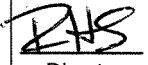
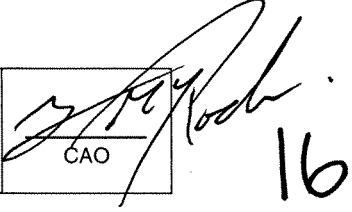


COUNCIL AGENDA/INFORMATION			
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DISTRICT OF WEST VANCOUVER  
750 – 17<sup>TH</sup> STREET, WEST VANCOUVER, BC V7V 3T3

## COUNCIL REPORT

Date: July 16, 2009 File: 1610-20-4608  
From: Geri Boyle, Manager, Community Planning  
Subject: **6520 and 6540 Marine Drive (former Horseshoe Bay Fire Hall site); Green Building Requirements and Design Guidelines**

### RECOMMENDED THAT:

1. The proposed green building requirements and design guidelines attached to the July 16, 2009 report from the Manager, Community Planning be conditions of sale of the three lots at the former Horseshoe Bay Fire Hall site and that the Design Review Committee review building plans for each lot to ensure consistency with the design guidelines and the Permits Department assure compliance with both sets of conditions at building plan review and construction.

### Purpose

The purpose of this report is to clarify the proposed green building requirements and the proposed building and site design guidelines (the 'proposed design guidelines') for new development on the former Horseshoe Bay Fire Hall site and to advise on how they would be applied and assured during the building process.

### 1.0 Background

#### 1.1 Prior Resolutions

June 15, 2009 – Council gave Zoning Bylaw No. 2200, 1968, Amendment Bylaw No. 4608, 2009 for the former Horseshoe Bay Fire Hall site first reading and forwarded the proposed bylaw to a Public Hearing on Monday July 6, 2009. At the same meeting Council received the proposed green building requirements and the proposed design guidelines for the property, and instructed that they be made available for public comment at the Public Hearing on the rezoning of the former Horseshoe Bay Fire Hall site.

July 6, 2009 – the Public Hearing on Zoning Bylaw No. 2200, 1968, Amendment Bylaw No. 4608, 2009 for 6520 and 6540 Marine Drive (former Horseshoe Bay Fire Hall site) was held and closed.

## **2.0 Analysis**

At the Public Hearing on July 6, 2009, Council received public comment on the rezoning of the former Horseshoe Bay Fire Hall site and the proposed green building requirements and design guidelines. As the green building requirements and the design guidelines were not 'required' Public Hearing items, Council may, if desired, still discuss and amend these items after the close of the Public Hearing.

Since the scheduling of the Public Hearing, staff has discussed both documents with interested parties and has reviewed them for clarity. As a result of those discussions, staff is recommending minor changes to the proposed green building requirements and to the proposed design guidelines. The changes to the green building requirements are in the Sensitive Site Development section and are as follows:

- moving "select plant materials with low watering requirements once established" from the proposed Design Guidelines to the proposed Green Building requirements
- replacing "19 litre shrubs" with "5 gallon or equivalent shrubs"
- reorganizing the requirements under "reduce local heat island effects" so that only one need be done, rather than both.

The changes to the proposed design guidelines are shown on the attached revised document. Staff welcomes additional comments from Council regarding both the green building requirements and the design guidelines.

In terms of applying both the green building requirements and the proposed design guidelines for new development, these documents:

- would become conditions of the sale of the three single family lots;
- would form covenants which would be registered concurrent with transfer of title of each lot; and
- would be reviewed and discussed with prospective purchasers, and could, with Council's concurrence via Council's consideration of the purchase offers, be further revised.

Prior to Building Permit application, the purchaser(s) of the lots will be required to submit a proposed building and site design. This submission will be reviewed by the Senior Urban Design Planner and the Design Review Committee (DRC) for consistency with the Design Guidelines. The Building Permit application will then be submitted. Compliance with the green building requirements and the design approved by the DRC will be assured by the Permits Department as part of the permit review & inspection process.

### 3.0 Option

Council may:

- (a) direct staff to include the proposed green building requirements and design guidelines, with or without changes to the versions attached to the July 16, 2009 report of the Manager, Community, as conditions of sale of the three lots at the former Horseshoe Bay Fire Hall site; or
- (b) receive the report for information and provide further direction to staff on the proposed green building requirements and the proposed design guidelines.

Author: \_\_\_\_\_

*G. Boyle*

Appendices:

A – Proposed Green building requirements revised to July 16, 2009

B – Proposed Building and Site Design Guidelines revised to July 16, 2009

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## WEST VANCOUVER STANDARD

### Green Building Requirements for new homes on the three lots at 6520 & 6540 Marine Drive (former Fire Hall No. 2 Site)

*These requirements are intended to create healthier and lower environmental impact residential homes. A specific EnerGuide rating is not required; but if all of these items are built into the home design, homes could theoretically achieve an EnerGuide Rating of 80.*

Component	Requirements
<b>Building Envelope Performance</b> <i>(adapted from City of Vancouver Green Homes Program)</i>	
Insulation	- Insulation requirements are detailed on the attached Schedule 'A'
Window performance	- Windows shall have a maximum thermal conductance (U value) of 2.00 W/(K·m <sup>2</sup> ) (any window with the EnergyStar label)
<b>Energy Efficiency</b> <i>(adapted from City of Vancouver Green Homes Program)</i>	
Hard wired non-incandescent, non-halogen light fixtures	- At least 40% of hard wired, electrically powered light fixtures shall be hard wired so as not to accept incandescent or halogen bulbs.
In-home Energy Display Unit	- Electrical installations shall have an energy usage display meter in the dwelling unit capable of calculating and displaying electrical consumption on at least a monthly basis.
Fireplaces	- No wood burning fireplaces - Gas-fuelled fireplaces shall use electronic ignitions; and shall be direct vented so that all products for and of combustion circulate to and from the dwelling unit without the use of a chimney.
Hot Water Tank Insulation / On Demand HW	- Electrically powered hot water tanks shall have insulation that provides a minimum RSI value of 1.76. <b>OR</b> - Install a tankless (instantaneous, on-demand) water heater
Hot Water Piping Insulation	- The first 3m of non-recirculating hot water piping leading from both electrically powered and gas powered hot water tanks, and the last 1m of piping prior to connecting to the hot water tank, shall have insulation that provides a minimum RSI value of 0.35. - Despite the above requirement, the entire hot water piping system, if it is of constant recirculation design, shall have insulation that provides a minimum RSI value of 0.35.
<b>In Building Water Efficiency</b> <i>(adapted from City of Vancouver Green Homes Program)</i>	
Dual Flush Toilets	- Toilets shall be of dual flush design, with a maximum single flush consumption of 6 litres.
<b>Indoor Environmental Quality</b> <i>(adapted from City of Vancouver Green Homes Program)</i>	
Heat Recovery Ventilator (HRV)	- Each dwelling unit, in the case of a one or two-family dwelling, and each one-family dwelling with an in-law suite shall have one heat recovery ventilator installed, and certified by an HRAI or HVC certified installer, to meet CSA standard CAN/CSA-F326 M91.
<b>Construction Waste Management</b> <i>(adapted from Metro Vancouver BuildSmart and LEED for Homes™)</i>	
Construction Waste Management	- Prepare and submit a construction waste management plan <sup>1</sup> that targets reduction or diversion of waste generated from construction activities from landfills and incinerators to 50% below industry norms (See Schedule A for industry norms). - Document the diversion rate for construction waste (provide disposal receipts) - Recycle all Metro Vancouver-banned materials <sup>2</sup> .
<b>Infrastructure / Data Collection</b> <i>(adapted from City of Vancouver Green Homes Program)</i>	
Pre-pipe for roof-mounted solar energy generation	- A vertical service shaft shall extend from the service room, which contains the service water heater, to the attic space, consisting of at least two 50 mm PVC pipes, capped at both ends, and

<sup>1</sup> Use the Metro Vancouver BuildSmart DLC Waste Management Toolkit as a guide. Investigate and document local options for diversion of all anticipated major constituents of the project waste stream, including cardboard packaging and household recyclables.

<sup>2</sup> See Metro Vancouver's website for a list of materials that are banned from landfills ([www.metrovancouver.org](http://www.metrovancouver.org)).

Component	Requirements
	having at least a 20° angle for hot water OR electricity generation
Pre-wire for electric vehicles	- Each dwelling unit shall have a cable raceway leading from the electricity circuit panel to an enclosed outlet box in the garage or carport (see following tables for details re cable raceway)
<b>EnerGuide Rating Service Audit Report<sup>3</sup></b>	- Before issuance of an occupancy permit, the Building Inspector shall be provided with an EnerGuide Rating System Audit, as defined by the EnerGuide™ Rating Service of Natural Resources Canada. <b>(See important note below)</b>

### Solar Orientation *(adapted from LEED for Homes™)*

Orient buildings for solar design (support passive solar heating)	<ul style="list-style-type: none"> <li>- Choose <b>two or more</b> of the following:               <ol style="list-style-type: none"> <li>a) The glazing area on the north- and south-facing walls of the building is at least 50% greater than the sum of the glazing area on the east- and west- facing walls.</li> <li>b) The east-west axis of the building is within 15 degrees of due east-west.</li> <li>c) The roof has a min of 42 square metres (450 sq ft) of south-facing area that is oriented appropriately for solar applications.</li> <li>d) At least 90% of the glazing on the south-facing wall is completely shaded (using shading, overhangs, etc.) at noon on June 21 and unshaded at noon on December 21.</li> </ol> </li> </ul>
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### Sensitive Site Development *(adapted from LEED for Homes™)*

Manage post-development stormwater at pre-dev rates	- Install permanent control measures to manage runoff to pre-development rates. Incorporate low impact development (LID) measures into development standards. Site design should include minimum LID runoff capture and infiltration target of 24mm in 24 hours for entire development site.
Minimize site disturbance and reduce irrigation demand of landscaping <sup>4</sup> .	<ul style="list-style-type: none"> <li>- Introduce no invasive plant species into the landscape. Note that not all non-native species are considered invasive.<sup>5</sup></li> <li>- Select plant materials that have low water requirements once established.</li> <li>- Use storage tank or rain barrels to retain rainwater for irrigation.</li> <li>- A Tree Preservation Plan shall be prepared and submitted<sup>6</sup>.</li> </ul>
Landscape Design <sup>7</sup> requirements.	<ul style="list-style-type: none"> <li>- Plant one tree, four 5 gal (or equivalent) shrubs, or 4.6m<sup>2</sup> of native groundcover per 46m<sup>2</sup> of lot area<sup>8</sup>.</li> <li>- Any turf must be drought-tolerant (minimize use of all turf); select drought tolerant landscaping species. Do not use turf in densely shaded areas or areas with a slope of 25% (i.e. 4:1 slope).</li> <li>- Add mulch<sup>9</sup> or soil amendments as appropriate.</li> <li>- All compacted soil (e.g. from construction vehicles) must be tilled to at least 150 mm (6 inches)</li> <li>- Maintain or enhance topsoil depth to a minimum of 12 inches</li> </ul>
Reduce local heat island effects	<p>Do one or both of the following:</p> <ul style="list-style-type: none"> <li>- Locate trees or other plantings to provide shading for at least 50% of hard surfaces within 15 meters of home</li> <li>- Install light coloured, high albedo materials or vegetation for at least 50% of hard surfaces within 15 meters of home (including roof). Strategies include: white concrete; grey concrete; open pavers; any materials with solar reflectance index of <math>\geq 29</math>; design vegetated roof to cover garage and/or accessory buildings.</li> </ul>

<sup>3</sup> The EnerGuide Rating Service will involve the following **multiple** steps:

- At the building schematic stage (e.g. before submitting your application for a building permit), contact a local EnerGuide Energy Advisor. They will review the building schematics, perform energy modelling and analysis, and offer advice on ways to modify the building's design to conserve energy and save money.
- Decide which modifications and suggestions to incorporate, and build the home.
- Once construction is completed, the Energy Advisor will perform a site visit to review the construction work and perform a Blower Door Test, which measures the building's air-tightness.
- The Energy Advisor will provide you with the final Evaluation Report, as well as an official label to display the rating on the home's furnace or electrical box.

<sup>4</sup> Visit [www.getwatersmart.com](http://www.getwatersmart.com) for water-conserving landscaping tips

<sup>5</sup> Invasive plant species vary by region. Consult the Canadian Botanical Conservation Network invasive plants list for your area: [http://www.rbg.ca/cbcn/en/projects/invasives/i\\_list.html](http://www.rbg.ca/cbcn/en/projects/invasives/i_list.html)

<sup>6</sup> A sample Tree Preservation Plan can be found at: <http://www.portlandonline.com/bds/index.cfm?&a=72537>

<sup>7</sup> "Designed landscape" means the arrangement of features on a site, including softscapes (e.g. grass, shrubs) and hardscapes (e.g., patios, fountains) but not areas under roof. Preserved natural areas are not considered part of the designed landscape.

<sup>8</sup> Lot area = total lot area, including that which is covered by buildings / structures.

<sup>9</sup> Mulch is as a covering placed around plants to reduce erosion and water loss and to help regulate soil temperature. Upon decomposition, organic mulches serve as soil amendments.

# SCHEDULE 'A' TO WEST VANCOUVER GREEN BUILDING REQUIREMENTS

## DETAILED INSULATION REQUIREMENTS:

<b>EXTERIOR &amp; BASEMENT WALL, AND UNDER-SLAB INSULATION</b>		
Minimum Thermal Resistance of Insulation for Buildings of Residential Occupancy		
Building Assembly	Value Required	
	RSI m <sup>2</sup> °C/W	R °F.Ft <sup>2</sup> .Hr/BTU
Attic Spaces	7.0	R40
Roof Joist Assemblies (Cathedral Ceilings/Flat Roofs)	4.9	R28
Frame Walls (including frame crawl space walls)	3.85	R22
Concrete or Masonry Walls (other than foundation walls)	2.1	R12
Suspended Floors	(Framed)	4.9
	(Concrete Slab)	2.1
Foundation Walls	3.85	R22
Concrete Slabs on Ground at, above, or below grade (insulation under all slab area and around edge of slab)	2.1	R12
Radiant Heating Suspended Floor Assembly Over Heated Area (insulation between heated floor and heated area below)	2.1	R12

## DETAILED HEAT RECOVERY VENTILATOR REQUIREMENTS:

- 1) Each dwelling unit, in the case of a one-family dwelling or two-family dwelling, and each one-family dwelling with secondary suite shall have one heat recovery ventilator.
- 2) Each heat recovery ventilator shall be designed and tested to meet the CSA International Standard CAN/CSA-F326 M91 ("Residential Mechanical Ventilation Systems"), and be installed by persons trained by the Heating, Refrigeration and Air Conditioning Institute of Canada or equivalent,
- 3) Door under-cuts or transfer grilles shall be installed in doors to rooms where both supply and return air ducts are not located.

## INDUSTRY NORMS FOR CONSTRUCTION WASTE MANAGEMENT

- 1) The industry average is 20 kg or 0.02 cubic metres of waste per square metre (4.2 pounds or 0.0265 cubic yards of waste per square foot) of conditioned floor area, based on data provided by the National Association of Home Builders' Research Center.
- 2) The following tables represent industry norms for construction waste.

Amount to Landfills and Incinerators (METRIC UNITS)			
Reduced construction waste		Increased waste diversion	
Kg/m <sup>2</sup>	m <sup>3</sup> / 100m <sup>2</sup>	% Waste	% Diverted
44	21	100%	0%
39	18	88%	13%
33	16	75%	25%
28	13	63%	38%
<b>22</b>	<b>10</b>	<b>50%</b>	<b>50%</b>
17	8	38%	63%
11	5	25%	75%
6	3	13%	88%

Amount to Landfills and Incinerators (IMPERIAL UNITS)			
Reduced construction waste		Increased waste diversion	
Pounds / ft <sup>2</sup>	y <sup>3</sup> / 1,000ft <sup>2</sup>	% Waste	% Diverted
4.0	25.5	100%	0%
3.5	22.3	88%	13%
3.0	19.1	75%	25%
2.5	15.9	63%	38%
<b>2.0</b>	<b>12.8</b>	<b>50%</b>	<b>50%</b>
1.5	9.6	38%	63%
1.0	6.4	25%	75%
0.5	3.2	12%	88%

### DETAILED CABLE RACEWAY REQUIREMENTS:

- 1) Each dwelling unit shall have a cable raceway leading from the electricity circuit panel to an enclosed outlet box in the garage or carport.
- 2) Pre-wire a dedicated electrical circuit in the garage or carport for a future electric vehicle charging system. Install a raceway of not less than 1 1/2" conduit (trade size) from the electrical panel to a receptacle box.

# APPENDIX <sup>'B'</sup>

## PROPOSED DESIGN GUIDELINES

### For the three Single Family Dwellings at the former Fire Hall Site No. 2 (6520 and 6540 Marine Drive)

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#### 1 INTRODUCTION

##### 1.1 Purpose

The purpose of these guidelines is to provide for single family dwellings on each of the three lots at the former Fire Hall No. 2 site that are compatible with character of the surrounding neighbourhood.

##### 1.2 Organization

The guidelines are organized to:

- establish design criteria for single family residences and accessory structures.
- address site planning details; and
- establish the design approval process.

##### 1.3 Prospective Purchasers

Anyone purchasing a single family building lot at the Fire Hall site will be required to retain:

- a) either an Architect registered in the Province of British Columbia or an Architectural Designer to prepare a house and site design in conformance with the architectural design guidelines; and
- b) a Landscape Architect registered in the Province of British Columbia to prepare the landscape plan and ensure the planting is completed within two years from the date of issuance of the building permit.

#### 2 ARCHITECTURAL DESIGN GUIDELINES

##### 2.1 Overall Character

The character of the building should be consistent with traditional West Coast residential character with an approximately 3 feet high base element of stone, and the remainder of wood siding or shingles.

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##### 2.2 Streetscape Character and Building Entrances

2.2.1 Buildings should present themselves to the street with a front door and entry that is clearly and easily identifiable from the street and with a front door that has weather protection. Pathways, planting and lighting should be used to define the entry path.

2.2.2 Each building should have a unique street façade(s) that varies and complements the adjacent buildings and includes rhythmic variations.

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- 2.2.3 The area between a building and the street should be established as a transition area that is visually interesting while clearly privately owned, rather than walled/fenced off from public view.
- 2.2.4 Meters and services should not be visible from the street and should be enclosed or screened when located in any front or corner side yard.

**2.3 Buildings**

- 2.3.1 Massing should be articulated with a domestic scale in mind. Approaches to reducing the overall massing of the building include porches, balconies, reducing the size of the second storey of the building (at the front and/or rear) so that the building 'steps back' at least 6 ft. for a significant portion of each façade, and limiting floor to floor heights to 10 feet.
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- 2.3.2 Roof volumes should be used to conceal top floor living spaces and to reduce the overall bulk and massing of a building.
- 2.3.3 The roof slope should have a minimum pitch of 5 to 12 and incorporate a gable end facing the street.
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- 2.3.4 Where feasible, wider, roof overhangs are encouraged up to 36 inches.
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- 2.3.5 The visual impact of garage door walls should be mitigated. Techniques for doing so include: setting the garage door at least 3 feet further back from the street than the house; incorporating a band of glazing into the garage door; a single car garage; a tandem car garage; and siting the garage door perpendicular to the street and enhancing the architectural treatment of the side of the garage facing the street.
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**2.4 Architectural Features and Detailing**

- 2.4.1 Columns, railings, trellises, corbels, knee braces, etc. should be used to provide detail to building façades.
- 2.4.2 Exposed metal chimney flues should be concealed with dark metal screens or materials consistent with the building's materials palette.

**2.5 Materials and Colours**

- 2.5.1 The exterior of buildings and structures should be finished with a consistent, palette of materials such as natural stone and wood siding, but limited manufactured sidewall siding/shingle products may be considered.
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- 2.5.2 Soffit materials should be compatible with the remainder of the building materials.
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- 2.5.3 All sides of a building should incorporate at least two different materials that are consistently used around the building.
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- 2.5.4 Predominant exterior colours should be neutral or earth tones, excluding white.
- 2.5.5 Accent colours (which for purposes of this provision includes white) should be considered for highlighting smaller building elements, such as the front door, window trim, and roof facias.
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## 2.6 Windows and Doors

- 2.6.1 Window sizes should reflect the use of the interior room, and should exhibit a consistency of detail/style and placement on the building façade.
- 2.6.2 Windows should be provided with a minimum of 6" trim.
- 2.6.3 Windows should allow for cross ventilation, particularly in bedroom areas.
- 2.6.4 Windows should be framed of wood, clad wood or a quality vinyl product.
- 2.6.5 Front entry doors should be single, and incorporate visibility features from the inside (e.g., sidelights)

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## 2.7 Parking Structures

Parking structures shall be limited to enclosed garages. Carports are not permitted. The garage doors for Lot C shall face Nelson Avenue.

# 3 SITE PLANNING AND LANDSCAPING ELEMENTS

## 3.1 Walls and Fences

- 3.1.1 Fence design should not be entirely 'solid' (e.g., lattice type fencing or top sections that incorporate open lattice elements).
- 3.1.2 Pet enclosures are not permitted in the front yard or other yards between the building and a street.

## 3.2 Planting

- 3.2.1 Select plant materials and place them to reflect both ornamental and functional roles, and to provide variations in texture, scale and seasonal colour.
- 3.2.2 Select species that are primarily native or indigenous to southwestern British Columbia.  
  
'Native' refers to plant material having originated in the Pacific Northwest (Coastal British Columbia). 'Indigenous' refers to plant material having originated in climatic zones similar to that of the Pacific Northwest (Japan, Coastal China and Western Europe).

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# 4 DESIGN APPROVAL PROCESS

*Note: the approval process will include review by the District's Senior Urban Design Planner and the District's Design Review Committee. The detailed steps in this process including the application submission requirements will be presented here prior to making the lots available for purchase.*

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**CONSENT AGENDA ITEMS**

**CONSENT AGENDA ITEMS**

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