

ENVIRONMENT COMMITTEE

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*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

SUBJECT: "PLAYGROUND OF THE GODS" CONSERVATION UPDATE

RECOMMENDATION:

1. THAT Council approve the request for an application of Borate-based pesticides to protect the outdoor sculpture "Playground of the Gods" from wood boring insect infestations and reduce regrowth of plant life on the poles after cleaning.

REPORT

The Environment Committee, at its Open meeting held on 2006 April 11, received and adopted the *attached* report requesting approval to proceed with pesticide application as part of a conservation treatment and long term IPM strategy for the "Playground of the Gods" artwork as a whole.

Respectfully submitted,

Councillor Dan Johnston
Chair

Councillor Pietro Calendino
Vice Chair

Councillor Lee Rankin
Member

COPY - CITY MANAGER
DIRECTOR PLANNING & BUILDING
DIRECTOR ENGINEERING
DIR. PARKS, REC. & CULTURAL SERV.

TO: CHAIR AND MEMBERS
ENVIRONMENT COMMITTEE

DATE: 2006 April 11

FROM: CONSERVATOR, BURNABY VILLAGE
MUSEUM

SUBJECT: “PLAYGROUND OF THE GODS” CONSERVATION UPDATE

PURPOSE: To update the Committee on the results of the remedial treatment to “The Direction” in 2004 and request permission to proceed with pesticide application as part of a conservation treatment and long term IPM strategy for the “Playground of the Gods” artwork as a whole.

RECOMMENDATION:

1. **THAT** The Committee recommend Council approve the proposed request for an application of Borate-based pesticides to protect the outdoor sculpture “Playground of the Gods” from wood boring insect infestations and reduce regrowth of plant life on the poles after cleaning.

REPORT

1.0 BACKGROUND

In the fall of 2004, the Environment Committee gave permission for the insertion of borate rods into the carpenter ant infested lintel and posts of the pole installation “The Direction”, a component of the public artwork known as “Playground of the Gods” on Burnaby Mountain. A special request to use this pesticide was made by staff of the Burnaby Village Museum because of the extent of the infestation, its primary location in load bearing posts, and a concern for public safety.

Permission for the installation of the borate rods was granted with the recommendation that follow up work by staff would include observing the conservation contractor at work on-site, monitoring the effect of the pesticide treatment, record keeping and reporting back to the Environment Committee the information collected.

To: Environment Committee
From: Conservator
Re: Update on Conservation Treatments for Playground
of the Gods
2006 April 11..... Page 2

2.0 EMERGENCY CONSERVATION TREATMENT OF “THE DIRECTION” IN 2004

The rods were installed by a conservation consultant, specializing in the field of totem pole conservation, on December 20, 2004. The choice to use borate in rod form was made to ensure the absolute minimum exposure of the pesticide to the public. Holes were drilled around the base of each post and in the lintel above each post. The slim rods were inserted and the holes capped with snug fitting fir plugs. Moisture moving within the wood dissolves the borate rods and allows the pesticide to diffuse into the wood, rendering it toxic to carpenter ants.

This work was carried out under the observation of a representative of Environmental Engineering and the BVM conservator. The public were informed of the purpose of the work and the nature of the pesticide used through clearly posted signage. Snow fencing encircled “The Direction” on the day of the work and several days following.

In a further effort to ensure public safety, a new sign with a no climbing pictograph and the message that climbing totem poles is prohibited, has been installed close to “The Direction”. Parks Maintenance also removed the birch tree which had been partially overhanging and casting shade on the pole grouping. It is hoped that the increased visibility of the sculpture and the new sign will discourage climbing by tourists, children and merrymakers.

3.0 CONSERVATION TREATMENT PROGRESS AND MONITORING OF “PLAYGROUND OF THE GODS” IN 2005

In the summer of 2005, emergency structural repairs were completed on two other pole groupings in “The Playground of the Gods”. Wood deterioration at the base of “The Whole Ocean” was allowing the sculpture to be easily twisted when pushed. Loose connections between the smaller minor poles and the main poles of “The Gods and The People” also allowed flexing and movement when the smaller poles were pushed. The conservation consultant was engaged to ensure public safety by installing supports and new connections where necessary.

The borate treatment of “The Direction” was monitored weekly by the conservation consultant and the BVM conservator in 2005. Ant activity was seen to continue. The ants were using their pathway between the nearby shrubbery and posts, and were also seen climbing within the vertical cracks of the posts. Visits to “The Direction” in 2006, show no ant activity. Whether this is in fact due to the effects of the borate in the wood or a condition of weather and temperature, is still uncertain. Monitoring will continue.

As mentioned, Parks Maintenance crews removed the birch tree that was shading “The Direction” and providing a nesting location for the ants. The increase in sunlight on the “The Direction” will slow the progress of wood decay from high moisture levels and the increased visibility of the pole grouping may deter climbers.

To: Environment Committee
From: Conservator
Re: Update on Conservation Treatments for Playground
of the Gods
2006 April 11 Page 3

Parks Maintenance has also agreed to remove the remaining laurel bushes and soil which remain beside “The Direction” while the ants appear inactive with the intent to take away as much of the remaining ant colony and their food source as possible.

4.0 CONSERVATION PROPOSAL AND IPM STRATEGY FOR 2006 AND 2007

In the language of art conservation, the work proposed by the conservation consultant is termed a conservation treatment proposal. However, the work proposed closely resembles an IPM strategy and considers environmental improvements, reduction of water content, physical insect control, limited use of pesticides and environment and health factors.

In general, all of the pole groupings that make up “The Playground of the Gods” suffer from the same conditions of deterioration brought on by water, infestation, moss and lichen growth, and public mischief. A full compliment of 8 interventions is proposed that reflect what is understood to be the best combination of steps for the preservation of wooden poles in the outdoor environment and which create a long-term IPM strategy.

The treatment categories as outlined for each pole unit are:

1. Remove existing concrete pad, top up the base of the poles with gravel and finish at ground level with an approved drainage material.
Rationale: The existing concrete pads trap moisture at the pole bases.
2. Clean overall by dry mechanical methods using hand tools, soft bristle brushes and wooden scrapers to remove accretions of lichens and mosses.
Rational: The lichens and mosses damage wood fibers, weakening the exterior surfaces of the poles and allowing rain water in.
3. Mechanically remove the remains of the old fiberglass cap at the top of the pole.
Rational: The tattered remains of these water repelling caps, applied when the poles were first installed, are now unsightly.
4. Follow hand cleaning with a gentle washing treatment, applied by soft bristle brushes and rinsed with hose water or low-pressure hand sprayer.
Rational: This is a gentle removal of the organic debris created by step 2.
5. Insert boron rods at the base of the pole. The posts and lintel of “The Direction” have been treated with boron rods and so are exempt from this step.
Rationale: The rods infuse borate slowly into the surrounding wood causing it to become inhospitable to wood boring pests over the long term.
6. Apply a borate solution, ‘Timbor’, overall by hand sprayer. The angled pole of “The Direction” is exempt from this step.

Rationale: The surface treatment of borate causes the wood to become immediately inhospitable to wood boring pests. The use of a small hand sprayer focuses the product on a small area at a time and eliminates overspray. Spraying would not be done on rainy or windy days in order to minimize the possibility of product run off or drift.

7. Apply a water repellent coating overall by hand sprayer. The angled pole of "The Direction" is exempt from this step.
Rationale: The water repellent reduces surface absorption of rain water and also reduces surface run-off of the borate sprayed on in step 6. The small hand sprayer focuses the water repellent on a small area at a time and eliminates overspray. Spraying would not be done on rainy or windy days in order to minimize the possibility of product run off or drift.
8. Install new metal caps of custom fitted zinc sheet to the tops of both columns.
Rationale: The metal shield keeps rainwater from penetrating the poles end grain and reduces damage from nesting/feeding birds. The zinc also has a biocide action that will protect the outer vertical surfaces of the poles.
9. Document all operations and provide written report.

The goal of these treatment steps is to slow the poles deterioration within their environment on Burnaby Mountain. Removal of the concrete pads will improve drainage for the wood below ground and make it easier to keep plant growth away from pole base. Removal of damaging plant growth, application of a water repellent and installation of zinc caps all serve to protect the poles from water penetration and its deteriorating effects above ground.

Periodic maintenance work, such as this conservation treatment for "Playground of the Gods" will be featured in the upcoming Cultural Services Division plan for Public Art. Resources will be allocated for maintenance and repair appropriate to each piece of artwork owned by the City and displayed in public areas. When the environment or the public are impacted by a treatment, as in this case, communication and discussion with all concerned parties will help determine the nature and course of treatment.

It is anticipated that the work would begin in early May and finish in late September of 2006. During this time the pole groupings on the lower half of the hill would receive treatment (#4 God of the sea, #7 Whole Ocean, #5 Tree God, #3 Soul of the Orca, #6 Lone Orca and #8 Young Orca). The remainder of the poles on the upper, more public section of the hill would be completed during a similar time frame in the summer of 2007.

5.0 PESTICIDE APPLICATION AS PART OF THE CONSERVATION TREATMENT AND IPM

To: Environment Committee
From: Conservator
Re: Update on Conservation Treatments for Playground
of the Gods
2006 April 11..... Page 5

Of special interest to the committee are the proposed steps 5 and 6, in which borate rods and surface spray are advocated. Borate is the preferred pesticide for carpenter ant infestations in artworks such as totem poles which are located in the environment where carpenter ant nests are naturally numerous and a continuous source of re-infestations. Borate is the least toxic to humans and other mammals, has the lowest impact on non-target organisms, is the most specific to the target species and presents the least environmental risk during handling and disposal.

As stated earlier, borate in rod form provides long term protection at the most vulnerable base area of the poles. In contrast, the spray form is better able to provide immediate protection to the entire outer surface of the poles, inhibiting the re-growth of fungal species, thereby cutting down on the need for maintenance procedures such as surface cleaning in the future, and making the wood a poor habitat for wood boring/eating insects.

When the borate is applied after cleaning and washing the wood surface, the best level of protection from infestation and re-growth is provided. The water repellent applied in step 8 protects the borate in the surface of the wood from washing away, and into the environment, on rainy days.

6.0 MINISTRY REQUIREMENTS

New regulations from the Ministry of Water, Land and Air Protection under the Integrated Pest Management Act, require that the contractor apply for a license and request a public land endorsement to be issued in order to apply the borate rods and spray. The preferred contractor has contacted the Ministry and has applied for the required licenses and endorsements.

7.0 CONSULTATION WITH PARKS MAINTENANCE STAFF AND HORIZONS RESTAURANT

Parks Maintenance staff, the conservation consultant and the Museum conservator have met on site to discuss requirements for fencing, scaffolding, signage to explain the treatment, signage to identify the pesticides if approved, and site security to ensure public safety during the treatment times.

Staff will be meeting with a representative of Horizons Restaurant to discuss the proposed treatment, its implications for the site and address any concerns.

8.0 CONCLUSION

A comprehensive conservation treatment that reflects what is understood to be the best combination of steps for the preservation of wooden poles in the outdoor environment, has been proposed by a conservation consultant specializing in the field of totem pole conservation, to

To: Environment Committee
From: Conservator
Re: Update on Conservation Treatments for Playground
of the Gods
2006 April 11..... Page 6

protect the "Playground of the Gods". This conservation treatment is a multi step process to reduce moisture content of the wood, remove organic growth, and prevent the infestation by wood boring insects and the return of new organic growth. Regular maintenance and conservation treatment, when necessary, is part of long term plan for the care of public art presently under development in the Cultural Services Division.

Because the artwork is located in a public park, a concerted effort is being made to provide protection from carpenter ants and termites by using a preferred pesticide with lowest impact on non-target organisms in a manner that seals the product inside the artwork and by using hand sprayers to minimize over spray. Leaching into the environment and exposure to the public are also minimized.

It is recommended that Borate based pesticides in rod and spray form be approved as part of the conservation treatment of the "Playground of the Gods" in order to provide the best protection for this public artwork.



Elisabeth Czerwinski
CONSERVATOR
Burnaby Village Museum

EC:ec

Cc: Assistant Director Cultural Services Division
Manager Environmental Engineering
Manager Parks Planning

