



Green Building Tenant Guidelines

An initiative of BC Buildings Corporation

A Commitment to Environmental and Community Stewardship



Developed in Cooperation with:

*Green Buildings BC
BCBC Technical Value Department*

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1.0 Introduction



1.1 Green Buildings

As part of the New Economy's "footloose industry", technology companies are drawn to, and motivated to stay in, areas offering a higher quality of life. There is widespread evidence of the importance of a clean environment and other quality of life considerations in the location decisions of these firms.

The Vancouver Island Technology Park (VITP) has been developed as a showcase, high performance (i.e., "green") building to further the principles of environmental and community stewardship thereby enhancing the image of Greater Victoria and the Capital Regional District (CRD) as a place where technology entrepreneurs and workers want to live, work and play.

A sustainable economy is one that exhibits diverse and viable economic opportunities and is resilient and responsive to changing circumstances ... [It] also supports the achievement of environmental and social sustainability.¹ CRD Regional Growth Strategy

Buildings have a tremendous impact on our environment and our daily lives. The average North American spends 90% of his/her time in buildings. They are responsible for 30% of greenhouse emissions and use one-third of total energy, two-thirds of our electricity and consume 12% of our fresh water withdrawals. Depending on the region, construction waste accounts for 15% to 40% of landfills. Buildings are significant users of our natural resources with some 3 billion tons of raw materials used annually to construct buildings worldwide.²

As such, Green Buildings are not solely about reducing energy. They are also about consuming less water, using less materials and resources, reducing waste, improving air and light quality, the treating and retention of storm water for ground water recharge, the restoration of habitat, reducing our dependency on the automobile, and much more.



1.2 Importance of Green Building Design

The development of VITP as a Green Building has many benefits to the occupants of the building. Support from our tenants in designing their space using the principles outlined in this report will ensure that the benefits from Green Building design are optimized.

Benefits from Green Building Design

- 1) Lower operating costs
- 2) Future-proofing for Tomorrow
- 3) Positive Corporate Image
- 4) Improved Worker Productivity; and
- 5) Good for the Environment

¹ Capital Regional District (2001), *A Proposed Regional Growth Strategy for BC's Capital Region* (Victoria: CRD, March).

² Natural Capitalism – Hawkin, Lovins & Lovins



Lower Operating Costs

Green Buildings consume less energy and water resulting in lower operating costs to our tenants.

Future-Proofing

Incorporating environmental features that lower energy and water costs is not only good for the environment, they also help “future-proof” a building for tomorrow against rising energy and water utility rates.

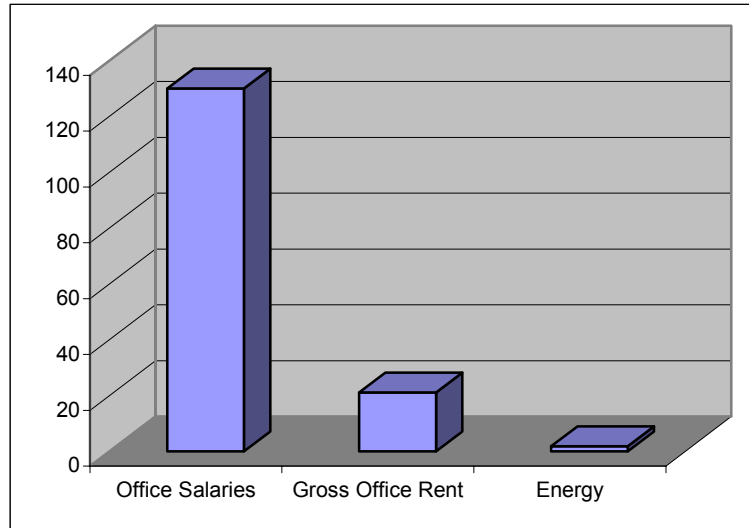
Positive Corporate Image

A positive environmental image is becoming increasingly important to corporations and their ability to attract personnel. Being part of, and contributing to, the efforts of sustainable design furthers this image.

Improved Worker Productivity

There are several documented case studies showing that improved lighting, thermal comfort and air quality are often byproducts of energy efficiency techniques that have increased worker productivity by 6% to 16%.

A typical office will spend 100 times more on office salaries per square foot than energy costs and about 7 times more than rent and operating costs. Therefore, spending money to optimize the indoor environmental quality that leads to a 1% increase in productivity has the bottom line effect of eliminating the entire energy bill. It should come as no surprise that workers will be more productive if they can see what they are doing, feel thermally comfortable and breathe fresh air. This chart demonstrates the relative cost impact of worker productivity.





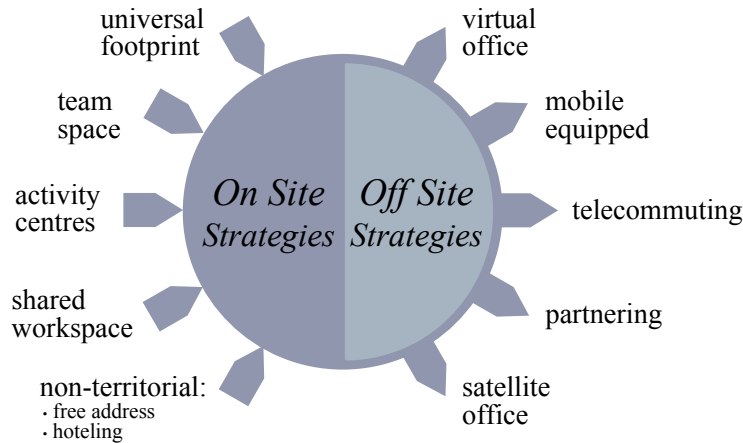
1.3 Design Process

Utilize the integrated design approach to designing your space. Building systems should not be evaluated or designed in isolation. For instance, increasing daylighting and energy efficient lighting not only affects your energy use but will generate less heat thereby impacting your cooling needs. Have your consultants work together to design a cost effective solution for your space while maximizing flexibility for change.

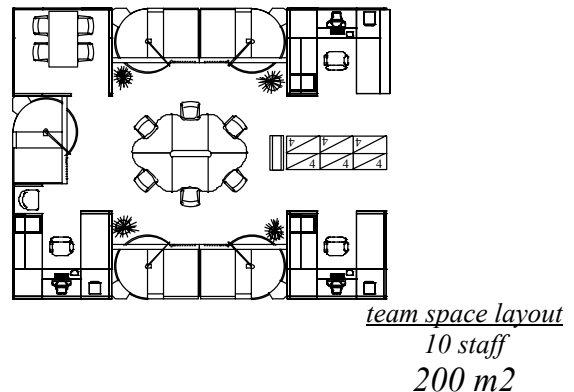
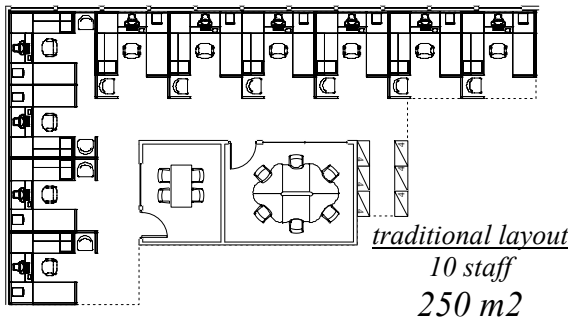
The Tenant Improvement Design Team is encouraged to incorporate space planning strategies used at the VITP Business Centre in the design of its tenant space. These strategies include:

1. Freeing perimeter glazing areas for open office and placing closed offices and other ancillary rooms toward the interior, allows daylighting to penetrate deeper into the space. This works with the lighting strategies covered in Section 2.3.
2. Implement alternative workplace strategies such as universal footprint, hoteling, shared workspace, free address, activity centres and team spaces to better support work activities, reduce space requirements and provide flexibility of use.

Strategies



3. Substituting open office planning with sound masking in lieu of enclosed rooms.





4. Utilize modular moveable office partitioning systems in lieu of the standard practice of steel stud and gypsum board partitioning of office spaces not requiring any *fire resistance ratings*. This provides flexibility and reduces time of future renovations. A modular moveable partition system facilitates an accessible infrastructure allowing changes to be made due to reorganizations and technological advances without wasteful rewiring or the destruction of drywall.
5. Modular moveable partition systems incorporating sliding doors in lieu of swing doors, can increase space efficiencies. Decreasing the amount of space per employee can reduce real estate costs without compromising worker comfort and productivity.
6. Utilize a raised floor system for electrical and structured cabling. This provides easy access to power, voice and data cables that run under the floor. This interstitial space also provides a distribution channel for the ventilation system.
7. Do-it-yourself "plug-and-play" cabling allows computers, telephones and other equipment to be easily moved, added to or removed from the basic grid of service, with no rewiring necessary. Install more cabling runs than you need initially for flexibility and future growth.

Furniture on wheels, folding/stacking/nesting furniture, mobile storage units and coat closets, modular stackable office screens, modular workstations consisting of various components that can be rearranged, added to or removed as desired and modular plug-in coffee nook/break areas all provide flexibility to future-proof interior fit-ups.

Some of the VITP Business Centre Work Environment and Green Initiatives



Modular walls with open ceilings



Modular office kitchen/servery unit



Raised floor with underfloor cabling



Indirect lighting and open ceiling





i Did You Know?

Sliding office doors do not have the space waste from conventional swing doors. 3x3 m (9x9ft) offices are workable with sliding doors.

The following sections deal with the major considerations for tenant improvement guidelines in designing your space.

2.0 Energy



2.1 Energy Use

Invest in Energy Efficient Design & Technology

Metering

All tenants at VITP will have their own meter for electricity use. This means that any electric energy that you save will directly benefit your bottom line.

Heat

Since all electric loads eventually become heat in the space, the smaller the load, the smaller that your cooling system can be sized. This can save in initial costs for the space fit-up.

Integrated Design

Make sure your consultants create a design together. This means that they will not be assuming the "worst case" and end up oversizing your systems. (See ***Design Process***).

Energy Simulations

VITP was modeled with an energy simulation software called DOE.2 in order to make the best design decisions for the building. The results of this energy simulation are available to tenants upon request.





Energy Efficient Equipment

Office Equipment

Office equipment, including computers, monitors, copiers, fax machines, etc., come in energy saving versions. To simplify the selection of this equipment, the US Department of Energy has developed an "Energy Star" program. Check to see that any new equipment purchases are rated as "Energy Star" <http://www.energystar.gov/whybetter.html>. For computer screens, consider high efficiency LCD flat screen technology. It uses less energy and uses far less space. (See **Space Planning**)

Did You Know?

Put it to sleep!

Instead of setting a screensaver to take over an inactive computer screen, set the screen to "sleep" mode. This saves energy, while a screen saver does not.

Sleep modes should be active wherever possible: on copiers, printers, faxes etc.

Did You Know?

LCD Flat Screens...

**occupy only 1/6 the depth and 85% of the width and height,*

**require one third the power, and*

**display reduced glare,*



...as compared to regular monitors.

2.2 Energy Efficient Heating, Ventilating and Air Conditioning Systems (HVAC)

Why do it?

- Lower energy bills. HVAC is typically responsible for 50% or more of building energy use.

What has been done at VITP?

- A water loop heat pump system has been installed at VITP in the north and south wings to provide heating and cooling to the space. This system is capable of recovering heat from zones requiring cooling and delivering it to zones requiring heating. In this manner, the run-time of the boiler system is reduced.
- The water loop heat pump system inherently avoids simultaneous heating and cooling within a zone.
- To save pumping costs, the water loop heat pump system has been designed to be variable flow instead of the conventional approach of constant flow.
- The original multizone air handler for the centre block has been retained to provide heating and cooling to the space. The system has been re-furbished and converted to a variable volume system to save energy costs.
- A digital control system has been installed at VITP to provide temperature control of tenant spaces and to allow coordination with the primary heating and cooling systems for the building. The heat pump controllers are mounted in the space and come with buttons to allow temperature setpoint adjustment and after-hours operation. The ambient space temperature is also displayed on a LCD screen.
- The digital control system will allow optimal start of each heat pump, thereby maximizing energy savings by keeping the zones in night setback as long as possible.





- An energy simulation was completed during the design process to help facilitate decisions on energy performance. The input files can be made available to tenant improvement consultants upon request.

What can tenants do?

1. Design

- Use heat pumps to cool any computer rooms or process loads requiring cooling. The heat is transferred to the loop, and can be used during the heating season instead of heat from the boiler system.
- Use 4 inch supply and return headers for the heat pump system in the tenant space. This increases the thermal capacity of the heat pump loop, and saves energy by delaying the use of the boilers and the cooling towers. The higher material cost will be offset by reduced handling and installation costs.
- Keep the size of the heat pumps to a maximum of 3 tons (smaller is better). Larger heat pumps are noisier and are less flexible for comfort control as they can serve too large of an area.
- Install the ventilation air ductwork right up to each heat pump, to ensure optimum ventilation of the occupied space.

2. Components

- Use *Trane* heat pumps that are compatible with the base building systems. Guaranteed unit pricing has been established with Trane to control costs for tenant fit-up (further information available from VITP). (Note: 8 week delivery for Trane heat pumps.)
- Use *Delta Controls* heat pump controllers that are compatible with the base building control system. Guaranteed unit pricing has been established with *Island Temperature Controls* to control costs for tenant fit-up (further information available from VITP).

See Technical Reference for equipment schedule and pre-negotiated price list.



2.3 Lighting

Why Design for Comfort & Energy Savings?

Visual discomfort due to poor lighting is one of the major complaints from office occupants. The key for any lighting is to provide comfortable light for the common tasks in the space, and to ensure that the lighting does not cause glare and reflections on computer screens.

- Energy-saving lighting systems typically produce better lighting quality than older wasteful systems.
- Simple paybacks for using energy saving lighting are usually less than 5 years (i.e. 20% ROI)
- Lighting typically is responsible for more than 30% of building energy use. See **Energy Use**
- Fewer lights need to be installed = lower capital cost

Design Concepts

Low Energy Density

Aim for a Design that is around 1.0 Watts per square foot, by keeping with the following recommendations.



Low-Glare

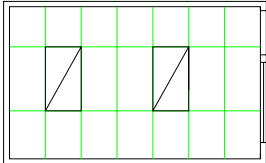
The major complaint about office lighting is glare. Glare is light that is getting in the way, instead of helping people to see. It is much easier to reduce glare in the design stage, then after a system has been installed.

Appropriate Light Level

A major source of glare is often simply too much light. BCBC Technical Standards call for 30-50 footcandles (320 –540 lux) for computer environments.

Rule of Thumb:

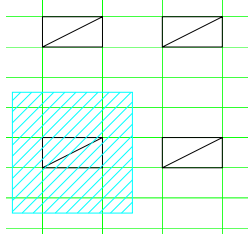
ENCLOSED OFFICES



A typical private office with two 2-lamp luminaires creates an appropriate light level.

Rule of Thumb:

OPEN OFFICES



A typical open office with a 2-lamp luminaire for every 64 square feet can create an appropriate light level.

Indirect Lighting

Lighting fixtures that hide the lamp (tube) and bounce light off of the ceiling or walls are known as indirect lights. Since the light source is broad and diffused, there are few shadows, and glare is reduced.



SMED Indirect furniture mounted light used in Business Centre at VITP.



Indirect lights reduce glare: 'Agili-T' indirect luminaire by Lightolier has a low-profile and is lightweight enough to mount from the T-bar.

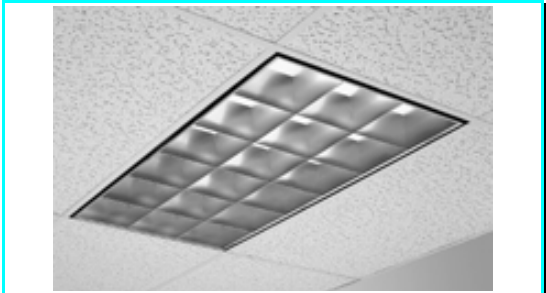
Some indirect lights hang from the ceiling, and some are mounted on furniture or walls. For areas with low ceilings, it is important to get a luminaire with a slender profile.





Deep-Cell Lighting

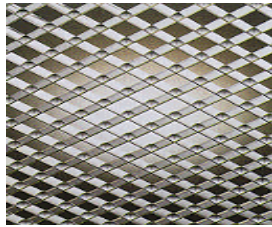
Lighting fixtures that have large, curved, polished aluminum louvers are known as deep-cell luminaires. These lights direct light down onto the worksurface, and keep the ceiling relatively dark. This reduces reflections on computer screens.



Lightolier deep-cell luminaire. Deep-cells push light down onto the work surface and keep glare off computer screens.



Rule of Thumb: AVOID PARACUBES!

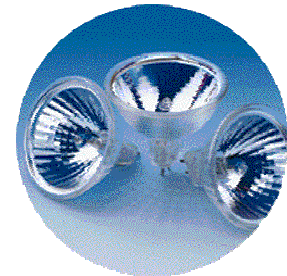


'Paracube' lenses are cool looking at first but are extremely inefficient, and quickly attract dust, dirt, and fingerprints. These lenses suck up over 35% of the light that reaches them. They are expensive, difficult to clean, and are not recommended.

Accent Lighting

Limit the use of low-voltage lighting

When lights are "Low-voltage" it does not mean they are "low energy". These small and stylish lighting components are very popular with many designers, however they typically use 50-75 watts for each tiny light bulb. The high energy use and the high heat that these create make them less attractive for office interiors. If these are going to be used, there should only be a few to highlight specific objects.



Low Voltage Track head by Juno & MR16 lamps. Low voltage incandescent needs to be used judiciously due to high energy use.



Did You Know?

Heaters or Lights?

Did you know that incandescent and halogen lamps produce more heat than light?

Fluorescent lamps, including compact fluorescent, T8 & T5 technologies can give great colour without heating you up.



Did You Know?

Compact Fluorescent Lamps:


- *incandescent lamps with the same input power*
- *incandescent lamps, which last only 1,000-2,000 hours*



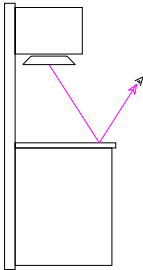



Task Lighting

A key component to a comfortable lighting system is giving the users control of their local lights. One of the best ways to offer this is to provide a flexible and efficient task light. Using task lighting can also mean that the overall ambient lighting system can be reduced, saving both initial cost and overall energy use.


 **Rules of Thumb: TASK LIGHTS**

*Don't use fixed task lights.
Glare will result when task light reflects off work surface.*



 **Rules of Thumb: TASK LIGHTS**

*Use task lights that have at least two "elbows" so that light can be directed where needed.
Use Compact fluorescent task lights*



Compact Fluorescent Task lights by SMED and Steelcase respectively

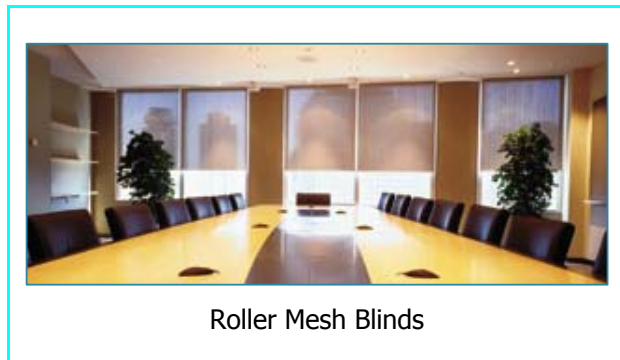
Choosing Room Finishes

Light Colours

Lighter room and furniture finishes will ensure that the space stays bright. Using dark room finishes may mean that more lighting will need to be installed.

Window Coverings

It is important to use window coverings that are adjustable and that will not create glare in the space. Window coverings with a non-metallic (matte) finish will ensure that direct sunlight hitting the surface will not reflect into the space. Roller perforated "mesh" blinds control glare, yet preserve the view.





Energy Efficient Lighting Controls

Occupants prefer to have control over the lights in their space. Keep in mind also...

- Lamps & other lighting components will last longer if they are turned off!
- Energy Savings: There is an urban myth that fluorescent lamps use a lot of energy to turn on and off. This is untrue. As soon as you turn off the lights you are saving energy.

Control Design Concepts

- For automatic lighting controls, make sure that the changes are mostly unnoticeable to the occupants. (eg: ensure that lights turn off after hours, and that occupancy sensors don't turn off the lights when the room is occupied!)
- For manual lighting controls, make sure that the occupant can see what is being switched from the switch location. Don't control extremely large areas from a single switch. Use approximately one switch for every 90 square metres.
- All enclosed spaces should have a separate switch.
- Use automatic controls to turn off the lights at night, or after hours.
- Consider multi-level controls for enclosed spaces, especially spaces with multiple uses or multiple users!

In the VITP Business Centre:

Occupancy Sensors are used instead of wall switches for the private offices of the VITP Business Centre.

The quality of this type of sensor has improved, in recent years, so that there are fewer false "offs".



Leviton Wall sensor



Rules of Thumb: OCCUPANCY SENSORS

Make sure that the sensor can "see" people entering and working in the space. Don't put sensors behind the door!

In the VITP Business Centre:

The lights are automatically turned off at night by the Automatic Building Control System.

Lighting Control Details

- Always allow a manual off switch, regardless of automatic controls. (Some people like to work in the dark!)
- Consider occupancy sensors for spaces that are often empty... and private offices are often empty!
- Consider using dimming and photocells in perimeter zones in order to reduce electric lighting when daylight is available. Dimming is the ultimate in control, however, dimming fluorescent systems can be expensive.
- If photocells are used to dim lights, mount them on the ceiling pointing towards the work surface.
- Consider having cleaning staff work during normal office hours.

A More Technical Approach to Consider...

Some luminaires allow for a connection to your computer network, so that luminaires can be controlled from an individual's workstation. Fun for Techies!



The "ErgoLight" by Ledalite allows users to dim their lights over the local area network.



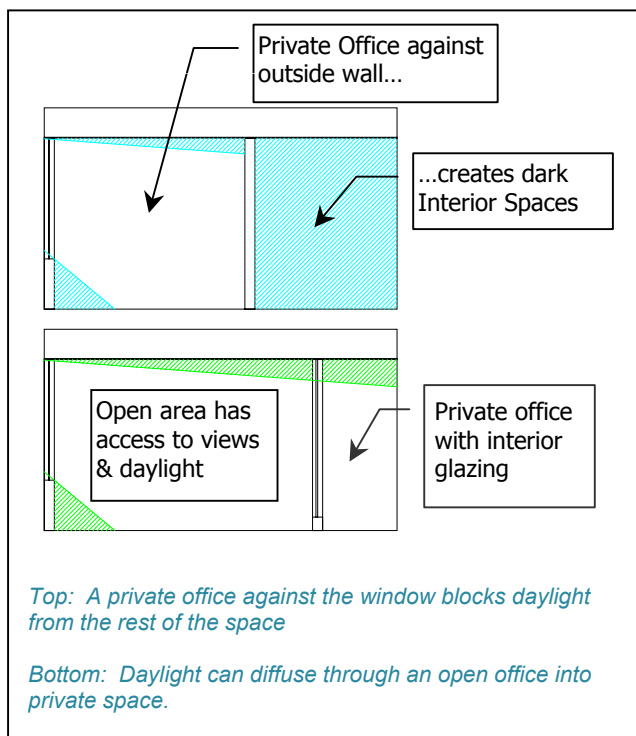
Commissioning

- Ensure that lighting controls are commissioned with the rest of the controls. (See **Systems Commissioning.**)



2.4 Daylighting

Daylighting Design Principles



Daylighting is providing useful light indoors from the sun and sky. This can then reduce electric lighting energy consumption. Diffuse daylight is one of the highest quality light sources available. It is important for the well-being of many occupants to have a view and a sense of the outdoors.

In order to provide good lighting for most people in the space:

- Keep enclosed spaces away from the window walls, so that daylight can penetrate the space.
- If full-height walls must be used, daylight can penetrate interior spaces by using interior windows and clerestories.

Daylighting at VITP

At VITP, the shape of the building maximizes daylight penetration into the

interior. The type of window glazing that was used, allows more light than heat into the space. Additionally, the occupied floor space has direct line of sight to windows on more than 90% of occupied space. VITP is blessed with views to the countryside and interior courtyards.

Daylighting & Energy Saving

By using photocell & dimming **Lighting Controls**, electric lighting energy can be reduced when daylight is available. Or just turn off your lights in your space when there is enough daylight.



2.5 Systems Commissioning and Cleaning

Commissioning has been found to optimize energy performance and efficiency by 5 to 10%, resulting in significant environmental benefits and cost savings.



Building Commissioning saves money by ensuring that equipment is installed and functioning properly from the start.

- Include commissioning in your contract documents to ensure that comfort conditions, indoor air quality, water use and energy consumption meet design intent.

Commissioning Components in Construction Documents

- *Scope of commissioning*
- *Features and systems to be commissioned*
- *Requirements for submittal review, inspection, start-up, testing, training, O & M documentation and warranty period activities, commissioning documentation requirements, schedule, and rigor and scope of testing*

- A guideline commissioning specification is provided in the Technical Reference document.
- All VITP base building mechanical and controls systems were commissioned to validate that they perform according to the design intent.

Commissioning Report Components

- *Meeting Design Intent*
- *Meeting Specifications*
- *Ensuring Proper Installation*
- *Functional Performance and Efficiency*
- *O & M Documentation*
- *Operator Training*

- A post-occupancy re-commissioning process near warranty-end can identify equipment that is not operating optimally prior to the expiry of the warranty period.

3.0 Indoor Air Quality



3.1 Indoor Air Quality

The base building HVAC (Heating, Ventilating, and Air Conditioning) systems were designed to meet or exceed ASHRAE Standard 62-1999, Ventilation for Acceptable Indoor Air Quality. This ASHRAE Standard is generally accepted as the design standard for indoor air quality.

- Tenant spaces must be designed to meet the ASHRAE 62-1999 ventilation and air quality requirements.





It is intended that most tenant spaces be fitted out with energy efficient heat pump units, incorporating fresh air delivery to the units by connection into the base building fresh air system.

In the base building, fresh outside air is ducted directly to each heat pump to ensure that the highest possible component of fresh air is delivered to the building occupants. Designers for Tenant spaces should follow this design practice.

i Did You Know?

Some perfumes contain VOC's (Volatile Organic Components).



3.2 Low Emitting Materials

Tenants are encouraged to use materials, finishes and systems which maintain the quality of fresh air established for the base buildings on the VITP Campus. Specify in contract documents that paints, adhesives, sealants, carpet and composite wood products have low VOC limits.

Paints	Total VOC limits less than 150 g/L (non-flat) Total VOC limits less than 50 g/L (flat)
Carpets	Total VOC limits less than 0.50 mg/m ² /hr
Adhesives	Total VOC limits less than 10.0 mg/m ² /hr
Architectural Sealants	Total VOC limits less than 250 g/L
Composite Wood Products	No added urea-formaldehyde resins

For insight into "green" paint products, refer to the Master Painters Institute newsletter **The Green Paper**, Volume 1, Issue 1, November 2001. Visit www.aqmd.gov/business/brochures/zerovoc.html for a listing of low VOC paint manufacturers.

For information on and sources of environmentally responsible carpet choices, visit www.metrokc.gov/procure/green/carpet.htm.

See our Technical Reference Document for a source of available products.





3.3 Construction IAQ Management during Construction

Duct systems were sealed during construction to prevent entry of construction dust.

Supply and return air duct systems were cleaned and verified prior to occupancy.

- During construction and demolition work in tenant spaces, a construction IAQ Management Plan must be developed and implemented to minimize dispersal of dust and other airborne pollutants. A good reference document is "SMACNA IAQ Guidelines For Occupied Buildings Under Construction" available through SMACNA at www.smanca.org.



Construction waste was separated and recycled during the VITP construction.

- The plan should incorporate procedures for sealing and protecting ductwork and equipment, protecting stored on-site or installed absorptive materials from moisture damage and replacing filtration media immediately prior to occupancy.
- Debris must be separated and carted to facilitate recycling.



3.4 Construction IAQ Management after Construction

Tenant Improvement construction must be handled to minimize [eliminate] dust, VOC dispersion, and other airborne pollutants to other parts of the building, its systems and components. Construction debris and packaging must be carefully separated and carted to facilitate recycling, while reducing dust, etc. to other areas of the building.



3.5 CO2 Monitoring

The base building includes carbon dioxide sensors, to insure that sufficient fresh air is provided to different areas of the buildings.

Tenants should install additional sensors within their spaces, to provide monitoring of air quality in their space. These sensors can be connected into the base building DDC (direct digital control) system.

Why do it?

- Improved indoor air quality. The level of CO₂ is an indicator of indoor air quality. CO₂ monitoring helps sustain long-term occupant health and comfort. CO₂ sensors mounted in the space provide feedback through the control system on space ventilation performance and allow operational adjustments as necessary.



- Optimized heating of ventilation air. Outdoor air for ventilation must be pre-heated over the winter period. CO2 sensors ensure the proper amount of ventilation air to the space, based on actual occupancy. Over-ventilation during quiet periods is reduced.

What has been done at VITP?

- The digital control system installed in the facility has the ability to monitor and log the CO2 data, and provide control adjustments to the ventilation systems as necessary.
- The digital control system will be set up to alarm if CO2 levels go too high.

What can tenants do?

1. Design

- Ensure space-mounted CO2 sensors are part of the design.
- Ensure the sensors are mounted in critical ventilation areas (e.g. meeting rooms).

2. Components

- Guaranteed unit pricing for space-mounted CO2 sensors has been established to control costs for tenant fit-up (further information available from VITP).



3.6 Indoor Chemical & Pollutant Control

Tenant spaces may include equipment or processes that generate contaminants or excessive heat. These rooms require local exhaust ventilation, filtration or other special control measures. Copy rooms must have separate exhaust ventilation to the outdoors.



3.7 Thermal Comfort

Meeting the requirements of ASHRAE Standard 55-1992 – Thermal Environmental Conditions for Human Occupancy. This standard identifies the range of design values for temperature, humidity and air movement that satisfies a minimum of 80% of occupants. Tenant spaces should be designed to meet this standard.

The building utilizes a DDC system to monitor and control thermal conditions, equipment and systems. The HVAC design within a tenant's space should incorporate sufficient zoning to enable good temperature control.

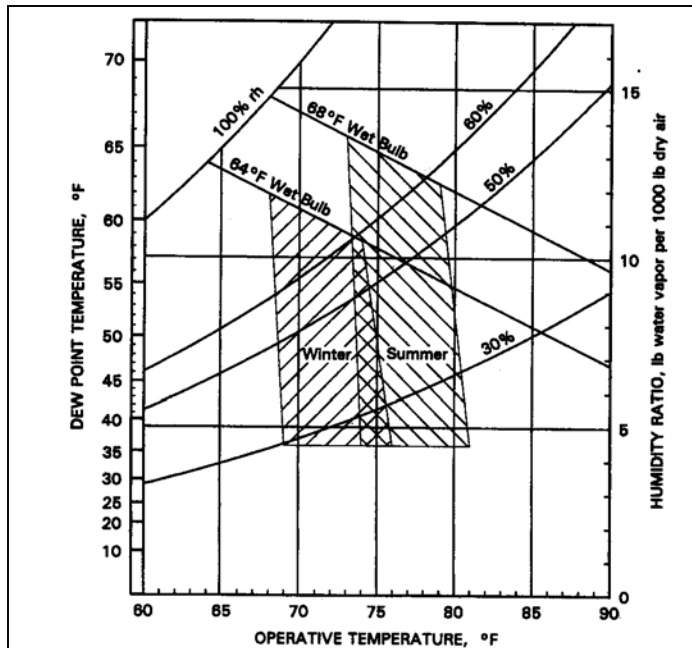


Fig. 5 ASHRAE Summer and Winter Comfort Zones
(Acceptable ranges of operative temperature and humidity for people in typical summer and winter clothing during primarily sedentary activity.)

ASHRAE Thermal Comfort Chart





Did You Know?

Individual perception of thermal comfort varies from person to person. Although most occupants will find a thermal condition comfortable, some individuals may find it either too hot or too cool.

Possible Green Solution: Supply a green corporate sweater.



3.8 Cleaning Solutions & Building Maintenance Materials

Cleaning solutions and building maintenance materials in the base building are non-toxic and biodegradable. Please refer to the Technical Reference document for guidance on this subject.

4.0 Materials & Resources



4.1 Recycling Facilities

The Tenant is encouraged to review the recycling programme in place at the VITP Campus and initiate a recycling programme of their own which will integrate with the base building facilities. VITP has facilities for recycling paper, glass, plastics, tins and pallets.



4.2 Construction Waste

Minimizing the disposal of construction waste not only makes good environmental sense but can save costs through the sale of construction waste and reduced landfill tipping charges. The Tenant Improvement Team should, through its design and specifications, specify products, materials and furnishings as salvaged, refurbished or reused where possible in order to reduce construction waste.

During the Tenant Improvement construction phase, implement a construction waste recycling programme with the contractor.

The Technical Reference Document includes a sample waste management plan that should be included in the construction document for tenant improvement work.





4.3 Recycled Materials

The Tenant Improvement Team should specify products, materials and furnishings that have post-consumer or post-industrial recycled content material.

Specify products such as carpet, ceramic tile and gypsum board with high recycled material content as well as inherent high recyclable features.



4.4 Local

Reduce the transport and support services, and systems. purchasing locally. It often results in lower costs because of reduced transportation costs.



Materials

environmental impacts of the local economy by using local materials, products, Ask your architect to document and focus on should come as no surprise that purchasing locally



5.0 Water Efficiency



5.1 Water Use

Water use reduction strategies were incorporated for the VITP base building, including: electronic faucets, waterless urinals, low flow toilets and showers.

Ultra Low Flow Toilets are defined as 6L or less, where as the standard toilet in our buildings today are 13 L (and in your homes from the 1970's might be 19 L).

This is Dual Flush!

Only 3 L are needed to flush liquids. Use the full flush of 6 L for solids.

- Low flow water conservation technologies should be specified in tenant spaces, for: faucets, toilets, showers, etc.





6.0 Clean Energy Transport



6.1 Clean Energy Transport

Encourage the use of transit, carpooling and bicycle use for your employees. A traffic demand strategy is being developed for the site. Encouraging the use of the above alternative transportation means will lower your operating costs because of less parking charges. By working with us we can show you how to lower your costs while providing and supporting alternative transportation methods for your tenants.



Bicycle Storage Room at VITP