Integrated Pest Management, Erosion Control and Landscape Management Plan

Royal Centre
1055 West Georgia Street

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1. Scope

Warrington PCI Management has created this integrated pest and landscape management strategy to preserve ecological integrity, enhance natural diversity and protect wildlife while supporting high-performance building operations and integration into the surrounding landscape.

This Plan aims to eliminate or minimize the potential negative health impacts associated with Pest Control inspections and prevention/elimination activities, Erosion Control and Landscape Management.

All practices shall comply with applicable local regulatory requirements.

The following boundaries apply to this plan:

Physical boundaries: Royal Centre's exterior, site, and base building areas.

Programmatic boundaries: This plan affects all Royal Centre personnel, vendors, contractors, and tenants who work at Royal Centre and addresses the following site issues:

- Outdoor Integrated Pest Management (Invasive plants and fungi are considered outdoor pests and should be addressed in the plan)
- Indoor Integrated Pest Management
- Landscape Waste
- Chemical Fertilizer
- Erosion and Sedimentation Control (as Warrington PCI Management does not have any uncontained natural landscaping on site, erosion control is limited to construction activities within the scope of this management strategy)

2. Goals

The program has been designed to LEED® Canada EB:O&M credit SSc3 Integrated Pest Management, Erosion Control, and Landscape Management Plan, and EQc3.6 Indoor Integrated Pest Management, should the property intend to pursue LEED certification. The Plan aims to eliminate or minimize the potential negative health impacts associated with pest control inspections and prevention/elimination activities.

3. Resources for Implementation: Procedures, Strategies & Performance Measurement

Outdoor and Indoor Integrated Pest Management
Warrington PCI Management will employ preventative measures, such as optimal building cleanliness, removal of landscape features that may house pests, using appropriate biological controls and regular inspections and discussions to manage infiltration of pests. Traps, mechanical means and other LEED-compliant control strategies will be used before considering the use of pesticides. When necessary, use only species-specific and least toxic pesticides with required notification periods for tenants, per this Plan.

Warrington PCI Management and its pest control contractor shall employ low impact preventative pest management practices, including:

- Regular inspections and monitoring for the presence of pests and effectiveness of current preventative measures.
- Improved sanitation and management of pest attractants.
- Removal of landscape features that may harbor pests.
- Managing pest attractants, monitoring pest populations and controlling noxious weeds and invasive plants.
- Use of appropriate biological controls.
- Use of humane insect and rodent traps (adhesive tape, baited cages, etc.) throughout the building.
- Regular inspection of exterior hardscape and building envelope to identify cracks or crevices through which pests may enter the building.
- Ensuring food-service areas and break rooms are kept clean and waste kept in airtight containers.
- Promptly fixing dripping faucets or leaking pipes.
- Rinsing or isolating empty beverage containers to deter sugar-loving pests.
- Cleaning all spills promptly and eliminating clutter to simplify cleaning and minimize hiding places for pests.
- Educating occupants to clean recycled containers before putting them into the blue box.

This practice approach aims to avoid unnecessary pesticide use. Integrated pest management should incorporate:

- Preferred use of non-chemical methods.
- Integrated methods to inspect and control pest populations.
- Specification of the circumstances under which an emergency application of pesticides is required, including a definition of emergency conditions.
- Requirement for universal notification of at least 72 hours under normal conditions and 24 hours in emergencies before a pesticide other than a least-toxic pesticide is administered.

Pesticide product that meets San Francisco's Tier 3 hazard criteria (http://sfenvironment.org/sites/default/files/fliers/files/sfe_th_pesticides_reviewed_091313.pdf) is considered a least toxic pesticide. Non-rodent pesticides are also considered least toxic if they exceed the Tier 3 criteria but are used in self-contained baits and placed in inaccessible locations; rodent baits are not considered least toxic under any circumstance because of their high toxicity. Rodent baits shall only be used as solid blocks located in locked, inaccessible outdoor dispensers which will not harm other wildlife.

All applications of pesticides shall be tracked with the log or similar means. Pesticide application logs shall note the targeted pest, the date and location of application, the individual responsible, and the type and amount of the pesticide applied. Also note the date and form of occupant notification procedures, and retain copies of all notices.

When a pest problem is identified, Warrington PCI Management's pest control contractor will investigate existing preventive measures for gaps or shortfalls. An acceptable threshold for each pest population shall be determined by the pest management contractor. After visually

confirming that this threshold has been exceeded, various means of managing the pests are considered. The pest management contractor shall minimize the use of pesticides wherever possible by trying to physically remove pests before resorting to pesticide use. Removal options include: sanitation, structural repairs, mechanical and living biological controls, other non-chemical methods and, if non-toxic options are unreasonable and have been exhausted, a least toxic pesticide.
In the case that least toxic pesticides are required, the chemicals should be used minimally and only in target locations specifically for targeted species. See Appendix A for a list of pesticides that are considered least toxic.

Under extreme conditions, use of pesticides that do not meet the definition of least toxic may be necessary. More toxic products may be used to control or destroy a health hazard. Pesticides that are not classified as least-toxic shall only be permitted during:

- Emergencies when there is a threat to human life;
- Times when application is necessary to eliminate a health hazard; and
- To manage termites or property damage caused by an infestation.

If a pesticide other than a least toxic pesticide or self-contained non-rodent bait is required to be used in an extreme circumstance (ie. Conditions are not able to be controlled by traps or exclusion), notification to all facility occupants shall be provided at least 72 hours before application under normal conditions, and within 24 hours after application in emergency conditions. Notify occupants in appropriate ways so that the notice reaches all potentially affected occupants and staff per the Communication Plan.

> ***Communication Plan:***
> *Tenant notification of the pest management control program will be through a Universal Notification Letter issued annually or as part of the Pest Management Service Schedule.*
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> *If a non-least toxic pesticide applications are required, per above, tenants shall be notified at least 72 hours in advance of any potential application through an Emergency Service Notification Letter. This letter must include the pesticide product name, active ingredient, product label signal word (e.g., "caution", "danger"), the time and location of the application, and contact information for persons seeking more information. This template will be developed by Warrington PCI Management and their pest control service provider, and used to support this plan's notification guidelines.*
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> *Any non-scheduled visits that occur are considered emergency conditions. Email notifications are sent to tenant representatives when this occurs. The notification informs that the pest management service providers will be on-site within 24hours from the issuance time of the notification. If the cause for concern requires pesticide application, they will be applied no sooner than 24 hours, and no later than 48 hours, from the issuance time of the notification. This provides tenants advance notice (24 hours) of potential application.*

PERFORMANCE MEASUREMENT: Environmentally preferred practices will be used 100% of the time for the above conditions. Pest management logs will be submitted to the building management on a monthly basis for review. When toxic chemicals are required, all building occupants in affected areas are notified per the requirements above 100% of the time.

Landscape Waste
The approved landscaping vendor will be responsible for diverting 95% landscape waste materials collected from the Royal Centre site via mulching, composting, or other low impact means. The landscaping contractor is responsible for removing all organic matter that cannot be broken down on site and bringing it to a local composting facility.

The amount of landscape waste sent to landfill shall be documented either by weight or volume.

PERFORMANCE MEASUREMENT: 95% of landscape waste shall be diverted from the waste stream via mulching, composting or other low impact means.

Chemical Fertilizers
Fertilizers listed as prohibited in the Society for Organic Urban Land Care's Organic Land Care Standard, Seventh Edition, 2017 (or newer), List 1 shall not to be used on site. The standard can viewed through the link below:
https://organiclandcare.ca/resources/Documents/Standard/SOUL-Standards-7Edition-Final.pdf

Strategies include landscaping with native or adapted plants, using organic or natural fertilizers (e.g., compost, grass clippings), and maintaining soil health to limit the need for chemical fertilizers. If fertilizers are necessary, the following best practices will be considered:

- Use fertilizers based on need, as determined by soil testing and other indicators, and not by calendar.
- Use fertilizers only during times of plant uptake and not when heavy rain is expected.
- Keep at least 7.6m (25 feet) from any waterway.
- Use organic and natural materials to the greatest extent possible.
- Slow-release formulations shall be used. "Weed and feed" products will not be used.

Alternatives to chemical fertilizers will be specified. Application protocols will be defined that mitigate the possibility of pollution through over-application or inappropriate timing.

Periodic soil testing will be considered for identifying any nutrient deficiency and developing targeted fertilizer treatments.

Where possible, practices will be tracked to quantify and estimate the extent to which chemical fertilizer use is reduced. MSDS of fertilizers shall be reviewed and documented before the fertilizers being applied.

PERFORMANCE MEASUREMENT: Environmentally preferred practices will be used 100% of the time for the above conditions.

Erosion and Sedimentation Control
Warrington PCI Management and its landscaping contractor shall employ strategies that prevent erosion during both normal operation and construction and will seek to minimize transported sediments from leaving the site.

Royal Centre does not have any uncontained natural landscaping on site. The site has underground parking and there are no exposed soils except for the above-ground planters

surrounding the building. Further, there are no receiving waters in the vicinity of the site. As such, there is not a risk of environmental impacts from erosion due to normal operations at Royal Centre.

Erosion and sedimentation control activities shall conform to the erosion and sedimentation requirements of the 2003 U.S. EPA Construction General Permit or local ESC standards and codes (http://cfpub.epa.gov/npdes/stormwater/cgp.cfm), whichever is more stringent.

Further, construction materials categorized as prohibited in the Society for Organic Urban Land Care's Organic Land Care Standard, Seventh Edition, 2017 (or newer), List 3 (https://organiclandcare.ca/resources/Documents/Standard/SOUL-Standards-7Edition-Final.pdf) are not to be used in projects on site.

In the event of a construction activity that disturbs the site, soil stabilization by temporary seeding, mulching, tarping, or other similar methods shall be employed. In the event of excavation of soil in the planters for replanting or rewaterproofing, soil stabilization shall be employed by stockpiling soil on top of an impermeable material and surrounded with permeable dams.

To slow down runoff flowing across the site during site disturbing construction, Interceptor dikes and swales shall be used.

To ensure dust control during construction on site, concrete and other dust producing materials will be wetted before it is cut, removed, or demolished.

To prevent sediment from being washed away, area drains, trench drains, and any municipal drains in the vicinity of work will be protected using at least one of the following methods:

- For drain inlets below, or less than 150 mm above the drainage plane: Firmly anchor geotextile fabric over the drain inlet and cover with crushed stone. Inspect and clean the fabric regularly to prevent clogging and ensure no tears develop.
- Install a water-permeable dam around each drain to slow water velocity and trap sediment before it reaches the drain. Inspect regularly to ensure proper performance.

4. Responsible Party

Teams and individuals involved in activities pertaining to the policy:

Name of Person / Position	Responsibilities
David Basford Property Manager Warrington PCI Management Tel: 604-602-4800 Email:dbasford@warringtonpci.com	Review the plan annually; ensure staff review and follow Integrated Pest and Landscape Management Plan.
Tim Stone President Florenco Tel: 604-328-7922 Email: tim@florenco.ca	Maintain landscape; track all landscape waste generated on site; provide landscape waste tracking logs monthly.
Gustavo Gabaldon Route Manager Abell Pest Control Tel: 604-395-8115 Email: GGabaldon@abellgroup.com	Perform pest control inspection; Provide tracking logs for pest control activities on site

5. Time Period

This plan has been developed for the Warrington PCI Management portfolio as a part of the corporate sustainable effort and shall be reviewed annually.

This plan will be in effect for the duration of building operations until amended and/or replaced by a subsequent integrated pest, erosion control and landscape management policy.

6. Quality Assurance / Quality Control Process

At least once a month, service providers shall provide an up-to-date tracking log of their activities. Warrington PCI Management will then review these logs to identify any deficiencies and issue corrective actions. Warrington PCI Management shall review this Plan annually to identify any activities and contracts that did not meet their requirements. Improvements will be included into service contracts, where applicable.

Appendix A: List of Least Toxic Pesticides

Least-toxic pesticides are those where the only active ingredients are included in the list below (Source: LEED Canada for Existing Buildings: Operations and Maintenance Reference Guide, 2009):

- Acetamiprid
- Biological pesticides, including Bt (Bacillus Thuringgienus) and nematodes
- Borax, also called “boric acid” or “boracic acid”
- Calcium sulphide or calcium polysulphide
- Conjugated decanoic and pelargonic acid
- Corn gluten meal
- Disoidium octoborate tetrahydrate
- Fatty acids
- Ferric phosphate
- Herbicidal soap
- Insecticidal soap
- Methoprene
- Mineral oil, also called “dormant or horticulture oil”
- Pyrethrum or pyrethrins
- Silica dioxide (diatomaceous earth)
- Spinosad
- Sulphur
- Other products listed as “Allowed” on the Society for Organic Urban Land Care’s Organic Land Care Standard, Fourth Edition, 2007, List 2
- Other products that meet San Francisco’s Tier 3 hazard criteria (least hazardous)
- Non-rodent pesticides used in self-contained baits and placed in accessible locations (rodent baits are not considered least toxic under any circumstance)

Below are examples of how some of the active ingredients above can be used on site:

Insecticides

Diatomaceous earth – A white abrasive powder made from ground-up, fossilized shells of small sea creatures. It punctures holes in the skins or shells of many insects and caterpillars. It is harmful to bees and should only be used in the morning before flowering.

Insecticidal soaps – Contains salts of fatty acids, mixed with water and alcohol in various proportions. Sprayed onto the leaves of plants it protects against aphids, spider mites, mealybugs, scale in its early stages and white fly.

Dormant and horticultural oils – Petroleum-based oils sprayed onto plants to smother insects in various developmental stages. Dormant oils are used before trees leaf out to kill over-wintering eggs or larva. Horticultural oils can be used on actively growing plants against pests such as mealy bugs and scales.

Herbicides

Corn Gluten – This product works by suppressing all seed germination, but will not kill

established weeds. It is primarily for lawns and must be applied in early spring. Do not reseed the lawn at the same time.

Horticultural Vinegar – A stronger version of household vinegar that contains 20% acetic acid. It is primarily used as a spot herbicide on weeds. It very harmful to adjacent plants and should be used with caution.

Fungicides

Lime sulphur solution – A combination of hydrated lime and sulphur used as a dormant spray in early spring. It controls powdery mildew and can be effective against scale in its early stages. Causes skin and eye irritation and must be applied using masks and gloves.

Sulphur – Made from ground-up sulphur dust and is relatively harmless. It is effective for acidifying soil and for controlling powdery mildew, black spot, rust and other diseases of plants. It can also be used as a dust on dahlia, gladioli and canna tubers before putting them in winter storage.

Biological controls

Beneficial nematodes (Steinernema and Heterorhabditis sp) – These help to control lawn grubs such as larvae of Japanese beetles, June bugs and European Chafer, sod webworm, wireworm and various weevils. They should be mixed with water and watered in deeply when the temperature is above 15F.

Beneficial nematodes (Steinernema spp only) – control Iris borer, cut worms, flea beetles, and other shallow living larvae. Should be applied when temperatures are above 15F.