427	206	94	42	85	20.36
District Heat	Q	Q	11	Q	Q	NF
Other	198	94	21	Q	Q	39.94
Energy End Uses (Solely or in Combination)						
Heated Buildings	2,051	1,262	309	195	286	7.36
Air-Conditioned Buildings	1,780	1,045	285	191	260	7.46
Buildings with Water Heating	1,960	1,171	320	196	273	7.40
Buildings with Cooking	975	478	199	198	100	9.69
Buildings with Manufacturing	286	144	12	Q	81	28.43
Space-Heating Energy Source						
Natural Gas	1,856	1,236	257	102	261	7.44
Main	1,778	1,195	247	98	238	7.62
With Secondary	560	318	99	26	116	16.72
Electricity Only	156	100	17	5	Q	19.84
Other Energy Sources or Combinations	360	192	78	20	70	20.36
With No Secondary	1,218	877	148	72	122	6.47
Secondary	78	41	Q	4	23	30.02
Other Excluding Natural Gas	195	26	51	Q	25	29.19
Building Not Heated	22	Q	11	Q	4	27.76
Main Space-Heating Energy Source						
Electricity	170	54	51	29	36	17.17
Natural Gas	1,778	1,195	247	98	238	7.62
Fuel Oil	25	8	Q	4	2	NF
District Heat	Q	Q	9	Q	Q	99.99
Other	6	Q	*	Q	Q	42.65
Water-Heating Energy Source						
Natural Gas	1,451	878	320	100	153	7.09
Other Excluding Natural Gas	509	293	NC	Q	120	17.70
Water Heating Not Performed	113	94	NC	2	Q	18.63
HEATING AND COOLING						
Percent Heated						
Not Heated	23	Q	12	Q	4	26.91
1 to 50	128	80	19	5	25	11.38
51 to 99	274	170	44	19	41	19.77
100	1,648	1,011	245	171	220	7.63
Percent Cooled						
Not Cooled	293	220	35	7	30	22.25
1 to 50	616	451	46	17	103	13.11
51 to 99	424	219	96	56	54	11.23
100	740	375	143	118	103	11.26

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)						
Furnaces	680	455	84	38	103	12.58
Boilers	1,043	667	178	55	144	9.35
Individual Space Heaters	787	455	103	Q	148	13.62
Packaged Heating Units	593	336	83	56	117	11.11
Heat Pumps	248	118	44	19	67	18.67
Air Ducts	1,367	771	220	161	216	9.79
Heating or Reheating Coils	629	303	113	Q	117	15.71
Fan-Coil Units	551	281	99	Q	80	14.63
Steam or Hot Water Radiators or Baseboards	776	453	107	Q	116	NF
Other	Q	35	10	3	Q	99.99
Cooling Equipment (Solely or in Combination)						
Central Chillers	574	253	118	Q	95	15.44
Individual Air Conditioners	719	455	122	52	90	10.36
Packaged Cooling Units	1,257	758	191	156	152	8.58
Heat Pumps	239	114	36	22	68	20.17
Air Ducts	1,268	709	216	157	185	9.01
Fan-Coil Units	452	187	98	Q	71	NF
Other	Q	12	Q	Q	Q	99.99
ENERGY MANAGEMENT						
Occupant Control						
Any Control of Heating	895	535	153	78	129	8.28
With Thermostats	825	486	143	70	126	8.81
Any Control of Cooling	868	510	157	79	122	8.45
With Thermostats	784	452	138	74	119	9.13
Reduced Use During Off-Hours						
Heating Only	279	208	32	10	29	21.37
Cooling Only	150	73	16	Q	Q	20.03
Heating and Cooling	1,214	767	149	128	171	8.89
Computerized Energy Management and Control System						
Present in Building	495	242	82	Q	87	15.47
Controls Heating and Cooling	481	237	77	Q	84	16.09
Controls Lighting	143	49	14	Q	Q	40.75
Controls Other	120	50	17	8	Q	45.83
Other Energy Management						
Regular HVAC Maintenance	1,631	964	258	161	248	8.43
Participated in Utility Conservation Program	404	235	74	37	58	15.03

[a] Includes cooling.

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

NF = No applicable RSE row/column factor.

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

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B8. Energy End-Use Intensities for Natural Gas, 1989

Building Characteristics	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
All Buildings	50.4	30.7	7.8	4.8	7.0	5.91
Building Floorspace (Square Feet)						
1,001 to 5,000	88.3	53.5	18.0	10.2	6.7	4.96
5,001 to 10,000	67.1	43.9	11.0	2.9	9.3	11.63
10,001 to 25,000	48.3	34.7	7.4	2.0	4.1	6.51
25,001 to 50,000	56.7	38.0	5.7	2.7	10.2	11.69
50,001 to 100,000	40.1	29.9	5.0	1.9	3.3	9.67
100,001 to 200,000	39.6	25.4	7.0	4.6	2.6	18.17
200,001 to 500,000	45.2	21.8	8.4	3.3	Q	26.13
Over 500,000	38.5	10.0	4.9	Q	Q	29.95
Year Constructed						
1899 or Before	52.3	42.6	5.1	2.3	2.3	19.97
1900 to 1919	40.2	24.0	3.8	Q	Q	30.69
1920 to 1945	42.5	27.0	3.4	3.4	Q	15.03
1946 to 1959	56.8	32.3	9.8	Q	6.4	11.28
1960 to 1969	54.0	36.4	7.3	3.0	7.3	10.14
1970 to 1979	54.4	32.2	10.7	6.1	5.4	13.87
1980 to 1983	53.6	27.8	9.4	4.8	11.6	12.66
1984 to 1986	40.9	22.9	8.4	4.0	5.6	18.94
1987 to 1989	45.4	26.8	7.7	5.5	Q	19.37
BUILDING USE						
Principal Building Activity						
Assembly	40.4	31.4	3.0	4.0	1.9	11.33
Education	48.7	35.6	2.2	Q	3.0	11.47
Food Sales	49.8	24.6	1.5	22.6	1.0	16.88
Food Service	156.4	44.8	53.3	49.9	8.5	9.53
Health Care	116.3	28.4	44.5	18.2	Q	10.48
Lodging	73.7	30.7	33.0	6.6	3.4	11.94
Mercantile and Service	47.4	31.3	5.4	2.2	8.6	10.21
Office	33.0	23.7	3.7	.6	4.9	11.19
Parking Garage	37.6	28.2	Q	Q	Q	47.02
Public Order and Safety	55.7	48.8	Q	Q	2.6	33.93
Warehouse	40.2	30.5	.7	Q	Q	22.86
Other	109.1	61.2	6.3	Q	36.9	18.36
Vacant	Q	16.2	Q	Q	Q	NF
Weekly Operating Hours						
39 or Fewer	38.0	32.4	2.9	.9	1.8	9.06
40 to 48	42.3	33.7	3.0	.8	4.8	8.15
49 to 60	38.5	28.9	2.7	Q	5.5	9.40
61 to 84	43.0	26.6	5.9	4.3	6.2	11.28
85 to 167	54.8	29.3	6.7	13.1	5.7	16.39
168 (Open Continuously)	87.7	34.9	26.8	8.8	17.1	11.18
Workers						
4 or Fewer	44.6	32.7	7.6	1.8	2.4	11.29
5 to 9	42.0	28.0	7.3	3.4	3.3	9.37
10 to 19	55.7	35.3	8.9	4.0	7.4	9.10
20 to 49	50.2	34.4	7.3	3.3	5.2	9.29
50 to 99	47.3	33.4	3.6	2.6	7.8	16.09
100 to 249	71.0	42.8	7.6	5.8	14.8	14.03
250 or More	46.9	15.5	10.9	Q	9.4	14.93

See footnote at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
Ownership and Occupancy						
Nongovernment Owned	50.5	30.0	8.1	4.1	8.3	6.61
Owner Occupied	54.7	31.7	9.0	4.4	9.6	7.13
Single Establishment	63.1	36.2	10.6	4.8	11.5	8.68
Multiple Establishment	32.4	19.6	4.9	3.1	4.7	13.59
Nonowner Occupied	38.3	24.9	5.4	3.4	4.5	14.39
Single Establishment	41.0	28.7	4.3	3.5	4.6	20.79
Multiple Establishment	29.0	17.6	5.9	3.4	2.1	15.42
Vacant	Q	60.2	Q	Q	Q	NF
Government Owned	50.0	33.4	6.7	Q	2.8	10.45
Federal	76.3	17.3	5.4	51.8	Q	17.88
State	48.3	34.0	7.8	1.7	4.8	18.59
Local	46.8	35.5	6.4	2.7	2.1	10.58
Multibuilding Facility						
Not on Multibuilding Facility	44.7	29.3	6.7	3.1	5.6	7.06
Part of Multibuilding Facility	60.3	33.3	9.6	7.9	9.5	7.85
On Facility with Central Plant	91.4	39.4	14.3	18.3	19.5	13.32
Percent Vacant at Least Three Months						
0	56.9	36.0	9.4	4.3	7.2	6.21
1 to 50	35.1	19.3	4.5	3.1	8.3	15.18
51 to 99	36.8	16.6	1.7	Q	1.3	36.19
100	51.6	32.9	10.3	.7	Q	27.59
Months in Use Out of Past 12 Months						
0 to 8	41.3	24.2	9.4	5.3	2.4	16.22
9 to 11	52.4	40.2	5.9	.7	Q	17.23
12	50.7	30.4	7.8	5.1	7.4	6.57
LOCATION						
Census Region						
Northeast	41.5	27.5	6.1	3.5	4.2	15.13
Midwest	64.8	45.1	7.9	3.6	8.2	8.71
South	42.7	22.6	7.2	3.6	9.3	13.83
West	48.0	23.1	10.1	Q	5.1	7.97
Census Division						
Northeast						
New England	31.8	15.7	Q	Q	3.6	24.95
Middle Atlantic	43.1	29.5	5.6	3.6	4.3	17.07
Midwest						
East North Central	63.8	45.3	8.3	4.1	6.2	11.99
West North Central	67.2	44.9	7.1	2.7	12.5	11.90
South						
South Atlantic	46.7	24.9	5.8	3.4	12.6	22.34
East South Central	61.8	31.4	Q	4.3	13.6	22.35
West South Central	32.3	17.4	6.3	3.5	5.0	18.59
West						
Mountain	63.0	31.1	9.0	Q	4.2	10.42
Pacific	38.7	18.2	10.8	4.1	5.6	8.85
Metropolitan Status						
Metropolitan	46.9	27.4	7.4	5.1	7.0	6.90
Nonmetropolitan	67.7	47.5	9.7	3.2	7.4	9.34

See footnote at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
Climate Zone: 45-Year Average						
Under 2,000 CDD and --						
Over 7,000 HDD	82.4	57.9	12.6	3.6	8.2	9.60
5,500-7,000 HDD	61.2	41.6	6.8	Q	5.8	8.27
4,000-5,499 HDD	42.1	23.1	6.9	3.9	8.2	14.31
Under 4,000 HDD	41.5	22.5	7.9	3.6	7.5	16.17
2,000 CDD or More and --						
Under 4,000 HDD	35.1	15.7	8.8	3.6	7.0	14.18
1989 Degree-Days						
Under 2,000 CDD and --						
Over 7,000 HDD	73.3	54.5	8.5	4.0	6.2	7.61
5,500-7,000 HDD	57.4	35.7	7.4	Q	8.4	9.10
4,000-5,499 HDD	35.1	20.8	6.5	5.2	2.6	14.74
Under 4,000 HDD	42.8	23.3	8.1	3.6	7.9	14.87
2,000 CDD or More and --						
Under 4,000 HDD	35.5	15.4	9.1	3.6	7.4	14.95
STRUCTURE						
Floors						
1	52.9	35.1	7.5	3.8	6.5	7.95
2	51.0	32.8	6.8	2.8	8.7	11.59
3	44.1	33.5	4.5	2.0	4.2	12.14
4 to 6	54.8	26.6	11.5	Q	5.3	12.43
7 or More	43.0	14.9	10.1	7.5	Q	22.83
Wall Materials						
Masonry	51.4	32.1	8.1	4.2	7.0	6.74
Siding or Shingles	51.0	31.2	11.1	4.2	4.5	16.44
Metal Panels	69.6	48.5	5.6	1.2	14.4	27.30
Concrete Panels	36.9	15.3	4.5	Q	6.0	19.00
Window Glass	Q	22.5	Q	Q	Q	NF
Other	45.1	25.6	12.3	3.5	Q	30.14
Roof Materials						
Built-Up	47.9	28.7	7.5	5.5	6.2	9.53
Shingles (Not Wood)	47.5	30.8	8.0	3.6	5.1	9.81
Metal Surfacing	59.6	42.1	4.1	2.0	11.4	21.21
Synthetic or Rubber	58.4	35.0	11.2	4.4	7.8	10.03
Slate or Tile	46.5	27.3	8.1	8.5	2.6	14.87
Concrete	Q	Q	Q	Q	Q	NF
Wooden Materials	59.4	39.0	9.4	Q	4.7	17.71
Other	115.7	39.7	Q	Q	57.3	14.38
Building Shell Conservation Features (Solely or in Combination)						
Roof or Ceiling Insulation	52.8	31.7	8.7	5.4	7.0	6.34
Wall Insulation	55.8	32.0	8.7	6.5	8.6	7.33
Storm or Multiple Glazing	56.2	33.8	10.6	5.0	6.8	6.97
Tinted, Reflective, or Shading Glass	49.7	26.7	7.7	6.9	8.4	8.94
Exterior or Interior Shadings or Awnings	47.7	27.0	7.4	6.8	6.5	6.29
Weather Stripping or Caulking	51.3	31.4	8.3	5.7	5.9	5.60
None of the Above	36.5	19.5	5.9	2.2	Q	26.50

See footnote at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
ENERGY SOURCES AND END USES						
Energy Sources (Solely or in Combination)						
Electricity	50.3	30.7	7.8	4.8	7.0	6.08
Natural Gas	50.4	30.7	7.8	4.8	7.0	5.91
Fuel Oil	54.3	26.2	11.9	5.4	10.8	15.95
District Heat	48.1	Q	3.2	Q	Q	29.19
Other	59.7	28.3	6.2	Q	Q	23.41
Energy End Uses (Solely or in Combination)						
Heated Buildings	50.3	30.9	7.6	4.8	7.0	5.96
Air-Conditioned Buildings	48.5	28.5	7.8	5.2	7.1	6.74
Buildings with Water Heating	51.0	30.5	8.3	5.1	7.1	5.94
Buildings with Cooking	51.7	25.3	10.5	10.5	5.3	7.77
Buildings with Manufacturing	75.8	38.1	3.2	Q	21.6	20.56
Space-Heating Energy Source						
Natural Gas	56.2	37.4	7.8	3.1	7.9	6.26
Main	57.2	38.4	7.9	3.1	7.7	6.34
With Secondary	71.0	40.4	12.6	3.3	14.7	13.12
Electricity Only	43.1	27.7	4.6	1.5	Q	18.22
Other Energy Sources or Combinations	87.0	46.4	18.8	5.0	16.8	15.17
With No Secondary	52.5	37.8	6.4	3.1	5.2	6.89
Secondary	41.0	21.5	Q	2.3	11.9	22.95
Other Excluding Natural Gas	25.0	3.3	6.6	Q	3.3	22.18
Building Not Heated	63.4	Q	33.0	9.2	Q	32.96
Main Space-Heating Energy Source						
Electricity	33.2	10.7	10.0	5.6	7.0	16.51
Natural Gas	57.2	38.4	7.9	3.1	7.7	6.34
Fuel Oil	12.3	4.0	Q	2.0	1.1	20.40
District Heat	37.7	Q	3.1	23.8	Q	30.92
Other	21.0	Q	Q	Q	Q	39.84
Water-Heating Energy Source						
Natural Gas	56.0	33.9	12.3	3.9	5.9	5.93
Other Excluding Natural Gas	40.7	23.4	NC	Q	9.6	12.92
Water Heating Not Performed	41.7	34.7	NC	Q	6.4	15.03
HEATING AND COOLING						
Percent Heated						
Not Heated	56.8	Q	29.7	7.8	9.4	27.51
1 to 50	21.4	13.4	3.1	.8	4.1	15.30
51 to 99	46.1	28.5	7.5	3.1	7.0	16.28
100	57.2	35.1	8.5	5.9	7.6	5.78
Percent Cooled						
Not Cooled	65.5	49.3	7.9	1.6	6.7	16.40
1 to 50	46.6	34.1	3.5	1.3	7.8	13.34
51 to 99	46.3	23.9	10.5	6.1	5.9	10.16
100	51.8	26.2	10.0	8.3	7.2	8.57

See footnotes at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Cooking	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)						
Furnaces	54.3	36.3	6.7	3.0	8.3	9.16
Boilers	64.0	40.9	10.9	3.4	8.8	7.63
Individual Space Heaters	48.3	27.9	6.3	Q	9.1	10.28
Packaged Heating Units	49.5	28.1	7.0	4.7	9.8	10.39
Heat Pumps	50.6	24.0	8.9	3.9	13.7	19.19
Air Ducts	50.4	28.4	8.1	5.9	8.0	7.20
Heating or Reheating Coils	55.2	26.6	9.9	Q	10.3	10.94
Fan-Coil Units	56.9	29.0	10.2	Q	8.3	9.84
Steam or Hot Water Radiators or Baseboards	62.7	36.6	8.6	Q	9.4	11.87
Other	76.5	32.0	8.8	2.8	Q	27.31
Cooling Equipment (Solely or in Combination)						
Central Chillers	51.9	22.8	10.6	9.9	8.6	11.23
Individual Air Conditioners	49.6	31.4	8.4	3.6	6.2	12.42
Packaged Cooling Units	47.6	28.7	7.2	5.9	5.8	8.07
Heat Pumps	52.6	25.0	7.9	4.8	14.9	16.86
Air Ducts	50.4	28.2	8.6	6.3	7.4	7.27
Fan-Coil Units	54.8	22.6	11.9	11.8	8.6	11.97
Other	71.2	11.3	Q	46.6	Q	16.81
ENERGY MANAGEMENT						
Occupant Control						
Any Control of Heating	46.9	28.0	8.0	4.1	6.8	9.26
With Thermostats	47.2	27.7	8.2	4.0	7.2	9.69
Any Control of Cooling	45.7	26.8	8.3	4.2	6.4	9.70
With Thermostats	45.5	26.2	8.0	4.3	6.9	10.05
Reduced Use During Off-Hours						
Heating Only	63.6	47.5	7.3	2.3	6.6	14.68
Cooling Only	62.5	30.5	6.5	Q	Q	26.27
Heating and Cooling	42.9	27.1	5.2	4.5	6.0	8.07
Computerized Energy Management and Control System						
Present in Building	46.6	22.8	7.7	Q	8.2	10.11
Controls Heating and Cooling	47.3	23.4	7.6	Q	8.3	9.93
Controls Lighting	45.5	15.7	4.6	Q	Q	19.83
Controls Other	62.1	25.6	8.5	3.9	24.1	25.24
Other Energy Management						
Regular HVAC Maintenance	54.7	32.3	8.7	5.4	8.3	6.21
Participated in Utility Conservation Program	55.7	32.5	10.2	5.1	8.0	12.22

[a] Includes cooling.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other [a]
All Buildings	100	61	15	10	14
Building Floorspace (Square Feet)					
1,001 to 5,000	100	61	20	12	8
5,001 to 10,000	100	65	16	4	14
10,001 to 25,000	100	72	15	4	9
25,001 to 50,000	100	67	10	5	18
50,001 to 100,000	100	75	12	5	8
100,001 to 200,000	100	64	18	12	7
200,001 to 500,000	100	48	19	7	26
Over 500,000	100	26	13	34	27
Year Constructed					
1899 or Before	100	81	10	4	4
1900 to 1919	100	60	10	6	Q
1920 to 1945	100	64	8	8	20
1946 to 1959	100	57	17	Q	11
1960 to 1969	100	67	14	5	14
1970 to 1979	100	59	20	11	10
1980 to 1983	100	52	18	9	22
1984 to 1986	100	56	21	10	14
1987 to 1989	100	59	17	12	12
BUILDING USE					
Principal Building Activity					
Assembly	100	78	7	10	5
Education	100	73	5	Q	6
Food Sales	100	49	3	45	2
Food Service	100	29	34	32	5
Health Care	100	24	38	16	Q
Lodging	100	42	45	9	5
Mercantile and Service	100	66	11	5	18
Office	100	72	11	2	15
Parking Garage	100	75	Q	Q	Q
Public Order and Safety	100	88	5	Q	5
Warehouse	100	76	2	*	22
Other	100	56	6	Q	34
Vacant	100	63	12	Q	23
Weekly Operating Hours					
39 or Fewer	100	85	8	2	5
40 to 48	100	80	7	2	11
49 to 60	100	75	7	4	14
61 to 84	100	62	14	10	14
85 to 167	100	53	12	24	10
168 (Open Continuously)	100	40	31	10	19
Workers					
4 or Fewer	100	73	17	4	5
5 to 9	100	67	17	8	8
10 to 19	100	63	16	7	13
20 to 49	100	69	15	6	10
50 to 99	100	71	8	5	16
100 to 249	100	60	11	8	21
250 or More	100	33	23	24	20

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other [a]
Ownership and Occupancy					
Nongovernment Owned	100	59	16	8	16
Owner Occupied	100	58	16	8	18
Single Establishment	100	57	17	8	18
Multiple Establishment	100	61	15	10	15
Nonowner Occupied	100	65	14	9	12
Single Establishment	100	70	10	9	11
Multiple Establishment	100	61	20	12	7
Vacant	100	54	16	Q	30
Government Owned	100	67	13	Q	6
Federal	100	23	Q	68	Q
State	100	70	16	Q	10
Local	100	76	14	6	5
Multibuilding Facility					
Not on Multibuilding Facility	100	66	15	7	13
Part of Multibuilding Facility	100	55	16	13	16
On Facility with Central Plant	100	43	16	20	21
Percent Vacant at Least Three Months					
0	100	63	16	8	13
1 to 50	100	55	13	9	23
51 to 99	100	45	5	47	4
100	100	64	20	1	15
Months in Use Out of Past 12 Months					
0 to 8	100	59	23	13	6
9 to 11	100	77	11	1	11
12	100	60	15	10	15
LOCATION					
Census Region					
Northeast	100	66	15	9	10
Midwest	100	70	12	6	13
South	100	53	17	9	22
West	100	48	21	20	11
Census Division					
Northeast					
New England	100	49	30	9	11
Middle Atlantic	100	69	13	8	10
Midwest					
East North Central	100	71	13	6	10
West North Central	100	67	11	4	19
South					
South Atlantic	100	53	12	7	27
East South Central	100	51	20	7	22
West South Central	100	54	19	11	16
West					
Mountain	100	49	14	Q	7
Pacific	100	47	28	11	14
Metropolitan Status					
Metropolitan	100	58	16	11	15
Nonmetropolitan	100	70	14	5	11

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other [a]
Climate Zone: 45-Year Average					
Under 2,000 CDD and --					
Over 7,000 HDD	100	70	15	4	10
5,500-7,000 HDD	100	68	11	11	9
4,000-5,499 HDD	100	55	16	9	19
Under 4,000 HDD	100	54	19	9	18
2,000 CDD or More and --					
Under 4,000 HDD	100	45	25	10	20
1989 Degree-Days					
Under 2,000 CDD and --					
Over 7,000 HDD	100	74	12	5	9
5,500-7,000 HDD	100	62	13	10	15
4,000-5,499 HDD	100	59	19	15	7
Under 4,000 HDD	100	54	19	8	18
2,000 CDD or More and --					
Under 4,000 HDD	100	43	26	10	21
STRUCTURE					
Floors					
1	100	66	14	7	12
2	100	64	13	5	17
3	100	76	10	4	9
4 to 6	100	49	21	Q	10
7 or More	100	35	23	17	25
Wall Materials					
Masonry	100	62	16	8	14
Siding or Shingles	100	61	22	8	9
Metal Panels	100	70	8	2	21
Concrete Panels	100	41	12	30	16
Window Glass	100	58	Q	13	8
Other	100	57	27	Q	Q
Roof Materials					
Built-Up	100	60	16	12	13
Shingles (Not Wood)	100	65	17	8	11
Metal Surfacing	100	71	7	3	19
Synthetic or Rubber	100	60	19	8	13
Slate or Tile	100	59	17	18	6
Concrete	100	53	37	5	4
Wooden Materials	100	66	16	Q	8
Other	100	34	Q	Q	49
Building Shell Conservation Features (Solely or in Combination)					
Roof or Ceiling Insulation	100	60	16	10	13
Wall Insulation	100	57	16	12	15
Storm or Multiple Glazing	100	60	19	9	12
Tinted, Reflective, or Shading Glass	100	54	15	14	17
Exterior or Interior Shadings or Awnings	100	57	16	14	14
Weather Stripping or Caulking	100	61	16	11	11
None of the Above	100	53	16	6	Q

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other [a]
ENERGY SOURCES AND END USES					
Energy Sources (Solely or in Combination)					
Electricity	100	61	15	10	14
Natural Gas	100	61	15	10	14
Fuel Oil	100	48	22	10	20
District Heat	100	25	7	42	26
Other	100	47	10	Q	14
Energy End Uses (Solely or in Combination)					
Heated Buildings	100	61	15	9	14
Air-Conditioned Buildings	100	59	16	11	15
Buildings with Water Heating	100	60	16	10	14
Buildings with Cooking	100	49	20	20	10
Buildings with Manufacturing	100	50	4	Q	28
Space-Heating Energy Source					
Natural Gas	100	67	14	6	14
Main	100	67	14	6	13
With Secondary	100	57	18	5	21
Electricity Only	100	64	11	3	Q
Other Energy Sources or Combinations	100	53	22	6	19
With No Secondary	100	72	12	6	10
Secondary	100	52	Q	6	29
Other Excluding Natural Gas	100	13	26	47	13
Building Not Heated	100	16	52	14	17
Main Space-Heating Energy Source					
Electricity	100	32	30	17	21
Natural Gas	100	67	14	6	13
Fuel Oil	100	32	44	16	9
District Heat	100	Q	8	63	10
Other	100	60	Q	Q	Q
Water-Heating Energy Source					
Natural Gas	100	60	22	7	11
Other Excluding Natural Gas	100	58	NC	19	24
Water Heating Not Performed	100	83	NC	Q	15
HEATING AND COOLING					
Percent Heated					
Not Heated	100	17	52	14	17
1 to 50	100	63	15	4	19
51 to 99	100	62	16	7	15
100	100	61	15	10	13
Percent Cooled					
Not Cooled	100	75	12	2	10
1 to 50	100	73	7	3	17
51 to 99	100	52	23	13	13
100	100	51	19	16	14
Heating Equipment (Solely or in Combination)					
Furnaces	100	67	12	6	15
Boilers	100	64	17	5	14
Individual Space Heaters	100	58	13	Q	19
Packaged Heating Units	100	57	14	9	20
Heat Pumps	100	48	18	8	27
Air Ducts	100	56	16	12	16
Heating or Reheating Coils	100	48	18	15	19
Fan-Coil Units	100	51	18	16	15
Steam or Hot Water Radiators or Baseboards	100	58	14	13	15
Other	100	42	11	4	43

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other [a]
Cooling Equipment (Solely or in Combination)					
Central Chillers	100	44	20	19	17
Individual Air Conditioners	100	63	17	7	12
Packaged Cooling Units	100	60	15	12	12
Heat Pumps	100	48	15	9	28
Air Ducts	100	56	17	12	15
Fan-Coil Units	100	41	22	21	16
Other	100	16	Q	65	Q
ENERGY MANAGEMENT					
Occupant Control					
Any Control of Heating	100	60	17	9	14
With Thermostats	100	59	17	8	15
Any Control of Cooling	100	59	18	9	14
With Thermostats	100	58	18	9	15
Reduced Use During Off-Hours					
Heating Only	100	75	11	4	10
Cooling Only	100	49	10	11	30
Heating and Cooling	100	63	12	11	14
Computerized Energy Management and Control System					
Present in Building	100	49	16	17	18
Controls Heating and Cooling	100	49	16	17	18
Controls Lighting	100	35	10	41	14
Controls Other	100	41	14	6	39
Other Energy Management					
Regular HVAC Maintenance	100	59	16	10	15
Participated in Utility Conservation Program	100	58	18	9	14

[a] Includes cooling.

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

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

Notes: • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B10. Consumption of Fuel Oil by End Use, 1989

Building Characteristics	Fuel Oil Consumption (trillion Btu)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
All Buildings	357	301	26	30	13.28
Building Floorspace (Square Feet)					
1,001 to 10,000	101	91	9	Q	23.83
10,001 to 25,000	69	61	5	Q	17.35
25,001 to 50,000	47	44	2	Q	19.69
50,001 to 100,000	54	47	Q	Q	46.65
100,001 to 200,000	46	31	Q	Q	39.53
Over 200,000	40	27	Q	Q	29.27
Year Constructed					
1945 or Before	112	101	8	Q	13.63
1946 to 1959	77	73	3	Q	24.41
1960 to 1969	73	60	6	Q	36.42
1970 to 1979	61	40	6	Q	30.29
1980 to 1989	34	27	Q	Q	33.98
BUILDING USE					
Principal Building Activity					
Assembly	31	29	2	Q	20.25
Education	71	68	Q	Q	24.77
Food Sales and Service	18	15	Q	Q	28.86
Health Care	17	7	Q	Q	42.28
Lodging	10	6	4	Q	33.61
Mercantile and Service	75	68	4	Q	22.11
Office	43	38	2	Q	27.63
Warehouse	53	39	Q	Q	38.96
Other	30	24	Q	Q	44.52
Vacant	7	7	Q	Q	34.88
Weekly Operating Hours					
39 or Fewer	26	25	1	Q	23.63
40 to 48	65	63	1	Q	19.31
49 to 60	54	49	3	Q	18.95
61 to 84	68	61	6	Q	20.54
85 to 167	80	67	Q	Q	32.60
168 (Open Continuously)	65	37	11	Q	30.29
Workers					
4 or Fewer	83	75	7	Q	19.56
5 to 9	35	29	3	Q	21.87
10 to 19	38	37	1	Q	25.85
20 to 49	72	66	4	Q	17.57
50 to 99	34	30	Q	Q	27.13
100 to 249	57	42	Q	Q	42.47
250 or More	39	21	Q	Q	35.13
Ownership and Occupancy					
Nongovernment Owned	242	197	19	Q	14.28
Owner Occupied	200	165	17	Q	17.06
Single Establishment	176	144	15	Q	18.40
Multiple Establishment	24	21	1	Q	15.14
Nonowner Occupied	42	32	2	Q	29.37
Single Establishment	Q	11	Q	Q	NF
Multiple Establishment	19	17	2	Q	29.73
Vacant	Q	Q	Q	NC	NF
Government Owned	115	103	Q	Q	22.24
Federal	Q	Q	Q	Q	NF
State	31	25	Q	Q	42.68
Local	79	75	3	Q	23.52

See footnotes at end of table.

Table B10. Consumption of Fuel Oil by End Use, 1989 (Continued)

Building Characteristics	Fuel Oil Consumption (trillion Btu)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Multibuilding Facility					
Not on Multibuilding Facility	234	206	15	Q	12.66
Part of Multibuilding Facility	123	95	11	Q	26.40
On Facility with Central Plant	60	Q	Q	Q	43.90
Percent Vacant at Least Three Months					
0	284	237	20	27	15.68
1 to 50	48	41	Q	4	18.10
51 to 99	14	13	Q	Q	43.43
100	11	10	Q	Q	32.28
Months in Use Out of Past 12 Months					
0 to 8	13	12	Q	Q	40.56
9 to 11	36	34	Q	Q	29.37
12	309	254	24	30	14.01
LOCATION					
Census Region					
Northeast	237	198	21	Q	17.86
Midwest	61	58	Q	Q	22.29
South	50	38	Q	Q	27.59
West	Q	Q	Q	Q	NF
Census Division					
Northeast					
New England	92	79	6	Q	16.02
Middle Atlantic	145	119	14	Q	28.19
Midwest					
East North Central	38	37	Q	*	26.22
West North Central	23	21	Q	Q	42.98
South					
South Atlantic	42	32	Q	Q	30.87
East South Central	Q	Q	Q	Q	NF
West South Central	Q	Q	NC	Q	NF
West					
Mountain	Q	Q	NC	Q	NF
Pacific	Q	Q	Q	Q	NF
Climate Zone: 45-Year Average					
Under 2,000 CDD and --					
Over 7,000 HDD	65	61	Q	2	16.38
5,500-7,000 HDD	137	113	11	Q	25.82
4,000-5,499 HDD	127	111	11	5	15.52
Under 4,000 HDD	Q	10	Q	Q	NF
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
1989 Degree-Days					
Under 2,000 CDD and --					
Over 7,000 HDD	100	85	Q	Q	33.27
5,500-7,000 HDD	148	129	10	Q	18.83
4,000-5,499 HDD	84	73	9	Q	17.67
Under 4,000 HDD	Q	Q	Q	Q	NF
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
STRUCTURE					
Floors					
1	101	87	4	Q	21.69
2	108	94	6	Q	26.90
3	75	63	10	Q	22.75
4 to 6	52	42	3	Q	23.21
7 or More	21	14	Q	3	36.40

See footnotes at end of table.

Table B10. Consumption of Fuel Oil by End Use, 1989 (Continued)

Building Characteristics	Fuel Oil Consumption (trillion Btu)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Wall Materials					
Masonry	285	242	20	Q	13.73
Siding or Shingles	31	27	Q	Q	32.51
Metal Panels	17	17	Q	Q	30.93
Concrete Panels	Q	10	Q	Q	NF
Window Glass	Q	Q	Q	Q	NF
Other	Q	Q	Q	Q	NF
Roof Materials					
Built-Up	175	152	11	Q	16.50
Shingles (Not Wood)	72	63	7	2	22.28
Metal Surfacing	34	27	Q	Q	32.32
Synthetic or Rubber	59	46	2	Q	38.41
Slate or Tile	Q	Q	Q	Q	NF
Concrete	Q	Q	Q	Q	NF
Wooden Materials	Q	Q	Q	Q	NF
Other	Q	Q	Q	Q	NF
Building Shell Conservation Features (Solely or in Combination)					
Roof or Ceiling Insulation	254	210	21	Q	14.36
Wall Insulation	148	117	14	Q	18.03
Storm or Multiple Glazing	160	133	17	Q	17.57
Tinted, Reflective, or Shading Glass	75	56	8	Q	18.83
Exterior or Interior Shadings or Awnings	130	111	13	Q	15.90
Weather Stripping or Caulking	244	209	21	Q	12.32
None of the Above	Q	34	Q	Q	NF
ENERGY SOURCES AND END USES					
Energy Sources (Solely or in Combination)					
Electricity	355	299	26	30	13.36
Natural Gas	149	117	11	Q	17.74
Fuel Oil	357	301	26	30	13.28
District Heat	Q	Q	Q	3	NF
Other	81	66	Q	Q	31.96
Energy End Uses (Solely or in Combination)					
Heated Buildings	356	301	25	30	13.28
Air-Conditioned Buildings	260	212	20	28	17.06
Buildings with Water Heating	321	266	26	30	14.20
Buildings with Cooking	150	119	14	Q	20.91
Buildings with Manufacturing	Q	Q	Q	Q	NF
Space-Heating Energy Source					
Fuel Oil	344	301	20	Q	13.65
Main	287	253	20	Q	15.27
With Secondary	59	48	Q	Q	24.61
Electricity Only	27	24	Q	Q	33.78
Other Energy Sources or Combinations	32	24	2	Q	31.81
With No Secondary	228	206	15	Q	18.34
Secondary	57	47	Q	Q	38.94
Other Excluding Fuel Oil	Q	NC	Q	Q	NF
Building Not Heated	Q	NC	Q	Q	NF
Main Space-Heating Energy Source					
Electricity	4	Q	Q	Q	45.39
Natural Gas	44	32	Q	Q	38.74
Fuel Oil	287	253	20	Q	15.27
District Heat	Q	Q	Q	Q	NF
Other	Q	Q	Q	Q	NF

See footnotes at end of table.

Table B10. Consumption of Fuel Oil by End Use, 1989 (Continued)

Building Characteristics	Fuel Oil Consumption (trillion Btu)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
HEATING AND COOLING					
Percent Heated					
Not Heated	Q	Q	Q	Q	NF
1 to 50	27	25	Q	Q	26.51
51 to 99	62	45	2	Q	35.05
100	264	228	22	Q	12.05
Percent Cooled					
Not Cooled	97	89	6	2	10.68
1 to 50	146	119	9	Q	23.47
51 to 99	65	52	6	Q	26.17
100	50	40	5	Q	23.02
Heating Equipment (Solely or in Combination)					
Furnaces	99	85	5	Q	21.30
Boilers	282	235	20	27	14.83
Individual Space Heaters	113	89	7	Q	26.89
Packaged Heating Units	28	18	Q	Q	43.40
Heat Pumps	16	12	Q	3	30.08
Air Ducts	181	143	11	27	21.00
Heating or Reheating Coils	89	63	Q	Q	32.68
Fan-Coil Units	78	60	Q	Q	19.99
Steam or Hot Water Radiators or Baseboards	216	174	18	24	17.38
Other	Q	Q	Q	Q	NF
ENERGY MANAGEMENT					
Occupant Control					
Any Control of Heating	157	137	10	Q	12.55
With Thermostats	143	125	9	Q	13.87
Any Control of Cooling	134	116	10	Q	17.02
With Thermostats	104	89	8	Q	17.67
Reduced Use During Off-Hours					
Heating Only	83	78	4	Q	12.39
Cooling Only	24	20	3	Q	33.78
Heating and Cooling	172	143	14	Q	16.04
Computerized Energy Management and Control System					
Present in Building	51	31	Q	Q	27.14
Controls Heating and Cooling	50	31	Q	Q	27.24
Controls Lighting	Q	Q	Q	Q	NF
Controls Other	Q	Q	Q	Q	NF
Other Energy Management					
Regular HVAC Maintenance	283	235	20	28	14.16
Participated in Utility Conservation Program	64	53	2	Q	25.62

[a] Includes cooking and cooling.

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

NF = No applicable RSE row/column factor.

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

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B11. Energy End-Use Intensities for Fuel Oil, 1989

Building Characteristics	Energy Intensity for Fuel Oil (thousand Btu per sq. ft.)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
All Buildings	28.3	23.9	2.0	2.4	11.84
Building Floorspace (Square Feet)					
1,001 to 10,000	66.1	59.9	5.6	Q	14.22
10,001 to 25,000	45.9	40.8	3.6	Q	13.54
25,001 to 50,000	35.5	33.0	Q	Q	16.34
50,001 to 100,000	32.5	27.8	Q	Q	47.93
100,001 to 200,000	20.7	13.9	Q	Q	35.67
Over 200,000	9.2	6.3	Q	Q	26.37
Year Constructed					
1945 or Before	30.4	27.4	2.1	Q	11.98
1946 to 1959	37.3	35.3	1.5	Q	16.67
1960 to 1969	32.0	26.2	2.4	Q	39.13
1970 to 1979	25.4	16.9	2.5	Q	29.64
1980 to 1989	15.7	12.4	Q	Q	30.76
BUILDING USE					
Principal Building Activity					
Assembly	29.4	27.2	2.0	Q	16.41
Education	32.1	30.8	1.1	Q	22.62
Food Sales and Service	Q	43.2	Q	Q	NF
Health Care	12.2	5.1	Q	Q	40.09
Lodging	17.4	Q	7.1	Q	44.71
Mercantile and Service	46.7	42.1	2.7	Q	16.22
Office	14.8	13.1	.8	.9	27.57
Warehouse	37.3	27.2	Q	Q	39.10
Other	41.3	32.6	Q	Q	38.51
Vacant	22.3	21.7	Q	Q	40.94
Weekly Operating Hours					
39 or Fewer	33.7	32.6	1.1	Q	13.51
40 to 48	24.5	23.6	.5	Q	25.32
49 to 60	22.8	20.8	1.2	Q	17.77
61 to 84	38.0	34.1	3.4	Q	17.97
85 to 167	36.1	30.3	Q	Q	21.88
168 (Open Continuously)	22.9	12.9	3.7	Q	28.19
Workers					
4 or Fewer	47.9	43.3	4.0	Q	14.17
5 to 9	31.9	27.1	3.2	Q	16.14
10 to 19	42.9	41.5	1.3	Q	22.75
20 to 49	47.8	44.2	2.9	Q	16.52
50 to 99	18.6	16.6	Q	Q	35.92
100 to 249	33.7	24.6	Q	Q	38.58
250 or More	10.0	5.5	Q	Q	31.74
Ownership and Occupancy					
Nongovernment Owned	27.6	22.5	2.1	Q	12.91
Owner Occupied	28.8	23.8	2.4	Q	14.00
Single Establishment	31.7	25.9	2.8	Q	15.84
Multiple Establishment	17.5	15.3	.9	Q	14.94
Nonowner Occupied	22.9	17.5	1.2	Q	28.05
Single Establishment	17.5	10.1	Q	Q	47.37
Multiple Establishment	30.8	28.0	2.6	Q	17.28
Vacant	33.9	33.1	Q	NC	40.46
Government Owned	29.9	26.9	Q	Q	19.04
Federal	Q	Q	Q	Q	NF
State	32.5	Q	Q	Q	25.35
Local	31.6	30.0	1.2	Q	22.93

See footnote at end of table.

Table B11. Energy End-Use Intensities for Fuel Oil, 1989 (Continued)

Building Characteristics	Energy Intensity for Fuel Oil (thousand Btu per sq. ft.)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Multibuilding Facility					
Not on Multibuilding Facility	30.0	26.4	1.9	Q	11.27
Part of Multibuilding Facility	25.6	19.7	2.3	Q	25.11
On Facility with Central Plant	26.2	Q	Q	Q	43.16
Percent Vacant at Least Three Months					
0	31.7	26.4	2.3	3.0	13.89
1 to 50	19.3	16.5	Q	1.4	16.96
51 to 99	19.6	17.4	2.1	Q	32.38
100	25.4	24.8	Q	Q	38.99
Months in Use Out of Past 12 Months					
0 to 8	23.2	22.2	Q	Q	26.40
9 to 11	40.1	38.6	Q	Q	33.23
12	27.6	22.8	2.2	2.7	12.73
LOCATION					
Census Region					
Northeast	46.1	38.6	4.0	3.5	13.01
Midwest	19.0	18.3	Q	Q	26.27
South	17.7	13.5	Q	Q	32.63
West	Q	Q	Q	Q	NF
Census Division					
Northeast					
New England	48.5	41.6	3.4	Q	11.05
Middle Atlantic	44.7	36.9	4.4	Q	21.59
Midwest					
East North Central	19.5	19.0	Q	Q	33.26
West North Central	18.2	Q	Q	Q	48.24
South					
South Atlantic	20.8	15.5	Q	Q	39.11
East South Central	16.5	Q	Q	Q	49.69
West South Central	Q	Q	NC	Q	NF
West					
Mountain	Q	Q	NC	Q	NF
Pacific	Q	Q	Q	Q	NF
Climate Zone: 45-Year Average					
Under 2,000 CDD and --					
Over 7,000 HDD	35.0	32.6	Q	1.1	15.35
5,500-7,000 HDD	34.9	28.8	2.7	Q	23.26
4,000-5,499 HDD	29.8	25.9	2.7	1.3	10.81
Under 4,000 HDD	Q	Q	Q	Q	NF
2,000 CDD or More and --					
Under 4,000 HDD	10.6	Q	Q	Q	49.99
1989 Degree-Days					
Under 2,000 CDD and --					
Over 7,000 HDD	39.0	33.0	Q	Q	28.27
5,500-7,000 HDD	28.8	25.2	1.9	Q	14.97
4,000-5,499 HDD	32.3	28.1	3.4	Q	17.07
Under 4,000 HDD	Q	Q	Q	Q	NF
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
STRUCTURE					
Floors					
1	44.4	38.4	1.6	Q	18.11
2	35.3	30.7	1.8	Q	25.45
3	36.7	30.9	4.8	Q	20.50
4 to 6	19.3	15.7	1.0	Q	21.14
7 or More	8.3	5.4	Q	1.2	36.46

See footnote at end of table.

Table B11. Energy End-Use Intensities for Fuel Oil, 1989 (Continued)

Building Characteristics	Energy Intensity for Fuel Oil (thousand Btu per sq. ft.)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Wall Materials					
Masonry	30.4	25.8	2.1	Q	11.59
Siding or Shingles	43.9	37.9	Q	Q	24.19
Metal Panels	26.0	25.0	Q	Q	21.54
Concrete Panels	13.0	7.8	Q	Q	46.24
Window Glass	13.9	Q	Q	Q	45.23
Other	Q	Q	Q	Q	NF
Roof Materials					
Built-Up	26.7	23.1	1.7	Q	14.49
Shingles (Not Wood)	33.7	29.5	3.1	1.1	19.54
Metal Surfacing	41.0	32.8	Q	Q	15.56
Synthetic or Rubber	33.2	25.7	1.2	Q	37.48
Slate or Tile	Q	Q	Q	Q	NF
Concrete	7.3	5.1	Q	Q	36.98
Wooden Materials	Q	Q	Q	Q	NF
Other	Q	Q	Q	Q	NF
Building Shell Conservation Features (Solely or in Combination)					
Roof or Ceiling Insulation	26.5	21.9	2.2	Q	11.81
Wall Insulation	23.2	18.3	2.1	Q	15.56
Storm or Multiple Glazing	23.9	19.7	2.5	Q	14.28
Tinted, Reflective, or Shading Glass	15.6	11.6	1.7	Q	18.14
Exterior or Interior Shadings or Awnings	22.6	19.2	2.3	Q	13.38
Weather Stripping or Caulking	25.9	22.2	2.2	Q	10.91
None of the Above	Q	29.5	Q	Q	NF
ENERGY SOURCES AND END USES					
Energy Sources (Solely or in Combination)					
Electricity	28.2	23.8	2.1	Q	12.46
Natural Gas	18.9	14.9	1.4	Q	14.78
Fuel Oil	28.3	23.9	2.0	2.4	11.84
District Heat	Q	Q	Q	Q	NF
Other	35.8	29.2	2.5	Q	19.32
Energy End Uses (Solely or in Combination)					
Heated Buildings	28.4	24.0	2.0	2.4	11.87
Air-Conditioned Buildings	24.8	20.2	1.9	2.7	15.79
Buildings with Water Heating	27.1	22.5	2.2	2.5	12.43
Buildings with Cooking	24.1	19.0	2.3	Q	20.01
Buildings with Manufacturing	Q	Q	Q	Q	NF
Space-Heating Energy Source					
Fuel Oil	32.7	28.6	1.9	Q	12.21
Main	51.3	45.3	3.5	Q	11.80
With Secondary	51.5	41.7	4.2	Q	16.14
Electricity Only	57.6	51.8	Q	Q	23.48
Other Energy Sources or Combinations	47.4	34.9	3.5	Q	18.81
With No Secondary	51.3	46.2	3.3	Q	13.83
Secondary	11.5	9.6	Q	Q	32.89
Other Excluding Fuel Oil	Q	NC	Q	Q	NF
Building Not Heated	14.6	NC	10.8	Q	11.75
Main Space-Heating Energy Source					
Electricity	3.8	1.5	Q	Q	45.19
Natural Gas	9.3	6.7	Q	Q	35.62
Fuel Oil	51.3	45.3	3.5	Q	11.80
District Heat	Q	Q	Q	Q	NF
Other	61.6	59.5	Q	Q	12.98

See footnote at end of table.

Table B11. Energy End-Use Intensities for Fuel Oil, 1989 (Continued)

Building Characteristics	Energy Intensity for Fuel Oil (thousand Btu per sq. ft.)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
HEATING AND COOLING					
Percent Heated					
Not Heated	35.5	Q	9.2	Q	11.75
1 to 50	27.5	25.2	Q	1.0	19.91
51 to 99	25.7	18.6	.7	Q	35.54
100	29.0	25.1	2.4	Q	10.76
Percent Cooled					
Not Cooled	45.3	41.6	2.8	.9	12.82
1 to 50	39.3	32.2	2.5	Q	20.72
51 to 99	18.9	15.2	1.7	Q	27.93
100	14.9	12.1	1.4	Q	22.46
Heating Equipment (Solely or in Combination)					
Furnaces	35.4	30.5	1.7	Q	17.31
Boilers	34.1	28.4	2.5	3.3	13.81
Individual Space Heaters	23.9	18.9	1.5	Q	26.31
Packaged Heating Units	14.8	9.7	Q	Q	31.50
Heat Pumps	10.7	7.9	Q	1.7	29.65
Air Ducts	22.4	17.6	1.4	3.4	19.51
Heating or Reheating Coils	17.2	12.2	Q	Q	31.32
Fan-Coil Units	17.7	13.6	1.7	Q	18.64
Steam or Hot Water Radiators or Baseboards	33.5	27.0	2.7	3.7	15.71
Other	6.4	5.0	Q	Q	35.35
ENERGY MANAGEMENT					
Occupant Control					
Any Control of Heating	33.0	28.9	2.2	Q	11.18
With Thermostats	33.3	29.1	2.1	Q	13.06
Any Control of Cooling	31.0	26.8	2.2	Q	15.11
With Thermostats	26.4	22.6	2.0	Q	15.22
Reduced Use During Off-Hours					
Heating Only	40.2	37.8	2.0	Q	11.04
Cooling Only	30.7	25.3	4.1	Q	24.46
Heating and Cooling	22.3	18.5	1.8	Q	14.15
Computerized Energy Management and Control System					
Present in Building	12.1	7.4	Q	Q	26.91
Controls Heating and Cooling	12.7	7.8	Q	Q	25.20
Controls Lighting	Q	Q	Q	Q	NF
Controls Other	Q	Q	Q	Q	NF
Other Energy Management					
Regular HVAC Maintenance	27.2	22.6	1.9	2.7	13.45
Participated in Utility Conservation Program	18.4	15.3	.7	Q	23.31

[a] Includes cooking and cooling.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B12. Consumption of District Heat by End Use, 1989

Building Characteristics	District Heat Consumption (trillion Btu)				RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
All Buildings	585	355	129	101	21.30
Building Floorspace (Square Feet)					
1,001 to 10,000	Q	Q	Q	Q	NF
10,001 to 25,000	63	42	Q	Q	44.51
25,001 to 50,000	Q	Q	Q	Q	NF
50,001 to 100,000	119	58	Q	25	49.81
100,001 to 200,000	106	71	Q	Q	38.40
Over 200,000	209	120	Q	31	36.55
Year Constructed					
1945 or Before	161	96	Q	20	42.01
1946 to 1959	Q	Q	15	Q	NF
1960 to 1969	156	86	Q	26	39.95
1970 to 1979	110	67	15	28	33.59
1980 to 1989	Q	24	Q	Q	NF
BUILDING USE					
Principal Building Activity					
Assembly	49	44	Q	Q	35.38
Education	Q	Q	Q	Q	NF
Food Sales and Service	Q	Q	Q	Q	NF
Health Care	92	23	Q	Q	48.56
Lodging	Q	Q	Q	Q	NF
Mercantile and Service	6	Q	Q	Q	46.28
Office	167	127	15	26	22.80
Warehouse	Q	Q	Q	Q	NF
Other	49	33	Q	Q	41.02
Vacant	Q	Q	Q	Q	NF
Weekly Operating Hours					
39 or Fewer	Q	Q	Q	Q	NF
40 to 48	105	79	Q	20	34.46
49 to 60	66	55	3	8	25.76
61 to 84	60	39	Q	Q	38.50
85 to 167	Q	Q	Q	Q	NF
168 (Open Continuously)	272	124	90	59	33.33
Workers					
4 or Fewer	Q	Q	Q	Q	NF
5 to 9	Q	Q	Q	Q	NF
10 to 19	16	10	Q	Q	32.36
20 to 49	Q	87	Q	Q	NF
50 to 99	Q	51	Q	Q	NF
100 to 249	99	54	Q	Q	34.67
250 or More	225	127	Q	38	34.30
Ownership and Occupancy					
Nongovernment Owned	284	141	Q	65	27.16
Owner Occupied	263	130	Q	58	28.65
Single Establishment	228	108	Q	53	33.34
Multiple Establishment	35	21	Q	4	23.86
Nonowner Occupied	Q	Q	Q	Q	NF
Single Establishment	Q	Q	Q	Q	NF
Multiple Establishment	Q	5	Q	Q	NF
Vacant	Q	Q	NC	Q	NF
Government Owned	301	214	51	36	28.07
Federal	Q	Q	Q	Q	NF
State	201	146	Q	21	35.62
Local	35	19	Q	Q	42.67

See footnotes at end of table.

Table B12. Consumption of District Heat by End Use, 1989 (Continued)

Building Characteristics	District Heat Consumption (trillion Btu)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Multibuilding Facility					
Not on Multibuilding Facility	58	38	Q	7	30.76
Part of Multibuilding Facility	527	317	116	94	24.33
On Facility with Central Plant	476	277	108	91	25.31
Percent Vacant at Least Three Months					
0	412	261	75	75	22.89
1 to 50	131	67	Q	17	38.91
51 to 99	Q	Q	Q	Q	NF
100	Q	Q	Q	Q	NF
Months in Use Out of Past 12 Months					
0 to 8	Q	Q	Q	Q	NF
9 to 11	Q	Q	Q	Q	NF
12	555	335	121	99	21.28
LOCATION					
Census Region					
Northeast	179	111	39	29	34.50
Midwest	159	70	Q	30	39.48
South	126	90	Q	21	44.55
West	121	84	17	Q	39.73
Census Division					
Northeast					
New England	Q	Q	Q	Q	NF
Middle Atlantic	127	87	22	18	27.22
Midwest					
East North Central	88	42	Q	Q	46.67
West North Central	Q	Q	Q	12	NF
South					
South Atlantic	Q	Q	Q	Q	NF
East South Central	Q	Q	Q	Q	NF
West South Central	Q	Q	Q	Q	NF
West					
Mountain	Q	55	7	Q	NF
Pacific	Q	Q	9	Q	NF
Climate Zone: 45-Year Average					
Under 2,000 CDD and --					
Over 7,000 HDD	Q	Q	Q	Q	NF
5,500-7,000 HDD	199	120	Q	43	34.35
4,000-5,499 HDD	152	84	Q	24	40.29
Under 4,000 HDD	83	Q	Q	Q	46.05
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
1989 Degree-Days					
Under 2,000 CDD and --					
Over 7,000 HDD	Q	74	Q	Q	NF
5,500-7,000 HDD	254	136	Q	53	32.06
4,000-5,499 HDD	84	55	16	Q	29.91
Under 4,000 HDD	Q	Q	12	Q	NF
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
STRUCTURE					
Floors					
1	Q	Q	Q	Q	NF
2	70	48	Q	Q	44.61
3	Q	68	Q	26	NF
4 to 6	168	109	Q	Q	40.67
7 or More	177	96	Q	27	37.46

See footnotes at end of table.

Table B12. Consumption of District Heat by End Use, 1989 (Continued)

Building Characteristics	District Heat Consumption (trillion Btu)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Wall Materials					
Masonry	385	226	107	52	27.08
Siding or Shingles	Q	Q	Q	Q	NF
Metal Panels	Q	Q	Q	Q	NF
Concrete Panels	113	73	11	29	41.24
Window Glass	23	15	Q	Q	37.95
Other	Q	Q	Q	Q	NF
Roof Materials					
Built-Up	309	190	59	60	21.20
Shingles (Not Wood)	Q	Q	Q	Q	NF
Metal Surfacing	Q	Q	Q	Q	NF
Synthetic or Rubber	Q	70	Q	23	NF
Slate or Tile	40	33	3	Q	25.53
Concrete	Q	Q	Q	Q	NF
Wooden Materials	Q	Q	Q	NC	NF
Other	Q	Q	Q	Q	NF
Building Shell Conservation Features (Solely or in Combination)					
Roof or Ceiling Insulation	459	267	109	83	26.14
Wall Insulation	265	139	Q	52	31.63
Storm or Multiple Glazing	212	95	Q	40	33.22
Tinted, Reflective, or Shading Glass	246	150	Q	40	34.57
Exterior or Interior Shadings or Awnings	331	199	Q	63	27.28
Weather Stripping or Caulking	495	289	112	94	24.03
None of the Above	Q	Q	Q	Q	NF
ENERGY SOURCES AND END USES					
Energy Sources (Solely or in Combination)					
Electricity	585	355	129	101	20.66
Natural Gas	290	158	Q	44	34.05
Fuel Oil	143	55	Q	Q	45.15
District Heat	585	355	129	101	21.30
Other	192	115	Q	Q	41.83
Energy End Uses (Solely or in Combination)					
Heated Buildings	584	355	128	101	21.30
Air-Conditioned Buildings	506	312	109	85	20.96
Buildings with Water Heating	580	350	129	101	21.30
Buildings with Cooking	298	171	Q	52	28.83
Buildings with Manufacturing	Q	Q	Q	26	NF
Space-Heating Energy Source					
District Heat	520	355	76	89	19.83
Main	511	346	76	89	20.34
With Secondary	134	79	Q	28	40.97
Electricity Only	Q	Q	Q	Q	NF
Other Energy Sources or Combinations	60	34	13	13	39.13
With No Secondary	377	267	49	61	25.57
Secondary	Q	Q	Q	Q	NF
Other Excluding District Heat	Q	Q	Q	Q	NF
Building Not Heated	Q	NC	Q	NC	NF
Main Space-Heating Energy Source					
Electricity	Q	Q	Q	Q	NF
Natural Gas	Q	Q	Q	Q	NF
Fuel Oil	4	Q	Q	Q	11.54
District Heat	511	346	76	89	20.34
Other	Q	Q	Q	Q	NF

See footnotes at end of table.

Table B12. Consumption of District Heat by End Use, 1989 (Continued)

Building Characteristics	District Heat Consumption (trillion Btu)				RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
HEATING AND COOLING					
Percent Heated					
Not Heated	Q	Q	Q	NC	NF
1 to 50	Q	Q	Q	Q	NF
51 to 99	59	48	8	Q	32.59
100	519	304	119	96	22.47
Percent Cooled					
Not Cooled	Q	Q	Q	Q	NF
1 to 50	113	75	16	Q	33.77
51 to 99	137	100	22	Q	25.15
100	256	137	Q	47	28.59
Heating Equipment (Solely or in Combination)					
Furnaces	Q	Q	Q	NC	NF
Boilers	50	Q	Q	Q	49.84
Individual Space Heaters	189	114	Q	30	40.89
Packaged Heating Units	Q	Q	Q	Q	NF
Heat Pumps	Q	Q	Q	Q	NF
Air Ducts	430	265	101	65	25.56
Heating or Reheating Coils	339	208	Q	53	27.57
Fan-Coil Units	267	156	Q	48	36.14
Steam or Hot Water Radiators or Baseboards	378	218	85	75	26.62
Other	Q	Q	Q	Q	NF
ENERGY MANAGEMENT					
Occupant Control					
Any Control of Heating	206	92	Q	40	37.85
With Thermostats	203	89	Q	40	38.28
Any Control of Cooling	223	113	Q	42	33.97
With Thermostats	216	108	Q	42	34.76
Reduced Use During Off-Hours					
Heating Only	Q	39	Q	Q	NF
Cooling Only	Q	19	Q	27	NF
Heating and Cooling	289	203	Q	33	33.27
Computerized Energy Management and Control System					
Present in Building	272	166	Q	35	32.90
Controls Heating and Cooling	271	165	Q	34	32.98
Controls Lighting	Q	Q	5	Q	NF
Controls Other	Q	12	Q	Q	NF
Other Energy Management					
Regular HVAC Maintenance	530	319	117	95	21.97
Participated in Utility Conservation Program	154	96	Q	Q	38.56

[a] Includes cooking and cooling.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B13. Energy End-Use Intensities for District Heat, 1989

Building Characteristics	Energy Intensity for District Heat (thousand Btu per sq. ft.)				RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
All Buildings	89.0	54.0	19.6	15.4	16.89
Building Floorspace (Square Feet)					
1,001 to 10,000	Q	Q	23.6	Q	NF
10,001 to 25,000	117.3	77.5	Q	Q	37.13
25,001 to 50,000	Q	Q	Q	Q	NF
50,001 to 100,000	142.0	69.6	Q	29.7	42.63
100,001 to 200,000	89.6	60.1	Q	12.8	24.64
Over 200,000	61.9	35.5	17.3	9.1	18.00
Year Constructed					
1945 or Before	94.5	56.5	26.3	11.7	21.71
1946 to 1959	76.8	52.3	9.2	15.3	17.41
1960 to 1969	128.3	70.9	35.7	21.8	32.88
1970 to 1979	89.4	54.3	12.3	22.8	28.76
1980 to 1989	44.0	27.7	13.0	Q	23.52
BUILDING USE					
Principal Building Activity					
Assembly	59.5	53.3	4.4	Q	18.37
Education	82.3	55.0	Q	8.3	18.33
Food Sales and Service	55.8	Q	11.7	Q	49.57
Health Care	135.1	34.2	68.8	32.2	11.83
Lodging	Q	59.8	Q	Q	NF
Mercantile and Service	56.2	Q	2.7	Q	34.98
Office	72.1	Q	6.3	11.0	44.69
Warehouse	172.5	95.6	.3	Q	45.53
Other	109.7	74.4	Q	Q	30.63
Vacant	20.9	14.8	Q	Q	17.30
Weekly Operating Hours					
39 or Fewer	Q	Q	Q	Q	NF
40 to 48	113.3	84.8	Q	21.7	32.72
49 to 60	56.0	46.6	2.9	6.5	24.14
61 to 84	Q	Q	Q	Q	NF
85 to 167	62.3	44.0	7.8	10.5	6.27
168 (Open Continuously)	126.6	57.4	41.7	27.5	22.14
Workers					
4 or Fewer	50.4	29.1	10.5	Q	16.88
5 to 9	79.4	47.1	Q	Q	46.17
10 to 19	86.4	55.2	Q	Q	23.94
20 to 49	Q	96.0	Q	Q	NF
50 to 99	Q	80.7	8.8	Q	NF
100 to 249	110.0	59.9	29.9	20.2	12.83
250 or More	69.2	39.0	18.5	11.7	22.59
Ownership and Occupancy					
Nongovernment Owned	84.3	42.0	23.1	19.2	23.52
Owner Occupied	85.2	42.1	24.5	18.7	23.27
Single Establishment	112.8	53.7	32.6	26.5	16.71
Multiple Establishment	33.0	20.1	9.0	Q	24.53
Nonowner Occupied	74.4	40.8	Q	Q	34.14
Single Establishment	110.9	63.3	Q	Q	7.82
Multiple Establishment	59.6	30.9	Q	Q	38.89
Vacant	Q	Q	NC	Q	NF
Government Owned	93.8	66.6	15.9	11.3	21.48
Federal	58.4	43.0	3.8	11.6	4.51
State	121.3	88.3	Q	Q	31.38
Local	80.8	44.8	30.9	Q	27.05

See footnote at end of table.

Table B13. Energy End-Use Intensities for District Heat, 1989 (Continued)

Building Characteristics	Energy Intensity for District Heat (thousand Btu per sq. ft.)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Multibuilding Facility					
Not on Multibuilding Facility	44.9	29.6	9.8	5.5	34.61
Part of Multibuilding Facility	99.7	59.9	22.0	17.8	16.93
On Facility with Central Plant	107.3	62.4	24.2	20.6	17.80
Percent Vacant at Least Three Months					
0	102.8	65.3	18.7	18.8	19.78
1 to 50	71.4	36.7	25.5	9.2	25.75
51 to 99	66.2	42.3	Q	16.0	7.15
100	36.4	19.8	Q	2.1	17.77
Months in Use Out of Past 12 Months					
0 to 8	35.7	15.1	13.0	Q	17.02
9 to 11	66.6	Q	Q	Q	37.09
12	92.2	55.6	20.1	16.5	16.69
LOCATION					
Census Region					
Northeast	80.1	49.5	17.5	Q	36.85
Midwest	105.3	46.6	38.7	20.0	12.36
South	Q	Q	Q	13.4	NF
West	97.1	67.2	Q	16.4	13.69
Census Division					
Northeast					
New England	Q	Q	Q	Q	NF
Middle Atlantic	68.3	46.6	12.0	Q	27.89
Midwest					
East North Central	104.0	49.6	33.4	21.0	16.02
West North Central	106.9	42.7	45.4	18.8	14.36
South					
South Atlantic	Q	Q	Q	Q	NF
East South Central	Q	Q	Q	Q	NF
West South Central	Q	Q	Q	Q	NF
West					
Mountain	99.1	74.8	Q	14.1	12.73
Pacific	94.4	56.4	18.3	Q	22.50
Climate Zone: 45-Year Average					
Under 2,000 CDD and --					
Over 7,000 HDD	206.3	117.8	Q	Q	43.76
5,500-7,000 HDD	90.4	54.7	Q	19.3	15.92
4,000-5,499 HDD	71.8	39.8	20.6	Q	28.13
Under 4,000 HDD	70.6	Q	13.2	Q	40.97
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
1989 Degree-Days					
Under 2,000 CDD and --					
Over 7,000 HDD	Q	91.1	Q	Q	NF
5,500-7,000 HDD	92.5	49.4	23.7	19.3	15.79
4,000-5,499 HDD	63.0	Q	12.3	Q	33.84
Under 4,000 HDD	67.2	Q	11.3	Q	46.66
2,000 CDD or More and --					
Under 4,000 HDD	Q	Q	Q	Q	NF
STRUCTURE					
Floors					
1	Q	111.7	Q	Q	NF
2	82.8	56.2	Q	Q	27.67
3	Q	59.3	Q	22.6	NF
4 to 6	101.2	65.8	Q	13.4	15.37
7 or More	67.9	36.6	21.1	10.2	24.83

See footnote at end of table.

Table B13. Energy End-Use Intensities for District Heat, 1989 (Continued)

Building Characteristics	Energy Intensity for District Heat (thousand Btu per sq. ft.)				RSE Row Factor
	Total	Space Heating	Water Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
Wall Materials					
Masonry	98.4	57.9	27.3	13.2	18.73
Siding or Shingles	Q	Q	Q	66.2	NF
Metal Panels	104.7	Q	Q	Q	11.99
Concrete Panels	87.1	56.2	8.1	22.8	19.80
Window Glass	Q	Q	9.5	Q	NF
Other	Q	Q	Q	Q	NF
Roof Materials					
Built-Up	92.1	56.6	17.6	18.0	13.19
Shingles (Not Wood)	Q	83.6	Q	Q	NF
Metal Surfacing	103.2	96.7	5.5	Q	33.13
Synthetic or Rubber	Q	51.2	Q	16.7	NF
Slate or Tile	118.2	96.8	9.2	12.2	19.74
Concrete	26.5	Q	Q	Q	10.27
Wooden Materials	71.4	37.4	Q	NC	20.16
Other	107.3	Q	93.1	9.4	8.42
Building Shell Conservation Features (Solely or in Combination)					
Roof or Ceiling Insulation	88.2	51.3	20.9	16.0	15.71
Wall Insulation	90.4	47.4	25.3	17.8	13.78
Storm or Multiple Glazing	90.2	40.4	32.8	17.0	14.80
Tinted, Reflective, or Shading Glass	77.1	46.8	17.8	12.5	25.91
Exterior or Interior Shadings or Awnings	75.8	45.6	15.8	14.4	19.76
Weather Stripping or Caulking	87.3	51.0	19.7	16.6	17.94
None of the Above	Q	69.9	12.8	Q	NF
ENERGY SOURCES AND END USES					
Energy Sources (Solely or in Combination)					
Electricity	89.0	54.0	19.6	15.4	18.75
Natural Gas	85.0	46.2	25.7	13.0	20.68
Fuel Oil	101.2	38.9	Q	Q	36.54
District Heat	89.0	54.0	19.6	15.4	16.89
Other	87.0	52.0	Q	15.6	15.37
Energy End Uses (Solely or in Combination)					
Heated Buildings	89.0	54.1	19.4	15.4	16.89
Air-Conditioned Buildings	84.9	52.4	18.3	14.3	15.57
Buildings with Water Heating	89.8	54.3	19.9	15.6	17.01
Buildings with Cooking	76.4	43.9	19.3	13.3	17.88
Buildings with Manufacturing	64.5	41.2	3.0	20.3	15.33
Space-Heating Energy Source					
District Heat	85.7	58.6	12.5	14.7	18.25
Main	85.7	58.1	12.7	14.9	17.86
With Secondary	116.0	68.7	Q	24.0	42.07
Electricity Only	Q	94.1	Q	Q	NF
Other Energy Sources or Combinations	88.7	50.8	Q	Q	39.57
With No Secondary	78.4	55.6	10.1	12.7	14.50
Secondary	Q	Q	Q	Q	NF
Other Excluding District Heat	129.1	Q	104.5	24.6	13.41
Building Not Heated	Q	NC	Q	NC	NF
Main Space-Heating Energy Source					
Electricity	52.3	Q	24.7	Q	47.59
Natural Gas	127.6	Q	83.8	18.6	11.34
Fuel Oil	88.2	Q	Q	Q	45.92
District Heat	85.7	58.1	12.7	14.9	17.86
Other	Q	Q	Q	Q	NF

See footnote at end of table.

Table B13. Energy End-Use Intensities for District Heat, 1989 (Continued)

Building Characteristics	Energy Intensity for District Heat (thousand Btu per sq. ft.)				RSE Row Factor
	Total	**Space** Heating	**Water** Heating	Other [a]	
RSE Column Factor:	1.0	NF	NF	NF	
HEATING AND COOLING					
Percent Heated					
Not Heated	Q	Q	Q	NC	NF
1 to 50	46.9	Q	6.4	Q	41.52
51 to 99	50.2	40.8	6.9	Q	28.01
100	98.8	57.9	22.6	18.3	18.75
Percent Cooled					
Not Cooled	Q	69.7	Q	Q	NF
1 to 50	104.1	68.6	15.1	Q	35.07
51 to 99	77.6	56.7	12.2	8.7	15.35
100	82.4	44.2	22.9	15.3	28.04
Heating Equipment (Solely or in Combination)					
Furnaces	Q	Q	Q	NC	NF
Boilers	Q	Q	Q	Q	NF
Individual Space Heaters	84.9	51.3	Q	13.6	16.32
Packaged Heating Units	82.9	51.3	Q	Q	37.04
Heat Pumps	73.9	62.0	9.2	Q	27.99
Air Ducts	76.8	47.2	18.0	11.6	17.11
Heating or Reheating Coils	72.8	44.7	16.6	11.4	18.14
Fan-Coil Units	85.9	50.1	20.3	15.4	13.52
Steam or Hot Water Radiators or Baseboards	96.9	55.9	21.7	19.2	19.24
Other	128.7	Q	73.9	Q	22.08
ENERGY MANAGEMENT					
Occupant Control					
Any Control of Heating	106.9	47.6	38.6	20.8	25.14
With Thermostats	107.8	47.2	39.4	21.2	25.26
Any Control of Cooling	99.5	50.4	30.3	18.8	17.32
With Thermostats	100.1	49.9	30.6	19.5	17.60
Reduced Use During Off-Hours					
Heating Only	Q	71.7	Q	Q	NF
Cooling Only	130.1	46.9	Q	66.4	47.68
Heating and Cooling	69.6	48.7	Q	7.9	20.28
Computerized Energy Management and Control System					
Present in Building	72.5	44.1	19.1	9.3	21.37
Controls Heating and Cooling	72.7	44.4	19.2	9.1	21.50
Controls Lighting	72.4	45.7	5.8	20.9	22.10
Controls Other	88.9	20.7	57.7	10.5	14.93
Other Energy Management					
Regular HVAC Maintenance	87.7	52.7	19.3	15.7	17.26
Participated in Utility Conservation Program	92.3	57.5	Q	13.6	35.95

[a] Includes cooking and cooling.
NC = No cases in responding sample.
NF = No applicable RSE row/column factor.
Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.
Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.
Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.