



CITY OF RICHMOND

REPORT TO COMMITTEE

TO: Public Works and Transportation Committee
FROM: Jeff Day, P. Eng.
Director, Engineering
RE: Environmental Purchasing Policy and Guide

DATE: October 16, 2000
FILE: 6405-00

STAFF RECOMMENDATION

1. That the following Environmental Purchasing Policy be approved:

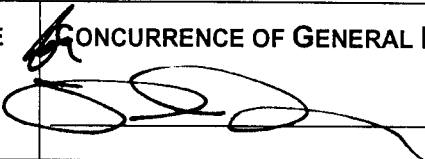
"In order to increase the development and awareness of environmentally-sound products and services, City of Richmond staff will review their contracts and tender specifications for goods and services, to ensure that wherever possible and economically feasible, specifications are amended to provide for consideration of environmental characteristics. Consideration may be given to those environmental products that are certified by an independent accredited organization.

The City of Richmond as a whole will endeavour to increase its use of products and services that are more responsible to the environment in the way that they are made, used, transported, stored and packaged and disposed of. It is recognized that analysis is required in order to ensure that the products are made available at competitive prices, and that the environmental benefits provided by a product or service should not significantly affect the intended use of that product or service."

2. That the Environmental Purchasing Guide be endorsed.
3. That the Environmental Purchasing Guide be referred to the Greater Vancouver Municipal Purchasing Group for endorsement.
4. That the City of Richmond partner with the GVRD to facilitate a delivery and training program for all GVRD member municipalities, on a cost recovery basis, for the Environmental Purchasing Guide.

Jeff Day, P. Eng.
Director, Engineering

Att. 1

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STAFF REPORT

ORIGIN

An environmental purchasing policy is presented to Council with this report for *approval*. In addition, an "Environmental Purchasing Guide" is presented for *endorsement*. These initiatives originate from two significant sources:

1. The Solid Waste Management Plan, which includes a recommendation for municipalities to develop policies and procedures that encourage their suppliers to provide products and services in a manner that fosters waste reduction and reuse, and
2. Richmond's State of the Environment Report, in which staff recommended the "Development of Environmentally-Responsible Purchasing Guidelines", as a cost-effective way for the City to demonstrate environmental leadership.

ANALYSIS

The "Policy" . . .

The City of Richmond does not currently have an environmental purchasing policy. While some departments have implemented practises to purchase products with recycled content, (e.g. recycled engine oil for Fleet Operations), the process is very *ad-hoc* as there is no formal structure in place.

The purpose of an environmental purchasing policy is to:

- *Encourage market development for recycling commodities.* By purchasing products with recycled content, the demand for recycled products increases, thereby ensuring the stability of markets for the materials we collect through our recycling programs.
- *Ensure that all aspects of the product "life cycle" are considered to minimize environmental impacts.* This ensures a full product analysis by comparing the raw materials acquisition, product manufacturing, packaging, transportation, use and ultimate disposal.
- *Demonstrate our commitment to environmental stewardship.*

The policy recommended for adoption is modelled after the groundbreaking statement of principle advocated by the Association of Canadian Cities for Environmentally Sound Strategies (ACCESS). It has been adopted by over 50 Canadian municipalities. This policy encourages the development of environmentally sound purchasing strategies, while at the same time providing the flexibility that is needed to ensure purchased products meet specification and usage requirements.

The Guide . . .

While having a purchasing policy is important, it is equally important that the policy has a true impact on purchasing practices. To accomplish this, we considered existing programs which complement environmental purchasing. There are product certification programs which have rigorous environmental testing processes. Manufacturers whose products meet the testing requirements can display the certification logo on those products. Because the process is rigorous and expensive for manufacturers, we felt it would be restrictive to limit our policy only to these products, particularly since other products could be available which meet the requirements, but have not gone through the certification process.

Therefore, a new concept was introduced – the development of environmental purchasing guidelines. These guidelines can be used by the staff in the development of their specifications. The guidelines provide useful information which staff can consider when acquiring products, yet do not dictate what products can or cannot be purchased. At the same time, these guidelines complement and promote product certification programs.

It is our hope that this approach will encourage active application of the guidelines, thereby achieving the desired impact on environmentally-sound purchasing practices.

In developing the Environmental Purchasing Guide, City staff consulted extensively with the GVRD. GVRD staff actively supported and assisted us throughout its development, providing research and other related materials. In so doing, it became apparent that it would make sense, as a way to further promote the guide and its true intent, to make it available to other municipalities. To do this, City and GVRD staff agreed that the best approach would be to seek endorsement from the Greater Vancouver Municipal Purchasing Group (GVMPG). This group represents the purchasing agents from all the lower mainland municipalities.

Once the guide has been endorsed by the GVMPG, we would partner with the GVRD on a delivery program, which would include a training workshop for member municipalities. Richmond staff would be the first to receive the training. After that, the GVRD would coordinate workshops for other municipalities on a cost recovery basis. This would be beneficial to Richmond from the perspective of exposure for the project. In addition, part of the workshop cost could include an amount for the recovery of costs which Richmond incurred in the development of the guide.

FINANCIAL IMPACT

Consultant assistance was retained to undertake research and related assistance at a cost of approximately \$10,000, with funding from the corporate consulting account. The project concept, content and graphic design layout was done by the environmental programs section. Production was done through the City's internal graphics department.

Depending on the degree of interest in the project by other municipalities, a portion or all of the City's costs can be recovered through distribution of the guide at the municipal workshops.

CONCLUSION

The proposed policy demonstrates the City's support for environmentally-sound purchasing practices, while at the same time allowing flexibility to ensure price and product performance standards are met.

The Environmental Purchasing Guide is a unique reference tool for staff to refer to in the application of the policy. This approach is expected to have a greater degree of impact in enhancing market development than that which would have been achieved solely through approval of a purchasing policy.



Suzanne Bycraft
Manager, Environmental Programs



Terry Crowe
Manager, Land Use

SJB:

Environmental

Purchasing Guide

A reference guide for
City of Richmond staff
designed to stimulate
market development
opportunities for
environmentally
preferred products

Environmental

Purchasing Guide

The City of Richmond would like to acknowledge the Greater Vancouver Regional District for providing support and resources to assist in the development of this guide.

This guide was published September 2000
by the City of Richmond
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This guide has been printed on recycled
paper containing 30% post-consumer waste.

Disclaimer: The health and safety of workers and the public are the first priority in any environmental purchase or practice. Users of this guide are responsible for complying with all applicable codes and statutory or regulatory requirements. Any specifications presented are not intended to constitute or render engineering, architectural, legal or other professional services or advice. Nor should they be a substitute for such services or advice from an experienced professional directed to a specific design situation. While information in any specifications is believed to be accurate, the City of Richmond, its employees, and its consultants on this project shall not be liable for damages arising from errors or omissions in specifications.

Welcome to the Environmental Purchasing Guide

Local governments throughout the Greater Vancouver Regional District demonstrate their leadership and commitment to the environment in a myriad of ways. Through their policies, plans and actions – from protecting environmentally sensitive areas and providing residential recycling programs to maintaining green space and reducing energy consumption in government facilities – municipalities cultivate a culture of caring for the environment.

Environmental purchasing is yet another way local governments can demonstrate their commitment to the environment. Environmental purchasing involves evaluating potential purchases not just by standard criteria such as price and performance but by environmental criteria such as recycled content, packaging and energy efficiency as well. This guide is intended to support local governments as they work to include environmental considerations in every purchasing decision.

“Green procurement should be a policy of all governments, including municipal governments. Their purchasing power can stimulate creation of environmentally benign products by ensuring there’s a market for those products.”

Governments need to walk the talk — not just expect others to do it. There is a movement in that direction but it needs to be given greater priority.”

Sherri Watson, environmental management consultant with the Federation of Canadian Municipalities.

The City of Richmond has taken a leadership role in developing this guide on environmental purchasing. It is recognized that staff need practical support in the form of current information and resources to integrate environmental considerations into their buying decisions. This guide strives to provide that support for staff in government and government agency settings.

While the primary audience for this guide is City of Richmond staff, it is hoped that other municipalities will adopt the guide as a resource for addressing environmental purchasing policies and practices in their jurisdictions. There is tremendous potential for positive environmental changes when all Lower Mainland municipalities focus their considerable purchasing power on reducing the environmental impact of the products and services they use. The guide focuses on typical purchases in these settings and provides general guidelines and tips on how to go about “green procurement”. (Although certain sections of this guide are applicable for purchases in the business/commercial sector, the guide is not intended as a reference for the business/commercial sector uses. Such users are referred to the section “Environmental Labelling” in Chapter 4 as a springboard for their own research.)

If you are with the City of Richmond ... This guide progresses logically from “big picture” information on City policies and programs to the nitty-gritty details individuals need to incorporate environmental considerations into purchasing decisions. The first time you look through this guide you may like to spend some time in the early chapters, familiarising yourself with Richmond’s environmental policies and plans as well as the contents of the guide. After that, choose a section that best addresses your question or issue and dive in!

Environmental

Purchasing Guide

Welcome to the *Environmental Purchasing Guide*

If you are with another local government ... You may wish to simply skim Chapters 1 and 3 that contain the policies and plans behind Richmond's environmental purchasing initiatives. While there are valuable insights to be gained from reading about Richmond's policies and plans, you may be anxious to get to the nitty-gritty of environmental purchasing. In that case, be sure to read Chapter 2 "Using This Guide" to find out how to get the most out of this resource, then go to the section that will best address your interest or needs.

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Environmental

Purchasing Guide

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Environmental Purchasing Matters

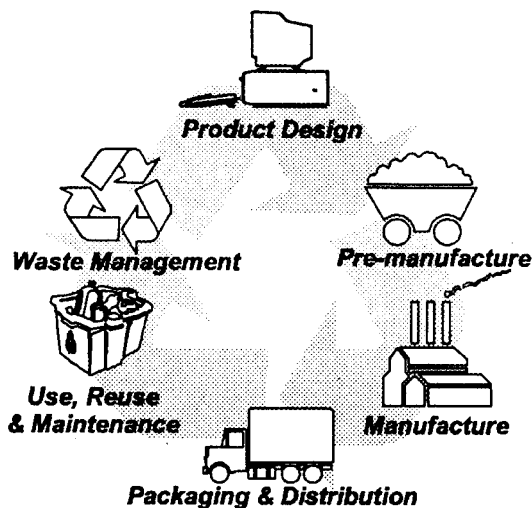
Protecting our environment. Preventing pollution. Recycling. Ensuring a sustainable community for our children and future generations.

The City of Richmond, its staff and citizens, share many common environmental values. The City demonstrates commitment to these values by cultivating a culture of responsibility for the environment through its policies, plans and actions. In fact, Richmond has been recognized internationally for environmental excellence in heritage management, landscape enhancement including the extensive dyke and trail system, environmental practises such as recycling and protection of environmentally-sensitive areas, community involvement and planning for the future.

Environmental purchasing is an important way for City staff to demonstrate leadership for the environment. Every day someone at the City, whether they have “purchasing” in their title or not, is considering or carrying out a buying decision on behalf of the City. This guide shows how we can use our purchasing power to demonstrate commitment to the environment.

Environmental Purchasing Defined

Environmental purchasing means purchasing products or services which minimize environmental impacts. Environmental purchasing involves considering the costs and environmental consequences of a product in all stages of its life cycle, from product development and manufacturing through product use to the ultimate disposal of whatever remains of the product at the end of its life span.



Product Lifecycle

When we practice environmental purchasing, we evaluate potential purchases not just by standard criteria such as price and performance but by environmental criteria such as recycled content, packaging and energy efficiency as well.

Many Richmond City staff already purchase environmentally friendly products. In a 1999 survey of City staff, 83% of respondents reported that their work groups buy items with recycled content some or most of the time. In addition, 71% of work groups buy items that are easy to recycle or are environmentally friendly.

Staff interest in environmental purchasing is high: fully 80% of respondents thought a structured list of environmental alternatives would help when ordering supplies. Almost two-thirds of respondents supported the development of an Environmental Purchasing Policy. Individuals commented on the need to raise all staff's awareness of environmental purchasing beyond stationery items to include a wide range of products and services.

Purchasing Guide

Why Bother

There are many compelling reasons to practice environmental purchasing. Consider these four:

Reducing Environmental Impacts

Environmentally sound products are generally produced and disposed of in ways that have **less impact** on the environment. Environmentally sound products are often produced using **fewer natural resources** or using resources sustainably to ensure a future supply. The product may contain **fewer hazardous or toxic materials** so pollution is reduced in its manufacture, use and disposal. Environmentally sound products may use **less energy** in their manufacture or consume less energy when used. They may **reduce waste** because the product contains recycled materials, uses less packaging or provides packaging that contains recycled material, is recyclable or will be taken back by the supplier.

When recycled materials are used to produce paper, aluminium and glass, energy consumption can be reduced by up to 95%, water consumption by up to 50%, air pollution by 95%, and water pollution by up to 97%.

Source: BC Liquor Distribution Branch Recycling Fact Sheet.

When scrap iron is used instead of iron ore to make steel, mining wastes are reduced by 97%, air pollution effluents by 80% and water pollution by 76%.

Source: Recycling Council of Ontario.

Supporting Recycling Programs

When we buy products with recycled content we help build and sustain markets for the materials collected in residential and business recycling programs. It makes no sense to separate materials like paper and plastics from the garbage if no one will use them productively again.

Recycling old materials into new products can save natural resources, energy and water, as well as reduce air pollution and the need for landfills or incinerators. By “buying recycled” we ensure a market for the materials we so diligently put into the Blue Box and other recycling programs.



Advertisement prepared by Keep America Beautiful Inc.

Increasing Demand For Environmentally Sound Products

As more customers demand products and services that have a minimal effect on the environment, business practices change to meet the demand. As more buyers seek out recycled products of the same quality as their virgin counterparts, industry alters its processes. And as more contract managers set down environmental specifications, bidders refine their practices to meet the environmental standards.

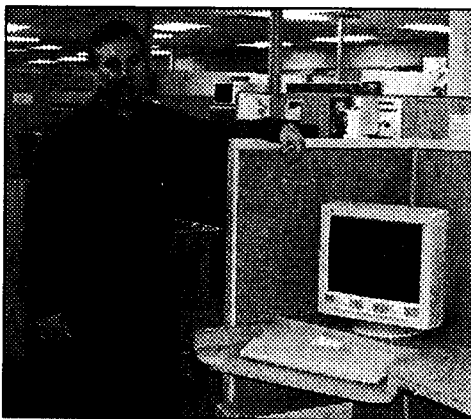
We can use our buying power as a powerful engine for positive change in how products and services affect the environment.

Taking Personal Responsibility

While taking care of our environment can seem like an overwhelming responsibility for one person, there is a simple starting point for each of us: making incremental changes in how we consume and dispose of items. Small changes in purchasing — choosing a durable product over a disposable one, adding environmental criteria to a tendering process, selecting items with recycled content — can make a world of difference.

Case Study: City of Richmond's purchase of second-hand furniture.

In 1995, John Lindberg was the City of Richmond's Manager of Purchasing and a man ahead of his time. Going against the common perception that new is best, Lindberg outfitted Richmond's treasury department with high quality, used modular office furniture, a move that saved an estimated \$157,000. Since then the City has furnished numerous offices, including the library, planning department and RCMP offices with second-hand furniture.



John Lindberg

Government's Commitment

The City of Richmond demonstrates leadership and a clear commitment to acting in an environmentally responsible manner through many important policy documents and programs endorsed by Council.

Consider these four:

Richmond's Strategic Management Plan

Our Vision is ... For the City of Richmond to be the most appealing, liveable, and well-managed community in Canada.

Source: The Strategic Management Plan for Richmond.

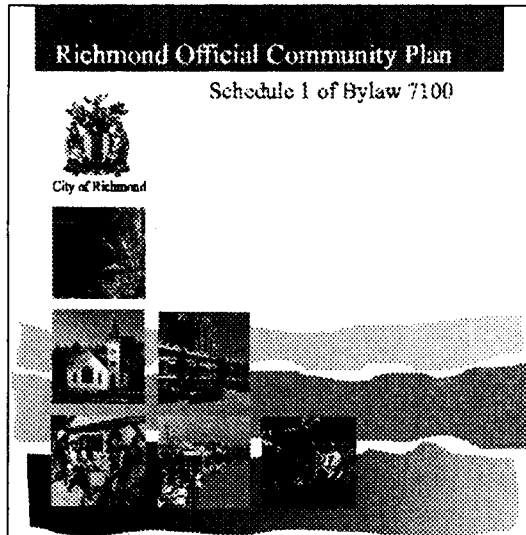
The Strategic Management Plan presents a vision-driven strategy for the City of Richmond to adapt to and build upon the challenges and opportunities of change. The Plan details the City's responsibility not only to create a culture of responsibility for the environment through the provision of programs such as recycling and beautification but also to ensure that the City's policies, plans and actions ensure conservation and environmental consideration.

Strategic actions that clearly demonstrate Richmond's commitment to the environment can be found in most core strategy areas. A sampling of these actions include:

- Creating a culture of responsibility for cleanliness and the 3Rs
- Developing principles and standards for City capital projects that ensure safety, conservation, environmental consideration and sustainability
- Developing strategies to ensure that Richmond is a sustainable city in the broadest context
- Ensuring that the City policies, plans and actions protect or enhance quality of life
- Developing an environmental strategy that enhances liveability.

Environmental Purchasing Guide

Richmond Official Community Plan



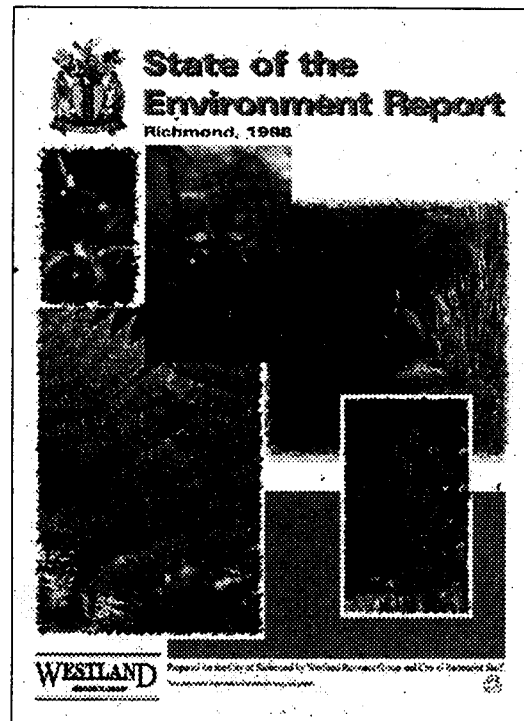
Richmond Official Community Plan

The Official Community Plan (OCP), like the Strategic Management Plan, calls on the City to continue its leadership role in caring for the environment. The OCP, a legal document that outlines the vision and policies for the City's social, economic, environmental and physical future, refers specifically to environmental purchasing when it states that the City will:

Continue to set an example of waste reduction in the City's procurement practice by emphasizing reusable packaged products, minimizing the procurement of over-packaged products and products that do not contain recycled materials, and ensuring responsible management of residential waste. (Page 127, OCP)

Further references include the City pursuing a lead role in developing new energy-saving programs, establishing best practices for City operations which impact air quality and, in general, "implement(ing) those environmental actions which are effective and within its mandate."

Richmond State of the Environment Report



State of the Environment Report

The State of the Environment Report (SOE) identifies Richmond's general environmental priorities and provides a report card on overall environmental health. As part of a planned environmental management system, the SOE identifies the significant role the City plays in ensuring care for the environment.

The city can help promote environmental stewardship by setting a good example and using best environmental practices. These practices may also save money and reduce liability as well as resulting in environmental benefits. (Page 67, SOE)

Richmond's Energy Conservation Policy

Richmond's Energy Conservation Policy, adopted in 1991, demonstrates commitment to the efficient use of energy in the planning and operating of all its facilities. The policy calls for a number of actions related to environmental purchasing including directives to:

- Consider life cycle costs when purchasing new equipment and when undertaking major repairs to equipment. (That is, products and systems with superior efficiency, which will pay for their premium costs within their useable life, will be preferred.)
- Provide, within reason, the best available energy-efficient system
- Upgrade existing facilities and equipment to higher efficiency as budgets and circumstances allow where the change offers a simple payback of no more than five years.

Policy 2004, Energy Conservation, Richmond.

Richmond's Civic Properties Department integrates energy considerations into all facets of facilities planning and operations, resulting in a number of Power Smart rebates and awards for energy-saving initiatives over the past 10 years. Projects such as replacing or retrofitting facility lighting and replacing faulty motor capacitors on pump stations have not only reduced energy consumption (the primary target) but, in many cases, have reduced maintenance costs and extended operating life as well.

Greater Vancouver Regional District Solid Waste Management Plan

The Solid Waste Management Plan is a guiding document that outlines how garbage within the GVRD will be managed and reduced in order to meet the provincially mandated goal of 50% less waste per capita by the year 2000. The Plan identifies a number of initiatives that member municipalities and the GVRD have implemented to reduce garbage, including the provision of residential Blue Box and yard waste recycling programs and the promotion of business recycling.

Impressively, by the end of 1998, GVRD member municipalities had collectively reached the goal. The challenge now is to maintain what has been achieved and take waste reduction to the next level.

Establishing an environmental purchasing policy and implementing practices are important next steps.

The Plan contains a clear call to action under the initiative "Procurement Policies." The initiative states that "all levels of government should increase government procurement of reusables or products containing post-consumer secondary materials." Further, the plan calls on the GVRD and member municipalities to "describe policies and programs to increase demand for recyclable materials."

Turning Talk Into Action

It is up to each of us to make the City's commitment to environmental purchasing a reality. Individual actions for the good of the environment, just like small sums of money regularly deposited in a savings account, add up over time and culminate in important results. YOU are the key to meaningful environmental change.

The guide is intended to support all staff, including:

- Computer and technical support staff who advise departments on upgrading computers
- Building maintenance supervisors who make decisions about the type of paint to use or the type of lighting systems to install
- Park designers who recommend the type of play equipment to install
- Staff who purchase office supplies
- Planners who write development permit guidelines that affect developers' choice of building materials and design
- Civil design engineers who decide what materials to use in building roads
- All other civic employees who make recommendations and/or purchasing decisions.

The City of Richmond has many environmentally responsible purchasing practices already underway including:

- *Converting City vehicles to run on both natural gas (a cleaner fuel) and gasoline*
- *Recycling and re-furbishing waste from Works Yard job sites*
- *Recycling office paper from City facilities*
- *Minimising use of chemical pesticides on civic property through alternatives such as using biological agents and selecting pest resistant plants and trees*
- *Purchasing equipment that results in reduced energy consumption, for example: programmable thermostats, DDC (direct digital controls) to control heating, ventilation and air conditioning, electronic ballast to replace standard fluorescent ballast and energy efficient boilers*
- *Publishing this guide to environmental purchasing.*



City of Richmond Gas Boy Fueling System

Making Environmental Purchasing Decisions

This guide will help you to consider environmentally sound alternatives when making your purchasing decisions. The next chapter “Using This Guide” outlines the many resources provided to assist you.

There will always be tradeoffs when making purchasing decisions. That’s why the guide provides criteria for you to judge the environmental benefits of items you are considering, recognizing that you will also look at other non-environmental criteria in making your decision. The guide does not impose strict regulations that force you to choose costly or inadequate items because of their environmental qualities.

This guide will never be a finished product. It will change and grow as new products come on the market, as technology changes and so on. Updates will be provided in as timely a fashion as possible. If you come across new information that can help other users, please share it by advising your municipal waste manager or recycling co-ordinator.

Case Study: Nations in Bloom.

In February 2000 the City of Richmond won the prestigious international “Nations in Bloom” competition for medium sized cities. The competition recognizes communities with exemplary environmental management practices in five areas: enhancement of the landscape, heritage management, environmentally sensitive practices, community involvement and planning for the future. Richmond and its citizens were recognized for their high level of commitment to sustaining and enhancing the environment in our City.

As Mayor Halsey-Brandt commented on receiving the award, “Richmond’s participation in Nations in Bloom celebrates the total commitment of the community and city staff to environmental and beautification programs.”



Mike Redpath, Mayor Grey Halsey-Brandt, Dave McLellan and Dave Semple, City of Richmond.

Photo by Mark Patrick

Using This Guide

Where to Start

Treat this guide more like an encyclopaedia than a novel. Jump in to the section that seems to best address your question or issue. For an introduction to making environmental purchasing decisions, begin with Chapter 4 “Considerations Before You Buy.”

Perhaps your department is in the market for a new product or service. You know there’s a corporate policy concerning environmental purchasing in the works and you want to follow it. But you have no idea where to begin. You flip to this chapter, “Using This Guide”, hoping for some answers.

Read **Chapter 3 “The Environmental Purchasing Policy.”** The goal of an environmental purchasing policy is to spur the review of purchasing decisions, contracts and tender specifications with the intent to increase the use of products and services that are more responsible to the environment. This chapter presents Richmond’s Environmental Purchasing Policy and provides background information on establishing an environmental purchasing policy.

In **Chapter 4 “Considerations Before You Buy”** you will find concrete ideas on how to put policy into action. Pay particular attention to the purchasing checklist. This checklist includes generic criteria that can be used to make many types of environmentally sound purchasing decisions. You may find that’s all the information you need to make your choice.

If you need more information, consult **Chapter 5 “Guidelines for Purchasing Specific Products.”** Here you’ll find guidelines in ten different categories, from paper and janitorial products to vehicles and vehicle maintenance. These guidelines are especially helpful if you are developing specifications for suppliers. Specifications should include environmental criteria.

In **Chapter 6 “Sample Specifications”** you’ll find samples of detailed specifications for suppliers, written by other agencies. Perhaps you can draw directly from the work of others in developing your requests for environmentally sound products.

Once you’ve identified the type of product you are interested in, check the GVRD’s **“Recycled Products Listing” in Chapter 7.** This listing of local suppliers has been compiled to promote the use of local products made from post-consumer recycled materials. By purchasing such products we help to establish markets for materials that are collected in municipal blue box and business recycling programs.

Chapter 8 “Reference Materials” suggests a host of other environmental purchasing resources available to you through the Internet.

The Appendices contain three items: **“Five Guiding Principles for Environmental Purchasing”**, **“Evolution of Environmental Procurement Policies”** and the **“GVRD: Project Waste Management Master Specification.”**

Case Study: Recycled glass trophies.

When Thomas Mueller, Construction and Demolition Recycling Advisor with the GVRD, needed trophies for the annual Job Site Recycling Awards in 1999 he contacted Sterling Glass of Victoria. Sterling Glass recycles over 100,000 kilograms of waste glass each year into new products for the giftware, tableware and awards industries.

Mueller's decision to order attractive recycled glass trophies from Sterling demonstrates the critical role purchasers play in "closing the recycling loop" by buying products made from materials collected in local recycling programs.



Retired Mayor Jack Loucks, City of North Vancouver, presents trophy to A. Waring of Polygon Construction

Meeting Corporate Expectations

In the past you've made purchasing decisions based on numerous criteria including price, performance, sales support and so on. With the establishment of an environmental purchasing policy, environmental implications should join your list of criteria whenever feasible. Because environmental criteria are new to most of us, this guide has been prepared to help.

This guide is not intended to make your job harder! It is not a set of regulations that dictate what you must do. Rather, the guide is intended to help you consider the environmental implications of future purchasing decisions. Staff are asked to respect the intent of a corporate purchasing policy as detailed in Chapter 3 by, at a minimum, consulting the criteria and suggestions included in this guide.

The Environmental Purchasing Policy

The City of Richmond's Environmental Purchasing Policy

In order to increase the development and awareness of environmentally sound products and services, City of Richmond staff will review their contracts and tender specifications for goods and services, to ensure that wherever possible and economically feasible, specifications are amended to provide for consideration of environmental characteristics. Consideration may be given to those environmental products that are certified by an independent accredited organization.

The City of Richmond as a whole will endeavour to increase its use of products and services that are more responsible to the environment in the way that they are made, used, transported, stored and packaged and disposed of. It is recognized that analysis is required in order to ensure that the products are made available at competitive prices, and that the environmental benefits provided by a product or service should not significantly affect the intended use of that product or service.

In Plain English

Like every good news story, the policy addresses the questions of who, what, where, when and why.

Who should implement this policy?

The short answer is “everyone”!

What actions should be undertaken?

City staff are asked, “wherever possible and economically feasible”, to consider the environmental characteristics of goods and services they may purchase or recommend for purchase. This includes reviewing contracts and tender specifications and revising them to reflect environmental considerations as appropriate.

Where does this policy apply?

Again, the short answer is “everywhere!” Staff are asked to add environmental considerations to the way they judge every product or service. That means looking at the way a product is made, used, transported, stored, packaged and disposed of.

The policy recognizes that environmental criteria are only one way in which staff will judge a product or service. Analysis is needed in order to ensure that environmentally responsible products are made available at competitive prices, and that the environmental benefits provided by a product or service do not undermine the overall performance.

When does this policy take effect?

Now.

Why establish a policy?

An environmental policy is established “in order to increase the development and awareness of environmentally sound products and services.” The desired outcome is that the whole organization strives to increase the use of products and services that are more responsible to the environment.

A Little Background

The City of Richmond Environmental Purchasing Policy is modelled after the groundbreaking Statement of Principle advocated by the Association of Canadian Cities for Environmentally Sound Strategies (ACCESS).

When ACCESS members — senior procurement officials representing major urban areas across Canada — first met in 1989 there were limited, almost non-existent sources and supplies of recycled content products. Members felt that, in order to ensure the continued success of waste reduction and recycling programs, sound procurement policies were needed. The Statement of Principle, now endorsed and/or adopted by over fifty Canadian municipalities, was seen as the starting point toward the development of environmentally sound purchasing strategies.

ACCESS’s approach has proven to be sound. In the last decade the availability of recycled products has increased significantly. The price gap between recycled products and standard stock have narrowed dramatically, and in a number of cases the prices for recycled products are at par or lower than prices for standard stock. Market conditions and factors of supply and demand, not artificial price preferences or premiums, have largely determined pricing.

For a closer look at how ACCESS has revised its “Statement of Principle” over the last decade, please see “Evolution of environmental procurement policies” in the Appendices.

Considerations Before You Buy

Environmentally Preferred Products

It's easy to say that we should all buy environmentally preferred products or services, but it's not always easy to identify these products and services. What are their attributes? In 1999 the City of Toronto Council adopted its Environmentally Responsible Procurement Policy which presents some straightforward, general criteria.

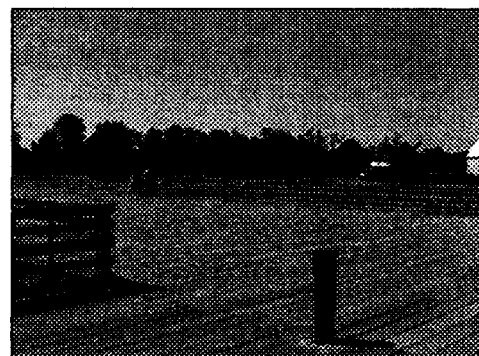
An environmentally preferred product (EPP) is one that is less harmful to the environment than the next best alternative, having characteristics including but not limited to the following:

- Reduce waste and make efficient use of resources: An EPP would be a product that is more energy, fuel, or water efficient, or that uses less paper, ink, or other resources. For example, energy-efficient lighting, and photocopiers capable of double-sided photocopying
- Are reusable or contain reusable parts: These are products such as rechargeable batteries, reusable building partitions, and laser printers with refillable toner cartridges
- Are recyclable: A product will be considered to be EPP if local facilities exist capable of recycling the product at the end of its useful life
- Contain recycled material: An EPP contains post-consumer recycled content. An example is paper products made from recycled post-consumer fibre

- Produce fewer polluting by-products and/or safety hazards during manufacture, use or disposal: An EPP product would be a non-hazardous product that replaces a hazardous product
- Have a long service-life and/or can be economically and effectively repaired or upgraded.

Case Study: Using recycled telephone and hydro poles.

Just how good is recycled lumber? It's great, according to the municipalities who have used lumber milled from old telephone and hydro poles. BC Wood Recyclers is a local company working with Telus and BC Hydro to process old, no-longer-functional poles into useable lumber. And fine lumber it is: long, straight and aged 40 to 60 years. Many municipal structures incorporate this lumber, including a new bridge on the east side of Richmond Nature Park, the wharf at Richmond's Garry Point, Steveston Docks and Delta Recycling Society's information kiosk. The latest use? Adirondack chairs and picnic tables manufactured by the Burnaby Association for the Mentally Handicapped.



Steveston Docks

A Comprehensive Environmental Purchasing Checklist

While the City of Toronto's general criteria are a great place to start, it is important to go further and ask more questions to determine the environmental qualities of a particular product or service.

The following checklist, drawn in large part from Environment Canada's "Green Procurement Checklist," suggests a number of questions to consider when contemplating the purchase of a product or service.

Environmental Purchasing Checklist

A. Confirm the Need to Buy

- Is the product/service necessary?
- Have other options for meeting the need been explored? For example, is there a comparable product available internally?
- Can the product be shared, borrowed or rented?
- Is the quantity requested appropriate and sure to be used?
- Are all the features/elements necessary?
- Will the product be used to the end of its useful life? If not, can it be easily reallocated or donated to charity?

B. Consider the Environmental Attributes of the Product

Is the product:

- Certified by the Environmental Choice program, Green Seal or other third party certification?
- Designed to minimize waste?

- Energy efficient (for example, office equipment with a power-saving "sleep" mode)? Does its energy use compare favourably to other products in the same category?
- Less polluting during its use than competing products (for example, non-toxic, biodegradable cleaners)?
- Free from hazardous ingredients that would require special disposal (for example, mercury)?
- Free from resources that come from environmentally sensitive regions (for example, contains no lumber from tropical rainforests such as some teak)?
- Free from banned or restricted substances (for example, contains no CFCs or benzene)?
- Manufactured from recycled materials, including a high percentage of post-consumer recycled content?
- Durable, with a long service life?
- Accompanied by clear and comprehensive operating instructions? (This will help to ensure that it is used efficiently.)
- Easy to maintain in good operating condition?
- Economical to repair?
- Easy to upgrade?
- Reusable, or does it include reusable parts (for example, rechargeable batteries)?
- Packaged with the intent to minimize waste (for example, bulk packaging)?
- Packaged in recycled or recyclable materials?

C. Consider Disposal of the Product and Its Packaging

Can the product and its packaging be:

- Reused or refurbished for further use (for example, furniture)?
- Resold or reallocated?
- Returned to the supplier for reuse, recycling or recovery?

- Contributed to the BC Recycling Council's Materials Exchange Program?
- Recycled locally?

The relative importance of these questions will vary depending on the product or service you seek. In general, choose the option that meets the greatest proportion of these criteria. Be sure to advise suppliers that you will evaluate products and service according to these factors. Of course, you will integrate environmental considerations with other criteria such as performance, life expectancy, quality and value for money.

Case Study: Using salvaged building materials.

The City of Vancouver's new Materials Testing Lab on East Kent Avenue South is an exciting example of how salvaged and recycled building materials can be used in new construction.

Approximately three-quarters of the building's structure and fabric are constructed with materials available from recently demolished warehouse buildings on the same site. For example, glazing throughout the building consists of sealed glazing units fabricated from salvaged glass, in frames milled on site from old wood decking material.

Approximately \$50,000 in cost savings are attributed to the use of salvaged materials, though these savings are offset against some increased construction management fees and labour costs.

Source: GVRD Design Guide.

Assessing Life Cycle Impacts

Life cycle assessment (LCA) seeks to answer the question: What is the environmental burden of a product or service, from its design through to production and then final disposal? A LCA seeks to determine the impact of a product or service over its entire life, from "cradle to grave" as it is sometimes described.

Certification programs such as Canada's Environmental Choice Program (described on the next page) carry out life cycle assessments to evaluate existing products. In a LCA the air, water and solid waste pollution generated when raw materials are extracted are all considered. The assessment includes the energy used in the extraction of raw materials and the pollution that results from manufacturing the product. It also accounts for environmental harm that might occur during the distribution and use of the product. Lastly, a LCA examines the solid and liquid wastes that are loaded on to the environment following final use of the product.

While it may not be feasible for civic employees to carry out LCA, it is possible and desirable for staff to consider the independent recommendations of agencies that undertake such analysis.

Environmental Labelling

Shifting through all the products that claim to be "green" or "environmentally safe" or "recyclable" can be a daunting task. While manufacturers and service providers have recognized that many consumers are interested in purchasing environmentally acceptable products and so have labelled their products as such, not all claims are valid and many are misleading.

Environmental

Purchasing Guide

Thankfully, there are a number of organisations putting considerable time and effort into evaluating products and services based on environmental impacts. Five programs of particular note are described below.

The Environmental Choice Program



Canada's Environmental Choice program is a comprehensive, national environmental labelling program initiated by Environment Canada. Products and services certified by the Environmental Choice Program are proven to have less of an impact on the environment because of how they are manufactured, consumed or disposed of. Certification of products and services is based on compliance with stringent environmental criteria that are established in consultation with industry, environmental groups and independent experts and are based on research into the life cycle impacts of a product or service.

The Program's official symbol of certification is the EcoLogo. For a catalogue of certified environmentally responsible products and services, suppliers and availability, visit the Environmental Choice program web site at www.environmentalchoice.com.

The web site also offers over 100 guidelines for defining green products and services. Simply select a product category to obtain the specific criteria goods and services in that category must meet in order to obtain the EcoLogo. References to these guidelines may be found in Chapter 5 "Guidelines for Purchasing" of this manual, while sample excerpts may be found in Chapter 6 "Sample Specifications."

Green Seal



Green Seal is an independent, non-profit organisation in the U.S., dedicated to protecting the environment by promoting the manufacture and sale of environmentally responsible consumer products. It sets environmental standards and awards a "Green Seal of Approval" to products that cause less harm to the environment than other similar products. For more information, visit Green Seal's web site at www.greenseal.org.

Energy Star

Sponsored by the U.S. Department of Energy and the U.S. Environmental Protection Agency, ENERGY STAR labels products such as computer CPUs, monitors, printers, copiers, fax machines and controlling devices that exceed US energy efficiency standards. ENERGY STAR also includes lighting, appliances, windows and many other products. For more information and energy-saving advice, visit their web site at www.energystar.gov or call their toll-free hotline at 1-888-STAR-YES.

EnerGuide

EnerGuide is an official Government of Canada mark associated with the labelling and rating of the energy consumption or energy efficiency of household appliances, heating and ventilation equipment, air conditioners, houses and vehicles.

Many Canadians recognize the EnerGuide labels that allow them to compare the energy efficiencies of different household appliances and heating and cooling equipment. There is now a similar label on all new cars, vans and light duty trucks for sale in Canada. For more information about the EnerGuide family of programs go to the Office of Energy Efficiency web site at <http://oee.nrcan.gc.ca/energuide>. EnerGuide, the EnerGuide for Houses logo, the stylized EnerGuide workmark and the EG design graphic are all official marks of the Government of Canada. Used with permission.

Power Smart

BC Hydro, through its energy conservation program Power Smart, assists both residential and business customers in finding ways to increase energy efficiency and decrease energy consumption. While Power Smart does not certify products or services, it does offer a number of support programs and publications.

The Power Smart publication Business Energy Tips, included in the appendices of this guide, presents a host of energy-saving strategies, from turning off computers and monitors after hours to setting water tank temperatures to energy-efficient levels. More information is also available on BC Hydro's Power Partnerships web site at www.powerpartnerships.com.

Guidelines For Purchasing Specific Types of Products

Recycling, energy efficiency, material conservation, pollution prevention.

These are all objectives of environmentally preferred, environmentally responsible, environmentally sound procurement or purchasing. These words capture the essence — the “key words” — of the guidelines for Environmental Purchasing.

Caution! Overload Warning

With the immense amount of information available on the Internet about other organizations’ experiences in this area, a simple search engine inquiry using the key words can result in a daunting amount of information through which to sift. Some of the information may be readily usable. However, a lot of the information in its raw form will be questionable for your particular application because most organizations’ needs grow from unique histories, available resources, and future plans.

There is good news. A lot of the legwork has been done for you. The sections in this chapter outline guidelines and specifications in ten different categories ranging from building maintenance, to janitorial products, to office supplies, to furniture and vehicle maintenance. The language in this chapter has been structured to allow you to cut through technical jargon and build your own specifications for your particular needs.

There are additional references in this guide that should be used with this chapter:

- If you want to refer to very technical specifications → go to Chapter 6 “Sample Specifications”
- If you want to refer to typical products and suppliers → go to Chapter 7 “Recycled Products Listing, GVRD”
- If you want to refer to a list of general outside references and resources → go to Chapter 8 “Reference Materials.”

All guidelines and specifications presented are intended to assist in purchasing products or services that will reduce environmental impact. They are intended to help achieve the commitment made through the adoption of an environmental purchasing policy.

As outlined in Chapter 1 “Environmental Purchasing Matters”, environmental purchasing involves considering the costs and environmental consequences of a product in all stages of its life cycle, from product development and manufacturing through product use to the ultimate disposal of whatever remains of the product at the end of its life span. When we practice environmental purchasing we evaluate potential purchases not just by standard criteria such as price and performance but by environmental criteria such as recycled content, packaging and energy efficiency as well.

All information presented is current at the time of printing. The information may change as new technology; processes and regulations come into effect. Responsibility lies with the user to decide whether the guidelines and specifications are applicable for their unique needs. Liabilities incurred consequent to the use of these guidelines rest with the user.

Customized Guidelines and Specifications Versus Seals of Approval

When we practice environmental purchasing we can evaluate potential purchases in two ways:

- We can develop our own sets of guidelines and specifications to allow for comparisons, calling on specifications developed by others and modifying them for our own needs. The advantage to this approach is we can “up the ante,” starting with a commonly accepted base level of standard or service and then customizing it for our own purposes. The disadvantage is that it can be time consuming and fraught with challenges and questions
- We can go a simpler route and rely on the “seals of approval” that products have garnered from environmental agencies to assist us in making environmental purchasing decisions. The advantage to this approach is the time and effort saved. The disadvantage is that we may have to compromise our larger list of potential service or product providers.

An example of a program that grants such a “seal of approval” is the Environmental Choice Program of Environment Canada. Products and services certified by Environmental Choice are proven to have less of an impact on the environment because of how they are manufactured, consumed or disposed of.

Certification of products and services is based on compliance with stringent environmental criteria that are established in consultation with industry, environmental groups, and independent experts and are based on research into the life-cycle impacts of a product or service. The Program’s official symbol of certification, its seal of approval, is the EcoLogo, a registered mark of Environment Canada. It may only be used in association with products and services that are certified by Environmental Choice.

Certification programs in the United States include the U.S. Environmental Protection Agency’s Energy Star program and the Green Seal program, an initiative of the nonprofit environmental labeling organization Green Seal. For further information on environmental labeling, see Chapter 4 in this guide.

5.1 General Building Maintenance



George Duncan, CAO, City of Richmond

You can start saving energy today. Try these three simple strategies:

- **Give your computer the night off.** *Turning off just one computer and monitor at night and on weekends results in annual cost savings of \$44. For computers that must be left on after hours, still turn off the monitor. Monitors consume over 2/3 of the total energy required to run a computer*
- **Reduce your paper trail.** *Use electronic mail and fax modems to avoid the energy cost of printing messages. As an added bonus, you'll also save paper*
- **Turn off the lights.** *Just like your mother said, lights should be turned off whenever an area is unoccupied. Consider installing occupancy sensors for greater convenience.*

Source: BC Hydro Business Energy Tips.

Building Maintenance is an area of municipal operations that has seen enormous changes since the advent of “smart buildings” and the increased focus on energy conservation and workplace safety. Gone are the days of buying the least expensive paint, carpet or fixture. Purchasers should now consider a wide variety of immediate impacts on users of a facility, as well as longer-term implications on operating budgets.

By and large, products containing commonly recognized, potentially “environmentally hazardous” products (such as products containing asbestos, PCB’s or lead) are no longer offered for sale in Canada. But many older facilities still contain materials where these products can be found.

For example, asbestos was used in a wide variety of products. As recently as the 1970’s asbestos was found in ceiling tile, linoleum flooring, insulation and even in water mains. In many instances proper management to ensure that particles don’t break off and become airborne (thus becoming a danger to lungs) has minimized its hazards.

Another example concerns paint. Durable paints were traditionally oil-based and many paints commonly contained lead additives. Both of these procedures have long term environmental impacts. New paint products are water-based formulas and the more toxic additives are generally relegated to special applications.

Sections 5.1.1 through 5.1.8 deal with the most typical “day to day” building maintenance purchases. They do not deal with heating, ventilation, or air-conditioning systems that are typically engineered under larger scale contracts and require particular specifications.

Rules of Thumb for most typical “day to day” Building Maintenance Selection:

- Reduce materials used and use materials efficiently
- Optimize space to reduce overall building size
- Specify standard dimension materials to reduce waste
- Use interior finishes that are durable or improve indoor air quality
- Specify materials with the best life-cycle environmental profile
- Look for durable and low-maintenance materials
- Match material life span to life span of the building
- Select materials that need infrequent recoating or refinishing
- Reject materials that need cleaning with high-emission cleaners
- Use materials readily recycled or reused
- Select biodegradable materials or products that can be recycled with existing technologies and collection programs
- Choose adhesives, paints, sealants, and other materials with low or no volatile organic chemical (VOC)* emissions
- Find products that emit the least amount of other chemicals harmful to human health.

** A note for cross-reference.*

Some of 5.1 General Building Maintenance sections may also be applicable to Products and Services required for “Construction, Renovation, and Demolition” (Section 5.8).

** A note about VOC: What is it?*

Common to many products in the Building Maintenance category (and most any refined petroleum ingredient in any number of products), is the presence of volatile organic compounds (VOC). These are commonly the ingredients that give these products their distinctive smell. Examples are paint fumes, gas fumes, the “smell” of new synthetic carpet etc. VOC’s react with nitrogen oxides in the presence of sunlight to produce ground-level ozone and photochemical smog. Reference to VOC appears throughout Chapter 5.

5.1.1 Paint**An Overview**

Paints are among the most widely purchased products in the area of building maintenance. Paints are sometimes called “surface coatings” in reference material on specifications, as this is the class of product to which they belong. Surface coatings include paints, stains and varnishes.

These products range in environmental impact, but all have the potential to adversely affect the environment through improper use, waste, and end disposal.

- Latex and acrylic paints (water based) are generally considered less damaging to the environment than oil based paints.
- Oil based paints have traditionally been called “enamels”, “stains” and “varnishes”. Their application has generally been promoted because of durability in “tough wear” and adverse exposure conditions.
- Oil based paints in the past had used lead as an additive. This is no longer the case.
- In Canada, application of these coatings releases thousands of tonnes of volatile organic compounds (VOC) (see 5.1) into the atmosphere each year.

Paint is produced in a highly regulated industry governed by several associations. Paint products are produced to specific industry standards that also incorporate environmental criterion. There are many types of seals of approval or guidelines on which to rely when purchasing such product. For details refer to the “ Specifications from Other Agencies and Seals of Approval” below.

Potential Environmental Impacts

- Volatile organic compounds (VOC) and fumes.
- Unused product disposal, if not performed properly, could lead to environmental problems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in paint specifications to address:

- Highest recycled content
- Recyclable products with “seals of approval”
- Low or no fumes (off-gassing) and preferably no volatile organic compounds (VOCs)
- Desired absence of mercury or mercury compounds
- Desired absence of pigments of lead, cadmium, chrome VI or their oxides that have recycled content
- Longevity of application.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-76
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-76.pdf)
Governments Incorporating Procurement Policies to Eliminate Refuse (GIPPER)
(details at www.buygreen.com/main/gipper/paint.htm)
Green Seal GS-11
(details at www.greenseal.org/pdf/paint.pdf)

5.1.2 Insulation

An Overview

There are many thermal insulation materials on the market. They may be purchased as two types: plastic foam insulation or fibrous material. More thermal insulation is used now than in the past, as the trend has been to curb the use of energy and non-renewable resources.

In addition to the energy conserved by using insulation materials, increasing the use of recycled materials will reduce the amount of materials entering the waste stream and reduce total resource consumption. In the case of use of fibrous material and cellulose filler, recycled mixed paper has become a potential ingredient.

Potential Environmental Impacts

Potential environmental impacts include:

- Health hazards from dust and fumes during and after insulation
- Energy and resource consumption in manufacturing the product
- Incorporation of ozone depleting substances in the manufacture of the product.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in insulation specifications to address:

- Highest recycled content
- Recyclable products with “seals of approval”
- Low or no fumes (off- gassing) and preferably no volatile organic compounds (VOCs).

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-40

(details at <http://www.environmentalchoice.com/guidelines/pdfs/ecp-40.pdf>)

Energy Star

(details at <http://www.epa.gov/appdstar/insulation/pdf/guide.pdf>)

5.1.3 Sealants and Caulking Compounds**An Overview**

Sealants and caulking compounds are used to fill and seal joints in buildings and other structures. They are applied to accommodate relative movement and significantly reduce unintentional air exchange. They assist in lowering heating and cooling losses and conserving energy.

The very reasons that these compounds have been developed to be soft and pliable results in their environmental impacts. The compounds dry very slowly, thereby remaining pliable. While longevity of application is sought, their slow drying results in long duration of off-gassing due to VOC (see 5.1).

Potential Environmental Impacts

- Many sealants and caulking compounds contain volatile organic compounds (VOC) which off-gas (release fumes) after application. Increased levels of VOC in buildings have been attributed to the use of sealants and may contribute to reduced interior air quality.
- Unused product disposal, if not performed properly, could lead to environmental problems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in sealant and caulking specifications to address:

- Highest recycled content
- Preference for products with “seals of approval”
- Low or no fumes (off-gassing) and preferably no volatile organic compounds (VOCs)
- Longevity of application.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-45
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-45.pdf)

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5.1.4 Adhesives

An Overview

Adhesives come in many forms and mixtures and are used for bonding in fabrication, maintenance and repair applications. Like sealant and caulking, many adhesives contain volatile organic compounds (VOC's) (see 5.1) that, when released, may contribute to reduced interior air quality.

Adhesives may be specified as one component required to complete a building maintenance job (e.g. re-flooring) or as a part of a pre-assembled item (e.g. cabinetry). In both these examples VOC and fumes could be adverse or left-over adhesive could become difficult to dispose of.

Potential Environmental Impacts

- Volatile organic compounds (VOC) and fumes.
- Unused product disposal if not performed properly could lead to environmental problems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in adhesive specifications to address:

- Preference for products with “seals of approval”
- Low or no fumes (off- gassing) and preferably no volatile organic compounds (VOCs)
- Longevity of application.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-44
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-44.pdf)

5.1.5 Carpeting**An Overview**

The vast amount of carpet manufactured and installed in North America is made of synthetic materials — nylon, polyester and polypropylene (PP) face fibres with most backings being a sandwich of polypropylene fabric and latex, or poly-vinyl. Most commercial carpet is made by bonding a face fibre to a backing fibre, using one of a variety of strong bonding agents. Nylon accounts for nearly two-thirds of the face fibre market, with PP being the next most commonly used fibre.

Recycled content and recyclable carpet options each have their own merits and considerations, depending on specific need, location, and use. Nylon, polyester, and plastics are made from petroleum, a non-renewable resource. Since the face fibre backing can contribute up to 60% of the carpet material, purchasing a nylon face fibre with 100% recycled content backing is worth consideration.

Closed-loop systems, where used carpet fibre and backing are made into new carpet and backing (and which can be recycled into new carpet after its useful life) are important to consider. Leasing is another option for commercial applications; the manufacturer bears responsibility for replacing worn sections of carpet and recycling the used carpet.

Note that new developments have been made using recycled PET materials:

- 100 per cent of the yarn is extruded and spun from recycled polyethylene terephthalate (PET), principally derived from post consumer soft drink bottles
- Virgin fossil fuel raw materials are not needed to produce this carpet, saving several million barrels of crude oil per year
- The carpet is finished with materials that do not contain formaldehyde
- The carpet is dyed in high-pressure jet dye becks, eliminating the need for biphenyl ingredients as dye carriers. This method of dyeing uses approximately 66 per cent of the water needed for conventional dyeing
- PET recycling does not generate nitrous oxide nor emit nitrous oxide into the air, so it does not contribute to ozone depletion or global warming
- PET carpet production uses more than 40 million pounds of PET bottles per year that would otherwise have become landfill.

Potential Environmental Impacts

- Indoor air quality concerns from fumes given off by new or recycled synthetic materials may favour “natural materials” such as wool, cocoa matting, hemp and similar materials.
- Conventional synthetic carpets are made from non-renewable resources.
- Disposal issues at end of product life span.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in carpeting specifications to address:

- Any extraordinary requirements for natural products or materials
- Highest recycled content
- Recyclable products with “seals of approval”
- Products that minimize volatile organic compound (VOC see 5.1) emissions
- Carpet that is not SB latex-backed (latex without 4-PC content)
- Products that contain natural or vegetable dyes and additives
- Colours that match natural soiling to hide dirt and stains
- A minimum 10-year warranty
- A minimum of 28 ounces per square yard for loop pile carpet and 34 ounces per square yard for cut pile carpet.

Specifications from Other Agencies and Seals of Approval

King County Environmental Purchasing Program, Environmentally Responsible Carpet Choices
(details at www.metrokc.gov/procure/green/carpet.htm)

5.1.6 Ceiling Tile

An Overview

Ceiling tiles generally fall under the product category of acoustical products. By requiring products to have a minimum percentage recycled content, the amount of material entering the waste stream and total resource consumption will be reduced.

Ceiling tiles are generally designed to be light, to be acoustically deadening, and to be durable and low maintenance. At one time ceiling tiles had high asbestos content. Ceiling tiles are continuing to improve with the advent of new recycling technologies. Some products now on the market have a minimum of 70 per cent recycled content (mineral fibre). They are durable and tear resistant, so they can be reused.

Potential Environmental Impacts

- Health hazards from dust and fumes during and after insulation.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in ceiling tile specifications to address:

- Desirability of tiles made from cellulose fibres, mineral and slag wool by-products and/or recycled fibreglass
- Tiles that do not contain asbestos fibres
- A high percentage of recycled content
- Preference for products with “seals of approval”
- Durable construction, low maintenance
- A product that meets all building and fire codes.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-35
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-35.pdf)

Case Study: Energy Efficient Emissivity Curtains

In 1991, in order to improve energy efficiency and reduce energy costs in Richmond’s Minoru arenas, emissivity curtains (basically large reflector blankets) were installed in the arenas’ ceilings. Richmond received a \$41,000 rebate from BC Hydro on the total \$67,000 cost of the project. In the first year alone Richmond realised energy savings of over \$16,000.

Source: Internal report.

5.1.7 Roofing**An Overview**

In the last few decades roofing in institutional commercial and industrial settings has been primarily a system of membranes and tar and gravel addressing the needs of “flat roofed” structures. Because of the use of tar, off-gassing and VOCs (see 5.1) are a concern.

With the advent of more diverse architectural styles and the retrofitting of existing flat roof structures to make use of urban space, more roofing material choices are available.

Potential Environmental Impacts

- Depending on material specified, air quality may be impacted adversely during time of installation.
- Depending on material specified, offgassing and VOCs may have a negative impact over longer term.
- Depending on material specified, there may be use of non-renewable resources.
- Disposal issues at end of product life span.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in roofing specifications to address:

- Highest recycled content
- Preference for products with “seals of approval”
- Low or no fumes (off- gassing) and preferably no volatile organic compounds (VOCs)
- Longevity of application
- Aproduct that meets all building and fire codes.

Specifications from Other Agencies and Seals of Approval

Currently, most reliable roofers adhere to strict codes of practice developed by their industry, which provides long-term warranties on materials and labour. Specifications particular to environmental purchasing and such seals of approval are not common.

Purchasing Guide

5.1.8 Walls (Gypsum-dry wall)

An Overview

Gypsum-drywall is one of the most used building materials of the last 50 years. Many older facilities may still have plaster walls but a combination of plaster and drywall is more the norm. Newer facilities likely have drywall construction as the norm.

Gypsum-drywall (called drywall or rock wall or gyproc) is made from gypsum based filler sandwiched between membranes. While designed to be a particularly fast and convenient way of installing walls to a stage ready for a prime coat of paint, disposal of the walls has an environmental impact. In a landfill, drywall breaks down, emitting the readily-recognizable rotten egg smell associated with sulfur. The gases formed create problems at landfills.

Building maintenance purchases with regard to drywall will most likely not be influenced by specifications for a better drywall as the industry has well-accepted standards and the use of the EcoLogo is prevalent. The maintenance purchase will however be influenced by specifications for demountable (full wall) partitions as described in section 5.4.2

Potential Environmental Impacts

- End-of-use disposal is a potential problem at landfills.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in Gypsum-drywall specifications to address:

- A high percentage of recycled content
- Preference for products with “seals of approval”
- Signs of durable construction, low maintenance
- A product that meets all building and fire codes.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-50
(details at. www.environmentalchoice.com/guidelines/pdfs/ecp-50.pdf)

5.2 Janitorial Products

Janitorial products include cleaners, disposable papers and tissues that are used on a daily basis in most workplace settings. Environmental procurement can have a large impact here because of the larger volumes of product in this material category.

Products range from general purpose cleaning agents to commercial and industrial strength cleaners to disposable papers and tissues. All of these products are commonplace and are also packaged for use in residential settings.

5.2.1 General Purpose Cleaning Agents

An Overview

The primary function of general purpose cleaners is to remove soils from hard surfaces. Statistics indicate over 54,000 tonnes of general purpose cleaners are consumed annually in Canada.

The major ingredients in general purpose cleaning products are surfactants, builder, solvents, and scouring abrasives. Surfactants lower the surface tension of the water, allowing the cleaning solution to penetrate and suspend soils.

Cleaning products on the market have been labelled "environmentally friendly" because they are phosphate free or are considered biodegradable. However, this determination has been difficult to assess in the past due to the lack of definitive standards for biodegradability and other environmental factors. The Environmental Choice Program is now developing guidelines.

Potential Environmental Impacts

- May be a burden on the environment in terms of wastewater loading and treatment, emissions of volatile organic compounds (VOCs) (see 5.1) and resource consumption.
- If surfactants are not easily biodegraded, they may persist and harm ecosystems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in general purpose cleaners to address:

- Preference for natural products or materials
- Preference for highest recycled content
- Preference for products with "seals of approval"
- Preference for products that are biodegradable, not toxic or chlorinated, and standardized as much as possible to reduce the number of chemicals in use
- Preference for products that minimize volatile organic compound (VOC) emissions
- Preference for products with minimal packaging in refillable or recyclable containers.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-33
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-33.pdf)
Green Seal GS-08
(details at www.greenseal.org/standard/h-cleanr.htm)

Purchasing Guide

5.2.2 Industrial and Commercial Cleaners

An Overview

Industrial and commercial cleaners are used primarily for facility and machinery cleaning. The selection of a cleaner is influenced primarily by the nature of the surface to be cleaned, the nature of the soiling, and the degree of cleanliness required.

The key active ingredients in industrial and commercial cleaners are: surfactants (to lower water tension and allow cleaning solution to work), builders (to control water hardness and improve surfactant performance), alkalis and organic solvents.

Potential Environmental Impacts

- If the surfactants are not easily biodegraded they may persist and harm ecosystems.
- Similarly, the products of degradation may also pose an elevated risk to the environment.
- Builders may have adverse impacts on aquatic systems and water quality if present at excessive concentrations.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in industrial and commercial cleaner specifications to address:

- Requirements for meeting existing government specifications (Canadian General Standards Board (CGSB) in order to validate manufacturer claims that products work just as well or better than other products
- Preference for products which are non-hazardous and low in phosphate
- Preference for water based cleaners over those of organic solvents with VOCs
- Where biodegradability is requested, the product's ability to degrade at the disposal site must be evaluated based on specific criteria such as: time required to degrade, recognized test method used, degradation by-products, and overall toxicity of substances generated during the degradation process
- Products of degradation and the product in question must not contain ingredients that are known to be damaging to the environment and/or the sewage collection or treatment facility
- Preference for products that require only a small amount to clean well, over others that require a larger amount, provided that all performance criteria are met (e.g. concentrates)
- Cleaning products should be purchased in containers which are reusable (refillable), returnable or recyclable (where recycling programs accept the containers)
- Contracts for janitorial and cleaning services should specify the use of EcoLogo approved products where applicable.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-57
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-57.pdf)

5.2.3 Disposable Papers and Tissues**An Overview**

Statistics indicate that more than 500,000 tonnes of paper, including disposable paper, toilet tissue, kitchen towels, facial tissues, table napkins and hand towels, are manufactured in Canada each year.

Alternatives in the choice of pulp finish, pulp and paper technology and emission control are available to manufacturers. The Environmental Choice Program has developed five separate guidelines that address: toilet tissue, paper towels, facial tissue, table napkins and hand towels.

Potential Environmental Impacts

- Manufacture of product may release substances that contaminate the environment and enter the solid waste stream.

Things to Consider If You Write Your Own Specifications

A requirement for minimum recycled content is not specified in the guidelines. That parameter has been incorporated into manufacturer resource consumption and solid waste production measurements (performance in these areas increases as amount of recycled material increases).

If considering the purchase of a product outside of the ECP guidelines and EcoLogo, you may wish to consider specification of a desired level of recycled content, bleach free products, and environmentally friendly packaging, all of which are addressed in the guidelines themselves.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-59 through 63

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-59.pdf)

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-60.pdf)

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-61.pdf)

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-62.pdf)

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-63.pdf)

Green Seal GS-09

(details at www.greenseal.org/standard/tn-paper.htm)

Green Seal GS-01

(details at www.greenseal.org/standard/t-paper.htm)

5.3 Vehicles and Maintenance

“Vehicles and Maintenance” encompasses a category of environmental purchasing that addresses not only the procurement of environmentally friendly products, but also of improving performance of equipment so that it has the least impact on the environment

The effects of a poorly tuned engine have been well publicized for some time. Emissions leading to smog that contributes to the greenhouse effect are not that easy to grasp. This line of questioning illustrates the point:

“Have you recycled for a whole year?”

Yes.

“Did you drive your car while it needed a tune-up?”

Yes.

“Well then the effects of the later just cancelled out the effects of the former”.

Simply stated, the effects of proper vehicle maintenance with appropriate lubricants and fuel, as well as the effects of residual management of waste tires, has not been so readily publicized as other important environmental actions.

5.3.1 Oils

An Overview

Statistics show that over one billion liters of lubricating and related oils are sold in Canada annually. Fully 50% of these oils are consumed while 500 million liters are available for reclamation. Only about 35% of this 500 million liters is re-refined. Another 10% is burned as fuel in an environmentally satisfactory manner. The remaining 275 million liters represent a significant pollution burden.

Used oil can be collected, cleaned and re-refined into new oil products. Used engine oil and solvents are considered waste and must be transported accordingly under applicable regulations.

Used engine oil is recycled by one of two ways:

- Re-refined for blending with additives
- Re-used as a supplementary heating fuel.

Re-refined oils typically meet or exceed manufacturers' specifications for virgin crude oil, and they are generally less expensive to purchase.

Potential Environmental Impacts

- Improper end-of-use disposal is a potential hazard.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in automotive oil specifications to address:

- Preference for products bearing the EcoLogo and developed as in ECP-01
- Assurance of product meeting SAE, API, or equipment manufacturers specifications so that vehicle /equipment warranty is not affected
- Service maintenance garages use re-refined and recycle used oil
- Assurance from collection companies of final use for used materials and verification of the same
- Assurance that collection companies are properly licensed.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-01

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-01.pdf)

5.3.2 Fuels**An Overview**

Canadian annual demand for gasoline reaches about 35 billion liters. Gasoline is by far the most commonly used automotive fuel.

It is reasoned that environmental benefits may accrue from either modification of existing fuels such as gasoline and diesel or through the use of alternative fuels in combination with specialized vehicles.

Only a small proportion of the country's vehicles are designed for dedicated alternative fuel use. The most immediate benefits will be gained using alternative fuels in combination with conventional gasoline. One option is the modification of the "hydrocarbon feedstock" and the use of a variety of additives

Potential Environmental Impacts

- Continued depletion of a non renewable resource.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in fuel specifications to address:

- Preference for fuels that carry the EcoLogo
- Preference for blended fuels such as ethanol blended gasoline
- Preference for ethanol derived from biomass (material of plant origin, including agricultural waste wood and animal manure.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-16
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-16.pdf)

5.3.3 Tires

An Overview

Tires purchased for fleets of vehicles have the potential for affecting the environment from two standpoints. Product performance of the tires affects the environment in terms of use of rubber and petroleum resources and disposal, but the immediate secondary impact on fuel economy may have far greater consequences over the longer time frame. Typically there is less pollution if the correct tire is chosen.

Tires are categorized into two types:

- Radial
- Bias Ply.

In addition tires are broken into two groups:

- Smaller diameter tires used for passenger and service vehicles
- Larger diameter tires used for transport vehicles and “off-road” heavy construction.

Both tire types have a wide range of environmental impacts. They have the potential to adversely affect the environment both through improper use, and end disposal.

- Radial tires are named such by virtue of their construction. The tire carcass is constructed in such a way that the belts, to which the actual rubber and tread are attached, are radial to the cross section of the tire. The belts have typically been made of steel. Because of their design and construction radial tires deform less than bias ply tires when rolling. This in turn causes them to heat less, wear out less quickly, and provide higher gas mileage. Typically radial tires of good quality have a wear life of between 80,000 and 100,000 KM. Radial tires are more appropriate for use on paved surfaces and for wheels less than 19 inches.
- Bias Ply tires are named such by virtue of their construction. The tire carcass is constructed in such a way that the belts are wound on a bias to the cross section of the tire. Belts traditionally have been made of rayon or nylon but can also be made of steel. Because of their design and construction bias ply tires deform more than radial tires when rolling. In turn they heat more, wear out more quickly and provide lower gas mileage. They do however provide a much greater strength sidewall and are most appropriate for off-road use or where travel is frequently “over curb”. Bias ply tires are typically better suited for high impact uses.

With regard to tire size:

- Smaller tires are easier to put into a recycling loop. Typically smaller tires (up to 19 inches) are collected. In BC they are primarily used as feedstock for cement kilns
- Larger size transport tires and off road tires can be reconfigured into “blasting mats” used in heavy construction. Transport regulations limit the amount of times that a transport tire can be re-used. Typically a cold vulcanization process is employed. Retreads that involve gluing material onto the carcass may be preformed 3 to 6 times depending on if the tires are used for steering or not.

Potential Environmental Impacts

- Higher use of non-renewable resource if incorrect type of tire is used.
- Unused product disposal, if not performed properly, could lead to environmental problems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in tire specifications to address:

- Highest recycled content
- Vehicle manufacturer’s recommendations
- Longevity of application.

Specifications from Other Agencies and Seals of Approval

Specifications from other agencies and seals of approval are pending. In the interim, individual tire manufacturers’ specifications are generally driven by vehicle manufacturers developing standards for “equivalent replacement for optimum performance.”

5.4 Furniture and Office Systems

5.4.1 Office Furniture and Workstation Panel Systems

An Overview

Office furniture and panel systems are made with any one or a variety of materials including gypsum board, metal, wood and wood based products, plastic and fabric. As a result of the different materials that may be used in manufacture, various environmental issues must be taken into account.

The design and manufacture of office furniture and panel systems can effect resource utilization, pollution, and worker health and safety. Waste generated as a result of manufacture and disposal of these products can be minimized through reuse, remanufacture and recycling.

Office furniture has traditionally been re-usable and of long life and usefulness if use and potential future use has been taken into account. Workstation panel walls are reusable. These walls can be re-configured into new partitions or recycled. They may contain from 20 per cent to 50 per cent recycled materials. Vinyl board panels can be disassembled intact and ground up to produce gypsum board. Vinyl face and the drywall paper are either screened or burnt off to expose the gypsum for recycling.

Potential Environmental Impacts

- Materials used in office furniture and workstation panel systems may emit VOCs when installed, immediately impacting indoor air quality.
- Building agents such as resins used in composite wood products can also affect indoor air quality, but the use of veneers and laminates can help to minimize these effects, as can low VOC content or water based liquid surface coatings.
- Materials used in the manufacture, treatment, installation, and final cleaning of fabrics can contain VOC, which in turn become secondary sources of VOC emissions.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in furniture and panel system specifications to address:

- Re-use of existing furniture where possible and refurbishment if desired. The environmental benefits of refurbishing are: it eliminates the need to purchase new furniture and manufacturing processes (including the use of new materials) have adverse effects on the environment
- By promoting the re-use of existing furniture, used/surplus furniture does not go to the landfill
- When new furniture is required, choice of a company that demonstrates environmental responsibility in its manufacturing processes (i.e. on-site recycling centres for fabric, etc.)
- Request for re-usable or returnable packaging and shipping materials
- When alternatives exist, avoidance of the use of products containing ozone depleting substances and volatile organic compounds
- Reusable demountable panel systems
- Recycled content (the higher the better)
- Drywall that does not contain fibreglass reinforcement.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-66
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-66.pdf)

5.4.2 Demountable (full wall) Partitions

An Overview

Demountable partitions are fully or partially prefabricated gypsum board based units whose primary functions are to restrict vision, sound and passage. These walls are 100 per cent reusable. No material is sent to landfill sites as a result of office reconfigurations. The most environmentally sound products feature:

- Materials that are 100 per cent reusable
- An electrostatic powder coating system that collects and recycles over 95 per cent of paint overspray and contains no solvents, eliminating emission of dangerous air-borne particles
- Excess fabric that is recycled as automobile insulation
- Scrap gypsum that is recycled and reused in cat litter
- Panels shipped unboxed eliminating additional waste.

Potential Environmental Impacts

- End- of- use markets or deconstruction still to be proven.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in demountable partition tile specifications to address desirability of:

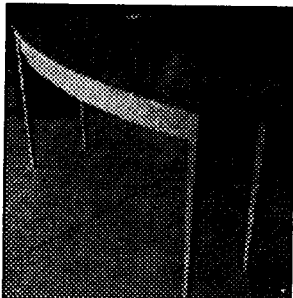
- Recycled steel framing
- A fibre core made of recycled paper products
- Paint applied by an electrostatic powder coating process
- Longevity.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-70
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-70.pdf)

Case Study: Eco-Labels Appearing on Furniture

If you build it, they will buy. At least that's what Vancouver-based Ornamantum Furniture hopes with their new line of eco-labelled tables and cabinets now available at Bonaparte Designs in Yaletown. Ornamantum buys its wood from two small-scale logging operations and a small sawmill that were recently certified by the Silva Forest Foundation. Silva certification, which recognizes sustainable logging practices, is viewed as one of the strictest certifications amongst a confusing number of certifications now underway in B.C.



Ornamantum Furniture

Herb Hammond, founder of the Silva Forest Foundation, highlights the critical role consumers play in supporting environmental initiatives. "We are ushering in a new era of forestry, one where consumers can now have a choice in purchasing products that come from intact forests or purchasing products that come from clear-cuts and tree farms."

Source: Vancouver Sun, March 30, 2000

5.5 Office Equipment and Related Services

Office equipment consists of all the “hard” materials that make an office function. The items in this category focus on printing and printing services, and production of

photocopies and facsimiles. In addition, as noted in the case study at the end of the section, much of this information can apply to computers.

5.5.1 Photocopiers and Facsimile Machines

An Overview

Photocopiers and facsimile (fax) machines are widely used in both traditional office and home workplaces. They are an integral part of many offices.

The variety of models on the market that perform “multifunction” tasks -- from acting as a photocopier, an answering machine, a fax machine, a computer printer or a computer scanner -- has made it possible for units to appear in the smallest of “home offices.”

With improvements to the environmental friendliness of this category of product there should be reduction in waste-to-disposal, a reduction of chemical emissions and conservation of energy.

Potential Environmental Impacts

- Consume both significant quantities of energy and paper.
- Release emissions in the form of noise and chemical substances such as ozone.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in photocopier specifications to address:

- Preference for units that carry the EcoLogo
- Preference for multifunction units that reduce the need for additional machines to perform office tasks
- Preference for machines that use standard paper
- Preference for photocopiers that make two sided copies.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-46

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-46.pdf)

Environmental Choice program guideline ECP-71

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-71.pdf)

Case Study: Computers for Schools



Computers for Schools

Old computers are finding new lives thanks to the Canadian Computers for Schools (CFS) Program. CFS channels eligible, surplus computer equipment and software from governments and businesses to schools and libraries. Since major sponsors Industry Canada and the Telephone Pioneers began the program in 1993, over 193,563 computers have been tested, refurbished and delivered to recipients free of cost. In British Columbia, BC Tel pioneers have logged countless volunteer hours testing and refurbishing over 16,000 of those computers for donation to BC schools.

This largely volunteer program has a lofty goal: to place a quarter of a million computers in schools and public libraries by March 31, 2001. For more information check the program's provincial web site at www.scbc.org/cfs.

5.5.2 Printing Cartridges (including remanufactured printing cartridges)

An Overview

Printing cartridges are widely used in photocopy and facsimile equipment, as well as in laser printers. Statistics indicate that in Canada over one million cartridges are disposed of annually. Most are not reused.

Cartridges are often thrown away once the toner inside the cartridge is used up or the “toner waste sump” is filled. This typically occurs after several thousand copies have been made, depending on the make and model of the printing cartridge.

Single use cartridges contain many components that are in perfect condition at the end of the expected life of the cartridge. The practice of re-manufacturing printing cartridges involves disassembling the unit, inspecting and cleaning components replacing or refurbishing the unit’s organic photoreceptor cell and replacing the supply of toner.

Potential Environmental Impacts

- End-of-use disposal problems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in photocopier specifications to address:

- Preference for units that carry the EcoLogo
- Preference for remanufactured print cartridges.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-42
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-42.pdf)

Case Study: Recycling Toner Cartridges



GVRD Staff Representative

A decade ago few people thought twice about throwing a spent toner cartridge in the garbage and buying a brand-new replacement. Times have changed, and the GVRD’s approach to replacing toner cartridges is an excellent example of how. In 1998 and 1999 the GVRD sent a total of 404 spent toner cartridges for recycling and purchased 760 remanufactured cartridges. In the past 4 years the GVRD has received \$10,250 in rebates from toner cartridge recycling and has applied these funds to other recycling projects.

5.5.3 Printing Inks**An Overview**

Printing inks, used to produce an image on a “substrate” (usually a paper), are generally made of 3 components: pigments, “the vehicle” (the carrier and binding agent) and additives.

Pigment is the solid coloring that we see. The “vehicle” is the largest component of ink and acts as a carrier medium for the pigment as well as a binder to fix the pigment to the “substrate”. Additives modify the performance of ink and include materials such as dryers, waxes, lubricants, reducing oils and solvents, binding varnish antioxidants and resins.

Potential Environmental Impacts

- The manufacture, use, and disposal of printing inks which contain heavy metals, petroleum distillates and volatile organic compounds (VOCs).

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in ink specifications to address.

- Preference for units that carry the EcoLogo.
- Preference for inks with lower levels of heavy metals and petroleum distillates.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-48
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-48.pdf)

5.6 Office Supplies

Office supplies consists of all the “soft” materials that make an office function. The items in this category focus on the feedstock for office equipment.

5.6.1 Batteries

An Overview

In Canada, performance standards for batteries are published by the International Electrotechnical Commission.

Traditionally, batteries contained a high degree of mercury, a highly toxic metal. Mercury's toxicity to the environment increases when converted by microorganisms under anaerobic conditions to organomercury compounds. It is known to concentrate in organisms and magnify in food chains.

Mercury sold in batteries is found in municipal waste streams and has been estimated to account for 35% of the total release of mercury into the environment in Canada.

Potential Environmental Impacts

- Batteries may pose a threat to the environment during their production and disposal because of certain toxic substances. The major substance of concern has traditionally been mercury.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in battery specifications to address:

- Preference for batteries that carry the EcoLogo
- Preference for rechargeable batteries
- Preference for distribution and end-of use disposal by the same contractor.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-04
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-04.pdf)

5.6.2 Envelopes**An Overview**

Over 10 billion envelopes are produced in Canada each year.

The manufacturing process for envelopes involves production of the paper used as the main raw material, the printing processes and the chemical components of inks, adhesives and other materials used in the process. The manufacturing process has an impact on the recyclability of envelopes.

Potential Environmental Impacts

Unnecessary end of use disposal of varying grades of paper.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in envelope specifications to address:

- Preference for products that carry the EcoLogo
- Preference for products with stipulated levels of pre and post consumer waste recycling.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-75
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-75.pdf)

5.6.3 Printing and Writing Papers (and uncoated mechanical printing paper)

An Overview

For both product categories: “Printing and writing paper” and “Uncoated Mechanical printing paper” the Environmental Choice Program has set out a guideline developed using a multi-parameter approach.

The guideline does NOT specify a minimum content of recycled material. That parameter has been incorporated into the calculation of resource consumption and waste production. (Performance in this area improves as the amount of recycled material increases.)

This method identifies the most important environmental stressors from all stages of the product life. The environmental requirements identifying pulp and paper aim to lower environmental impacts through:

- Reduction in air emissions
- Reduction in water emissions
- Reduction of waste
- Efficient use of fibre and recycled fibre
- Reduction of energy use.

Potential Environmental Impacts

- Production of all types of paper in pulp and paper mills consumes significant quantities of energy and resources.
- Waterborne and airborne emissions to the environment.
- Process generates significant waste.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in paper specifications to address:

- Preference for products that carry the EcoLogo
- Preference for products with stipulated levels of pre and post consumer waste recycling.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-77

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-77.pdf)

Environmental Choice program guideline ECP-78

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-78.pdf)

Case Study: Eco-Certified Paper Mill

Fletcher Challenge Canada’s Elk Falls paper mill is the first major mill in Canada to receive an eco-certification supported by environmental groups such as Greenpeace and the Sierra Club. The mill, located on Vancouver Island, received chain-of-custody certification that meets Forest Stewardship Council standards.

John Cathro, chair of the FCS committee, says the push for certification is being driven by consumer demand. “These companies are being told by buyer groups or by their clients that consumers are demanding certified products.”

At the moment several small operations in B.C. are certified but they can not provide enough fibre to meet Fletcher’s paper demands. The onus is now on larger forest companies to make changes to their practices to ensure an adequate supply of FCS certified fibre.

5.6.4 Miscellaneous Recycled Paper Products**An Overview**

Waste paper such as old newspaper (ONP), printing and writing paper (OP), old corrugated containers (OCC) and other packaging (MP) contributes about 35% by weight to the municipal waste stream.

As recently as 1990, markets of an appreciable size had not been developed for recycling of paper other than ONP. Not all of the waste paper was recoverable because of limitations such as paper contamination. Now markets for and products made from recycled paper exist.

The occasion now arises to purchase products like boxes, packaging and trays and forms made from recycled paper products.

Potential Environmental Impacts

- Unnecessary end of use disposal of varying grades of paper.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in paper specifications to address:

- Preference for products that carry the EcoLogo
- Preference for products with stipulated levels of pre and post consumer waste recycling.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-10
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-10.pdf)

5.7 Lighting and Lighting Systems

5.7.1 Lights

An Overview

With the use of energy efficient lighting products, such as fluorescent lamps and energy efficient ballasts, electric lighting costs can be reduced by as much as 60%. Newer lamps and ballasts are more energy efficient, generate less heat than older models and last longer. Savings are also incurred in lower labour costs for maintenance as well as lower air conditioning costs for removal of lamp and ballast-generated heat.

Newer developments include these and other features:

- Electronic ballasts contain no PCBs
- Instant start ballasts consume less energy than rapid start ballasts. Soft start technology gives the tubes a longer lifespan
- Electronic ballasts consume substantially less energy when operating at very high frequencies, they hum less and do not flicker
- Used in combination with T8 lamps, electronic ballasts consume 36 per cent less energy than conventional ballasts with T12 lamps
- T8 lamps use 20 per cent less energy to provide the same amount of light as conventional fluorescents. They also offer better colour rendering
- Parabolic louvers control glare while maintaining a level of light efficiency that exceeds IES and ASHRAE standards.

Potential Environmental Impacts

- Higher energy costs with inefficient lighting fixtures or inefficient lighting design.
- End of use disposal problems.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in lighting specifications to address desirability of:

- Use energy efficient lighting systems wherever possible, i.e. low wattage, reflective fluorescent
- Ballasts not containing PCBs
- Office design to optimize natural light as well as efficient placement of lighting systems
- Task lighting to minimize need for overhead lighting. Use of T-8 lamps, compact fluorescents are preferred.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-19

(details at www.environmentalchoice.com/guidelines/pdfs/ecp-19.pdf)

Case Study: Energy Efficient Lighting

The lighting in Richmond's Thompson Community Centre main gym left much to be desired. The HID (high intensity discharge) lighting system was expensive, could not be instantly switched on and off to save electricity and did not provide the desired illumination.

BC Hydro reviewed the existing lighting and made recommendations for a re-design that meets the City of Richmond's primary objectives of reducing energy costs, increasing illumination and providing increased flexibility to switch off lights when not in use.

The new lighting system, installed in Spring 2000, uses compact fluorescent sources in high-bay luminaries. This solution combines the benefits of smaller point sources with the flexibility of switching control. This energy efficient approach is expected to provide approximately \$13,000 in energy savings annually and a two year pay-back on investment from the operating cost savings.

Source: BC Hydro.

5.8 Construction, Renovation, Demolition

5.8.1 Construction and Demolition Waste

An Overview

Moving, renovating, and demolishing facilities can generate significant waste. Construction and demolition waste accounts for up to 25% of the waste stream. Reorganizations in offices and facilities both add to the challenge and open new opportunities to apply sound environmental practices. These practices can lead to improved energy efficiency and workplace and public facility standards.

For the “renovation component” of any required work you may also refer to section 5.1.1 through 5.1.8 to consider replacement materials.

Potential Environmental Impacts

- Poor waste management practices throughout any construction, renovation or demolition project will add to disposal volumes and their impacts on the environment.

Things to Consider If You Write Your Own Specifications

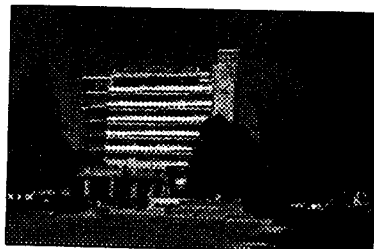
Contractors should be required to submit a Waste Management Plan with their quotations. The plan should include:

- Procedures for educating workers and subcontractors in order to ensure adherence to the Waste Management Plan
- Methods for reducing waste such as ordering material only as required, using up excess material on site where possible, or prefabricating sections off site
- The percentage of recycled content in construction materials
- Methods and techniques for collecting, separating, and recycling waste materials and packaging, including a list of materials to be recycled and percentage expected to be recycled or sent to landfills
- Provisions for dealing with hazardous waste, including procedures for handling, clean-up and disposal
- A list of carriers and disposal destinations for each material to be disposed of or recycled. The list should be provided initially or at least before the final payment is made. This will ensure that all materials are being recycled and waste is legally disposed of
- Alternative options for recovering higher percentages of materials and related costs
- The cost associated with the recovery of the material and the anticipated revenues from the sale of such material.

Specifications from Other Agencies and Seals of Approval

Sample specifications from other agencies are outlined in the pages following immediately and in Appendix C - GVRD Project Waste Management Master Specification.

Case Study: Energy Efficient City Hall



Richmond City Hall

Thanks to innovative design and attention to environmental details, the new Richmond City Hall will be 25 per cent more energy efficient than a standard office building. From energy efficient boilers to a system that automatically shuts off air conditioning when windows are opened, City Hall is a model for energy conservation. In fact, the City has been awarded federal funds in recognition of the building's energy efficiencies.

Case Study: Construction waste management at Richmond City Hall.

When City of Richmond staff prepared the construction documents for the new City Hall, they began a process that would not only see significant volumes of waste recycled but would result in scores of contractors being introduced to value of construction waste recycling. Richmond used the GVRD Project Waste Management Master Specifications to set out standards for recycling and waste management on the construction site.

During construction, wood waste, scrap metal, drywall and cardboard were targeted for recycling. Weekly site meetings were used to educate and inform contractors about the recycling program. A site safety officer was responsible for talking to contractors, keeping recycling bins clear of contamination, and ensuring the program ran smoothly.

Urban Wood Waste Recyclers of south Vancouver accepted and sorted the co-mingled bins of materials. Wood waste was processed into hogfuel and taken to Canadian Forest Products where it was used to make value-added products such as hardboard paneling and hydro-seeding mulch. Cardboard went to Crown Packaging for recycling into new cardboard products. Scrap metal was sent to Richmond Steel, ABC Recycling and others for recycling.



City Hall -
New Construction

Calculations suggest that 81% of total waste material was diverted to recycling. Source: GVRD Construction and Demolition Recycling Document.

An example from King County Washington highlights some typical specifications:

King County Regional Justice Center Project Overview

This project involved the development of a new regional justice center, including courthouse and detention facilities. The project manager required that materials be recycled on the project site and used in place of new material.

The project used recycled concrete aggregate from the demolition for backfill, general fill, pipe bedding and as aggregate base course for pavement construction in new construction.

The Regional Justice Center project team was able to recycle **ninety-five percent** of the demolition-debris generated during the demolition phase of the project and saved almost **\$250,000**. Most of the concrete and asphalt, 31,840 tons, was crushed and used as fill-material on the project site. A local recycler accepted 1,518 tons of concrete rubble, 791 tons of steel and 918 tons of waste-wood, ; and 750 tons of lumber was salvaged. Only 1706 tons of the material generated was not able to be recycled.

The paragraphs below are edited from contract documents related to this project.

Summary of Work

Ownership and Disposal of Materials

- The County wants to recycle as much material as possible during demolition and the demolition schedule has been planned to maximize the amount of recycling, reuse, and salvage that can be achieved during demolition.

Base Contract Work

- Demolish building and foundations. Crush and stockpile concrete rubble and dispose of all re-bar.
- Do not mix asphalt with concrete in stockpile.
- Remove drives, parking areas, walks and pads. Segregate different material types (concrete and asphalt), load, haul, crush, consolidate and stockpile material on site.
- Backfill pits, holes and excavations with clean recycled crushed concrete. Backfill to surrounding grades.
- Recycled crushed materials of differing material types are not to be mixed. Segregate concrete and asphalt stockpiles. Concrete which has been overlaid with asphalt shall be kept separate from other stockpiles.

Requirements

- The County requires the Contractor to recycle, reuse, and salvage as much material as possible. The demolition schedule was planned to allow for selective removal and sorting of materials.

- The County requires the Contractor to submit a waste handling plan detailing how the waste streams will be separated and managed.
- The Contractor is responsible for removing and reusing, recycling, or salvaging all other materials associated with the demolition of the buildings, pavement, vegetation, utilities, and any other site improvements.

Recycled Crushed Materials

General

- Concrete including concrete and cement shall be crushed on site. Crushed concrete shall be stockpiled separately on-site. Crushed concrete shall be used as backfill as specified in Section 02200, Earthwork.
- Asphalt and Concrete Asphalt mixtures shall be crushed on site. No asphalt or combination of asphalt products shall be used as fill by the Demolition Contractor.
- Crushed asphalt shall not be mixed with crushed concrete.

Description of Work

This section pertains to work involving recycled crushed concrete, crushed asphalt, and crushed concrete/asphalt materials produced on site during demolition operations. Potential sources of recycled crushed materials on site include (but are not limited to) existing foundations, floor slabs, reinforced concrete walls, and pavements. Mixed crushed recycled concrete/asphalt may occur as a result of demolishing concrete slab areas overlain by asphalt surfacing. All reinforcing steel shall be removed from concrete elements prior to crushing, and exported from the site.

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Recycled crushed concrete may be used on site as backfill in the parking garage over excavation zone identified on the project plans, or as general backfill to fill depressions produced during demolition or within low areas. Recycled crushed concrete will also be stockpiled on site for use during future site work, as backfill in future footing over excavation zones, as general fill, pipe-bedding or backfill, and as aggregate base course for pavement construction. Recycled crushed asphalt or mixed asphalt/concrete will be stockpiled on site for use during future site work, as general fill or aggregate base beneath paved areas. Brick, masonry, and CMU elements will be demolished as part of this contract. These materials will not be reused on site, but should be demolished and exported from the site.

Description of Site Conditions

- Reuse, recycle and salvage as much material as possible.
- Stockpile the various types of crushed recycled materials in separate, secure areas as directed by the County.
- Do not mix recycled materials with soil, and do not mix crushed recycled concrete with asphalt.

Products

■ Crushed Recycled Concrete

Crushed recycled concrete materials shall conform to the following gradation specification:

Sieve Size	Percent Passing by U.S. Standard Dry Weight
------------	---

1 – ½ inch	100
¾ inch	40-75
¼ inch	25-50
No. 40	5-20
No. 200	10 max.

Recycled concrete materials used or stockpiled on site shall be uniform in quality and free from wood, steel, roots, bark or other extraneous material. In addition, the recycled concrete materials shall meet the following requirements:

Los Angeles Abrasion, 500 rev.
— 35% max Sand Equivalent —
30 min.

■ Crushed Recycled Asphalt Pavement

Existing asphalt concrete pavement on site shall be pulverized by a method that limits damage or dislodging of the material below the pavement. The pulverized material shall conform to the following gradation:

Sieve Size	Percent Passing by U.S. Standard Dry Weight
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1 – ½ inch	100
¾ inch	40 min.

Acceptance of the gradation will be based on visual inspection by the County's Representative.

■ Mixed Crushed Concrete/Asphalt

Any mixed crushed concrete/asphalt shall conform to the gradation specified above.

Execution

- The Contractor shall crush, haul and stockpile the crushed Materials to a stockpile area on site designated by King County, and crushed recycled materials shall not be placed higher than Elevation 33 within the parking garage excavation, as shown on the project plans.
- Where used as backfill in the parking garage over excavation zones, the recycled concrete shall be placed on properly prepared subgrade. Where very soft, wet subgrade conditions are encountered, use a geotextile separator between subgrade soils and the recycled concrete. Evaluation of conditions requiring use of a geotextile separator, and monitoring of geotextile placement, shall be performed in the field by County's Representative.
- Where placed as compacted fill, recycled concrete materials shall be moisture conditioned to within 3 percent of the optimum moisture content, placed in horizontal lifts less than 8 inches in loose thickness, and compacted to at least 95 percent maximum dry density, determined using ASTM D 1557. Where used as general backfill in areas to be reloaded, the recycled concrete shall be compacted to at least 90 percent maximum dry density, and using the same criteria.

Quality Control

- The Contractor is responsible for the quality of the work and for complying with the specifications. Testing will be conducted by County.
- The following laboratory tests will be performed on the recycled concrete:

L.A. Abrasion Testing for determination of aggregate durability, using ASTM C 131.
 Sand Equivalent Testing, using ASTM C 2419.
 Sieve analysis for acceptance of aggregate gradation, using ASTM D 422.

Other tests may be performed as necessary based on field conditions, to verify the suitability of the crushed recycled materials for the intended purpose.

Measurement and Payment

- Crushing, placement, and stockpiling of crushed recycled materials shall be measured by lump sum as part of the base bid.
- Crushed recycled materials that do not meet gradation or other criteria specified herein shall be removed from the site and disposed of at the Contractor's expense.
- Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions, or beyond that level required for normal clearing and grubbing operations or removal of structural elements, without specific direction of King County. Unauthorized excavations within footing over excavation zones shall be backfilled in accordance with these specifications, at the Contractor's expense. Any unauthorized excavations in other areas of the site shall be backfilled as directed by the County representative.

- Any additional testing required due to recycled crushed materials failing laboratory or field density test specifications shall be at the Contractor's expense. In addition, testing related to backfilling of unauthorized excavations shall be at the Contractor's expense.
- No payment will be made for materials which have become mixed with other material or misplaced by the Contractor's action, or lack of action. Crushed recycled material which is contaminated by the Contractor by spills or mixing with other site soils, or by any other means, shall be tested, removed, and disposed of by the Contractor at the Contractor's expense.

Supplemental Backfilling

- The Contractor shall backfill the portion of the excavation above the lean concrete using recycled crushed concrete and/or structural fill, in accordance with applicable sections of the specifications.

See also the GVRD Project Waste Management Master Specification, Appendix C.

Case Study: Deconstruction, not demolition.

When the University of British Columbia decided to raze the wood-framed "Pan-Hellenic House" to make way for a new building, project specifications stated that the building was to be deconstructed, not demolished. Bidders were asked to submit material reuse and recycling targets along with their pricing.

The successful bidder, Litchfield & Co. Ltd., deconstructed the building using primarily manual labour. The interior was stripped of salvageable items (e.g. cedar siding, dimensional lumber, electrical and bathroom fixtures) and recyclable materials (e.g. drywall, wood waste, scrap metal and stucco). In total 94% of demolition material was salvaged or recycled and only 6% landfilled.

Of the total recovered materials, 17 % was salvaged and 77% was taken to local scrap metal, concrete, wood and drywall recycling facilities. Glulam beams and tongue-and-groove decking salvaged from the "Pan-Hellenic House" were used on site in the construction of the new Liu Centre for the Study of Global Issues.

Source: Demolition and Salvage Facts, GVRD.



Pan-Hellenic House at UBC

5.9 Parks, Recreation Amenities and Landscaping

Thus far in this chapter we have looked at the inside of facilities in terms of building maintenance, the inside of offices in terms of hard and soft equipment, vehicles and maintenance and major site works involving

renovation and demolition. There is another category of purchasing that relates primarily to open spaces; that is parks and recreation amenities and landscaping.

5.9.1 Organic Turf Management

An Overview

Organic turf management is described as being a process that weans turf off of chemical management replacing traditional chemicals and compounds with natural additives. The desired result is a process that has the least impact on the environment, a managed product that is non-toxic and a waste disposal system that is not harmful to the environment.

Organic turf management can represent any number of services, from maintenance to disposal of wastes arising from the maintenance. Currently the Environmental Choice Program is in the midst of a panel review process to determine the final criterion for requirements of products to carry the Ecologo.

Potential Environmental Impacts

- Unnecessary impact on the environment in the form of additional chemicals in the turf, its cuttings, and runoff from the turf.

Things to Consider If You Write Your Own Specifications

At this time it is recommended that:

- Organic turf management systems meet or exceed all applicable governmental and industrial safety and performance standards and that all steps of the process meet all applicable laws
- The process follow the methodology outlined in “1994 Standards for certification of Organic Lawn Care Professionals in the Northeastern United States (Ecological Landscaping Association) or equivalent internal protocol
- Turf management systems include the use of (for example):
 - Synthetically compounded growth promoters
 - Synthetically compounded pesticides
 - Petroleum distillate herbicides
 - Synthetic fumigants
 - Synthetic growth regulators
 - All natural poisons such as arsenic and lead salts.

Specifications from Other Agencies and Seals of Approval

Environmental Choice program Panel Review Committee PRC-003

5.9.2 Recycled Rubber

An Overview

Used tires become raw material for the manufacture of an increasing number of products. Applications for shredded, ground, or chipped tires include rubber mats, playground surfaces, and "soaker" hoses. Tire rubber that has been sliced is fabricated into entry mats, loading-dock bumpers, and other products. Shredded tires have been used with limited success as a lightweight fill material in construction applications.

Reduction, reuse and recycling are estimated to potentially divert one third of the scrap tire stream and reduce environmental liability, as there are particular concerns regarding the difficult end-of-use disposal of tires. The recycling option has created a market for consumer products that are made from shredded tires, processed rubber crumb and rubber/plastic mixtures.

The Environmental Choice Program has developed some very specific guidelines regarding recycled rubber content of various sub categories including these that can be applied to Parks and Recreation amenities:

- Agricultural and horticultural supplies (garden hoses, soaker hoses, tubing)
- Containers (composting units, garbage containers)
- Sporting goods (sports mats, running tracks).

Potential Environmental Impacts

- Long term liability of difficult end-of-use disposal including stockpiling, fires, and vector control.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in particular application specifications to address desirability of:

- Preference for products that carry the EcoLogo
- Preference for products with stipulated levels of pre and post consumer waste recycling
For example:
 - 65% recycled rubber by weight as a portion of total rubber compound (agricultural and horticultural supplies)
 - 70% recycled rubber by weight, as a proportion of total content of rubber compound (containers)
 - 100% recycled rubber by weight, as a proportion of total content of rubber compound (sporting goods).

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-06
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-06.pdf)

5.10 Special Programs

5.10.1 Backyard Compost Bins

An Overview

Domestic composting is an effective and economical means of producing valuable soil amendments. Composting helps reduce organic wastes going to disposal.

Potential Environmental Impacts

- Vector control problems associated with inappropriately managed organic waste.

Things to Consider If You Write Your Own Specifications

This is an opportunity to add clauses in composter specifications to address desirability of:

- Preference for products that carry the EcoLogo otherwise
- Preference for products that adhere to the policies and targets as stated in the National Packaging Protocol
- Preference for products that adhere to particular specifications as outlined in Section 4.1 of ECP-15 (recommended to use exact wording).

Specifications from Other Agencies and Seals of Approval

Environmental Choice program guideline ECP-15
(details at www.environmentalchoice.com/guidelines/pdfs/ecp-15.pdf)

Case Study: Plan for Sustainable Community in Vancouver

The City of Vancouver's plan to develop a 36-hectare parcel of former industrial land in Southeast False Creek is already drawing international attention. The City intends to build a sustainable community of 2,000 - 2,500 housing units where people can shop, play, live and work without having to commute by car. Wastewater may be treated on site and Vancouver will partner with BC Hydro to explore renewable-energy technology. In March 2000 City councillors gave approval to begin work on the Official Development Plan for the area. Source: Vancouver Sun, March 16, 2000.

Sample Specifications

Three Steps to Gathering Your Resources

With the background material from Chapter 5 at hand, writing your own custom specifications or simply using “seals of approval” on purchases should be much easier.

Step 1

The first decision to be made is whether to use “seals of approval” as the sole criterion for evaluation. Think of the consequences. With “seals of approval” like the EcoLogo you have the resources of a big environmental organization backing you up. You essentially have a “short list” of suppliers to work from for selection.

If a prospective suppliers product doesn’t carry a seal of approval that you have called for it is disqualified from evaluation.

Step 2

So you think using a “seal of approval” limits the field of choice too much? Or maybe you think a seal of approval isn’t “tight enough” for your specific purpose?

In that case it is time to add clauses to your specifications by drawing on the information in the sections “Things to consider if you are writing your own specifications”:

- Pick and choose from those suggestions and add your own
- Preface these specifications with the statement: “Preference will be given to bidders whose product ...”
- Remember, you can still use applicable “drop in” language like that provided for some products by Green Seal

- Remember also to excerpt additional definitions from Environmental Choice Program (EPC) if you are not actually specifying a preference for EcoLogo products.

Just make sure that you aren’t into the trap of specifying “one product” or using a particular suppliers’ product as “the standard”. You’ll be called to question faster than you can imagine.

Remember:

- Be precise
- Be fair.

Step 3

Wrap up your specifications with a preamble that sets forth your intent. You might use the example specification language presented in the example below.

King County, Washington kindly donated the following example, with an invitation to use it appearing on their Green Procurement web site.

(details at www.metrokc.gov/procure/green)

Environmental Purchasing Policy - General

(Provides general encouragement of recycled products in all contracts.)

It is the policy of _____ to use recycled and environmentally preferable materials whenever practicable. Bidders able to supply products containing recycled materials (especially post-consumer recycled materials) which meet performance requirements are encouraged to offer them in bids and proposals.

Recycled Products for Trial Uses (Proposes language to establish trial supply contract.)

It is the policy of _____ to increase the use of products manufactured with recycled material, especially post-consumer recycled material, whenever practicable. The purpose of this bid is to establish (a contract/multiple contracts) to furnish _____ (name of agency) _____ with recycled _____ for testing and evaluation.

For each ____ (recycled product) _____ offered, bidder shall furnish descriptive information, performance data, recommended applications, or other material that will help the potential user to identify opportunities for the use of the product. All such information will be forwarded to potential users for evaluation. The actual quantities that will be purchased by _____ are not known. Purchases are more likely where the information supplied with the bid clearly indicates that its use will reasonably meet the needs of _____.

Bidder shall indicate the source of feedstocks used for the manufacture of the product (for example, 100% Post-Consumer High Density Polyethylene from Recycled Milk Containers).

Bidder shall furnish pricing at price-break quantities.

Recycled Product Award Criteria for Design Contracts (Proposes requirement for design contracts.)

It is the policy of (City, policy citation) to use recycled materials whenever practicable. In evaluation of bids for this contract, (City) shall consider the extent to which the designer proposes to use recycled products and materials. Bidders are encouraged to propose demonstration and trial uses that will further promote the use of recycled products.

Recycled Product Award Criteria for Construction Contracts (Proposes requirement for construction contracts.)

It is the policy of _____ (name of agency) _____ (name of policy) _____ to use recycled materials whenever practicable. Bidders are encouraged to use recycled products and materials whenever they will meet functional requirements and to propose demonstration and trial uses that will further promote and develop their use. In evaluation of bids for this contract, _____ (name of agency) _____ shall consider the extent to which the contractor proposes to use recycled products and materials.

Additional Resources

Chapter 5 attempted to draw attention to specific web pages (generally containing .pdf image files) that feature definitions and product specifications.

In a perfect world the reader has access to a computer “on the spot”. But it isn’t a perfect world so the following ECP guidelines are appended to allow familiarization with the language and the format of these marker specifications.

Directly following these marker specifications are examples of “write your own” specifications following the 3 steps outlined above.

Sample Specifications for Paint:

ECP Guideline for Paint – Marker Specification

Specifications for Paint and Other Surface Coatings

(Excerpt from Terra Choice #ECP-76)

This category includes all **surface coatings** as further defined in the sub-categories in this section. The sub-categories are:

- Paints
- Stains
- Varnish.

Note: Other sub-categories may be added at a later date. Criteria for the certification of *Recycled Water-borne Surface Coatings*, are available in ECP-67.

General Requirements

To be authorized to carry the EcoLogo the **surface coatings** must:

- Meet or exceed all applicable governmental and/or industrial safety and performance standards.

Note: In Canada, standards for surface coatings are published by the Canadian General Standards Board (CGSB) and the Bureau de normalisation du Quebec (BNQ). Acceptable test methods are available from ASTM and CGSB.

- Be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the *Fisheries Act* and the *Canadian Environmental Protection Act* (CEPA).

Notice

In order to minimize the solid waste burden, conserve resources, and reduce quantities and impacts of toxic substances and other pollutants associated with packaging, the Environmental Choice Program requires the submission of an attestation of commitment to the objectives of the National Packaging Protocol.

Any reference to a standard means to the latest edition of that standard.

The Environmental Choice Program reserves the right to accept equivalent test data for the test methods specified in this guideline.

Notice of Intent

It is the intent of the Environmental Choice Program to reduce the allowable level of VOCs in certified products from 200 g/L to 150 g/L at the next three year revision, January 1, 2001. Reductions for varnishes will be considered at that time.

Product Specific Requirements

To be authorized to carry the EcoLogo the **surface coating** must:

- Not be formulated or manufactured with aromatic solvents
- Not be formulated or manufactured with formaldehyde
- Not be formulated or manufactured with halogenated solvents
- Not be formulated or manufactured with mercury, lead, cadmium, hexavalent chromium and their compounds
- Have a flash point of 61.0o C or greater
- Be made by a process that does not release matter in the undiluted production plant effluent generating a BOD5 in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment
- Be made by a process that does not release TSS in the undiluted production plant effluent in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment
- Be accompanied by information describing proper disposal methods.

To be authorized to carry the EcoLogo the surface coating must meet the criteria specific to its sub-category.

Paints and stains must not contain VOCs in excess of 200 g/L as determined by ASTM test method D3960 *Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings*.

Varnishes must not contain VOCs in excess of 300 g/L.

The calculation of as stated above shall:

- Exclude water;
- Exclude tinting colorant added at the point of sale, where applicable.

Compliance with Section 3(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the manufacturer. The Environmental Choice Program shall be advised in writing immediately by the licensee of any non-compliance which may occur during the term of the license. On the occurrence of any non-compliance, the license may be suspended or terminated as stipulated in the license agreement. In the event of a dispute related to the suspension or termination of the license, the license agreement provides for arbitration.

Interpretation

In the guideline:

“aromatic solvent” means any organic solvent that has a benzene ring in its molecular structure

“biochemical oxygen demand” or **“BOD₅”** means the amount of dissolved oxygen required for the biodegradation of the organic matter in water, when tested in accordance with the five day test set out in the *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub-part 5210, jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation

“consumer” means a household, commercial establishment or institutional facility

“flash point” means the minimum temperature of a liquid at which the vapours given off are sufficient to form a flammable mixture with air which will ignite when exposed to an open flame in accordance with the American Society for Testing and Materials (ASTM) test method D93-80 (Pensky-Martens Closed Tester) or ASTM test method D3278-82 (Seta)

“halogenated solvent” means any organic solvent containing halogens including fluorine, chlorine, bromine and iodine

“industrial scrap” means by-products of an industrial process that can be, and regularly are, used in either the same process, or in a different process. Such materials are excluded from the standard definition of recycled material

“paint” means a pigmented liquid that is designed for application in single or multiple layers and forms an opaque, continuous film after application. The purpose is for decorating and/or protecting surfaces, as well as concealing surface irregularities. It does not include driveway sealers, wood preservatives or anti-fouling paints

“post-consumer material” means a product which has served its end-use at the consumer level, has been discarded by the consumer, and would, unless diverted, enter the waste stream

“pre-consumer material” means materials generated by an industrial process that would, unless diverted, enter the waste stream. This includes, but is not limited to, damaged or defective materials, overstock or obsolete inventories from manufacturers, distributors, and wholesalers. It does not include industrial scrap

“recycled material” means post-consumer material and pre-consumer material. It does not include industrial scrap, except that proportion of the scrap which originated as post-consumer material and pre-consumer material

“stain” means a transparent, semitransparent or opaque mixture of colouring matter (dyes and/or pigments) in a vehicle, designed to colour and/or protect a surface by penetration, leaving practically no surface film

“surface coating” means a paint, stain or varnish used to coat architectural or other constructed surfaces. This product category does not include driveway sealers, wood preservatives, or anti-fouling paints

“total suspended solids” or “TSS” means any solid matter that is found to be in effluent when tested in accordance with the test for total suspended solids dried at 103° C to 105° C set out in the *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub-part 2540, Sections A to E, jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation

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“varnish” means a liquid composition that is converted to a transparent or translucent, continuous film after application as a thin layer. The purpose is primarily to protect and decorate surfaces

“volatile organic compound” or **“VOC”** means any organic compound which participates in atmospheric photochemical reactions. It excludes those organic compounds which the ECP designates as having negligible photochemical reactivity.

“Write your own” Specification for Paint

Environmental Purchasing Policy - General

It is the policy of _____ to use recycled and environmentally preferable materials whenever practicable. Bidders able to supply products containing recycled materials (especially post-consumer recycled materials) which meet performance requirements are encouraged to offer them in bids and proposals.

Paint for Trial Uses and Purchase

It is the policy of _____ to increase the use of products manufactured with recycled material, especially post-consumer recycled material, whenever practicable. The purpose of this request for bids is to furnish _____ with paint for testing, evaluation, and future purchase.

- The bidder shall furnish descriptive information, performance data, recommended applications, or other material that will help identify opportunities for the use of the product. All such information will be forwarded for evaluation.

- The actual quantities that will be purchased by _____ are yet to be determined. Purchases are more likely where the information supplied with the bid clearly indicates that its use will reasonably meet the needs of _____.
- Bidder shall indicate the source of feedstocks used for the manufacture of the product.
- Bidder shall furnish pricing at price-break quantities.

Environmental Considerations for Paint

Bidders shall provide detailed environmental information about their product specifically addressing (but not limited to) these environmental concerns:

- Highest recycled content
- Low or no fumes (off-gassing) and preferably no volatile organic compounds (VOCs)
- Proposed product has garnered an environmental “seal of approval”
- Desired absence of mercury or mercury compounds
- Desired absence of pigments of lead, cadmium, chrome VI or their oxides that have recycled content
- Longevity of application
- Unused product disposal (that if not performed properly, could lead to environmental problems).

Sample Specifications for Insulation:

ECP Guideline for Insulation – Marker Specification

Specifications for Insulation

(Terra Choice #ECP-40)

Pursuant to paragraph 8(1)(b) of the Canadian Environmental Protection Act, Environment Canada is pleased to publish the following national guideline on **thermal insulation materials** under the auspices of the Environmental Choice^M Program.

The Environmental Choice Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and services available to Canadians.

There are many thermal insulation materials on the market. They may be purchased as two types: plastic foam insulation or fibrous insulation. More thermal insulation has been used in buildings in recent times because of economic and environmental concerns such as global warming and excessive use of energy and non-renewable resources.

In addition to the energy conserved through the use of thermal insulation materials, encouraging the use of recycled material will reduce the amount of materials entering the waste stream. It will also reduce the total resource consumption through the recycling of resources.

Encouraging the use of substances that do not deplete the ozone layer or cause global warming will reduce adverse impacts on the earth's atmosphere.

Based on a review of currently available life cycle information, the product category requirements will produce an environmental benefit through resource conservation, reduction of waste entering the landfill and reduced global atmospheric impacts.

Life cycle review is an ongoing process. As information and technology change, the product category requirements will be reviewed and possible amended.

Environment Canada anticipates that manufacturers or importers of **thermal insulation materials** which conform to this guideline will apply to the Environmental Choice Program for verification and subsequent authority to label the qualifying products with the Environmental Choice EcoLogo^M.

Category Definition

This category includes all **thermal insulation materials** as further defined in the sub-categories in this section. The sub-categories are:

- Board-type thermal insulation materials
- Loose-fill and spray-on thermal insulation materials
- Batt-type thermal insulation materials.

Note: Other sub-categories may be added at a later date.

General Requirements

To be authorized to carry the EcoLogo **thermal insulation** must:

- Meet or exceed all applicable governmental and industrial safety and performance standards
- Be manufactured and transported in such a manner that all steps of the process including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including the Fisheries Act and the Canadian Environmental Protection Act (CEPA).

Notice

In order to minimize the solid waste burden, conserve resources, and reduce quantities and impacts of toxic substances and other pollutants associated with packaging, the Environmental Choice Program requires the submission of an attestation of commitment to the objectives of the National Packaging Protocol.

Any reference to a standard means to the latest edition of that standard. The Environmental Choice Program reserves the right to accept equivalent test data for the test methods specified in this guideline.

Product Specific Requirements

To be authorized to carry the EcoLogo the **thermal insulation material** must:

- Not require being labelled as poisonous, corrosive, flammable or explosive under the Consumer Chemical and Container Regulations of the Hazardous Products Act
- Be accompanied by detailed instructions for proper handling and installation so as to minimize health concerns.

To be authorized to carry the EcoLogo the **thermal insulation material** must meet criteria specific to its sub-category.

Board-type thermal insulation materials must:

- Contain, when calculated on a 12-month rolling basis:
 - Over 35% recycled material by weight of the finished product if made from glass fibre; or
 - Over 45% recycled material by weight of the finished product if made from mineral composition
- If made from plastic, be manufactured so that the total of load points assessed for ozone layer impact, global warming impact and recycled content does not exceed five (see Appendix I)
- Comply with either:
 - CAN/CGSB-51.10: Mineral Fibre Board Thermal Insulation
 - CAN/CGSB-51.11: Mineral Fibre Thermal Insulation Blanket
 - CAN/ULC-S701: Thermal Insulation, Polystyrene, Boards and Pipe Covering
 - CGSB-51-GP-21M: Thermal Insulation, Urethane and Isocyanurate, Unfaced
 - CAN/CGSB-51.25: Thermal Insulation, Phenolic, Faced
 - CAN/CGSB-51.26: Thermal Insulation, Urethane and Isocyanurate, Boards, Faced

- CAN/CGSB-51.31: Thermal Insulation, Mineral Fibre Board for Above Roof Decks; or

Loose-fill and spray-on thermal insulation materials must:

- Contain, when calculated on 12-month rolling basis:
 - Over 75% recycled material by weight of the finished product, if made from cellulose fibre
 - Over 35% recycled material by weight of the finished product if made from glass fibre
 - Over 50% recycled material by weight of the finished product, if made from mineral wool
- If made from plastic, be manufactured so that the total of load points assessed for ozone layer impact, global warming impact and recycled content does not exceed five (see Appendix I)
- Comply with either:
 - CAN/CGSB-51.11: Mineral Fibre Thermal Insulation Blanket
 - CAN/CGSB 51.23: Spray Applied Rigid Polyurethane Cellular Plastic Thermal Insulation
 - CGSB 51-GP-27M: Thermal Insulation, Polystyrene, Loose Fill
 - CAN/CGSB-51.60: Cellulose Fibre Loose Fill Thermal Insulation
 - CAN/CGSB 92.2: Trowel or Spray Applied Acoustical Material; or

Batt-type thermal insulation materials must:

- Contain when calculated on 12-month rolling basis:
 - Over 35% recycled material by weight of the finished product if made from glass fibre

- Over 45% recycled material by weight of the finished product if made from mineral composition
- Comply with:
 - CAN/CGSB-51.11: Mineral Fibre Thermal Insulation Blanket.

Interpretation

In the guideline:

“**batt**” means a portion of a mat in the form of a rectangular piece generally between 1 and 3 metres in length and usually supplied flat or folded

“**binder**” means a material that is applied in conjunction with a spray-on insulation material to attach the fibres together and provide adherence to the substrate

“**board-type thermal insulation**” means material supplied in the form of sheets, which may be unfaced, or incorporate a facing material on one or both surfaces

“**cellulose thermal insulation materials**” means loose fill cellulose and spray-on cellulose manufactured from some types of paper products

“**CFC**” means chlorofluorocarbon

“**consumer**” means a household, commercial establishment or institutional facility

“**fibrous insulation**” means mineral wool, glass fibre and cellulose (wood) fibre insulation material

“**glass fibre**” means all glass wool products

“glass fibreboard” means a board that must contain more glass fibre than any other fibre

“global warming potential” (GWP) means the time-integrated change in radiative forcing due to the instantaneous release of 1 kilogram of a gas expressed relative to the radiative forcing from the release of 1 kilogram of CO₂

“industrial scrap” means by-products of an industrial process than can be, and regularly are, used in either the same process, or in a different process. Such materials are excluded from the standard definition of recycled materials

“loose fill thermal insulation” means fibre granules, nodules, or similar forms of material designed to be installed by hand pouring or blowing by pneumatic equipment. This includes loose fill cellulose fibre, loose fill glass fibre and loose fill mineral wool

“mat” means flexible fibrous insulation supplied in the form of a roll or a batt, which may be faced but not enclosed

“mineral wool board” means rock wool or slag wool products or a combination of both

“newsprint” means paper having a surface density of 40 g/m²-57 g/m² generally used in the publication of newspapers. It includes both post — consumer and pre-consumer materials

“ozone depleting potential” (ODP) means the ratio of calculated ozone column change for each mass unit of a gas emitted into the atmosphere relative to the calculated depletion for a mass unit of the reference gas CFC-11

“paper products” means newsprint, fine paper and clay-coated paper

“plastic foam cellular insulation” means extruded polystyrene (XPS) board, expanded polystyrene (EPS) board, polyurethane (PU) or polyisocyanurate (PIR) board, polyurethane spray (SPUR) foam and phenolic board

“post-consumer material” means a product which has served its end-use at the consumer level, has been discarded by the consumer, and would, unless diverted, enter the waste stream

“pre-consumer material” means materials generated by an industrial process that would, unless diverted, enter the waste stream. This includes, but is not limited to, damaged or defective materials, overstock or obsolete inventories from manufacturers, distributors, and wholesalers. It does not include industrial scrap

“recycled material” means post-consumer material and pre-consumer material. It does not include industrial scrap, except that proportion of the scrap which originated as post-consumer material and pre-consumer material

“slag” means a pre-consumer waste material generated from the smelting industry

“spray-on thermal insulation” means material supplied in the form of fibre granules, nodules, or similar forms of material designed to be installed in conjunction with a binder material by means of spraying, or thermoplastic insulation materials designed to be installed by means of spraying using a blowing agent.

“Write your own” Specification for Insulation

Environmental Purchasing Policy - General

It is the policy of _____ to use recycled and environmentally preferable materials whenever practicable. Bidders able to supply products containing recycled materials (especially post-consumer recycled materials) which meet performance requirements are encouraged to offer them in bids and proposals.

Insulation for Trial Uses and Purchase

It is the policy of _____ to increase the use of products manufactured with recycled material, especially post-consumer recycled material, whenever practicable. The purpose of this request for bids is to furnish _____ with insulation for testing, evaluation, and future purchase.

- The bidder shall furnish descriptive information, performance data, recommended applications, or other material that will help identify opportunities for the use of the product. All such information will be forwarded for evaluation.
- The actual quantities that will be purchased by _____ are yet to be determined. Purchases are more likely where the information supplied with the bid clearly indicates that its use will reasonably meet the needs of _____.
- Bidder shall indicate the source of feedstocks used for the manufacture of the product.
- Bidder shall furnish pricing at price-break quantities.

Environmental Considerations for Insulation

Bidders shall provide detailed environmental information about their product specifically addressing (but not limited to) these environmental concerns:

- Highest recycled content
- Energy and resource consumption in manufacturing the product
- Low or no fumes (off-gassing) and preferably no volatile organic compounds (VOCs)
- Minimal incorporation of ozone depleting substances in the manufacture of the product
- Health hazards from dust and fumes during and after insulation
- Proposed product has garnered an environmental “seal of approval”
- Unused product disposal (that if not performed properly, could lead to environmental problems).

Recycled Products Listing, GVRD

The Greater Vancouver Regional District has prepared the following “Recycled Products Listing” to promote the use of local products made from post-consumer recycled materials.

The “Recycled Products Listing” is a list of products with **recycled content**, not a list of items that are **recyclable**. All of the products listed are common to both homes and businesses. The listing also includes environmentally responsible products and services where appropriate.

The “Recycled Products Listing” includes a useful glossary of terms and standards, index of suppliers, and information on products in 10 categories:

- Automotive
- Batteries
- Building materials
- Business/office
- Cleaning products
- Clothing
- Energy conservation
- Home and garden
- Mats
- Other resources.

Reference Materials

A number of excellent resources addressing environmental purchasing exist on the Internet. Many web sites offer sound advice, helpful recommendations and links to other sites.

www.buygreen.com

A site dedicated to providing information on "green" products and services, and tips on how to set up a green procurement program. Buy Green is divided into five topic areas:

- **Information on Purchasing and the Environment** - This menu provides links to Environment Canada, the US EPA and many other resources that are excellent sources of advice on everything from starting a buy green program to environmental issues related to products and services
- **Green Products and Services** - This menu includes green products and services, and a number of directories of products and services from various organizations. Links to supplier web pages are featured as well as lists from organizations such as Environmental Choice, EcoMall and EcoExpo
- **Guidelines, Standards, and Certification Services** - A number of independent third party organizations develop standards and guidelines for green products and services. Included in this menu are links to national programs such as Environmental Choice and Green Seal, as well as specific programs such as Energy Star and Power Smart
- **What's New** - News on green procurement will appear here, and will be updated on a regular basis
- **Join Buy Green** - This page is a shared resource created with special funding from Environment Canada. It is maintained by volunteers.

iisd.ca/business/gprocurement.htm

Hosted by the International Institute for Sustainable Development (IISD). This site is designed to encourage business people to develop a vision of a sustainable company, translate that vision into a management action plan and turn sustainability into a competitive advantage. Provides a Green Procurement Tool Kit, developed by Manitoba Green Procurement Inc.

www.environmentalchoice.com

The Environmental Choice Program web site. This site is an excellent source for information on certified environmental products and services.

www.greenseal.org

This site includes the Green Seal program standards and certified product database.

oee.nrcan.gc.ca/energiguide

Web site for the Canadian energy efficiency and consumption labelling program, EnerGuide. This site includes information on EnerGuide programs.

www.energystar.gov

Web site for the U.S. energy efficiency and consumption labelling program, ENERGY STAR. This site provides lists of ENERGY STAR qualified products.

www.ec.gc.ca

The Green Lane: Environment Canada's World Wide Web site. This site contains significant resources available on a wide range of environmental issues and topics. Visitors can use the search function to investigate green procurement resources and links.

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www.epa.gov

The U.S. Environmental Protection Agency website. This site offers significant resources available on wide range of environmental issues and topics.

www.iclei.org

The International Council for Local Environmental Initiatives (ICLEI), an association of local governments dedicated to the prevention and solution of local, regional, and global environmental problems through local action, hosts this site. It provides resources and links addressing local environmental action.

www.powerpartnerships.com

BC Hydro website for businesses. This site includes information on increasing energy efficiency and associated programs.

Appendix A

Five Guiding Principles of Environmental Purchasing

The U.S. Environmental Protection Agency (EPA) has developed five guiding principles to provide purchasers with broad guidance for undertaking environmentally preferable purchasing. While the applicability of these principles will vary depending on many factors including the type and complexity of the product or service being purchased and the dollar amount of the purchase, the principles capture the key points to consider in pursuing environmental purchasing.

In presenting these guidelines the EPA acknowledges that personnel must exercise their professional judgement and common sense, whether assessing a product or service's performance, cost, or availability. In addition, personnel are reminded to use reasonable discretion about the level of analysis needed to determine environmental preferability. For example, life cycle assessment is likely not required to purchase a box of rubber bands. On the other hand, large-volume or systems acquisitions, or for complex products, such assessments may be appropriate, might already be required or may already be available.

EPA's Guiding Principles of Environmentally Preferable Purchasing

Guiding Principle One:

- Environment + Price + Performance = Environmentally Preferable Purchasing

Environmental considerations should become part of normal purchasing practice, consistent with such traditional factors as product safety, price, performance, and availability.

Guiding Principle Two:

- Pollution Prevention

Consideration of environmental preferability should begin early in the acquisition process and be rooted in the ethic of pollution prevention, which strives to eliminate or reduce, up-front, potential risks to human health and the environment.

Guiding Principle Three:

- Life Cycle Perspective/Multiple Attributes

A product or service's environmental preferability is a function of multiple attributes from a life cycle perspective.

Guiding Principle Four:

- Comparison of Environmental Impacts

Determining environmental preferability might involve comparing impacts. In comparing environmental impacts, Federal agencies should consider: the reversibility and geographic scale of the environmental impacts, the degree of difference among competing products or services, and the overriding importance of protecting human health.

Guiding Principle Five:

- Environmental Performance Information

Comprehensive, accurate, and meaningful information about the environmental performance of products or services is necessary in order to determine environmental preferability.

Purchasing Guide

For in-depth descriptions and application of the Guiding Principles visit the EPA website at www.epa.gov/opptintr/epp/guide2.htm.

Appendix B

Evolution of Environmental Procurement Policies

In 1989 the Association of Canadian Cities for Environmentally Sound Strategies (ACCESS) adopted the following "Statement of Principles" which was adopted as policy by numerous municipalities and other public affairs:

"That in order to increase the development and awareness of Environmentally Sound Products all departments, in conjunction with Purchasing and Supply Staff review their contracts and tender specifications for goods and services, to ensure that wherever possible and economical, specifications are amended to provide for expanded use of products and services that contain the maximum level of post-consumer waste and/or recyclable content, without significantly affecting the intended use of the product or service, and that it is recognized that cost analysis is required in order to ensure that the products are made available at competitive prices."

This was subsequently revised by ACCESS in 1997 in order to reflect changing realities:

"In order to increase the development and awareness of environmentally sound products and services, organizations, in conjunction with Purchasing and Material Management staff, will review their contracts and tender specifications for goods and services, to ensure that wherever possible and economically feasible, specifications are amended to provide for consideration of environmental characteristics. Consideration may be given to those environmental products that are certified by and independent accredited organization.

The organization as a whole will endeavour to increase its use of products and services that are responsible to the environment in the way that they are made, used, transported, stored, packaged and disposed of. It is recognized that analysis is required in order to ensure that the products are made available at competitive prices, and that the environmental benefits provided by a product or service should not significantly affect the intended use of that product or service."

(Revised and Adopted June 9, 1997)

Again, changes are being completed and it is expected that ACCESS will revise its "Statement of Principle" in 2000 as follows:

Revised Environmentally Responsible Procurement Policy

"That in order to increase the development and awareness of environmentally sound purchasing, acquisitions of goods and services will ensure that wherever possible specifications are amended to provide for the expanded use of environmentally preferred products such as: durable products, reusable products, energy efficient products, low pollution products, products (including those used in services) that contain the maximum level of post-consumer waste and/or recyclable content, and products that provide minimal impact to the environment."

An environmentally preferred product is one that is less harmful to the environment than the next best alternative having characteristics including, but not limited to the following:

Purchasing Guide

- Reduce waste and make efficient use of resources: An EPP would be a product that is more energy, fuel, or water efficient, or that uses less paper, ink, or other resources. For example, energy-efficient lighting, and photocopiers capable of double-sided photocopying
- Are reusable or contain reusable parts: These are products such as rechargeable batteries, reusable building partitions, and laser printers with refillable toner cartridges
- Are recyclable: A product will be considered to be an EPP if local facilities exist capable of recycling the product at the end of its useful life
- Contain recycled materials: An EPP contains post-consumer recycled content. An example is paper products made from recycled post-consumer fibre
- Produce fewer polluting by-products and/or safety hazards during manufacture, use or disposal: An EPP product would be a non-hazardous product that replaces a hazardous product
- Have a long service-life and/or can be economically and effectively repaired or upgraded.

It is recognized that cost analysis is required in order to ensure that the products are made available at competitive prices, and that the environmental benefits provided by a product or service does not undermine its overall performance.

Given the environmental and economic importance of infrastructure, environmentally responsible procurement principles should be applied to construction design, processes, tendering and materials.

Given that many environmentally preferred products and service was can produce a variety of tangible benefits, full consideration should be given to the long-term and complete costs and benefits of environmentally responsible procurement.

Tender and RFP clauses are written to reflect this policy.

Prepared by Bob Lalonde, GVRD, May 2000.

Appendix C

Section 5.8 of this guide introduced the issues around “Construction, Renovation, Demolition”. An example of typical specifications from King County was outlined on pages 48 through 52. The GVRD has also prepared the following “Project Waste Management - Master Specification” which forms Appendix C.

Also included as part of Appendix C is the 2nd Edition of the GVRD’s “Directory of Resource-Efficient Building Products” provided in CD format. This disk provides information on 149 ‘green’ building products readily available in the Lower Mainland. The products listed in the Directory are made from salvaged materials, have recycled-content, are engineered or conserve water. Free copies of the Directory are available from the GVRD. Call 436-6788.

PROJECT WASTE MANAGEMENT

MASTER SPECIFICATION

APRIL 7, 1998

Prepared by Susan Morris Specifications Limited
under Contract to Greater Vancouver Regional District

DISCLAIMER: THE HEALTH AND SAFETY OF WORKERS AND THE PUBLIC ARE THE FIRST PRIORITY IN ANY CONSTRUCTION OR DEMOLITION PROJECT. PROJECT OWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE COES AND STATUTORY OR REGULATORY REQUIREMENTS. THIS SPECIFICATION IS NOT INTENDED TO CONSTITUTE OR RENDER ENGINEERING, ARCHITECTURAL, LEGAL OR OTHER PROFESSIONAL SERVICES OR ADVICE NOR SHOULD IT BE A SUBSTITUTE FOR SUCH SERVICES OR ADVICE. FRP, AN EXPERIENCED PROFESSIONAL DIRECTED TO THE SPECIFIC DESIGN SITUATION. WHILE THE INFORMATION IN THE SPECIFICATION IS BELIEVED TO BE ACCURATE, THE GVRD AND SUSAN MORRIS SPECIFICATIONS LIMITED SHALL NOT BE LIABLE FOR DAMAGES ARISING FROM ERRORS OR OMISSIONS IN THIS SPECIFICATION.

SECTION 01505 - PROJECT WASTE MANAGEMENT

PART 1 - GENERAL

1.1 WASTE MANAGEMENT GOALS FOR THE PROJECT

- .1 The Owner has established that this Project shall generate the least amount of waste possible and that processes shall be employed that ensure the generation of as little waste as possible including prevention of damage due to mishandling, improper storage, contamination, inadequate protection or other factors as well as minimizing over packaging and poor quantity estimating,
- .2 Of the inevitable waste that is generated, the waste materials designated in this specification shall be salvaged for reuse and or recycling. Waste disposal in landfills or incinerators shall be minimized. On new construction projects this means careful recycling of job site waste, on demolition projects this also means careful removal for salvage.

1.2 RELATED SECTIONS

- .1 Section 02050 - Demolition / Dismantling / Salvage

- .2 Section 02200 - Earthwork
- .3 Section 02870 - Site Furnishings
- .4 Section 02900 - Landscaping
- .5 Section 03100 - Concrete Formwork
- .6 Section 03300 - Cast-In-Place Concrete
- .7 Section 05100 - Structural Metal Framing
- .8 Section 05400 - Light Gauge Metal Framing
- .9 Section 06100 - Rough Carpentry
- .10 Section 06200 - Finish Carpentry Cabinets, Countertops
- .11 Section 06300 - Wood Treatment
- .12 Section 07200 - Building Insulation
- .13 Section 08800 - Glazing / Windows
- .14 Section 09250 - Gypsum Board

- .15 Section 09300 - Tile Work
- .16 Section 09550 - Wood Flooring
- .17 Section 09650 - Resilient Flooring
- .18 Section 09680 - Carpet
- .19 Section 09900 - Painting

1.3 CODE OF PRACTICE

- .1 In addition to other requirements specified herein it is a requirement for the Work of this project that the Contractor comply with the GVRD's "3Rs Code of Practice" as outlined in publication entitled "Job Site Recycling: A Guide for Builders and Developers" available from the GVRD, Solid Waste and Recycling Department. Telephone: 437-GVRD. Website address: <http://testwww/waste/bro/dlcgde.html>.

1.4 WASTE MANAGEMENT PLAN

- .1 Waste Management Plan: Within 10 calendar days after receipt of Notice of Award of Contract, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Owner and Consultant a Waste Management Plan. Attached is a sample format together with sample waste generation rates to aid the Contractor in formulating the Plan. The Contractor may use this form or provide a custom form containing the same information. The Plan shall contain the following:
 - .1 Analysis of the proposed job site waste to be generated, including the types of recyclable and waste materials generated (by volume or weight). In the case of demolition, a list of each item proposed to be salvaged during the course of the project should also be prepared (Refer to the Job Site Recycling Guide for a directory of service providers. This list is not necessarily complete. The Contractor may use any of these or other service providers).
 - .2 Alternatives to Landfilling: Contractor shall designate responsibility for preparing a list of each material proposed to be salvaged, reused, or recycled during the course of the Project (Refer to the Job Site Recycling Guide, Directory section).
 - .3 List of compulsory materials to be recycled, shall include, at minimum, the following designated materials:
 - .1 Old corrugated cardboard.
 - .2 Clean dimensional wood, palette wood.
 - .3 Concrete/Brick/Concrete Block/Asphalt.
 - .4 Scrap Metal.
 - .5 Drywall.
 - .6 Landclearing debris.

- .7 Paint (return to Paint Depot).
- .5 List of optional materials to be salvaged (demolition projects only)
 - .1 Dimensioned Lumber and Heavy Timbers.
 - .2 Wood siding.
 - .3 Structural Steel.
 - .4 Wood Paneling, molding, trim and Wainscoting.
 - .5 Heritage architectural elements such as mantle pieces, columns, etc.
 - .6 Cabinets and casework.
 - .7 Insulation.
 - .8 Brick and block.
 - .9 Electric Equipment and Light Fixtures.
 - .10 Plumbing fixtures and brass.
 - .11 Windows, doors and frames.
 - .12 Hardwood flooring.
- .2 Meetings: Contractor shall conduct Project Waste Management meetings. Meetings shall include subcontractors affected by the Waste Management Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:
 - .1 Pre-bid meeting.
 - .2 Pre-construction meeting.
 - .3 Regular job-site meetings.
- .3 Materials Handling Procedures: prevent contamination of materials to be recycled and salvaged and handle materials consistent with requirements for acceptance by designated facilities. Where space permits, source separation is recommended. Where materials must be co-mingled they must be taken to a processing facility for separation off site.
- .4 Transportation: The Contractor may engage a hauling subcontractor or self haul or make each subcontractor responsible for their own waste. In any case compliance with these requirements is mandatory.
- .5 Submit to the municipality way-bills, invoices and other documentation confirming that all materials have been hauled to the required locations. Only those brokerage, storage, transfer, compost and disposal facilities, which comply with authorization issued by the local jurisdiction, can be used by the contractor for the recycling and disposal of waste materials generated at the project.

.6 Waste Management Plan Implementation:

- .1 Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and recording results of the Waste Management Plan for the project.
- .2 Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Consultant.
- .3 Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling to be used by all parties at the appropriate stages of the Project. On demolition projects the Contractor shall provide on-site instructions for salvage and requirements for reusing salvaged materials within the project, either in new construction or in a renovation.
- .4 Separation facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for recycling and salvage. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials. The requirement for separation will only be waived if the Contractor can demonstrate to the Owner/Consultant that there is insufficient room to accommodate it. If this is the case the materials must be sent to a processing facility for separation off site.
- .5 Hazardous wastes: Hazardous wastes shall be separated, stored, and disposed of in accordance with the requirements of the authorities having jurisdiction including the Provincial Waste Management Act and B.C. Special Waste Regulation.
- .6 Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a summary of waste materials, recycled, salvaged and disposed of by the Project using the form appended to this specification or a form generated by the Contractor containing the same information. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall contain the following information:

The amount (in cubic yards or [metric] tonnes) of material landfilled or incinerated from the Project, the identity of the landfill, incinerator and/or transfer station. For each material recycled or salvaged from the Project, include the amount (in cubic yards or tonnes or in the case of salvaged items state quantities by number of items) and the destination (i.e. the material recovery facility, transfer station, landfill, incinerator or used building materials yard).

END OF SECTION 01505

Construction Projects Waste Generation Rates

	Residential/Commercial High-rise Construction		Institutional Low-rise Construction		Commercial Low-rise Construction		Residential Low-rise Construction	
Material	cu.yd./ 1,000 sq.ft.	tonnes/ 1,000 sq.ft.	cu.yd./ 1,000 sq.ft.	tonnes/ 1,000 sq.ft.	cu.yd./ 1,000 sq.ft.	tonnes/ 1,000 sq.ft.	cu.yd./ 1,000 sq.ft.	tonnes/ 1,000 sq.ft.
wood	3.3	0.40	7.0	0.86	5.6	0.68	6.0	0.73
drywall	3.6	0.92	0.9	0.22	0.2	0.05	1.1	0.27
metal	0.2	0.09	0.4	0.21	--	--	--	--
concrete/ asphalt	1.7	1.79	0.7	0.99	--	--	0.04	0.05
corrugated cardboard	--	--	--	--	7.1	0.14	2.4	0.05
other	5.6	1.54	0.2	0.54	1.0	0.27	0.5	0.14
Total	14.4	4.74	9.2	2.82	13.9	1.14	10.04	1.24

Explanatory note:

Waste generation rates vary depending on project type and size, subtrade efficiency, accurate material estimation, on-site materials storage procedures and product packaging.

Estimate the volumes or quantities of materials generated on the site by multiplying the floor area of your project with the generation rates listed for the different materials.

Waste Management Plan Construction & Demolition Projects

Name of Company		Contact Person	Telephone No.
Project Site/Location		Project Type <input type="checkbox"/> Construction <input type="checkbox"/> Demolition	Project Size (in square feet)

	Pre-Project	Project Updates	
		For Period:	to
Material	Estimated Generation	Recycled/Salvaged/Disposed	Facility
Total			

Signature	Title	Date
-----------	-------	------

Explanatory note:

- Column 1 - "Material" – enter materials targeted for recycling and/or salvage and include a category for waste materials requiring disposal
- Column 2 - "Estimated Generation" – enter estimated volumes (cu.yd.) or quantities (metric tonnes) of recyclable and waste materials generated and state number of salvageable items
- Column 3 - "Recycled/Salvaged/Disposed" – enter volumes (cu.yd.) or quantities (metric tonnes) of materials recycled and disposed and state number of items salvaged
- Column 4 - "Facility" – enter end-destination of recycled, salvaged and disposed materials.