



# Survey 2000

Commercial and Institutional Building Energy Use

Summary Report

December 2003



Natural Resources  
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Canada

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*Leading Canadians to Energy Efficiency at Home, at Work and on the Road*

The Office of Energy Efficiency of Natural Resources Canada strengthens and expands Canada's commitment to energy efficiency in order to help address the challenges of climate change.

Commercial and Institutional Building Energy Use — Survey 2000  
Summary Report — December 2002

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# I. Introduction

In 2001, Statistics Canada conducted the first *Commercial and Institutional Building Energy Use Survey* (CIBEUS) on behalf of the Office of Energy Efficiency (OEE) of Natural Resources Canada (NRCan). CIBEUS contributes directly to the OEE's mandate — to strengthen and expand Canada's commitment to energy efficiency in order to help address the challenges of climate change — by providing detailed information on the commercial sector that will be useful to assess how well Canada is fulfilling its commitment to reducing greenhouse gas emissions.

The main objective of this survey was to collect energy intensity information for the commercial and institutional buildings in Canada for the reference year 2000. More precisely, the survey involved collecting information on

- building characteristics
- occupancy characteristics
- energy efficiency characteristics
- energy consumption

The purpose of this summary report is to give an overview of the main survey findings. A more detailed report entitled *Commercial and Institutional Building Energy Use Survey 2000 — Detailed Statistical Report* is also available at [oee.nrcan.gc.ca/neud/dpa/data\\_e/cibeus\\_description.cfm](http://oee.nrcan.gc.ca/neud/dpa/data_e/cibeus_description.cfm).

The findings presented in this document are representative of the CIBEUS target population. The CIBEUS target population includes all buildings with an area of at least 92 m<sup>2</sup>, of which 50% or more is devoted to commercial or institutional activities, located in Census Metropolitan Areas (CMAs) or Census Agglomerations (CAs) with a population of 175 000 or greater; or in the Atlantic provinces, a population of 50 000 or greater.

For more information on this publication or on OEE services, please contact us by e-mail at [euc.cec@nrcan.gc.ca](mailto:euc.cec@nrcan.gc.ca).

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## II. Statement of Findings

### Analytical Summary

- The *Commercial and Institutional Building Energy Use Survey* (CIBEUS) was conducted for the first time in 2001, using 2000 as the reference year.
- The survey shows that the real estate is relatively old, particularly in Ontario and British Columbia, and that the largest proportion of new construction activity was in the Prairies.
- The vast majority of buildings are of average or small size — under 929 m<sup>2</sup>. However, the size of buildings constructed in the last 10 years has been steadily growing, and an increasing number of buildings are air-conditioned.
- Nearly 11% of buildings had energy efficiency retrofits in 2000. The health care sector accounted for the greatest number of retrofits among all sectors. The reason given most frequently for the decision to upgrade was the need to be more competitive economically.
- The rate of implementation of energy conservation measures varies widely from sector to sector. Overall, the rates are higher for large and recently constructed buildings than for small and older buildings.
- Buildings constructed in the last 20 years are less energy-intensive. Small buildings and those owned by private individuals are the most energy-intensive. Education is the sector with the lowest energy-intensity rate.

### A. SCOPE OF SURVEY

#### From Halifax to Victoria

CIBEUS 2000 covers over 137 000 buildings. The survey is representative of buildings located in Census Metropolitan Areas (CMAs) or Census Agglomerations (CAs) with a population of 175 000 or greater, with the exception of the four Atlantic provinces, where the threshold population is only 50 000. The statistics show that CIBEUS represents 67% of Canadian commercial and institutional buildings as a whole. The regional breakdown of CIBEUS buildings is as follows: Ontario, 38%; Quebec, 23%; the Prairies, 20%; British Columbia, 12%; and the Atlantic provinces, 7%.

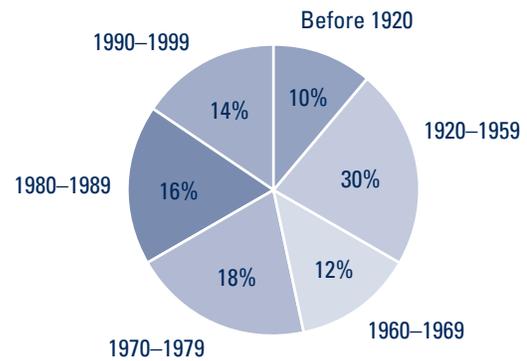
### Aging real estate

Year of construction is a determining factor in energy efficiency analysis, which will be discussed later in this report. The survey shows that over 40% of commercial and institutional buildings in Canada were constructed before 1960 and that 25% of these were in fact over 80 years old. Again, for Canada as a whole, 14% of the buildings surveyed were constructed in the last 10 years, compared with 16% from 1980 to 1989 and 18% from 1970 to 1979. In 2000, the mean year of construction for all buildings was 1959.

A region-by-region analysis of the same data shows that real estate in Ontario and British Columbia is relatively old. Overall, 53% of buildings in British Columbia and almost half of buildings in Ontario were constructed before 1960. Only 24% of buildings in the Prairies were constructed before that year, and 21% of commercial and institutional buildings in that region were constructed recently, between 1990 and 1999. Only 10% of buildings in Ontario and British Columbia were constructed in the past 10 years.

**Chart 1:**

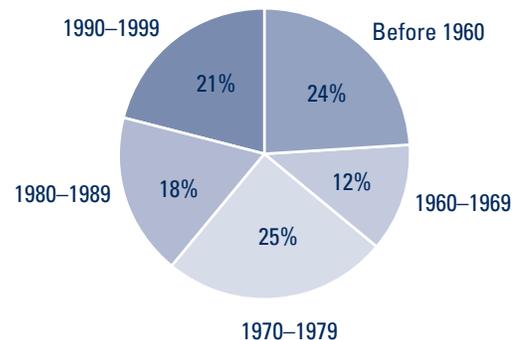
#### Year of Construction



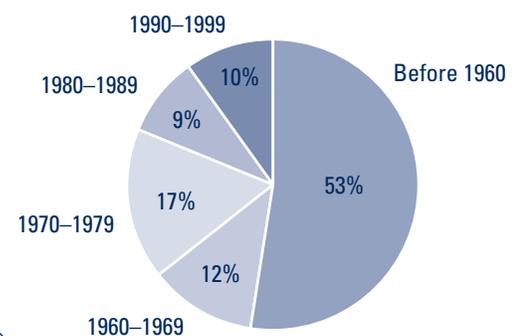
**Chart 2:**

#### Comparison of Prairies and British Columbia Building Construction Rates, by Decade

##### Prairies



##### British Columbia



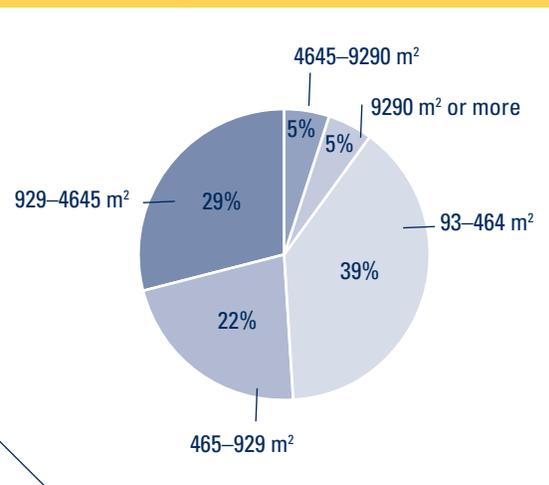
According to year 2000 data, the largest number of new commercial and institutional buildings constructed in the past 10 years was in the Prairies. From 1990 to 1999, over 30% of new buildings were constructed in that region, compared with 28% in Ontario and 25% in Quebec. Before 1960, Ontario accounted for 45% of new construction, compared with only 11% for the Prairies. One of the main reasons for the change is no doubt the level of economic activity. In the nineties, economic growth was very strong in the Prairies, and rising fuel prices also contributed to the construction boom.

**Table 1. Breakdown of New Construction Projects in Canada — Relative Decline of New Construction Projects in Ontario**

	Before 1960	1990–1999
Atlantic	5%	8%
Quebec	23%	25%
Ontario	45%	28%
Prairies	11%	30%
British Columbia	16%	9%

**Chart 3:**

**Size of Buildings**



**Increasing size of buildings**

CIBEUS data shows a use of nearly 303 square kilometres of building space, or more than half the surface area of Montréal Island. Most buildings in the survey are of average size: over 60% of them have a floor area under 929 m<sup>2</sup>, and 70% of commercial and institutional buildings have no more than two floors. Slightly more than 10% of buildings have more than 4645 m<sup>2</sup> of floor space capacity.

**Table 2. Comparison Between Sizes of Buildings Constructed Before 1960 and From 1990 to 1999**

	Before 1960	1990 to 1999
93 to 464 m <sup>2</sup>	48%	32%
465 to 929 m <sup>2</sup>	25%	23%
929 to 4645 m <sup>2</sup>	22%	29%
4645 m <sup>2</sup> or more	5%	16%
All buildings	40%	14%

However, if we disaggregate the same data by year of construction, we find that recently erected buildings are much larger than the older ones. The trend comes out clearly when we compare data on buildings constructed in the last 10 years with data on those constructed before 1960. Small buildings (floor space less than 465 m<sup>2</sup>) account for almost half of new buildings constructed before 1960. Yet new buildings account for only one-third of new construction in the 1990–1999 period. The trend is reversed for large buildings (over 4645 m<sup>2</sup>). They accounted for only 5% of new construction before 1960 but make up 16% of new construction in the last 10 years.

### Predominance of services

Using the CIBEUS data, we can break down buildings by use and sector of activity. The largest sector is non-food service, with 15% of buildings. This includes gas stations, hairdressing salons, garages and cleaners. Non-food retails account for 13%: this sector includes pharmacies, department stores and electronics stores. Private, financial and professional offices rank third, with 11%.

The survey shows that nearly 40% of buildings belong to private individuals, and 36% to private organizations. Private non-profit organizations and government agencies each account for 12% of buildings.

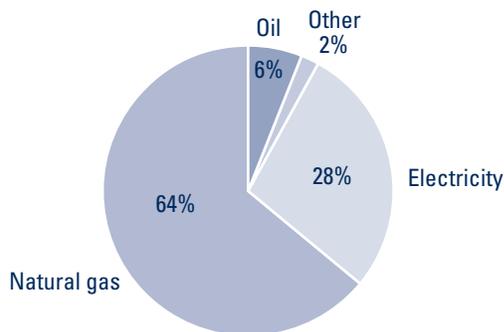
## B. ENERGY CONSUMPTION

CIBEUS provides us with information on the energy sources used in the commercial and institutional sector. Naturally, the population as a whole uses electricity. Over 72% of buildings also use natural gas, and only 8% use oil.

In 2000, buildings in the commercial and institutional sector consumed more than 479 million gigajoules of energy, which is equivalent to the total consumption of 4 million Canadian households. The regional breakdown shows that Ontario accounted for 43% of consumption, the Prairies for 23%, Quebec for 21%, British Columbia for 9%, and the Atlantic provinces for 4%.

**Chart 4:**

### Principal Energy Source for Heating (rate of use)



### Natural gas: Principal energy source for heating

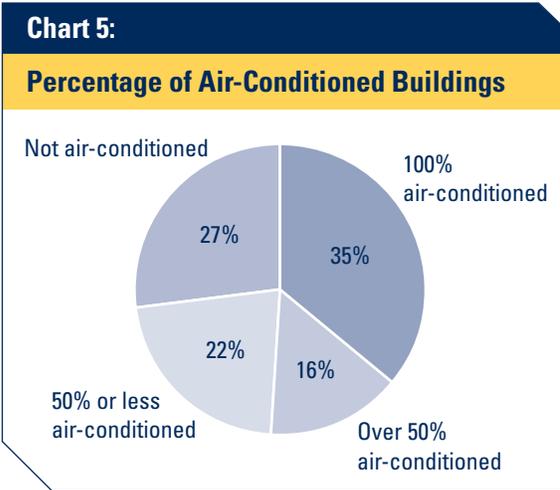
In 2000, almost 88% of buildings heated 100% of their floor space. In 7% of cases, 50% to 99% of floor space was heated, and in 5% of cases, less than half was heated. Survey data indicates that 69% of buildings used natural gas at least to some extent, 50% used electricity, and 8%, fuel/heating oil.

Overall, natural gas was the principal heating source for 64% of buildings, compared with 28% and 6% respectively for electricity and oil.

**Table 3. Principal Energy Source for Heating, by Region**

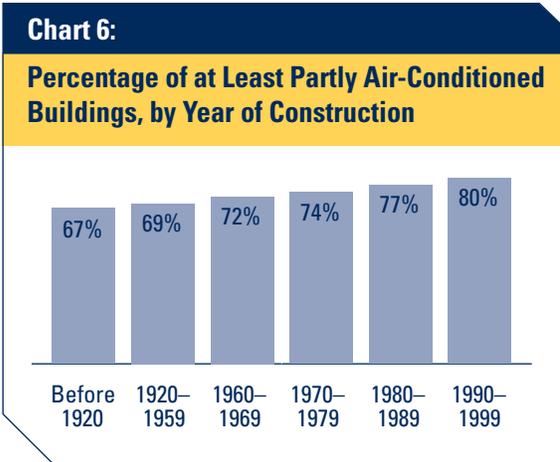
Region	Energy Source	Rate of Use
Atlantic	Electricity	54%
Quebec	Electricity	58%
Ontario	Natural gas	79%
Prairies	Natural gas	92%
British Columbia	Natural gas	69%

A regional breakdown shows significant variations in the rate of use for each energy source. Because Quebec is major producer of hydroelectric power, it is not surprising that electricity is the principal source of energy used for heating in 58% of buildings in that province. Natural gas is the main energy source for heating in 92% of buildings in the Prairies, 79% in Ontario, and 69% in British Columbia.



**Air-conditioned commercial and institutional buildings are increasing**

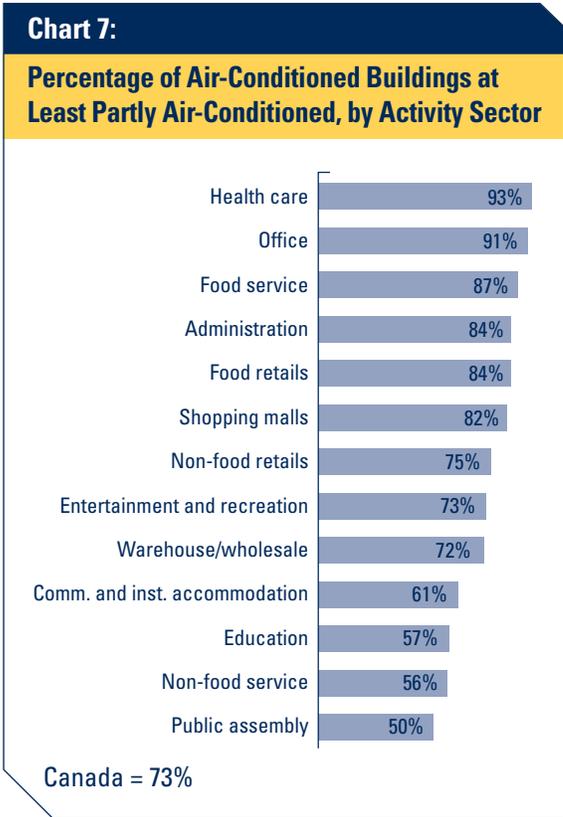
The survey shows that 100% of floor space is air-conditioned in 35% of buildings, more than half is air-conditioned in 16% of them, less than half is air-conditioned in 22%, and 27% of buildings are not air-conditioned at all. This means that, in total, 73% of buildings are at least partly air-conditioned; 86% of these use electricity as one or their energy sources, whereas 13% use natural gas.



There is a direct link between the year of construction of buildings and the rate of air conditioning: the more recently the buildings were constructed, the higher the rate of air-conditioning. In fact, more than 4 out of 5 buildings constructed between 1990 and 1999 are at least partly air-conditioned. The rate is 77% for the 1980–1989 period and 74% for 1970–1979. The downward trend continues for buildings constructed before 1920, with a rate of 67%.

The relationship is just as direct when we examine it in terms of floor space. The larger the building, the more likely it is to be air-conditioned. Thus 87% of large buildings (4645 m<sup>2</sup> or more of floor space) are at least partly air-conditioned, compared with 69% of small buildings (less than 929 m<sup>2</sup>).

CIBEUS shows us that, all things considered, the buildings air-conditioned most often are the ones in the health care and office sectors, with 90% being at least partly air-conditioned, followed by food service, administration, food retails and shopping malls with rates over 80%. The buildings with the lowest rates of air conditioning are in the public assembly (only half of buildings at least partly air-conditioned), non-food service and education (56% and 57% respectively) sectors.

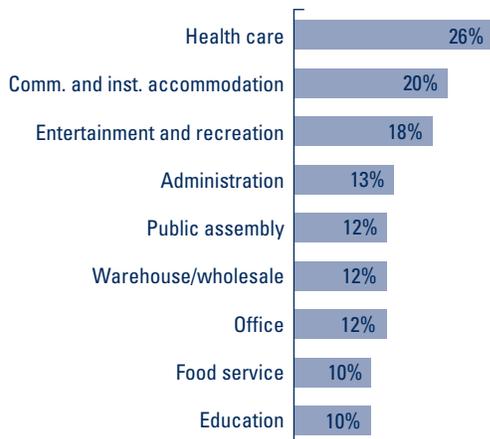


### C. A STEP IN THE RIGHT DIRECTION

In the year 2000 alone, 14 886 or nearly 11% of the buildings had retrofits that, according to their owners, changed their energy consumption significantly. Nearly one-quarter of the upgrades involved the heating system, compared with 18% for ventilation and air conditioning, and 17% for the basement and foundations.

**Chart 8:**

#### Main Sectors Undertaking Energy Efficiency Retrofits in 2000

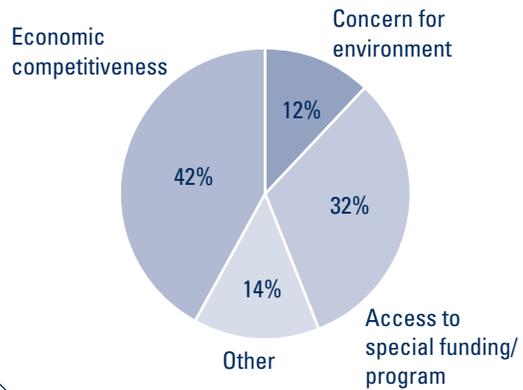


Canada = 11%

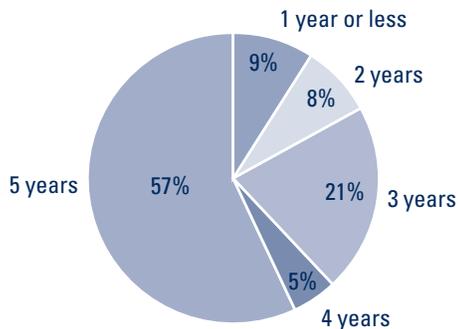
The sectors that undertook the most work to upgrade building energy efficiency significantly are health care (over one-quarter of buildings had work done in 2000) and commercial and institutional accommodation (20%), followed by entertainment and recreation (18%), administration (13%) and public assembly (12%).

**Chart 9:**

#### Reason for Retrofit



The reasons for the upgrades vary, but CIBEUS identified the three major ones. Economic competitiveness was the one most often cited (42% of retrofitted buildings), followed by access to special funding/ programs (32%), and concern for the environment (12%).

**Chart 10:****Appropriate Payback Period for Energy Efficiency Upgrades****Owners willing to invest**

CIBEUS also asked what an appropriate payback period would be for an organization to consider undertaking an energy efficiency retrofit of any kind. The average payback period considered appropriate for the commercial and institutional building sector as a whole is 4.8 years. Duration naturally depends on the type and content of work. Overall, 57% of owners would consider doing work with a payback period of 5 years or more. A mere 9% would consider it only if the payback period was 1 year or less.

CIBEUS shows that private organizations are less willing to undertake work with a long payback period. Thus 70% of buildings belonging to government agencies could benefit from work with a payback period of 5 years or more, compared with 55% of buildings belonging to private individuals.

**Toward greater energy efficiency**

Many retrofit projects involved installation of a variety of devices designed to improve energy efficiency. CIBEUS differentiates between two types of energy conservation measures: those concerning lighting and those concerning heating and air conditioning.

*More energy-efficient lighting*

A number of measures and devices target lighting energy efficiency. Table 4 summarizes the main ones identified in the survey and gives the implementation rate of each one for the whole sample. According to CIBEUS, 54% of buildings are equipped with one or more of these devices over at least 25% of their floor space, 44% with devices over more than half their floor space, and 31% with devices over more than 90% of their floor space. Nearly 30% of buildings have no device for reducing lighting energy consumption. Only those with energy conservation measures covering over half of the floor space will be used for our analysis.

**Table 4. Rate of Implementation of Conservation Measures Targeting Lighting**

Lighting	Rate
Energy-efficient ballast	42%
Energy-efficient lamps	30%
Time switches	22%
Reflectors	21%
Manual dimmer switches	21%
Daylight controls that detect natural light	13%
Occupancy sensors	9%

**Table 5. Rate of Implementation of Conservation Measures Targeting Lighting**

Building Size	Rate
Large	70%
Small	37%
Year of Construction	
1990–1999	62%
Before 1960	37%
Activity Sectors (High Rates)	
Entertainment and recreation	64%
Education	62%
Administration	57%
Activity Sectors (Low Rates)	
Commercial/institutional accommodation	23%
Non-food retails	32%
Non-food service	32%

According to CIBEUS, the larger the building, the more likely it is to be equipped with lighting energy efficiency devices. Nearly 70% of large buildings (4645 m<sup>2</sup> and over) have such devices. This is much higher than the Canadian average of 44% and the rate for small buildings (under 465 m<sup>2</sup>), which is 37%. If we compare implementation rates by building age, we find another significant disparity. Buildings constructed between 1990 and 1999 have a lighting energy efficiency implementation rate of 62%, compared with only 37% for those constructed before 1960.

Overall, the sectors with the highest lighting energy efficiency implementation rates are entertainment and recreation, education and administration (all three around 60%). At the other end of the spectrum, less than one-quarter of buildings in commercial and institutional accommodation are equipped with the devices concerned. The implementation rates are also relatively low in the case of non-food service and non-food retails (less than one-third of buildings).

**Table 6. Rate of Implementation of Conservation Measures Targeting Heating and Air Conditioning**

Equipment	Canada	Large buildings (over 4645 m <sup>2</sup> )	Small buildings (under 465 m <sup>2</sup> )	Constructed 1990–1999	Constructed before 1960
Temperature setback	38%	60%	31%	50%	36%
Outdoor air economizer	34%	67%	23%	50%	29%
Equipment reset	30%	60%	21%	43%	27%
Variable air volume system	28%	53%	20%	40%	23%
Heat recovery system	13%	28%	10%	21%	11%

*Heating and air conditioning:**Getting equipped in order to consume less*

Table 6 summarizes the main conservation measures targeting heating and air conditioning and gives their implementation rates for all the Canadian buildings surveyed. Note that 38% of commercial and institutional buildings have temperature setback devices. More than one-third have an outdoor air economizer. Only 13% have a heat recovery system.

Implementation rates for conservation measures targeting heating and air conditioning vary with building size in particular. Table 6 compares rates for small and large buildings. Overall, a much higher percentage of large buildings are equipped with energy conservation devices. For example, two-thirds of large buildings have an outdoor air economizer, compared with 23% of small buildings. The survey also shows that recently constructed buildings are more likely to have energy conservation devices than older buildings. Half of the buildings constructed between 1990 and 1999 have an outdoor air economizer, compared with 29% of pre-1960 buildings.

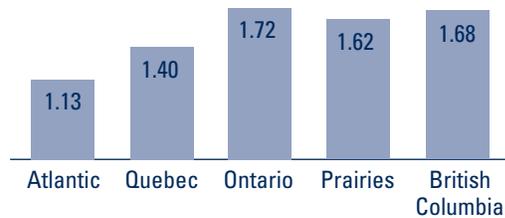
## D. ENERGY INTENSITY

In this report, energy intensity is defined as the amount of energy consumed per unit of floor space and is expressed in gigajoules per square metre ( $\text{GJ}/\text{m}^2$ ). Obviously, the energy intensity level depends on the interaction of many factors that are difficult to isolate, and the impact of this is hard to study individually. However, CIBEUS enables us to determine the main factors influencing energy consumption.

**Chart 11:**

### Energy Intensity ( $\text{GJ}/\text{m}^2$ ), by Region

Canada = 1.58



### Significant regional variations

Overall, the commercial and institutional sector had an energy intensity of  $1.58 \text{ GJ}/\text{m}^2$  in 2000. Energy intensity varies significantly with the province and region. The Atlantic has the lowest intensity, with a ratio of  $1.13 \text{ GJ}/\text{m}^2$ , followed by Quebec ( $1.40 \text{ GJ}/\text{m}^2$ ), the Prairies ( $1.62 \text{ GJ}/\text{m}^2$ ), British Columbia ( $1.68 \text{ GJ}/\text{m}^2$ ) and Ontario ( $1.72 \text{ GJ}/\text{m}^2$ ). Many factors can be used to help explain these regional disparities, including the differing commercial and institutional structures in the various regions, major climatic differences, type of energy used, type of construction and building size.

**Chart 12:**

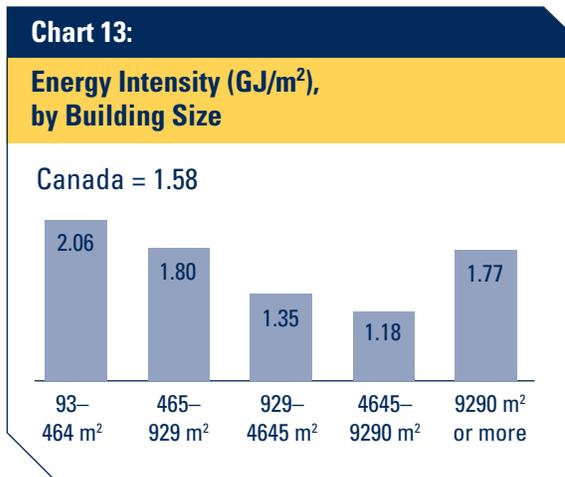
### Energy Intensity ( $\text{GJ}/\text{m}^2$ ), by Year of Construction

Canada = 1.58



### Low energy intensity of new buildings

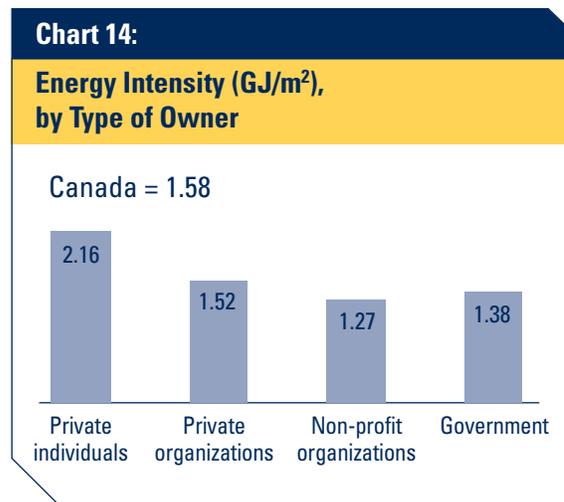
Construction standards, techniques, materials and types vary considerably from one decade to the next, but in all cases they still exert a direct impact on energy use. The survey data clearly shows that buildings with lower energy intensity are the ones constructed from the 1980s on. Overall, the energy intensity of these buildings is slightly higher than  $1.3 \text{ GJ}/\text{m}^2$ . The buildings with the highest intensity are the ones constructed in the 1970–1979 period: their intensity is  $1.83 \text{ GJ}/\text{m}^2$ .



### High energy intensity of small buildings

Based on CIBEUS data, increased floor space does not necessarily mean a higher energy intensity ratio. In fact, the data shows that buildings with a floor area below 464 m<sup>2</sup> (small buildings) have higher energy intensity (ratio of 2.06 GJ/m<sup>2</sup>). More than half of these buildings are more than 40 years old, i.e. they were constructed before 1960.

The 4645–9290 m<sup>2</sup> category has the lowest energy intensity, with a ratio of 1.18 GJ/m<sup>2</sup>. As pointed out earlier, the energy intensity of a building is partly a function of the year of construction. The survey shows that 47% of buildings in this category were constructed after 1980. The causal relationship between floor space and energy intensity is nonetheless difficult to establish because many external factors influence energy consumption, including construction techniques and new technologies.



### Higher energy intensity of buildings owned by private individuals

The buildings with the highest energy intensity are owned by individuals. The ratio is 2.16 GJ/m<sup>2</sup>, which is well above the Canadian average of 1.58 GJ/m<sup>2</sup>. The energy intensity of buildings belonging to private organizations is 1.52 GJ/m<sup>2</sup>, and that of federal, provincial, municipal and regional government buildings is 1.38 GJ/m<sup>2</sup>. The ratio for non-profit organizations is the lowest, at 1.27 GJ/m<sup>2</sup>. The relatively low ratio for government property and, indeed, for non-profit organizations is attributable both to the type of activities they are engaged in and to the fact that the owners enjoy greater access to infrastructure programs.

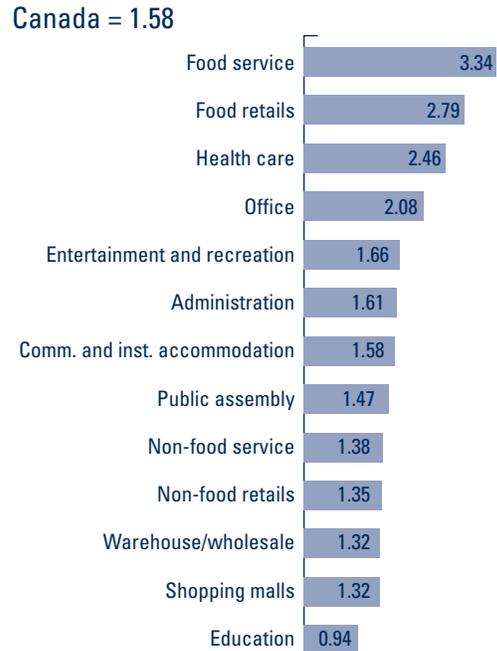
### Impact of type of activity on energy consumption

The type of activity in the building directly affects energy consumption. Some activity sectors consume much more energy than others, and their energy intensity ratio is generally higher as a result. The sector with the highest energy intensity ratio (3.34 GJ/m<sup>2</sup>) is food service, followed by food retails (2.79 GJ/m<sup>2</sup>), health care (2.46 GJ/m<sup>2</sup>), and office (2.08 GJ/m<sup>2</sup>). The type of activity with the lowest energy intensity is education (0.94 GJ/m<sup>2</sup>), followed by shopping malls and warehouse/wholesale at 1.32 GJ/m<sup>2</sup>.

Of course, it is impossible to establish a direct connection between type of activity and energy intensity, but CIBEUS does give some possible explanations. With this in mind, we conclude with a case study on the education sector — the one with the lowest energy intensity ratio in Canada — and we endeavour to identify the impact of building characteristics on energy intensity.

**Chart 15:**

### Energy Intensity (GJ/m<sup>2</sup>), by Type of Activity



## Case Study: Education Sector

- The education sector encompasses not only preschool, elementary secondary, college, university and professional training institutions but also music, dance, theatre, language, driving and other schools. It also includes adjacent buildings such as libraries, gymnasiums, auditoriums, offices for the administration and student associations, etc. In all, the category includes more than 11 500 buildings, or 8.4% of all buildings surveyed.
- Buildings in the education sector are relatively old: 39% of them were constructed before 1960, and only 9% between 1990 and 1999. However, their energy conservation measure implementation rate is much higher than that of several other sectors. In the case of lighting, for example, 62% of buildings in the education sector are equipped with energy conservation devices; this is much higher than the Canadian average of 44%.
- The education sector accounts for nearly 19% of total floor space — the highest proportion, along with that of the office sector. The office sector accounts for 25% of total energy consumption, compared with only 11% for education.
- It will come as no surprise that most buildings in the education sector are large. Nearly half of them have between 929 and 4645 m<sup>2</sup> of floor space, and 28% have more than 4650 m<sup>2</sup>. CIBEUS shows that, overall, large buildings have a lower energy intensity ratio than small buildings.
- Education is one of the sectors with the lowest air-conditioning rate: 57% of education real estate is at least partly air-conditioned, compared with the Canadian average of 73%.
- Nearly 75% of the buildings belong to government. Overall, the energy intensity ratio of government properties is lower than the Canadian average — 1.38 as opposed to 1.58.

# Appendix

## Description of building activity sectors

For the purpose of the survey, buildings were classified according to the main use(s) to which most of their floor space was put in 2000. In this appendix, we provide details of the activities included in each category.

## Commercial and institutional accommodation

### *Commercial:*

Rooming houses; casino hotels; extended-stay hotels; hotels; inns; motels; motor inns; tourist homes; other unclassified commercial accommodation establishments; unclassified long-term (commercial) residences; other unclassified short-term (commercial) residences.

### *Institutional:*

Establishments providing services to seniors (limited medical facilities); emergency shelters; group homes; halfway houses; old-age homes; residences for persons with disabilities; hospitals and group homes for persons with developmental disabilities; monasteries/convents; nursing homes; orphanages; rectories; other unclassified service residences; other unclassified institutional accommodation establishments; other unclassified long-term (institutional) residences; other unclassified short-term (institutional) residences.

## Entertainment and recreation

Casinos; flea markets; race courses; indoor swimming pools; movie theatres; nightclubs; permanent buildings in a camp, on a campsite or in a recreational-vehicle (RV) park; radio and TV stations and studios; resorts; ice rinks; sport establishments (completely enclosed); stadiums; theatres; other unclassified entertainment and recreation buildings; other unclassified entertainment buildings (electronic games, bingo, dance and pool halls); other unclassified recreation buildings (bowling lanes, gymnasiums, physical fitness centres).

## Office

Accounting, bookkeeping, preparation of tax returns; architecture, engineering, liberal and other professions (except medical professions); communication, marketing, advertising and public relations agencies; financial services (banks, brokerages, insurance companies, securities); human resources, management and computer systems consultants; private offices (head offices and branches); property management companies; realtors; other unclassified, private financial and professional services; other unclassified professional and consulting services; other unclassified real estate offices.

## Food retails

Beer, wine and spirits stores; convenience stores in gas stations; convenience stores or markets; agricultural producers and fruit and vegetables markets; grocery stores, supermarkets and hypermarkets; butcheries/fish markets; bakeries/confectioners; specialty food stores; other food retails.

**Non-food retails**

Art dealers; clothing stores; department stores; pharmacies; appliance and electronics (including computers, software, stereo equipment and TVs) stores; furniture and household accessories (including building materials and hardware) stores; vehicles and parts (including trucks, motorcycles and boats) sales; optical equipment (opticians) and photography stores; other non-food retails.

**Food service**

Take-out (fast-food restaurants, pizzerias, sandwich bars); caterers; coffee, doughnut and bagel shops; drinking establishments — alcohol (bars, cocktail lounges, nightclubs); menu and full-service restaurants (small restaurants, family restaurants, large restaurants); prepared food services (cafeterias); other food services.

**Non-food service**

Agriculture/biology laboratories; aircraft hangars; bus maintenance shops; crematoriums; cleaners/laundrerers (including linen and uniform suppliers); food analysis laboratories; funeral homes; gas stations; highway and construction material and equipment maintenance shops; mechanical/electrical laboratories; medical/dental laboratories; automobile repair, service and maintenance shops (including carwashes); multi-service establishments; personal services (hairdressing, beauty and tattooing salons); photo developing; photography (excluding photographic equipment sales); railway maintenance facilities; repair and maintenance services; veterinary laboratories; other non-food services; other unclassified funeral services; other unclassified laboratories; other unclassified non-food services; other transportation and maintenance facilities; other unclassified vehicle maintenance shops.

**Shopping malls**

Shopping malls (groups of retail stores sharing common indoor areas); strip malls (groups of retail stores with no common indoor area); other unclassified shopping malls.

**Warehouse/wholesale**

Refrigerated warehouses (food, mixed, non-food, frozen food products, frozen mixed products, frozen non-food products); non-refrigerated warehouses (self-serve, food, mixed, non-food); other refrigerated warehouses (food and non-food); other unclassified refrigerated warehouses (food and non-food); other unclassified warehouse and wholesale facilities.

**Administration**

First Nations and tribal corporations; First Nations and band councils; Crown corporations (federal, provincial); fire stations; federal courthouses; federal police (RCMP); federal penitentiaries/prisons; municipal corporations (municipal public utilities); municipal police; national defence (excluding military bases and protected units); Aboriginal peoples and First Nations offices (excluding band councils and other government agencies); offices of religious organizations; union offices; provincial courthouses; provincial prisons and correctional agencies; provincial police; city and town halls; other public administrations (federal, municipal, provincial); other unclassified administrations; other unclassified administrations of non-profit organizations; other unclassified Crown corporations; other unclassified public administrations (First Nations).

**Education**

Business schools (including training courses); CEGEPS; community colleges; continuing training and adult education; universities and degree-granting colleges; driver education schools with classrooms; secondary schools/colleges/composite schools; language schools; intermediate schools (cycle I and II secondary schools); preschool/daycare/nursery establishments; regular elementary schools; art, dance, theatre and music schools; information technology training schools (including computer and software training); specialized elementary schools; specialized secondary schools; specialized trade schools; university teaching buildings (classrooms, laboratories, offices); university administrations; university auditoriums/concert halls; university student residences; university gymnasiums/sport facilities; university libraries/archives/art galleries/museums; university stadiums; university social centres; other unclassified teaching buildings; other unclassified occupational/professional training schools.

**Health care**

Abortion/birth control; alcoholism, substance abuse, narcotics and psychotropic drug abuse; ambulance dispatch centres; chiropractic centres and offices; local community service centres (CLSC), community health centres; dental clinics, dentists' offices; emergency rooms, after-hours clinics; medical hospitals; medical and veterinary clinics/offices; psychiatric institutions (psychiatric hospitals); optometrists and ophthalmologists (excluding optical equipment/opticians); physiotherapists, occupational therapists, and speech therapists; physiotherapy; psychiatrists (MDs); psychologists, psychotherapists, social workers; specialized clinics (orthopedics, osteopathy, ear, nose and throat); veterinary clinics and hospitals; other unclassified health care (hospital in-patient care, outpatient clinics and offices); other unclassified mental health clinics and offices; other unclassified rehabilitation establishments.

**Public assembly**

Airports; archives; art galleries (excluding art dealers); meeting halls and rooms (non-profit organizations); auditoriums/conference rooms; bus terminals; performing arts centres; community centres; concert halls; convention centres; historic and heritage sites (historic forts, heritage villages); libraries; port terminals (ferries); museums/exhibition halls; religious worship buildings (chapels, churches, synagogues, temples); train stations; other unclassified cultural centres; other unclassified passenger stations; other unclassified public places; other unclassified public rooms.