



LOUIS & ANNIE HILL COTTAGE ADAPTIVE RE-USE STUDY

City of Burnaby





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PROJECT ADDRESS	6584 Deer Lake Ave		
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1 INTRODUCTION & PURPOSE

This Feasibility Study explores the adaptive re-use of the Louis and Annie Hill Cottage (or “Hill Cottage”) located at 6570 Deer Lake Ave, within the Deer Lake Master Plan Area (or “Deer Lake Park”). This report provides a snapshot of the present condition of the Hill Cottage site and proposed adaptive re-use cases for the City of Burnaby (the “City”).

The City of Burnaby purchased the Hill Cottage fee-simple lot in 2006, rezoning it to P3 with the intention of consolidating the lot into Deer Lake Park. The city explored re-using the site and cottage as an office in 2008, and also retained Architect and Heritage Consultant Eric Pattison to complete a Conservation Assessment. Pattison’s 2008 report can be found in the Appendix of this report.



Figure 1: 2023 front entrance to Hill Cottage.



Figure 2: 1938 front steps, Peers and Hill family.



2 EXECUTIVE SUMMARY

Hill Cottage has heritage significance due to its construction by the Hill family in 1925. The Hill family played a significant role in the early history of Burnaby and Deer Lake Park.

- Current use: The house is currently being utilized as storage.
- Hill Cottage site's potential adaptive re-use: The Cottage and site has potential to be utilized as an accessory building by City of Burnaby Parks, Recreation, and Culture ("PRC") programming or for administrative purposes, such as an office use.
- The Site without the house has the potential to be utilized additional open park space, and as a connection between the Burnaby Village Museum and Deer Lake Park.

Note: This study does not address operating costs, operational issues, and cannot assess hidden conditions.

HILL COTTAGE'S LINK TO INDIGENOUS PEOPLES

Deer Lake Park falls within the shared, ancestral and unceded territories of the hən'qəmin'əm' and Skwxwú7mesh-speaking people. First Nations intensively used the area to hunt, smoke fish, and gather fruits and plants, far before the arrival of newcomers. The below excerpts from 'Indigenous History in Burnaby, Resource Guide (2019)' illustrate the significance that Deer Lake, the surrounding park and Hill's residence site continue to hold from a First Nation perspective.

Central Coast Salish Nations

"Before Burnaby existed, its lands were home to the ancestors of several local Central Coast Salish Nations. Today, their descendants continue to live in Burnaby and the adjacent municipalities that developed within their traditional territories. [...] Since time immemorial, each of these Nations has celebrated its own unique culture and history, while remaining connected to the others by family, social life, traditions, protocols, and language. Each has oral traditions to explain their origins and ongoing connections to local lands. In these accounts, geography is often more important than chronology for understanding the past. Indigenous history is, instead, invoked by features of the landscape such as Burnaby Mountain, Deer Lake and the Brunette River, and the resources belonging to those places."

Central Valley and Deer Lake

"The Central Valley area includes Deer Lake, Burnaby Lake and the Brunette River. It was an intensively used resource area before the arrival of newcomers who cleared the land for logging and farming. hən'qəmin'əm' and Skwxwú7mesh ancestors lived in long-term settlements at the mouth of the Brunette River, [...] and near Deer Lake at the present site of Burnaby Village Museum. [...] In the Central Valley area, hən'qəmin'əm' and Skwxwú7mesh ancestors traditionally gathered crops like cranberries, crab apple, labrador tea, cattail, and wapato. They hunted ducks, elk, deer, and beaver. Salmon and trout were among the many fish species available in both lakes [...]. After Burnaby was re-settled by newcomers,



hənqəminəm' and Skwxwú7mesh men sometimes traded game and berries to homesteaders for freshly baked bread, while women went door to door trading their cedar root baskets [...]."

"The western shores of both lakes supported extensive cranberry marshes. In the late 1800s, the Hill family frequently saw groups of hənqəminəm and Skwxwú7mesh people camping near the bridge across Deer Lake Brook, near present-day Canada Way. They arrived each fall when the bog cranberries were ripe, to gather the fruit and to smoke fish, and were seen in the area until around 1914. [...] Dugout canoes, projectile points (arrow and spear tips), and hand mauls (tools used for splitting planks in woodworking) were found in abundance near the two lakes by early newcomers to Burnaby. The styles of the tools found by the Hill family on their strawberry farm near Deer Lake tell us that hənqəminəm and Skwxwú7mesh ancestors lived in this area for thousands of years before the arrival of settlers."

SUMMARY OF FINDINGS

The following summary of recommendations is based on the consolidation of the Hill Cottage site (currently zoned P3) into Deer Lake Park, to be operated as part of the collection of building assets within Deer Lake Park. The recommendations seek to limit the impact on Hill Cottage's main Character Defining Elements (CDE's).

Conservation Approach

1. **Exterior Restoration:** Hill Cottage's form and exterior cladding and finishes are the most recognized CDE's, and should be restored. (CDE's - identified in the 2008 Pattison Report).
2. **Renovate the interior for modern programming:** In contrast with the exterior, the interior shows evidence of several periods of changes, and is the least documented aspect of the heritage cottage.
3. **Retain Natural Landscaping:** Hill Cottage site remains in its original location with much of its original landscape features, with some invasive, non-original plants. The landscaping should be carefully managed in this original layout, as part of Deer Lake Park's natural, evolving heritage.
 - o **Connection to Deer Lake:** To achieve a strong connection between Burnaby Village Museum and Deer Lake, intervening on the site by removing the rear yard fence and connecting Deer Lake Ave to the trail behind Hill cottage. This can include features such as park benches and art installations to further strengthen the public nature of the site.

Incorporate into Deer Lake Park as Open Space

Dismantling Hill Cottage and incorporate the site into Deer Lake Park as a natural feature, connecting Burnaby Village Museum, Deer Lake and the cluster of heritage cultural assets. This may be the most practical option given several key reasons:

1. **Deer Lake Park alignment for the future:** This would align with Deer Lake Park Management Plan, increasing park space.



- 2. **Costs:** associated with restoration work, systems and structural upgrades, and interior finish and millwork improvements for modern uses may not be considered best value investments.
- 3. **Operational Practicalities:** The building is small and the site itself is isolated from other City buildings, which may make it difficult to integrate into operations.
- 4. **Balanced Approach:** this option should be balanced with thoughtful documentation of the Hill Family's historical presence and contribution to Deer Lake and the City of Burnaby, such as an Interpretive Node on the former Hill Cottage Site.

Rationale for the dismantling of Hill Cottage is detailed in the "Incorporate into Deer Lake Park as Open Space: Dismantling Hill Cottage" section.

Renovations - Building Adaption:

- 4. **Hazardous Materials:** As Hill Cottage has not been occupied by people since 2007, a hazardous materials survey should be completed, and recommended abatement completed.
- 5. **Envelope inspection and repair:** The cottage is showing signs of a leaking roof and may have other hidden leaks or building envelope issues.
- 6. **Minimize major changes:** Hill Cottage, including its extension, appears to be in good condition given its age. While changes to the interior partitions are possible, it's recommended to avoid changes, as buildings of this era tend to require extensive structural review and interventions due to the use of many interior walls as part of the building's structural system.
- 7. **Completely retrofit systems:** Heating, cooling and ventilation, as well as plumbing, will also require new systems.
- 8. **Light interior refresh:** The interior of Hill Cottage can be refinished, with new millwork, to allow for modern day programming to comfortably utilize the cottage.

Adapting Hill Cottage to accommodate present and future city programming can be accomplished through three main interventions, yielding the greatest usability for a range of possible uses.

Building Adaption	Useability	Rationale	Reference Information (if applicable)
1. Envelope	Medium	The Cottage currently shows signs of leaks that is causing damage. The Cottage's envelope can also be retrofitted with insulation, etc. To provide greater occupant comfort.	N/A
2. Accessibility Upgrade	High	The site is currently not universally accessible, limiting its usability by a sub-section of the City staff and the public.	Building Accessibility Handbook 2020



3. Universal Washroom Addition	High	The Cottage's single, non-accessible bathroom constrains the Cottage's occupancy limit. The addition of a second universal toilet room would be a significant improvement.	Washroom Facilities (3.7.2.2)
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Figure 3: 2023 west elevation.



Figure 4: 2023 Street view, east elevation (front of Hill Cottage).



Figure 5: 2023 west elevation. Rear yard, including the addition (sunroom) with the missing patio.



3 HILL COTTAGE SITE

The Hill Cottage site includes the cottage, far back from Deer Lake Ave, with a gravel driveway flanked by large trees. West (behind) of the cottage, separated from the site with a wood fence, is a public trail that is part of the Deer Lake Park trail network. The site also includes a garage, close to the northwest corner of the lot. The garage is not included in this study.

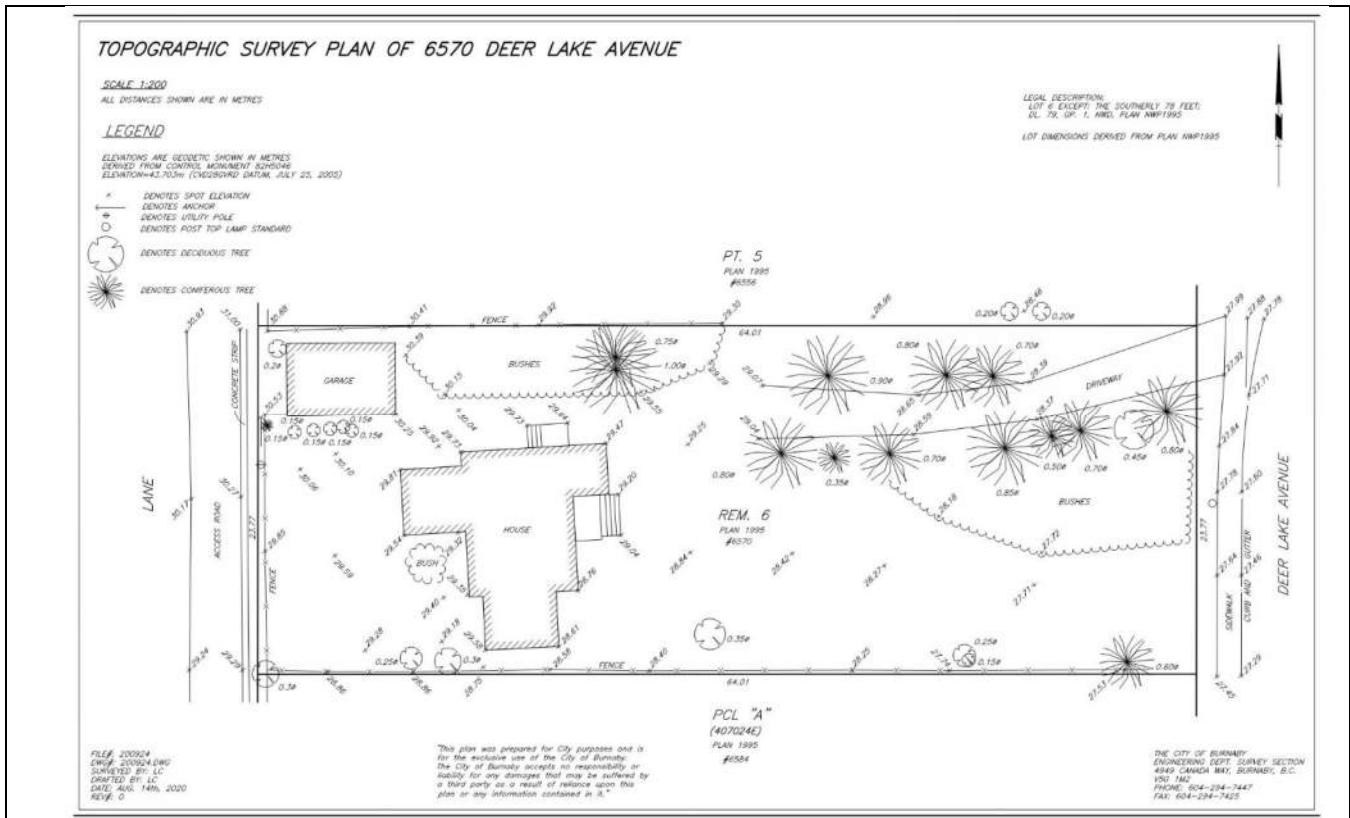


Figure 6: 2020 Survey Plan. Provided by City of Burnaby Engineering Dept. (See Appendix for full-size)



Schematic Site Plan	
Legal Description:	PID: 2321-6570-0000 Lot: 6 Block 1 District Lot: 79 Plan: NWP1995
Lot Area:	16377.50ft ² / 1521.52m ²
Allowable Lot Coverage (built area):	4913.24ft ² / 456.46m ²
Current Lot Coverage (Current built area):	1438.26 ft ² / 133.62 m ² (including decks)
Front Yard:	East 40.2m
Side Yards:	South 1.8m / North 8.1m
Rear yard:	West 14.4m
Off-Street Parking:	Drive lane, gravel/earth. Approx. length: 40m.
Off-street Loading:	None.
Gross Floor Area:	186.2 m ² / 2004 ft ²
Main Level:	120.4 m ² / 1296 ft ²
Attic Level:	32.9 m / 354 ft ²
Basement Level:	51.5 m / 554 ft ²

Hill Cottage: Floor Plans

When it was first built in 1925, Hill Cottage had 3 levels: a Main Floor, Attic with two small rooms, and a basement that acts as the cottage’s service space. In 1931, an additional “Sunroom” was built into the South façade, with a set of double doors that exit onto a patio, with a set of stairs leading down onto the (west) rear yard. Record drawings of the Hill Cottage from the 2008 Conservation and Adaptive Re-Use Plan Report (produced by Eric Pattison Architect) were utilized as underlays for this report’s schematic designs, detailing the approximate interior layout of the Cottage.

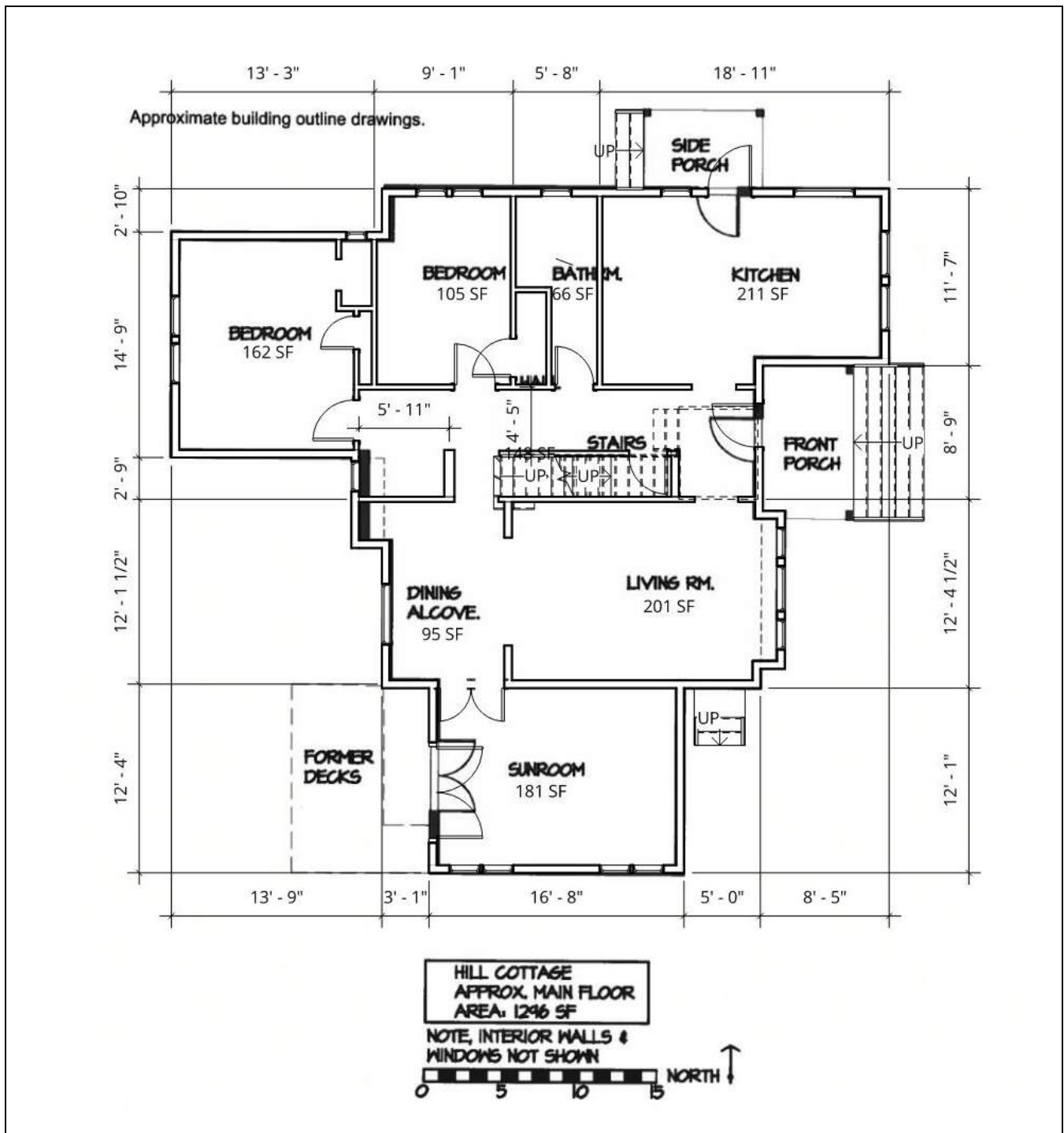


Figure 7: Main level, Hill Cottage. Interior layout overlaid on record drawing.

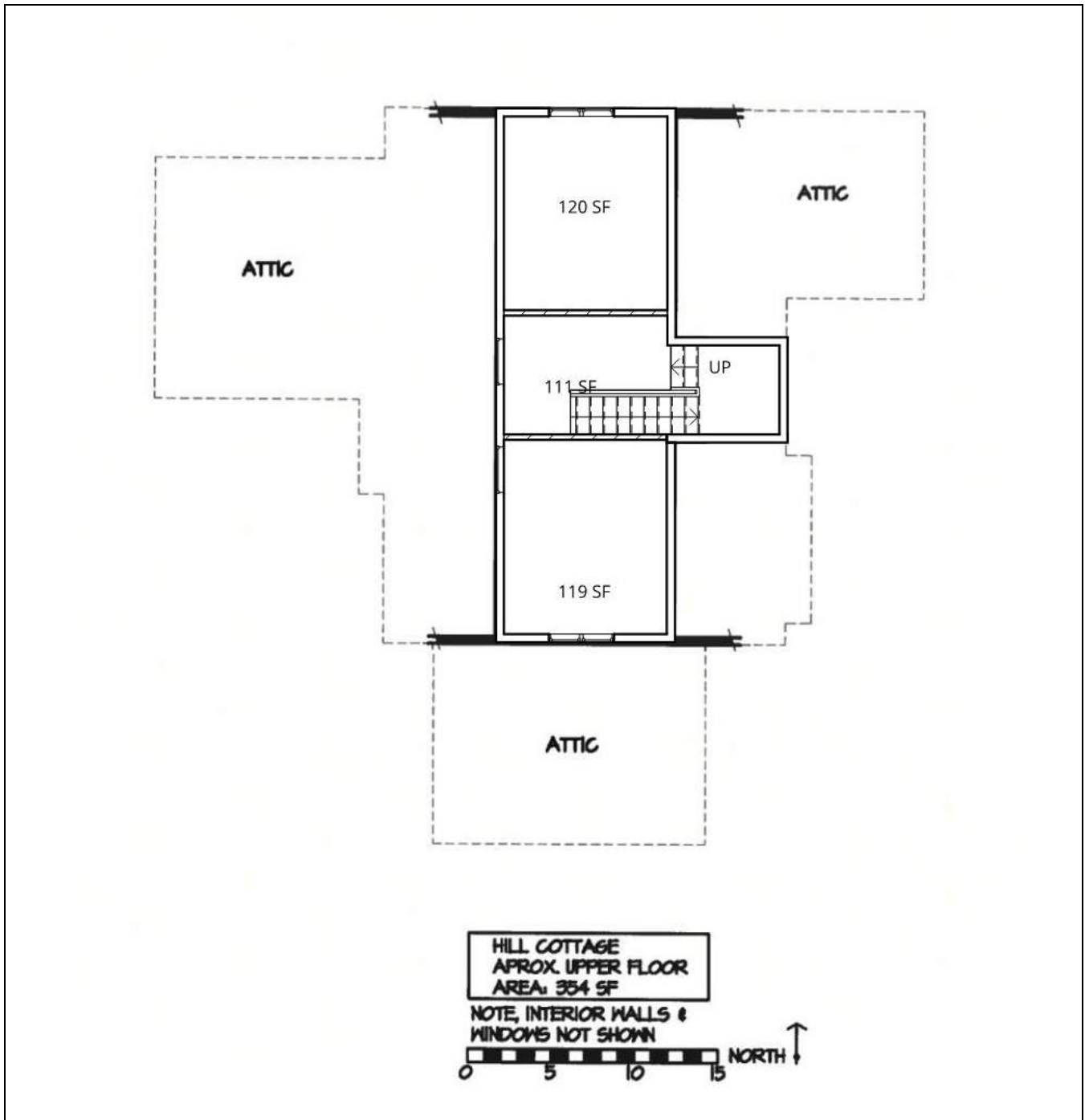


Figure 8: Attic level, Hill Cottage. Accessed from a set of stairs from the main floor. Interior layout overlaid on record drawing.

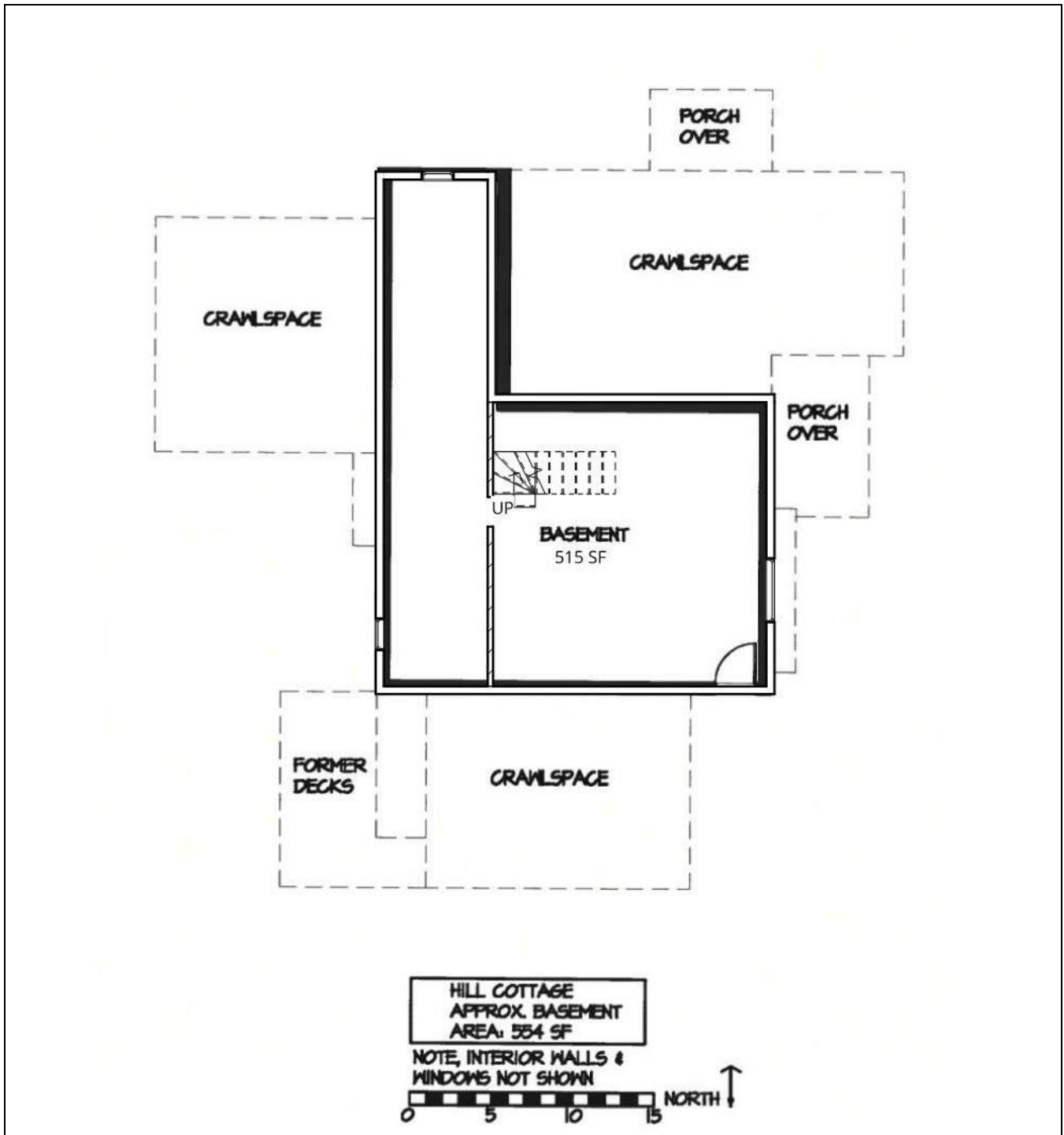


Figure 9: Basement level, Hill Cottage. Accessed from the main floor via a set of stairs, as well as an exterior door. Interior layout overlaid on record drawing.



4 HERITAGE AND CULTURAL VALUE ASSESSMENT

The 2008 Pattison report indicates the heritage value of the residence at the time of the assessment. The following values are indicated in the Statement of Significance:

1. Association with Burnaby's pioneers, Louis and Annie Hill
 - a. Louis Hill immigrated in 1887, established a small fruit farm, was one of the first municipal councilors for the newly incorporated Burnaby, and responsible for the subdivision of Buckingham Estate in the Deer Lake neighborhood.
2. The home is representative of the suburban development of Deer Lake in the 1920's.
3. The house demonstrates the late persistence of the Arts and Crafts movement
4. Now owned by the City and is part of a grouping of heritage buildings located in Deer Lake Park.

It should be noted that the values presented in 2008 report are based on settler values and do not address values associated with the natural and Indigenous relationship of the place. For a full understanding of the value of this place, further investigation and research would be required, which is outside of the scope of this review. However, the Settler values presented in the Pattison report are still valid today. This report includes a brief summary of the indigenous histories of the site based on research published by the city.

5 REGULATORY CONTEXT

Hill Cottage's past use as a single-family residence is consistent with the City of Burnaby's P3 zoning, if occupied by a caretaker, watchman or other persons similarly employed by the City. For its present and future use, Hill Cottage will not be retained as a single-family residence. The City has noted the P3 zoning allows for accessory use as part of other facilities located in Deer Lake Park.

5.1 ZONING & PERMITTED USES – P3 PARK & PUBLIC USE DISTRICT

503.1 Permitted Uses

- (1) Assembly, Cultural and recreational facilities
- (2) Arboreta, botanical gardens, planetaria, zoological gardens and aquaria
- (3) Public parks
- (5) Public libraries
- (6) Public playfields and playgrounds
- (8) Dwelling or dwelling unit for a caretaker, watchman or other persons similarly employed, when considered to be essential to the operation of the facility.
- (9) Accessory building & uses (B/L No. 5170-67-06-26)
- (11) Temporary Shelter (B/L No. 14003-19-07-29)



(12) Childcare facility [if operated by the City] (B/L No. 14065-19-11-18)

503.1A P3f Zoning District

- (1) Uses permitted in the Parks and Public Use District P3.
- (2) Liquor license establishment

503.2 Condition of Use

- (1) All principal uses shall be oriented to pedestrian needs and be so located and designed as to avoid vehicular interference with pedestrian movement.
- (2) No power boats
- (3) Childcare shall be operated by the City

503.3/4/5/6/7/8 Site

Lot Coverage: Maximum 30% of lot area.

Front Yard: A front yard not less than 6.0m in depth.

Side Yards: A side yard not less than 6.0m in width.

Rear yard: A rear yard not less than 9.0m in depth.

Off-Street Parking: Schedule No. VIII Off-Street Parking

Off-street Loading: Schedule IX Off-Street Loading

5.2 CODE AND BUILDING SAFETY

The Hill Cottage is currently considered a Part 9, Group C, single family residence. It has been unoccupied since 2007 and is currently being used as storage. Key code considerations:

- **Exiting:** The Hill Cottage does not have exiting for public use, such as exit signage or panic bars for doors, which would be required for other proposed uses.
- **Fire safety:** No fire alarm, smoke or CO detectors were seen inside the cottage.
- **Not fully accessible:** The building is raised from grade by a half-storey (basement) with stairs for access. Accessibility is particularly important if Hill Cottage will be open to the public or if it will be utilized as an office.
- **Attic Level:** The low sloped ceilings limit the use of the two attic bedrooms. (See reference: BCBC 9.5.3.1.) Head height over the stairs (particularly at the top) does not meet code and code compliant head heights. Liveable space within the rooms at each end of the attic is very limited.



6 EXISTING CONDITION ASSESSMENT

CIVIL & LANDSCAPE

Binnie

This property was originally part of the Deer Lake Crescent Subdivision, and the lot is accessed from a driveway on Deer Lake Ave. The existing site is heavily treed on the eastern portion of the site. Topographical survey is available in the Appendix.

Deer Lake Ave is two-lane local road with abutting sidewalk on the west side and angled parking and sidewalks on the east side. The existing pavement fronting the site appears to be in good condition with no signs of cracking or rutting. The vehicle access to the site is through a shared driveway letdown with the adjacent property to the north.

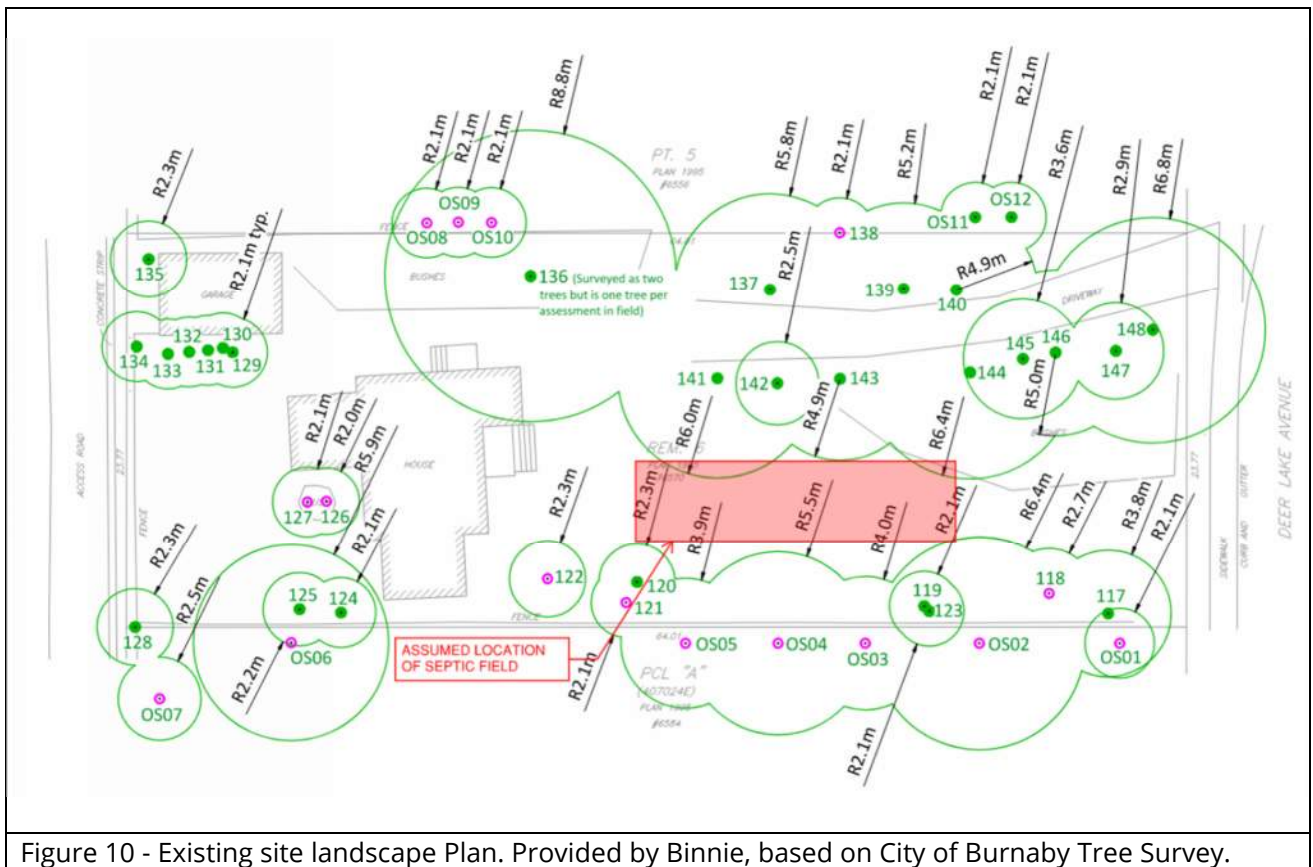
The site is serviced by the following existing services within Deer Lake Ave:

- Existing 150mm diameter ductile iron watermain, installed in 1987 along Deer Lake Ave. The existing water service records cards show the water service approximately at the centre of the property. A faint blue paint is marked at approximately that location confirming the location of the water service. Refer to photos in the Civil Report (see Appendix).
- Existing 200mm diameter PVC storm was installed in 1987 along Deer Lake Ave. Service connection is shown on the records at the southeast corner of the site. The building roof drainage is assumed to be connected to this storm service connection based on the 2008 Pattison Report. (See Appendix for the 2008 Pattison Report)
- There are no sanitary sewers along Deer Lake Ave.
- Existing streetlighting ducts are installed on the west side of Deer Lake Ave.

Refer to the Civil Report (in the Appendix) for a sketch of the existing City of Burnaby utilities and the relevant record drawings.

The Pattison Report noted that the onsite perimeter drainage drains to a rock pit within the site. Further investigations will be required to locate the existing rock pit. In addition, the report also notes septic field exists in the front yard of the main building as the site is not serviced by a sanitary sewer. Binnie completed a visual inspection of the area and presume the septic field exists between the north and south row of trees per the layout shown in the figure below. City staff has also provided photos of the presumed location.

Third party utilities exist within the lane (officially a trail behind the Hill Cottage site) and Deer Lake Avenue. An existing 26DP gas main services the property from Deer Lake Ave. The existing overhead electrical service is from the pole in the lane, northwest of the property.





Figures 11 & 12 – Location of the existing Septic Tank in front of Hill Cottage (east elevation).

ARCHITECTURE

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Site

- Mature trees may have been planted as part of the original construction. Original 'cottage' garden style plantings are not present. Some flora does appear to be volunteer and not part of the original planting scheme.
- The rear yard and fence restrict access through the site, connecting Burnaby Village Museum and Deer Lake.
- The Cottage site access is currently a gravel and dirt path that has limited accessibility for those with disabilities.
- Along the perimeter of the house, the grade appears to be at the same level as the window sills in the basement (half storey). There is also an access hatch into the crawlspace under the extension (locked, no access currently), and a door into the basement (sealed shut).



- The original long driveway exists between rows of mature cedars and leads to the garage at the northwest corner of the site. The driveway appears to have been gravel but has had significant organic infiltration blurring the edges of the drive.
- The site has the appearance of a privately owned lot, like the private homes beside Hill Cottage.

Envelope – Walls

- Assembly appears to be 2x4 walls, diagonal wood sheathing, original shakes, more recent stucco, complete with metal beads, trim, etc. Not known if insulation (period or modern) is present. Condition of the original cedar shake siding is unknown.
- Crawlspace skirting is wide vertical wood plank on plank pattern in fair to poor condition.
- Wood planter boxes were not original to the house and are in poor condition.
- Faux half-timber details would have been added at the time of the stucco installation and are not original to the house. The half timbering is in fair condition.
- Arts and Crafts Details – evident at roof eaves, window details, and under overhanging floor areas, are in fair to localized poor condition. All need removal of spalling and weathered paint with application of new.
- Exposed wood soffits and rafter tails are in fair condition. Facias are in poor to fair condition.

Envelope – Windows and Doors

- Windows appear to be from different eras. The 1st floor windows have different head heights, and the 2nd floor windows are double pane. The trim may have been changed when the stucco was applied (along with edge trims, etc. for the stucco).
- All original windows are wood frame and sash with double hung for operable windows. Most have been painted closed. Newer windows are wood and either sliders or fixed.
- Window paint is peeling significantly in places and sills are showing signs of significant weathering and some rot. Window sills at basement level where the grade is at the same level are in poor condition.
- Glazing putty is cracking and spalling in certain locations. Old glazing putty can contain asbestos and would need to be tested and if found containing, abated properly. All glazing putty needs to be replaced.
- The main entry door does not appear to be original and has a more modern storm door.
- The kitchen north side door appears original but does not have the original door handle. Another kitchen door at the front porch has been closed in and is not evident in the current condition.

Envelope – Roof

- Roof appears to be 2x4 rafters, wood roof boards and asphalt shingle (modern). It appears original strapping (used with the original shingle roof) may have been removed. The shingles appear to be in poor condition.



- An access door into the attic shows it is not conditioned, with ceiling insulation installed on top of the ceiling between the ceiling framing. The insulation appears to be batt mixed with suspected vermiculite and appears to be inconsistent. Note the wall hosting the access door appears to be uninsulated and without vapour barrier.
- Hill cottage has two chimneys: one serving a fireplace in the living room (appears to be non-original), and one that appears to have served a furnace located in one of the 1st floor bedrooms. The 2nd chimney appears to be leaking, with evidence of significant water damage on the interior walls and ceilings. Both chimneys are in fair condition.

Porches

- The main entry porch is not original and may have been replaced in the 1970's. It is in fair condition. The existing indoor/outdoor carpet needs to be removed to assess the condition of the porch floor boards.
- The north side porch is not original, and it is questionable whether there was anything more than stoop here. It is in fair condition, but the indoor/outdoor carpet needs to be removed to assess the condition of the porch floor boards.
- There was a deck off the 1937 addition that faces Deer Lake Park. The addition probably did not include this deck and was more likely a set of stairs down to the back garden.

Attic (2nd) Floor

- The 2nd floor has two sloped ceiling bedrooms connected to a hall and stairway down to the first floor. Head height may restrict what the 2nd floor could be used for (code, usability, etc.)
- There is evidence of black mold in one of the bedrooms, on the ceiling.
- The rooms and hallway appear to be finished at a later period, likely in the 1960's or 1970's.
- An access door near the stairwell not sealed shut provides a viewport into the roof cavity.
- The finishes are in fair condition.

Stairwell

- The stairwell landing has a low head height due to the roof slope. The stair's handrail/guard appears to have been installed later, likely in the 1960's or 1970's. The stair treads are exposed painted wood. Carpet in the 2008 Pattison report has been removed from the stairs.

Main (1st) Floor

- This main floor is raised by about 4 feet and does not have any access ramp. An old double door at the addition has the patio removed and is not usable at the present.
- Hill Cottage has a basement, which is accessed by a set of wood exterior stairs near the main entry. Hill Cottage is served by 1 bathroom and 1 kitchen, with outdated fixtures, appliances, etc. and not salvageable. Millwork is also not original, outdated and at the end of its service life.



- The 1st floor has 2 bedrooms (one of which is an extension), a living room with fireplace and mantle (with what appears to be newer stone cladding, tiled hearth, and a newer insert) and a utility room complete with old appliances and a built-in ironing board.
- Generally, the wall and ceiling finishes appear to be from different eras, and range from old but reasonably better shape, to poor, to water damaged. Stippled ceiling treatments are contemporary as are some of the walls covering and paneling treatments.
- The floor appears to be framed with 2x lumber, with 45-degree sheathing with Douglas fir T&G flooring in the main living spaces and linoleum sheet flooring that appears to be original in the hallway. The floor shows signs of “waviness” (i.e., a marble will likely roll unpredictably to low points or edges).
- The living room wall above the fireplace has poly covering the entire wall except at the fireplace. It is taped at the edges, though not effectively.

Basement

- Signs of animal infiltrations, including rats and possibly other animals from a hole in the basement, under the cottage extension crawl space.
- The concrete foundations (later construction?) also appear to be parged in some locations.
- Near the newer heating system, the wall appears to show possible water infiltration, draining in from grade.
- Taped poly barriers are installed in the long room with the newer heating equipment.
- An access hatch allows access into the crawlspace under the kitchen, bathroom, and main hallway. There is a concrete structure (likely under the 2nd chimney) with significant “honeycombing” and larger rocks, which can affect the integrity of the foundation and will need to be assessed in detail. The crawlspace does appear to be dry.

HERITAGE

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Character Defining Elements

The Statement of Significance (SOS) containing the Character Defining Elements (CDE's) is found in a 'Conservation and Adaptive Re-Use Plan' prepared by Eric Pattison Architect in 2008 ("Pattison Report"). The CDE's that are identified in the report include the following:

- location in the Deer Lake neighbourhood, fronting Deer Lake;
- residential form, scale and massing as expressed by its one-storey height plus crawlspace, side-gabled roof, front projecting gables, square projecting front bay and open front porch;
- wood-frame construction with original wood siding intact under a later coat of stucco;
- modest Arts and Crafts details such as diamond-point triangular eave brackets;
- windows, including double-hung, 1-over-1 wooden sash windows with horns;
- associated landscape features including mature cedars lining the driveway.



As noted in the report renovations in the 1970's "did not include noteworthy architectural aspects nor reinforce identified Heritage Values; the opposite is more the case as many Character-Defining Elements were compromised".

Over the past 15 years since the Pattison Report was prepared, there appear to have been no further significant renovations or physical changes. The house has endured further wear and tear, there is some evidence of rodent damage, vandalism, and maintenance has been minimal. There are also areas that have been undergoing abatement, or at the very least have been covered in poly to reduce possible air-borne contaminants.

The form of the house and the character defining elements have not been unduly compromised to the extent that they are no longer valid. Nor has the siting and landscape features changed in any meaningful way.

Condition Assessment

The house is now 98 years old. The Pattison Report noted Hill Cottage was in FAIR condition. Roofing, roof trims, vertical wood siding at the crawlspace level are in FAIR TO POOR condition. The stucco has continued to perform well and has helped to protect the original wood cladding, but until the stucco is removed, the overall condition of the wood cladding is not known. An exposed portion does indicate some damage, but that may only be from being exposed. Further weathering and water damage have affected the exterior finishes. The interior finishes range from POOR to GOOD condition due to water ingress issues, rodent action, and vandalism. The building has continued to age and experience wear and tear without the benefit of restoration and rehabilitation to ensure its long-term conservation. The kitchen and bathroom are in POOR condition (refer to the more detailed assessment above).

STRUCTURAL CWMM

During the walkthrough, the existing structure is generally concealed with finishing except that the main floor structure is exposed at the underside and can be viewed from basement space. Based on the review of the exposed structure and condition of the building finishing, though there are some cracks and stains found at the wall finishing and ceiling at localized areas, which are possibly due to differential settlement and/or water infiltration, there is no apparent visual evidence of structural distress, obvious floor sagging or sign of obvious deterioration noted. Therefore, it is anticipated that the Hill Cottage structure, in general, is in reasonably good condition.



2.1 Visual Review at Basement Floor

- The perimeter wall is generally constructed of wood cripple stud walls on top of the concrete foundation wall. No obvious/visible cracks was found along the concrete foundation walls though honeycombing was noticed at some walls.
- The main floor consists of diagonal shiplap over 2x6 joists running along north south direction supported on stud walls and a beam near mid-span, which in turn, supported by wood post on top of concrete pilaster. Header was found missing over the door opening of the interior supporting stud walls and the wall top plate supporting the floor joist was found deformed.

Visual Review at Main Floor

In general, the main floor is found in reasonably good condition with no obvious sign of cracks or sagging except at the following areas:

- In the middle bedroom, a minor vertical hairline crack was found at the bedroom wall adjacent to the bathroom and ceiling was found slightly bulged with localized cracks, which is possibly due to ceiling joist deformation and/or differential settlement. The cracks appear to be stabilized.
- Cracks found at the ceiling above hallway outside the bathroom, which is possibly due to ceiling joist deformation and/or differential settlement.
- Stains and minor cracks found at bulkhead over laundry room door, which appears to be due to water infiltration from the lower roof along the interface joint adjacent to the north attic wall and differential settlement. Wall finishing found peeled off along the south wall of the north bedroom, which is likely due to potential water leaking from the lower roof along the interface adjacent to the north attic wall.

Visual Review at Attic

The attic floor is generally found in reasonably good condition with no obvious sign of cracks or sagging except at the ceiling panel found bulged out with mold stains at localized ceiling space over attic west room, which is likely due to water leaking from the high roof above.

MECHANICAL

MCW

The current state of the mechanical systems in the Louis and Annie Hill Residence highlights several key areas requiring attention for both heating and plumbing. The heating system needs significant upgrades in terms of capacity, ductwork, and ventilation to meet current standards and ensure efficiency. The domestic hot water system, while operational, may benefit from a review of its efficiency and longevity. The plumbing system requires upgrades for piping and fixtures to align with modern usage requirements.



Heating & Ventilation System

Current Heating System: The residence's gas-fired furnace seems to have been recently replaced. However, it is not of sufficient capacity for the building's heating needs.

Cooling and Ventilation Deficiencies: Currently, there is no mechanical cooling system installed. The ventilation system lacks an exterior connection, which is a requirement per building codes for adequate air exchange and indoor air quality.

Ductwork and Airflow Control: The ductwork for the heating system is observed to be undersized, uninsulated, and improperly hung, lacking seismic considerations. There also appears to be an insufficient number of balancing dampers to properly control airflow to each space, which could result in uneven heating and inefficiencies.

System Controls: The controls for the heating system are in relatively good condition, indicating that with proper upgrades to other components, the system could function more efficiently.

Domestic Hot Water Heating System

The existing gas-fired domestic hot water tank, though aged, is operational and appears to be appropriately sized for its current application. **Plumbing Fixture and Piping Distribution:**

Piping Distribution: The plumbing distribution piping is observed to be undersized and lacks insulation, which can lead to inefficiencies and potential risks.

Plumbing Fixtures: The existing plumbing fixtures are aged and appear to require refurbishment or replacement to ensure proper functionality and meet modern standards.

ELECTRICAL MCW

Incoming Electrical, Telephone and Cable TV services

Electrical, Telephone and Cable TV services are obtained via overhead wires from a BC Hydro wood pole (#10502 5453 343 878) located in the laneway. Three electrical wires from the BC Hydro wood pole connect to a service mast located at the west (back) side of the house, in-turn to a 200A, 240V, 1PH BC Hydro meter, #4880516P263 396 793 778.

Telephone and Cable TV services are separate overhead lines to the house. One terminates at the west (back) side of the house (adjacent to power service mast) and the other terminates on the north side of the house. We were not able to locate the demarcation location within the house.



Electrical Systems

Electrical service size is 100A, 120/208V, 1PH, 3W to a Panelboard located inside the Basement. Panelboard is a Square D Load Centre model #QOC24UC, with 100A main breaker and 24 circuit capacity. There are:

- (1) 40A-2P breaker for Cooking Range,
- 30A-2P breaker for Dryer,
- 15A-2P breakers for split receptacles,
- (10) 15A-1P breaker for lights and other receptacles, and - (4) spaces.
-

Lumex wiring and Bx cables are mainly used for branch circuits. The electrical panel and wiring appears to be in good condition and may have been recently replaced. There are old wiring with ceramic porcelain insulators noted in the basement of the house, but we believe these may have been abandoned.

Lighting

Lighting appears dated with A-19 type lamps. Lighting controls are manual on/off type switches. There are no other exterior lights except at the front entry.

Security

There is an active Security System within the house.

6.1 PHOTOGRAPHS OF EXISTING CONDITIONS

8-12 Key photos based on the site review by consultants:



Figure 13: Cottage windows. (different types)



Figure 14: Cottage windows. (different types)



Figure 15: Concealed cladding. (original)



Figure 16: Soffit and roof details.



Figure 17: Main floor hallway.



Figure 18: Kitchen, with non-original millwork.



Figure 19: Living Room.



Figure 20: Bed Room, showing water leak.



Figure 21: Room in Attic, low ceiling.



Figure 22: Stairs to Attic, non-original railings.



Figure 23: Basement and foundations.



Figure 24: Basement with modern interventions.



7 ADAPTIVE RE-USE CONSIDERATIONS

Adaptive Re-use Scenarios considered Hill Cottage site's physical context, policy context, heritage framework (the City's 2023 draft version) and building code, helping shape what is possible on-site with both the cottage and site. The analysis included interviews with City staff regarding operational needs and opportunities.

7.1 SITE CONTEXT CONSIDERATIONS

Program Connections

Hill Cottage provides a public connection to Deer Lake and Shadbolt Centre. If the existing fence at the rear of the site (west) was removed, a public access trail could connect Burnaby Village Museum across the Deer Lake Avenue, to Deer Lake and the existing trail network. From there, further connections lead to Shadbolt Centre, Fairacres Estate, as well as other adapted heritage buildings and park facilities.

City Lots among Private Lots

Currently the Deer Lake Art Gallery and the Hill Cottage site are flanked by private lots, making the entire 4-lot street front appear to be a row of single-family houses with no connection to Deer Lake Park, or the numerous community assets in the area.

Residential, Forested Site

Other than the neighboring Deer Lake Art Gallery's signage facing Deer Lake Ave, the Hill Cottage Site largely reads as a private residential lot. This is further reinforced by comments from Deer Lake Art Gallery, who often have to extend programming out the front yard, along Deer Lake Ave, to guide patrons or attract public foot traffic to the gallery.

7.2 RELEVANT POLICIES AND PLANS

Deer Lake Park Management and Conceptual Design Plan (1999)

Published in 1999, the high-level Park Management Goals remain relevant, and was reviewed as part of the analysis of the future potential of Hill Cottage site.

"Deer Lake Park is a 'jewel' in the City of Burnaby. The park's natural values, recreation, arts and cultural opportunities and heritage legacy are an inherent part of its future".

The specific Park Management Goals that support the conservation of heritage buildings:



1. Recognize Deer Lake Park's unique character and its civic and regional role
4. Provide appropriate cultural and recreational experiences in the park
5. Integrate the natural and heritage experience in the park in a compatible manner which protects the park's integrity
6. Enable all people to access and experience the parks natural and heritage experiences
7. Provide and improve linkages within the park, and to the broader community
8. Raise awareness and stewardship regarding the natural, cultural attributes

Burnaby History and Heritage: Draft Thematic Framework (2023)

The Burnaby's Draft Thematic Framework was also considered as part of the development of adaptive re-use scenarios. The themes also frame this study, ensuring any future use of Hill Cottage is carefully considered and balanced with the City of Burnaby's values.

Vision:

"The City of Burnaby is committed to providing opportunities for increased awareness and conservation of the City's unique natural, cultural, archaeological, and built heritage. Burnaby's stories and unique historical character are recognized and valued because they contribute to a sense of place for the people who live, work and visit here."

Values:

1. Sharing stories contributes to understanding, empathy and connection
2. Tangible heritage provides a strong foundation
3. Everyone has a history
4. History is a responsibility
5. Personal encounters with history are important

Themes:

- People: A diverse community on unceded lands
- Collective Action and Community Building
- Geography: Burnaby is the land

7.3 P3 – PARK & PUBLIC USE DISTRICT

P3 zoning provides flexibility in how the Hill Cottage site can be adapted for future use and programming. For this study, no outright uses in P3 zoning is applicable to the three adaptive re-use scenarios. However, the re-use scenarios are aligned with the Deer Lake Management Plan (1999) and the Burnaby History and Heritage: Draft Thematic Framework (2023). Deer Lake Art Gallery, south of the Hill Cottage site, is also in a P3 zoned lot that is technically not fully supported under P3.



PERMITTED USES	DESCRIPTION
(1) Assembly, Cultural and recreational facilities	Arenas, auditoriums, band shells, bowling greens, community centres, curling rinks, gymnasiums, riding academies, skating rinks, stadiums, swimming pools and tennis courts.
(3) Public parks	Integration of the lot into park lands.
*Office Use	While not specifically identified as a use, accessory use of buildings for supporting uses is possible in the P3 Zoning District.

Off-Street Parking – Schedule VIII

Parking is not available on the small Hill Cottage site and parking demand for specific uses will be required. Shared parking within Deer Lake Park is possible if demand is limited. For example, east, across the Deer Lake Park, are nine angled parking spaces.

800.3.1 Parking Spaces for Disabled Persons

Parking for disabled persons should be integrated into the site to provide convenient access to Hill Cottage for both staff and the public.

Off-Street Loading – Schedule IX

A Loading zone is not designated on the site, but the gravel driveway is regularly used by City of Burnaby staff for parking light trucks and could double as a loading area.

7.4 BUILDING CODE USE CLASSIFICATIONS & UPGRADES

The following Code Classification have been selected for this assessment based on the three re-use scenarios presented in this report. As the site will be consolidated into Deer Lake Park, P3 zoning permits accessory uses to other facilities located within Deer Lake Park. Note that a preliminary plan approval (PPA) would be required for uses that constitute a change in use.



Building Code Assumptions

For determining Code Classifications, 4 key assumptions are made:

1. **Hill Cottage site faces 1 Street:** East of the site, Deer Lake Ave.
2. **Attic floor cannot be occupied:** Due to the low ceilings, the space cannot be considered occupiable (See BCBC 9.5.3.1).
3. **Basement cannot be occupied:** Also due to the low ceiling and the unfinished nature of the basement, it is assumed to be a service space (access to crawl spaces, mechanical equipment, etc.)
4. **Usable Floor area - 120.4 m2 / 1296 ft2:** The occupiable space is only the main floor.

Use Scenario	Code Classification	Loadbearing walls, columns, and arches	Sprinklers
Cultural Programming	Part 3, Group A2: 3.2.2.25 up to 2 storeys (not sprinklered)	45 min, combustible construction	None required
Office, Business and Personal Services	Part 3, Group D: 3.2.2.62 up to 2 storeys (not sprinklered)	45 min, combustible construction	None required

Note: Detailed information on Uses and Code are found in the “Recommended Building Adaptions For Hill Cottage” section.

8 KEY FINDINGS

The physical Cottage itself and the site’s landscaping, has potential to be adapted for various uses that enhance or extend current successful programs, or can be utilized for new programs. If the building is retained as a heritage resource, the re-use of the Cottage should focus on restoring the exterior façade (windows, roof and exterior features) as a minimum standard. Renovation of the interior to meet modern uses could be pursued.

8.1 CONSERVATION APPROACH

Should the house be retained, the Primary Treatment will focus on the exterior façade and elements, including the windows, doors, roof and other exterior features. There are three treatments outlined in the Standards & Guidelines for the Conservation of Historic Places in Canada’ 2nd edition. They are presented here for ease of reference.



1. Preservation - involves protecting, maintaining and stabilizing the existing form, material and integrity of an historic place or individual component, while protecting its heritage value. This would be considered the primary treatment when:
 - a. Materials, features, and spaces of the historic place are essentially intact, and convey the historic significance, without extensive repair or replacement.
 - b. Depiction during a particular period in its history is not appropriate; and,
 - c. Continuation or new use does not require extensive alterations or additions.

2. Rehabilitation - involves the sensitive adaptation of an historic place or individual component for a continuing or compatible contemporary use, while protecting its heritage value. Rehabilitation can include replacing missing historic features. The replacement may be an accurate replica of the missing feature, or it may be a new design compatible with the style, era, and character of the historic place. This would be the primary treatment when:
 - a. Repair or replacement of deteriorated features is necessary;
 - b. Alterations or additions to the historic place are planned for a new or continued use; and,
 - c. Depiction during a particular period in its history is not appropriate.

3. Restoration - involves accurately revealing, recovering, or representing the state of an historic place or individual component as it appeared at a particular period in its history, while protecting its heritage value. Restoration may include removing non-character-defining features from other periods in its history and recreating missing features from the restoration period. Restoration must be based on clear evidence and detailed knowledge of the earlier forms and materials being recovered. This would be the primary treatment when:
 - a. An historic place's significance during a particular period in its history significantly outweighs the potential loss of existing, non-character-defining materials, features, and spaces from other periods;
 - b. Substantial physical and documentary or oral evidence exists to accurately carry out the work; and,
 - c. Contemporary additions or alterations and are not planned.

The Pattison report recommended Restoration as the primary treatment and recommended 1931 as the restoration period. This was when the south sunroom and bedroom were added and were done so sympathetic to the Arts and Crafts style and when the Hill's still occupied the home, though Claude Hill had passed away that year. We believe this is still an appropriate primary treatment and an appropriate time period to revert to. Supporting this recommendation are the state of the surviving CDE's including the expected state of the cedar siding under the stucco intervention installed sometime in the 1950's.

As with any primary treatment, secondary treatments of preservation and rehabilitation will be required partly depending on the adaptive re-use scenario chosen.

Heritage Retention



The Adaptive Re-use options are analysed in the next section for the effect on the Heritage Values and the Character Defining Elements (CDE's) of the historic place.

8.1.1 CONSERVATION PLAN – HOUSE EXTERIOR

Refer to condition assessment in 6. Existing Condition Assessment for as-found conditions. Recommendations generally follow the 2008 Pattison Report. Recommendations are repeated here with adjustments in wording and content were deemed appropriate for current conditions and best practices.

1. Structure and Foundation
 - a. Crawlspace: remove exterior skirting carefully for reinstatement
 - b. Consider constructing a new perimeter shallow concrete footing and foundation wall to replace post and beam construction where applicable
 - c. Install ground seal on poly vapour barrier
 - d. Infill framing and historic skirting stopping 8" above finished grade
2. Cladding and Trims
 - a. Skirting: Per a) above carefully remove existing skirting and store for foundation work, or remove deteriorated skirting for replacement
 - b. Repair any exposed wood framing and sheathing as required. Add moisture/air barrier and re-install skirting in original pattern. If skirting is deteriorated and cannot be repaired, cut off deteriorated portions and use skirting where a shorter length will work. Use new siding, matching original in species, grade/cut, dimension and texture on full wall sections from corner to corner. Do not mix with original skirting.
 - c. Use only original skirting on East façade if possible.
 - d. Main Floor Walls and Gables: carefully remove stucco in panels by exposing and cutting stucco mesh and peeling downward in panels. Breaking stucco through impact is not allowed. Carefully de-nail or de-screw backing panels.
 - e. Repair or replace cedar shingles with new in-kind. Replace as few shingles as possible and do not replace entire panels of shingles.
 - f. At gables remove non-historic vents and re-instate or create soffit vents and roof top vents.
 - g. Exterior Trims: repair or replace damaged, deteriorated or missing elements matching existing wood. Missing window and door trims are likely 1x6 flat stock but should be able to confirm from shadow lines on the cedar shingles once stucco is removed. At window sills, reinstate missing sill horns.
 - h. At roof bargeboards reconstitute deteriorated lower ends using 2-part penetrating epoxy filler or as seamlessly as possible, cut in new wood material to match existing. Install missing crown trim to match that found on the east gable.
 - i. At roof fascia boards, investigate once gutters removed and replace damaged or deteriorated wood with new in-kind.



- j. At cantilevered bays, reconstitute deteriorated decorative floor joists using 2-part epoxy filler or as seamlessly as possible, cut in new wood material to match existing.
 - k. At gables, determine if current half-timbering is original feature. If not, remove entirely and repair cladding. Expectation is that it is not original.
 - l. At gables, repair or replace timber brackets. Reinstate missing timber bracket at east roof gable. Note not all brackets match as some were built with later additions.
 - m. Repair gaps and holes for repainting all new and existing wood elements using linseed oil putty up to ¼" wide, and 2-part penetrating epoxy if wider or 1-part polyurethane sealant for continuous cracks.
3. Roofs
- a. Remove previous roofing down to roof strapping and maintain later infill wood sheathing. This does not comply with the restoration period but is an important element for the long-term structural efficacy of the house. Repair, re-nail, replace in-kind and generally make roof structure sound.
 - i. If rafter tails require replacement do NOT sister-on a new tail at the eave, remove the rafter at a length double the overhang, insert a new tail then double up the entire rafter inside the roof only.
 - b. Install new cedar roof shingles (treated No. 1 Blue Label) with 5" exposure.
 - c. Install attic vents as required by Code; do NOT install vents on roof slopes facing the street.
 - d. Install new metal flashings at eaves, sidewalls, saddles, chimneys and plumbing stacks.
 - e. Complete roof installation to be to RCABC Roofing Practices Manual standards.
4. Chimneys
- a. Remove furnace chimney entirely and retain bricks for re-use. Per the Pattison report this is a later addition when a furnace was installed and not appropriate to the restoration period.
 - b. Remove rain cap and giant bricks from fireplace chimney and reinstate two-course corbelled cap using original brick salvaged from the other chimney.
 - c. Remove all moss build-up on brick, rake all mortar joints. Clean mortar off brick faces and repoint with soft, lime-based mortar with tooled joints.
 - d. Thoroughly clean chimney flue
5. Porches
- a. Front porch: remove contemporary porch posts, decking, railing and stairs. Rebuild solid railings, box columns, and stairs based on historic photographs using new wood to match existing. Note that the railings per the original design do not meet current codes and sympathetic contemporary railings beside or on top of the historic replica railings will need to be installed.
 - b. Remove vinyl carpet and plywood floor sheathing. Retain existing tongue and groove decking if salvageable otherwise replace deteriorated elements with new in-kind.
 - c. Side Porch: contemporary, original design is unknown. Likely it was a stoop with steps straight north from door. Maintain existing porch but remove vinyl carpet and investigate



structure below. If plywood, remove and replace with flush T&G decking. If T&G decking, replace deteriorated with new to match existing. Suggest replacing railings with straight pickets per 2008 report.

- d. Back Deck: deck has been removed, but was likely installed in the 1970's. There is no documentation of the original deck and may have been simply a landing with steps to the ground. Per the 2008 report, suggest installing a deck suitable to the use and detailed similarly to the side porch.

6. Windows and Doors

- a. Retain original wood windows in original locations; do not add new windows.
- b. Remove basement windows on north and west elevations due to very small size, excessive deterioration and adjacent soil build-up. Remove window/openings in sunroom crawlspace. Optionally consider providing light wells at these windows to allow for longer term protection of the windows.
- c. Make all windows operational by freeing sashes, replacing sash cords and locks in-kind, and repairing deteriorated sashes. If necessary, replace sashes or components with new wood strictly in-kind. Repair upper floor contemporary window hardware.
- d. Add historically appropriate, metal weather stripping to original windows.
- e. Repair gaps and holes for repainting all new and existing wood elements using linseed oil putty up to 1/4" wide, and 2-part penetrating epoxy if wider or 1-part polyurethane sealant for continuous cracks.
- f. The Pattison report suggests the following: 'Consider reinstating retractable canvas awnings at kitchen and bedroom windows as they are highly visible and authentic to the restoration period.' Part of the reason for the use of awnings was protection from the sun. The surrounding trees would have been small at the time. They are mature now and provide significant shading to the residence. Addition of awnings may not be desired at this time.
- g. At sunroom retain and repair exterior double doors. Investigate repairing and re-plating deteriorated hardware or replace with new in-kind.
- h. Replace kitchen back door with new paint-grade wood "Dunbar"-style door with hardware to match historic photograph. Note after stucco removal the kitchen door from the front porch may be found; this door should be restored though it could be non-operational depending on new user requirements.
- i. Reinststate front door using historically appropriate, stain-grade, Douglas fir, glazed door and hardware. Though no documentation exists, this is supportable action as the contemporary door greatly diminishes authenticity and the proposed door can be found on many similar houses. A salvaged heritage door should be considered if the correct design.
- j. At basement door, replace with new solid-core wood door and frame, but clad exterior in tongue and groove wood to match original door. Label and store original door in house.

7. Rainwater



- a. New perimeter drainage around entire building should be considered. Note as the site has no storm water service the existing system likely drains into a rock pit which may require renewal.
 - b. Install new rainwater works including aluminum gutters, rainwater leaders and below grade collection piping to rock pit. Rainwater leaders should be round type.
 - c. Gutters and rainwater leaders should be installed after exterior painting, then painted out to match adjacent surface.
8. Exterior Repainting
- a. Remove damaged or deteriorated paint to the next sound layer using the gentlest means possible (hand scraping and sanding), do NOT power wash the building, use a garden hose, bristle brush and mild TSP solution.
 - b. Prepare surfaces as per the Master Painters' Institute, Repainting Manual (Custom).
 - c. Be aware of the likely presence of lead-based paints during the work and take appropriate precautions.
 - d. Repaint all exposed exterior wood surfaces.
 - e. Pattison suggested colour palette using Benjamin Moore, Vancouver True Colours line:
 - i. Field (all cladding): Strathcona Mahogany, VC-34.
 - ii. Trim, soffits, sash and doors: Pendrell Cream, VC-3
 - iii. Porch floors and stairs: Edwardian Porch Grey, VC-26
 - iv. New front entry door: Sikksens, Cetol TGL, 072 Butternut

8.1.2 CONSERVATION PLAN – HOUSE INTERIOR

The interior of the house has been modified from the original condition and many of the original finishes have been compromised. The SOS does not indicate interior CDE's and as a result, the scope of work should be limited to refreshing the space for each of the possible uses.

1. General
 - a. Main Level
 - i. Flooring :
 1. Resilient flooring: remove all existing resilient flooring, prepare substrate, and replace with new resilient flooring
 2. Refinish all wood flooring
 - ii. Walls:
 1. Wallcoverings: remove all wall coverings and patch and prepare surface for painted finish
 2. Painted finish: patch and prepare for new paint per MPI repainting standards
 - iii. Ceilings:
 1. Variety of ceiling stippling treatments:
 - a. Option 1: scrape all ceilings to smooth finish and repaint per MPI standards



- b. Option 2: leave as is, patch and prepare and repaint per MPI standards
- iv. Doors:
 - 1. Repaint per MPI standards
 - 2. Clean existing hardware of old paint and buff for brass finish – replace non-functioning or damaged hardware to match existing
 - 3. Depending on use, reinstate doors in openings to match existing that were removed
- v. Trim:
 - 1. Remove all contemporary valences and patch and repair finishes for repainting
 - 2. Prepare all existing trim for repainting per MPI standards.
 - 3. Replace any trim damaged beyond repair to match existing and paint.
- vi. Lighting:
 - 1. Provide lighting appropriate to use
- b. Attic
 - i. Provide a fresh coat of paint on painted surfaces per MPI repainting standards
 - ii. Leave remainder of finishes as is.
 - iii. General clean
- c. Basement
 - i. General clean
 - ii. Upgrade stairs to meet code.
- 2. Kitchen
 - a. Remove all contemporary cabinets, wood trims, finishes, appliances, valences, built-in shelves, ceiling tiles, light fixtures and sheet vinyl flooring from the 1970's renovation.
 - b. Repair walls and ceilings, install flat stock, paint grade wood trims to match original and repaint all surfaces.
 - c. Note kitchen door to front porch may be re-instated if found under stucco siding.
 - d. Kitchen may be relocated if functionally preferred.
 - e. All proposed uses; install new commercial grade cabinetry in kitchenette configuration
 - f. Provide new appliances for commercial use. Typically - fridge, microwave, coffee maker, and dishwasher. Include stove if functionally appropriate.
- 3. Bathroom
 - a. Demolish all interior finishes and fixtures and reconfigure for accessibility.
 - b. Install new finishes, commercial grade fixtures and accessories. New finishes to include ceiling cove, door and window trims, and bases to match existing.
 - c. Note recessed medicine cabinet and overhead light appear original and could be salvaged for another use.



- d. Replace door with new accessible door to match existing. May require auto-operators with wave actuators depending on configuration.
 - e. Accessible lever hardware to match finish of existing hardware.
4. Living Room and Dining Room
- a. The 2008 report suggests reinstating missing window to original size complete with associated wood trims. Depending on location this may have been covered over when the sunroom was added. If that is the case, then the window should not be reinstated. However, if in the removal of the stucco on the exterior, the window is discovered over the basement entry, then reinstate per above.
 - b. Fireplace insert, hearth, stonework, millwork, paneling, and mantel are not per existing, however, retain and clean and paint paneling to match wall colour. Paint bookcases. If the window noted above is reinstated, this will likely compromise the wood paneling. In that case, remove the paneling and prepare the wall for a painted finish.
 - c. Clean chimney.
 - d. Refinish wood plank flooring.
 - e. Do not remove faux beams and wood details in living and dining area. Paint out to match wall or ceiling finishes.
5. Bedrooms – Main Floor
- a. 1931-bedroom addition. To enlarge the room the small closet could be removed; the closet window should be restored as an opening.
6. Sunroom
- a. Paint contemporary wood panelling and ceiling cove to match trim colours.
 - b. To enlarge the room the small closet could be removed.
 - c. If closet retained, repaint doors and trim.



8.1.3 CONSERVATION ALTERNATIVE - INCORPORATE INTO DEER LAKE PARK AS OPEN SPACE

Dismantling Hill Cottage and incorporate the site into Deer Lake Park as a natural feature, connecting Burnaby Village Museum, Deer Lake and the cluster of heritage cultural assets: This may be the most practical option given several key reasons:

1. **Deer Lake Park alignment for the future:** This would align with Deer Lake Park Management Plan, increasing park space.
2. **Costs:** associated with restoration work, systems and structural upgrades, and interior finish and millwork improvements for uses noted above may not be considered best value investments.
3. **Operational Practicalities:** The building is small and the site itself is isolated from other City buildings, which may make it difficult to integrate into operations.
4. **Balanced Approach:** this option should be balanced with thoughtful documentation of the Hill Family's historical presence and contribution to Deer Lake and the City of Burnaby, such as an Interpretive Node in the former Hill Cottage Site.

The conservation treatment for this option would be as follows:

1. Retention and improvement of existing mature trees planted by the Hills
2. Removal of volunteer flora that was not part of the original planting scheme and is not located in a position that is of benefit to the site and the story being told
3. Possible retention of original garden intent if it fits within Parks, Arts and Recreation's (PRC) vision for the site
4. Installation of an interpretive node to share the site's history and significance
5. Opening connection to Deer Lake Park by removal of the later addition fence

8.1.4 CONSERVATION TREATMENT - UPDATED QUANTITY SURVEY

The 2023 estimated for the exterior renovations is \$490,105. An updated QS estimate of the 2008 Report's scope of restoration, broken out by elements, provides both an idea of the present-day cost of restoration: please reference LTA Consultant's Class D Conceptual Estimate in the Appendix.



8.2 RECOMMENDED BUILDING ADAPPTIONS FOR HILL COTTAGE

Interviews with City of Burnaby staff identified a range of current and potential uses by PRC programming that could potentially find a home at Hill Cottage. Adapting Hill Cottage and/or its site to accommodate present and future City programming could be accomplished through three main interventions, yielding the greatest usability for a range of possible uses.

Two of the recommended adaptations seek to limit the impact on Hill Cottage’s exterior CDE’s, while the third has a significant impact on the CDE’s with the removal of Hill Cottage. The emphasis on the exterior and natural CDE’s (cladding and the site’s evolving landscaping - trees, plantings and layout), while focusing on renovating and retrofitting the interior of Hill Cottage, is intended to maximise the usability of the building. The option to remove the cottage provides an opportunity to focus on the natural value of the site and its potential for parks use and programming. These potential uses are identified in the evaluation matrices below.

Building Adaption	Useability	Rationale	Reference Information (if applicable)
1. Envelope	Medium	<p>Repair leaks: The Chimney at the West end of Hill Cottage is leaking heavily into the attic, down into the first level bedroom. This may also be evidence of other hidden issues.</p> <p>Increase Occupant Comfort: Committing to restoring Hill Cottage’s cladding is also an opportunity to retrofit new insulation for thermal comfort and a new membrane to reduce bulk air exfiltration. This can reduce energy usage and increase occupant comfort with minimal visual impact on the cottage’s exterior CDE’s. However, it is critical to consult with a building science expert, as any envelope intervention may disturb the equilibrium of the building, affecting the long-term durability of the heritage building.</p>	N/A
2. Accessibility Upgrade	High	<p>Access on-site & Hill Cottage: The site lacks an accessible walkway for those with limited mobility to get to the cottage or pass-through, and the Cottage itself sits on top of a basement that raises the first-floor level significantly above grade. Upgrading accessibility will open up Hill Cottage site to a wider range of staff and patrons, and better reflect the City’s population.</p>	Building Accessibility Handbook 2020



3. Universal Washroom Addition	High	Occupancy Constraint: The Cottage's single, non-accessible bathroom is a significant constraint on the occupancy limit and access of Hill Cottage, reducing its usability. The addition of a second universal toilet room would be a significant improvement.	Washroom Facilities (3.7.2.2)
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Potential Programming	Examples of Program uses	Comments
1. Program Space, public use	<ul style="list-style-type: none"> • Cultural, recreational and heritage programming • Natural heritage • Indigenous heritage • Settler heritage • Integrate site for public park use and connecting Deer Lake more directly to Burnaby Village Museum 	Upgrades required for accessibility, fire safety, occupant comfort, and functionality. Exterior restoration and rehabilitation.
2. Office, Business and Personal Services	<ul style="list-style-type: none"> • Staff offices • Integrate site for public park use and connecting Deer Lake more directly to Burnaby Village Museum 	Upgrades required for accessibility, fire safety, occupant comfort, and functionality. Exterior restoration and rehabilitation.
3. Integrate into Deer Lake Park as open, public space	<ul style="list-style-type: none"> • Integrate site for public park use and connecting Deer Lake more directly to Burnaby Village Museum 	Retention of natural CDE's is emphasised. CDE's are lost in situ and will only survive in archival records. The development of an approach to commemorate Hill Cottage – both with a physical interpretive node and programming, could also help maintain historical continuity and maintain the important elements of the site's historical narrative.

Conservation Standard Impact Evaluation (Y = Conforms; N = Does not Conform)			
Conservation Standard	Adaptive Re-use Scenario Impact		
	Office	Program Space	House Removal
General Standards			
1) Conserve the heritage value of a historic place. Do not remove, replace, or substantially alter its intact or repairable character-defining elements.	Y	Y	N
2) Conserve changes to a historic place, which over time, have become character-defining elements in their own right.	Y	Y	N/A
3) Conserve heritage value by adopting an approach calling for minimal intervention.	Y	Y	N
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.	Y	Y	Y
5) Find a use for a historic place that requires minimal or no change to its character-defining elements.	Y	Y	N
6) Protect and, if necessary, stabilize a historic place until any subsequent intervention is undertaken.	Y	Y	N
7) Evaluate the existing condition of character-defining elements to determine the appropriate intervention needed. Use the gentlest means possible for any intervention. Respect heritage value when undertaking an intervention.	Y	Y	N/A
8) Maintain character-defining elements on an ongoing basis. Repair character-defining elements by reinforcing their materials using recognized conservation methods. Replace in kind any extensively deteriorated or missing parts of character-defining elements, where there are surviving prototypes.	Y	Y	N/A
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.	Y	Y	N/A
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.	Y	Y	N/A
11) Conserve the heritage value and character-defining elements when creating any new additions to an historic place and any related new construction. Make the new work physically and visually compatible with, subordinate to and distinguishable from the historic place.	Y	Y	N/A
12) Create any new additions or related new construction so that the essential form and integrity of an historic place will not be impaired if the new work is removed in the future.	Y	Y	N/A
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.	Y	Y	N/A
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.	Y	Y	N/A
Overall Assessment (Y=Generally Conforms; N= Does Not Conform)	Y	Y	N



Character Defining Elements (CDE's) Impact (M = Minor to Moderate Impact; N = No Impact; H = High Impact)			
CDE	Adaptive Re-use Scenario Impact		
	Office	Cultural Space	House Removal
1) Location in the Deer Lake neighbourhood, fronting Deer Lake	N	N	N
2) Residential form, scale and massing as expressed by its one-storey height plus crawlspace, side-gabled roof, front projecting gables, square projecting front bay and open front porch	N	N	H
3) Wood-frame construction with original wood siding intact under a later coat of stucco	N	N	H
4) Modest Arts and Crafts details such as diamond-point triangular eave brackets	N	N	H
5) Windows, including double-hung, 1-over-1 wooden sash windows with horns	N	N	H
6) Associated landscape features including mature cedars lining the driveway	M	M	M
Overall CDE Impact	N	N	H



Code Summary: Adaptive Re-use

The recommended building adaptations based on retaining Hill Cottage as a heritage asset.

Adaptive Re-use Example	Change in Use?	Occupancy (3.1.17.1.)	Fire-resistance rating	Sprinklers	Washroom Facilities (3.7.2.2)	Structural	Design occupied spaces	Accessible	Stairs	Means of Egress	Fireplace	Heat, Air, Condensation Control	Energy
Program Space: Part 3, Group A2: 3.2.2.25 up to 2 storeys (not sprinklered)	Yes – Major Change in Use	25 (1)	No Change	Not Required	Add 1 Universal Washroom	(5)	Attic & Basement not useable (2)	Yes	No	Yes	No (3)	Yes (4)	ANSI/ASHRAE/IES 90.1, or NECB, or 10.2.3 (10.2.2.2) (4)
Office, Business and Personal Services: Part 3, Group D: 3.2.2.62 up to 2 storeys (not sprinklered)	Yes - Major Change in Use	12 (1)	No Change	Not Required	Add 1 Universal Washroom	(5)	Attic & Basement not useable (2)	Yes	No	Yes	No (3)	Yes (4)	Prescriptive or NECB (9.36.1.3.) (4)

BC Building Code Notes for Adaptive Re-use Scenarios

1. Number of water Closets are the limiting factor. Occupancy assumes replacing the existing washroom with one accessible washroom. The occupant limit of upgrading the single washroom to be accessible is 10 people. If two washrooms are provided, both would need to be accessible to meet code requirements. With two washrooms the occupancy limit would be 25 but it could be 35 since the code allows a reduction in the number of occupant calculation by 10 if one washroom is accessible.
2. The existing stairs and head height over the stairwells are not compliant with the BCBC. However, they should be considered to be serving non-public or service spaces: the Attic Level's low slope roof precludes it from being a regularly used space, and the Basement is a low-ceiling service space.
3. Fireplaces are not recommended for typical Group A2 or D uses.



4. Building envelope retrofit for Hill Cottage will need to consider the heritage conservation implications of any proposed interventions. For example, heat, air, condensation detail design will also need to consider the long-term durability of the wood frame structure and existing cladding (e.g. original shake siding, with lathe and stucco applied over and concealing it).
5. See 8.3 Critical Retrofits/Upgrades, Structural.

8.3 CRITICAL RETROFIT/UPGRADES

Regardless of the re-use use is pursued, the Hill Cottage will require a minimum level of intervention to reinstate the house into a usable building.

CIVIL

Binnie

Servicing the Hill Cottage site will need further detailed investigation, as the building has not been used as a residence since 2007.

- Remove abandoned and out of service site services.
- Install new water service to the property line. (can be sized to accommodate sprinklers if required)
- Two options for sanitary service to the Cottage, requiring a Registered Onsite Wastewater Practitioner (ROWP):
 - Review and upgrade the current septic system.
 - Connect to the City sanitary line running north-south, ending north of the Hill Cottage site behind 6450. Due to insufficient cover for a pipe extension (110m total length), an onsite sanitary pump station and forcemain (to discharge into the terminal manhole) will be required.
- General site drainage.
- New perimeters drain around Hill Cottage, connected to the municipal storm sewer.
- Removal of the rear yard fence, allowing for public access between Deer Lake Ave and Deer Lake.
- New access trail for pedestrian access between Deer Lake Ave and the Lake, as well as connection to the Deer Lake Park's trail network.
- New landscape design, incorporating elements for public use including park benches, lighting, or other exterior features.

HAZARDOUS MATERIALS ABATMENT

Hill Cottage has been tested for Asbestos, which will need to be addressed prior to any work on the Cottage. The site is over-grown with invasive plants which may need to be addressed as well.

1. Hazardous Material Abatement: Identified in Pinchin's Asbestos Building Materials Assessment (dated December 31, 2020) identified in flooring and ceiling finishes, drywall and joint compound, and tape used on the furnace in the Basement Level.
2. Note that other hazardous materials, such as lead in paint may also be present, or other materials maybe concealed or covered during past work.



ARCHITECTURE

Iredale Architecture

In addition to the renovation of Hill Cottage's layout in the example schematic plans of the "Specific Retrofit/Upgrades: Adaptive Uses" section, Hill Cottage site has two major architectural items common with any adaptive re-use.

- Accessibility (9.5.2 / 3.8): Public Program use and Office will require accessibility,
- Roof and Envelope (9.25): All uses shall remediate the roof and building envelope to protect the heritage asset, and to provide the best occupant comfort possible for a proposed use. Note this item will need to be carefully balanced with heritage conservation.

However, if the adaptive re-use requires major changes to the structural system which "...reduce the level of life safety and building performance of the existing building", an upgrade to fully satisfy the requirements of the current BCBC 2018 will be required. This can include envelope, energy and life safety systems.

STRUCTURAL

CWMM

Gravity load consideration

With the existing building to be kept for occupancy, the following nominal/minimum structural repair/upgrade work should be considered based on the review of existing building condition:

With the water infiltration noted in the ceiling/wall at some areas, it is anticipated that localized rotten issues might possibly be present to the roof joists at the leaking areas, e.g., along the interface of lower roof and the north attic wall and the high roof over the attic west room, which can be reviewed and replaced if needed during the building envelop upgrade with roofing removed to expose roof structure at a later stage. Also, it is recommended that a header be provided over the basement door opening where main floor joists run over to satisfy the Part 9 requirements.

It is understood that the building could be converted to assembly or office use. The design load of building as commercial/assembly is greater than the design load of the existing building that was designed/constructed for residential occupancy. Therefore, the existing floor structure would need to be upgraded to support this greater design load.

Lateral load consideration

In the current 2018 Edition of the British Columbia Building Code (BCBC 2018), for the application to existing buildings, it is required that "when a building is altered, rehabilitated, renovated or repaired, or there is a change in occupancy, the level of life safety and building performance shall not be decreased



below a level that already exists.” It is not the intent that the BCBC be used to enforce the retrospective application of new requirements to existing buildings or existing portions of relocated buildings, unless specially required by local regulations or bylaws. Therefore, as long as the capacity of existing walls and their supporting structures are not modified/reduced due to the proposed conversion, it is anticipated that seismic assessment/upgrade would not be triggered due to the proposed conversion and change in occupancy.

Minimizing structural changes, and only making minor structural repairs and interventions, is estimated to cost \$24,695 in 2023. Please reference LTA Consultant’s Class D Conceptual Estimate in the Appendix for more details.

Major Changes to Layout: Changing Interior Walls/Partitions

Changes to interior walls would require the detailed inspection of the structural system of the building. This will likely happen through selective demolition of finishes, etc. to reveal the concealed structural beams, posts and other elements.

Gravity load consideration

If the interior walls to be removed are load-bearing walls, new beam and supporting posts would need to be provided to support the floor/roof structure. The posts would need to be carried down to the foundation with potential upgrade to existing foundation to support the posts.

Lateral load consideration

All the existing walls, including the existing interior partitions (non-load-bearing walls), would be considered as redundancy that forms part of the lateral-force-resisting system for an existing Part 9 building. With any of the interior walls being removed, the level of life safety and building performance of the existing building would be considered decreased and therefore, an upgrade to fully satisfy the Part 9 requirements of the current BCBC 2018 would be triggered.

Minimizing structural changes, and only making minor structural repairs and interventions, is estimated to cost \$101,997 in 2023.

MECHANICAL

MCW

These mechanical upgrades cover converting the Louis and Annie Hill Residence into a Group A2 program space or Group D office, with particular attention to the heritage aspects of these upgrades. The goal is to ensure that the building’s mechanical systems meet the demands while contributing to the city’s decarbonization goals. Common to both scenarios:



- **Ductwork:** Installation of new ductwork is necessary for both scenarios, tailored to the capacity of the heating and cooling systems and ensuring proper air distribution.
- **Plumbing System:** Replacement of all plumbing pipes and fixtures to accommodate new layouts.
- **Controls and Accessories:** Installation of programmable thermostats, sensors, and efficient controls.
- **Installation Requirements:** Special consideration for non-invasive installation techniques due to the building's heritage status.

Reference each re-use scenario for specific requirements.

Heating & Ventilation System

- **VRF Heat Pump System:** A Variable Refrigerant Flow (VRF) system is recommended for the heating and cooling requirements. VRF systems are advantageous in retrofitting historical buildings due to their flexibility in installation, minimal ductwork requirements, and ability to provide zoned heating and cooling control. This system will enable efficient temperature regulation in different office areas without compromising the building's architectural integrity.
Benefits of Installing a VRF System in an Existing Building:
 - **Flexible Installation:** VRF systems can be adapted to the unique layouts of historic buildings, offering a versatile solution that minimizes structural disruptions.
 - **Energy Efficiency:** VRF systems are highly energy-efficient, reducing operational costs and environmental impact.
 - **Zoned Control:** They allow for individualized temperature control in different areas, enhancing comfort in a diverse office setting.
 - **Quiet Operation:** VRF systems operate quietly, which is beneficial in maintaining a conducive office environment.
- **Energy Recovery Ventilation (ERV) System:** Coupled with the VRF system, an Energy Recovery Ventilation system is proposed to ensure adequate ventilation. ERVs are effective in preserving indoor air quality, crucial in a commercial setting, and contribute to energy efficiency by pre-conditioning the incoming air using the energy from the outgoing air.
- **Alignment with Decarbonization Goals:** This combination of a VRF system with ERV contributes to the city's decarbonization objectives by reducing reliance on fossil fuels and enhancing overall energy efficiency.

Building Fire Safety: Code Compliance and Verification

Given the complexity of integrating modern fire safety systems into a heritage building, the architect or code consultant's review during design will be crucial. They will consult with the Building Officials to confirm the specific requirements and help ensure that all proposed changes and upgrades are compliant with current building codes while respecting the building's historical integrity.



Sprinklers

- If required, sprinklers will comply with NFPA 13. This will involve the installation of a wet system, placing sprinkler heads throughout the building, strategically located to provide comprehensive coverage.
- Water Utility Connection Upgrade: Accommodating the new sprinkler system may require an upgrade to the existing water utility connection to ensure adequate water supply and pressure for the system's optimal functionality.

Fire Alarm Panel Upgrade

A new fire alarm panel and associated detection and notification systems will need to be installed. This upgrade is essential to meet current safety standards.

Domestic Hot Water System

- Replacement with High-Efficiency System: The existing domestic hot water system, although functional, is recommended to be replaced with a high-efficiency condensing gas-fired system or an air-source heat pump system. This upgrade is essential to meet the higher hot water demands.
- Decarbonization and Efficiency: The proposed systems are more aligned with decarbonization goals. An air source heat pump system, in particular, significantly reduces carbon emissions and energy use, making it an environmentally sustainable choice.

ELECTRICAL MCW

Electrical System

The current electrical service seems undersized for the application. An Electrical Service upgrade to 200A, 120/208V, 3PHG, 4W is required to allow for Mechanical HVAC upgrades. Electrical Service upgrade size will depend on BC Hydro service availability in this area. A new Panelboard with breakers to accommodate existing and new circuits will be installed. This panel will be upright mounting with one meter service access clearance in front. All branch circuit wiring will use armoured cables. Reference each re-use scenario for estimated electrical loads and specific requirements.

8.3.1 EXAMPLE OF SPECIFIC RETROFIT/UPGRADES: ADAPTIVE USES

Two example schematic layouts of representative adaptive re-use illustrate some of the specific modifications that can be considered and implemented to modify Hill Cottage for present day uses. As



noted in the previous section, the modifications balance the heritage and regulatory requirements of Hill Cottage site.

USE SCENARIO EXAMPLE #1: PUBLIC PROGRAM SPACE, GROUP A2

Hill Cottage may be suitable as a “Satellite Space” for extending existing cultural programs or allowing for new programs to be developed to support arts, culture and recreation program delivery. Examples for this adaptive re-use:

- **Learning Centre:** Education programming for local and regional public visitors.
- **Artist Day Studio:** Artist studios and workshops for artists in traditional, non-traditional arts, or “hybrid” art-history programs.
- **“Home Base” for outdoor programming:** – “Home Base” for outdoor program around Deer Lake Park, to organize, manage and operate such programs.
- **Outdoor Exhibit Space:** – Beyond indoor programming, the site can also accommodate art or historical installations as outdoor extensions of programming offered at adjacent venues.

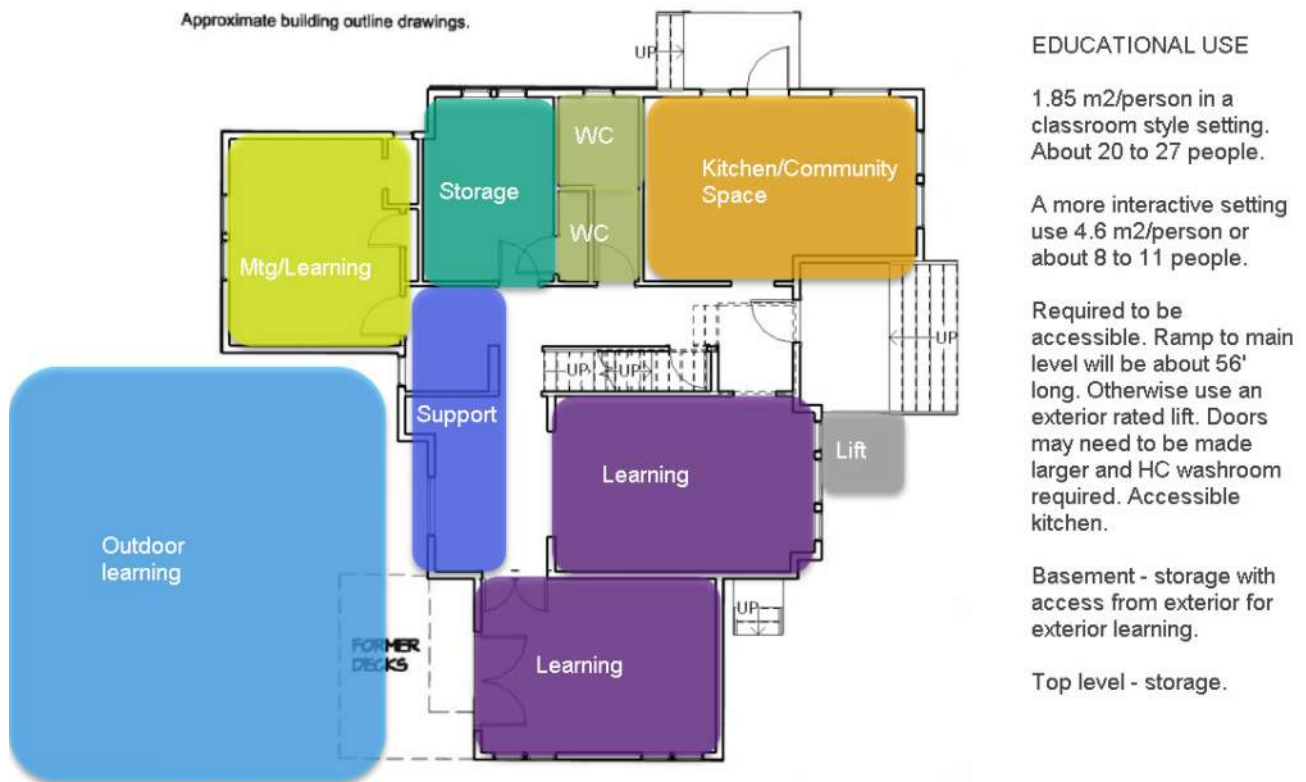


Figure 25: Schematic Layout - Public Program Space.



MECHANICAL MCW

Heating & Ventilation System

VRF Heat Pump System: A VRF system with a capacity of approximately 15 tons is recommended for the new office space. This system should include multiple indoor units for flexible zoning.

ERV System: An ERV system capable of handling around 600 CFM is recommended. It should feature necessary filters, duct connections, and controls.

Domestic Hot Water System

High-Efficiency System: A system with 100-gallon tanks, either condensing gas-fired or air-source heat pump, to meet typical office water usage.

If Required - Sprinkler System

Wet Sprinkler System: Installation of a new wet sprinkler system as per office safety standards. This includes sprinkler heads, piping, and associated controls.

ELECTRICAL MCW

Electrical System

The current electrical service seems undersized for the application: the estimated total load is 172A. An Electrical Service upgrade to 200A, 120/208V, 3PHG, 4W is required to allow for Mechanical HVAC upgrades.

Lighting

New LED type general lighting and display lighting will be installed. Lighting will meeting current Ashrae Code requirement for Lighting Power Usage and controls. Light levels will meet each room/space defined usage requirements. Exit signs and Emergency battery backup lighting will be installed to lights exit pathways. Lighting fixture with integrated battery units can be installed to lessen visual impact. Aged appearance exterior building and pathway lighting fixture will be installed.

Telecom System

A new Telecom service from Telus and/or Rogers is strongly recommended to better define and locate the demarcation location. New Telephone, Data and Cable TV wiring and outlets will be installed. Provisions for wireless access point (WAP) locations is recommended.



Fire Alarm System

A new Fire Alarm System need to be installed. Fire Alarm devices can be installed at inconspicuous locations but still provide good overall coverage. Fire Alarm system shall be complete with remote monitoring.

Public Program Space: Class D Estimate

The 2023 estimated cost for fitting out Hill Cottage into a program space is \$750,742. Please reference LTA Consultant's Class D Conceptual Estimate in the Appendix.



USE SCENARIO EXAMPLE #2: CITY OF BURNABY STAFF OFFICE – GROUP D

Hill Cottage could be used for administrative purposes as an accessory use, including as office or storage uses. The cottage could be utilized to practically provide an office space for up to 7 or 8 additional workstations, albeit separated from other, existing buildings and office spaces. There could be space for light vehicles to be parked at the site, such as parks operations vehicles, or some rooms in an office use can continue to be utilized as storage, depending on the needs of the operating department.

Approximate building outline drawings.



OFFICE USE

Per code, 9.3 m²/person, up to 13 staff, however expect that 7 staff is the maximum that can be accommodated with one (1) possible flex station. However, workstations will be about 30 sq.ft. Typical size is about 42 to 49 sq.ft., therefore for comfort, up to 5 staff would be preferable. Plan shows up to 7 plus one flex.

Accessible upgrades required including ramp at 56' or lift, accessible washroom and kitchenette and doors may need to be widened.

Storage in attic and basement.

Figure 26: Schematic Layout - Offices

MECHANICAL

MCW

Heating & Ventilation System

VRF System: A VRF system with a capacity of approximately 10 tons is recommended for the new office space. This system should include multiple indoor units for flexible zoning.



ERV System: An ERV system capable of handling around 400 CFM is recommended. It should feature necessary filters, duct connections, and controls.

Domestic Hot Water System

High-Efficiency System: A system with 100-gallon tanks, either condensing gas-fired or air-source heat pump, to meet typical office water usage.

If Required - Sprinkler System

Wet Sprinkler System: Installation of a new wet sprinkler system as per office safety standards. This includes sprinkler heads, piping, and associated controls.

ELECTRICAL

MCW

The current electrical service seems undersized for the application: the estimated total load is 139A. An Electrical Service upgrade to 200A, 120/208V, 3PHG, 4W is required to allow for Mechanical HVAC upgrades.

Lighting

New LED type lighting will be installed. Lighting will meeting current Ashrae Code requirement for Lighting Power Usage and controls. Light levels will meet each room/space defined usage requirements. Exit signs and Emergency battery backup lighting will be installed to lights exit pathways. Lighting fixture with integrated battery units can be installed to lessen visual impact. Aged appearance exterior building and pathway lighting fixture will be installed.

Telecom System

A new Telecom service from Telus and/or Rogers is strongly recommended to better define and locate the demarcation location. New Telephone, Data and Cable TV wiring and outlets will be installed. Provisions for wireless access point (WAP) locations is recommended.

Fire Alarm System

A new Fire Alarm System need to be installed. Fire Alarm devices can be installed at inconspicuous locations but still provide good overall coverage. Fire Alarm system shall be complete with remote monitoring.

Office: Class D Estimate

The 2023 estimated cost for fitting out Hill Cottage into a program space is \$688,121. Please reference LTA Consultant's Class D Conceptual Estimate in the Appendix.



Example #3: Deer Lake Park Landscape Design

Hill Cottage site's consolidation into Deer Lake Park provides an opportunity to connect the site with the other amenities at Deer Lake Park, connecting the site's natural heritage assets to the park.

- **Connect Burnaby Village Museum to Deer Lake and Shadbolt Centre:** New access trail for pedestrian access between Deer Lake Avenue and the Lake, as well as connection to the Deer Lake Park's trail network.
- **Landscape Features:** Integrating features such as park benches, lighting and other elements to highlight Hill Cottage's heritage, such as the original, mature trees.

If Hill Cottage is retained and adapted for another use, its integration will also require Landscape design to integrate the site into Deer Lake Park:

- **Combined walkway with driveway for accessibility:** The access trail could be a controlled drive lane for access to an accessible parking spot with convenient access to Hill Cottage's lift. This could be integrated in such a way as to blend the access and parking spot into the landscape design.
- **Cottage-specific landscape design:** Programming taking place at Hill Cottage could also spill out onto the site, integrating into the Park.

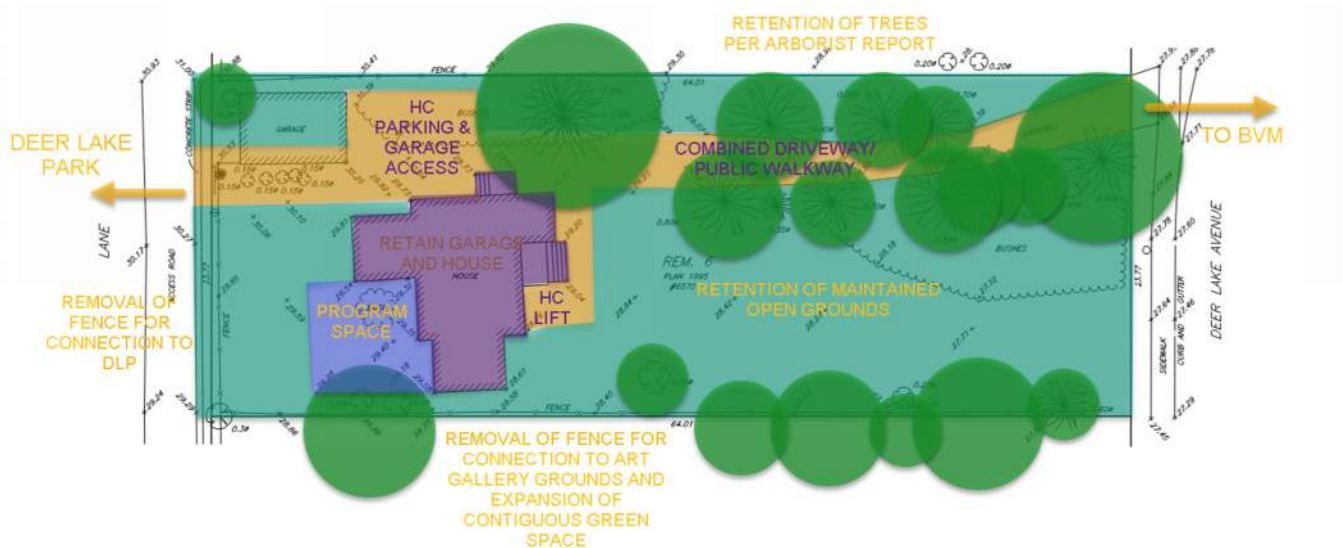


Figure 27: Schematic Landscape Plan – Hill Cottage

Civil and Site Work: Class D Estimate

The 2023 estimated cost for the Civil and Site work retaining Hill Cottage as an heritage asset is \$253,333. Please reference LTA Consultant's Class D Conceptual Estimate for more details and specific line items in the Appendix.



Incorporate into Deer Lake Park as Open Space

If Hill Cottage is dismantled to provide more open space, the landscape should include an interpretive node dedicated to the Hill Family's historical presence and contribution on the former site. This includes art features that honour the Cottage's former position on the site.

Rationale for the dismantling of Hill Cottage is explained in the previous "Incorporate into Deer Lake Park as Open Space" section.

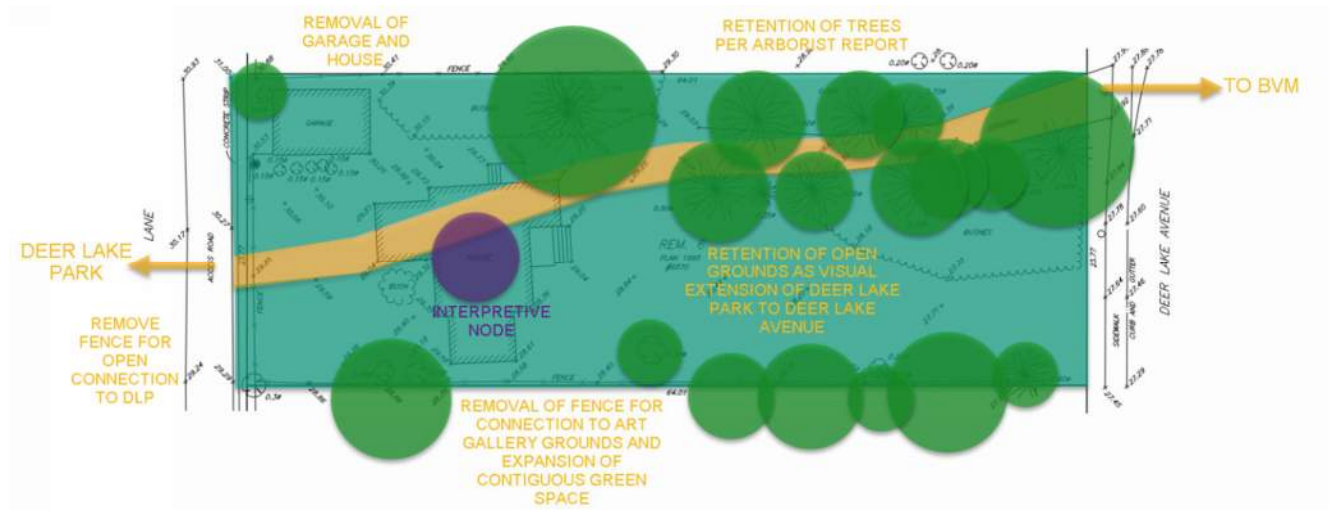


Figure 28: Schematic Landscape Plan – Open Park Space

Site Restoration: Class D Estimate

The 2023 estimated cost for dismantling Hill Cottage and restoring the site is \$448,673. Please reference LTA Consultant's Class D Conceptual Estimate for more details, including allowances for park features and an interpretive node, in the Appendix.



9 KEY RECOMMENDATIONS

The following summary of recommendations is based on the consolidation of the Hill Cottage site (currently zoned P3) into Deer Lake Park, to be operated as part of the collection of building assets within Deer Lake Park. The recommendations seek to limit the impact on Hill Cottage's main CDE's.

Conservation Approach:

1. **Exterior Restoration:** Hill Cottage's form and exterior cladding and finishes are the most recognized CDE's, and should be restored. (CDE's - identified in the 2008 Pattison Report).
2. **Renovate the interior for modern programming:** In contrast with the exterior, the interior shows evidence of several periods of changes, and is the least documented aspect of the heritage cottage.
3. **Retain Natural Landscaping:** Hill Cottage site remains in its original location with much of its original landscape features, with some invasive, non-original plants. The landscaping should be carefully managed in this original layout, as part of Deer Lake Park's natural, evolving heritage.
 - o **Connection to Deer Lake:** To achieve a strong connection between Burnaby Village Museum and Deer Lake, intervening on the site by removing the rear yard fence and connecting Deer Lake Ave to the trail behind Hill cottage. This can include features such as park benches and art installations to further strengthen the public nature of the site.

Incorporate into Deer Lake Park as Open Space: Dismantling Hill Cottage

Dismantling Hill Cottage and incorporate the site into Deer Lake Park as a natural feature, connecting Burnaby Village Museum, Deer Lake and the cluster of heritage cultural assets: This may be the most practical option given several key reasons:

5. **Deer Lake Park alignment for the future:** This would align with Deer Lake Park Management Plan, increasing park space.
6. **Costs:** associated with restoration work, systems and structural upgrades, and interior finish and millwork improvements for modern uses may not be considered best value investments.
7. **Operational Practicalities:** The building is small and the site itself is isolated from other City buildings, which may make it difficult to integrate into operations.
8. **Balanced Approach:** this option should be balanced with thoughtful documentation of the Hill Family's historical presence and contribution to Deer Lake and the City of Burnaby, such as an Interpretive Node on the former Hill Cottage Site.



Renovations - Building Adaption:

1. **Hazardous Materials:** As Hill Cottage has not been occupied by people since 2007, a hazardous materials survey should be completed, and a recommended abatement completed.
2. **Envelope inspection and repair:** The cottage is showing signs of a leaking roof and may have other hidden leaks or envelope issues.
3. **Minimize major changes:** Hill Cottage, including its extension, appears to be in good condition given its age. While changes to the interior partitions are possible, it's recommended to avoid changes, as building's of this era tend to require extensive structural review and interventions due the use of many interior walls as part of the building's structural system.
4. **Completely retrofit systems:** Heating, cooling and ventilation, as well as plumbing, will also require new systems.
5. **Light interior refresh:** The interior of Hill Cottage can be refinished, with new millwork, to allow for modern day programming to comfortably utilize the cottage.

Adapting Hill Cottage to accommodate present and future city programming can be accomplished through three main interventions, yielding the greatest usability for a range of possible uses.

Building Adaption	Useability	Rationale	Reference Information (if applicable)
1. Envelope	Medium	The Cottage currently shows signs of leaks that is causing damage. The Cottage's envelope can also be retrofitted with insulation, etc. To provide greater occupant comfort.	N/A
2. Accessibility Upgrade	High	The site is currently not universally accessible, limiting its usability by a sub-section of the City staff and the public.	Building Accessibility Handbook 2020
3. Universal Washroom Addition	High	The Cottage's single, non-accessible bathroom constrains the Cottage's occupancy limit. The addition of a second universal toilet room would be a significant improvement.	Washroom Facilities (3.7.2.2)

Honouring Hill Cottage: If Hill Cottage is dismantled to provide more public park space, the landscape should include an interpretive node dedicated to the Hill Family's historical presence and contribution on the former site. This can include art features that honour the Cottage's former position on the site.



10 CONCLUSION

Based on our review, and consultation with City staff, the building could support the following adaptive re-uses:

1. **PRC Programming:** as an accessory to nearby facilities within Deer Lake Park.
2. **Office:** in support of City operations.
3. **Park:** an open space that provides a trail connection between Deer Lake Avenue and Deer Lake Park.

Hill Cottage provides an opportunity to preserve a historical building associated with early settlers in Deer Lake Park, while adapting the cottage and site for today's modern-day residents within the City of Burnaby and Metro Vancouver. Adapting Hill Cottage is not just a case of using a heritage building for modern uses. Hill Cottage can become an element in a growing cluster of facilities, including heritage buildings, that are used for arts and cultural programming. It could serve to teach history and the evolution of Deer Lake Park and Burnaby.

We look forward to discussing the adaptive re-use Louis and Annie Hill Cottage at your convenience.

Respectfully submitted,
IREDALE ARCHITECTURE

James Emery, Architect AIBC, P.Eng., MRAIC, CAHP, LEED AP | Principal

Albert Lam, Architectural Technologist AIBC, MBA

December 20, 2023



11 METHODOLOGY

This study was completed by a multidisciplinary team, in consultation with select City staff:

- City of Burnaby Park, Recreation and Culture
- City of Burnaby Community Planning
- Iredale Architecture
- Binnie Civil Engineer Consultants - including Landscape and Arborist
- CWMM Consulting Engineers Ltd. - Structural
- MCW Consultants Ltd – Mechanical and Electrical
- Dunefield - Community

The team gathered information for this study from several different sources:

- Site Reviews - Visual review of existing conditions in 2023
- Interviews with select City of Burnaby Park, Recreation and Culture staff
- Existing City and Consultants Reports
- City Policy and Planning Documents
- Regulatory Documents, including zoning, building codes and by-laws
- Relevant heritage and conservation documents, based on consultant experience and industry practices

12 APPENDIX

1. 2008 Pattison Report
2. Site Survey Plan – City of Burnaby
3. All Consultant's Adaptive Re-use Reports
 - a. Binnie Civil Engineer Consultants - including Landscape and Arborist
 - b. CWMM Consulting Engineers Ltd. - Structural
 - c. MCW Consultants Ltd – Mechanical and Electrical
4. LTA Consultant's Class D Conceptual Estimate Report