

LEADING...OUT OF THE BLOCKS

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Blue Sky Thinking about Green: Volume Two – A Primer on Sustainable Approaches to Interior Finishes

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This document is the second in a “sister series” of our “Leading... Out of the Blocks” publications, specifically designed to heighten our awareness about emerging opportunities to incorporate sustainable elements into the management of real estate. We are doing so in partnership with recognized experts who are eager to help GWL Realty Advisors advance our clients’ best interests and our collective knowledge base. This volume has been prepared in conjunction with Mr. Kevin Hanvey, MAIBC, LEED™ ap, a Partner with OMICRON. Kevin is an architect and green building professional based in Vancouver. He leads OMICRON’s sustainability initiatives and projects.

We have quite deliberately subtitled this sister series “Blue Sky Thinking about Green”. “Blue sky thinking” may best be described as a means to give consideration to all possible opportunities, without pre-conceptions.

To that end, all opportunities raised in this series must be carefully assessed to determine if they might be in our best interests. When pursuing these ideas, consider them in the context of a property business plan, your own specific market conditions and experiences. With the experiences of our people in the field, we have the skills to know how and when to implement some of these new ideas.

Introduction:

A key component of environmental sustainability in buildings is careful selection of materials employed in finishing a space. The materials selected may have a significant impact on occupant health and comfort. If finishes (paints, wall coverings, adhesives) or furnishings (office furniture, blinds, millwork) are high in VOCs (volatile organic compounds) they can adversely affect the indoor air quality and occupant health.

VOCs are often used in paint, carpet backing and plastics. The United States Environmental Protection Agency (EPA) has found concentrations of VOCs in indoor air to be 2 to 5 times greater than in outdoor air. Considered a factor in indoor air quality issues sometimes referred to in the past as “sick building syndrome”, VOCs are generated by photocopiers, carpets, and furnishings as they are used or when components oxidize. They also evaporate from paints, varnishes, and chemicals used for sealing and finishing walls.

When undertaking environmentally sustainable building renovations, it is essential that both landlord spaces (i.e. common areas) and tenant spaces contribute to the broader goal of a sustainable environment. The good work of one party could be “undone” by the other if there is not a coherent approach. Thus, it is incumbent upon landlords to be knowledgeable about sustainable issues. Landlords can then educate and support tenants to promote mutually-successful “green” projects. Providing lists of green service providers, maintaining green tenant guidelines and tenant education programs related to green materials are ways that building owners and managers can support tenants in the pursuit of a sustainable building environment.



Image credit: Benjamin Moore & Co., Ltd.

¹ Volatile Organic Compounds (VOCs) are organic chemical compounds that have vapour pressures high enough under normal conditions to significantly vaporize and enter the atmosphere. A wide range of carbon-based molecules, such as aldehydes, ketones, and hydrocarbons are VOC's.

To optimize the health and comfort of building occupants, here are some things to consider when fitting out both building common areas and tenant spaces:

1) Paint and Wall Covering Options:

Selecting environmentally-preferable paint and coating options is easy and straightforward. Almost all paint and coating manufacturers have recognized the turning tide toward greener buildings and now produce low or zero VOC products. Low VOC is defined as less than 150g/L for water-based paints while most adhesives and sealants should be in the 20-50 g/L range to qualify as low VOC. The “Master Painters and Decorator’s Association” is an independent, industry association that provides information on painting and coatings and have produced information on VOC levels. Their manual is an essential reference guide for specifiers.



Most paint manufacturers measure the VOC levels of paint when they are minimally tinted (or coloured) – e.g. “warm” white or “off” white. Increasing the pigmentation in paint will impact the VOC content. Many deep colours, even those created with natural pigments, will increase the VOC content dramatically.

Wall coverings for building common areas (lobbies and corridors) come in a myriad variety of materials, textures and colours. Manufacturers have recognized the need to produce wall coverings with more environmentally friendly materials and they are now widely available. Consider selecting wall covering made from recycled polyester, paper-based products or even natural fibres, rather than those that are typically made from vinyl or poly-vinyl compounds.



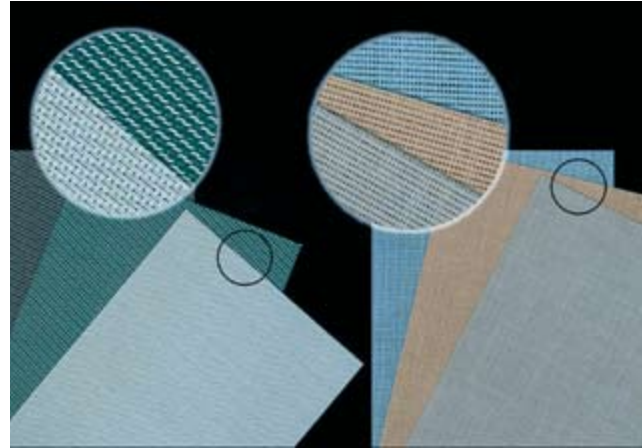
2) Windows Blinds and Glazing films:

Window blinds are an important requirement in any commercial office landscape. They are important for glare control and visual comfort. There is a common misperception that the type or colour of the blind can contribute to a building's energy reduction strategy. Sadly, this is not the case. Once solar energy is inside the building and converted from ultraviolet to infrared radiation, there is nothing that blinds can do to reduce heat gain. The interior blinds (of any colour or finish) actually absorb solar heat and act like large radiant heating panels, and this heat has to be overcome by the building HVAC system. Rejection of solar energy, thereby reducing the need for mechanical cooling, can only be achieved on the outside of the building envelope.

Therefore, blinds should be chosen based on their contribution to visual comfort and performance. Because horizontal (Venetian) blinds tend to collect and hold more airborne particulates, roller blinds are a good alternative. Remember that blinds (like glazing systems) can and should be "tuned" to reflect building orientation. Roller blinds are available at variable densities of weave, and the degree of light and glare that is mitigated varies accordingly.

It is not necessary to have the same level of light rejection on the north and east sides of an office building as it is on the south and west sides. Higher daylight admission is possible on the north side of a building without any of the negative impacts of glare and reflection that you would get on the south side of the building.

Blinds should be selected from materials that do not "off-gas" VOCs into the office areas. Roller blinds, like wall coverings, can be manufactured from polyester which is an environmentally preferable choice to those made with vinyl or poly-vinyl compounds (which are high in VOCs).



3) Glazing films for privacy, security and energy efficiency

Older buildings with less efficient glazing systems can improve energy performance by the application of an exterior glazing film. Adhesive films can be applied to the exterior surface of a building's glazing system to effectively provide an "after-market" tint. Some of these films have the added benefit of enhancing security. In the event of an attempted forced entry, the film will hold the broken glass within the frame, limiting the ability of intruders to enter the building.

The less solar radiation that enters the building, the less the energy required to produce mechanical cooling. Exterior films will reduce the solar heat gain in a building but will also reduce the visible light transmittance, so care should be taken when specifying these features – make sure to consult with a mechanical engineer and a glazing specifier. Building owners and occupants will want to balance energy utilization with occupant visual comfort and satisfaction.



Photography courtesy of Terry > Guscott/atnvisuals.com

4) Ceilings

Many sustainably-designed interiors have featured, at least in part, an “open” ceiling concept. This approach foregoes the traditional acoustic, t-bar suspended ceiling and exposes the building’s structure and services. The degree to which this strategy promotes environmental sustainability depends on a number of factors. Effectively employed, an open ceiling concept can enhance daylight penetration into the space and reduce the energy consumed to produce artificial lighting. Combined with a direct/indirect lighting strategy, the additional volume of space above occupant’s heads can create better diffused and indirect light to the work space.



Photography courtesy of Terry > Guscott/atnvisuals.com

However, an open plan ceiling concept will often create an acoustically “livelier” space and care must be taken to ensure that the working environment has sufficient acoustic privacy. All companies have unique requirements for acoustic privacy and what works well for a call centre may not work for a law firm or bank. If an open plan ceiling concept is to be developed, consider providing (soft) acoustic dampening materials on floors and furniture. The introduction of “white” noise can also mitigate the background noise and reduce distractions in the work place.

If a ceiling is to be provided in a common area or tenant space, there are many manufacturers who provide ceiling tiles with a high percentage of recycled content. Ceiling tiles are typically manufactured from spun mineral wool fiber which is bound together with starch. The starch is often mixed with pigmented clay paints. The materials typically employed are environmentally neutral but the environmental performance of the interior fit-out can be enhanced through the introduction of a product which uses post-consumer and/or post-industrial recycled materials.

Our Conclusion:

The quality of our work spaces – the lighting (natural and artificial), the indoor air, the views and the auditory environment – depend on the materials employed to create them. The benefits of an environmentally sustainable (base) building could be muted if the interior space (common areas and tenanted areas) is not compatibly fit out with green materials and finishes.

We are now more aware and capable, than at any time in the past, of making informed choices about the environmental performance and health of our work places. As landlords, we can take the initiative and champion sustainable initiatives in a building’s common areas. Also, with the benefit of our expertise, and the expertise of others, we can collectively act as advisors to help our tenants determine which interior finishes are most appropriate and provide the greatest benefit to a specific property. Not all projects need to be elaborate or expensive; it might very well be the case that a comparatively simple system will achieve a praiseworthy level of sustainability.

Leading...Out of the Blocks is a periodic internal publication of GWL Realty Advisors’ Analysis & Research Services.

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