District of West Vancouver

Heritage Revitalization Agreement Bylaw No. 4877, 2016 (5616 Westport Place)

Effective Date: June 6, 2016

District of West Vancouver

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District of West Vancouver

Heritage Revitalization Agreement Bylaw No. 4877, 2016 (5616 Westport Place)

A bylaw to enter into a Heritage Revitalization Agreement (5616 Westport Place).

WHEREAS the property at 5616 Westport Place known as the Sykes Residence is recorded in the District's Community Heritage Register and has heritage value; and

WHEREAS the District of West Vancouver and the Owner of the property at 5616 Westport Place wish to enter into a Heritage Revitalization Agreement in respect of the property to ensure conservation of the property;

NOW THEREFORE, the Council of The Corporation of the District of West Vancouver enacts as follows:

Part 1 Citation

1.1 This bylaw may be cited as "Heritage Revitalization Agreement Bylaw No. 4877, 2016 (5616 Westport Place)".

Part 2 Severability

2.1 If a portion of this bylaw is held invalid by a Court of competent jurisdiction, then the invalid portion must be severed and the remainder of this bylaw is deemed to have been adopted without the severed section, subsection, paragraph, subparagraph, clause or phrase.

Part 3 Heritage Revitalization Agreement

3.1 The Mayor and Municipal Clerk are authorized to sign and seal on behalf of the District the Heritage Revitalization Agreement attached to this bylaw as Schedule A.

Schedules

Schedule A – Heritage Revitalization Agreement for 5616 Westport Place (Sykes Residence)

READ A FIRST TIME on April 25, 2016

PUBLICATION OF NOTICE OF PUBLIC HEARING on May 8 and May 11, 2016

PUBLIC HEARING HELD on May 16, 2016

AMENDED on May 16, 2016

READ A SECOND TIME AS AMENDED on May 16, 2016

READ A THIRD TIME on May 16, 2016

APPROVED by the Minster responsible for the administration of the *Transportation Act* on April 12, 2016.

ADOPTED by the Council on June 6, 2016

[Original signed by Mayor]

Mayor

[Original signed by Municipal Clerk]

Municipal Clerk

Schedule A

to Bylaw No. 4877, 2016

HERITAGE REVITALIZATION AGREEMENT FOR 5616 WESTPORT ROAD (SYKES RESIDENCE)

THIS AGREEMENT dated as of the day ___ of ___, 2016

BETWEEN:

THE CORPORATION OF THE DISTRICT OF WEST VANCOUVER, a municipal corporation having offices at 750 – 17th Street, West Vancouver, British Columbia, V7V 3T3

(the "District")

AND:

DAVID GARRETT LESLIE AND CHRISTINA CATHLEEN LESLIE 1065 Crestline Road, West Vancouver, British Columbia, V7S 2E3

(the "Owner")

WHEREAS:

A. The District may, by bylaw, enter into a Heritage Revitalization Agreement with the Owner of property identified as having heritage value, pursuant to section 610 of the *Local Government Act*; and

B. The Owner owns certain real property on the northeast portion of which is situated a building of heritage value known as the Sykes Residence, listed on West Vancouver's Community Heritage Register, which property and building are located at 5616 Westport Place, West Vancouver, British Columbia, and legally described as LOT 4 BLOCK E DISTRICT LOT 1374 PLAN 10565 (the "Heritage Lands"); and

C. The Owner has presented to the District a proposal for the use, development and conservation of the Heritage Lands that would change the density of use of the Heritage Lands, and has voluntarily and without any requirement by the District, entered into this Agreement pursuant to section 610 of the *Local Government Act*; and

D. The Heritage Lands are subject to section 52 of the *Transportation Act* and the Minister responsible for the administration of the *Transportation Act* has approved the bylaw authorizing this Agreement; and

E. The District must hold a Public Hearing before entering into, or amending, a Heritage Revitalization Agreement if the Agreement or amendment would permit a change to the use or density of use of the Heritage Lands that is not otherwise authorized by the applicable zoning, and the District has held a Public Hearing on this Agreement; and

F. The Council of the District has, concurrently with the adoption of the bylaw authorizing the execution of this Agreement, adopted a bylaw pursuant to section 610 of the *Local Government Act* designating the Sykes Residence as protected heritage property (the "Heritage Designation Bylaw"); and

G. The Council of the District has authorized the issuance of a development permit that enables the Owner to make an application to subdivide the Heritage Lands into two developable lots on steep terrain, being Lot 1 for the retention of the Sykes Residence and Lot 2 for the development of an additional residential dwelling (the "Leslie Residence"), in accordance with the proposed plan of subdivision attached to this Agreement as **Appendix A** (the "Subdivision");

NOW THEREFORE in consideration of the mutual promises contained in this Agreement and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1.0 Conservation of the Heritage Lands

1.1 The Owner agrees to conserve, protect and maintain the Heritage Lands in accordance with this Agreement, including the Conservation Plan in **Appendix B** to this Agreement, and in accordance with Heritage Maintenance Bylaw No. 4187, 1999 as amended or replaced from time to time, and in the event of any inconsistency this Agreement shall prevail.

1.2 Without limiting the generality of section 1.1, the Owner agrees not to do any of the following without the prior written approval of the District in the form of a Heritage Alteration Permit:

(a) make any interior or exterior structural alteration to the Sykes Residence;

(b) alter or replace the flat and 'spiral helix' roof, exposed beams, or the horizontal, asymmetrical massing of the Sykes Residence, except with materials of like composition and colour;

(c) alter or replace the vertical V-joint cedar siding and curved concrete 'Denstone' block wall and chimney, except with materials of like composition and colour;

(d) alter or replace the West Coast Style details such as the use of local materials, the solid wood front door, the flat roof of the east facade and the 'spiral helix' roof of the west facade, all facades that feature wide flaring eaves and exposed wooden beams, smooth wall surfaces, windows set flush with the outer wall plane, and the relationship between the interior and exterior spaces, except with materials of like composition and colour and sourced locally where possible;

(e) alter the appearance of the exposed wooden beams whether on the exterior or in the interior of the Sykes Residence, except to renew existing finishes;

(f) replace any window or door of the Sykes Residence except with a window or door replicating the original, provided that new windows may differ from original windows to improve their thermal performance;

(g) alter the original exterior architectural details of the Sykes Residence including the California stucco finish, poured concrete floors supported by concrete pillars, the 'transom inspired' angled wall of the second-storey bedroom, and the open car port of the east facade, which was constructed over living space, except new stucco may replicate the original stucco finish to complete repairs where required;

(h) alter the original open floor plan that would interfere with the split-level concept;

(i) alter the original fireplace with round hearth and tapered form in the library of the Sykes Residence, which is connected to the central chimney;

(j) alter the original granite-faced fireplace of the Sykes Residence, which is incorporated with the concrete staircase above, and connected to the central chimney;

(k) alter the original cast-in-place concrete staircase of the Sykes Residence that spirals clockwise down from the upper level to the lower level of the dwelling, except to replace treads or railing elements with like materials;

(l) alter or replace the banister and balusters of the staircase of the Sykes Residence;

(m) alter the curved wall formed by the central chimney of the Sykes Residence, which is clad in vertical tongue-and-groove cedar siding;

(n) alter the exposed bedrock, which is visible in the storage area of the Sykes Residence;

(o) alter any structural wall or pillar or chimney that supports the original dwelling or contributes to its defining characteristics;

(p) alter or remove mature landscape features on the Heritage Lands including cedars, arbutus trees, Douglas firs, rhododendrons, and ferns, the original stone steps and stone walls located at the front and rear of the house, and the original stone light pillars.

1.3 The Owner acknowledges that the District may refuse to issue a Heritage Alteration Permit required by section 1.2 if, in its sole discretion, the District considers that the alteration that permit would authorize is inconsistent with this Agreement or the Heritage Designation Bylaw, and without limiting the generality of the foregoing the District may refuse to authorize the alteration of any of the character-defining elements set out within the Conservation Plan.

1.4 If the Owner fails within the time specified in the notice to conserve, protect or maintain the Heritage Lands in accordance with this Agreement after having been given notice in writing to do so, which notice must specify the work that the Owner is required to undertake, the Owner agrees that the District may enter on the Heritage Lands to carry out the work, and may recover the cost of doing so from the Owner in the same manner and with the same remedies as taxes in arrears.

1.5 In the event of any dispute between the Owner and the District as to the necessity for any work required by the District pursuant to section 1.4, the parties agree that the dispute will be resolved by a member of the Architectural Institute of British Columbia with training and experience in heritage conservation who has been chosen by the parties or, failing agreement between the parties, by the Architectural Institute of British Columbia, and that the fees of the architect shall be borne by the Owner if the dispute is resolved in the District's favour and by the District if the dispute is resolved in the Owner's favour.

1.6 The Heritage Lands may, notwithstanding the provisions of the RS10 Single Family Dwelling Zone 10 within the District of West Vancouver's Zoning Bylaw No. 4662, 2010, as amended or replaced from time to time, and in accordance with the further provisions of this Agreement:

(a) the Sykes Residence shall remain on Lot 1; and

(b) a new single family dwelling (the "Leslie Residence") may be built on Lot 2 in accordance with the architectural and landscape plans attached as **Appendix C** to this Agreement.

1.7 The parties agree that the Owner may apply for and the District may in its sole discretion issue development and building permits that include minor variances from Appendices C and D, including increased rock removal limits for Lot 2, provided that any variances do not alter the character-defining elements or interfere with the overall appearance of the Sykes Residence as described in **Appendix B** or increase the total floor area or height of the Leslie Residence.

1.8 The Owner agrees that the District may withhold any development permit, building permit, or occupancy permit or final building permit approval as the case may be, in respect of the Sykes Residence if the alteration of the Sykes Residence is not in accordance with **Appendix B**, notwithstanding that the construction may be in compliance with the British Columbia Building Code, the Zoning Bylaw and any applicable permit or development permit guidelines.

1.9 The parties agree that, except as varied or supplemented by the provisions of this Agreement, all bylaws and regulations of the District and all laws of any authority having jurisdiction shall continue to apply to the Heritage Lands, the Sykes Residence and the Leslie Residence.

1.10 The Owner agrees that the Development Permit and the Zoning Bylaw variances provided under this Agreement fully compensate the Owner for any reduction in the market value of the Heritage Lands that may result from the adoption of the Heritage Revitalization Agreement Bylaw, and waives absolutely all claims for compensation that the Owner is otherwise entitled to make under section 613 of the *Local Government Act* in respect of the adoption of the Heritage Revitalization Agreement Bylaw.

2.0 Zoning Bylaw Variances

2.1 The following variances to Zoning Bylaw No. 4662, 2010 are granted through this Agreement to enable the subdivision of the Heritage Lands and construction of the Leslie Residence in accordance with Appendix A and Appendix C respectively, and for those purposes only:

(a) Lot 1 (Sykes Residence):

a. Section 210.03 Site Area is reduced from 1,115 square metres to 945 square metres.

b. Section 210.08 Rear Yard is reduced from 9.1 metres to 2.5 metres; and

c. Section 210.09(2)(b)(ii) Combined Side Yard is reduced from 7.9 metres to 5.1 metres.

(b) Lot 2 (Leslie Residence):

a. Section 210.03 Site Area is reduced from 1,115 square metres to 980 square metres.

b. Section 210.07 Front Yard is reduced from 9.1 metres to 3.5 metres;

c. Section 210.08 Rear Yard is reduced from 9.1 metres to 5.4 metres;

d. Section 210.09(2)(b)(ii) Combined Side Yard is reduced from 7.9 metres to 6.9 metres;

e. Section 210.10 Building Height is increased from 7.62 metres to 8.6 metres; and

f. Section 210.11 Number of Storeys is increased from 2 plus basement to 3 plus basement.

3.0 Damage or Destruction

3.1 In the event that the Sykes Residence is damaged by fire, earthquake, or any other cause, such that in the written opinion of a member of the Architectural Institute of British Columbia with training and experience in heritage conservation engaged and instructed by the District it is not possible or appropriate from a heritage conservation perspective to repair it, the Owner must construct on Lot 1 at the Owner's cost a replica of the Sykes Residence in accordance with the original plans and specifications for the building and subject only to such variations from the original plans and specifications as are required to comply with the current British Columbia Building Code. Thereafter the provisions of this Agreement pertaining to the conservation, protection and maintenance of the Sykes Residence, including this provision, shall apply to the replica of the Sykes Residence.

3.2 As an alternative to constructing a replica of the Sykes Residence in the event of such damage, the Owner may develop Lot 1 in accordance with the then current zoning regulations and development permit guidelines, provided that no residential dwelling constructed on the lot shall have a floor area exceeding 216 square metres (2,325 square feet) in total, including basement and garage areas.

3.3 In the event that the Sykes Residence is damaged, the Owner must repair the Sykes Residence, within one year of the date of damage, after having obtained a Heritage Alteration Permit, Development Permit and a building permit, and must carry out all repairs in accordance with **Appendix B**. Section 1.4 shall apply in the event of any failure of the Owner to repair the Sykes Residence in accordance with this section.

4.0 Amendment

4.1 The parties acknowledge and agree that this agreement may only be amended by bylaw with the consent of the Owner, provided that a Public Hearing shall be held if an amendment would permit a change to use or density of use of the Heritage Lands.

5.0 Representations

5.1 It is mutually understood and agreed upon between the parties that the District has made no representations, covenants, warranties, promises or agreements expressed or implied, other than those expressly contained in this Agreement.

6.0 Statutory Functions

6.1 Except as varied or supplemented herein, this Agreement shall not prejudice or affect the rights and powers of the District or its approving officer in the exercise of their statutory functions and responsibilities and their rights and powers under any enactments, bylaws, order or regulations, including but not limited to the *Local Government Ac*t and the *Land Title Act*, all of which, except as expressly varied or supplemented herein, are applicable to the Heritage Lands, the Sykes Residence and the Leslie Residence.

6.2 The Owner acknowledges that the subdivision of the Heritage Lands is subject to the jurisdiction of the District's approving officer, that the construction of or alteration of a building on any portion of the Heritage Lands requires a Heritage Alteration Permit, a Development Permit and a building permit, and that the District may impose off-site works and services requirements and development cost charges in respect of the subdivision and development of the Heritage Lands.

7.0 Enurement

7.1 This Agreement enures to the benefit of and is binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

7.2 The District shall file a notice within the Land Titles Office, as provided for in section 610 of the *Local Government Act*, and upon registration of such notice, this Agreement and any amendment to it shall be binding on all persons who acquire an interest in the land affected by this Agreement.

8.0 Other Documents

8.1 The Owner agrees at the request of the District, to execute and deliver or cause to be executed and delivered all such further agreements, documents and instruments and to do and perform or cause to be done and performed all such acts and things as may be required in the opinion of the District to give full effect to the intent of this Agreement.

9.0 Notices

9.1 Any notice required to be given pursuant to this Agreement shall be in writing and shall be delivered by registered mail as follows:

(a) To the District:

THE CORPORATION OF THE DISTRICT OF WEST VANCOUVER
750 – 17TH STREET
WEST VANCOUVER, BC V7V 3T3

(b) To the Owner:

DAVID GARRETT LESLIE AND CHRISTINA CATHLEEN LESLIE
1065 CRESTLINE ROAD
WEST VANCOUVER, BC V7S 2E3

10.0 No Partnership or Agency

10.1 The parties agree that nothing contained in this Agreement creates a relationship between the parties of partnership, joint venture or agency.

APPENDICIES:

A. **Subdivision** of LOT 4 BLOCK E DISTRICT LOT 1374 PLAN 10565 (5616 Westport Place)

B. **Conservation Plan** for the **Sykes Residence** prepared by Donald Luxton & Associates, October 2014

C. **Architectural Drawings** for Proposed **Leslie Residence** by Synthesis Design Inc. dated October 7, 2015 and **Landscaping Plans** prepared by Urban Niche Landscape Design for the Leslie Residence dated October 7, 2015

DAVID GARRETT LESLIE

By his authorized signatory

_____

CHRISTINA CATHLEEN LESLIE

By her authorized signatory

_____

CORPORATION OF THE DISTRICT OF WEST VANCOUVER

By its authorized signatory

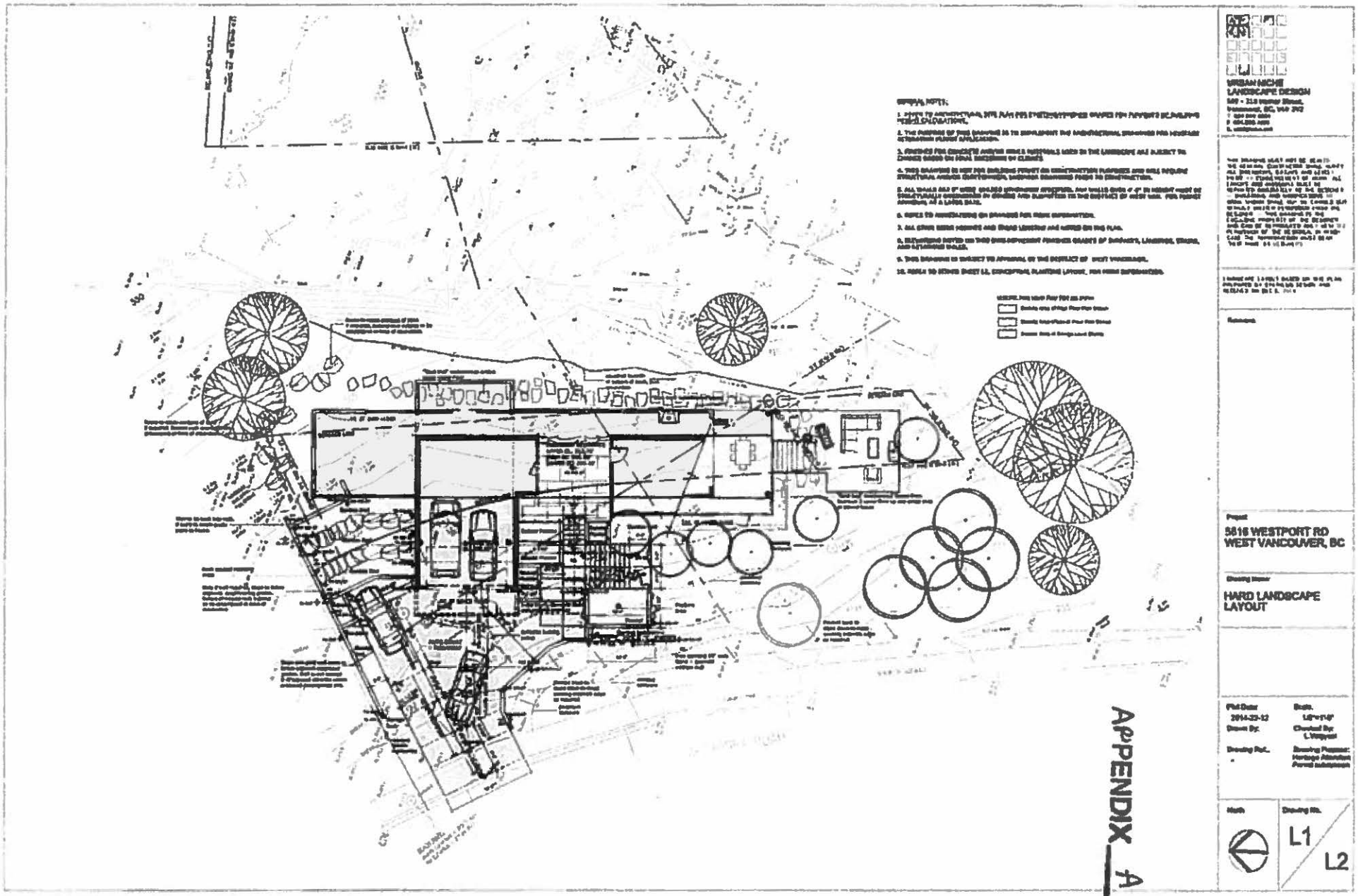
_____

Mayor

_____

Municipal Clerk

APPENDIX A


APPENDIX A
URBAN NICHE
LANDSCAPE DESIGN
5816 WESTPORT RD
WEST VANCOUVER, BC
HARD LANDSCAPE
LAYOUT
L1
L2

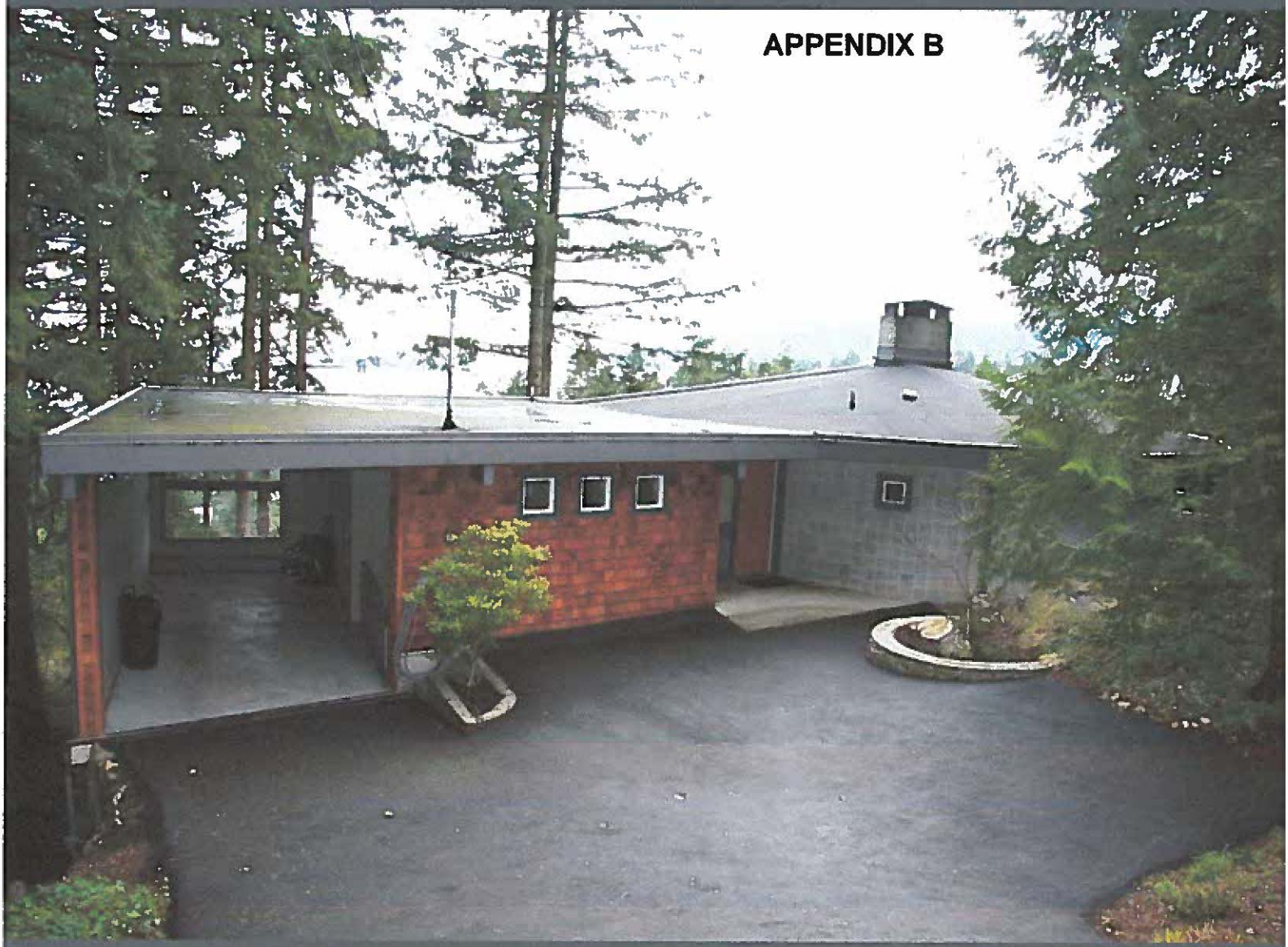
SYKES RESIDENCE

5616 WESTPORT PLACE, WEST VANCOUVER

CONSERVATION PLAN

NOVEMBER 2014

APPENDIX B



DONALD LUXTON AND ASSOCIATES INC

DONALD LUXTON AND ASSOCIATES INC.
1030 - 470 GRANVILLE STREET, VANCOUVER BC, V6C 1V5
info@donaldluxton.com 604 688 1216 www.donaldluxton.com

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South view of the elevated Sykes Residence

1.0 INTRODUCTION

SUBJECT PROPERTY:	SYKES RESIDENCE
ADDRESS:	5616 WESTPORT PLACE, WEST VANCOUVER
ORIGINAL OWNER:	MAJOR PAUL SYKES AND DOROTHY SYKES
ARCHITECT:	PETER KAFFKA
DATE OF CONSTRUCTION:	1964
HERITAGE STATUS:	PROPOSED LEGAL PROTECTION

The Sykes Residence, located at 5616 Westport Place in West Vancouver, is an exceptional example of the West Coast Style of architecture for which West Vancouver and North Vancouver have become renowned. The house was constructed in 1964 for original owner, Major Paul Sykes and his family; the house was designed by architect, Peter Kaffka.

As part of a proposed Heritage Revitalization Agreement (HRA), the Sykes Residence conservation strategy calls for the preservation of exterior and interior character-defining elements of the original house. Future interventions to the house should comply with the conservation strategies outlined in this report. The house will be legally designated under the HRA and the lot will be subdivided in order to construct a second single-family home on the property. The new building, in compliance with the *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010) will be compatible with, distinguishable from and subordinate to the 1964 Sykes Residence.

2.0 HISTORY

2.1 ARCHITECT: PETER KAFFKA

Peter Kaffka was born in 1899 in Budapest, Hungary. Kaffka graduated from the Royal Hungarian Joseph Polytechnical University in 1925 and worked for architectural firms in Budapest until 1936 when he founded his own practice. In 1939, Kaffka was the director of City Planning for the City of Budapest.

Following his service in the war from 1941-1945, Kaffka left for Canada where, between 1945 and 1948, he worked for the Ministry of Reconstruction in Ontario before joining the Toronto firm Marani & Morris. Moving to Vancouver in 1950, Kaffka was employed that year first by William K. Noppe, then the important office of Sharp & Thompson, Berwick, Pratt. He began his own practice in 1954 and became a member of the Architectural Institute of British Columbia in 1956.

Amongst the notable projects produced by Kaffka are the Grouse Mountain Chalet in North Vancouver, built in 1956, and the Thea Koerner Graduate Centre and House at the University of British Columbia, 1959-1961. With three stories of student centre and the top floor a residence, this building was chiefly conceived by architect Charles E. Pratt with the assistance of Kaffka, Zoltan Kiss and Roy Jessiman. It was awarded a gold Massey Medal for Architecture in 1962.

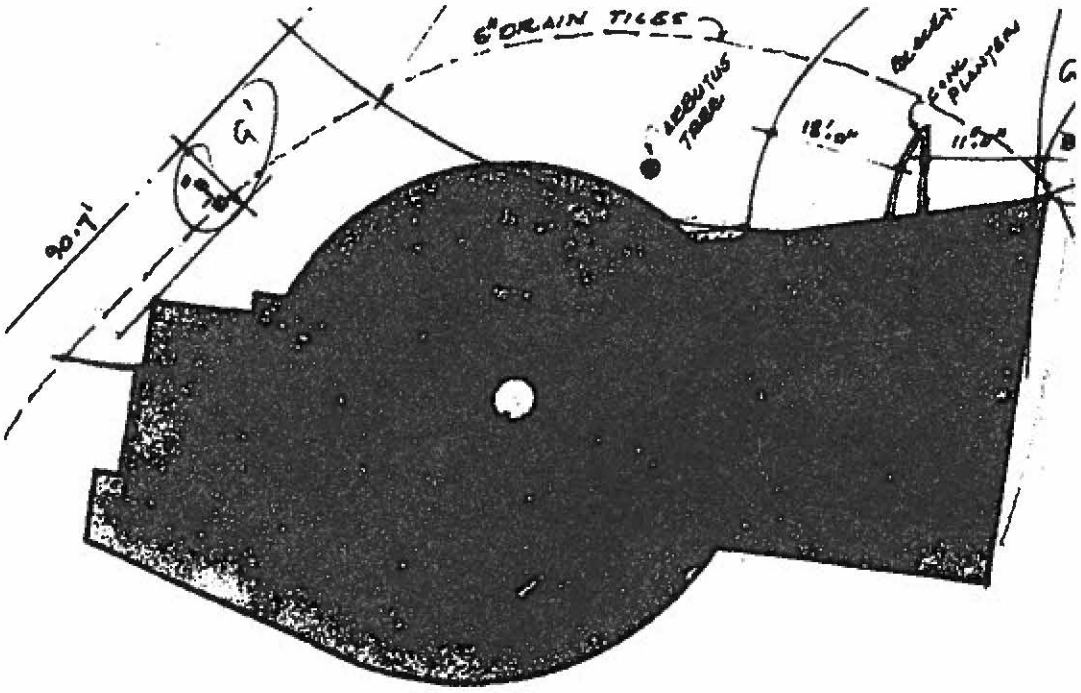
Kaffka designed the Sykes Residence for original owner Major Paul Sykes and his wife, Dorothy in 1964. When viewed from the street level, the house appears to be a single level bungalow with an open carport to the east and a unique circular room to the west. Upon entering the home and viewing the exterior from the back of the property however, is it clear how unusual and distinctive the Sykes Residence is in both form and innovation. The house features a distinguishable 'spiral helix' roof reflecting the shape of a seashell. This organic design echoes the marine environment that is visible from the house as well as the use of organic inspiration in the West Coast Style of architecture. With an elevated concrete floor and large floor-to-ceiling windows, the house appears to be floating in the trees, giving it a feeling of weightlessness.

The carport, also with a concrete floor, is located over living space, demonstrating the boldness, creativity and practicality of Kaffka as a designer. Through efficient use of space, Kaffa was able to functionally design all necessary components of the house into the natural environment and natural layout of the site.

Aside from the spectacular views offered from almost every south facing room in the house and the dramatic cliff top setting, much of the significance of the Sykes Residence is in the smaller details. The chimney acts as a source of heat, a staircase, and the principal support for the central roof structure, it also connects two unique and vastly different fireplaces; one, which is located in the original library, features a tall tapered column, while the other is clad in large, irregular granite stones, which, when burning, heats the moulded concrete staircase above. The unique circular design of the original library of the house reflects the shape of the Vancouver Observatory, which was often frequented by original owner Major Paul Sykes. From its unassuming front façade to its innovative design details, the Sykes Residence is an excellent example of an unusual and impressive West Coast Style home.

Due to his wide range of experience designing a variety of building types and using a variety of styles and technologies, Kaffka is remembered as an innovative and ambitious architect who created buildings that have become landmarks in both Vancouver and West Vancouver.

Peter Kaffka retired in the late 1970s and died in North Vancouver in 1992 at the age of 93.



Roof plan of Sykes Residence (architect Peter Kaffka, 1964)

2.2 ORIGINAL OWNER: MAJOR PAUL SYKES

Paul Sykes was born in Hummelston, Pennsylvania in 1918. Known later in life for his interest in astronomy, Sykes began pursuing his curiosity as a young age; during his teens he published his own monthly astronomical column and was known to give at least one lecture on the subject.

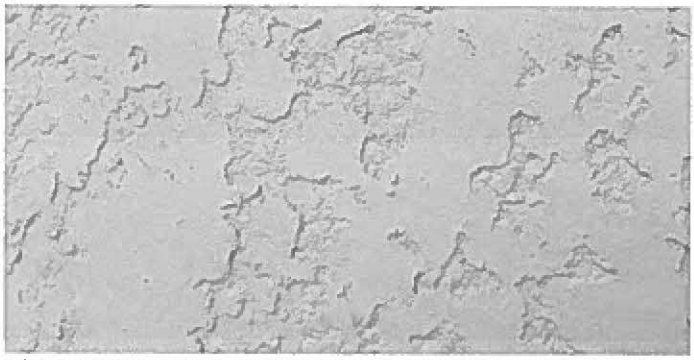
Sykes was an officer in the United States Air Force and served in the Pacific during WWII, attaining the rank of Captain. He was awarded a Presidential Unit Citation, the U.S. Air Medal, the Oak Leaf and Cluster and the Bronze Star for his service. Following the war Sykes attended UBC earning a degree in Physics graduating in 1948. He rejoined the United States Air Force and attended the Oak Ridge School of Reactor Technology (OSORT) in Tennessee, studying nuclear physics. He worked on the Nuclear Engine for Rocket Vehicle Application (NERVA) Project, a nuclear rocket development effort, and rose to the rank of Major within the Air Force.

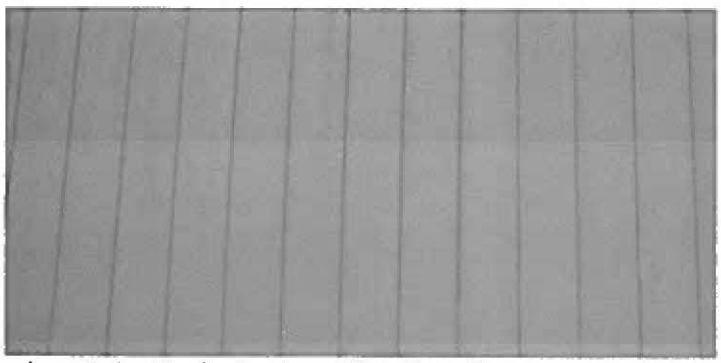
Following his time with OSORT, Paul returned to Vancouver and commissioned architect Peter Kaffka to design his family home in West Vancouver. It was also during this time Sykes was appointed a lecturer and administrator in the Department of Physics at UBC; he remained there until his retirement in 1983.

Throughout his life, Paul actively pursued his interest in astronomy, attending conferences and joining the Royal Astronomical Society of Canada (R.A.S.C.), where he became a Life Member.

Paul Sykes passed away in 2005.

OBITUARY: Major Paul Jay Sykes passed away peacefully at home October 20, 2005, at age 87, his wife Dorothy having predeceased him in 2001. He is survived and deeply missed by his twin sisters, Virgina Reiffer (Mathew), Diana Belhouse (Henry), his nephew Randy Reiffer, his son Richard of Boulder, Colorado, 4 grandchildren, Rebecca, Amy, Jean and David, and many friends. Major Sykes served with distinction in the United States Air Corp. during WWII. He served in the 1st photo-mapping Squadron in the Amazon Basin and then as Squadron Navigator in many long range missions against Japan. After the war he returned to his studies at UBC and completed a degree in Physics. He rejoined the US Air Force and completed a Masters Degree in Physics. He subsequently attended the Oakridge School of Reactor Technology. Then he was appointed as a lecturer and administrator in Physics at UBC, where he remained until he retired in 1983. Throughout his life he was active in the Royal Astronomical Society (Life Member), involved in local and provincial politics, and remained a talented pianist. He was first published as a teenager when he wrote a monthly column on astronomy. His Memorial Service was held at West Vancouver United Church on October 29, 2005, attended by family and close friends. He will be interred with Dorothy at the Arlington National Cemetery in Washington, DC. A donation to the Canadian Cancer Society in his memory would be greatly appreciated. (Published in Vancouver Sun and The Province from Nov. 5 to Nov. 6, 2005)





Sykes Residence: Examples of original materials (f.l.t.r.): stucco render, exterior cedar panels, granite-faced fireplace, interior wood panelling and beams

2.3 THE WEST COAST STYLE

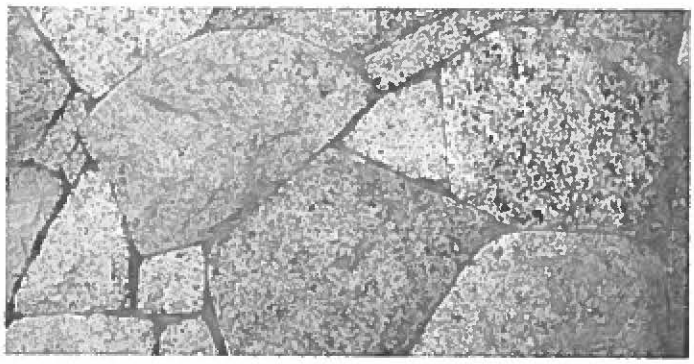
After 1945, the Greater Vancouver region became for approximately thirty years a centre of innovative residential designs in North America. Growing population and changes in lifestyle opened the door for new housing concepts, which were affordable for young families. Progressive and experimental architects developed the West Coast Style based on the principles of modern architecture: functionalism, simplicity, and flexibility.

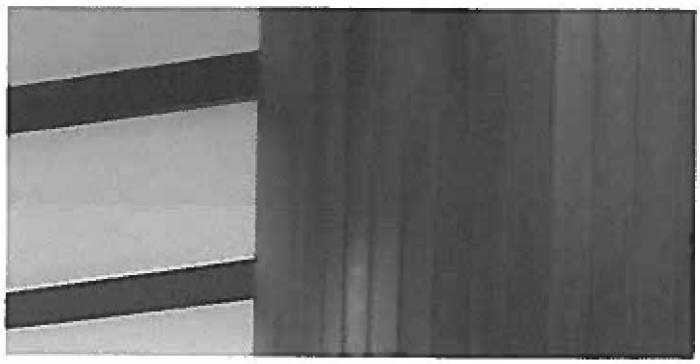
Undeveloped and inexpensive land on the North Shore often comprised sloping and irregular sites with sometimes expansive views. Developing, and designing for such sites, offered a welcome opportunity for upcoming architects to experiment with new designs and building technology. The West Coast Style has several common features, which are also characteristic of the Sykes Residence. The style responded to the rough topography and climate conditions of then "unbuildable" sites on the North Shore with expansive vistas over the ocean, native forests and mountain views. The entrance and parking areas were commonly placed facing the street to allow the living areas to open at the rear with vistas over the ocean. The houses were designed in geometric forms and irregular layouts with local and prefabricated materials used in modular fashion for cost-efficient construction. Modern materials of glass, steel, concrete, and new technology were used, often with cantilevered forms, ceiling-height fenestration and open floor plans. Flat or low-pitched roofs were decked with asphalt roofing material, which replaced the traditional and increasingly expensive cedar shingles.

Walls were filled with modular windows and panels to create a rhythmic pattern of solid and voids. Natural light was considered a key design element in this new modern architecture. Floor-to-ceiling windows provided ample daylighting of the interior. The large window elements connected the interior and exterior spaces in an almost seamless fashion and provided easy access to outdoor decks, which extended the living area.

Traditional floor plans were replaced with flexible, multi-functional layouts to serve a new, more informal lifestyle. Interior spaces were not decorated with ornate features; contrasting natural materials such as wood, brick, stone and plaster were used to create interesting visual effects. In particular timber structural members were exposed and often stained. Interior and exterior spaces were integrated by creating lines of vision through transparent windows and doors to patios, private garden spaces, zones designed for special uses, and access to the surrounding nature. The arrangement of hedges, shrubbery and beds of low growing plants formed abstract geometrical patterns. These geometrical patterns reinforced the horizontal and vertical planes of the modern houses.

The functional and simple design of the West Coast Style homes responded to a new lifestyle. Open plan layouts with flowing interior open spaces and extensive glazing allowed flexible uses and interaction with the surrounding, and often scenic landscapes and native forests.





3.0 STATEMENT OF SIGNIFICANCE

REVISED OCTOBER 2014 (DLA)

Address: 5616 Westport Place, West Vancouver
Historic Name: Sykes Residence
Original Owner: Major Paul Sykes and Dorothy Sykes
Architect: Peter Kaffka
Date of Construction: 1964

DESCRIPTION OF THE HISTORIC PLACE

The Sykes Residence, located at 5616 Westport Place in West Vancouver, is a two storey house, built into a steep and rugged cliffside. Designed in the West Coast Style of architecture, it features both a flat and round 'spiral helix' roof with wide flaring eaves and exposed beams, vertical V-joint cedar siding, and a curved concrete 'Denstone' block wall. Located on a 20,800 square foot residential lot with south facing views of the Strait of Georgia, Passage Island, and Bowen Island, the Sykes Residence is distinguished by its integration with the natural environment.

HERITAGE VALUE OF THE HISTORIC PLACE

Built in 1964, the Sykes Residence is valued as an outstanding representation of the West Coast Style of modern architecture in West Vancouver. Exemplified by design innovation, advancing architectural technologies, use of natural materials, and sensitive integration with the natural environment, the West Coast Style was prevalent between 1945 and 1970. This was an era of postwar optimism, prosperity, growth and pent-up demand for new housing. The Sykes Residence is a fine representation of this new modern architecture, and features exposed beams and a 'spiral helix' roof that emulates the shape of a seashell. Utilizing high-quality materials and progressive techniques, the house features sophisticated lines that give it an organic sense of flow while differentiating it from earlier, simplistic post-and-beam structures. The interior features floor-to-ceiling windows that offer unobstructed views and ceilings that follow the curve of the unique roofline and expose its structure. The central chimney, which functions as the heart of the house, connects two unique fireplaces and is formed into the main staircase, creates interior walls, and acts as the primary roof support.

Built on an expansive residential lot, the Sykes Residence is significant for its seamless blend with the natural environment, a hallmark feature of the West Coast Style. The living room floor is constructed on an elevated slab of concrete supported by concrete pillars to permit the house's incorporation into the steep cliff with minimal disruption of the rugged landscape. This construction technique allows for maximum views and natural light, and by designing an elevated living room, Kaffka's design creates an infinite sense of space, which gives the impression that the house is hovering amidst the trees. With southwest-facing views to the Strait of Georgia, Passage and Bowen Islands, and surrounding vegetation, the Sykes Residence functions as an urban retreat.

This house is also valued for its association with the original owner, astronomer and educator Major Paul Sykes Jr. Born in Hummelston, Pennsylvania in 1918, Sykes was giving radio lectures on the subject of astronomy and publishing a monthly astronomical column by the age of fourteen. Sykes served in the Pacific in the United States Air Force during the Second World War and, after earning a Physics degree from the University of British Columbia in 1948 and studying nuclear physics, he rejoined the Air Force, achieving the rank of Major. He was a long-term lecturer and administrator in the Physics Department at UBC from the late 1940s until his retirement in 1983. Sykes was also a Life Member of the Royal Astronomical Society of Canada. He and his wife owned and occupied this residence upon its completion in 1964 until his passing in 2005.

The Sykes Residence is additionally significant for its association with prominent architect Peter Kaffka (1899-1992), who was born in Budapest, Hungary. After graduation in 1925, Kaffka worked for several Budapest firms before advancing to the position of director of the Budapest planning board. In the 1930s he was involved with the post-war reconstruction of Budapest before immigrating to Canada in 1945, and settled with his wife and son in Vancouver in 1950. Kaffka is attributed with the design of some of Vancouver's most iconic buildings, including Parkview Towers (1960), the Thea Koerner House (1961) at UBC, which was awarded a Gold Massey Medal for outstanding architecture in Canada, and the Imperial Tower (1962), which upon completion, was the tallest building in Western Canada. Kaffka designed several West Coast Style houses in both West and North Vancouver and was recognized for his experimental nature and his ability to combine design and function. Kaffka viewed each project as an opportunity to amalgamate the natural and built environments, while utilizing creative design, and the Sykes House remains as a testament to his exceptional design skills.

CHARACTER-DEFINING ELEMENTS

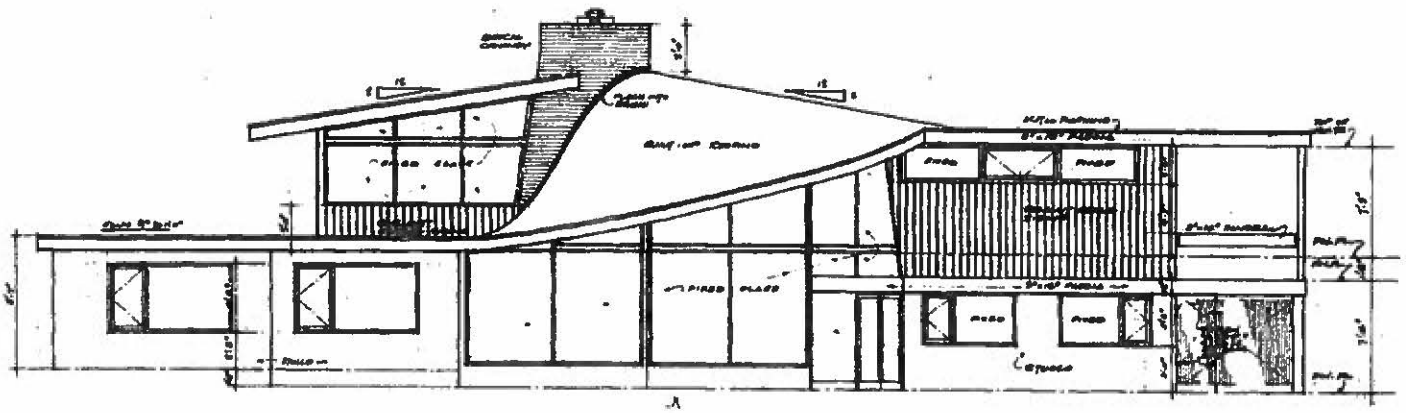
Key elements that define the heritage character of the Sykes Residence include its:

Exterior Elements

- setting amongst mature vegetation on a large lot, with expansive and unobstructed views southwest to the Straight of Georgia and Passage, and Bowen Islands;
- residential form, scale and massing as expressed by its two storey plan, one storey visible at the entry way and two storey height visible from the rear façade;
- flat and 'spiral helix' roof, exposed beams, and horizontal, asymmetrical massing;
- concrete construction with vertical V-joint cedar siding and curved concrete 'Denstone' block wall and chimney;
- West Coast Style details such as the use of local materials, the solid wood front door, the flat roof of the east façade and the 'spiral helix' roof of the west façade, all sides featuring wide flaring eaves and exposed wooden beams, smooth wall surfaces, windows set flush with the outer wall plane, and the relationship between the interior and exterior spaces;
- exterior architectural details such as exterior sections of original California stucco finish, poured concrete floors supported by concrete pillars, the 'transom inspired' angled wall of the second-storey spare bedroom, and the open car port of the east façade, which was constructed over living space;
- original windows such as its large two-storey fixed glass windows of the living room, small square reeded glass windows of the concrete block library wall, fixed-glass windows throughout the house and the solid wood panel front door with reeded glass sidelights; and
- associated landscape features such as the mature trees and plants including cedars, arbutus trees, Douglas firs, rhododendrons, and ferns, the original stone steps and stone walls located at both the front and rear of the house, and the original stone light pillars.

Interior Elements

- open floor plan with split-level concept;
- elevated concrete floor of the lower level of the house, which is supported by concrete pillars;
- concrete floor of the upper split-level of the residence;
- original fireplace with round hearth and tapered form in the library, which is connected to the central chimney;
- original granite-faced fireplace, which is incorporated with the concrete staircase above, and connected to the central chimney;
- central chimney which supports the weight of the main roof structure;
- cast-in-place concrete staircase that spirals clockwise down from the upper level to the lower level of the house;
- banister and balusters of the staircase;
- curved wall formed by the location of the central chimney, which is clad in vertical tongue-and-groove cedar siding;
- exposed bedrock, which is visible in the storage area of the house; and
- exposed wood beams that follow the unique roofline of the house.



Sykes Residence: South elevation by architect Peter Kaffka (1964)

4.0 CONSERVATION GUIDELINES

4.1 NATIONAL STANDARDS AND GUIDELINES

The Sykes Residence is an exceptional example of the West Coast Style and a significant historic resource located at 5616 Westport Place in West Vancouver. The Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010) is the source used to assess the appropriate level of conservation. Under the *Guidelines*, appropriate conservation strategies to historic sites include aspects of preservation, restoration and rehabilitation.

PRESERVATION: *the action or process of protecting, maintaining, and/or stabilizing the existing materials, form, and integrity of a historic place or of an individual component, while protecting its heritage value.*

RESTORATION: *the action or process of accurately revealing, recovering or representing the state of a historic place or of an individual component, as it appeared at a particular period in its history, while protecting its heritage value.*

REHABILITATION: *the action or process of making possible a continuing or compatible contemporary use of a historic place or an individual component, through repair, alterations, and/or additions, while protecting its heritage value.*

Future interventions to the Sykes Residence should be based upon the **Standards** outlined in the *Standards and Guidelines*, which are conservation principles of best practice. The following **General Standards** should be followed when carrying out any work to an historic property.

STANDARDS

Standards relating to all Conservation Projects

1. Conserve the heritage value of a historic place. Do not remove, replace, or substantially alter its intact or repairable character-defining elements. Do not move a part of a historic place if its current location is a character-defining element.
2. Conserve changes to a historic place, which over time, have become character-defining elements in their own right.
3. Conserve heritage value by adopting an approach calling for minimal intervention.
4. Recognize each historic place as a physical record of its time, place and use. Do not create a false sense of historical development by adding elements from other historic places or other properties or by combining features of the same property that never coexisted.
5. Find a use for a historic place that requires minimal or no change to its character defining elements.
6. Protect and, if necessary, stabilize a historic place until any subsequent intervention is undertaken. Protect and preserve archaeological resources in place. Where there is potential for disturbance of archaeological resources, take mitigation measures to limit damage and loss of information.
7. Evaluate the existing condition of character-defining element to determine the appropriate intervention needed. Use the gentlest means possible for any intervention. Respect heritage value when undertaking an intervention.
8. Maintain character-defining elements on an ongoing basis. Repair character-defining element by reinforcing the materials using recognized conservation methods. Replace in kind any extensively deteriorated or missing parts of character-defining elements, where there are surviving prototypes.
9. Make any intervention needed to preserve character-defining elements physically and visually compatible with the historic place and identifiable upon close inspection. Document any intervention for future reference.

Additional Standards relating to Rehabilitation

10. Repair rather than replace character-defining elements. Where character-defining elements are too severely deteriorated to repair, and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements. Where there is insufficient physical evidence, make the form, material and detailing of the new elements compatible with the character of the historic place.

11. Conserve the heritage value and character-defining elements when creating any new additions to a historic place and any related new construction. Make the new work physically and visually compatible with, subordinate to and distinguishable from the historic place.
12. Create any new additions or related new construction so that the essential form and integrity of a historic place will not be impaired if the new work is removed in the future.

Additional Standards relating to Restoration

13. Repair rather than replace character-defining elements from the restoration period. Where character-defining elements are too severely deteriorated to repair and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements.
14. Replace missing features from the restoration period with new features whose forms, materials and detailing are based on sufficient physical, documentary and/or oral evidence.

4.2 CONSERVATION REFERENCES

Recent interventions to the Sykes Residence addressed material deficiencies. The current condition of the exterior elevations and interior space are very good based on a visual review. Conservation work that may be carried out in the future should refer to the following conservation resources:

Parks Canada:
Standards and Guidelines for the Conservation of Historic Places in Canada, 2010.

U.S. National Park Service, Technical Preservation Services:

- *Preservation Brief 3: Improving Energy Efficiency in Historic Buildings.*
- *Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings.*
- *Preservation Brief 9: The Repair of Historic Wooden Windows.*
- *Preservation Brief 10: Exterior Paint Problems on Historic Woodwork.*
- *Preservation Brief 22: The Preservation and Repair of Historic Stucco.*
- *Preservation Brief 41: The Seismic Retrofit of Historic Buildings: Keeping Preservation in the Forefront.*
- *Preservation Brief 47: Maintaining the Exterior of Small and Medium Size Historic Buildings.*

4.3 GENERAL CONSERVATION STRATEGY

The Sykes Residence was designed by architect Peter Kaffka and constructed in 1964 for the original owner, Major Paul Sykes. After change of ownership, necessary exterior and interior rehabilitation work was carried out including the repair and replacement of deteriorated building materials. The overall heritage character and value of the Sykes Residence was retained. Based on a visual site review in October 2014, the general condition of the Sykes Residence appears to be very good. Only minimal maintenance work is recommended in order to preserve the heritage value and character of the historic house.

Proposed Design Scheme
The primary intent for the subject property is to preserve the Sykes Residence in situ, to legally designate the house under a proposed Heritage Revitalization Agreement, and to subdivide the lot in order to build a new single-family home. The development scheme for the new addition has been prepared by Synthesis Design Inc. and comprises a three-storey residential building plus subterranean parking level on the south side of the sloped lot.

New Additions to the Historic Site
The proposed design scheme considers the construction of a new residential home on the subdivided property. Parks Canada's *Standards and Guidelines* list the following recommendations for new additions to historic places.

- Designing a new addition in a manner that draws a clear distinction between what is historic and what is new.
- Design for the new work may be contemporary or may reference design motifs from the historic place. In either case, it should be compatible in terms of mass, materials, relationship of solids to voids, and colour, yet be distinguishable from the historic place.
- The new addition should be physically and visually compatible with, subordinate to and distinguishable from the preserved historic place.

The proposed design for the new home is expressed in a contemporary idiom and in the spirit of the West Coast Style:

- **Innovative** architectural design with complicated geometric forms;
- **Truth** in architecture and materials and rejecting false materials that mimic other materials qualities and/or appearance;
- **Space** with a sense of horizontal and vertical continuity in scale of the human need and function;
- **Light** in its daily and seasonal movements as an element of natural lighting.

The schematic design concept of the new home is respectful to the heritage character of the Sykes Residence and complies with Parks Canada's recommendations for new additions to historic sites.

4.4 SUSTAINABILITY STRATEGY

Sustainability is most commonly defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (*Common Future*. The Bruntland Commission). The four-pillar model of sustainability identifies four interlinked dimensions: **environmental, economic, social and cultural sustainability,** the latter including the built heritage environment.

Current research links sustainability considerations with the conservation of our built and natural environments. A competitive, sustainable economy requires the conservation of heritage buildings as an important component of a high quality urban environment.

> *"We need to use our cities, our cultural resources, and our memories in such a way that they are available for future generations to use as well. Historic preservation makes cities viable, makes cities liveable, makes cities equitable."* (*Economic Benefits of Preservation*, Sustainability and Historic Preservation)

Heritage conservation and sustainable development can go hand in hand with the mutual effort of all stakeholders. In a practical context, the conservation and re-use of historic and existing structures contributes to environmental sustainability by:

- Reducing solid waste disposal (reduced impact on landfills and their expansions);
- Saving embodied energy (defined as the total expenditure of energy involved in the creation of the building and its constituent materials);
- Conserving historic materials that are significantly less consumptive of energy than many new replacement materials (often local and regional materials, e.g. timber, brick, concrete, plaster, can be preserved and reduce the carbon footprint of manufacturing and transporting new materials).

The following considerations for energy efficiency in historic structures are recommended in the Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010) and can be utilized, if future interventions at the Sykes Residence are considered.

Sustainability Considerations

- Add new features to meet sustainability requirements in a manner that respects the exterior form and minimizes impact on character-defining elements.
- Work with sustainability and conservation specialists to determine the most appropriate solution to sustainability requirements with the least impact on the character-defining elements and overall heritage value of the historic building.
- Comply with energy efficiency objectives in a manner that minimizes impact on the character-defining elements and overall heritage value of the historic building.

Energy Efficiency Considerations

- Identifying the historic place's heritage value and character-defining elements — materials, forms, location, spatial configurations, uses and cultural associations or meanings.
- Complying with energy efficiency objectives in such a manner that character-defining elements are conserved and the heritage value maintained.
- Working with energy efficiency and conservation specialists to determine the most appropriate solution to energy conservation problems that will have the least impact on character-defining elements and the overall heritage value.
- Weighing the total environmental cost of energy saving measures against the overall environmental costs of retaining the existing features or fabric, when deciding whether to proceed with energy saving measures.

Buildings: Insulation

- Exercising caution and foreseeing the potential effects of insulating the building on the envelope system so as to avoid damaging changes such as displacing the dew point and creating thermal bridges.
- Installing thermal insulation in attics and in unheated cellars to increase the efficiency of the existing mechanical systems unless this could adversely affect the building envelope.
- Installing insulating material on the inside of masonry and wood-frame walls to increase energy efficiency where there is no character-defining interior moulding around the windows or other character-defining interior architectural detailing.

Buildings: Windows

- Utilizing the inherent energy conserving features of a building by maintaining character-defining windows in good operating condition for natural ventilation.
- Improving thermal efficiency with weather-stripping, storm windows, interior shades and, if historically appropriate, blinds and awnings.
- Installing interior storm windows with airtight gaskets, ventilating holes and/or removable clips to ensure proper maintenance and to avoid condensation damage to character-defining windows.
- Installing exterior storm windows that do not damage or obscure character-defining windows and frames.

Buildings: Mechanical Systems

- Improving the energy efficiency of existing mechanical systems by installing insulation in attics and basements, unless this could adversely affect the building envelope.

The conservation recommendations for the Sykes Residence recognize the need for sustainable interventions and adhere to the **Standards and Guidelines** as outlined.

4.5 HERITAGE EQUIVALENCIES AND EXEMPTIONS

As a significant heritage resource, the Sykes Residence may be eligible for heritage variances that will enable a higher degree of heritage conservation and retention of original material during conservation work that may be contemplated in the future, including considerations available under the following provincial legislation.

4.5.1 BRITISH COLUMBIA BUILDING CODE

Building Code upgrading ensures life safety and long-term protection for historic resources. It is important to consider heritage buildings on a case-by-case basis, as the blanket application of Code requirements do not recognize the individual requirements and inherent strengths of each building. Over the past few years, a number of equivalencies have been developed and adopted in the British Columbia Building Code (2012) that enable more sensitive and appropriate heritage building upgrades. For example, the use of sprinklers in a heritage structure helps to satisfy fire separation and exiting requirements. Table A-1.1.1.1., found in Appendix A of the Code, outlines the "Alternative Compliance Methods for Heritage Buildings."

Given that Code compliance is such a significant factor in the conservation of heritage buildings, the most important consideration is to provide viable economic methods of achieving building upgrades. In addition to the equivalencies offered under the current Code, the District can also accept the report of a Building Code Engineer as to acceptable levels of code performance.

4.5.2 ENERGY EFFICIENCY ACT

The provincial Energy Efficiency Act (Energy Efficiency Standards Regulation) was amended in 2009 to exempt buildings protected through heritage designation or listed on a community heritage register from compliance with the regulations. Energy Efficiency standards therefore do not apply to windows, glazing products, door slabs or products installed in heritage buildings. This means that exemptions can be allowed to energy upgrading measures that would destroy heritage character-defining elements such as original windows and doors.

These provisions do not preclude that heritage buildings must be made more energy efficient, but they do allow a more sensitive approach of alternate compliance to individual situations and a higher degree of retained integrity. Increased energy performance can be provided through non-intrusive methods of alternate compliance, such as improved insulation and mechanical systems. Please refer to the *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010) for further detail about "Energy Efficiency Considerations."

Front facade with open carport and curved library wall

4.5.3 HOMEOWNER PROTECTION ACT

Amendments to the Homeowner Protection Act Regulation made in 2010 allow for exemptions for heritage sites from the need to fully conform to the BC Building Code under certain conditions, thus removing some of the barriers to compliance that previously conflicted with heritage conservation standards and guidelines. The changes comprised

1. an amendment to the Homeowner Protection Act Regulation, BC Reg. 29/99 that allows a warranty provider, in the case of a commercial to residential conversion, to exclude components of the building that have heritage value from the requirement for a warranty, and
2. clarification of the definition of 'substantial reconstruction.' The latter clarification explains that 75% of a home must be reconstructed for it to be considered a 'new home' under the Homeowner Protection Act, thus enabling single-family dwelling to multi-family and strata conversions without the Act now coming into play. The definition of a heritage building is consistent with that under the Energy Efficiency Act.

4.6 SITE PROTECTION

The Sykes Residence appears to be generally in very good condition. If future interventions are proposed to the historic house that require to temporarily vacate the building, it is the responsibility of the owner to ensure the historic structure is protected from potential risks such a physical or environmental damage or unauthorized access at all times. Therefore a range of precautionary measures for the protection of an historic resource is recommended while conservation work is being carried out.

The following checklist will ensure that future work items for the protection during the temporary vacancy of a historic structure are not inadvertently omitted and the heritage site secured.

Moisture
- Is the roof watertight? If not, repair or install temporary cover.
- Is exterior cladding in good condition to keep water out?
- Is the site of the temporary location properly graded for water run-off?

Ventilation
- Have steps been taken to ensure proper ventilation of the building?
- Have interior doors been left open for ventilation purposes?
- Has the secured building been checked within the last 3 months for interior dampness or excessive humidity?

Pests
- Have nests/pests been removed from the building's interior and eaves?
- Are adequate screens in place to guard against pests?
- Has the building been inspected and treated for termites, carpenter ants, rodents, etc.?

Security
- Are smoke and fire detectors in working order?
- Are wall openings boarded up and exterior doors securely fastened?
- Are plans in place to monitor the building on a regular basis?
- Are the keys to the building in a secure but accessible location?
- Are the grounds being kept from becoming overgrown?
- Have the following been removed from the interior: trash, hazardous materials such as inflammable liquids, poisons, and paints and canned goods that could freeze and burst?
- Is the site securely fenced and regularly patrolled?
- Is the building signed identifying it as a protected heritage building with a phone number for citizens to call with questions or concerns?

Original landscape features at the front of the house including original stone walls, steps and light pillars.

5.0 CONDITION REVIEW AND CONSERVATION RECOMMENDATIONS

A visual condition review of the exterior elevations and interior space of the 1964 Sykes Residence was carried out during a site visit in October 2014. The historic house retains a high level of historic integrity and the existing materials are generally in very good condition. The proposed Heritage Revitalization Agreement considers a new residential home on the subject property and the preservation of the historic house in situ. The following chapter describes the materials, physical condition and recommended conservation strategy for the Sykes Residence. The conservation recommendations are based on Parks Canada's *Standard and Guidelines for the Conservation of Historic Places in Canada* (2010).

5.1 SITE

The Sykes Residence was built at 5616 Westport Place in West Vancouver on an irregular lot that principally stretches in north-south direction. The residential neighbourhood is characterized by low-rise family homes built into the cliffside with rugged and densely forested terrain. The topographic survey illustrates the steep slope of the subject lot, which drops from the upper level of the historic house at 371.60 feet above sea level approximately 100 feet to the lowest point of the property at the southeast corner. The significant changes in grade allow for expansive and unobstructed views from the Sykes Residence to the Strait of Georgia and Bowen Island. This is an important character-defining element of the historic site and should be preserved.

Access to the front entrance and carport is from a blacktop cul-de-sac. The landscape features at the front of the house include stone steps, low stone walls and stone light pillars. The natural setting at the rear of the house with mature trees and rugged terrain was basically preserved except for retaining walls and concrete pillars to support the elevated home. A preliminary geotechnical site assessment suggests that rootwork of some mature trees on the south side of the house may have caused instability to sections of the bedrock and remedial work may be required.

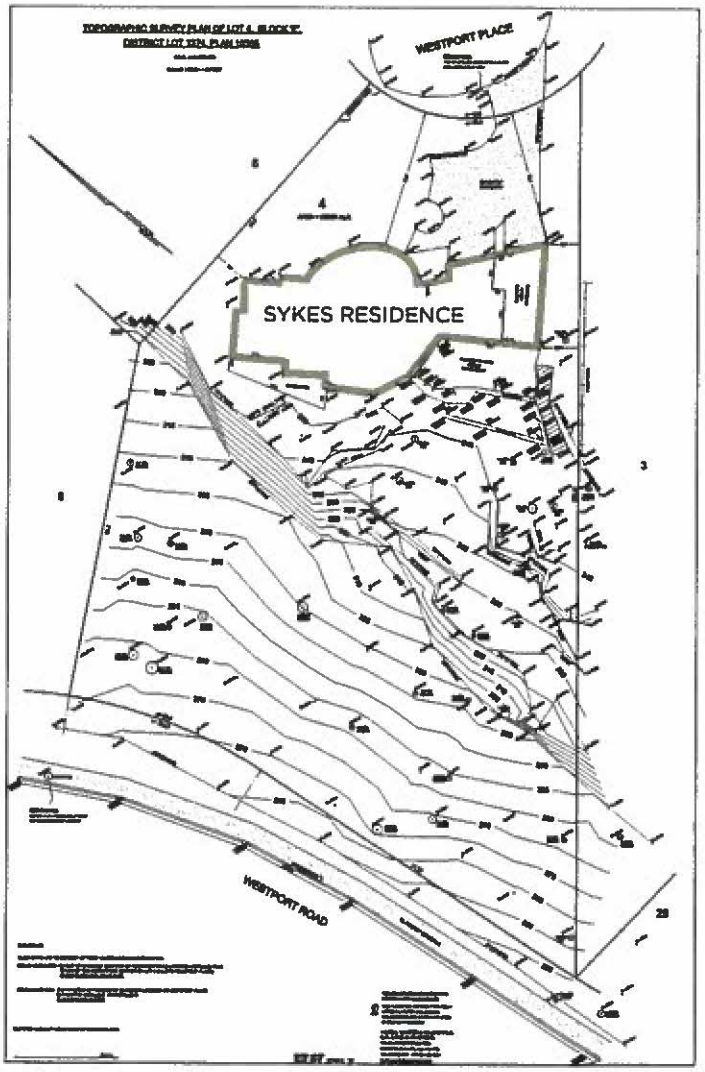
It is proposed to subdivide the subject property and to construct a new three-storey home plus subterranean parking level on the south side of the sloping lot. This intervention is generally acceptable due to the topography of the site. The new construction should not diminish the unobstructed views from the Sykes Residence.

CONSERVATION RECOMMENDATION: PRESERVATION OF THE HISTORIC HOUSE

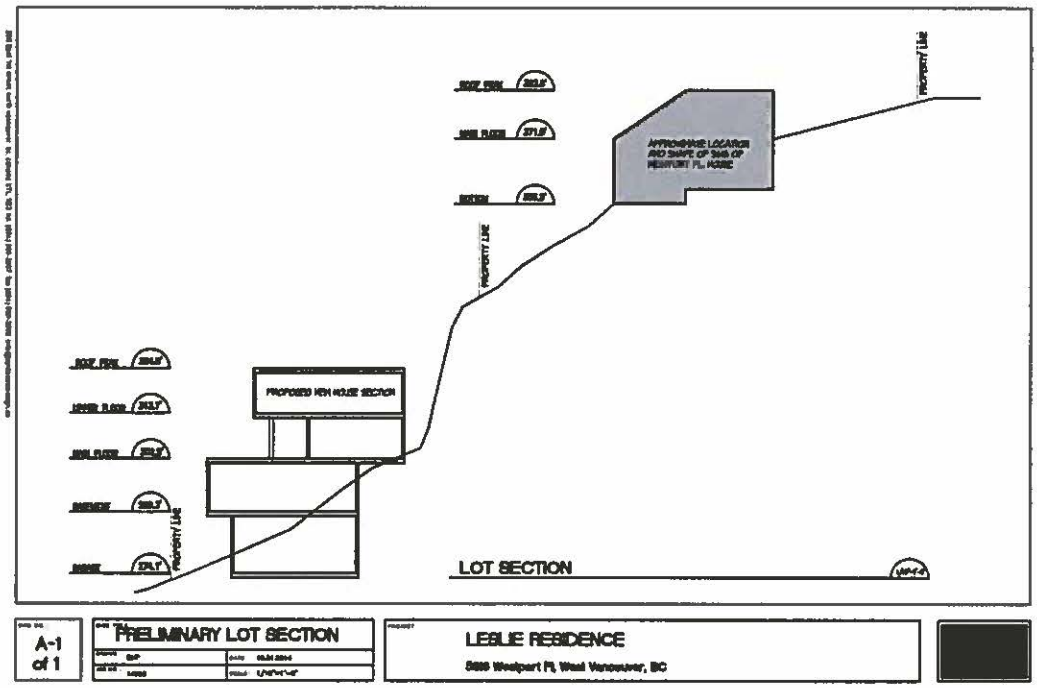
- Preserve the historic house in its original location.
- Future work should consider the retention of landscape features including stone walls and light pillars at the front of the house. Repair deteriorated elements with appropriate in-kind materials where necessary.
- Potential geotechnical instabilities caused by mature vegetation should be carefully mitigated and coordinated by a professional engineer.
- The new addition on the subdivided lot is adequately located on the site and preserves the expansive views from the historic house.
- The design of the new addition should be compatible with, distinguishable from and subordinate to the historic house. The design of the new addition should follow recommendations listed in the Parks Canada *Standards and Guidelines* (4.3 General Conservation Strategy).

TOPOGRAPHIC SURVEY AND PROPOSED SCHEMATIC DESIGN CONCEPT

VIEW FROM LIVING ROOM OF THE SYKES RESIDENCE



TOPOGRAPHIC SURVEY
HOBBS, WINTER & MACDONALD, B.C. LAND SURVEYORS, 2009



LOT SECTION WITH SCHEMATIC DESIGN CONCEPT
SYKES RESIDENCE AT TOP, PROPOSED NEW CONSTRUCTION BELOW
SYNTHESIS DESIGN INC. , 2014

VIEW FROM SOUTH DECK, SYKES RESIDENCE

5.2 FORM, SCALE AND MASSING

The two-storey Sykes Residence features a residential form and scale with one storey visible at the entry way and two-storey height visible from the rear façade. The asymmetrical massing is typical for the West Coast Style and was preserved at the subject property during later interventions. Alterations include the construction of two wooden decks on the south side, which are not original to the house but are reversible interventions. The overall form, scale and massing of the house is a character-defining element and should be preserved in the future. If additions or alterations to the original volume of the Sykes Residence are considered, the proposed design should be reviewed by a heritage consultant to ensure they follow good conservation practice and do not diminish the heritage value and character of the historic house.

CONSERVATION RECOMMENDATION: PRESERVATION

- Preserve the overall form, scale and massing of the original house.
- If interventions are proposed in the future, they should be assessed by a heritage consultant and comply with Parks Canada's *Standards and Guidelines*.

5.3 FOUNDATION

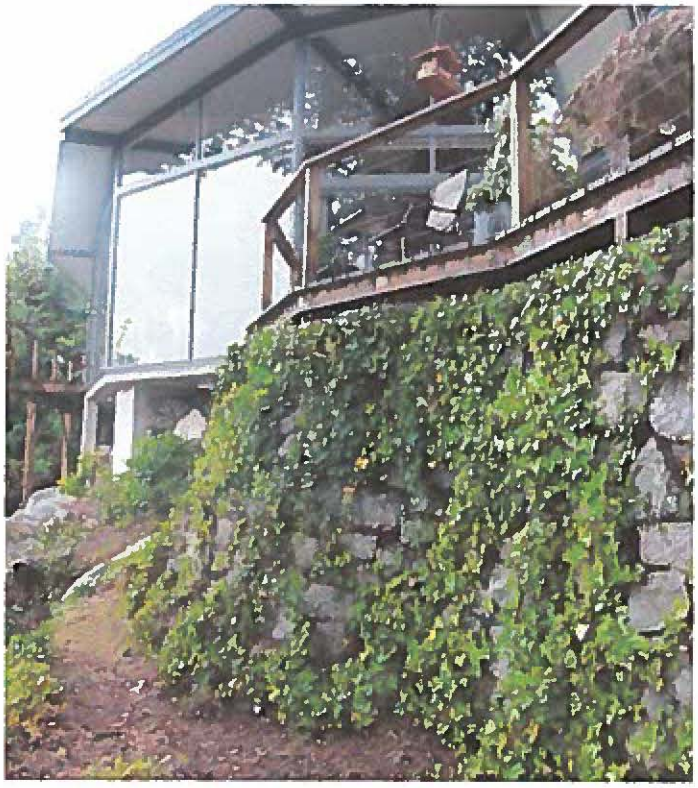
The Sykes Residence is built into the cliffside and the bedrock is incorporated into the poured-in-place concrete foundation along with the stone retaining walls on the south side that support the cantilevered house. The concrete foundation appears to be in good condition and subsidence was not observed during the visual review. In localized areas signs of efflorescence were noted on concrete surfaces, particular where material changes between concrete foundation walls and bedrock occur. It appears these are merely of aesthetic and not of structural concerns, but a structural review may be carried out. The cantilevered concrete slab of the lower floor is supported by structural concrete pillars, while the retaining wall below the carport was constructed with granite blocks. The granite retaining wall on the south side is covered with ivy, which is well adopted for living in woodlands and thrives well where light levels are low. It has its feeding roots anchored in the ground and climbs up trees or walls with strong adhesive to rough surfaces. This can lead to ivy stems penetrating the mortar of masonry walls and breaking up the structure. Ivy removal should be carefully undertaken without further structural damage to the mortar joints or waterproofing problems.

Concrete pillars support the cantilevered floor slab of the living room

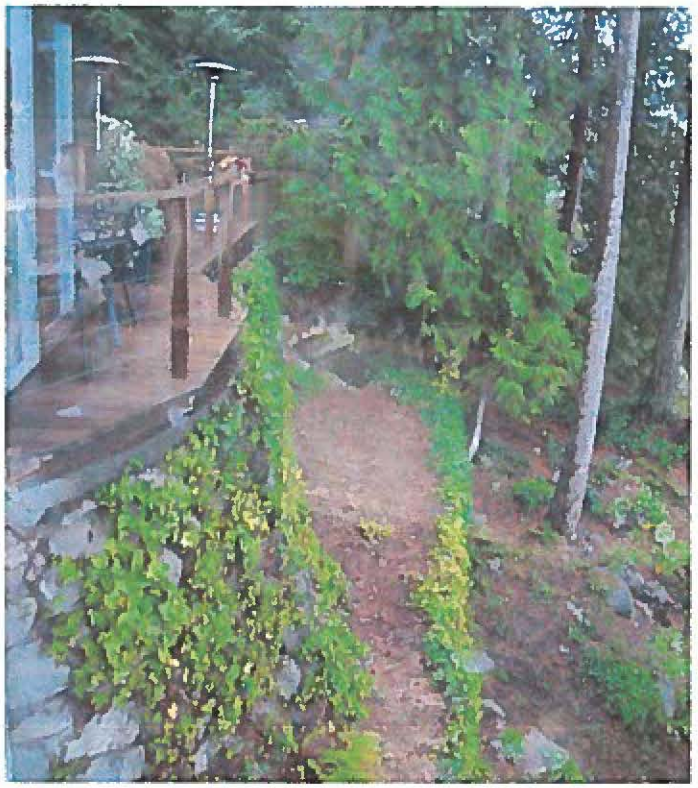
CONSERVATION RECOMMENDATION: PRESERVATION

- Preserve the historic foundation walls, concrete pillars and stone retaining walls.
- Carefully remove ivy from the stone retaining wall. Rake loose mortar and repoint with suitable mortar of lower compressive strength than the existing granite blocks. Mortar colour to match existing.
- If future seismic upgrades or structural interventions are contemplated, the work should not diminish character-defining elements and the design should be sympathetic to the historic character of the house.

Concrete foundation wall built into bedrock



Granite retaining wall covered with ivy



Grade changes on the south side of Sykes Residence

5.4 EXTERIOR WALLS

5.4.1 CONCRETE BLOCKS

A significant architectural feature of the Sykes Residence is a curved cinder concrete block wall on the north side of the house and identified as 'Denstone' blocks on the original architectural drawings. The square shaped concrete blocks in medium grey colour and smooth surface are laid in stack bond pattern. The mortar joints feature a lighter grey colour and are almost flush with the concrete blocks. The curved concrete block wall and mortar joints are in good condition and signs of cracking, spalling, or other damage was not observed. The curved cinder block wall should be preserved as a character-defining element.

CONSERVATION RECOMMENDATION: PRESERVATION

- Preserve the curved concrete block wall.
- Cleaning should only be carried out only if necessary and with the mildest cleaning method possible, starting with a mild water rinse. High-pressure power washing, abrasive cleaning or sandblasting should not be allowed under any circumstances on any original building materials of the house.
- Repointing should only be undertaken if existing mortar shows signs of deterioration. New mortar to match existing in composition, colour and joint profile.

5.4.2 STUCCO RENDER

Originally sections of the exterior walls were finished with California stucco. Areas featuring the original finish are still extant on the southwest elevation of the upper floor. The render is in good condition and should be preserved as an important architectural feature.

In locations where prolonged water ingress severely damaged the original stucco render, for example at the southeast elevation near the kitchen, the original cladding was removed and replaced with cedar shingles. This substitute material is not original to the architectural design and if replacement is required in the future, the original California stucco finish should be reinstated.

CONSERVATION RECOMMENDATION: PRESERVATION

- Sections with original California stucco finish are in good condition and should be preserved. If future repair work is required, appropriate repair materials matching the original in material and surface finish should be used.
- Later shingle siding is not original to the house and if renewal is required in the future, remove the shingles and reinstate the California stucco finish to match original.

Original 'Denstone' block wall

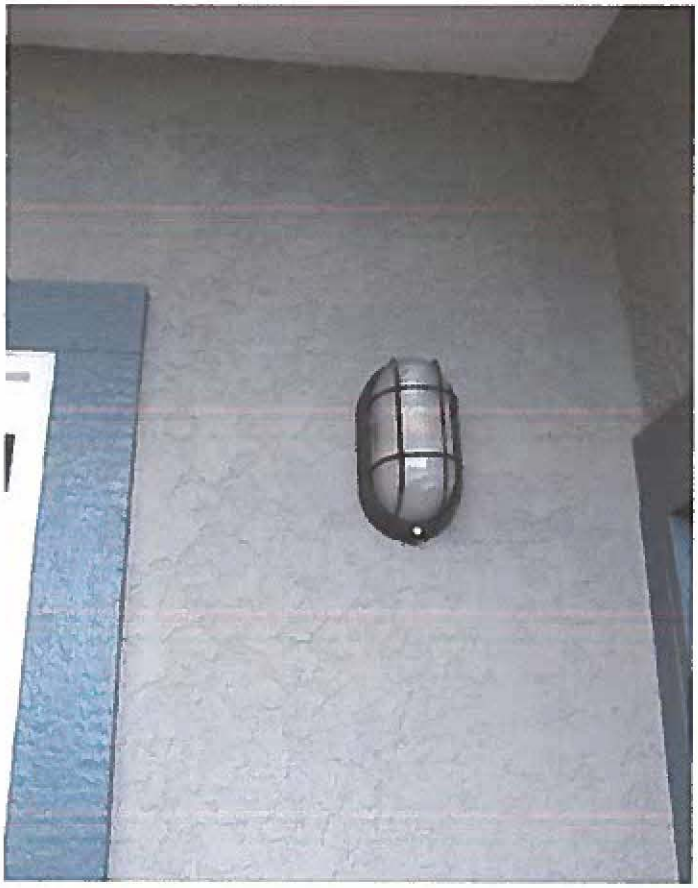
5.4.3 WOOD SIDING

The Sykes Residence features vertical V-jointed cedar siding on the angled upper bedroom floor, which is original to the house and an important architectural feature. Based on a visual review the original siding appears to be in good condition and is well protected by a wide roof overhang. The vertical cedar siding is also installed on the interior walls of the open carport and the staircase walls leading to the lower floor.

CONSERVATION RECOMMENDATION: PRESERVATION

- Original vertical cedar siding should be preserved as a character-defining element.
- If deterioration will be detected in the future, damaged material should be restored in place. Only severely damaged or deteriorated panels should be replaced with new siding to match original in material, size, profile and thickness.

Carport walls finished with original wood siding



Original stucco finish

Angled upper wall with original wood siding, lower level with new cedar shingles

5.5 EXTERIOR TRIM

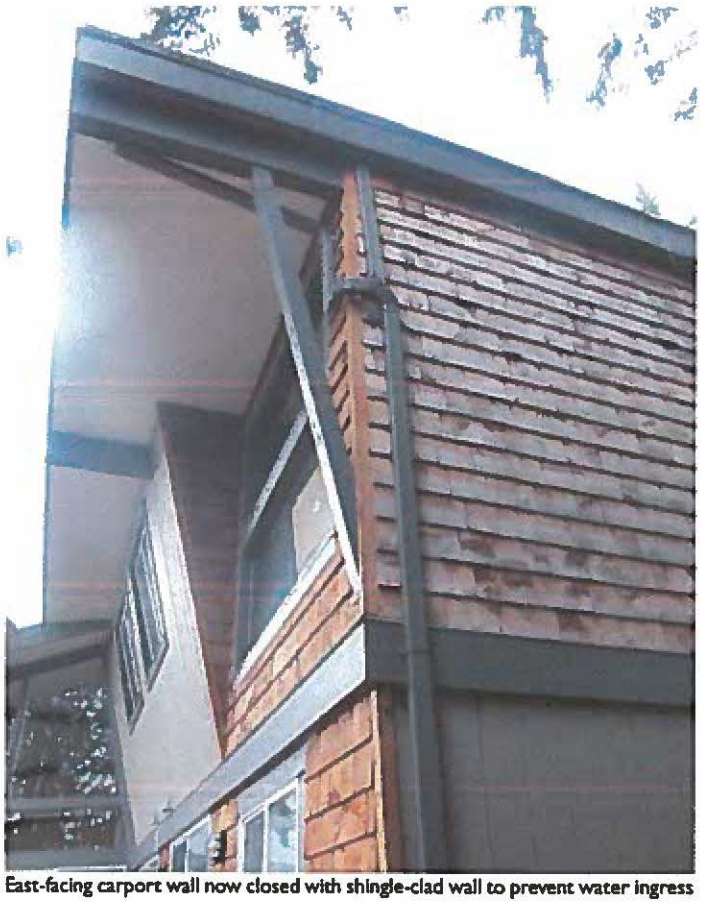
Recent building repairs due to moisture damage required the replacement of some original wooden trim elements. This work included the installation of new wooden fascia boards around the house, and new wooden cornerboards and window trim in locations where new cedar shingle and replacement windows were installed. In particular the south-facing windows at the lower level experienced severe water damage from the open carport above. The new window trim is similar in design to the original elements, which are extant on the upper level and protected by wide roof overhangs, however the original sill detailling was not exactly replicated. In areas where repair work occurred, the newly installed white flashings do no match the colour of the surrounding materials, mostly dark painted trim elements. Future work should consider to repaint the new flashings to match the adjacent trim colour. The original front door trim appears to be extant. Original window trim elements that are still extant should be preserved and repaired in situ if necessary. Wood elements that are too deteriorated to be repaired should be replaced with replica to match the original design.

CONSERVATION STRATEGY: PRESERVATION

- Preserve and maintain original trim elements on the exterior elevations.
- If future replacement is required, install new material matching original in design, material, and profile in order to restore the original appearance.
- Combed and/or textured lumber, fibre cement and vinyl materials are not acceptable as replacement materials on the exterior elevations of the historic house.

5.6 FENESTRATION

Windows and doors are among the most conspicuous feature of any building. In addition to their function — providing light, views, fresh air and access to the building — their arrangement and design is fundamental to the building's appearance and heritage value. Each element of fenestration is, in itself, a complex assembly whose function and operation must be considered as part of its conservation.
Standards and Guidelines for the Conservation of Historic Places in Canada (2010).



East-facing carport wall now closed with shingle-clad wall to prevent water ingress

5.6.1 WINDOWS

Natural light was considered one of the key design elements of West Cost Style homes and the Sykes Residence features large floor-to-ceiling windows providing ample daylight of the two-storey living room. The single-pane fixed glass windows are installed in their original wood frames. They are important architectural elements and should be preserved. Additional windows original to the house are square reeded glass windows of the library block wall. They repeat the patterned semi-obscure glass design of the original front entry sidelights. Original aluminum windows located, for example, in the kitchen were in recent years replaced with new aluminum sliding units.

CONSERVATION STRATEGY: PRESERVATION

- The original floor-to-ceiling windows in the living room, square reeded glass windows and other original window assemblies should be preserved as character-defining elements.
- Regularly inspect for condition and complete detailed window inventory to determine extent of recommended repairs. Repair as required using in-kind repair techniques where feasible.
- Retain historic glass. Where broken glass exists in historic wood-frame windows, the broken glass should be replaced with visually and physically compatible glazing. A contractor trained in the repair of historic sash windows and with experience in working on heritage buildings should be retained to carry out window restoration work if required in the future.
- Replacement windows should be sympathetic in their design and match the original in material, style, detailling, profile thickness and operating mechanism.

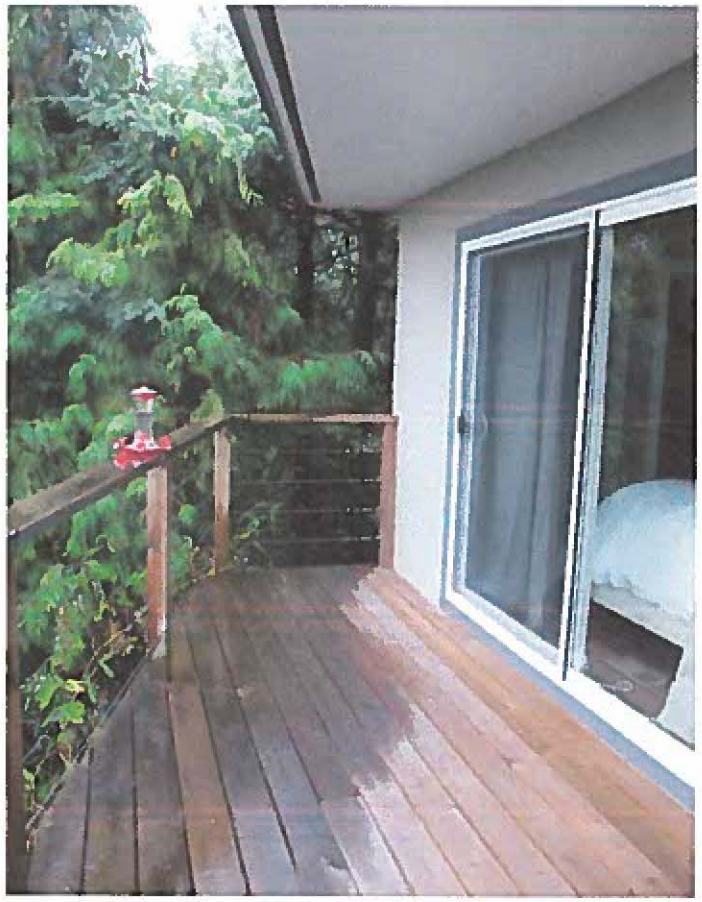
5.6.2 DOORS

The original solid wood front door with reeded glass sidelights in original wood frames are extant. The assembly is a character-defining element of the Sykes Residence. The recessed entry door is well protected from the environment and in very good condition.

A second wooden entrance door exists at the lower level and is accessed from the carport via a wooden staircase. Two pairs of new sliding glass doors were installed in the master bedroom and adjacent bedroom. They replaced original window openings and the doors provide access to the newly built exterior deck on the south side.

CONSERVATION STRATEGY: PRESERVATION

- The front door assembly with reeded glass sidelights is a character-defining element and should be preserved in situ.
- The original secondary door at the lower should be retained, if possible.
- Repairs should only be carried out if necessary and with appropriate conservation methods.



New south deck and new sliding doors

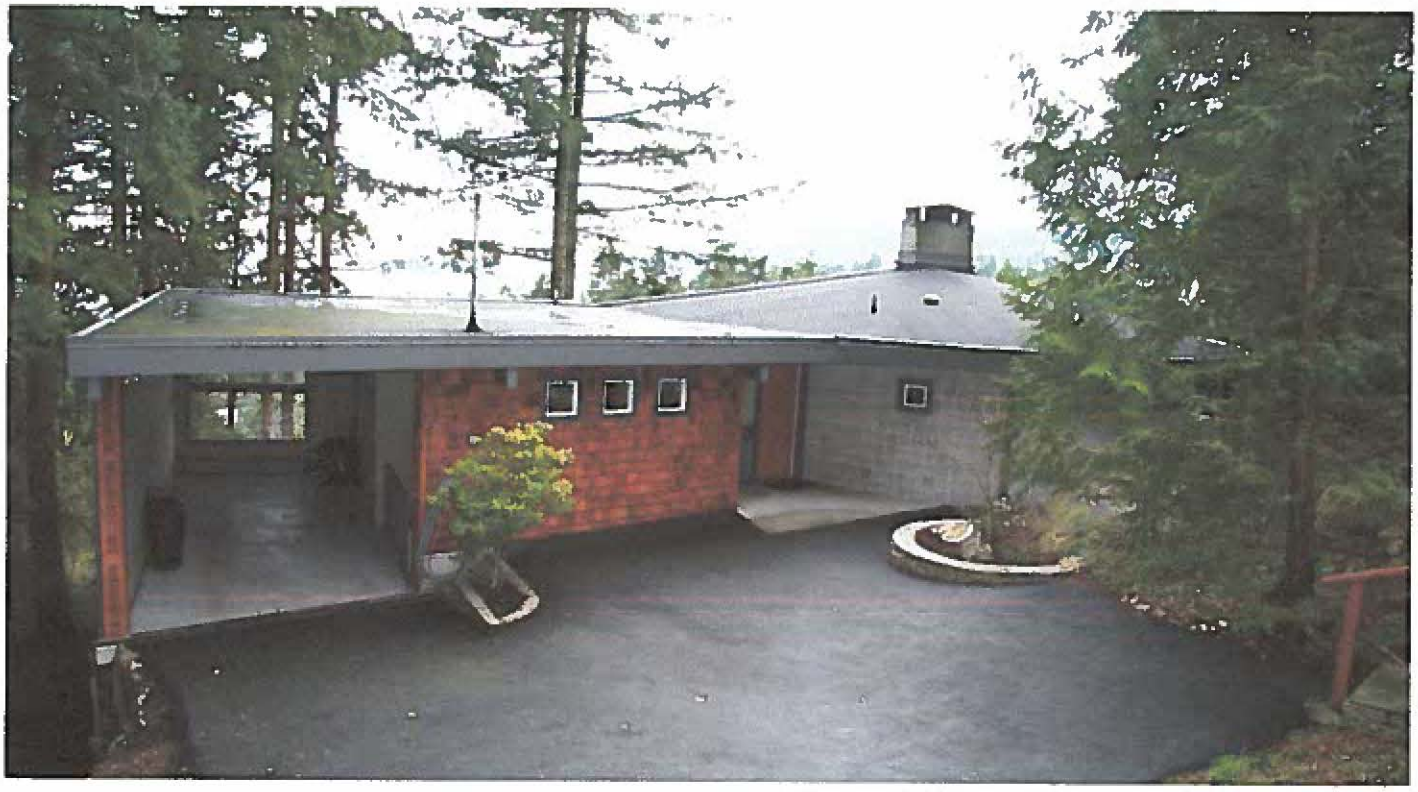
Original front door assembly with reeded sidelights

5.7 ROOF & CHIMNEY

The Sykes Residence features a 'spiral-helix' roof above the main body of the house and a flat roof over the carport. The roof structure is an expression of the innovative design typical for West Coast Style homes. The wide-flaring eaves are important features and protect the envelope from direct rainwater. The roofing materials and membranes were repaired with torch down roof in recent years that provides good waterproofing capabilities to the flat and sloped roofs. Additional metal flashings assist in shedding rainwater from the roof and protecting the envelope. New rainwater leaders and downspouts drain the water away from the building. During the recent site visit some standing water and accumulated organic debris on the flat carport roof was noted.

Regular inspections to detect damage of the roof membrane and removal of build-up debris and cleaning of clogged downspouts ensure that rainwater drains freely and prevents water penetration and material deterioration.

A central chimney built in 'Denstone' concrete blocks provides structural support to the main roof. The exterior face of the cinder blocks, laid in stack bond pattern, and flush mortar joints show signs of biological growth, which should be carefully removed. The new metal flashings appear to be in good condition. The roof design and chimney are important architectural features of the Sykes Residence and will be preserved.



Flat roof above carport and office

CONSERVATION RECOMMENDATION: PRESERVATION

- The original 'spiral-helix' roof, flat roof and cinder block chimney will be preserved as character-defining elements.
- Regular inspection and cleaning of the roof and flashings should be carried out and repairs undertaken where necessary. If roof elements are deteriorated beyond repair, replace with new material that is physically and visually compatible.
- Investigate condition of cinder blocks and mortar joints. If required, masonry may be repointed and cleaned using a natural bristle brush and clean water rinse.
- The rainwater disposal system should be adequately designed and regularly maintained to ensure drainage from the site.
- Trimming of trees in close proximity to the house will help to reduce organic debris accumulating on the roof.

5.8 EXTERIOR COLOUR SCHEDULE

The existing paint on the exterior elevations will be retained. If repainting in the future is considered, a heritage consultant should develop an authentic colour schedule based on on-site investigations.

CONSERVATION RECOMMENDATION: PRESERVATION

- Retain the existing paint schedule.
- Future site investigation should determine the authentic finish, hue and placement of applied colour.

'Spiral-helix' roof with central chimney above library

5.9 INTERIOR ARCHITECTURAL ELEMENTS

The 1964 Sykes Residence retains a high level of historic integrity including interior architectural features that date to the original construction. They include the following character-defining elements listed in the Statement of Significance:

Interior Elements

- open floor plan with split-level concept;
- elevated concrete floor of the lower level of the house, which is supported by concrete pillars;
- concrete floor of the upper split-level of the residence;
- original fireplace with round hearth and tapered form in the library, which is connected to the central chimney;
- original granite-faced fireplace, which is incorporated with the concrete staircase above, and connected to the central chimney;
- central chimney which supports the weight of the main roof structure;
- cast-in-place concrete staircase that spirals clockwise down from the upper level to the lower level of the house;
- banister and balusters of the staircase;
- curved wall formed by the location of the central chimney, which is clad in vertical tongue-and-groove cedar siding;
- exposed bedrock, which is visible in the storage area of the house; and
- exposed wood beams that follow the unique roofline of the house.

These interior elements contribute to the historic character and heritage value of the 1964 Sykes Residence. In recent years some alterations to the interior were carried out including the replacement of historic carpeting with hardwood flooring, the installation of new floor tiles in the hallway, and the modernization of the kitchen and bathrooms. These interventions are sympathetic to the historic character of the house and meet modern user requirements.

Building Code upgrading is one of the most important aspects of heritage building rehabilitation, as it ensures life safety and long-term protection for the resource. However, the interior features of an historic property are often heavily altered in the process. The British Columbia Building Code offers equivalencies and exemptions to heritage buildings, which enable a higher degree of heritage conservation and retention of original material. The following guidelines pertaining to Health, Safety and Security Considerations from the *Standards and Guidelines* should be followed when faced with the conservation of interior character-defining elements:

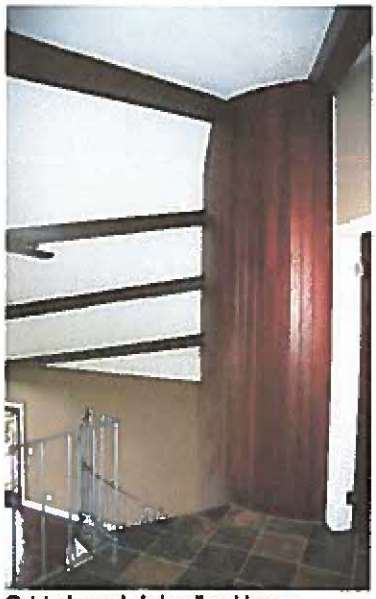
- Upgrade interior features to meet health, safety and security requirements, if required and in a manner that preserves the existing feature and minimizes impact on its heritage value.
- Work with code specialists to determine the most appropriate solution to health, safety and security requirements with the least impact on the character-defining elements and overall heritage value of the historic building.
- Explore all options for modifications to existing interior features to meet functional requirements prior to considering removal or replacement.
- Remove or encapsulate hazardous materials, such as friable asbestos insulation, using the least-invasive abatement methods possible, and only after thorough testing has been conducted.
- Install sensitively designed fire-suppression systems that retain character-defining elements and respect heritage value.

The following conservation recommendations are applicable, if future interventions to the interior architectural elements of the Sykes Residence are considered.

CONSERVATION RECOMMENDATION: PRESERVATION

- Proposed interior alterations should aim to preserve or restore character-defining elements in their original locations.
- Preserve the original interior layout of the Sykes Residence, if possible.
- Only if interventions are required to satisfy structural, electrical, mechanical or code requirements or to meet modern user needs, they should be carefully designed and interior features salvaged and reinstated in their original locations.
- The primary conservation strategy should be to minimize interventions that could potentially damage character-defining elements and surviving interior features.
- Proposed alterations should be reviewed by a heritage consultant to ensure that the historic character and heritage value of the Sykes Residence are being preserved and work is being done in accordance with Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada*.

Original floor-to-ceiling windows in living room



Original wood clad wall and beams

Concrete stair above granite-faced fireplace

Original concrecte block fireplace. Decorative pebbles are a later intervention.

6.0 MAINTENANCE PLAN

A Maintenance Plan should be adopted by the property owner, who is responsible for the long-term protection of the heritage features of the historic building. The Maintenance Plan should include provisions for:

- Copies of the Maintenance Plan and this Conservation Report to be incorporated into the terms of reference for the management and maintenance contract for the building;
- Cyclical maintenance procedures to be adopted as outlined below;
- Record drawings and photos of the building to be kept by the management / maintenance contractor; and
- Records of all maintenance procedures to be kept by the owner.

A thorough maintenance plan will ensure the integrity of Sykes Residence is preserved. If existing materials are regularly maintained and deterioration is significantly reduced or prevented, the integrity of materials and workmanship of the building will be protected. Proper maintenance is the most cost effective method of extending the life of a building, and preserving its character-defining elements. The survival of historic buildings in good condition is primarily due to regular upkeep and the preservation of historic materials.

6.1 MAINTENANCE GUIDELINES

A maintenance schedule should be formulated that adheres to the *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010). As defined by the Standards and Guidelines, maintenance is defined as:

> *Routine, cyclical, non-destructive actions necessary to slow the deterioration of a historic place. It entails periodic inspection; routine, cyclical, non-destructive cleaning; minor repair and refinishing operations; replacement of damaged or deteriorated materials that are impractical to save.*

The assumption that newly renovated buildings become immune to deterioration and require less maintenance is a falsehood. Rather, newly renovated buildings require heightened vigilance to spot errors in construction where previous problems had not occurred, and where deterioration may gain a foothold.

Routine maintenance keeps water out of the building, which is the single most damaging element to a heritage building. Maintenance also prevents damage by sun, wind, snow, frost and all weather; prevents damage by insects and vermin; and aids in protecting all parts of the building against deterioration. The effort and expense expended on an aggressive maintenance will not only lead to a higher degree of preservation, but also over time potentially save large amount of money otherwise required for later repairs.

6.2 PERMITTING

Once the proposed development is completed, any repair activities at the Sykes Residence, such as simple in-kind repair of materials, should be exempt from requiring municipal permits. Other more intensive activities will require the issuance of a Heritage Alteration Permit.

6.3 ROUTINE, CYCLICAL AND NON-DESTRUCTIVE CLEANING

Following the *Standards and Guidelines for the Conservation of Historic Places in Canada*, be mindful of the principle that recommends "using the gentlest means possible". Any cleaning procedures should be undertaken on a routine basis and should use non-destructive methods. Exterior elements are usually easily cleaned, simply with a soft, natural bristle brush, without water, to remove dirt and other material. If a more intensive cleaning is required, this can be accomplished with warm water, mild detergent and a soft bristle brush. High-pressure washing, sandblasting or other abrasive cleaning should not be undertaken under any circumstances.

6.4 REPAIRS AND REPLACEMENT OF DETERIORATED MATERIALS

Interventions such as repairs and replacements must conform to the *Standards and Guidelines for the Conservation of Historic Places in Canada*. The building's character-defining elements – characteristics of the building that contribute to its heritage value (and identified in the Statement of Significance) such as materials, form, configuration, etc. - must be conserved, referencing the following principles to guide interventions:

- An approach of minimal intervention must be adopted - where intervention is carried out it will be by the least intrusive and most gentle means possible.

- Repair rather than replace character-defining elements.
- Repair character-defining elements using recognized conservation methods.
- Replace 'in kind' extensively deteriorated or missing parts of character-defining elements.
- Make interventions physically and visually compatible with the historic place.

6.5 INSPECTIONS

Inspections are a key element in the maintenance plan, and should be carried out by a qualified person or firm, preferably with experience in the assessment of heritage buildings. These inspections should be conducted on a regular and timely schedule. The inspection should address all aspects of the building including exterior, interior and site conditions. It makes good sense to inspect a building in wet weather, as well as in dry, in order to see how water runs off – or through – a building.

From this inspection, an inspection report should be compiled that will include notes, sketches and observations. It is helpful for the inspector to have copies of the building's elevation drawings on which to mark areas of concern such as cracks, staining and rot. These observations can then be included in the report. The report need not be overly complicated or formal, but must be thorough, clear and concise. Issues of concern, taken from the report should then be entered in a log book so that corrective action can be documented and tracked.

An appropriate schedule for regular, periodic inspections would be twice a year, preferably during spring and fall. The spring inspection should be more rigorous since in spring moisture-related deterioration is most visible, and because needed work, such as painting, can be completed during the good weather in summer. The fall inspection should focus on seasonal issues such as weather-sealants, mechanical (heating) systems and drainage issues. Comprehensive inspections should occur at five-year periods, comparing records from previous inspections and the original work, particularly in monitoring structural movement and durability of utilities. Inspections should also occur after major storms.

6.6 INFORMATION FILE

The building should have its own information file where an inspection report can be filed. This file should also contain the log book that itemizes problems and corrective action. Additionally, this file should contain building plans, building permits, heritage reports, photographs and other relevant documentation so that a complete understanding of the building and its evolution is readily available, which will aid in determining appropriate interventions when needed.

The file should also contain a list outlining the finishes and materials used, and information detailing where they are available (store, supplier). The building owner should keep on hand a stock of spare materials for minor repairs.

LOG BOOK

The maintenance log book is an important maintenance tool that should be kept to record all maintenance activities, recurring problems and building observations and will assist in the overall maintenance planning of the building. Routine maintenance work should be noted in the maintenance log to keep track of past and plan future activities. All items noted on the maintenance log should indicate the date, problem, type of repair, location and all other observations and information pertaining to each specific maintenance activity. Each log should include the full list of recommended maintenance and inspection areas noted in this Maintenance Plan, to ensure a record of all activities is maintained. A full record of these activities will help in planning future repairs and provide valuable building information for all parties involved in the overall maintenance and operation of the building, and will provide essential information for long term programming and determining of future budgets. It will also serve as a reminded to amend the maintenance and inspection activities should new issues be discovered or previous recommendations prove inaccurate. The log book will also indicate unexpectedly repeated repairs, which may help in solving more serious problems that may arise in the historic building. The log book is a living document that will require constant adding to, and should be kept in the information file along with other documentation noted in section **6.6 Information File.**

6.7 EXTERIOR MAINTENANCE

Water, in all its forms and sources (rain, snow, frost, rising ground water, leaking pipes, back-splash, etc.) is the single most damaging element to historic buildings. The most common place for water to enter a building is through the roof. Keeping roofs repaired or renewed is the most cost-effective maintenance option. Evidence of a small interior leak should be viewed as a warning for a much larger and worrisome water damage problem elsewhere and should be fixed immediately.

6.7.1 INSPECTION CHECKLIST

The following checklist considers a wide range of potential problems specific to the Sykes Residence, such as water/ moisture penetration, material deterioration and structural deterioration.

EXTERIOR INSPECTION

Site Inspection
Is the lot well drained? Is there pooling of water?
Does water drain away from foundation?

Foundation
Moisture: Is rising damp present?
Is there back splashing from ground to structure?
Is any moisture problem general or local?
Is spalling from freezing present? (Flakes or powder?)
Is efflorescence present?
Is spalling from sub-fluorescence present?
Is damp proof course present?
Are there shrinkage cracks in the foundation?
Are there movement cracks in the foundation?
Is crack monitoring required?
Is uneven foundation settlement evident?
Are foundation crawl space vents clear and working?

Wood Elements
Are there moisture problems present? (Rising damp, rain penetration, condensation moisture from plants, water run-off from roof, sills, or ledges?)
Is wood in direct contact with the ground?
Is there insect attack present? Where and probable source?
Is there fungal attack present? Where and probable source?
Are there any other forms of biological attack? (Moss, birds, etc.) Where and probable source?
Is any wood surface damaged from UV radiation? (bleached surface, loose surface fibre)
Is any wood warped, cupped or twisted?
Is any wood split? Are there loose knots?
Are nails pulling loose or rusted?
Is there any staining of wood elements? Source?
Condition of Exterior Painted Materials:

- Paint shows: blistering, sagging or wrinkling, alligatoring, peeling. Cause?
- Paint has the following stains: rust, bleeding knots, mildew, etc. Cause?
- Paint cleanliness, especially at air vents?

Windows
Is there glass cracked or missing?
Are the seals of double glazed units effective?
If the glazing is puttied has it gone brittle and cracked? Fallen out? Painted to shed water?
If the glass is secured by beading, are the beads in good condition?
Is there condensation or water damage to the paint?
Are the sashes easy to operate? If hinged, do they swing freely?
Is the frame free from distortion?
Do sills show weathering or deterioration?
Are drip mouldings/flashing above the windows properly shedding water?
Is the caulking between the frame and the cladding in good condition?

Doors
Do the doors create a good seal when closed?
Are the hinges sprung? In need of lubrication?
Do locks and latches work freely?
Are door frames wicking up water? Where? Why?
Are door frames caulked at the cladding? Is the caulking in good condition?
What is the condition of the sill?

Gutters and Downspouts
Are downspouts leaking? Clogged? Are there holes or corrosion? (Water against structure)
Are downspouts complete without any missing sections? Are they properly connected?
Is the water being effectively carried away from the downspout by a drainage system?
Do downspouts drain completely away?

Roof
Are there water blockage points?
Is the leading edge of the roof wet?
Is there evidence of biological attack? (Fungus, moss, birds, insects)
Are flashings well seated?
Are metal joints and seams sound?
Does the soffit show any signs of water damage? Insect or bird infestation?
Is there rubbish build-up on the roof?
Are there blisters or slits in the membrane?
Are the drain pipes plugged or standing proud?
Are flashings well positioned and sealed?

INTERIOR INSPECTION

Foundation
Are there signs of moisture damage to the walls? Is masonry cracked, discoloured, spalling?
Are there signs of past flooding, or leaks from the floor above? Is the floor damp?
Are walls even or buckling or cracked? Is the floor cracked or heaved?
Are there signs of insect or rodent infestation?

6.7.2 MAINTENANCE PROGRAMME

INSPECTION CYCLE:

Daily
- Observations noted during cleaning (cracks; damp, dripping pipes; malfunctioning hardware; etc.) to be noted in log book or building file.

Semi-annually
- Semi-annual inspection and report with special focus on seasonal issues.
- Thorough cleaning of drainage system to cope with winter rains and summer storms
- Check condition of weather sealants (Fall).
- Clean the exterior using a soft bristle broom/brush.

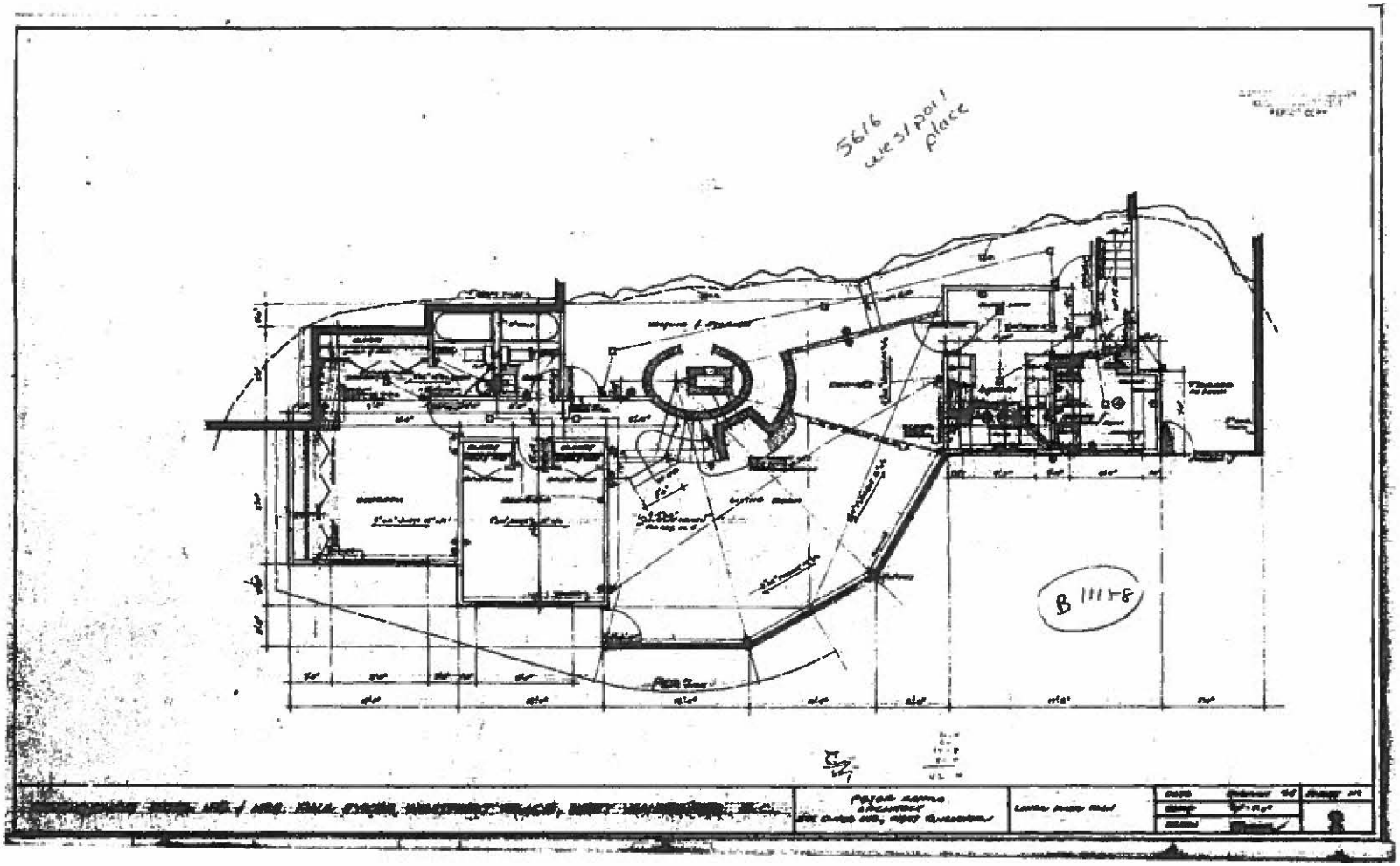
Annually (Spring)
- Inspect concrete for cracks, deterioration.
- Inspect metal elements, especially in areas that may trap water.
- Inspect windows for paint and glazing compound failure, corrosion and wood decay and proper operation.
- Complete annual inspection and report.
- Clean out of all perimeter drains and rainwater systems.
- Touch up worn paint on the building's exterior.
- Check for plant, insect or animal infestation.
- Routine cleaning, as required.

Five-Year Cycle
- A full inspection report should be undertaken every five years comparing records from previous inspections and the original work, particularly monitoring structural movement and durability of utilities.
- Repaint windows every five to fifteen years.

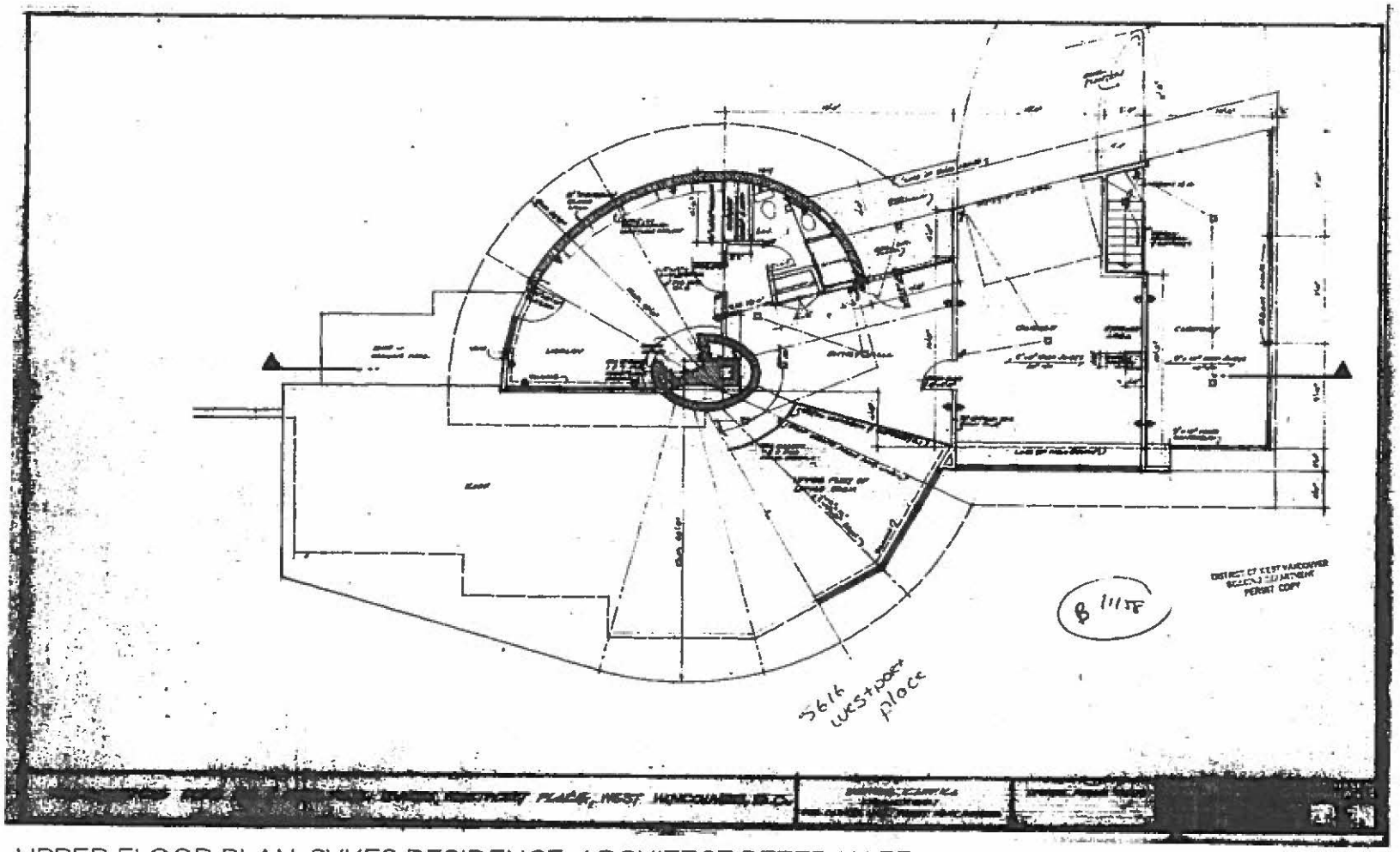
Ten-Year Cycle
- Check condition of roof every ten years after last replacement.

Twenty-Year Cycle
- Confirm condition of roof and estimate effective lifespan. Replace when required.

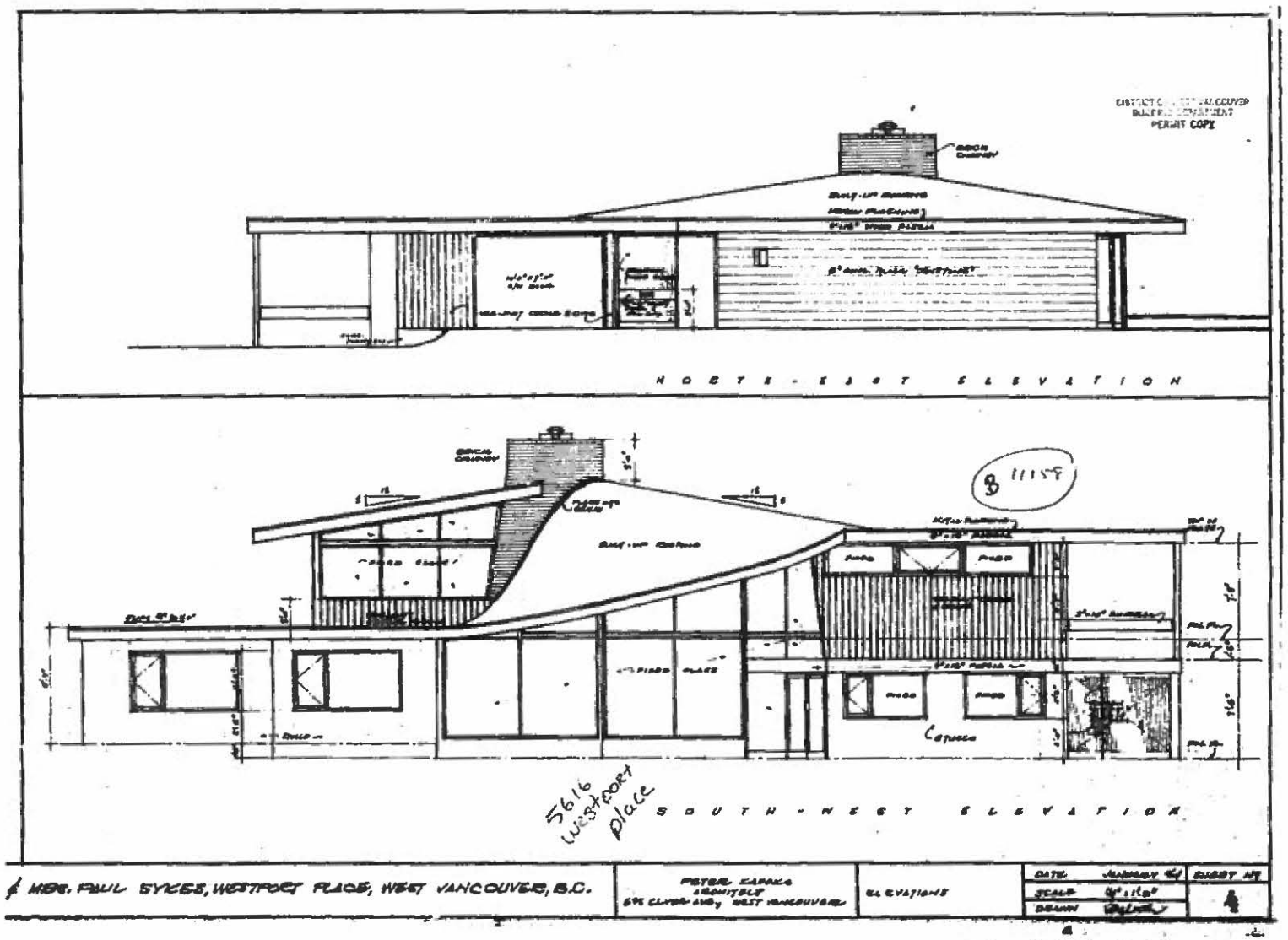
Major Maintenance Work (as required)
- Replacement of deteriorated building materials as required.



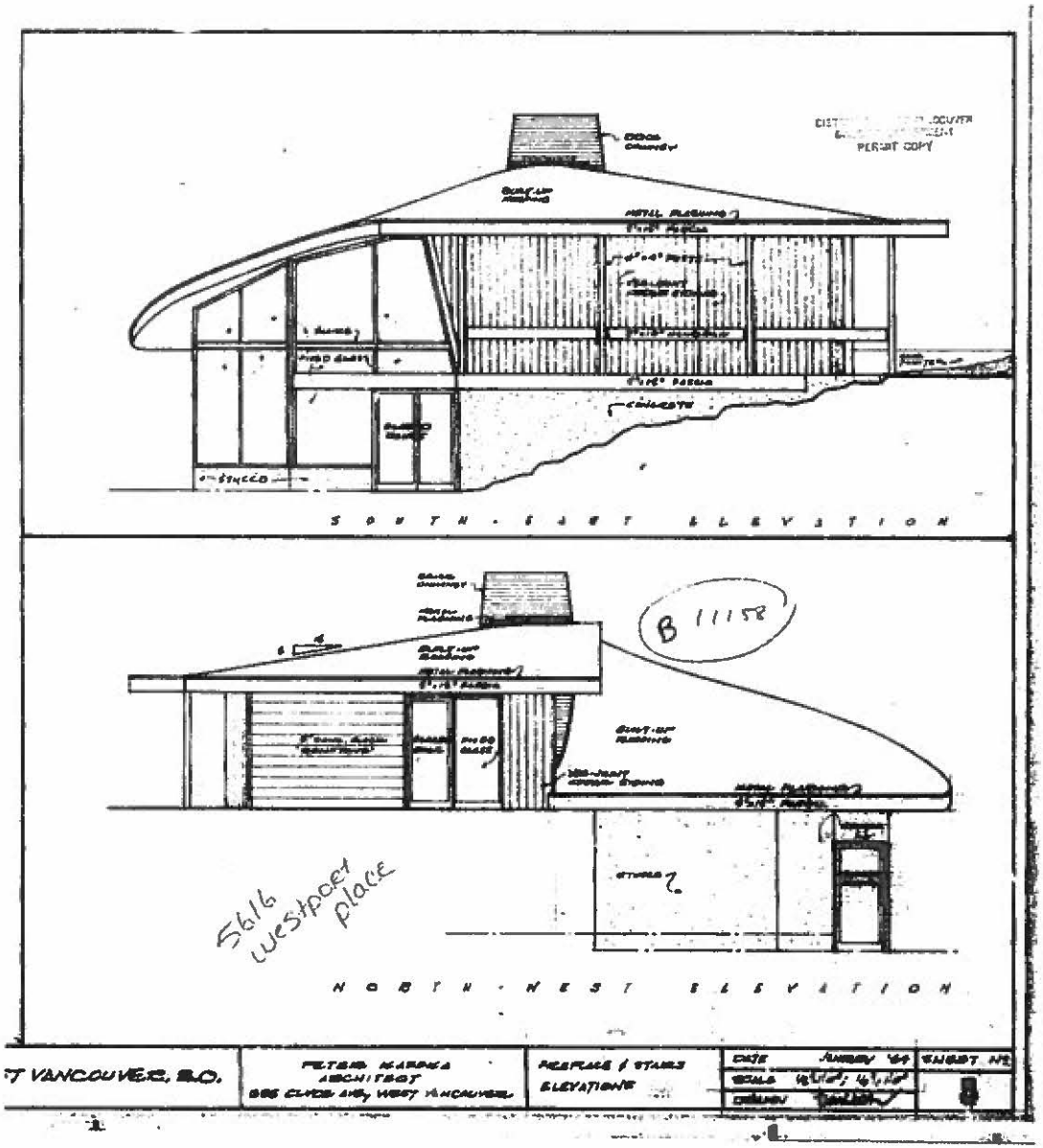
LOWER FLOOR PLAN, SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964



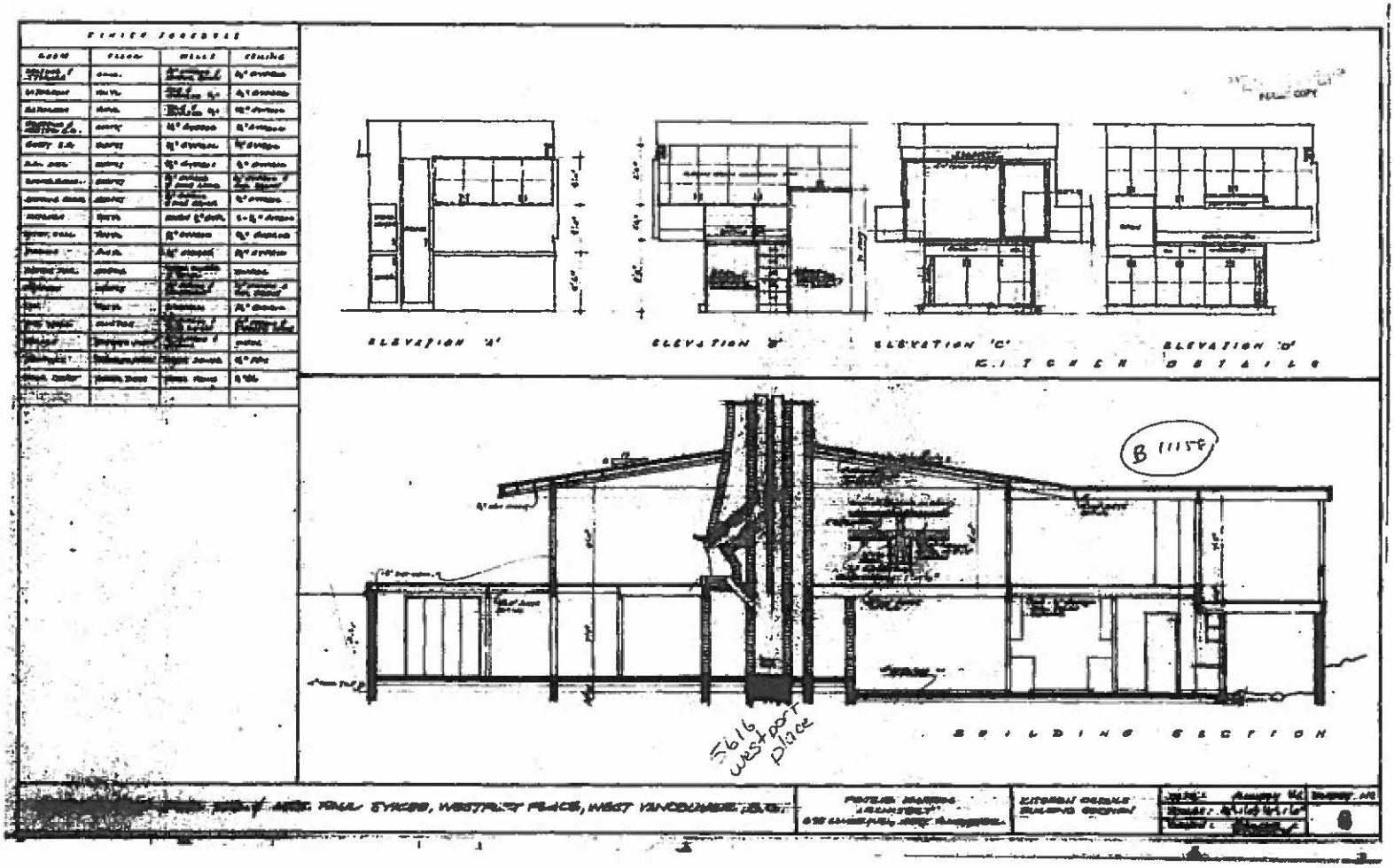
UPPER FLOOR PLAN, SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964



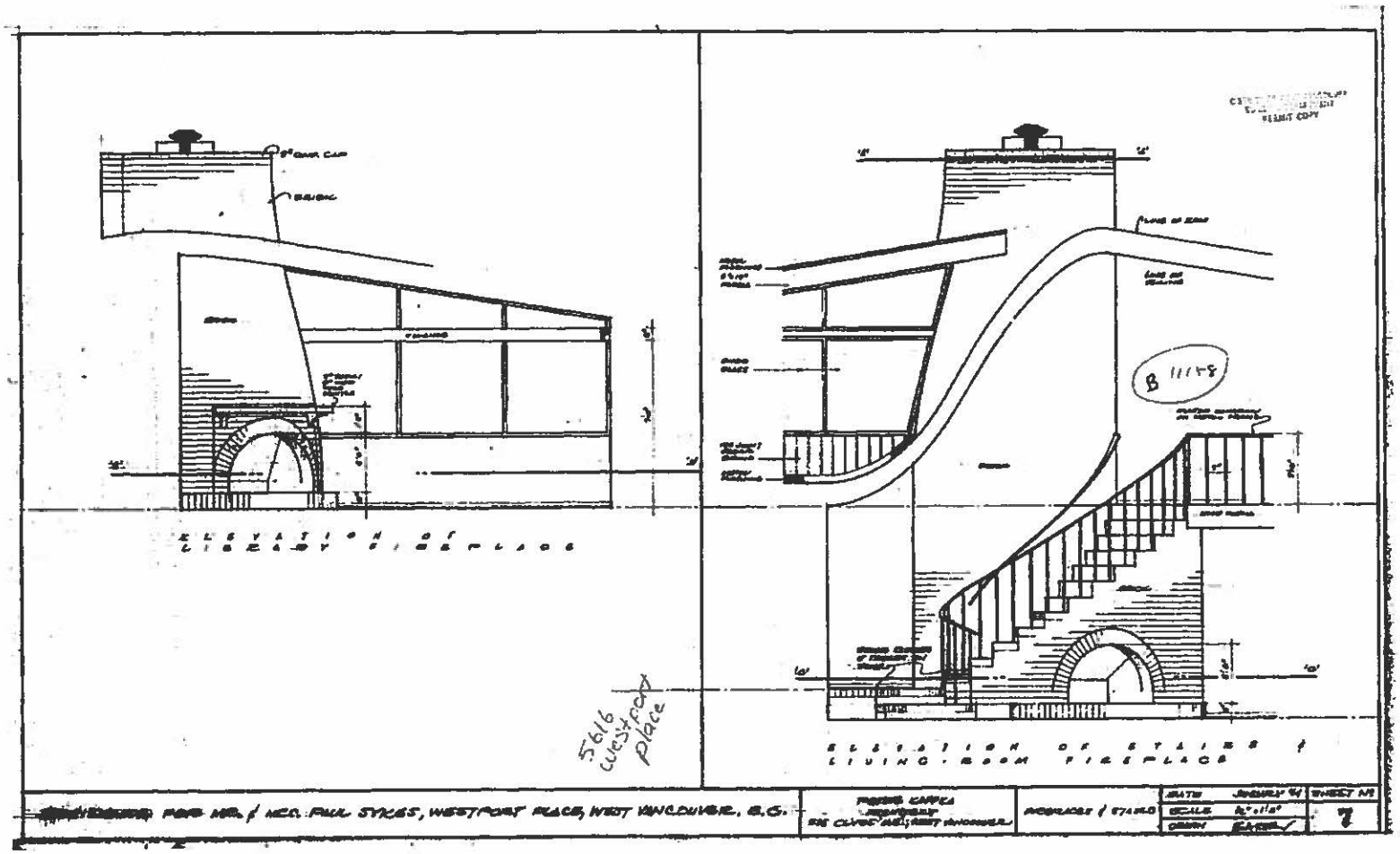
NORTH AND SOUTH ELEVATIONS SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964



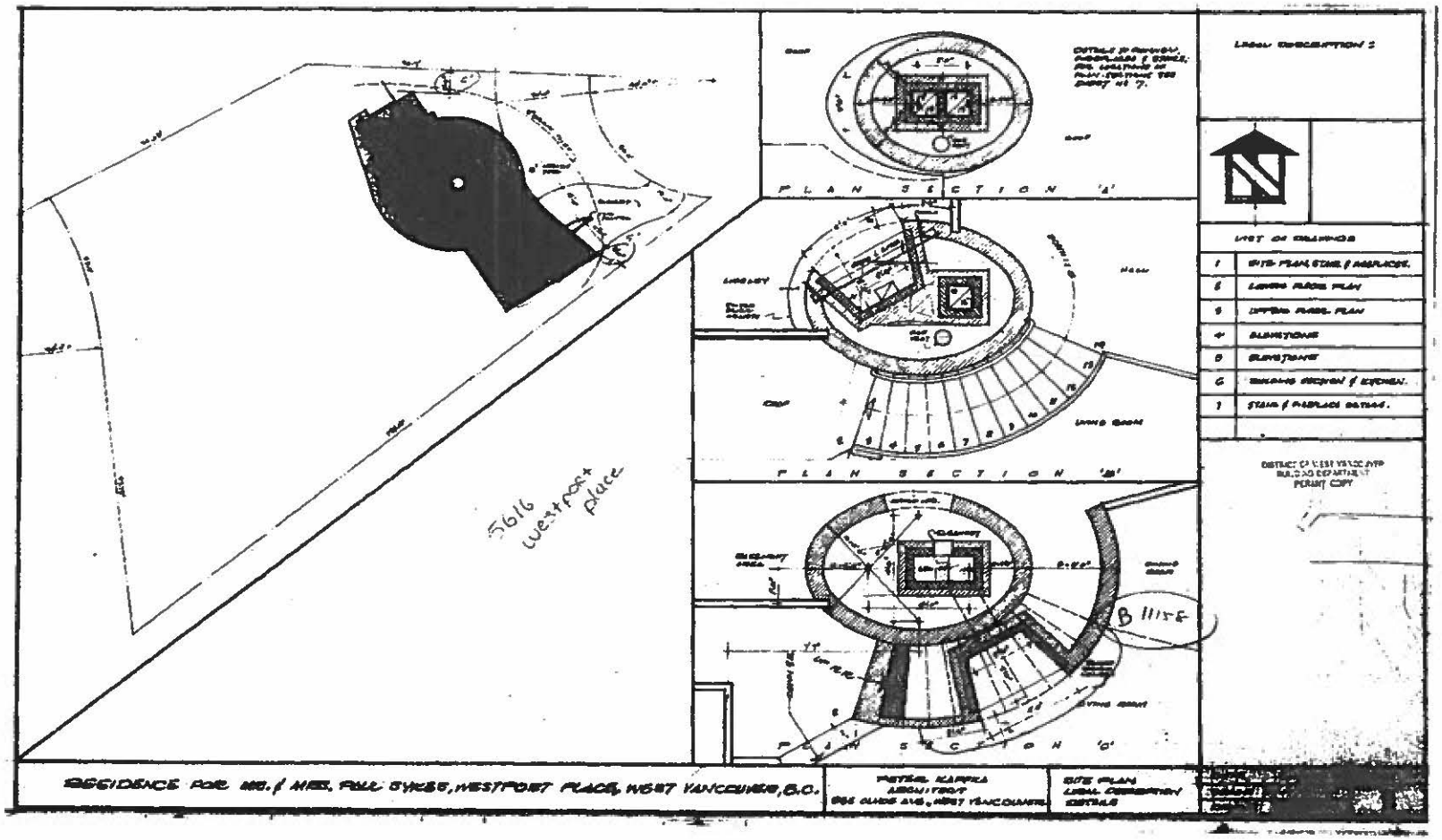
EAST AND WEST ELEVATIONS SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964



SECTION SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964



FIREPLACE DETAILS SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964



SITE PLAN AND STAIR DETAILS SYKES RESIDENCE, ARCHITECT PETER KAFFKA, 1964

RESEARCH SUMMARY

NAME:	Sykes Residence
CIVIC ADDRESS:	5616 Westport Place, West Vancouver
ARCHITECT:	Peter Kaffka
SOURCE:	Building Plans for 5616 Westport Place and correspondence with Peter Kaffka's son, Martin Kaffka
ORIGINAL OWNER:	Major Paul Sykes Jr.
SOURCE:	Building Plans for 5616 Westport Place by Peter Kaffka and correspondence with Peter Kaffka's son, Martin Kaffka
ORIGINAL DATE OF CONSTRUCTION: 1964	
SOURCE:	Building Plans for 5616 Westport Place, Building Department, District of West Vancouver

REFERENCES:

- March, 1946. "Captain Paul Sykes Decorated U.S. Navigator", The Graduate Chronicle. UBC.
- Summer 2006. "Major Paul Jay Sykes Jr. BA (Physics) '48", Trek 61(2). Mitchell Press.
- Koerner Foundation website. Accessed February 2010. "Thea Koerner House Graduate Student Centre at UBC". www.koernerfoundation.ca
- Liscombe, R.W. 1997. "The New Spirit: Modern Architecture in Vancouver, 1938-1963". Montreal: Canadian Centre for Architecture.
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- Reppel, R. January 6, 2009. "Paul Sykes – An Early Member of RASC Vancouver Centre", Royal Astronomical Society of Canada. Accessed February 2010.
- Wiebenson, D; Sisa, J.; and Pal Lovei. 1998. "The Architecture of Historic Hungary".
- University of British Columbia. November 28, 2007. Agenda Item No. 4.1: Endowments. "C. UBC Vancouver Scholarships, Awards and Prizes" Scholarship 11 "Paul Sykes Scholarship in Astronomy". UBC.

APPENDIX C

SYKES/LESLIE RESIDENCES

5616 Westport Pl, West Vancouver, BC

OCTOBER, 2015 (RE-PRINTED APRIL 2016)

LETTER OF RATIONALE
DAVID + CHRISTY'S LETTER TO COUNCIL
DRC LIST OF DESIGN CHANGES
SYNTHESIS DESIGN REVISED DEVELOPMENT PACKAGE
DRC DESIGN CHANGES C/W GHOST OUTLINE
NEIGHBORHOOD CONTEXT
URBAN NICHE LANDSCAPE PLAN
DIAMOND HEAD ARBORIST REPORT
GWH CONSULTING GEOTECHNICAL REPORT

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258 east first street, north vancouver, bc, v7l 1b3
p·604.980.2087 f·604.980.3008 w·synthesisdesign.ca

Sykes / Leslie Residence
December 22, 2014

Letter of Rationale:
5616 Westport place
West Vancouver, B.C.

The intention of this application is to satisfy all requirements of the Heritage Revitalization Agreement so that the existing Sykes Residence may be listed on the Community Heritage Registry as a legally designated heritage building. Subsequently, an application will be made for an infill subdivision, allowing for the construction of a new residence that although different in form, takes its design cues from the Sykes Residence's modern spirit.

The Sykes Residence is sited at the top of the property, while the proposed dwelling will be seamlessly sited on the lower portion, below the natural rock bank, which will separate the two dwellings both visually and geographically.

The success of the proposed dwelling lies in its response to the Sykes Residence, and how it is seamlessly sited within the lower portion of the property. The proposed dwelling has been designed to have minimal impact on the natural attributes of the site, as well as respecting the views, privacy, and architecture of the Sykes Residence.

Both dwellings will be a distinct entity unto themselves.

The proposed residence is of a linear nature, following the natural slope of the property. It is simple in form, modern in its aesthetic, and complimentary to the Sykes residence by not competing in form or its command of its siting. As the roof of the proposed dwelling is over 30 feet below the foundation of the Skyes Residence, the views of the Sykes residence will not be affected.

Nestled into its site in the rock bank, the proposed residence is a study in the play of mass and void, as an open but protected volume of space forms an "entry cube" offering welcome and shelter while drawing one into the home. This feature allows the natural rock face to be exposed as one surveys the front façade of the house, reinforcing to concept of the house being integrated with the site.

The proposed residence will tread lightly on its site, with the surrounding landscape naturally flowing in, around, and through the various levels of the structure. As a means to further integrate with the landscape, the roofs will feature a combination of green roofs and decorative rock features at different levels. The driveway has been located underneath the house, rather than off to the side, which minimizes its length and impact on the natural landscape, which should appear unaffected by the introduction of the proposed structure.

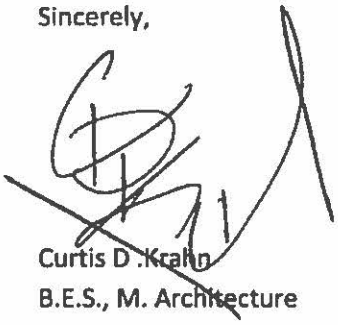
Sustainability will be integrated through the use of energy efficient materials and building practices, incorporating natural ventilation and screening wherever possible, maximizing natural, local materials. The incorporation of rooftop green gardens will reduce pollutants and reflectivity, while moderating the temperature of the house, and providing a backdrop for the local ecology.

Working in conjunction with Donald Luxton & Associates to ensure the Sykes Residence receives the respect it deserves through the conservation plan was a key starting point for the owners, David and Christy Leslie. We then worked closely with and relied upon a team of engineers and designers to ensure all aspects of tree retention, slope stability, and landscape design were fully integrated.

The result is the proposed residence that will be in keeping with the context of the surrounding lots, respecting the scale and character of the neighbourhood, while complimenting the exceptional example of West Coast style Architecture that is The Sykes Residence.

Thank you for your consideration.

Sincerely,



Curtis D. Krahn
B.E.S., M. Architecture

24 November, 2014

To Council,

The moment we entered the Sykes House in 2007, we knew it was a piece of West Vancouver worth saving. Despite the fallen branches, overflowing eaves, pots stuffed with Woodward's bags and obvious disrepair, it spoke to us. It told a story of the West Vancouver that we, and our parents, grew up in and cherished. It reminded us of the artist community we walked to school in, the yards we played in with their magical paths, bed rock and rope swings, and the warm, modest post and beam style homes we shared with our families. That is the West Vancouver we wish to preserve and those are the memories we wish to recreate with our young son.

As third generation West Vancouverites and high school sweethearts, we have always been passionate about our community. We have watched it change throughout the years and we have seen its character threatened as the house prices soar out of reach. Our family homes, growing up, are essentially cottages when compared to the new monster houses being built. We had been looking for a more typical home in which to start a family and had accepted that a project-house was all we could afford. But when we saw the Sykes house in all its West Coast splendour, we were spellbound and could not accept that its story was about to end. Sadly, when we purchased the property, it was marketed as a tear-down for land value only. Despite our thoughtful restoration, we have no doubt that if we sold, a developer wouldn't hesitate to build a mega home on the stunning cliff with the views to Passage Island.

After getting to know our unique, Kaffka designed home, it is hard to imagine someone tearing it down. Perched delicately on bed rock, surrounded by trees, with its spiral helix roof and floor to ceiling glass, it invites the outdoors in, like a mid-century modern tree house. As we carefully updated it, we found ourselves wondering about the original owner, the architect and their vision for creating a design that so beautifully harmonized land and nature, yet would have been so challenging to build in 1964. Our passion for the house led us to the District of West Vancouver, where we worked together with Donald Luxton and Associates, to prepare a Statement of Significance and have it added to the West Vancouver Heritage Registry. As far as protecting the house, this was a good first step, but still not enough. Over the next five years we continued to explore ways to make the house and lot more viable within the changing community and demographics of West Vancouver.

This journey led us to our current project proposal of subdividing the property into two unique lots. The Sykes house was constructed at the very top of its lot in order to capture the best possible views. There is a cliff that creates a natural division which could allow for two lots of equal size, one with frontage on Westport Place and one with frontage on Westport Road below. Currently, from the Sykes home, the lower portion is inaccessible and overgrown. By subdividing the property through the HRA process, we would be able to utilize this land and preserve the neighbourhood feel, while simultaneously protecting our Sykes home with a Heritage Designation. For us, and for the community as a whole, this seems like the perfect solution.

The new home that we are proposing will reflect the needs of our current family and we plan to move into the Sykes home as our needs evolve. This project will allow us to raise our son in West Vancouver, provide intergenerational space for Christy's recently widowed mother, and protect an important piece

of West Vancouver's heritage. It is important to us that this new home treads lightly on the landscape, complements the Sykes home and blends with the current structure of the streetscape. It is our passion for West Vancouver's character preservation that led us to this design and we believe we can achieve it through this project. We understand the serious implications of designating our home as Heritage and accept the responsibility with enthusiasm. We feel strongly that it is the right thing to do for our family, and for the future of the community.

In closing, we would like to say thank you to Stephen and the District for all of their hard work with regard to Heritage initiatives. We would also like to thank Council for getting to know the Sykes House and taking the time to review our proposal. Some believe a house has a life that eventually ends to make way for new life. However, we believe that with the right timing, the right vision and the right people, at least for this little house, its' story and life are just beginning.

Kind Regards,
David and Christy Leslie

1. Reduce floor to ceiling heights

a. Garage	14'-2" to 10'-0"	4'-2" reduction
b. Lower	13'-0" to 10'-0"	3'-0" reduction
c. Main	10'-0" to 10'-0"	no reduction
d. Up	10'0" to 9'-0"	1'-0" reduction
e. Total Reduction		8'-2" reduction

2. Garage Floor
   a. Eliminate 6 or 7 risers at west side of elevator
   b. Move garage back 3'-0" +/-. Garage setback from 11'-6" to 14'-6" (4.42m)

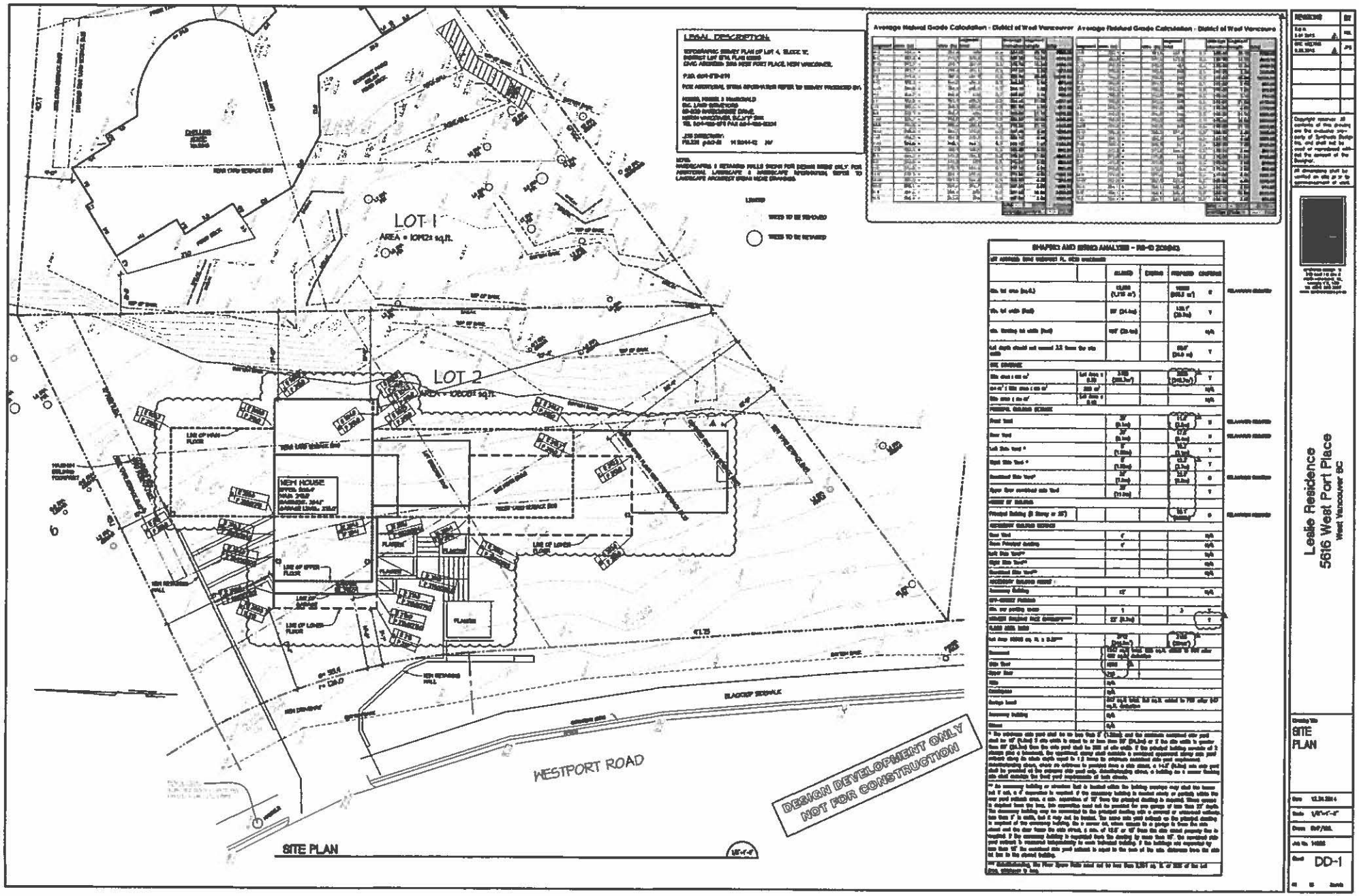
3. Lower Floor
   a. Eliminate 6 or 7 risers at west side of elevator
   b. Reduce depth of relax space by 6'-0" +/- (maintain 3'-0" overhang on garage and increases setback from 6'-0" to 11'-7" (3.5m)

4. Living Floor
   a. Reduce length of side deck by 6'-6"
   b. Side setback to be increased to 12'-5"

5. Upper Floor No changes

6. Landscape
   a. Propose keeping 1 tree at the side of the deck and 2 trees behind the deck - Arborist report does show they are in very poor condition.
   b. Graphically show a more natural and less regimented landscape pattern

DESIGN REVIEW COMMITTEE DESIGN CHANGES



LEGAL DESCRIPTION

Average Natural Grade Calculation - District of West Vancouver

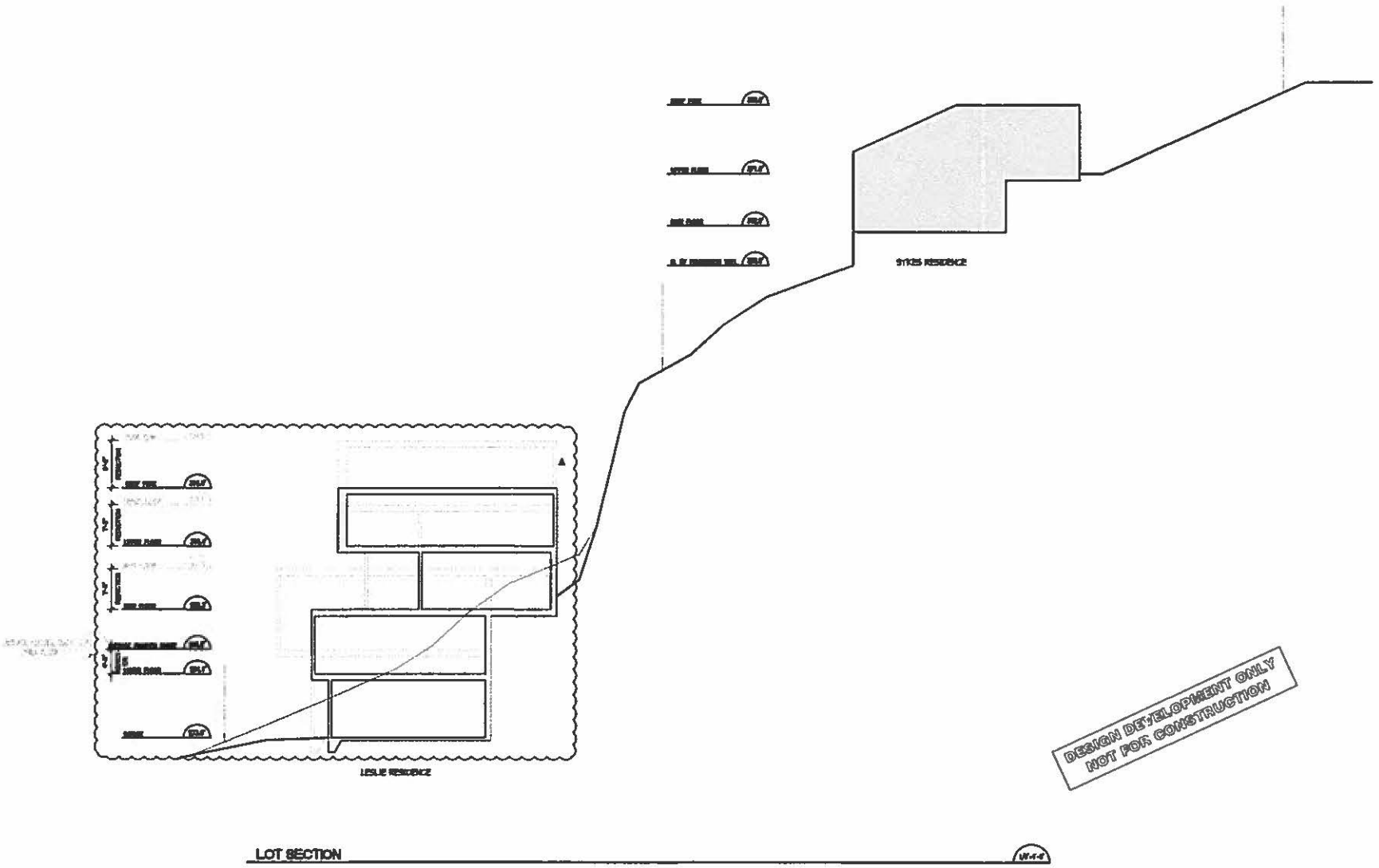
Average Finished Grade Calculation - District of West Vancouver

ZONING ANALYSIS AND BYLAW ANALYSIS - RS-5 ZONING

Leslie Residence
5616 West Port Place
West Vancouver BC

SITE PLAN

DD-1

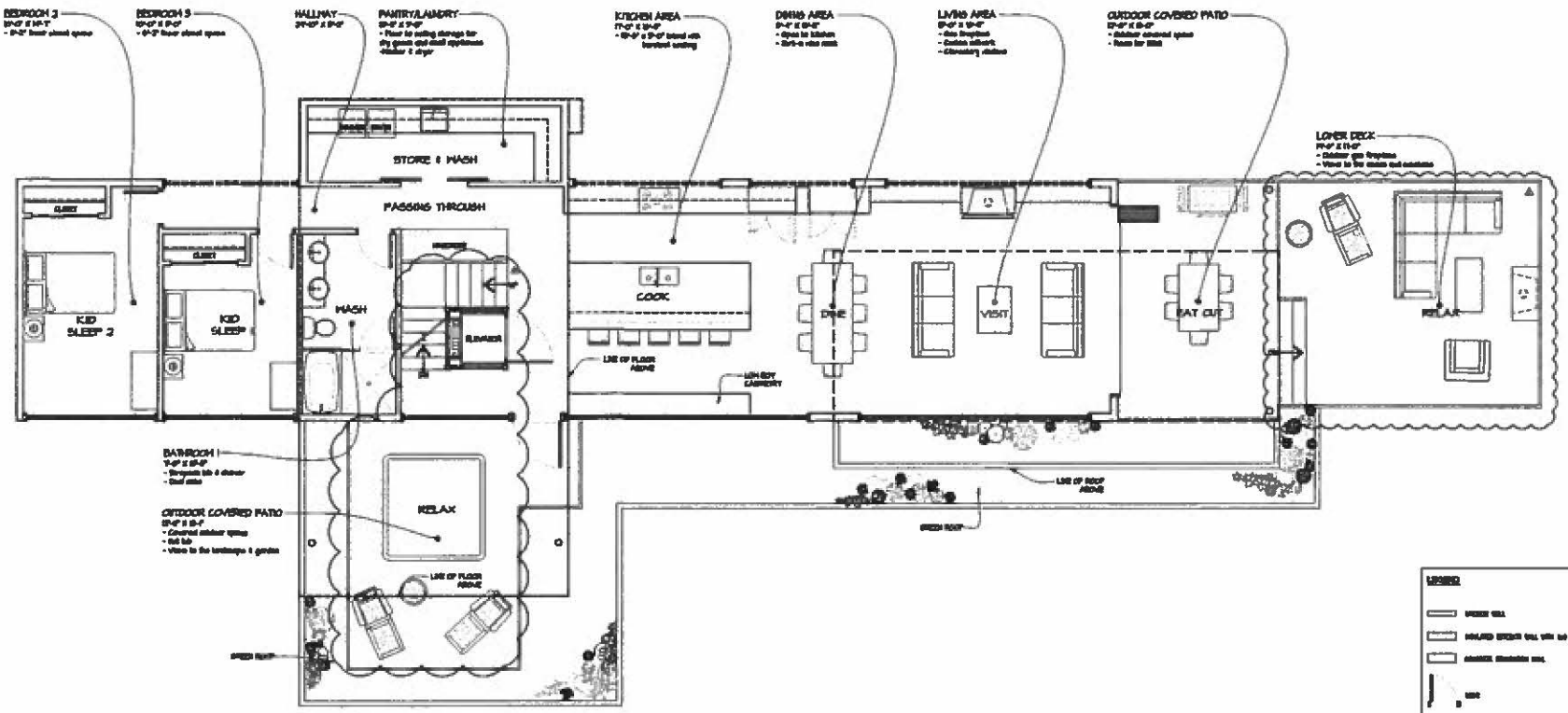


DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 West Port Place
West Vancouver BC

LOT SECTION

DD-2



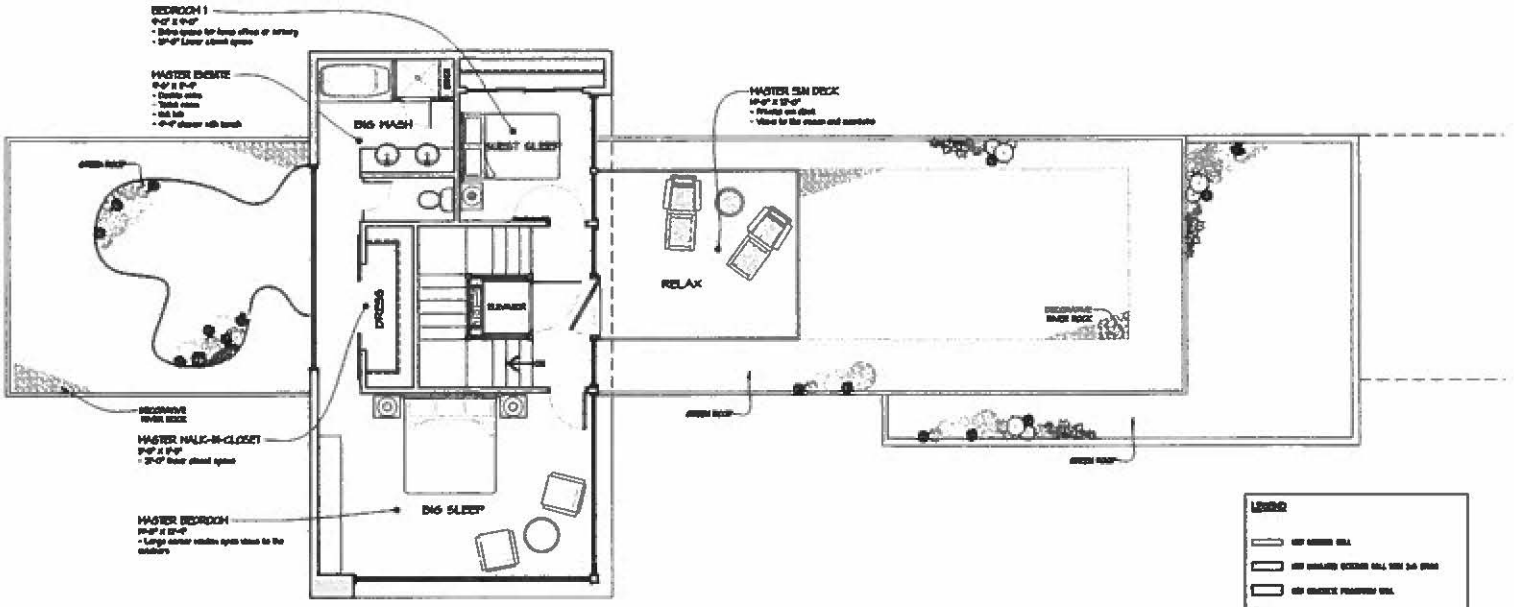
MAIN FLOOR
1596 SF

DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

MAIN FLOOR PLAN

DD-3



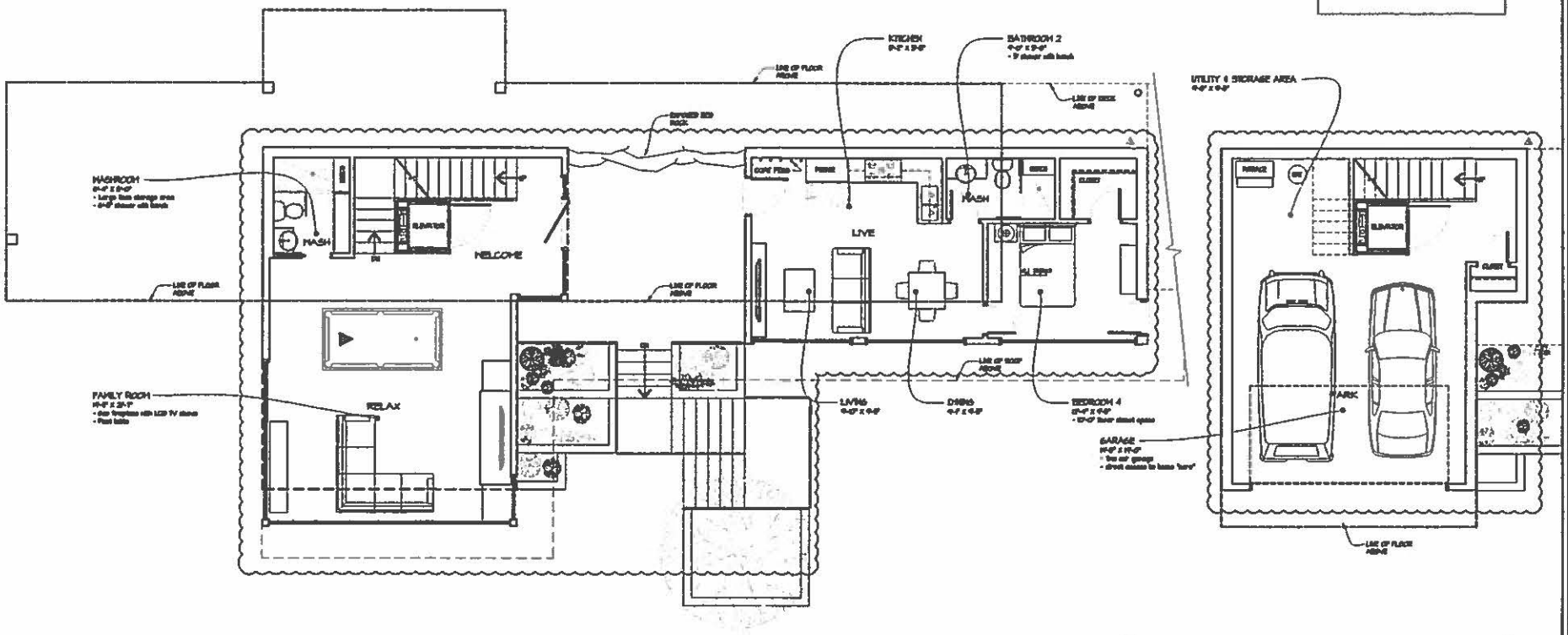
UPPER FLOOR
745 SQ.FT

DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

UPPER
FLOOR
PLAN

DD-4



LOWER FLOOR
710 SQ. FT. MAIN HOUSE + 537 SQ. FT. SUITE = 1247 SQ. FT.

GARAGE PLAN
647 SQ.FT

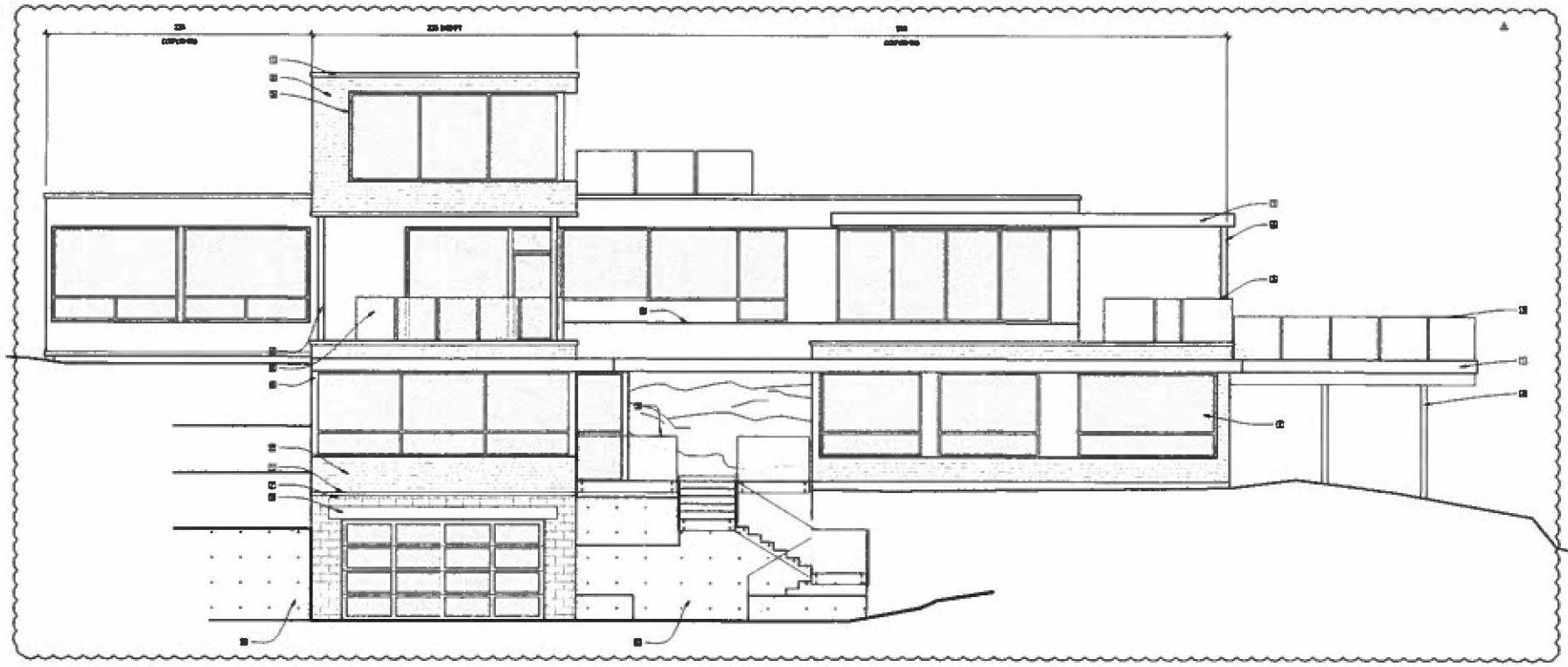
DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

LOWER FLOOR+ GARAGE PLAN

DD-5

MATERIALS LEGEND



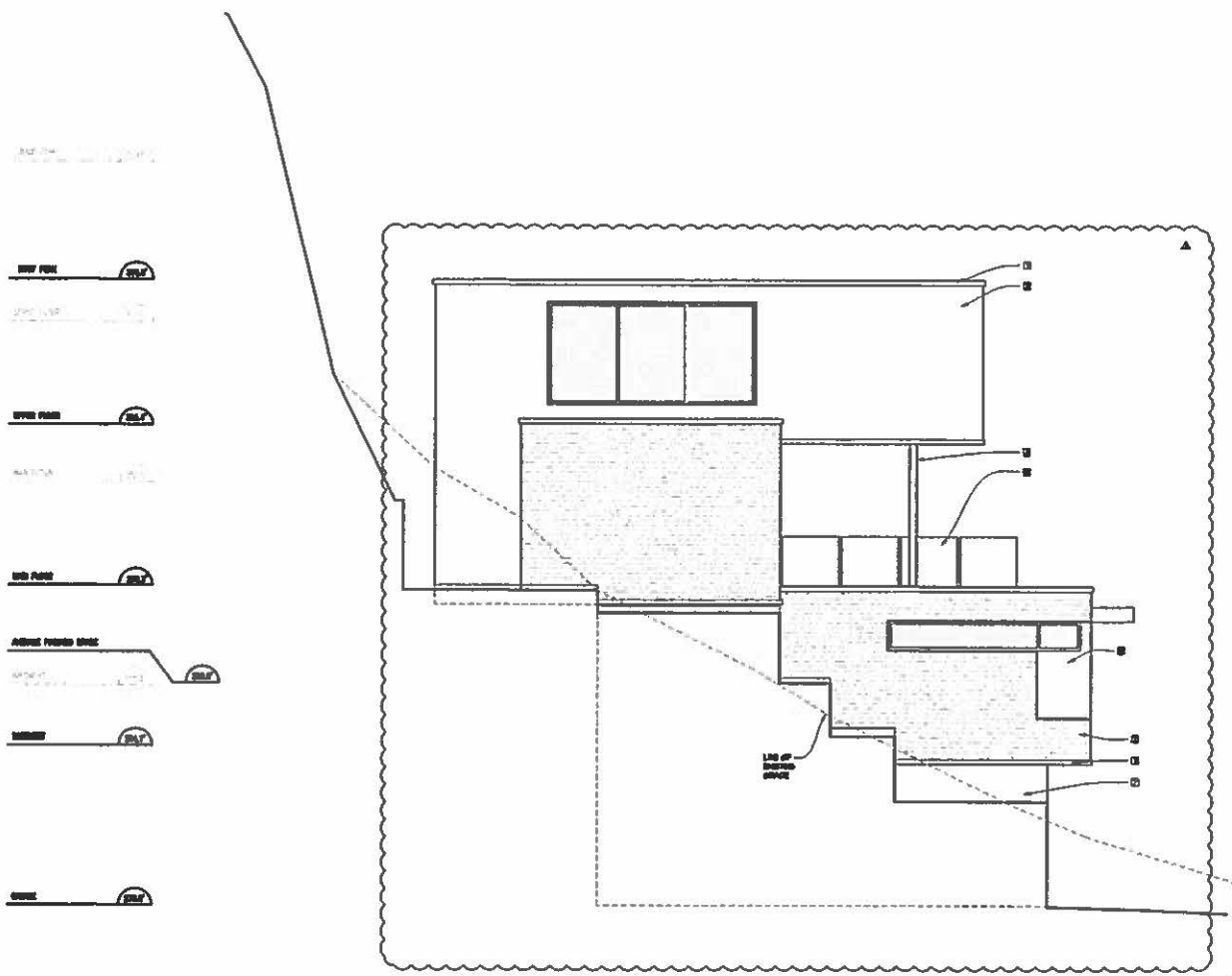
FRONT ELEVATION

DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

ELEVATIONS

DD-6



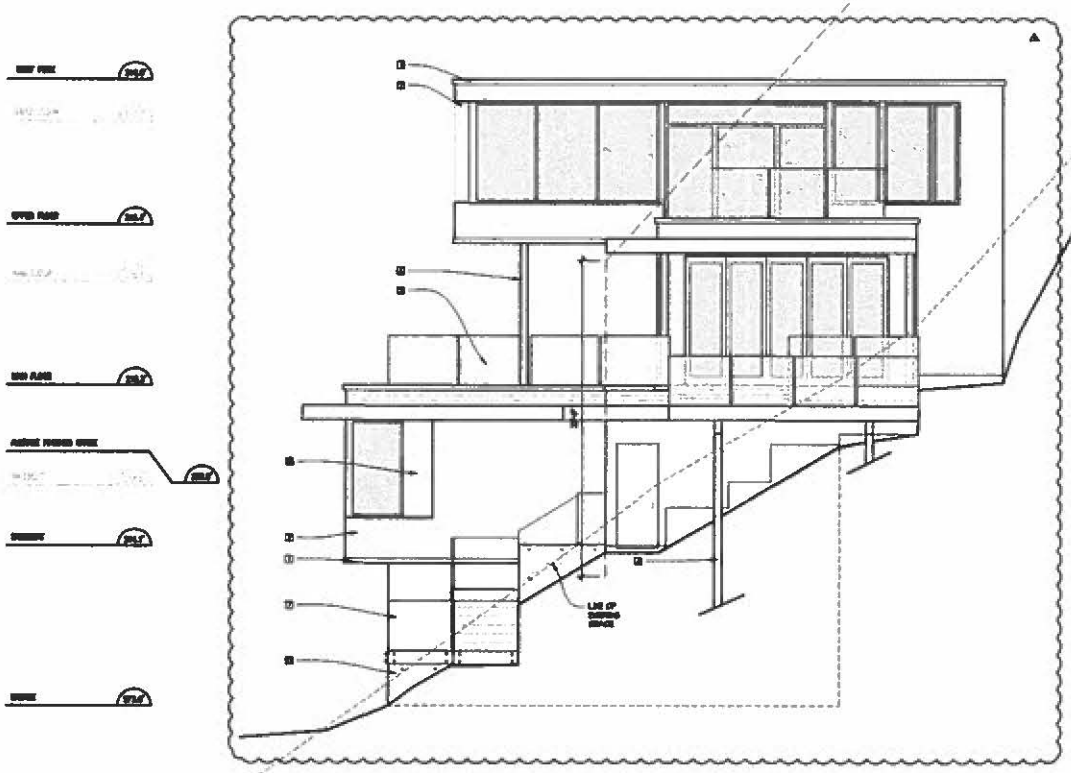
LEFT ELEVATION

DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

ELEVATIONS

DD-7



MATERIALS LEGEND

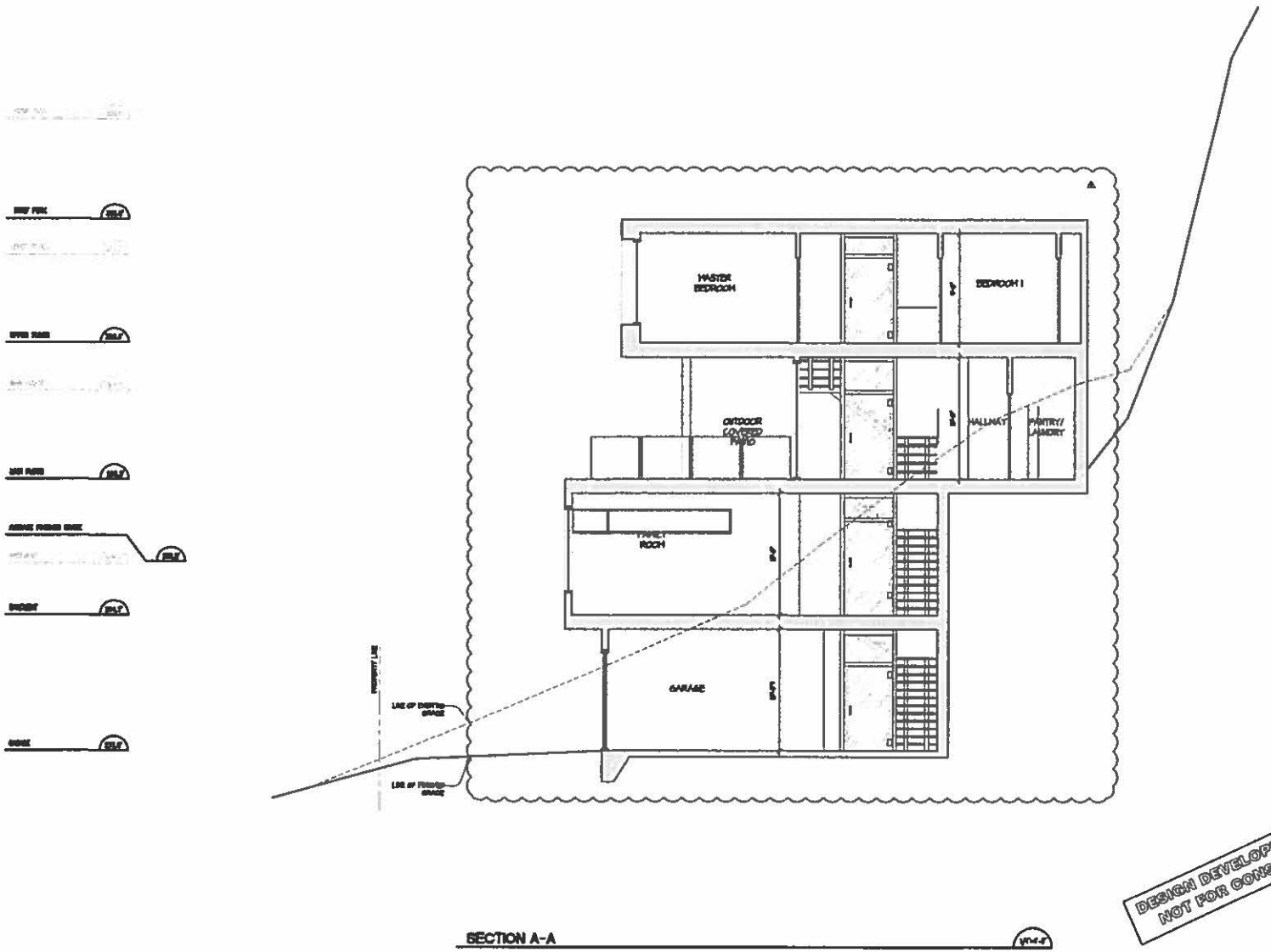
RIGHT ELEVATION

DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

ELEVATIONS

DD-8



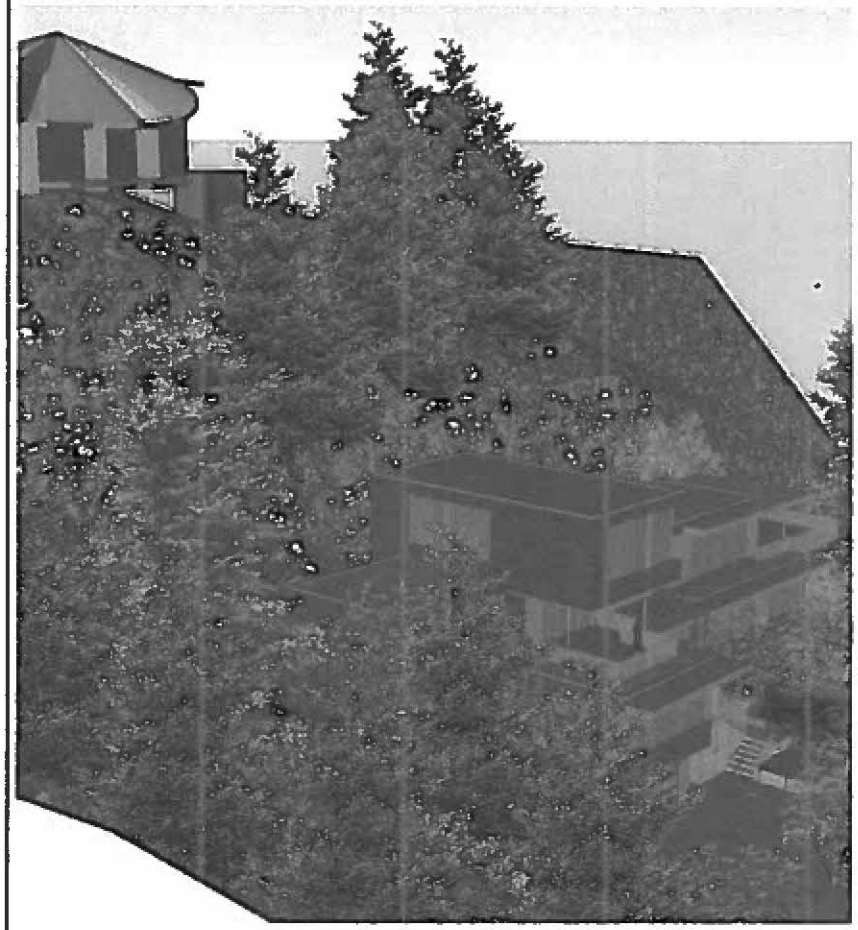
SECTION A-A

DESIGN DEVELOPMENT ONLY
NOT FOR CONSTRUCTION

Leslie Residence
5616 Westport Place
West Vancouver BC

SECTION

DD-9



NORTH ELEVATION

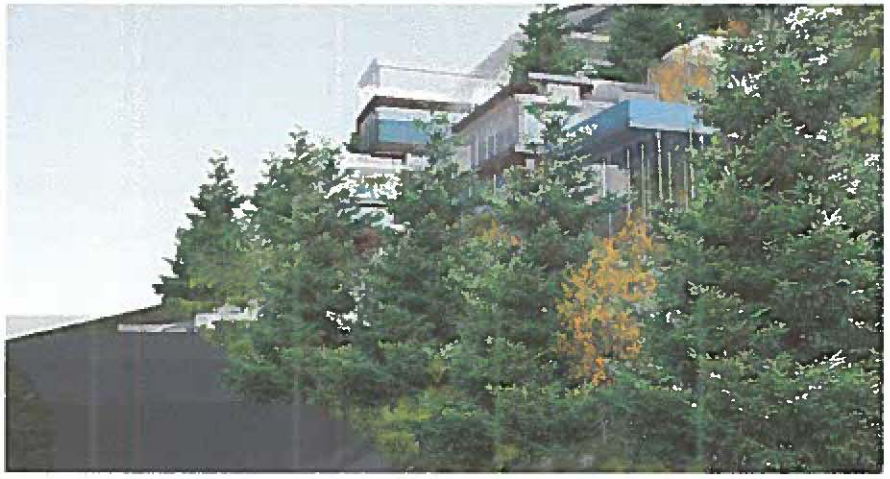
AERIAL VIEW OF SOUTH ELEVATION

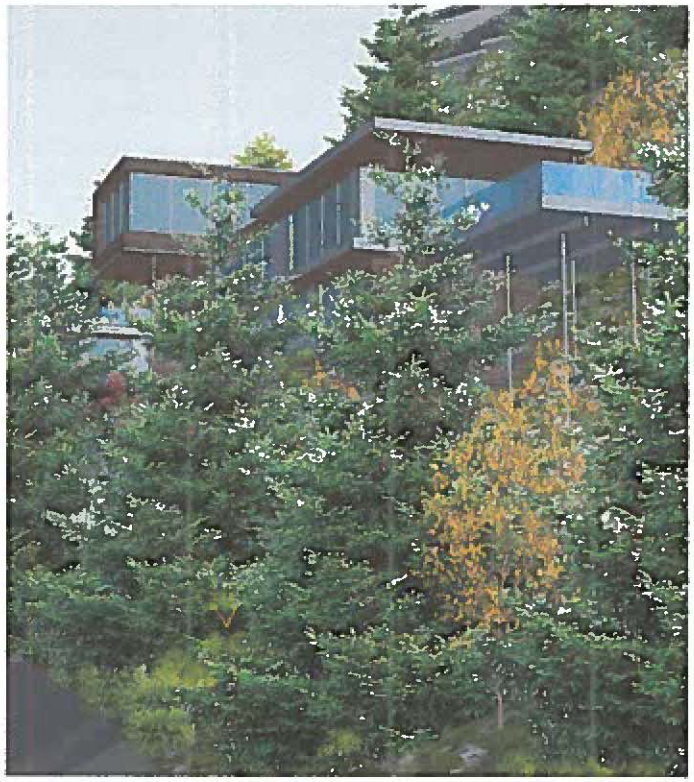
WEST ELEVATION

Leslie Residence
5516 Westport Pl

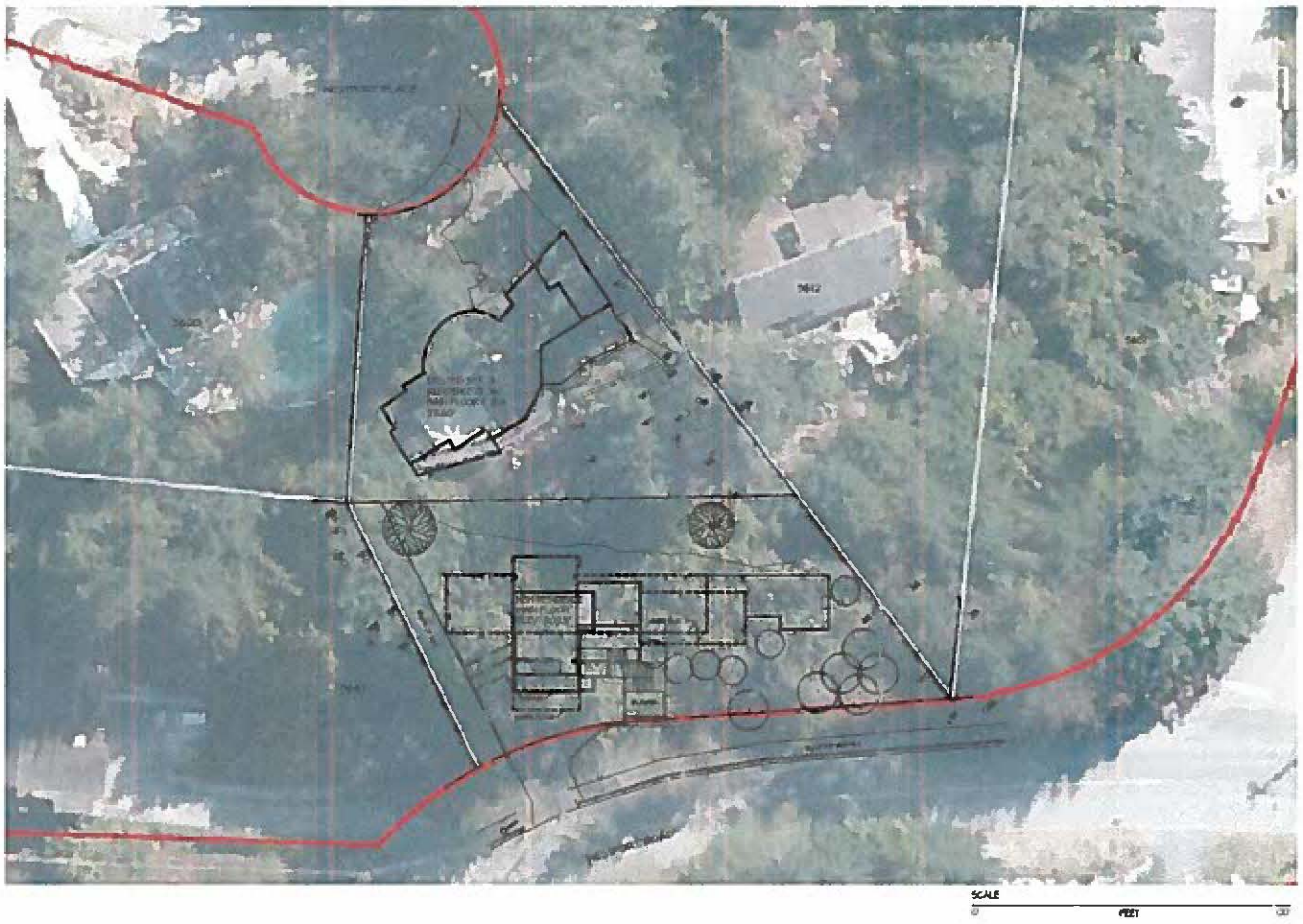
3D MODEL CONTEXT VIEWS

DD-10





DESIGN REVIEW COMMITTEE DESIGN CHANGES C/W GHOST OUTLINE



NEIGHBOURHOOD PLAN

FOR FURTHER SITE INFORMATION, SEE DD-1 IN DESIGN DEVELOPMENT DRAWINGS

A

VIEW FROM WESTPORT ROAD LOOKING AT THE FRONT OF THE NEW PROPERTY

B

VIEW OF NEIGHBOURING PROPERTY 5611 FROM WESTPORT ROAD

C

VIEW OF NEIGHBOURING PROPERTY 5615 FROM WESTPORT ROAD

D

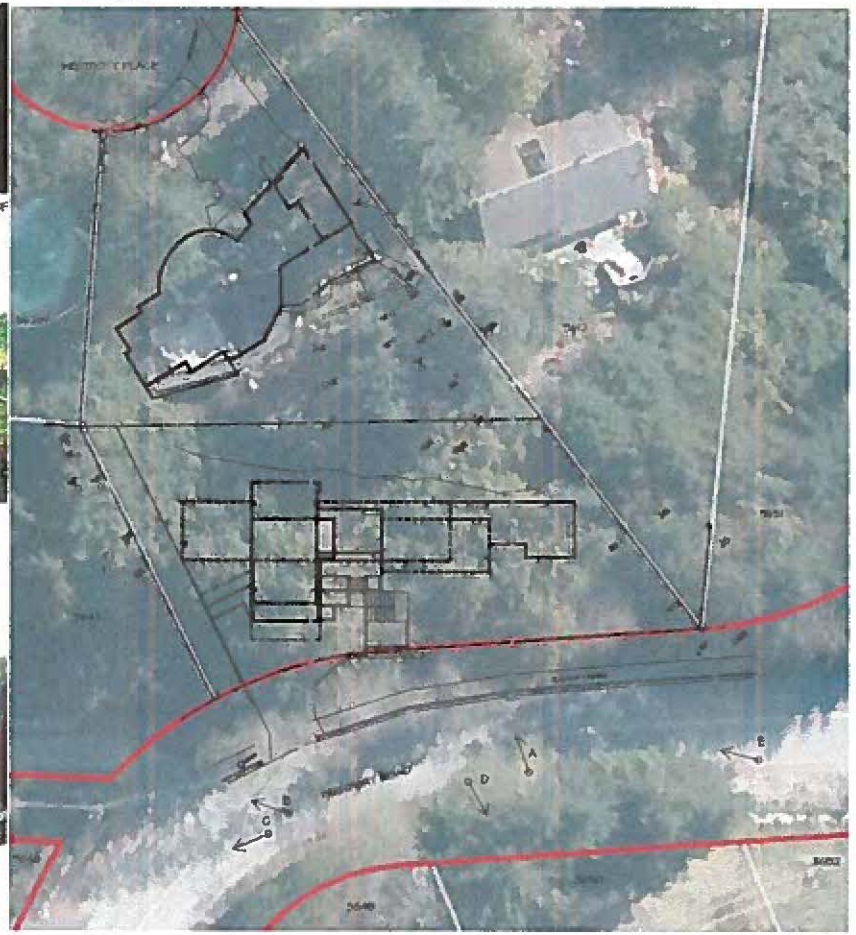
VIEW FROM WESTPORT ROAD LOOKING AT THE FRONT OF 5615

E

LOOKING NORTH ALONG WESTPORT ROAD

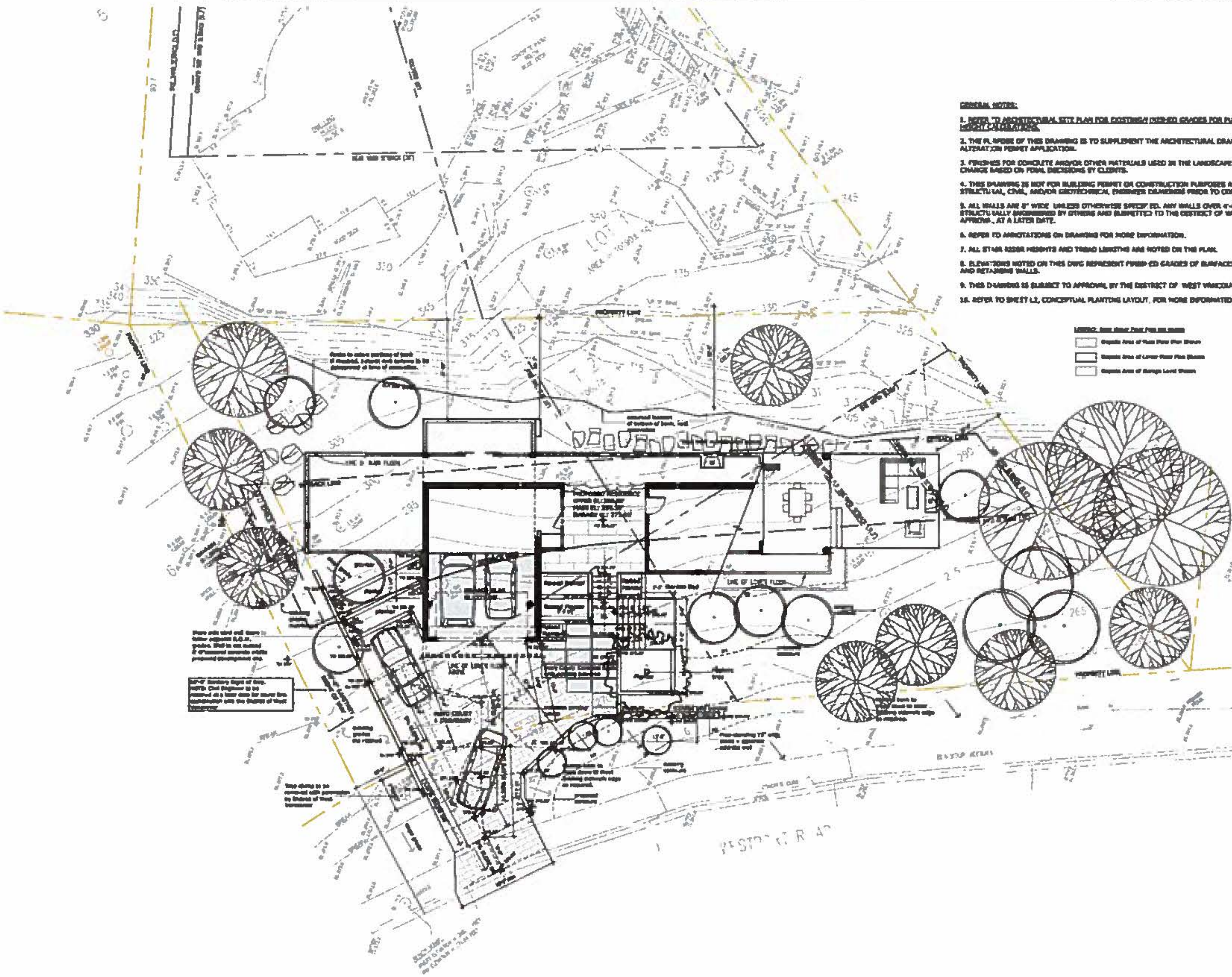
F

VIEW FROM SKYES CARPORT OVERLOOKING LOCATION OF LESLIE'S PROPERTY



SCALE
0 FEET 100

CONTEXT INFORMATION



GENERAL NOTES:

1. REFER TO ARCHITECTURAL SITE PLAN FOR EXISTING/FINISHED GRADES FOR PURPOSES OF BUILDING HEIGHT CALCULATIONS.

2. THE PURPOSE OF THIS DRAWING IS TO SUPPLEMENT THE ARCHITECTURAL DRAWINGS FOR HERITAGE ALTERATION PERMIT APPLICATION.

3. FINISHES FOR CONCRETE AND/OR OTHER MATERIALS USED IN THE LANDSCAPE ARE SUBJECT TO CHANGE BASED ON FINAL DECISIONS BY CLIENTS.

4. THIS DRAWING IS NOT FOR BUILDING PERMIT OR CONSTRUCTION PURPOSES AND WILL REQUIRE STRUCTURAL, CIVIL, AND/OR GEOTECHNICAL ENGINEER DRAWINGS PRIOR TO CONSTRUCTION.

5. ALL WALLS ARE 8" WIDE UNLESS OTHERWISE SPECIFIED. ANY WALLS OVER 4'-0" IN HEIGHT MUST BE STRUCTURALLY ENGINEERED BY OTHERS AND SUBMITTED TO THE DISTRICT OF WEST VAN. FOR PERMIT APPROVAL, AT A LATER DATE.

6. REFER TO ANNOTATIONS ON DRAWING FOR MORE INFORMATION.

7. ALL STAIR RISER HEIGHTS AND TREAD LENGTHS ARE NOTED ON THE PLAN.

8. ELEVATIONS NOTED ON THIS DWG REPRESENT FINISHED GRADES OF SURFACES, LANDINGS, STAIRS, AND RETAINING WALLS.

9. THIS DRAWING IS SUBJECT TO APPROVAL BY THE DISTRICT OF WEST VANCOUVER.

10. REFER TO SHEET L2, CONCEPTUAL PLANTING LAYOUT, FOR MORE INFORMATION.

URBAN NICHE LANDSCAPE DESIGN
509 - 318 Homer Street,
Vancouver, BC, V6B 2V2

LANDSCAPE LAYOUT BASED ON SITE PLAN PREPARED BY SYNTHESIS DESIGN AND RECEIVED ON DEC 8, 2014

Revisions:
APRIL 22, 2015: ADDITION OF 10' SANITARY R.O.W. ALONG NORTH PROPERTY SIDE YARD (SET NOT ON PLAN); ADJUSTED ALL HARD LANDSCAPE TO REFLECT SHIFT IN HOUSE LOCATION
APRIL 23, 2015: RESUBMIT TO DISTRICT OF WEST VANCOUVER
APRIL 28, 2015: REMOVED ALL WALLS + OBSTRUCTIONS FROM THE R.O.W. DISTRIBUTED TO SYNTHESIS DESIGN FOR THEIR USE + RESUBMISSION TO DWV
OCT. 2015: UPDATED FRONT BUILDING SETBACKS, FINISHED GRADES, FLOATING DECK, PLANTER WALL HEIGHTS, MAIN ENTRY STAIRS AND LANDINGS, OTHER RELEVANT HARD LANDSCAPE, AND UPDATED TREE LOCATIONS.

Project:
5616 WESTPORT RD
WEST VANCOUVER, BC

Drawing Name:
HARD LANDSCAPE LAYOUT

1st Plot Date: 2014-22-12	Scale: 1/8"=1'-0"
Drawn By:	Checked By: L.Volgyes
Drawing Ref.: -	Drawing Purpose: Heritage Alteration Permit submission + DRC approval
North	Drawing No. L1 / L2

Diamond Head Consulting Ltd.
Arborist Report

For:

5616 Westport Place
West Vancouver, BC

December 3, 2014

To be submitted with Tree Protection Plan
Dated: December 3, 2014

Submitted to:

Synthesis Design
258 East 1st Street
North Vancouver, BC
V7L 1B3

Submitted by:

DIAMOND HEAD
CONSULTING LTD.

342 West 8th Avenue
Vancouver, BC
V5Y 3X2

The following Diamond Head Consulting staff performed the site visit and prepared the report. All general and professional liability insurance and individual accreditations have been provided below for reference.

Supervisor:

Trevor Cox, MCIP
ISA Certified Arborist (PN1920A)
Certified Tree Risk Assessor (43)
BC Parks Wildlife and Danger Tree Assessor

Project Staff:

David Lishman BNRS, P.Ag, FIT
ISA Certified Arborist (PN7535A)
Certified Tree Risk Assessor (1867)

This report summarizes the planned management of trees on the site. If there are any questions or concerns as to the contents of this report, please contact us at any time.

Contact Information

Phone:	604-733-4886
Fax:	604-733-4879
Email:	trevor@diamondheadconsulting.com or david@diamondheadconsulting.com
Website:	www.diamondheadconsulting.com

Insurance Information

WCB:	# 657906 AQ (003)
General Liability:	Northbridge General Insurance Corporation - Policy #CBC1935506, $5,000,000 (Mar 2014 to Mar 2015)
Errors & Omissions:	Lloyds Underwriters – Policy #1010346D, $1,000,000 (June 2011 to June 2015)

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1.0 Introduction

Diamond Head Consulting Ltd. (DHC) was asked to complete an assessment of the trees on and adjacent to the following proposed development:

Civic address:	**5616 Westport Place, West Vancouver BC**
Project No.:	unknown
Client name:	Synthesis Design
Date of site visit:	November 27, 2014
Weather during visit:	Overcast and rain

The objective of this report is to ensure the proposed development is in compliance with the District of West Vancouver Development Procedures Bylaw No. 3984, 1996. The trees at the site were assessed, including: species, diameter at breast height (dbh) measured to the nearest 1 cm at 1.4 m above tree base, estimated height and general health and defects. Critical root zones were calculated for each of the trees with the potential for development impacts. Tree hazards were assessed according to International Society of Arboriculture and WCB standards. Suitability for tree retention was evaluated based on the health of the trees and their location in relation to the proposed building envelopes and infrastructure. This report outlines the existing condition of the trees on and adjacent to the property, summarizes the proposed tree removals and retention trees as well as suggested guidelines for protecting the remaining trees during the construction process.

1.1 Limits of Assignment

- Our investigation is based solely on our visual inspection of the trees on November 27, 2014. Our inspection was conducted from ground level. We did not conduct soil tests or root examination to assess the condition of the root system of the trees.
- Only the trees specified in the scope of work were assessed and assessments were performed within the limitations specified.
- This report does not provide any estimates to implement the proposed recommendations provided in this report.
- This report is valid for six months from the date of submission. Additional site visits and report revisions are required after this point to ensure accuracy of the report for the District's development permit application process.

1.2 Purpose and Use of Report

- Provide documentation pertaining to on and off site trees to supplement the proposed development permit application.

Figure 1. Location of site – 5616 Westport Place, West Vancouver

2.0 Observations

2.1 Site Overview

The site consists of one lot with a single residence located at the north east section of the property. There is a steep cliff located on the property. The proposed development area is located west of the cliff and access is from Westport road. This area is currently a forested stand that has been managed for views. Many of the trees have been previously topped. The total lot size is approximately 1800 m^2. The proposed minimum lot area is 985 m^2. The site is mostly composed of mature native conifer and deciduous species along with native and non native ground cover, there is one landscaped and maintained yard within the site. The by-law sized tree species within the lot consist primarily of Bigleaf Maple (*Acer macrophyllum*), Red Alder (*Alnus rubra*), Western Redcedar (*Thuja plicata*) and Douglas-fir (*Pseudotsuga menziesii*) which are located throughout the site. Tree attributes, critical root zones and recommendations for the trees are listed below in **Table 1.**

2.2 Tree Inventory

The following is an inventory of assessed trees, each of which was marked with a numbered tag as is required by the District Tree Bylaw. Tree species, characteristics, comments, recommendations and required root protection zones have been suggested (Table 1). Their locations are illustrated on the accompanying map.

Overall Health and Structure Rating

Excellent = Tree of possible specimen quality, unique species or size with no discernible defects. Or a heritage tree.
Normal = These trees are in fair to good condition, considering its growing environment and species.
Poor = These trees have low vigour, with noted health and/or structural defects. This tree is starting to decline from its typical species growth habits.
Very poor = These trees are in serious decline from its typical growth habits, with multiple very definable health and/or structural defects.
Dead/Dying = These trees were found to be dead, and/or have severe defects and are in severe decline.
High Risk = These trees have been deemed hazardous by a Certified Tree Risk Assessor utilizing CTRA methods. They have a probability of failure of 3 or higher with a total overall risk rating of 8 (Moderate 3) or above.

Tree Retention Suitability Ratings

Unsuitable = Not suitable for retention in context of the proposed project design and land use changes. These trees have pre-existing health and structural defects. There is a significant chance that these trees will not survive or may become a hazard given the proposed future land use.
Moderate = These trees have moderate structural defects or health issues. The retention of this class of trees is not always successful or viable due to their pre-existing structural defects or health issues; however these trees may be viable for retention with the use of special measures.
Suitable = These trees have no obvious structural defects or health issues, and are worthy of consideration for retention in the proposed development.
Suitable as group = These trees have grown up in groups (groves) of other trees, and have not developed the type of trunk and root structure that will allow them to be safely retained on their own. These trees should only be retained in groups.

Tree Risk Assessment

Using the *Tree Risk Assessment in Urban Areas and the Urban/Rural Interface Release 1.4* manual, published by the International Society of Arboriculture, a Risk Rating out of 12 maximum points was given to the tree as shown in Table 2. The formula used was: **Probability of Failure + Size of Part + Target Area = Tree Risk Assessment (Rating).**

In the Tree Risk Assessment, the tree was rated as follows:

Probability of Failure = (1 low to 5 Extreme). This is the likelihood of branch or whole tree failure. One is the lowest possible score; five is the highest likelihood of tree part failure.

Size of Defective Part = (1 small to 3 large). This section identifies the largest part, which could fail. A part greater than 50 cm is given a rating of 3, a part between 10 and 50 cm is given a rating of 2 and all parts less than 10 cm are given a rating of 1.

Target Area = (1 low to 4 high). The target that the tree could strike is designated a value from 1 to 4 based on the potential to cause personal injury or damage structures and infrastructure.

A value for each of the three categories is assessed and added together in the Risk Rating calculation shown in Table 2. A score of 3-5 indicates a low risk, 6-8 is a moderate risk, 9-11 is a high risk and 12 indicates an extreme risk; this level warrants immediate tree removal. A risk category assigning ranges to the three levels of risk is also provided. Please refer to the table in Appendix 1 for detailed information on interpretation and implications of risk ratings and categories.

2.3 Photographs

Photo 1. The majority of trees located within the proposed development area have been previously topped for views..

Photo 2. View from within the development area.

Photo 3. The majority of trees located within the proposed development area have been previously topped for views.

Photo 4. The majority of trees located within the proposed development area have been previously topped for views.

Tree Inventory Table

Table 1. Tree Inventory.

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
1168	Douglas-fir	*Pseudotsuga menziesii*	23	8	Poor	Suitable as group	Previously topped for view. Growing on top of slope.	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	1.4
1169	Western Redcedar	*Thuja plicata*	32	8	Poor	Suitable as group	Previously topped for view. Growing on top of slope.	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	1.9
1172	Western Redcedar	*Thuja plicata*	66	28	Normal	Suitable as group	Intermediate stem in stand. Phototrophic lean. Growing at bottom of slope	Remove	Tree within building envelope of garage.	4
1173	Western Redcedar	*Thuja plicata*	39	26	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope	Remove	Tree within building envelope of garage.	2.3
1174	Western Redcedar	*Thuja plicata*	34	28	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope and stem against rock. Multiple tops at 25m	Remove	Not suitable for individual retention.	2
1175	Western Redcedar	*Thuja plicata*	51	28	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Scar and decay in base. Previously topped for view. Multiple tops at 25m	Remove	Tree within building envelope of proposed residence.	3.1
1176	Western Redcedar	*Thuja plicata*	57	28	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. 2 stems at 2m with included bark.	Remove	Tree within building envelope of garage.	3.4
1177	Western Redcedar	*Thuja plicata*	86	28	Normal	Suitable as group	Intermediate stem in stand. Minor decay pocket approximately 20m up the stem. Growing at bottom of slope.	Remove	Tree within building envelope of garage.	5.2
1192	Western Redcedar	*Thuja plicata*	44	28	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Previously topped for view. Multiple tops at 25m.	Remove	Tree within building envelope of proposed residence.	2.6

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
1193	Western Redcedar	*Thuja plicata*	49	28	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Previously topped for view. Multiple tops at 25m. Not on survey.	Remove	Tree within building envelope of proposed residence.	2.9
1194	Western Redcedar	*Thuja plicata*	46	26	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Previously topped for view. Multiple tops at 22m.	Remove		2.8
1195	Western Redcedar	*Thuja plicata*	34	26	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Previously topped for view. Multiple tops at 22m. Not on survey.	Remove		2
1196	Western Redcedar	*Thuja plicata*	42	24	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Previously topped for view. Multiple tops at 20m. Not on survey.	Remove		2.5
1197	Western Redcedar	*Thuja plicata*	42	24	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope.Not on survey. Codominant stems at 12m. Previously topped for view. Multiple tops at 20m. Not on survey.	Remove		2.5
1198	Western Redcedar	*Thuja plicata*	65	16	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 16m.	Remove	Tree within building envelope of proposed residence.	3.9
1199	Western Redcedar	*Thuja plicata*	35	16	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 16m. Not on survey.	Remove	Tree within building envelope of proposed residence.	2.1
1200	Western Redcedar	*Thuja plicata*	34	16	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 16m. Not on survey.	Remove	Tree within building envelope of proposed residence.	2

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
1201	Western Redcedar	*Thuja plicata*	35	16	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 16m. Not on survey.	Remove	Tree within building envelope of proposed residence.	2.1
1202	Western Redcedar	*Thuja plicata*	38	24	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 22m.	Remove	Tree within building envelope of proposed residence.	2.3
1203	Western Redcedar	*Thuja plicata*	45	16	Dead/dying	Moderate	Wildlife stem. Decay in stem. Retain if there is no target. Not on survey.	Remove	Tree within building envelope of proposed residence.	2.7
1204	Western Redcedar	*Thuja plicata*	42	24	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 22m.	Remove	Tree within building envelope of proposed residence.	2.5
1205	Douglas-fir	*Pseudotsuga menziesii*	38	24	Poor	Moderate	Intermediate stem in stand. Maintain topping if retained. Growing on rocky slope. Previously topped for view. Multiple tops at 22m.	Remove	Tree within building envelope of proposed residence.	2.3
1206	Western Redcedar	*Thuja plicata*	117	24	Normal	Suitable as group	3 stems at base; 46cm, 30cm, 40cm. Growing on rocky slope. Good unions at base	Remove	Tree within building envelope of proposed residence.	7
1207	Western Redcedar	*Thuja plicata*	37	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope. Not on survey.	Remove		2.2
1208	Western Redcedar	*Thuja plicata*	39	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope. Not on survey.	Remove		2.3
1209	Western Redcedar	*Thuja plicata*	62	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope. 2 stems at 1m; 42cm, 20cm. Not on survey.	Retain		3.7
1210	Bigleaf Maple	*Acer macrophyllum*	30	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope	Retain		1.8

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
1211	Western Redcedar	*Thuja plicata*	40	24	Poor	Suitable as group	Intermediate stem in stand. Growing on rocky slope. previously topped for view	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	2.4
1212	Western Redcedar	*Thuja plicata*	35	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope. Not on survey.	Retain		2.1
1213	Western Redcedar	*Thuja plicata*	70	24	Poor	Suitable as group	Intermediate stem in stand. Growing on rocky slope, Dbh estimate. 2 stems at 2m with moderate inclusion	Remove		4.2
1214	Bigleaf Maple	*Acer macrophyllum*	57	20	Poor	Suitable as group	Intermediate stem in stand. Growing on rocky slope. Phototrophic lean	Remove		3.4
1215	Western Redcedar	*Thuja plicata*	72	24	Poor	Suitable as group	Intermediate stem in stand. Growing on rocky slope. 2 stems at base. 32cm, 40cm. Phototrophic lean	Remove	Tree within building envelope of proposed residence.	4.3
1216	Western Redcedar	*Thuja plicata*	37	18	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. Previously topped for view. New tops at 10m. Not on survey.	Remove	Tree within building envelope of proposed deck.	2.2
1217	Western Redcedar	*Thuja plicata*	34	24	Poor	Moderate	Intermediate stem in stand. Growing on rocky slope. growing at base of slope. Not on survey.	Remove	Proposed driveway within root protection zone of tree.	2
1218	Western Redcedar	*Thuja plicata*	34	24	Poor	Moderate	Intermediate stem in stand. 2 stems at base; 24cm, 10cm. Poor rooting. Growing at base of slope. Not on survey.	Remove	Proposed driveway within root protection zone of tree.	2
Un-tagged 01	Western Redcedar	*Thuja plicata*	43				Tree was thought to be offsite, no data recorded. DBH from surveyor.	Remove	Proposed house within root protection zone.	2.6
dr30	Red Alder	*Alnus rubra*	30		Poor	Unsuitable	May be district owned. Not on survey.	Remove	Not suitable for long term retention. **District's approval required for removal.**	
dr45	Red Alder	*Alnus rubra*	45		Poor	Unsuitable	May be district owned. Not on survey. Leaning over road. Monitor.	Remove	Not suitable for long term retention. **District's approval required for removal.**	

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
OS dr70	Red Alder	*Alnus rubra*	70		Poor	Unsuitable	2 stems at base. **District owned tree.**	Remove	Root protection zone within proposed driveway. Not suitable for long term retention. **District's approval required for removal.**	
OS dr30	Red Alder	*Alnus rubra*	30		Poor	Unsuitable	May be district owned. **District owned tree.**	Remove	Root protection zone within proposed driveway. Not suitable for long term retention. **District's approval required for removal.**	
os01	Western Redcedar	*Thuja plicata*	50	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope. Not on survey.	Retain		3
os02	Douglas-fir	*Pseudotsuga menziesii*	50	24	Normal	Suitable as group	Intermediate stem in stand. Growing on rocky slope. Previously topped with new stems. Not on survey.	Retain		3
os03	Western Redcedar	*Thuja plicata*	45	12	Very poor	Suitable as group	Intermediate stem in stand. Pruned for power lines. 2 stems at base. 25cm, 20cm. Not on survey.	Retain		2.7
os04	Western Redcedar	*Thuja plicata*	37				No data recorded. DBH from surveyor.	Retain		2.2
os05	Western Redcedar	*Thuja plicata*	24				No data recorded. DBH from surveyor.	Retain		1.4
os06	Western Redcedar	*Thuja plicata*	24				No data recorded. DBH from surveyor.	Retain		1.4
os07	Douglas-fir	*Pseudotsuga menziesii*	49				No data recorded. DBH from surveyor.	Retain		2.9
os08	Douglas-fir	*Pseudotsuga menziesii*	61				No data recorded. DBH from surveyor.	Retain		3.7
os09	Douglas-fir		37				No data recorded. DBH from surveyor.	Retain		2.2
os10	Western Redcedar	*Thuja plicata*	43				No data recorded. DBH from surveyor.	Retain		2.6

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
OS 1178	Douglas-fir	*Pseudotsuga menziesii*	53	33	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Exposed roots due to rocky ground.	Retain		3.2
OS 1179	Douglas-fir	*Pseudotsuga menziesii*	71	33	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Exposed roots due to rocky ground.	Retain		4.3
OS 1180	Western Redcedar	*Thuja plicata*	35	20	Normal	Suitable as group	Suppressed stem growing in grove on rocky area. High crown. Must retain with grove. Growing at top of slope	Retain		2.1
OS 1181	Douglas-fir	*Pseudotsuga menziesii*	53	30	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Growing at top of slope	Retain		3.2
OS 1182	Douglas-fir	*Pseudotsuga menziesii*	45	30	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Growing at top of slope	Retain		2.7
OS 1183	Douglas-fir	*Pseudotsuga menziesii*	43	30	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Growing at top of slope	Retain		2.6
OS 1184	Western Redcedar	*Thuja plicata*	50	30	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. Growing 0.1m from rock wall. Must retain with grove	Retain		3
OS 1185	Douglas-fir	*Pseudotsuga menziesii*	48	30	Normal	Suitable as group	Intermediate stem growing in row. 1.8m from house. Branches overhanging roof.	Retain		2.9
OS 1164	Douglas-fir	*Pseudotsuga menziesii*	36	25	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Growing on top of slope. Poor stem form	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	2.2

Tag #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Overall Condition	Retention Suitability	Comments	Retain/ Remove	Tree Retention Comments	Root Protection Zone (m)
OS 1165	Douglas-fir	*Pseudotsuga menziesii*	35	10	Poor	Suitable as group	Previously topped for view. Growing on top of slope.	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	2.1
OS 1170	Douglas-fir	*Pseudotsuga menziesii*	58	30	Normal	Suitable as group	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. Growing on top of slope,	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	3.5
OS 1171	Douglas-fir	*Pseudotsuga menziesii*	53	30	Poor	Moderate	Intermediate stem growing in grove on rocky area. High crown. Must retain with grove. 3 stems at 25m. Still small, but may be an issue in future.	Retain	Future replacement leader management required to mitigate future hazards from previous topping.	3.2

Tree Risk Assessment Table

Only trees that had an overall risk rating of 9 (High 1) or above are included in the following table. The remainder of the trees on the subject site are a moderate risk rating or lower and are suitable for retention in their current land use and condition.

Table 2. Tree Risk Assessment.

Tag #	Common Name	Probability of Failure (1-5)	Size of Part (1-3)	Target Area (1-4)	Tree Risk Rating (3-12)	Tree Risk Category (Low 1-3/Mod 1-3/ High1-3/Extreme)	Action/ Comments
1203	Western Redcedar	4	2	1	6	Moderate 1	No current target, but will be a hazard to construction. Within building footprint

3.0 Summary

The site inventory identified thirty-six (36) trees on the subject site that are protected under the bylaw. Thirty (30) of the trees are to be removed for the development. One of the trees was found to be at high risk of failing and will require removal. There were twenty-six trees identified on adjacent properties that require protection (discussed below). Four of the trees may be owned by the District and will require District's approval for removal. The location of protected trees, their root protection zones as well as those trees to be removed have been illustrated on the accompanying map.

3.1 Tree Retention and Removal by Species

Table 3. Tree species on site summary.

Tree Species	Total Number of Trees	Total Retained	Total Removed
Bigleaf Maple	2	1	1
Douglas-fir	2	1	1
Western Redcedar	32	4	28
Total	**36**	**6**	**30**

4.0 Trees on Adjacent Properties

Twenty-two trees and four District owned trees found growing on the adjacent properties are included in the inventory and retention plan. These trees require root protection where the root protection zone (RPZ) extends onto the development site. The majority of off-site trees on the adjacent lots are pioneer species trees including Maple, Douglas-fir and Western Redcedar. A risk assessment was not done for trees outside the subject property. Root protection zones for the trees have provided within Table 1. Tree Inventory.

5.0 Construction Guidelines

The following are recommendations for risk mitigation and proper tree protection during the construction phase of the project.

Tree Retention Zones

Six times the diameter was used to determine the optimal root protection zone (RPZ). The RPZ is the area around the tree in which no grading or construction activity may occur without project arborist approval, and is required for the tree to retain good health and vigor.

The following are tree preservation guidelines and standards for the RPZs:

- No soil disturbance or stripping;
- The natural grade shall be maintained within the protection zone;
- No storage, dumping of materials, parking, underground utilities or fires;
- Any plan affecting trees should be reviewed by a consultant including demolition, erosion control, improvement, utility, drainage, grading, landscape, and irrigation;
- Special foundations, footings and paving designs are required if within the tree protection zone;
- Utilities should be routed around the RPZ;
- Excavation within the tree protection zone should be supervised by a consulting arborist;
- Surface drainage should not be altered so as to direct water into or out of the RPZ; and
- Site drainage improvements should be designed to maintain the natural water table levels within the RPZ.

Respecting these guidelines will prevent changes to the soil and rooting conditions, wounding of the trees and contamination due to spills and waste. Any plans for work or activities within the RPZ that are contrary to these guidelines should be discussed with the project arborist so that mitigation measures can be implemented.

Tree Protection Fences

Prior to any construction activity on site, tree protection fences must be constructed at the specified distance from the tree trunks. The protection barrier or temporary fencing must be at least 1.2 m in height and constructed of 2 by 4 lumber with orange plastic mesh screening. This must be constructed prior to tree removal, excavation or construction and remain intact throughout the entire period of construction. Further standards for fencing construction can be found at:

http://westvancouver.ca/government/bylaws.aspx

Regulation of Soil Moisture and Drainage

The excavation and construction activities adjacent to the RPZs can influence the moisture availability to the subject trees. This is due to a reduction in the total rooting mass, changes in drainage conditions and changes in exposure including reflected heat from adjacent hard surfaces. To mitigate these concerns the following guidelines should be followed:

- Soil moisture conditions within the tree protection zones should be monitored during hot and dry weather. When soil moisture conditions are dry, supplemental irrigation should be provided. Irrigation should wet the soil to the depth of the root system (approximately 30 cm deep).
- Any planned changes to the surface grades within the RPZ, including the placement of mulch, should be designed so that the water will flow away from the tree trunks.
- Excavation adjacent to trees can alter the soils hydrological processes by draining the water faster than it had naturally. It is recommended that when excavating within 6 m of any tree, the site be irrigated more frequently to account for this.

Tree Pruning

All heavy machinery (excavators, cranes, dump trucks, etc.) working within five meters of tree crowns should be made aware of their proximity to the tree. If there is to be a sustained period of machinery working within five meters of the tree crowns, a line with colored flags should be suspended at the height of the crowns along the length of the protected tree area. If there are concerns regarding the clearance required for machinery and workers within the tree protection zone, or just outside of it, the project arborist should be consulted so that a pruning prescription can be developed or a zone surrounding the crowns can be established. Any wounds incurred to the subject trees during construction should be reported to the project arborist immediately.

Fertilization

Fertilization and root zone enhancements may be recommended by the project arborist in any phase of the project if they deem it necessary to provide the best chance of tree survival.

Paving Within and Adjacent to Tree Protection Zones

If the development plans propose the construction of paved areas and/or retaining walls close to the proposed tree protection zones measures should be taken to minimize impacts. Construction of these features would raise concerns regarding proper aeration, drainage, irrigation and opportunities for adequate root growth. The following design and construction guidelines are recommended be followed to minimize the long-term impacts to trees if any paving or retaining walls are necessary:

- Any excavation activities near the TPZ (tree protection zone) should be monitored by a Certified Arborist. Excavation should remove and disturb as little of the rooting zone as possible and all roots greater than 2 cm in diameter should be hand pruned.

- The natural grade of the rooting zone should be maintained. Any retaining walls should be designed at heights that will maintain the existing grade to within 20 cm of its current level. If the grade is altered, it should be raised not reduced in height.
- The long-term health of the tree is directly dependent on the volume of available, below ground growing space. If the RPZ must be compromised, the planned distance of structures from the trunks of the subject trees should not be closer than 50% of the RPZ on more than two sides of the tree.
- Compaction of sub grade materials can cause the trees to develop shallow rooting systems. This can contribute to long-term damage to pavement surfaces as the roots grow. Minimizing the compaction of sub grade materials using structural soils and increasing the strength of the pavement reduces the reliance on sub grade for strength.
- If it is not possible to minimize the compaction of sub grade materials, subsurface barriers should be considered to help direct roots downward into the soil and prevent them from growing directly under the paved surfaces.

Plantings Within the TPZs

If there are plans to landscape the ground within the TPZ, measures should be taken to minimize impacts. It is not recommended that the existing grass layer be stripped, as this will damage the surface roots. The grass layer should be covered with mulch at the start of the project, which will gradually kill the grass while moderating soil moisture and temperatures. Topsoil should be mixed with the mulch prior to planting of shrubs; however the depth of this new topsoil layer should not exceed 20 cm. Planting should take place within the newly placed topsoil mixture and should not disturb the original rooting zone of the trees. Two meters around the base of each tree should be left unplanted and covered in mulch.

Monitoring During Construction

Ongoing monitoring should be provided for the duration of the project. Site visits should be more frequent during activities that are higher risk, including the first stages of construction when excavation occurs adjacent to the trees. Site visits will ensure contractors are respecting the recommended tree protection measures and will allow the arborist to identify any new concerns that may arise.

During each site visit the following measures will be assessed and reported on:

- The integrity of the Tree Protection Zone and fencing;
- Changes to TPZ limits including: overall maintenance, parking on roots, and storing or dumping of materials within TPZ. If failure to maintain and respect TPZ is observed, suggestions will be made to ensure tree protection measures are upheld;
- Review and confirmation of recommended tree maintenance including root pruning, irrigation, mulching and branch pruning;
- Health and condition of each tree;

- Damage to trees that may have resulted from construction activities will be noted, as will the health of branches, trunks and roots of protected trees. Recommendations for remediation will follow;
- Changes to soil moisture levels and drainage patterns; and
- Factors that may be detrimentally impact the trees.

All findings and recommendations will be documented in a summary report. All concerns will be highlighted along with recommended mitigation measures.

6.0 Limitations

1. Except as expressly set out in this report and in these Assumptions and Limiting Conditions, Diamond Head Consulting Ltd. (**"Diamond Head"**) makes no guarantee, representation or warranty (express or implied) with regard to: this report; the findings, conclusions and recommendations contained herein; or the work referred to herein.

2. This report has been prepared, and the work undertaken in connection herewith has been conducted, by Diamond Head for the **"Client"** as stated in the report above. It is intended for the sole and exclusive use by the Client for the purpose(s) set out in this report. Any use of, reliance on or decisions made based on this report by any person other than the Client, or by the Client for any purpose other than the purpose(s) set out in this report, is the sole responsibility of, and at the sole risk of, such other person or the Client, as the case may be. Diamond Head accepts no liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm (including without limitation financial or consequential effects on transactions or property values, and economic loss) that may be suffered or incurred by any person as a result of the use of or reliance on this report or the work referred to herein. The copying, distribution or publication of this report (except for the internal use of the Client) without the express written permission of Diamond Head (which consent may be withheld in Diamond Head's sole discretion) is prohibited. Diamond Head retains ownership of this report and all documents related thereto both generally and as instruments of professional service.

3. The findings, conclusions and recommendations made in this report reflect Diamond Head's best professional judgment in light of the information available at the time of preparation. This report has been prepared in a manner consistent with the level of care and skill normally exercised by arborists currently practicing under similar conditions in a similar geographic area and for specific application to the trees subject to this report as at the date of this report. Except as expressly stated in this report, the findings, conclusions and recommendations set out in this report are valid for the day on which the assessment leading to such findings, conclusions and recommendations was conducted. If generally accepted assessment techniques or prevailing professional standards and best practices change at a future date, modifications to the findings, conclusions, and recommendations in this report may

be necessary. Diamond Head expressly excludes any duty to provide any such modification if generally accepted assessment techniques and prevailing professional standards and best practices change.

4. Conditions affecting the trees subject to this report (the **"Conditions"**, including without limitation structural defects, scars, decay, fungal fruiting bodies, evidence of insect attack, discoloured foliage, condition of root structures, the degree and direction of lean, the general condition of the tree(s) and the surrounding site, and the proximity of property and people) other than those expressly addressed in this report may exist. Unless otherwise stated: information contained in this report covers only those Conditions and trees at the time of inspection; and the inspection is limited to visual examination of such Conditions and trees without dissection, excavation, probing or coring. While every effort has been made to ensure that the trees recommended for retention are both healthy and safe, no guarantees, representations or warranties are made (express or implied) that those trees will remain standing or will not fail. The Client acknowledges that it is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree, or groups of trees, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure and this risk can only be eliminated if the risk is removed. If Conditions change or if additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification of Conditions change or additional information becomes available.

5. Nothing in this report is intended to constitute or provide a legal opinion, and Diamond Head expressly disclaims any responsibility for matters legal in nature (including, without limitation, matters relating to title and ownership of real or personal property and matters relating to cultural and heritage values). Diamond Head makes no guarantee, representation or warranty (express or implied) as to the requirements of or compliance with applicable laws, rules, regulations, or policies established by federal, provincial, local government or First Nations bodies (collectively, **"Government Bodies"**) or as to the availability of licenses, permits or authorizations of any Government Body. Revisions to any regulatory standards (including by-laws, policies, guidelines an any similar directions of a Government Bodies in effect from time to time) referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification if any such regulatory standard is revised.

6. Diamond Head shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

7. In preparing this report, Diamond Head has relied in good faith on information provided by certain persons, Government Bodies, government registries and agents and representatives of each of the foregoing, and Diamond Head assumes that such

information is true, correct and accurate in all material respects. Diamond Head accepts no responsibility for any deficiency, misinterpretations or fraudulent acts of or information provided by such persons, bodies, registries, agents and representatives.

8. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

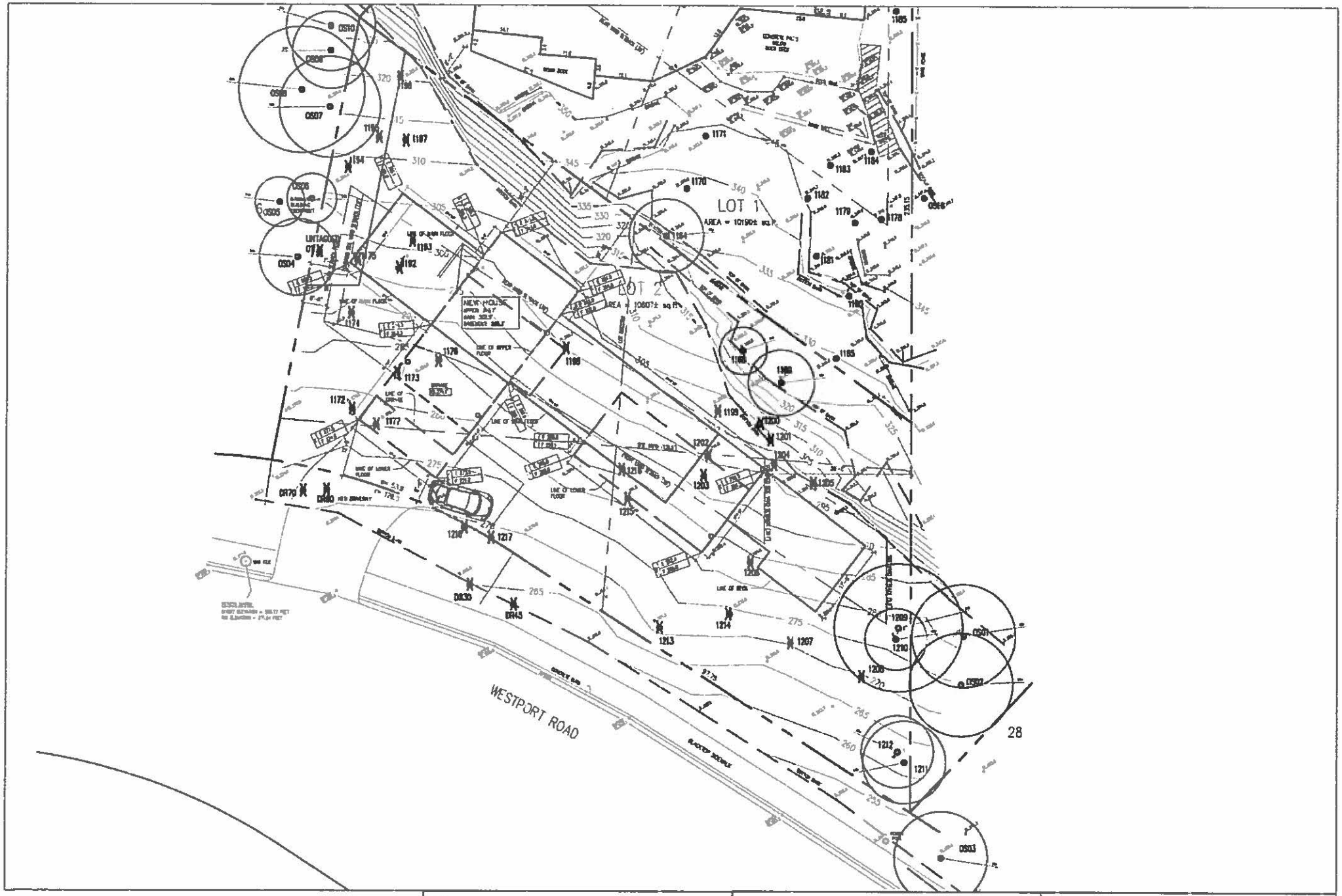
9. Loss or alteration of any part of this report invalidates the entire report.

7.0 Appendix 1 – Overall risk rating and action thresholds

The Overall Risk Rating and Action Thresholds

Risk Rating	*Risk Category*	*Interpretation and Implications*
3	Low 1	Insignificant - no concern at all.
4	Low 2	Insignificant - very minor issues.
5	Low 3	Insignificant - minor issues not of concern for many years yet.
6	Moderate 1	Some issues but nothing that is likely to cause any problems for another 10 years or more.
7	Moderate 2	Well defined issues - retain and monitor. Not expected to be a problem for at least another 5 - 10 years.
8	Moderate 3	Well defined issues - retain and monitor. Not expected to be a problem for at least another 1 - 5 years.
9	High 1	The assessed issues have now become very clear. The tree can still reasonably be retained as it is not likely to fall apart right away, but it must now be monitored annually. At this stage it may be reasonable for the risk manager/owner to hold public education sessions to inform people of the issues and prepare them for the reality that part or the entire tree has to be removed.
10	High 2	The assessed issues have now become very clear. The probability of failure is now getting serious, or the target rating and/or site context have changed such that mitigation measures should now be on a schedule with a clearly defined timeline for action. There may still be time to inform the public of the work being planned, but there is not enough time to protracted discussion about whether or not there are alternative options available.
11	High 3	The tree, or a part of it has reached a stage where it could fail at any time. **Action to mitigate the risk is required within weeks rather than months.** By this stage there is not time to hold public meetings to discuss the issue. Risk reduction is a clearly defined issue and although the owner may wish to inform the public of the planned work, he/she should get on with it to avoid clearly foreseeable liabilities.
12	Extreme	This tree, or a part of it, is in the process of failing. **Immediate action is required.** All other, less significant tree work should be suspended, and roads or work areas should be closed off, until the risk issues have been mitigated. This might be as simple as removing the critical part, drastically reducing overall tree height, or taking the tree down and cordoning off the area until final clean up, or complete removal can be accomplished. The immediate action required is to ensure that the clearly identified risk of harm is eliminated. For areas hit by severe storms, where many extreme risk trees can occur, drastic pruning and/or partial tree removals, followed by barriers to contain traffic, would be an acceptable first stage of risk reduction. There is no time to inform people or worry about public concerns. Clearly defined safety issues preclude further discussion.

The Table shown above outlines the interpretation and implications of the risk ratings and associated risk categories. This table is provided to inform the reader about these risk categories so that they can better understand any risk abatement recommendations made in the risk assessment report.



LEGEND

- TREE TO BE RETAINED
- TREE TO BE REMOVED
- UNSURVEYED TREE
- ROOT PROTECTION ZONE
- ROOT PROTECTION FENCING

DATE

December 03, 2014

CLIENT

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V7L 1B3

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VANCOUVER, BC V5Y 3X2
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TITLE

TREE PROTECTION AND REMOVAL PLAN
5818 Westport Place, BC

GVH CONSULTING LTD.

#102 - 6388 Bay Street, West Vancouver, BC, V7W 2G9
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David Leslie
8593 Bedora Place
West Vancouver, BC
V7W 2W4

October 30, 2014
File 14-124

Re: Proposed Subdivision and Residence
5616 Westport Place
LOT 4 BLOCK E DISTRICT LOT 1374 PLAN 10565
West Vancouver, BC
Preliminary Geotechnical Report for Subdivision Approval

1.0 INTRODUCTION

As requested, GVH Consulting Ltd. has completed a geotechnical report for the above noted property. The purpose of this report is to assess natural hazards on the site, to provide preliminary recommendations pertaining to construction of a new residence on the proposed southern lot to be subdivided from the existing lot and residence. We have based the following report on review of available documents pertaining to the site including preliminary proposed subdivision and house location routing of the proposed driveway and on a field review of the site conducted on October 15th, 2014.

Reference documents for this review include:

1. Images from David Leslie of Synthesis Design Architectural Drawings showing the proposed house siting, October 10, 2014
2. Survey Drawing, Hobbs, Winter & MacDonald, November 19th 2009
3 Community Charter, Ministry of Community, Sport & Cultural Development- Government of British Columbia, May 2003
4. British Columbia Building Code, 2012
5. National Building Code of Canada, 2010
6. Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC, APEG revised May 2010
7. DWV GIS Site
8. DWV Building Bylaws

This report presents our interpretation of geotechnical characteristics and natural hazards that may affect the proposed development and contains general recommendations for construction of the new residence. Post development landslide risk (rock fall) is based on procedures outlined in reference #6 above and on the assumption that mitigation of the risk will be accomplished in accordance to general recommendations contained in this report. It is concluded that the site is safe for the intended usage regarding natural hazards provided the recommendations contained herein are followed. Find attached "Appendix D: Landslide Assessment Assurance Statement"

2.0 SITE AND SUBSURFACE DESCRIPTION

The property adjoins Westport Place to the north, Westport Road to the south and private property to the east and west. Competent granitic bedrock outcrops over most of the site with some ground cover consisting of loose talus or jointed rock and debris at the south side of the property and proposed new building site. Shear cliffs bound the north side of the southern proposed lot just north of the new building site with an elevation difference of about 25 feet. The cliffs are close to the proposed new property of the subdivision for the lot. The south side of the new lot slopes at roughly 5 H : 3V down to Westport Road and is comprised of granitic talus over bedrock. The thickness of the talus is estimated at 3 to 5 feet. The proposed access for the lot is from Westport Road to south.

3.0 NATURAL HAZARD (ROCKFALL) ASSESSMENT

The natural hazards listed as per references #3 and #6 pertaining to this property with a probability of occurrence greater than 1 : 2475 years (ie 2% over 50 years) includes rock falls that fall under the APEG Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC Revised May 2010 and adopted into the BCBC in 2010.

Rock fall considerations affect the area north of the proposed residence where shear cliffs up to about 25 feet high are found. Future rock cuts for the building foundation wall would be retained by the structure of the house. The rock cliffs were reviewed on site and it is concluded that any rock fall hazard can be mitigated by scaling or rock bolting in discrete areas thus removing the potential hazard to the proposed building site rendering the site safe for the intended usage as pertaining to natural hazards as described in reference #3.

4.0 RECOMMENDATIONS For DEVELOPMENT

It is recommended that foundations for the residence comprise conventional strip and pad foundations with structural fill supporting slab-on-grade. Structural fill can be used to raise the grades to the design grade using compacted shotrock fill (150 mm minus angular broken rock) or the foundation walls can bear directly onto bedrock.

Subgrade preparation should include removal of all vegetation, organic soils and soft disturbed soils down to the underlying bedrock. Footings placed on bedrock sloping steeper than 1V : 2H should

be dowelled into the bedrock with 15M dowels placed every 400 mm imbedded into the rock a minimum of 300 mm. The prepared footing areas should be reviewed and approved by the engineer prior to pouring or placing dowels.

The following values can be used for design of footings:

Foundation Soil	Factored Ultimate Bearing Capacity	Allowable Bearing Pressure
Bedrock	2000 kPa	1000 kPa
compacted structural fill	400 kPa	200 kPa

The above design bearing pressures assume the following:

- Footings have a minimum dimension of 400mm- foundation walls can be pinned directly to bedrock without a footing.
- Footings are founded at least 450 mm below the final finished exterior grades except where foundation walls are pinned or placed directly on bedrock (non frost susceptible)
- Site preparation is completed as indicated above and load-bearing surfaces are inspected and approved by the Geotechnical Engineer.
- For seismic design the site can be considered as Site Class B as defined in the current BCBC
- Foundations should be pinned onto sloping bedrock using minimum 15M dowels at 400 mm o/c grouted 300 mm into the underlying bedrock for strip footings or foundation walls and a minimum of 4 15M dowels for square pad footings.

Slab-on-grade can be supported on suitable prepared subgrades. The subgrade should be prepared by stripping all loosened, softened or otherwise unsuitable material. We recommend that a minimum 100 mm layer of clear crushed gravel or compacted shotrock fill should be placed beneath the crawl space skim coat or slab-on-grade in order to provide a drainage layer for potential seepage zones. The gravel drainage layer should have outlets via weep holes at the low sides of the foundation walls. A layer of 6mil poly vapour barrier should be placed over the clear crushed gravel to protect it from concrete contamination and to limit dampness of the skim coat.

Foundation walls and retaining walls can be designed assuming a minimum lateral load of an equivalent fluid pressure of 5 kPa x H where H is the depth below grade in metres for static load. For seismic load a reversed triangular loading of 4 kPa x H where H is the height above the bottom of the wall can be used. A uniform load 2 kPa should be additional to the above to account for surcharge loading. In giving the above loading it is assumed that the perimeter fill is comprised of freely draining backfill. Perimeter drains are required for foundation walls that retain fill with finished grades above that of the adjacent floor slab. The drain should consist of 100 mm diameter perforated PVC pipe surrounded with clear gravel with a suitable gravity outlet. Perimeter drains are not required in areas where the slab-on-grade is above the adjacent grades.

Backfill for for support of exterior sidewalks, driveway, patios, etc. should consist of well-graded granular material (75 mm minus) with less than 5% passing the US Standard No. 200 (0.075mm) sieve by dry weight. The backfill should be placed in thin lifts (200 mm) and compacted to a minimum 90% Modified Proctor Maximum Dry Density. The placement of structural fill should be monitored by a representative from GVH Consulting Ltd. to confirm that the placed fill is suitable for the intended purpose.

All backfill should be placed in a manner that avoids damaging the foundation wall, drainage tile, and damp-proofing or waterproofing on the wall. Finished grades should slope away from the building to promote flow of surface water runoff away from the building. A 200 mm layer of 20 mm minus crushed sand and gravel (road base) should be placed immediately beneath pavements and sidewalks.

5.0 CLOSURE

GVH Consulting Ltd. has completed this preliminary report for the exclusive use of our client and designated consultant or agents specifically for the proposed residence and subdivision planned. Any other usage of the report is not authorized by GVH. We trust that this report meets your present requirements. Please call if you have any questions or require further assistance.

For:
GVH Consulting Ltd.

Greg Ven Huizen, M.Eng., P.Eng.
Geotechnical Engineer

Site Plan from DWV GIS showing Property Location of 5616 Westport Place