



VICTORIA PLACE

Introduction to Victoria Place

What is a 'Green' Building?

Victoria Place has tried to be as comprehensive as possible in designing an 'environmentally friendly' building, or to be more appropriate, as environmentally friendly as possible compared to traditional building techniques. By aligning the Victoria Place project with the US Green Building Council's LEED program we ensure that the widest range of green issues are addressed.

These issues include not only energy efficiency but water use efficiency, quality of the indoor air for occupants, longevity and recycled content of the materials used for construction as well as less tangible benefits such as the quality of the working environment which produces a healthier and more productive workforce for those occupying the building.

The mix of uses has been carefully arranged to complement each other with a restaurant, gym and other retail areas providing an active social environment at

street level and which also support the office uses above. This combined with the large amounts of semi-public space generates a locus of activity in the immediate area which helps to revitalize this area in North East Hamilton.



Particular techniques include:

Sun-shading and High Performance Windows

Overhanging balconies and louvered sunshades stop much of the sun's direct light from entering the windows and overheating the interior. The windows also let a large amount of natural light into the space while reflecting the heat from outside. This means that less energy is used for air conditioning.

Building Shape & Location



The large surface area of the building provides for many windows which allow daylight deep into the floor plates. This also lets people inside have a connection to the outside world which improves their morale and productivity as opposed to being stuck in a windowless back office.

The site is close to the bus terminal and has dedicated parking for motorcycles and bicycles

along with showers on each floor to promote alternative transportation and reduce the use of cars.

Grey Water Recycling & Water Efficiency

- ❖ All rain runoff from terraces & courtyard areas as well as air conditioning condenser water which cannot be used for drinking are collected for use in flushing and irrigation.
- ❖ All toilets, faucets and showers have water saving features.
- ❖ All drinking water is subjected to ultraviolet light as well as filtered to kill and remove contaminants.

Daylight Harvesting

Light sensors near the windows dim the electrical lights depending on the amount of daylight in the space. This also reduces the heat generated by the light fixtures also reducing the amount of air conditioning required as a knock on effect.

Lighting Controls

Occupancy sensors turn off lights in areas which are not occupied.

Efficient Air Conditioning

- ❖ The mechanical equipment uses well water to reject the heat associated with producing air conditioning rather than noisy and unsightly rooftop units which require maintenance and ultimately replacement as they are exposed to the weather.
- ❖ The walls and roof of the building are heavily insulated to keep the heat out.
- ❖ All of the motors for the pumps, chiller equipment and fans throughout the building have variable speeds which reduces electricity uses when the demand on them is low.
- ❖ New fresh air is pre-cooled by the already cold exhaust air reducing the amount of energy required to cool the building.

Interior Air Quality

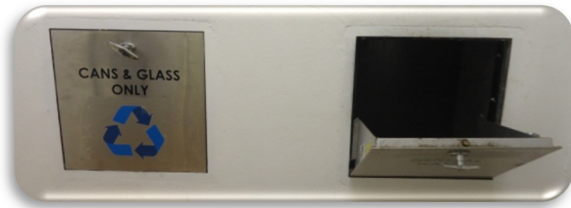
- ❖ All paints, carpets and other interior finishes rated low or zero VOC's (Volatile Organic Compounds) which escape into the air over time.
- ❖ All cleaning products are also environmentally friendly.
- ❖ Each part of each floor plate has its own dedicated air handler to supply cold air which prevents cross contamination with other parts of the building.

Efficient Hot Water

The heat from the hot well water put back into the ground by the air conditioning system is recaptured by a 'Heat Harvester' which heats the hot water for the building.

Building Automation System

Computers and thousands of sensors throughout the building monitor the air conditioning, lights and air quality to ensure everything is working efficiently.



GARBAGE SHOOT

Waste & Recycling

The building has a dedicated recycling stream to separate waste.

Alternative Energy

Victoria Place is keeping abreast of developments in solar power and wind turbines and has made provisions for their introduction when they become more cost effective in a few years' time.

Green policies and practices



GREEN TOUCHSCREEN DIRECTORY AND LEED INFORMATION

Since the initial conception Victoria Place was always intended to not only be constructed and built with minimal environmental impact but to also be continued to operate that way. This was a core objective of the directors. These current green practices include:

Recycling

Victoria Place was designed with recycling in mind. All of the floors from Ground through to 5th have a garbage shoot system. Two shoots run in parallel through all of the tenant space. One for regular waste and one for recyclable waste. These shoots enable quick and efficient waste disposal, avoid moving waste through the building space and make garbage separation easier. Battery and toner recycling is also in place throughout Victoria Place.

Cleaning

Ongoing cleaning of the interior and exterior of Victoria Place was also given special consideration. One of the top priorities in awarding the contract was the green practices and services offered by various cleaning companies. After much consideration the cleaning contract for the inner core and shell as well as the tenant space was given to Bright Brigade.

All of the products and methods used for the cleaning in the base building as well as the tenant space are green and non-wasteful.

Paper products

All paper products distributed through the building restrooms for tenant use are 100% recycled material and designed specifically to be effective with minimal usage. This supplier was also chosen due to the obvious green benefits.

Electronic information and notification

In the VP lobby is a sophisticated touchscreen that takes the place of a traditional directory enabling easy changes and instant access to a wide array of information. This eliminates the need for a more traditional approach of signage, posters, flyers etc.



Another technology practiced is the electronic distribution of information to all tenants through an electronic tenant handbook. Tenants receive notification and have access to online building information that can be quickly and easily updated. This prevents the need for heavy paper documents and information being distributed physically.

The interactive touchscreen in the VP lobby can be viewed online here - <http://victoriaplace.greentouchscreen.com>



Restrictions

For the benefit of all occupants at Victoria Place certain restrictions were put in place. Two of these were the banning of aerosols to avoid any internal air pollution as well as banning of electric heaters which counter the air conditioning and waste energy.

Energy Monitoring

Victoria Place has over 120 metered points for electrical and HVAC usage. This provides an impressive breakdown of usage for individual areas. Monthly utility charges are broken down and sent to all tenants. Reports can be requested and run on demand.

Tenants are 100% responsible for their own usage and benefit from the savings of office efficiencies. Having detailed metering also enables much better



Summary of Green Features:

- ❖ **Building Automation System**
- ❖ **Building design**
- ❖ **Daylight Harvesting**
- ❖ **Efficient Air Conditioning**
- ❖ **Efficient Hot Water**
- ❖ **Green cleaning**
- ❖ **Green lifestyle amenities; restaurant, health store & 24-hour gym**
- ❖ **Green purchasing**
- ❖ **Green Touchscreen**
- ❖ **Grey Water Recycling & Water Efficiency**
- ❖ **Interior Air Quality**
- ❖ **Sun-shading and High Performance Windows**
- ❖ **Web based tenant handbook**

troubleshooting and understanding of the consumption. This is one of the single biggest energy related technologies in VP that will benefit the tenants and help to keep up the efficiency.

Tenant Education

With the building designed and intended to be efficient and green from the drawing board all tenants are onboard for efficiencies and most have their own inter office policies in line with the building policies.

Indoor Air Quality

The entire HVAC system is maintained under a service contract with a local provider. Part of their obligation is the maintaining of air filtration. Each area of the building has sensors incorporated to measure temperature, humidity and Carbon Dioxide. Make up, fresh air, is then strictly controlled to keep all spaces well ventilated. This ensures maximum efficiency along with required ventilation.

Water Usage and Monitoring

Within VP there are two main water supplies, fresh and gray water. Both rely on either rainwater or Watlington water supply. The water is stored in one of four water tanks. Each are monitored and automatically controlled to maintain preset levels. Comprehensive trending is available to track changes in levels. (attached and explained below)

Appendices

Included attachments

Included in this submission are several attachments, these are:

- ❖ **May energy charges broken down per tenant; this is not to be shared publically or outside of the judges panel** as it details out each tenant and there usage.

This spreadsheet provides an extremely detailed overview of where and how the power is consumed in VP. Every tenant has their own metering system and directly pays for their own usage. This is by far the most effective and responsible means of tenant utilities.

- ❖ **2011 VP energy consumption** – This attachment provides an extremely detailed month to month comparison, cost's per sq ft and many other statistics. It is updated and analyzed monthly to ensure the building is running at its best.
- ❖ **Water Tanks** – A screen capture showing the overview of the water tanks. This screen shows make up indication, levels and setpoints. All of which enable operators to constantly be aware of consumption
- ❖ **North Tank Level** – A trend showing the water level for the current month in the primary potable water tank. An example of the infinitely customizable reporting capable.
- ❖ **Chiller Plant** – A real time overview of the chiller plant at VP. Easily the most important screen on the BAS. Every point is trendable and real time data can be pulled and compared. The total metered consumption is calculated and combined with the chiller plant output in tons for real time efficiency readings.
- ❖ **4th Floor** – A typical floor in VP showing space temperatures, real time power consumption and providing access to every tenant for scheduling.

Additional Images



