

## OFFICE BUILDING ENVIRONMENTAL SUSTAINABILITY ELEMENTS

At Francis Cooke Landfill we try to practice what we preach and have constructed our new administration building to incorporate the sustainability elements listed below.

### 1/ SOLAR POWER GENERATION

Both roof surfaces have been used to mount a 20 kilowatt solar panel array to generate renewable electricity and offset the building's electrical needs. It is estimated that the Francis Cooke site will use less than half of the [electricity produced](#), with the remaining power fed back into the Alberta power grid.

### 2/ RENEWABLE ENERGY FROM RECYCLED BIOMASS

An efficient, computer controlled biomass boiler has been installed to heat the new building and maintenance shop using recycled wood products as fuel. This will reduce use of non-renewable energy while providing another value-added use for the recycled biomass that is delivered to our resource recovery operation.



### 3/ EFFICIENT IN-SLAB FLOOR HEATING

The building is heated via hydronic in-slab heating. This minimizes the energy needed to move warm air around the building and takes advantage of heat stored in the concrete slab to buffer dramatic swings in building temperature. In summer the mass of the slab serves as a heat sink to help keep the building cool.

### 4/ EVEN TEMPERATURE CONTROL

The in-slab heating system operates three "loops". Each of these loops is controlled by its own thermostat to allow the temperature of different parts of the building to be managed separately. Heating and cooling provide even temperatures as the thermal mass of the concrete slab buffers temperature swings in the building.

### 5/ MINIMAL FLOOR COVERINGS

By avoiding the use of carpet and other floor coverings the concrete slab is kept exposed to efficiently transfer both convective and radiant heat to the walls, ceiling and furnishings.

## 6/ R-30 INSULATED BUILDING ENVELOPE

The building envelope has been insulated to R30 standards to make the most efficient use of the heating and cooling systems.

## 7/ ENERGY EFFICIENT LIGHTING

All lighting for the building is provided by energy efficient LED fixtures. Office spaces are located on exterior walls allowing large windows to provide natural light into the most the frequently used work spaces.

## 8/ AUTO-OFF LIGHT SWITCHES

Common rooms have automatic-off lighting switches to ensure lights are not left on for extended periods.

## 9/ RECYCLED ASPHALT SURFACING

Parking and traffic surfaces around the building have been prepared using recycled asphalt from the Francis Cooke resource recovery operations.

## 10/ USE OF RECYCLED FILL MATERIAL

Any back-fill that was required during the finishing of the building utilized clean fill and recovered asphalt that did not meet specifications for resale. Final landscaping will make use of the topsoil product produced at the Francis Cooke facility. This material is prepared by blending clean fill delivered to our site with our Class A compost prepared from the Bow Valley's recycled yard and garden material.

## 11/ RECOVERED WINDOWS

All office windows were recovered from a building that was decommissioned at the Calgary airport. These windows are triple paned, laminated high impact glass intended to withstand blasts from aircraft engines. These windows provide both security and energy efficiency while preventing dust penetrating the building in our windy environment.

## 12/ REUSED OFFICE FURNITURE

Most of the building's furnishings have been purchased from a used office furniture distributor in Calgary.

## 13/ RECYCLED PAINT

The building's interior surfaces have been finished with recycled paint collected through Alberta's used paint recovery program. This helps to "close the loop" and support one of the Province's valuable stewardship programs.

## 14/ RECYCLING OF CONSTRUCTION MATERIALS

During the construction of the building effort was made to recycle materials that otherwise would have been destined for landfill. Materials recovered for recycling are typical of the Francis Cooke resource recovery program and included metal, drywall, wood, cardboard and paper.