



ENERGY-EFFICIENCY PROJECTS AT THE MCGILL UNIVERSITY HEALTH CENTRE GENERATE ENERGY SAVINGS AND A REDUCTION IN GREENHOUSE GAS EMISSIONS

Table I, Montreal Children’s Hospital—a \$1.43M project whose annual economic return on investment (ROI) is \$339.3K:

Measures	Energy Savings (Gj/yr)	Reduction in GHGs (t. CO ₂ /yr)
▪ Installation of high-efficiency centrifugal chillers	11,686	866
▪ Installation of an innovative serpentine-type boiler that recovers heat from combustion gases before they're evacuated outdoors	5,967	442
▪ Optimization of the steam distribution network	4,616	342
▪ Optimization of controls	5,830	432
▪ Installation of variable speed drives	2,666	198
▪ Heat recovery from the medical air compressor room	1 852	137
Total Savings	32,617	2,417

TOTAL
2,417 tonnes
of CO₂

Table II, Royal Victoria Hospital—a \$3.3M project whose annual economic ROI is \$984K:

Measures	Energy Savings (Gj/yr)	Reduction in GHGs (t. CO ₂ /yr)
▪ Installation of 6 high-efficiency boilers	34,881	2,585
▪ Installation of a heat recovery system on the boilers (hot gases)	10,093	748
▪ Installation of a centralized building control system	N/A	N/A
▪ Installation of an electrical boiler	3,891	288
▪ Insulation of pipe network	2,540	188
▪ Condensed steam heat recovery system	5,783	428
Total Savings	57,188	4,238

TOTAL
4,238 tonnes
of CO₂

Table III, Montreal Neurological Hospital—a \$7.9M project whose annual economic ROI is \$952K:

Measures	Energy Savings (Gj/yr)	Reduction in GHGs (t. CO ₂ /yr)
▪ Conversion of the heating network	20,329	1,506
▪ Installation of heat recovery system	8,385	621
▪ Replacement of a hot-water production system	1,257	93
▪ Installation of a variable-speed drive system	N/A	N/A
▪ Installation of a centralized building control system	2,726	202
Total Savings	32,697	2,423

TOTAL
2,423 tonnes
of CO₂

Table IV, Montreal General Hospital—a two-phase \$10.03M project whose annual economic ROI is \$1.57M:

Measures	Energy Savings (Gj/yr)	Reduction in GHGs (t. CO ₂ /yr)
▪ Modernization of the steam network	15,961	780
▪ Installation of 2 off-peak-hour electrical boilers	12,500	145
▪ Conversion of heating from steam to hot water	10,410	510
▪ Replacement of hot-water boilers	16,463	805
▪ Installation of a heat recovery system	55,454	2,710
Total Savings	110,788	4,950

TOTAL
4,950 tonnes
of CO₂

Table V, Montreal Chest Institute—a \$800K project whose annual economic ROI is \$127K:

Measures	Energy Savings (Gj/yr)	Reduction in GHGs (t. CO ₂ /yr)
▪ Conversion of the heating network in Pavilion J, optimization of steam production, conversion of hot-water production, and installation of a heating plant in Pavilion D	10,294	663
▪ Installation of the windows in Pavilion D	46	3.4
Total Savings	10,340	666.4

TOTAL
666.4 tonnes
of CO₂