

SPECIAL MEMBERS' MEETING

Wednesday, February 28, 2024 at 7:00 pm
Meeting held at Hillary House NHS
and Virtually via Zoom
MINUTES

Present

BOARD OF

DIRECTORS: Alan Lambert, Geoffrey Dawe, John Green, Dan McGeown, Michelle Primeau.

STAFF: Kathleen Vahey – Curator/Manager, Julie Preston – Administrative Assistant, Selin Kahramanoğlu – Programming & Outreach Coordinator.

MEMBERS: Claude Arcand, Erika Baird, John Bare, Marjorie Bare, Margaret Blackie, Sandy Bundy, Laureen Campbell, Lissa Dwyer, Joan Gardner, Richard Hess, Marybeth Hess, Don Hutchinson, Tim Jones, Anna Kroeplin, Yves Larouche, Renee LeBlanc, Bill Newman, John McIntyre, Bob McRoberts, Layla Pasdernick, Helen Roberts, John Smale, Jacqueline Stuart, Patricia Wallace, Nancee Webb, Donald Webb, Molly Wills.

1. CALLED TO ORDER: 7:03 p.m.

Co-President Geoffrey Dawe welcomed everyone to the Special Members' Meeting and called it to order.

2. CONFIRMATION OF QUORUM

Geoffrey Dawe and Kathleen Vahey confirmed quorum.

3. MEETING PROCEDURE

Geoffrey Dawe outlined meeting procedure for in-person and virtual meeting.

4. APPROVAL OF AGENDA

MOTION

THAT the Agenda be approved. Moved by: Anna Kroeplin. Seconded by: Bob McRoberts.

CARRIED.

5. DECLARATION OF CONFLICT OF INTEREST – None.

6. INTRODUCTORY REMARKS

Geoffrey Dawe and Alan Lambert discussed the reason for the meeting and presented an overview of the AHS' financial position and recent condition assessment reports for Hillary House.

7. COMMENTS/QUESTIONS

AHS Members discussed AHS and Hillary House.

MOTION

THAT the Membership of the Aurora Historical Society authorize the Board of Directors to enter into discussions with the Town of Aurora to explore options with respect to ensuring the long-term sustainability of Hillary House, and to report back to the Membership. Moved by Tim Jones. Seconded by Bob McRoberts.

CARRIED.

8. NEXT STEPS

Geoffrey Dawe discussed the next steps. Membership will be updated as needed.

9. ADJOURNMENT – 7:53 p.m.

MOTION

THAT the meeting be adjourned at 7:53 p.m. Moved by: John Green. Seconded by John Bare.

CARRIED.



Dear AHS Member,

The AHS Board of Directors decided that a special meeting of AHS members would be prudent to share information and seek input on a number of matters under consideration by the Board relating to the maintenance and preservation of Hillary House and the AHS.

Based on a review of a recent Condition Assessment Report, and in consideration of our current financial situation, it has become more and more clear that the obligations of maintaining/preserving Hillary House are exceeding our ability to raise the necessary funds required to meet those obligations.

Our ongoing viability, including fiscal, membership, and volunteer participation challenges are concerning, and we felt engaging the membership would be appropriate at this time, to best inform a plan for the future. Our meeting agenda will include a review of the current situation, along with an opportunity to gather member perspectives and ideas.

To best inform you of our current situation relating to Hillary House, attached are 3 documents, including the most recent (December 2023) Condition Assessment report, which was done by ERA Architects, and commissioned with the generous assistance of the Town of Aurora.

The documents attached include:

- Agenda
- 2022 Audited Financial Statement
- 2018-2026 Financial Forecast
- Hillary House Condition Assessment Report, December 2017.
- Hillary House Enhanced Condition Assessment Report, December 2023.
- Electrical Systems Assessment and Mechanical Systems Assessment by Smith + Andersen and a Structural Condition Assessment Report by Eternity Engineering Inc. – this is 1 (one) pdf, with the 3 (three) reports.

The recent Condition Assessment report updates ERA's 2017 report. In addition to their own work, ERA coordinated with Smith & Anderson (electrical & mechanical consultants), and Eternity Engineering (structural consultants) to provide added discipline-specific assessments and updated costing.

You will find that the report is very comprehensive, and we hope that you have the time to fully review and consider prior to the meeting.

The 2023 ERA report has an estimated expenditure of at least \$1.2 million over the next 10 years, primarily for preservation of Hillary House, and exclusive of any regular maintenance or unforeseen circumstance.

It should be noted that:

- The \$30,000 Foundation work (Item 11 in the 2023 Costing Estimate) would be a minimum and entirely dependent on the condition of the foundation, which can only be determined with excavation.
- The Eternity Engineering report, Item 3.0 states "The roof covering materials were reviewed from the ground level and generally was in good condition". However, this is somewhat open-ended and further investigation could show deficiencies.
- Although concern with respect to the status of the Barn is mentioned in the latest reports, no costing has been assigned to any necessary repairs.

To reiterate, the purpose of this meeting is to inform the Membership of the challenge and to solicit your input to help us determine a path forward.

Thank you for your interest and we look forward to meeting with you on February 28th.

- AHS Board of Directors



MEMBERS' MEETING

Wednesday, February 28, 2024 at 7:00pm

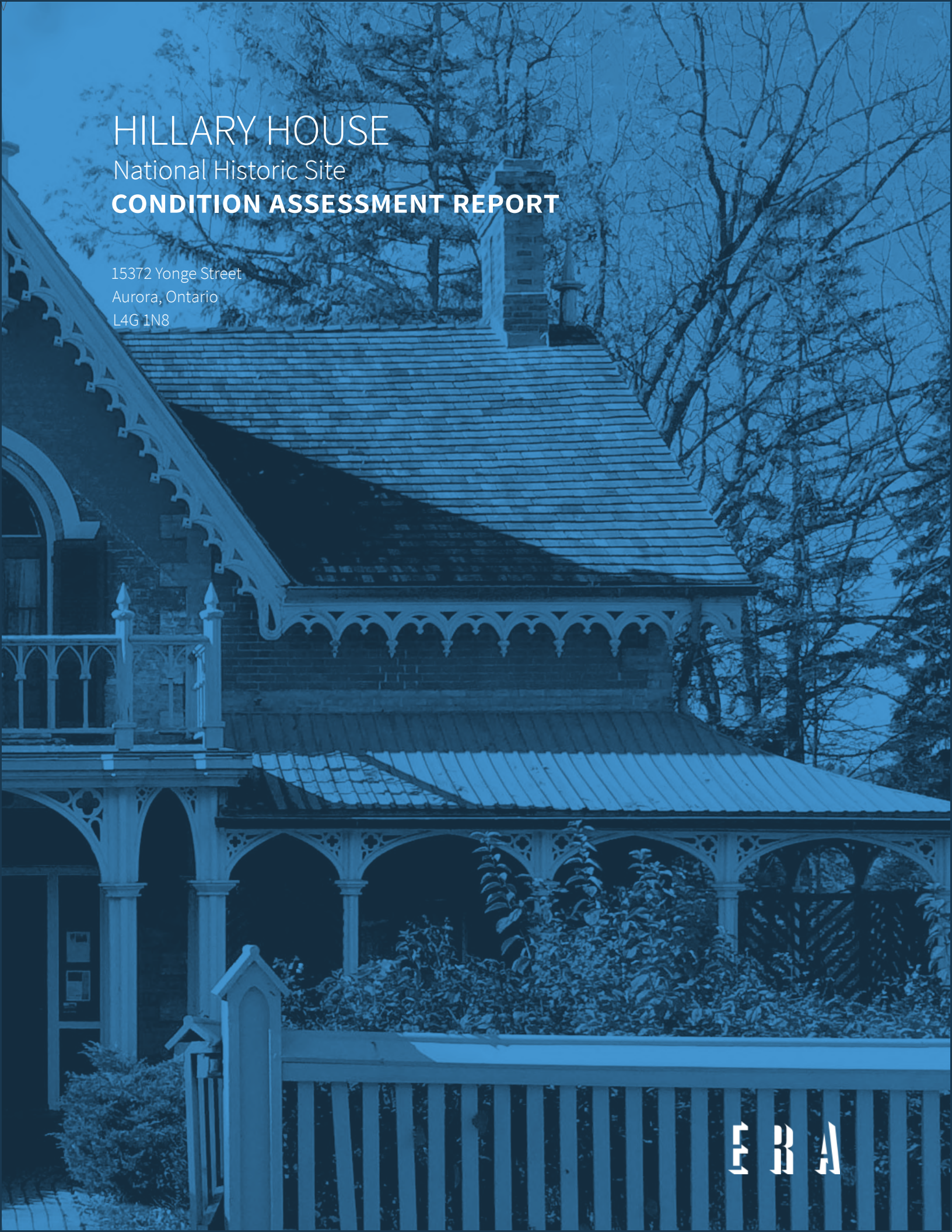
Hillary House National Historic Site

& Virtually via Zoom

AGENDA

- 1. Call to Order**
- 2. Confirmation of Quorum**
- 3. Comments with Respect to Meeting Procedure**
- 4. Approval of Agenda**
- 5. Declarations of Conflict of Interest**
- 6. Introductory Remarks - Geoffrey Dawe & Alan Lambert**
 - a. Confirmation that this is a Proactive Meeting
 - b. Overview of the AHS Financial Position
 - c. Overview of Condition Assessment Reports
- 7. Comments/Questions**
- 8. Next Steps**
- 9. Adjournment**

	2018 Audited	2019 Audited	2020 Audited	2021 Audited	2022 Audited	2023 Projected - Unaudited	2024 Forecast	2025 Forecast	2026 Forecast
Operating Revenue	\$16,409	\$11,454	\$11,382	\$27,089	\$22,226	\$16,195	\$15,850	\$16,250	\$16,750
Donations & Fundraising	\$61,816	\$42,728	\$14,132	\$61,725	\$82,730	\$12,733	\$15,000	\$27,000	\$20,000
Municipal Funding	\$79,500	\$77,900	\$81,675	\$82,830	\$84,600	\$88,597	\$85,900	\$87,600	\$89,400
Grant Revenue	\$22,091	\$24,640	\$24,631	\$61,755	\$31,877	\$35,036	\$28,042	\$25,242	\$25,242
COVID-19 Funding	\$0	\$0	\$15,556	\$38,804	\$44,935	\$0	\$0	\$0	\$0
Total Revenue	\$179,816	\$156,722	\$147,376	\$272,203	\$266,368	\$152,561	\$144,792	\$156,092	\$151,392
Operating Expenses	\$147,886	\$128,029	\$96,716	\$126,129	\$207,000	\$200,748	\$185,225	\$145,900	\$149,800
Fundraising Expenses	\$25,091	\$16,944	\$2,982	\$29,625	\$32,665	\$6,559	\$7,000	\$5,000	\$5,000
Restoration Costs	\$0	\$0	\$3,653	\$43,183	\$58,794	\$5,000	\$0	\$0	\$0
Total Expenses	\$172,977	\$144,973	\$103,351	\$198,937	\$298,459	\$212,307	\$192,225	\$150,900	\$154,800
Operating Surplus/Deficit	\$6,839	\$11,749	\$44,025	\$73,266	-\$32,091	-\$59,746	-\$47,433	\$5,192	-\$3,408
Transfer in/out from Reserves	\$0	+\$11,749 (in)	+\$21,995 (in)	-\$38,836 (out)	-\$44,692 (out)	\$0	\$0	\$0	\$0



HILLARY HOUSE

National Historic Site

CONDITION ASSESSMENT REPORT

15372 Yonge Street
Aurora, Ontario
L4G 1N8

ERA

CONTENTS

EXECUTIVE SUMMARY	IV
1 BACKGROUND, PREVIOUS WORK, AND PRESENT CONCERNS	1
1.1 Hillary House	1
1.2 Previous Work, Modifications and Upgrades	2
1.3 Present Conservation Concerns	4
2 CONDITION ASSESSMENT	5
2.1 Site Visit	5
2.2 General Exterior Review	5
2.3 Veranda Floor and North Staircase	8
2.4 Rear Summer Kitchen Addition	11
2.5 Animal Infestation	16
2.6 Roof and Attic	19
2.7 Bedroom Wallpaper	20
2.8 McIntyre Coachhouse	22
3 RECOMMENDATIONS	23
3.1 Objectives and Opportunities	23
3.2 Site Considerations	25
3.3 Conservation Recommendations	27
3.4 Conservation Strategies and Priorities	31
4 PRELIMINARY CONSERVATION COST ANALYSIS	34
4.1 Preliminary Conservation Cost Analysis	34
6 CONCLUSION	35

PREPARED FOR:

Aurora Historical Society
15372 Yonge St.
Aurora, Ontario L4G 1N8
905-727-8991

PREPARED BY:

ERA Architects Inc.
10 St. Mary Street, Suite 801
Toronto, Ontario M4Y 1P9
416-963-4497



COVER PAGE: Hillary House, East Elevation, 2013. (Wikimedia Commons)
ABOVE: Hillary House, South Elevation. (AHS)

Project # 15-153-03
Prepared by MM / AP / NM

EXECUTIVE SUMMARY



Hillary House National Historic Site and the Koffler Museum of Medicine is a significant cultural resource in Aurora, Ontario. Built between 1861-1862, its original neo-gothic style combines with a series of picturesque additions and a dynamic landscape to create a uniquely cohesive and intact property. Inside, its restored rooms - complete with period furniture - complement the immersive experience. The books, furniture and artifacts (particularly the medical artifacts) constitute an impressive collection worthy of display and appreciation. Hillary House is also home to a wide variety of programs, from historical tours to community events.

Since 1981, the Aurora Historical Society (AHS) has been the owner and operator of the site, and it has undertaken conservation, restoration, stabilization, curation and programming for the site. Still, the AHS faces ongoing challenges in the management of this valuable resource. Maintenance and repair issues related to structural performance, masonry deterioration, animal infestation persist, as do considerations of further restoration projects. In addition to these ongoing issues of upkeep and improvement, there are larger concerns relating to the availability of usable space on the property, and the facilities Hillary House requires to optimally serve all of its programs.

The visitor experience of the site is affected by a number of issues which prevent full engagement with the valuable assets of the museum and its landscape. The lack of accessible washrooms and on-site parking pose accessibility challenges for some visitors, and there is little space for interpretation and artifact display outside the historic areas of the house. Given the lack of facilities, the AHS

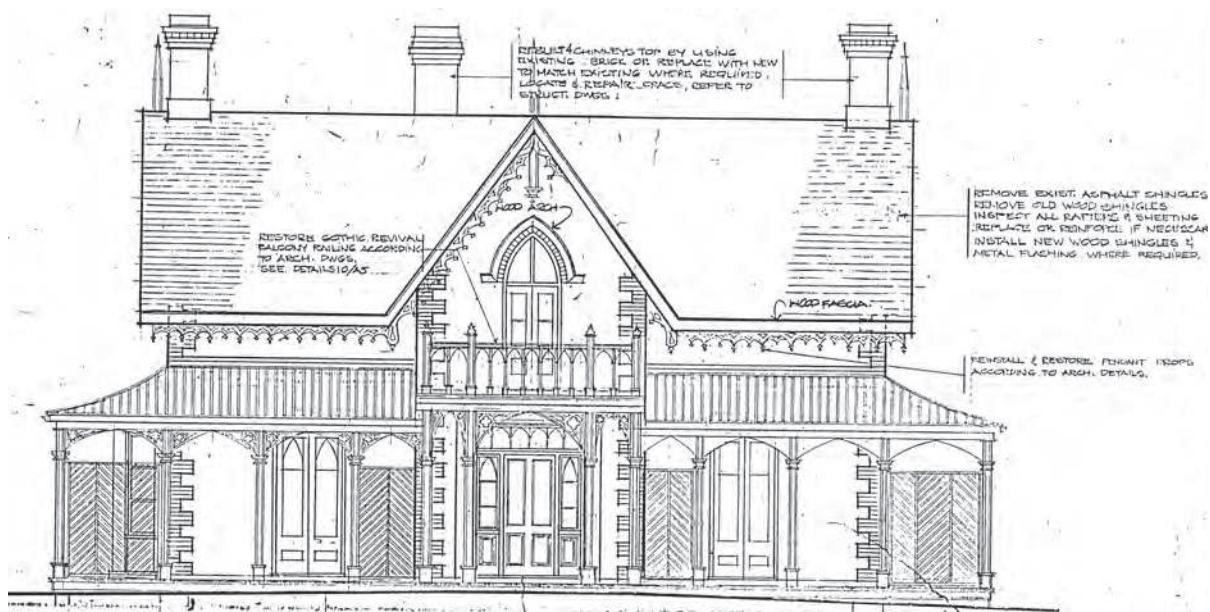
ABOVE. Hillary House, East Elevation, 2013. (Wikimedia Commons)

must host their office and storage programs in the historic areas of the house, preventing their use as museum space for visitors.

ERA Architects visited Hillary House in August, 2017 to conduct a condition assessment and discuss the issues mentioned above. This report begins with background information, and then describes the findings on site as well as the discussion with AHS staff, offering analysis of the issues present. It also provides itemized recommendations which are delivered within the context of a conservation approach and understanding of broader operational and site issues. Finally, this report will provide cost estimates related to the conservation scope recommended, and target next steps.

While ERA located a number of areas for repair and maintenance about the building, the majority of these recommendations are relatively minor in nature, and can be addressed

in a straightforward manner. This being said, there are some concerns which require further investigation to be fully assessed. ERA also identified several options for restoration work in the form of small projects. Regarding the larger considerations of space / site planning and enhancing visitor experiences, ERA has considered two opportunities for expanding the usable enclosed space available on the site (the McIntyre Coach House and the rear summer kitchen addition), and has forwarded recommendations for exploring these options. This process could result in an exciting solution which would improve the experience of the site, more comfortably accommodate the AHS and its functions, and allow Hillary House to share more of its valuable resources with a wider audience.



Hillary House, East Elevation. (Goering, 1982)



1 BACKGROUND, PREVIOUS WORK, AND PRESENT

1.1 Hillary House

Hillary House was built between 1861 and 1862 at 72 Yonge Street North (now 15372 Yonge St.) in Aurora, Ontario. It was constructed by local builder Henry Harris in the Gothic Revival style. It received two additions in its early life, one in 1869, and another in 1888. The latter addition was designed by architect David Dick, and both additions display an evolution of the Gothic Revival style evident in the original building.

Hillary House is noted particularly as having Picturesque Gothic attributes in its design and motifs, placing it in a hybrid category of mid 19th century architectural styles. The landscape surrounding the house reinforces the Picturesque reading, with its dynamic topography and obscuring foliage. The components and the details of the house are in keeping with this stylistic vein. Gothic Revival elements include the ornamental bargeboard, the pointed arch at the gable window, the first floor window traceries, and the cloister-like veranda with its arch detailing. Its Picturesque qualities are found in its roofscape, where steep pitches combine with prominent chimneys and king posts to create a dynamic profile.

Hillary House was built for Dr. Walter B. Geikie, a physician and medical teacher, who lived there until 1869. The house was designed from the outset as a both a physician's home, and a functioning doctor's office. A dispensary and consulting room flank the main corridor at the front of the house, with living spaces behind. Given this purpose built layout, the subsequent three occupants of the house were all doctors who served the local community. These included Dr. Frederick Strange (1869-1876) and Dr. Robert William Hillary (1876-1894). Dr. Robert Michael Hillary acquired the property in 1894 – his family would live in the home for just under a century, ending with his daughter, Nora Hillary.

OPPOSITE PAGE, TOP: Hillary House
- South-East Exterior. ("The Manor",
1975)

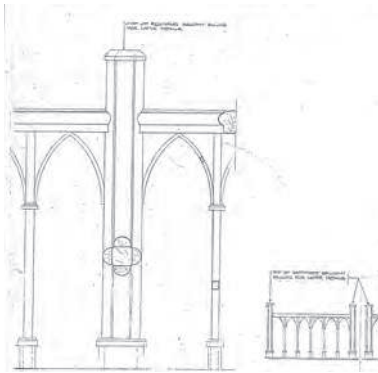
OPPOSITE PAGE, BOTTOM: Hillary
House, view from Yonge Street, date
unknown. (Pinterest)



Hillary House Veranda. ("The Manor",
1975)



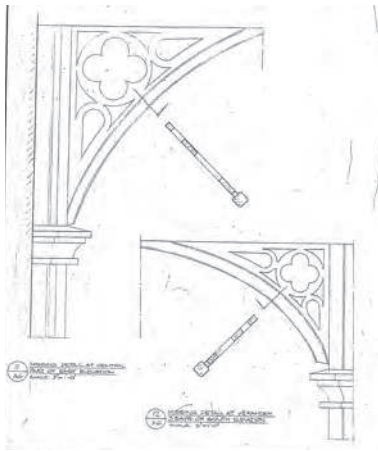
Hillary House, South East Corner.
("The Manor", 1975)



Hillary House was designated as a National Historic Site in 1973. In 1981, the Aurora Historical Society (a non-profit organization) purchased the house and surrounding land in order to better preserve the property. This purchase was made with the support of the Hillary family, and the generosity of Dr. Murray B. Koffler. Nora Hillary continued to live in the house until her death in 1993, acting as resident curator – Hillary House was opened to the general public for tours and visits at this time. The house also gained status as the Koffler Museum of Medicine, not only for the architectural resources of the intact consulting room and dispensary, but also for the large collection of medical books, instruments and artifacts displayed onsite.

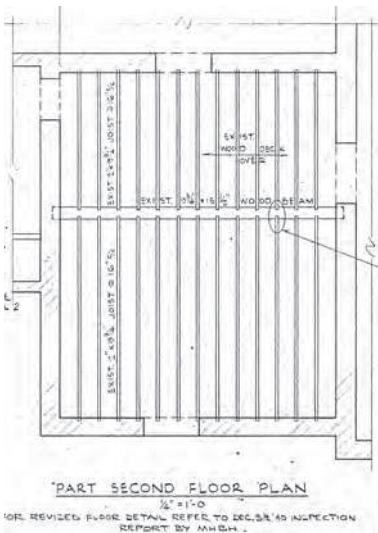
1.2 Previous Work, Modifications and Upgrades

Upon taking ownership of the house, the Aurora Historical Society conducted a feasibility study directed by architect Peter L.E. Goering, with the support of the Ontario Heritage Foundation and Parks Canada. A master plan was developed, and from the years 1980 – 1987, initial structural stabilization and restoration work was performed on the house.



Architectural details prepared for 1980's restoration. (Goering, 1982)

This initial work included the reinforcement and stabilization of the south foundations, south wall, main floor, ballroom floor, ballroom and dining room walls, and roof. The veranda floors and steps were reinforced, chimneys repaired and/or rebuilt, and some of the railings, bargeboard, king posts, and other exterior woodwork were repaired or rebuilt. A new cedar shingle roofing was also installed, as well as upgraded insulation.



Structural stabilization plan drawing prepared for 1980's remediation work (Morrison Hershfield, 1980)

From the years 1988 – 1992, a second phase of work was performed on the house, largely concerning service upgrades. New electrical services, gas furnaces and water heaters were installed, as well as air conditioning in rear wings and a monitored security system. Additionally, the veranda roofs and skylights were restored, and the complete restoration of the ballroom was finished.

A third phase of work from 1993-1998 saw significant interior work on the house, including the restoration of the consulting room, dispensary, the study and the original bathroom. During this time, two new washrooms and a second-floor kitchen were also introduced, and the main stairway was structurally stabilized.



Hillary House seen from south, 1893. Dr. Robert William Hillary is seen on the steps. (AHS)



Tennis Tournament on the north lawn at Hillary House, 1913. (AHS)



Hillary House from the east, seen behind the trees from across Yonge Street. (Pinterest)



Hillary House East Elevation, date unknown. (Ontario Museum Association)

Over the next decade, the major project completed was the renovation and rebuilding of the barn on the property, the only remaining outbuilding from the time the house was constructed. This work was completed in 2007.

More recently, the Aurora Historical Society has undertaken work to restore the chimneys, bargeboard, and front king post, as well as to replace the cedar shingle roof and flashings. There have also been recent waterproofing and drainage upgrades to the basement.

1.3 Present Conservation Concerns

In the summer of 2017, the Aurora Historical Society contacted ERA Architects to discuss several areas of concern regarding the maintenance and conservation of Hillary House, as follows:

- Deflection and sponginess observed in the veranda floor.
- Settlement and deterioration at the rear summer kitchen addition.
- Masonry deterioration at select locations
- Animal infestation in various parts of the building
- Condition of the roof and attic
- Restoration of the side staircase to the north lawn
- Restoration of the historic kitchen and dining room
- Conservation of bedroom wallpaper
- Strategy for disassembled McIntyre Coach House



Hillary House Ballroom before (top) and after (bottom) restoration work. (AHS)

Over the course of subsequent conversations, broader strategic issues related to the long term planning of Hillary House emerged. As part of a larger effort to restore more rooms in the house into museum grade space, there was the question first of how to best organize the storage and administrative space to allow for this within the existing usable house footprint, but also the options available to expand the amount of usable space on the property. Another wider set of issues surrounds the proposed landscape work on the site (to introduce a parking lot at the west of the property with a pathway access to the rear of the house), and its impact on the areas under discussion.



Hillary House Barn (AHS)

2 CONDITION ASSESSMENT

2.1 Site Visit

Michael McClelland, Andrew Pruss, and Noah McGillivray of ERA Architects paid a visit to Hillary House on Wednesday, August 30th, 2017 to review the areas of concern mentioned in the previous section. They were met there by Mary Beth Hess, Erika Mazanik, and Peter Styrmø of the Aurora Historical Society. At the time of the visit, John Shaw and a team of workers were carrying out exterior preservation work on the chimney caps, king posts, bargeboard, balcony, upper windows and eavestrough of the main portion of the house, as well as exterior work on the barn.

2.2 General Exterior Review

The condition of the exterior masonry at Hillary House varies across the faces and wings of the building. This is due not only to the varying stages and methodologies of construction the house has undergone over the course of its life, but also the varying degrees of alteration and conservation work the different parts of the building have received. The original building is load bearing brick masonry on field stone foundations, which were partially underpinned during the 1980s rehabilitation work. Various additions are either multi-wythe masonry or wood frame construction (clad in either brick veneer or wood cladding).

Masonry on the east elevation is in generally good condition. Mortar joints are relatively intact, and there are few damaged brick units. There are several local areas for selective repointing of joints, and a small number of damaged brick units that could be replaced. Exterior woodwork is either newly restored or in good condition, and new lead coated copper flashings have been installed.

While the brick masonry at the south elevation of the original house is in similarly good condition to that of the east, the south brick wall that is part of the 1869 addition to the house displays issues. The foundation under this portion of the house was excavated after its initial construction to allow for coal delivery and storage, and the excavation for the adjacent under-porch passageway may have caused some soil settlement. It is expected that the resulting foundation



Hillary House west lawns the morning of the site visit. (ERA, 2017).



Area of current restoration work by John Shaw (ERA, 2017).



East Elevation (ERA, 2017).



Brick masonry at the east elevation (ERA, 2017).



Left: South elevation of 1869 Addition.
Right: Structural cracking beneath 1st story window at south elevation of 1869 addition.
(ERA, 2017)



Left: West facing elevation of main house.
Right: Missing brick units at this elevation.
(ERA, 2017)



Left: North elevation of 1869 addition
Right: Detail of deteriorating foundation at north elevation.
(ERA, 2017)

movement contributed to the structural issues in the brick, but was perhaps exacerbated by subsequent water penetration. It is clear that the wall has been repaired many times, as several different mortars are visible in the brickwork. Some of areas have been repointed using cement based mortar, which can cause deterioration of the brick units themselves. The major issue with this wall is a structural step crack which runs up the full height of the wall at the west side of the window bay. In addition to the earlier mentioned historical disruptions to the wall, inadequate or deteriorated lintels at the window openings could have contributed to this condition. The wood windows and sills at this wall exhibit peeling and deteriorating paint.

The west facing elevation of the original house is in generally fair condition. The mortar is relatively sound and intact, with some isolated areas of deteriorating or missing mortar visible. Previous repairs seem to have been effective, although there is some cement based mortar present. There are several small holes to be filled in the brickwork, and a small number of missing or damaged brick units. The condition of the west face of the rear kitchen addition will be discussed in a separate section.

Similar to the south elevation, the masonry at the north of the 1869 addition is in poorer condition than that at the original house, but the condition of the brick is better than at the south, as this wall has received less foundation disturbance over its history. It has been visibly modified, however, where a second story opening was infilled and a slightly offset window introduced in the ballroom. This infilled area marks the top of a large step crack that runs down toward the west portion of the wall, some of which has been repaired with an unsympathetic cement based mortar. The condition of the mortar in general on this wall is fair, with some local areas exhibiting missing or deteriorated mortar in the joints. Minor holes are scattered along the wall closer to grade, and there are a number of spalled units at the upper part of the wall. While much of the foundation wall at this elevation is unexposed, the visible portion at the west side of the wall displayed significant deterioration, with a total loss of mortar in multiple locations. The settlement in this area is likely contributing to the structural cracking observed up the wall to the east. The condition of the rear kitchen addition will be discussed in a separate section.



Depression in ground by site of former coal chute at south elevation. (ERA, 2017).



Keying of field stone and brick at base of west elevation. (ERA, 2017).



Portland cement repair of step crack-ing at north elevation (ERA, 2017).



Base of infilled door at north elevation, with step crack visible. (ERA, 2017).



Portion of east veranda where firmness issues are present in the floor. (Wikimedia Commons).



Portion of north veranda where firmness issues are present (Parks Canada).



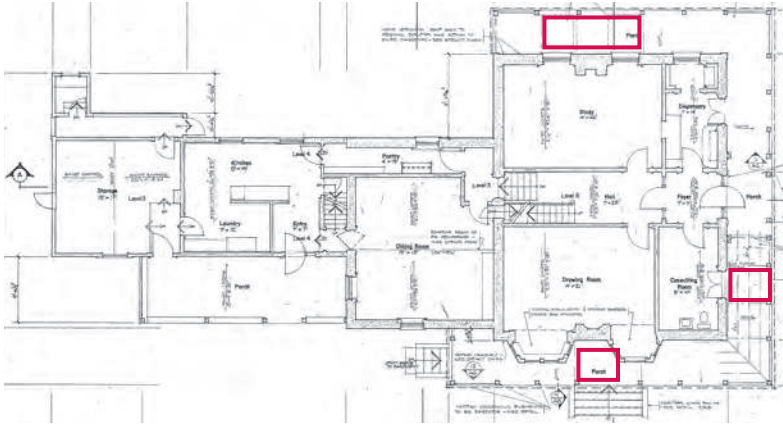
Steel plates installed to reinforce block wall under south veranda. (ERA, 2017).

2.3 Veranda Floor and North Staircase

The veranda floor exhibited sponginess and minor deflection in some of its floorboards. This was reported primarily at the east elevation in front of the consulting room doors, and at the north veranda facing the lawns, although deflection was also observed at the south elevation at the top of the veranda steps.

While the underside of the veranda at the east elevation was inaccessible, it is known that the structure and decking of the veranda here were upgraded or replaced as part of the 1980s conservation work, with a new 2x6" ledger board at the house and new 2x4" decking shown in the archival construction drawings. The drawings did not call for complete replacement of the existing beams at the edge of the veranda, however. Though it should be acknowledged that the east veranda is a higher traffic area, and experiences more wear, the area of concern here is also the portion of the veranda floor in the closest relationship with the ground plane. This makes it more likely to suffer from moisture related deterioration and rot, especially in areas where an adequate slope away from the structure is not provided. There could be deterioration in the floorboards themselves, or in the beams at the edge of the veranda – especially if the existing beams not replaced during the porch restoration were untreated lumber not suitable for construction near grade. While there is a nominal slope away from the porch about the area of concern, there is a depression in the lawn that could cause some pooling.

The veranda at the north was also subject to framing upgrades as part of the 1980s conservation work, including new ledger boards, posts and decking. There has been some deflection reported in floorboards of this portion of the veranda, but it does not have the same close relationship with the ground plane as the east veranda, meaning that migration of ground moisture to the floorboards is less of a possibility. The floor deck is situated well over a foot above grade at most portions of the north veranda, and there appears to be sufficient drainage away from the structure. To assess the causes of the deflection further, an investigation underneath the north veranda floor should be conducted - access for this was not available at the time of review.



Plan of ground floor, with areas of concern at porch floor highlighted in red. (Goering, 1982. Annotated by ERA, 2017)



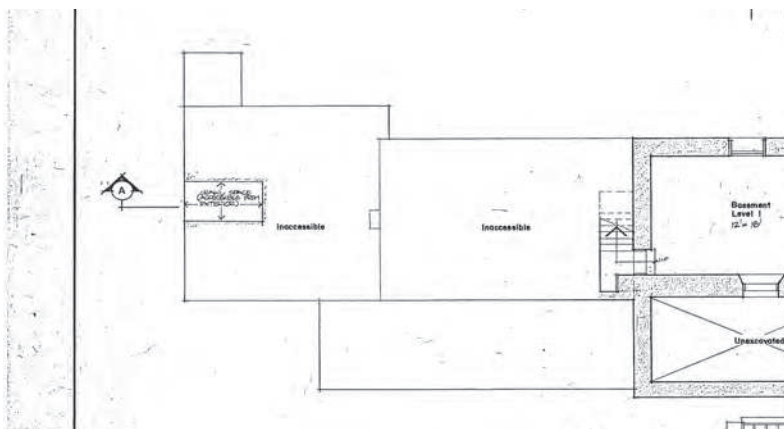
Deteriorating woodwork at Veranda edge. (ERA, 2017)



Underside of south veranda floor at area of concern, showing the wide span made by the floorboards in the area at the top of the steps.
(ERA, 2017)

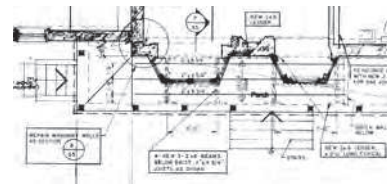


Excerpt of archival photograph showing north veranda staircase position and style.
(AHS)



Excerpt of archival drawing showing lack of foundation information obtained about the west additions to the house during 1980's investigations.
(Goering, 1982)

In addition to the areas reported above, there was also minor deflection observed in the floor at the top of the south veranda stairs. The joists in this area received reinforcement with new beams during previous remedial work, in addition to new decking and ledger boards, as at the east. The concrete block wall at the edge of the veranda in this section (which is also the sidewall of the passage underneath the veranda) was noted as being deteriorated in a 1999 structural assessment report. The wall has subsequently been repaired and reinforced with steel plates and anchor rods to assist in the retention of the soil beyond. The crawl space passage underneath this section of the veranda provided an opportunity for review of the underside of the porch structure. While the condition of the wood framing and repaired block wall appeared good, it is possible that the settlement and subsequent remediation of the block wall caused a loss of fit or alignment in some of the wood structural members, contributing to a lack of firmness in the decking. Worthwhile to note is the span of the floorboards in the area of the veranda at the top of the stairs. While Morrison Hershfield's 1980 structural drawings show existing double floor joists at a maximum of 21" spacing in this area, the floorboards as observed are spanning over 30" from the south masonry wall to the mid span joist. This large span may be contributing to the firmness issues at the porch in this area.



Excerpt of archival structural drawing indicating floor joists at the south veranda that no longer exist. (Morrison Hershfield, 1982)

The restoration of the historic staircase down from the veranda to the north lawns was discussed. Archival photographs confirm that this staircase was located at the wider central column bay of the north veranda, and was relatively simple in design, having bullnosed treads and riser boards, but no handrails or newel posts.

2.4 Rear Summer Kitchen Addition

The westernmost addition to the house, a wood frame, wood clad structure referred to as the summer kitchen, is the portion of the house which has received the least remediation and conservation work, and is in the poorest condition. No work was proposed for this area in Peter Goering's 1982 drawing set, and its existing foundation and floor assembly were not identified.

The south elevation of the addition displays a sag in the wood cladding, where shifting structural members have caused the seams between boards to come out of alignment and apart. At the foundation level,



Underside of rear kitchen addition floor, with broken floorboards visible. (ERA, 2017)



Interior of central crawlspace under rear kitchen addition. (ERA, 2017).

it was observed below the cladding that the brick foundation wall at the west does not return and connect back to the assumed foundation wall at the east of the addition, compromising the stability of the wall. The resulting opening below the cladding at the south (as well as many other cracks and holes about the addition) was covered with wire mesh. Observing the floor structure through this mesh covered opening, several deteriorated and broken floorboards were visible.

The foundation area (below the wood cladding) at the west elevation of the addition has seen some repairs. At some point, the southernmost portion of the brick wall was rebuilt, and brick piers were constructed to form the crawlspace at the center of the addition which is accessed from the exterior. The foundation depth and footing of these newer brick elements is unknown, but they appear fairly stable. Investigation in the central crawlspace found the brick piers to be supporting widely spaced 2x6" joists. The floorboards of the addition were not fitted tight against the joists, with most showing either shimming or gaps. The section of foundation brickwork to the north of the crawlspace is older and in poorer condition, exhibiting step cracking, deteriorated mortar joints, and cracked units.

At the north of the addition is a semi-independent structure comprising the privy and the corridor leading to it. At the exterior, it appears to have a separate foundation system from the main addition, as the brick wall at the north terminates at this portion. Gaps in the skirt beneath the cladding showed that there was no visible continuous foundation wall. Significant deterioration of the floor joists at this north portion was visible through small openings in the skirting.

On the whole, it appears the rear kitchen addition has suffered from foundation settlement and movement, which is forcing the wood framing above out of alignment, and straining their connections. It is possible the foundations in this area are not of adequate depth to prevent frost heave issues, or are not bearing on a solid footing. They are also discontinuous, and lacking in proper integration with each other to achieve greater stability. While previous repair is still sound and intact, it is a local effort, and the quality and depth of the footings for these repaired portions is unknown.

In Peter Goering's 1982 drawing set, a building section shows that the foundation at the rear summer kitchen addition is only partially excavated, and that a north-south foundation wall is present



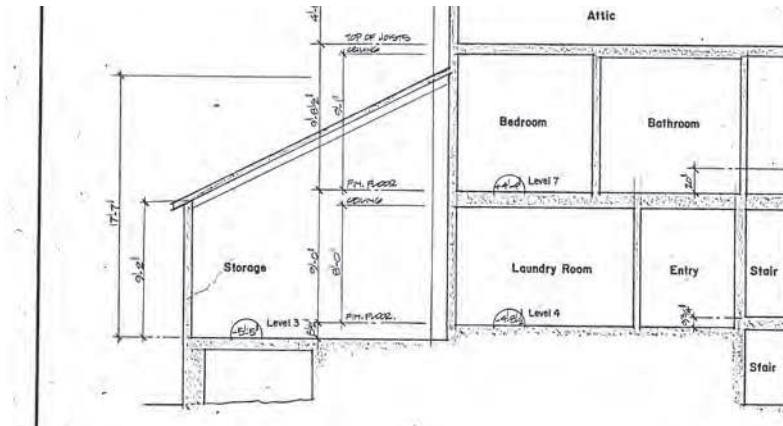
Left: South elevation of rear kitchen addition
Right: Detail of rebuilt west foundation wall that does not return at south.
(ERA, 2017)



Brick Foundation Wall at north portion of west elevation of kitchen addition.
(ERA, 2017)



North elevation of rear kitchen addition, showing corridor and privy structures.
(ERA, 2017)



Excerpt of archival drawing showing rear kitchen addition area, including assumed retention wall at mid point of the floor.
(Goering, 1982)



Remediation of framing at the interior of the rear summer kitchen addition.
(ERA, 2017)

approximately in the middle of the addition floor plate. Judging by the section, this wall is retaining soil to its east, which forms the substrate on which the eastern part of the addition floor is built. While it was not possible to observe this area of the substructure, it can be assumed that there are also settlement and foundation deterioration issues present in the mid foundation wall, and that the close interface of the soil retained to the east and the eastern part of the floor structure could pose some issues related to migration of ground moisture and rot. The connection of the floor structure at the west foundation wall of the 1888 addition could not be verified.

The floor surface at the interior of the rear summer kitchen addition is irregular, and exhibits gaps and discontinuities. While deflection and deterioration were observed, it is difficult to know if these local conditions can be attributed to a compromised primary floor structure beneath, or to the deterioration of the various layers of built-up flooring that have been applied on top. A photograph taken from a gap underneath a section of plywood subfloor reveals that 2x4" sleepers have been laid (north-south) across an irregular joist fabric below.

The framing above the floor level, visible from the interior of the addition, shows evidence of previous repairs. The oldest framing visible is rather sparse 2x4" construction. Newer 2x4" back-up stud walls have been constructed within the older walls to support the roof close to the south gable. While the older 2x4" spliced rafters remain, there has been newer roof sheathing installed. Additional bracing and supports have been installed throughout. It is assumed this repair and remediation was introduced in response to issues in the wood framing resulting from foundation settlement.



Underside of rear kitchen addition flooring, showing wood sleepers resting on irregular joist fabric. (ERA, 2017)

2.5 Animal Infestation

The AHS has reported animal infestation throughout the house. Specifically this has included noises of animal movement behind the finishes at the ground floor of the 1888 addition (the present office), as well as the presence of shells and other discarded food items in parts of the house, notably in the floor cavity at the second floor historic washroom.



Cavity in historic washroom floor showing evidence of animal infestation. (ERA, 2017)



Typical repairs to building fabric to prevent entry of animals. (ERA, 2017).



Wood shutter has been chewed, allowing access to a hole in the masonry. (Hillary House National Historic Site, 2017).

Judging by the exterior review, much effort has been undertaken to prevent the access of animals into the house. Holes, cracks and gaps in the wood siding, masonry walls, foundations, and roof soffits and eaves have been filled, or more often covered with a wire mesh. This has succeeded in barring the most obvious points of entry, but several additional potential access points were identified during the visit

Regarding the presence of animals in the 1888 addition area, it seems likely that there are access opportunities coming from the rear kitchen addition area. The majority of the openings in the wall of this addition have been meshed over, but where the cladding meets the ground, two definite opportunities for animal access were visible. At the south elevation, where the block wall of the porch structure meets the wood clad wall of the addition, there is a depression in the soil where it could be possible for animals to slip into an opening in the cladding. Though stones were placed in front of the opening, it seemed as if they may have been breached. Additionally, at the north elevation, there was evidence of burrowing animals tunneling underneath the wire mesh which covers an opening to the substructure. As there is no sub grade foundation in much of this area, relatively little digging is required for an animal to enter at this point. There was a burrowed hole adjacent to the privy structure which seemed to support this. The migration of animals from the rear kitchen addition substructure to the walls of the 1888 addition (where the office is) likely results from a porousness in the connection area between floor of the summer kitchen addition and the adjacent shared wall to the east. This area has seemingly not been inspected for some time, and was identified as concerning in the previous section. It is unclear how far animals would be able to migrate from the 1888 addition walls to the rest of the house.

Animals may also be entering the fabric of the 1888 addition area through the eaves of the roof. Upon inspecting the attic at the top of this addition, it was observed that the batt insulation at the ceiling joists was disturbed, especially at the eaves, and there was some evidence of animal traffic. As there was a considerable amount of daylight visible in the attic at the eaves, it is assumed that there may be unchecked points of entry about the perimeter.



Potential point of animal entry at south portion of rear kitchen addition. (ERA, 2017)



Evidence of burrowing animals under floor structure of rear kitchen addition at north elevation. (ERA, 2017)



Area of potential animal entry at eaves of 1869 addition roof, showing disturbed batt insulation at assumed entry point. (ERA, 2017)



Interior of eastern (main house) attic, with tie reinforcement, wiring, and blown in insulation shown. (ERA, 2017).



Interior of western (1869 addition) attic, showing framing, and multiple layers of insulation. (ERA, 2017)



Area of water penetration at west gable of western attic. (ERA, 2017)

2.6 Roof and Attic

Access was provided via ceiling hatches to both the principal attic above the original house, and the attic above the 1888 addition. While the attic spaces were not fully entered, a visual inspection was conducted from the location of the hatch.

The eastern attic (above the main house) displayed sound framing. There is evidence of previous remediation in the form of additional wood roof ties installed across the structure, as well as additional vertical members supporting the ridge. There is approximately 3-4" of blown in batt insulation between the ceiling joists, having likely settled from an original 6" application to fill the depth of the 2x6" joists. A fair amount of wiring was visible across the attic. Older knob and tube wiring is visible, although it has been cut off. Two roof vents were observed. Overall, this attic area appears dry, and there was no visible evidence of water penetration.

The western attic and roof (above the 1888 addition) has not received the same framing remediation as the eastern roof. Though there was no significant deterioration visible in the structural members, this roof has no ties or braces for reinforcement, and displays relatively light 2x4" rafter construction. Generally, the wiring in this attic seems to be in good condition, but there are some areas where wires are kinked, and there are some areas of electrical tape repair to the wiring. There is evidence of water penetration at the western gable, where discoloration of the wood sheathing and framing is visible. While this may still be occurring, it is perhaps not a regular or severe enough issue to cause rot and deterioration yet. It is noted that this area is directly beneath the western chimney of the 1888 addition. The penetration of water here may be due to inadequate, missing or damaged flashing about the chimney base. At the attic floor, an additional layer of batt insulation has been applied over an initial layer of blown-in insulation. It was noted that the batt insulation has been disturbed throughout, and particularly pulled away from the eave area, suggesting animal access and habitation. As described in the previous section, there was a significant amount of daylight visible at the eaves, where there could be unsealed openings allowing animal access.



Delaminating wall paper at second floor bedroom (now gallery). (ERA, 2017).

2.7 Bedroom Wallpaper

The historic wallpaper at the second floor bedrooms of the main house is in varying states of repair and deterioration. The wallpaper at the Master bedroom (at the south-east) is the most intact, with the majority still in place. Some portions of this wallpaper (likely deteriorated) have been removed, while others have been repasted and secured. The resulting appearance of the wall is patchy and incomplete, but does not display much new deterioration. The wallpaper in the nursery (at the south-west) is in considerably worse condition, and shows evidence of moisture damage, peeling, and delamination. The coverage of the original wallpaper is also sparser in this room, and not as much repair has been undertaken. The most intact section of this wallpaper was found in the closet of this room. It should be noted that this room is currently being used for storage purposes, and thus has not undergone as much restoration work as the historic master bedroom, which is considered part of the museum space. At the north-east bedroom (currently being used as an exhibition space), there has been newer wallpaper applied over the existing wall surface. There is, however, an issue with the adhesion of the new wallpaper to the existing wall surface, which has resulted in the delamination of some sections of wallpaper. Also of note is a small section of the wall where an underlying, older portion of wallpaper (in a different style) was preserved, exposed, and covered with plexi-glass.

2.8 McIntyre Coachhouse

At the south grounds of the property, directly to the west of the barn, the disassembled components of the McIntyre coach house are stored outdoors with some weather protection. This coach house was situated on a nearby property, and was disassembled and brought to the Hillary House property by Peter Van Nostrand, after it was threatened with demolition in 2015.

The components of the coach house are stacked on wood skids across a sizeable ground area, and are covered with sheets of metal siding,



Wallpaper at second floor master bedroom.
(ERA, 2017)



Wallpaper at second floor nursery (now storage room).
(ERA, 2017)



Current Storage Arrangement for disassembled McIntyre Coach House.
(ERA, 2017)



Detail of stacked Coach House components showing organization and tags.
(ERA, 2017)



McIntyre Coach House prior to disassembly.
(AHS)

weighed down with stones. Close inspection of the components reveals that they are stored fairly systematically, with joists, rafters, cladding, and other building elements stacked in separate parts of the storage area. It was also noted that many of the components had tags attached to them, presumably with identification information necessary for reconstruction. It is not known whether there is a set of drawings which to which these tags are keyed.

While the coach house components appear to be dry, free of rot, and in generally good condition, their mode of protection could be inadequate for longer term storage. The historic building components are too close to the ground, and the migration of ground moisture into the wood is a concern. Additionally, the open sides of the enclosure, underneath the sheet metal covering, allow for blowing snow and driving rain to infiltrate the storage area, which could lead to moisture damage.

3 RECOMMENDATIONS

3.1 Objectives and Opportunities

The condition issues discussed in the previous section could each be regarded as a separate concern which can be addressed independently. It will be rewarding, however, to gain an understanding of how the areas of discussion can be viewed within a larger set of objectives and needs for the AHS and Hillary House. This will not only aid in evaluating the recommendations and determining priorities, but will also frame the discussion according to the long term goals of the organization.

A primary ongoing mission of the AHS is to ‘preserve Hillary House for the future’. Accordingly, a key objective in the present discussion of issues must be to maintain and repair this built resource in order to arrest and remediate current deterioration, and safeguard against future degradation - to protect what already exists.

Beyond the regular mandate of maintenance and upkeep, the AHS has also identified a set of objectives that can be grouped under a single broad goal: the enhancement of the site’s performance as a public museum. Hillary House has a remarkable collection of assets, including architectural, landscape, artifactual and bibliographic resources. It also has an extremely dedicated and competent group of individuals who are invested in its well-being and future as a public resource. The facilities of Hillary House, however, pose some challenges to the full access and appreciation of these assets by the community at large, as well as to the protection and maintenance of the assets themselves.

The site lacks some basic services for visitors, such as parking and accessible washrooms. As AHS staff do not have a separate facility or wing for office space, they are currently forced to occupy some historic areas of the house, preventing these rooms from being fully restored into museum space. Similarly due to the lack of available space, Hillary House does not have a consolidated, environmentally controlled facility for artifact storage and maintenance. This has resulted in some historic areas of the house being used for artifact storage, again preventing their use as museum space.



Porch soffit, Hillary House.
(ERA, 2017)



Medical Artifacts, Hillary House.
(ERA, 2017).



Storage at second floor bedroom.
(ERA, 2017)



AHS Office space at 1888 addition.
(ERA, 2017).

Accordingly, the AHS' long term agenda of enhancing visitor experiences to the site could be said to include the following objectives:

- Open the historic areas of the house (currently employed as storage and office) to the public as fully restored and decorated museum space, by relocating the existing uses elsewhere.
- Introduce a new artifact / archival storage facility, removed from the museum areas of the house.
- Introduce a new office area for the AHS, removed from the museum area of the house.
- Provide enhanced services to visitors, including accessibility upgrades and improved washrooms.

As these objectives all require additional enclosed space on the property, the options are fairly limited. There is very little unused space available in the house itself. A new contemporary structure on the property, or an addition to the existing house, would be subject to Ontario Heritage Trust approval, which could be difficult to obtain. There are, however, two distinct opportunities for expansion on the property which are outside of the principal museum space, could be sympathetic to the historic character of the site, and may have better prospects with heritage approvals than a new structure.

The rear summer kitchen addition is currently in poor condition, and is relatively unused. Renovating or partially rebuilding this structure could allow for additional insulated finished space adjoined directly to the main house. The McIntyre Coach House is a period structure sympathetic with the Victorian fabric of Hillary House, and is characteristic of the area (as it was moved from a neighbouring property). While it is now disassembled, if this Coach House was reconstructed (with a new foundation, upgraded structure, high performance envelope, and comfortable finishes) it could provide a complimentary auxiliary building on the property that could house new or displaced programs.

These two opportunities can be taken together as a potential means of approaching the long term objectives described above.

3.2 Site Considerations

The expansion and/or reorganization of the program areas at Hillary House would create an opportunity for examining how the site as a whole functions for its various user groups. A key asset of the site is the cohesive and intact landscape that surrounds the house, which has remained untainted by any large interventions, and functions as a key aspect of the visitor experience. At the same time, this condition has resulted in limited access and parking, and thus poses some functional problems for visitors.

The house is currently accessed from Yonge St. by a gravel driveway at the south-east of the property, leading to a small parking area to the south of the house. While this parking area can serve the everyday staff functions of the house, it has limited space for larger numbers of visitors. From the parking area, AHS staff are able to enter their western office area via the south-west porch. Visitors take a path through the front garden to the main door at the east elevation of the house. The reception area in the Dining Room at the west of the house is then accessed via the main hallway. This area has pamphlets, books, and small gifts available, as well as desks for AHS staff.

The AHS have considered the issue of how to improve visitor access and parking while protecting the integrity of the landscape surrounding Hillary House, particularly at the east (Yonge St.) frontage. In 2016, a design was developed for a shared parking lot that would occupy lands currently used by the municipal Parks Department as a maintenance yard directly to the west of the Hillary House property. Machell Avenue, a street running parallel to Yonge St. which reaches a dead end at the southern boundary of the maintenance yard, would be extended to reach the proposed parking lot and provide access. The design included 40 parking spaces which could be shared as public parking or with nearby business' or residents. Access would be provided to Hillary House via a gate at the property line and a path leading up to the western portion of the building.

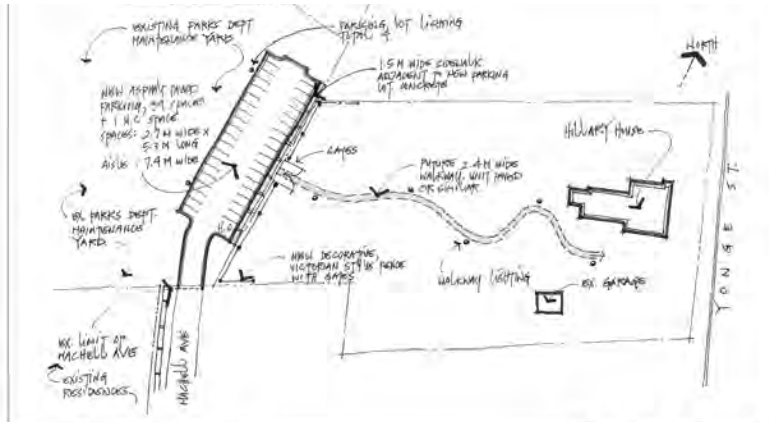
While this proposal is still in early planning stages, it should be included in considerations of long term site planning. The situation of the



Western view from Hillary House.
(ERA, 2017)



Landscaping at south and east.
(Life At Cloverhill, 2012).



parking lot to the west would effectively invert the visitor's approach to the building – rather than walking up to the main east façade, they will be coming to the building's western face. This raises questions about whether there is an opportunity for leveraging this route to provide accessible entrance, reception, amenity and interpretation functions in the far western portion of the building, thus making as much of the eastern portion as possible available as museum space. This new configuration could result in a more legible and defined visitor circulation route throughout the entire site. If, as discussed, the McIntyre Coach House were to be re-assembled, its siting would have to be considered in relation to this new access route, and the potential new public face of the western portion of Hillary House.

3.3 Conservation Recommendations

Given the nature of the circumstances described in the previous sections, the following recommendations fall broadly into two categories. The first concerns the regular upkeep, repair, and maintenance of the existing house, considered as short and medium term recommendations. The second addresses the considerations of facility expansion, site planning, and visitor experience, which are regarded as long term recommendations.

Short Term - Maintenance and Repair Recommendations:

1. Regrade around the perimeter of the house, ensuring slope is away from the house. Provide river-rock buffer at edge of house,
2. Excavate around existing fieldstone foundation to a depth of 600mm below grade. Repoint 100% all visible fieldstone and apply parging finish. Replace deteriorated stone units as required. Provide one (1) test pit down to footing of brick foundation.
3. Remove skirt and/or floorboards at deteriorated areas of floor on the east and north veranda to inspect for deterioration of structural members. Repair or replace severely damaged structure as required to make safe. Prepare, prime and paint.
4. Install new joist(s) at the south veranda between the southernmost existing joist and the block perimeter wall. Inspect all floorboards and structural members for deterioration and stability. Repair as required.



Detail of deteriorating foundation at north elevation of 1869 addition. (ERA, 2017).



Depression in ground by site of former coal chute at south elevation. (ERA, 2017).



Area for review and repair of wire mesh at rear kitchen addition. (ERA, 2017).



Hole to be repaired at second floor washroom. (ERA, 2017).



Location for inspection of flashing at western chimney. (Goering, 1982. Annotated by ERA, 2017).



Any animals should be removed and the shutter and masonry repaired. (Hillary House National Historic Site, 2017).

5. Remove portion of flooring at east edge of rear kitchen addition to investigate floor assembly, condition of structure and foundation, and potential weak points for animal entry.
6. Ensure that there is a continuous wire mesh (max ½" openings) around the entire perimeter of the rear kitchen addition at grade, extending from the wood cladding down to 4-5" below ground level. Replace existing wire mesh as required. Provide pavers around foundation for animal control.
7. Review exterior walls of 1888 addition, rear summer kitchen addition and masonry house for openings, holes and points of animal entry. Patch and repair as required. Consult animal control company to remove pests.
8. Provide repair to openings and holes at the eaves of the western roof (of the 1888 addition). Reinstall disturbed insulation batts between ceiling joists at this attic..
9. Seal opening at second floor historic washroom with fitted plywood.
10. Inspect flashing on western roof at west chimney / gable for deterioration. Repair as required.
11. Re-stack components of McIntyre Coach House and adjust skids so that the components are a minimum of 5" off the ground. Provide sheet material for protection of top and sides of stack of building components, weighed down or fastened as required. Ensure ventilation around all elements.
12. Repoint critical areas of mortar deterioration and replace severely compromised masonry units on above grade brick facades.

Medium Term - Maintenance and Repair Recommendations:

1. Excavate masonry foundations at the north, south and west elevations of the 1869 addition, review for deterioration and repair as required. Repair work to include removal of cement mortars, repointing, brick replacement, patching of holes and stitching of cracks, as well as repair of foundation issues from test pit investigation.
2. Scrape, prime and paint the wood windows and sills at the north and south walls of the 1869 addition.
3. Restore the north veranda staircase, including stone slab at bottom tread to provide clearance from soil.
4. Review wiring in western attic for kinks, poor repairs and anomalies. Ensure wire is not kinked or twisted, and is properly fixed to framing. Replace any electrical tape connections or repairs with plastic twist on cap connections
5. Provide additional batt insulation between the ceiling joists at the eastern (main) attic.
6. Determine a preferred strategy for the conservation of the wallpaper in the second floor bedrooms. Options discussed included replicating and restoring the entirety of the wallpaper, removing the majority of the wallpaper but retaining a representative area, and protecting the wallpaper while leaving it as is. Once a strategy is decided upon, a plan for implementation can be developed.
7. Dismantle and rebuild summer kitchen structure. Salvage existing wood cladding and sheathing for reuse. Provide new wood cladding for lower 3 courses of cladding, new wood shingle roof, new interior wood plank subfloor, foundation repairs and foundation infill. Ensure crawl space is ventilated.

Long Term - Site Planning Recommendations

This set of recommendations concerns the opportunities to meet several key long term objectives of the AHS through the reconstruction of the McIntyre Coach House and the rehabilitation of the Rear Kitchen Addition, as well as through the integration of these new spaces into an evolved site plan and programmatic redistribution.



Masonry for review at North elevation of 1869 addition. (ERA, 2017).



Wood window and shutters at south elevation of 1879 addition (ERA, 2017).



North veranda staircase to be restored. (AHS).



McIntyre Coach House. (AHS).



Rear summer kitchen addition.
(ERA, 2017).

While the process for the development of these two projects could be regarded independently, it is recommended that, at least in early planning stages, they be treated as components of a single comprehensive strategy for helping the AHS acquire dedicated facilities for their offices and artifacts, while at the same time enhancing visitor experiences through improved amenities and new museum spaces.

To achieve this comprehensive strategy, a feasibility study must be conducted which takes into account the entirety of the site's existing resources, the potential of the proposed spaces, the programmatic needs of the various user groups and the long term objectives of the AHS. This process would not only safe-guard against a sub-optimal solution, and be of importance in obtaining further project funding, but would also examine the viability of the project on all fronts.

As a first step in this process, the house would have to be properly measured, and assemblies assessed, in order to provide a new updated digital drawing package of the house which takes into account known structure and assemblies. This is especially true for the area in question at the west of the house, which was the least documented in Peter Goering's drawings of the 1980's. The process would have to include measurement and assessment of the McIntyre Coach House components, and sourcing of any archival information. This updated drawing set would form the base on which schematic design will be carried out. A new survey may be required, which includes site modifications such as the introduction of the barn.

A comprehensive analysis of the component issues must then be conducted in order to evaluate design options on a broad set of criteria. As discussed above, these include considerations of programming, long term objectives, and site planning, but also encompass historical integrity, building science and approvals strategy. From these values, parameters and constraints, schematic design options should be developed for discussion and evaluation, ultimately resulting in one preferred option which is developed into a full design concept package, including a site planning strategy for the entire property and costing estimates.

This process would result in a new and updated package of drawings and building information about Hillary House, would assist the AHS in developing both site planning and operational goals, and would help to manage the diverse array of issues (architectural, practical and financial) associated with a project like this. From a design perspective, it would safeguard from investment in a less than optimal solution, and ensure that the AHS are exposed to all related issues, and consider all options. From a financial standpoint, a feasibility study would be crucial in understanding costs, and assisting in long term planning for the AHS. It would additionally demonstrate the value and viability of the project, and bolster (if not be required for) funding applications. The study would also necessarily include operational considerations, and could help the AHS clarify their goals regarding programming and services in the future.

3.4 Conservation Strategies and Priorities

The preceding recommendations vary in scale, cost and urgency. In order to better understand how a sequence of priority and action can be developed, it would be helpful to gain understanding of an overall conservation strategy for the site. The AHS have a twofold mission in their work at Hillary House. The first is to preserve and maintain the assets of the house and site such that its longevity and availability for appreciation by future generations is ensured. The second is to provide for programming, education, events and interpretation that allow for the assets which are so diligently maintained to be studied and shared with the wider public. These two functions are interdependent. Preservation of the material assets of the house maintains the resources that are valued in its public function. Conversely, the public use of (and interest in) Hillary House is the only sure way to provide for its ongoing preservation by generations to come.

This last point is to be taken as an operating principle in a strategy for conserving Hillary House: that improving public access and experience of the site is in fact a crucial conservation approach, in that it generates community investment, pride and exposure, and repositions Hillary House as a shared public resource. This will not only create the wider support network required for ongoing upkeep and improvement of



Window restoration at Hillary House.
(ERA, 2017).



Opening of the North Tennis Court.
(Ontario Tennis Association, 2015)



Jazz Concert at Hillary House, 2015.
(AHS).



Doors open festival at Hillary House,
complete with Tennis and Live Band,
2015. (The Auroran).

the site, but also ensure that the house remains alive with activity and fixed in the public mind. The development of public facilities on the site should not be viewed as a trade-off with conservation priorities, but as an integral part of the conservation strategy.

While this long term trajectory should be kept in mind, the conservation strategy for Hillary House must also include a mandate to immediately assess and address any areas of concern that may pose imminent threat to the historic fabric of the building or site. Potentially requiring more than routine maintenance, these are areas which may lead to further distress or deterioration if left unchecked. These issues should receive top priority as they arise, as the protection of existing resources must take precedence over restoration, alteration or expansion projects.

With this framework in mind, it can be noted that there are few areas of concern at Hillary House that fall into the category of immediate threat.

There was evidence, at both the north and south elevation, that the foundations of the 1869 addition were either settled or deteriorated. The exposed fieldstone foundation at the north elevation was in especially poor condition. This issue should be investigated to prevent further deterioration to the brick masonry above.

Improved protection of the McIntyre Coach House should also be prioritized. Ideally, the components would be stored further away from the ground, and would be provided with protection at the side as well as the top.

After these higher priority items, other 'Short Term' recommendations should be addressed, with a priority placed on investigatory work. Animal protection recommendations can be taken on as the severity of the problem dictates. 'Medium Term' recommendations to take priority would be the masonry work and window repainting at the 1869 addition, with the remainder of items to be addressed as budget and other factors dictate.

The other area of the house which could be considered to be at a high level of priority is the rear summer kitchen addition. This portion of the structure suffers from foundation issues and has significant

distortion in its framing and deterioration in its finishes, resulting in a space that can only be used as storage. An attempt could be made to stabilize the structure with additional foundation supports and framing improvements, and it could be left as a non-insulated storage space. This could be an expensive undertaking for the amount of benefit to museum, and could also be impossible to achieve given the state of the structure. The rear summer kitchen addition could also be simply left as is, in which case further deterioration and possible collapse must be expected. As recommended, it could also be rebuilt as an insulated addition to the main house, on new foundations, potentially with an enlarged consolidated footprint.

The critical decision for the AHS becomes whether to undertake consideration and study of a facility expansion through the rear addition and/or the McIntyre Coach House, as discussed. If this is being pursued, immediate work on the rear addition becomes redundant, as further assessment and action will be taken. If this is not being undertaken, then a stabilization strategy should be developed in the near future with an engineer to keep the rear addition usable and safe.



Rear summer kitchen addition.
(ERA, 2017).

4 PRELIMINARY COST ESTIMATE

4.1 Conservation Cost Estimate

Item	Description	QTY	Unit	Unit Price	Amount	Notes
Short Term						
1	Regrade around the perimeter of the house, ensuring slope is away from the house. Provide river-rock buffer at edge of house.	1	All.	\$3,000.00	\$3,000.00	
2	Excavate around existing fieldstone foundation to a depth of 600mm below grade. Repoint 100% all visible fieldstone and apply parging finish Replace deteriorated stone units as required. Provide one (1) test pit down to footing of brick foundation.	1	All.	\$10,000.00	\$10,000.00	Does not include repairs under existing porch areas
3	Remove skirt and/or floorboards at deteriorated areas of floor on the east and north veranda to inspect for deterioration of structural members. Repair or replace severely damaged structure as required to make safe. Prepare, prime and paint.	1	All.	\$5,000.00	\$5,000.00	
4	Install new joist(s) at the south veranda between the southernmost existing joist and the block perimeter wall. Inspect all floorboards and structural members for deterioration and stability. Repair as required.	1	All.	\$5,000.00	\$5,000.00	
5	Remove portion of flooring at east edge of rear kitchen addition to investigate floor assembly, condition of structure and foundation, and potential weak points for animal entry.	1	All.	\$1,500.00	\$1,500.00	
6	Ensure that there is a continuous wire mesh (max ½" openings) around the entire perimeter of the rear kitchen addition at grade, extending from the wood cladding down to 4-5" below ground level. Replace existing wire mesh as required. Provide pavers around foundation for animal control.	1	All.	\$1,500.00	\$1,500.00	
7	Review exterior walls of 1888 addition, rear summer kitchen addition and masonry house for openings, holes and points of animal entry. Patch and repair as required. Consult animal control company to remove pests.	1	All.	\$2,000.00	\$2,000.00	
8	Provide repair to openings and holes at the eaves of the western roof (of the 1888 addition). Reinstall disturbed insulation batts between ceiling joists at this attic.	1	All.	\$3,000.00	\$3,000.00	
9	Seal opening at second floor historic washroom with fitted plywood.	1	All.	\$500.00	\$500.00	
10	Inspect flashing on western roof at west chimney / gable for deterioration. Repair as required.	1	All.	\$2,000.00	\$2,000.00	
11	Re-stack components of McIntyre Coach House and adjust skids so that the components are a minimum of 5" off the ground. Provide sheet material for protection of top and sides of stack of building components, weighed down or fastened as required.	1	All.	\$1,000.00	\$1,000.00	
12	Repoint critical areas of mortar deterioration and replace severely compromised masonry units on above grade brick facades.	1	All.	\$5,000.00	\$5,000.00	

Estimated Total of Short Term Work \$39,500.00

Item	Description	QTY	Unit	Unit Price	Amount	Notes
Medium Term						
1	Excavate masonry foundations at the north, south and west elevations of the 1869 addition, review for deterioration and repair as required. Repair work to include removal of cement mortars, repointing, brick replacement, patching of holes and stitching of cracks, as well as repair of foundation issues from test pit investigation.	1	All.	\$10,000.00	\$10,000.00	
2	Scrape, prime and paint the wood windows and sills at the north and south walls of the 1869 addition.	10	Each	\$2,000.00	\$20,000.00	
3	Restore the north veranda staircase, including stone slab at bottom tread to provide clearance from soil.	1	All.	\$5,000.00	\$5,000.00	
4	Review wiring in western attic for kinks, poor repairs and anomalies. Ensure wire is not kinked or twisted, and is properly fixed to framing. Replace any electrical tape connections or repairs with plastic twist on cap connections	1	All.	\$1,000.00	\$1,000.00	
5	Provide additional batt insulation between the ceiling joists at the eastern (main) attic.	1	All.	\$150.00	\$250.00	
6	Determine a preferred strategy for the conservation of the wallpaper in the second floor bedrooms. Options discussed included replicating and restoring the entirety of the wallpaper, removing the majority of the wallpaper but retaining a representative area, and protecting the wallpaper while leaving it as is. Once a strategy is decided upon, a plan for implementation can be developed.	1	All.	\$3,000.00	\$3,000.00	
7	Dismantle and rebuild summer kitchen structure. Salvage existing wood cladding and sheathing for reuse. Provide new wood cladding for lower 3 courses of cladding, new wood shingle roof, new interior wood plank subfloor, foundation repairs and foundation infill.	1	All.	\$15,000.00	\$15,000.00	

Estimated Total of Medium Term Work \$54,250.00

Estimated Total for Short and Medium Term Work \$93,750.00

General Contractors Overhead and Profit (15%) \$14,062.50

Subtotal \$107,812.50

Construction Contingency (40%) \$43,125.00

Subtotal \$150,937.50

HST (13%) \$19,621.88

GROSS ESTIMATED CONSERVATION COST \$170,559.38

5 CONCLUSION

The items described within this report will conserve and stabilize the heritage resource, allowing it to be usable for years to come. The proposed conservation approach prioritizes repairs of deterioration of varying degrees of severity, over several phases. The first scope of work looks at completing essential repairs to stabilize the building and also investigations that will inform the second phase of work. Once the building fabric has been stabilized, the phase two conservation work can form a larger more comprehensive project, including rebuilding the rear portion of the building. Beyond the conservation work, future facility upgrades can follow, expanding on the properties operational capabilities.

It is ERA's recommendation that the Hillary House undertake the work described in this report, in a phased conservation strategy to improve the integrity and longevity of the heritage resource.



HILLARY HOUSE

National Historic Site

CONDITION ASSESSMENT REPORT UPDATE - 2023

15372 Yonge Street
Aurora, Ontario
L4G 1N8

DECEMBER 21, 2023

ERA

CONTENTS

1	EXECUTIVE SUMMARY	4
2	OVERVIEW OF CONDITION ASSESSMENT	5-11
2.1	Work executed since 2017 Report	5
2.2	Outstanding Observations since 2017 Report	5-7
2.2.1	General Exterior Review	
2.2.2	Veranda Floor and North Staircase	
2.2.3	Rear Summer Kitchen Addition	
2.2.4	Animal Infestation	
2.2.5	Roof and Attic	
2.2.6	Bedroom Wallpaper	
2.3	New Observations since 2017	8-11
2.3.1	Rainwater Management	
2.3.2	Foundation Damage on Main House	
2.3.3	Concealed Conditions behind Basement Waterproofing	
2.3.4	Verandah Roof and Skylights	
2.3.5	1888 addition Verandah Cedar Roof	
2.3.6	Woodwork at main House Roof	
2.3.7	Hillary House Barn	
3	CONSERVATION RECOMMENDATIONS & PRELIMINARY COST ANALYSIS UPDATE	12-14
3.1	Estimated Conservation Work Costing	13-14
4	CONCLUSION	15

PREPARED FOR:

Aurora Historical Society
15372 Yonge St.
Aurora, Ontario L4G 1N8
905-727-8991

PREPARED BY:

ERA Architects Inc.
10 St. Mary Street, Suite 801
Toronto, Ontario M4Y 1P9
416-963-4497



COVER PAGE: Hillary House, South East Corner, 2023. (ERA)
ABOVE: Hillary House, North Elevation, 2023. (ERA)

Project # 15-153-03
Prepared by DS/ AP / BB

1 EXECUTIVE SUMMARY



Hillary House, East Elevation, 2013. (Wikimedia Commons)

ERA has been engaged by the Town of Aurora and the Aurora Historical Society to update their 2017 Condition Assessment Report to include the work performed on the property to date as well as outlining any remaining and new work required. ERA coordinated with Smith + Andersen (Electrical & mechanical consultants), and Eternity Engineering (Structural consultant) to provide added condition discipline discipline-specific condition assessment and an updated costing. The objective of the condition assessment update is to establish the existing condition of the building, and to describe the extent and quality of the work performed on the property. Further, the report reviews and updates the existing conservation strategies and priorities from the 2017 report and incorporates the conservation strategy established in the 2022 ERA Feasibility Study for the Summer Kitchen. The conservation recommendations were divided into priority levels:

Priority	Description	Timeline
1	Urgent: Risk of a system failure or life-safety exists.	0-1 year
2	Medium Term: Regular maintenance and upkeep.	0-5 years
3	Long Term: Strategic objectives and Heritage asset planning.	0-10 years

2 OVERVIEW OF CONDITION ASSESSMENT

2.1 Work executed since 2017 Report

Overall, the property was maintained with a number of recommendations from the 2017 report implemented. Recommendations that have been executed or have become irrelevant are listed in the updated costing analysis with a zero-dollar value and “grayed-out.”

The Verandah Conservation Project was tendered in Spring 2021 and partially completed. Remaining or deficient work is listed in the cost analysis and discussed in the latter half of the report.

ERA was informed at the time of the site visit that the wood components of the McIntyre Coach House have been sold and relocated off site.

2.2 Outstanding Observations since 2017 Report

The following observations noted in the 2017 report remain valid at the time of ERA's visit to the site in 2023. The associated recommendations have been carried over into the updated costing analysis and are represented in black text and completion status set as “No”. The timelines for the recommendations remain unchanged.

2.2.1 General Exterior Review

The condition of the exterior masonry at Hillary House has remained mostly unchanged, apart from the foundation deteriorations on west elevation of the main house which will be discussed under New Observations. Selective repointing and brick replacement on masonry walls and wood windows maintenance and re-painting is recommended as within the next five years.

ERA maintains the 2017 recommendation to excavate masonry foundations at the north, south and west elevations of the 1869 addition to inspect for deterioration and repair as required. Repair work would include removal of cement mortars, repointing, brick replacement, patching of holes and stitching of cracks, as well as repair of foundation issues from test pit investigation. See item 2.3.2 Foundation Damage on Main House for further information. (Item 11)



Foundation at South elevation of ball room, closed-off crawlspace venting.



North Verandah missing stairs to tennis court.



Deficient paint work at exterior west veranda stairs.



Rear Summer kitchen addition. (ERA, 2023)

2.2.2 Veranda Floor and North Staircase

Deficient and incomplete work from the verandah conservation Project includes re-grading at east verandah face to attain a minimum of 2% slope away from the building, restoration of the north veranda stairs, a perimeter skirt to prevent vermin from entering, as well as remediation of deficient paint and woodwork on the verandah decking and wood lattices.

2.2.3 Rear Summer Kitchen Addition

The condition and heritage status of the rear summer kitchen as well as the conservation strategy has been discussed in the 2022 ERA report titled “Hillary House Summer Kitchen Feasibility Report” in this report ERA recommends an in-depth investigation and refinement of the conservation scope and rehabilitation of the summer kitchen to prevent further deterioration or collapse of the asset. A single line-item (item 28) is carried in the cost analysis with escalated value for 2023.

2.2.4 Animal Infestation

Vermin infestations appear to be addressed with ongoing efforts of entry prevention, wildlife traps and cleaning. While this issue remains acute at present, it would be substantially reduced with the rehabilitation of the summer kitchen and addressing of verandah deficiencies.

2.2.5 Roof and Attic

ERA was not able to confirm the remediation of the missing or damaged flashing about the chimney base and western eaves at the roof of the 1869 addition. The associated items are carried over in the cost analysis.

2.2.6 Bedroom Wallpaper

At the time of the visit the condition of the wallpaper in second floor bedrooms appeared to be unchanged since 2017. Refer to Conservation recommendations in 2017 report. The associated cost of the investigation is carried over in the cost analysis.



Animal Ingress routes through the summer kitchen north-west corner which have been partially addressed with chicken wire, and traps. Note, significant amounts of skat present in outhouse. (ERA, 2023)



Active animal Ingress routes through the verandah south-east corner. (ERA, 2023)



Deteriorations of wall paper with emergency plaster repairs in bed rooms on second floor. (ERA, 2023)

2.3 New Observations since 2017

New observations include newly discovered conditions or developments of previously recorded observations. New observations are noted in the Preliminary Cost Analysis and highlighted in light-blue. Of these, four observations are considered **Priority-1** items and require urgent attention.



Rupture at PVC pipe with wash-out of backfill at foundation.



One of 2 capped off drain pipes under south verandah crawl space.



PVC rain water pipe collecting water from 5 rainwater leaders.

2.3.1 Rainwater Management

ERA observed a rupture on the white PVC rainwater drainage pipe at the corner of west elevation of the main house and the north elevation of the 1869 addition. The single 6-inch pipe was laid against the exterior walls of the main house, 1869 and 1888 additions and services five rainwater leaders (approx. 45% of roof area) and two sump pump water exits. It contains numerous elbows which decrease flow and increase the risk of freezing in winter. (Item 10) It is recommended that the all rainwater leaders and sump pumps be serviced individually by leading 2-metre long horizontally laid lead-coated-copper pipes away from the foundation walls. Connecting rainwater leaders at grade unnecessarily compounds the risk of back-ups and eventual failures. To prevent freezing and back-ups a temperature actuated heat trace system can be installed in the rain gear. It is also recommended that the remaining rainwater leaders and gutters be inspected and serviced for proper operation. (Item 17)

The bottom landing of the Verandah exterior access stair and verandah basement do not appear to be drained. Two PVC drains exist in the crawlspace under the south verandah, but they are capped off. It should be investigated whether drains are operational. It is advisable to pour a slab-on-grade for veranda basement and hook-up the drains. A new drain should be provided for the bottom landing of verandah access stairs and connected to the veranda basement drains. (Item 16)

2.3.2 Foundation Damage on Main House

The rupture on the white PVC rainwater drainage pipe previously noted has caused the ground at the foundation to wash out. It is assumed that a significant amount of water has entered through the foundation this way. (Item 7) The area around the affected foundation should be excavated to depth of the footing and reviewed by a heritage architect and structural engineer. The fieldstone masonry will need be deep repointed and rebuild as required. Backfill should be done with non compactible fill and a positive slope, away from building be provided. While this repair work overlaps with the repointing of below grade



1869 addition north elevation window well with broken window.



Landscape grading towards east elevation of house.



Basement waterproofing concealing masonry wall



Uncovered, deteriorated fieldstone foundation under waterproofing in basement.

field stone scope (Item 2) it should be addressed with urgency. This scope of work overlaps with (Item 11)

At the 1869 addition a window well on the north elevation and crawlspace vent well on the south elevation appear to lack sufficient ventilation and water drainage. There is a risk of moisture ingress through these openings. The south window well should be cleared out to allow proper ventilation of the crawlspace. A secure steel grate should be installed to prevent any fall risks or vermin infestations. The north window well should be lowered to prevent water ingress through the window. The window requires repair. (Item 15)

As a result of inadequate re-grading of landscaping around verandah east elevation in the Veranda Conservation Project (2021) the risk remains for moisture damage to the wood structure of the verandah (and the (east elevation foundation)). Re-grading to a minimum of 2% slope away from the building should be completed as per original contract documents. As a preventative measure we recommended a 2-foot-deep French drain be installed along f the entire length of the east verandah edge with dry wells at both ends. This item is noted as a Priority-2 recommendation. (Item 20)

2.3.3 Concealed Conditions behind Basement Waterproofing

ERA noted a concealed condition at fieldstone foundations underneath basement waterproofing. Insulating and waterproofing historic rubble masonry walls carries a risk of masonry mortar deterioration due to continuous moisture buildup. The added insulation on the interior side of the masonry moves the freezing point inwards to within masonry. This situation increases the risk of freeze-thaw action during the cold months which can lead to premature failure of the lime mortar. In addition, no capillary break between masonry and bearing timbers was observed. A lack of capillary break under the timber frame increases the risk of moisture travelling up the foundation wall into the timber frame which is in direct contact with the wall. Waterproofing and insulating rubble masonry foundation walls from the interior is not necessarily a bad thing. However, the associated risks have to be managed and controlled if necessary. ERA recommends an intrusive investigation of the condition of the exterior foundation walls and timber bearing connections be done. An allowance should be made for up to eight investigative openings on the interior side by pulling back sections of waterproofing membrane to review the foundation wall surfaces.

It may be beneficial to periodically monitor these locations by making the openings re-sealable access flaps. (Item 18)

2.3.4 Verandah Roof and Skylights

The Board and batten roof of the verandah shows peeling paint and localized wood deteriorations on all three sided. Both skylights on the north side have deteriorations on the wood frames and glazing with water penetration likely. One of the two skylights has been boarded up with painted OSB boards. ERA recommends local repairs of board and batten roof as well as scraping, re-painting of the roof on all sides. The repair and re-glazing of the two skylights should also be considered. (Item 22)

2.3.5 1888 addition Verandah Cedar Roof

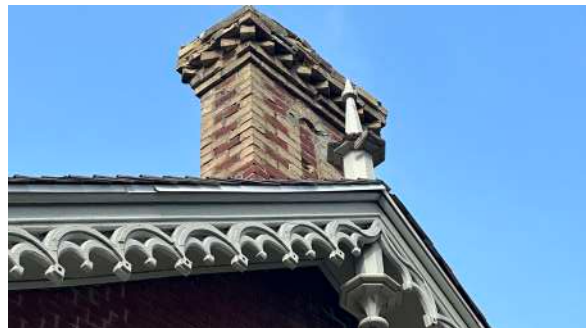
The cedar shingle roof of the 1888 Addition verandah appears to be partially covered with moss, indicating prolonged exposure to moisture. It is likely that the shingles in this area have experienced accelerated decay and will need early replacement. The moss growth should be removed from roof the affected area to allow for the shingles to dry out. Due to the prone condition and state of the roof a replacement of cedar shingle roof should be considered within 5-10 years. (Item 24)



Moss seen on 1888 addition verandah cedar roof.

2.3.6 Woodwork at main House Roof

The wood finials at the north and south gable ends show advanced deteriorations. Some wood elements have detached. The barge boards at the south gable end show localized splitting. Local wood repairs and repainting of the finials and barge boards should be performed to prevent further disintegration. (Item 23)



Wood finial at south gable.

2.3.7 Hillary House Barn

An in-depth assessment of the Hillary House barn was not undertaken for the 2017 Condition Assessment Report. Although an investigation of the barn is not part of this report, the consultant team undertook a brief review and found that the wood structure contains significant deteriorations at grade and is no longer properly supported. The ERA and Eternity opines that the barn is at its state not fit to be used for occupancy or storage. It is advised to remove all storage from barn and cease use of barn until a detailed condition assessment be done by a structural consultant and heritage consultant. (refer to attached structural assessment report by Eternity Engineering)



Skylights at veranda roof.



Hillary House Barn.

3 CONSERVATION RECOMMENDATIONS & PRELIMINARY COST ANALYSIS UPDATE

The following cost estimate has been prepared for the Hillary House Condition Assessment Update based on the preliminary scope of work outlined above. Please note, in preparing this estimate, the following limitations and exclusions apply:

The estimates are to be understood as recommended allowances for each general work item, rather than as construction cost estimates relating to a specific and quantified scope of work.

In the past, hyperinflation has occurred because of unexpected local or regional market factors, such as the number of projects being tendered at the same time, the likelihood that certain trades have limitations in their bids, uncertainties in the approval process, and time periods for tendering and construction.

There is no accounting for unpredictable costs associated with labour resource shortages, supply and demand cycles, or travel and per diem costs.

The value of all work items is carried in 2023-dollars. Values for items from 2017 and 2022 cost estimates have been adjusted using escalation factors from Statistics Canada.

(Remainder of the page left intentionally blank)

3.1 Estimated Conservation Work Costing

Hillary House - Estimated Conservation Work Costing

27-Oct-28

Items completed 2023

Items added 2023

Item	2017 Item No.	Condition	Recommendation	Completed	Priority Level	Amount	Notes
1	Short Term 1		Regrade around the perimeter of the house, ensuring slope is away from the house. Provide river-rock buffer at edge of house.	partially	1	\$ 5,000.00	
2	Short Term 2		Excavate around existing fieldstone foundation to a depth of 600mm below grade. Repoint 100% all visible fieldstone and apply parging finish. Replace deteriorated stone units as required. Provide one (1) test pit down to footing of brick foundation.	No	1	\$ 18,900.00	Does not include repairs under existing porch areas
3	Short Term 8		Provide repair to openings and holes at the eaves of the western roof (of the 1888 addition). Reinstall disturbed insulation batts between ceiling joists at this attic.	No	1	\$ 5,700.00	
4	Short Term 9		Seal opening at second floor historic washroom with fitted plywood.	Unconfirmed	2	\$ 500.00	
5	Short Term 10		Inspect flashing on western roof at west chimney / gable for deterioration. Repair as required.	Unconfirmed	2	\$ 3,800.00	
6	Short Term 12		Repoint critical areas of mortar deterioration and replace severely compromised masonry units on above grade brick facades.	No	2	\$ 9,500.00	
7		Inside corner at main house and 1869 addition foundation exposed with mortar washed out due to a rupture in PVC rain water pipe. Severe water incursion during rain falls. Foundation wash-out and differential settlement is imminent.	Excavate around stone foundation to depth of footing. Extent of excavation to be determined based on damage. Provide deep repointing and rebuild as required. Backfill with non compactible fill and provide positive slope away from building.		1	\$ 10,000.00	Urgent. Immediate action required. Related to Item 2.
8		Archival storage on second floor likely exceeds designed live load of the existing floor structure.	Move second floor storage items and shelving to offsite storage. (allow for transport)	-	1	\$ 1,500.00	
9		barn wood structure shows significant deteriorations at grade and is not fit to be used for occupancy or storage.	Remove storage from barn and cease use of barn and complete a detailed condition assessment with recommended remediation by a structural consultant and heritage consultant.	-	1	\$ 12,000.00	Assessment of barn was not covered in 2017 report and current report.
10		PVC rain water piping along west elevation of main house and north elevation of additions has ruptured. Risk of further ruptures along drain line jeopardize foundation wall along drain.	Replace the existing PVC piping with galvanized metal drainage piping with heating cable. Avoid connecting multiple drain lines at grade to prevent freezing and water backflow in cold season. (See mechanical scope)	-	1	\$ -	Covered in Mechanical Scope
11	Med. Term 1		Excavate masonry foundations at the north, south and west elevations of the 1869 addition, review for deterioration and repair as required. Repair work to include removal of cement mortars, repointing, brick replacement, patching of holes and stitching of cracks, as well as repair of foundation issues from test pit investigation.	No	2	\$ 30,000.00	
12	Med. Term 2		Scrape, prime and paint 10 wood windows and sills at the north and south walls of the 1869 addition.	No	2	\$ 20,000.00	no scaffold access allowed.
13	Short Term 3		Remove skirt and/or floorboards at deteriorated areas of floor on the east and north verandah to inspect for deterioration of structural members. Repair or replace severely damaged structure as required to make safe. Prepare, prime and paint.	No	2	\$ 9,400.00	
14	Med. Term 4		Review wiring in western attic for kinks, poor repairs and anomalies. Ensure wire is not kinked or twisted, and is properly fixed to framing. Replace any electrical tape connections or repairs with plastic twist on cap connections	No	2	\$ 1,000.00	
15		window well at north and crawlspace vent well at south walls of 1869 addition lack sufficient depth for proper water drainage. Moisture ingress through windows possible.	Reconstruct/repair window well and crawlspace venting well. Repair/replace north basement window.	-	2	\$ 6,000.00	
16		Verandah exterior access stair bottom landing and verandah basement are not drained. Two PVC drains under verandah appear capped off.	Investigate whether drains are operational. Provide slab-on-grade for veranda basement and hook-up drains. Provide new drain to bottom landing of verandah access stairs and connect to veranda basement drains.	-	2	\$ 8,000.00	
17		Gutters have localized deformation at south verandah return. Significant water expelled at east side downspouts from main roof onto verandah roof.	Service all gutters and downspouts and repair as required. Provide additional painted metal flashing where downspouts spill onto verandah roof to protect board and battens.	-	2	\$ 5,000.00	include access via mobile lift platform.
18		Concealed condition at fieldstone foundations underneath basement waterproofing. Risk of masonry mortar deterioration due to continuous moisture and freezing point within masonry. No capillary break between masonry and bearing timbers observed. Risk of rot on timber frame.	Investigate condition of interior faces and timber bearing connections of fieldstone foundations in basements at all exterior sides. Allow for up to 8 test locations by pulling back sections of waterproofing membrane.	-	2	\$ 8,000.00	
19		South chimney at main house shows localized brick spalling.	Repoint brick chimney. Allow for localized brick replacements.	-	2	\$ 10,000.00	
20		Inadequate Re-grading of landscaping around verandah. (Veranda Conservation Project 2021)	Re-grade at east verandah face to attain a minimum of 2% slope away from the building. Install 2-foot deep french drain along the east face of the entire length of the veranda with two dry wells on both ends.	-	2	\$ 12,000.00	re-planting not included in estimate.
21		Wood lattices on veranda contain deficiencies including split lattice boards, paint drips and deteriorated frames. Perimeter skirt and wire mesh not completed. (Veranda Conservation Project 2021)	Remediate deficient work done on veranda.	-	2	\$ 16,200.00	
22		Board and batten roof at verandah shows localized wood deterioration and peeling paint. Both skylights show advanced deteriorations and water penetration.	allow for local repairs of board and batten roof and scrape prime and paint. Repair and re-glaze two skylights at verandah north side.	-	2	\$ 15,000.00	
23		Wood finials at gable ends show advanced deteriorations. Barge boards at gable ends show localized splitting.	Provide local wood repairs on finials and barge boards. Prime and paint.	-	2	\$ 3,000.00	
24		Cedar shingle roof of 1888 Addition verandah is partially covered with moss, indicating prolonged moisture exposure.	Remove moss growth from roof in the near term. Allow for replacement of cedar shingle roof within year 5-10.	-	3	\$ 30,000.00	
25	Med. Term 3	Refer to ERA Hillary House Verandah Conservation Project. (2021)	Restore the north verandah staircase, including stone slab at bottom tread to provide clearance from soil.	No	3	\$ 9,500.00	
26	Med. Term 5		Provide additional batt insulation between the ceiling joists at the eastern (main) attic.	Unconfirmed	3	\$ 250.00	
27	Med. Term 6		Determine a preferred strategy for the conservation of the wallpaper in the second floor bedrooms. Options discussed included replicating and restoring the entirety of the wallpaper, removing the majority of the wallpaper but retaining a representative area, and protecting the wallpaper while leaving it as is. Once a strategy is decided upon, a plan for implementation can be developed.	No	3	\$ 3,600.00	
28	Med. Term 7	Refer to ERA Feasibility Study Report for Summer Kitchen Rehabilitation. (2022)	Dismantle and rebuild summer kitchen structure. Salvage existing wood cladding and sheathing for reuse. Provide new wood cladding for lower 3 courses of cladding, new wood shingle roof, new interior wood plank subfloor, foundation repairs and foundation infill.	No	3	\$ 405,000.00	(8.4% construction cost escalation to Q2-2023 pricing)
29	Short Term 4		Install new joist(s) at the south verandah between the southernmost existing joist and the block perimeter wall. Inspect all floorboards and structural members for deterioration and stability. Repair as required.	Yes	-	\$ -	
30	Short Term 5		Remove portion of flooring at east edge of rear kitchen addition to investigate floor assembly, condition of structure and foundation, and potential weak points for animal entry.	Yes	-	\$ -	addressed in ERA 2022 Summer Kitchen Feasibility report.
31	Short Term 6		Ensure that there is a continuous wire mesh (max 3/4" openings) around the entire perimeter of the rear kitchen addition at grade, extending from the wood cladding down to 4-5" below ground level. Replace existing wire mesh as required. Provide pavers around foundation for animal control.	Yes	-	\$ -	
32	Short Term 7		Review exterior walls of 1888 addition, rear summer kitchen addition and masonry house for openings, holes and points of animal entry. Patch and repair as required. Consult animal control company to remove pests.	Yes	-	\$ -	
33	Short Term 11		Re-stack components of McIntyre Coach House and adjust skids so that the components are a minimum of 5" off the ground. Provide sheet material for protection of top and sides of stack of building components, weighed down or fastened as required.	N/A	-	\$ -	Coach house no longer on premises.

COST SUMMARY

	Conservation Work			Mechanical			Electrical		
	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3	Priority 1	Priority 2	Priority 3
Estimated Total of Work	\$ 53,100.00	\$ 157,400.00	\$ 448,350.00	\$ 12,000.00	\$ 37,000.00	\$ -	\$ 500.00	\$ 18,500.00	
General Contractors Overhead and Profit (15%)	\$7,965.00	\$23,610.00	\$67,252.50	\$1,800.00	\$5,550.00	\$0.00	\$75.00	\$2,775.00	\$0.00
Subtotal	\$61,065.00	\$181,010.00	\$515,602.50	\$13,800.00	\$42,550.00	\$0.00	\$575.00	\$21,275.00	\$0.00
Construction Contingency (30%)	\$18,319.50	\$54,303.00	\$154,680.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal	\$79,384.50	\$235,313.00	\$670,283.25	\$13,800.00	\$42,550.00	\$0.00	\$575.00	\$21,275.00	\$0.00
HST (13%)	\$10,319.99	\$30,590.69	\$87,136.82	\$1,794.00	\$5,531.50	\$0.00	\$74.75	\$2,765.75	\$0.00
GROSS ESTIMATED CONSERVATION COST	\$89,704.49	\$265,903.69	\$757,420.07	\$15,594.00	\$48,081.50	\$0.00	\$649.75	\$24,040.75	\$0.00
Refer to Mechanical and Electrical cost tables for breakdown of estimated totals, priority and timeline recommendations shown above									
Estimated Timeframe			Total Cumulative Cost (2023)						
Priority 1	Within 1 Year		\$105,948.24						
Priority 1 + 2	Within 5 Years		\$443,974.18						
Priority 1 + 2 + 3	Within 10 Years		\$1,201,394.25						

(Remainder of the page left intentionally blank)

4 CONCLUSION

This report was prepared as an update of the 2017 ERA Condition Assessment Report and the 2022 ERA Summer Kitchen Feasibility Report. ERA has reviewed the current condition of the Hillary House and categorized the site observations and recommendations into three groups: 1. Work completed since the last report, 2. Work that remains outstanding since the last report, and 3. Observations of new developments or conditions. The Conservation Recommendations and Preliminary Cost Analysis has been updated to incorporate new and existing findings in order of priority. (1. Urgent, 2. Medium Term and 3. Long Term)

Overall, the property was maintained and a number of recommendations from the 2017 report have since been implemented. While the interiors of the house have not undergone any significant work, the rooms have remained in stable condition with no observations of new deteriorations.

A matter requiring urgent attention is the rainwater management on the north elevation of the house and additions. (Items 7 and 10) Emergency repairs to the PVC pipes on the exterior side of the main house west elevations should be undertaken to stop the flow of water into the foundation this winter season before foundation repairs can be undertaken the following spring. ERA reiterates the 2017 report recommendation to excavate masonry foundations at the north, south and west elevations of the 1869 addition to inspect for deteriorations in other areas, and to repair as required.

As a related urgent priority, a detailed structural analysis should be carried out on the Hillary House barn which was flagged by Structural Consultant Eternity Engineering as not fit for occupancy or storage due to extensive deterioration of the timber structure at grate. We recommend this be done by a structural engineer with experience in the rehabilitation of historic structures, or in conjunction with a heritage architectural consultant.

Another short-term objective should be to remove archival storage items and shelving from the second-floor bedroom room in order to not exceed the live load design of the floor structure, or to add temporary shoring down to the foundation until the storage has been removed.

Beyond addressing the urgent priorities and as an important next step, ERA recommends that the Medium-Term Priority Items from the ERA condition assessment Reports and Long-Term Strategic Objectives and the Summer Kitchen Feasibility report be integrated into a comprehensive Conservation Management Plan that develops the management strategy for the entire Hillary House property. A Conservation Management Plan will take into consideration the stabilization and rehabilitation activities, as well as compliance, operational and programmatic aspects of the museum in order to secure the longevity, integrity and relevance of this historic asset.

**ELECTRICAL SYSTEMS ASSESSMENT – HILLARY HOUSE,
15372 YONGE STREET, AURORA**

**FOR
ERA ARCHITECTS**

**OUR PROJECT NUMBER:
23609.001.M.001**

**DATE:
2024-01-19**

ISSUED / REVISION: FINAL





Project Name: Hillary House Building Assessment
S+A Project No.: 23609.001.M.001

2024-01-19
Page 2

LIMITS OF LIABILITY ASSOCIATED WITH THIS DOCUMENT

1. HAZARDOUS MATERIALS

- 1.1. It is understood that hazardous materials may be present (e.g. asbestos, mould, PCB's, etc.) within the existing building. The identification of and abatement recommendations with respect to hazardous materials is outside the scope of services provided by Smith + Andersen.

2. THIRD PARTY USE

- 2.1. Any use that a third party makes of this document, or reliance on or decisions to be based on it, are the responsibility of such third party. Smith + Andersen accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based upon this document.

3. GENERAL LIMITS

- 3.1. The review of existing installations was general in nature and limited to casual, visual observation without removal of ceilings, chases, destructive testing or dismantling. The review was not exhaustive and was performed to acquire a general understanding of the condition of existing systems. Very limited existing drawings were made available for the review of existing systems.
- 3.2. This document has been prepared solely for the use of ERA and its team associated with **Hillary House Building Assessment**. The material contained in this document reflects Smith + Andersen's best judgement in light of the information available at the time of preparation. There is no warranty expressed or implied. Professional judgement was exercised in gathering and assessing information. The recommendations presented are the product of professional care and competence and cannot be construed as an absolute guarantee.
- 3.3. Where expected or anticipated equipment life is provided it is based on ASHRAE Median Service Life statistics. Actual life of equipment may vary depending on variables such as operation, service and maintenance frequency.
- 3.4. Where equipment sizing is provided it should be considered order-of-magnitude only as the project details that may affect systems (e.g. envelope quality, occupancy loads, equipment loading) sizing have not been established or finalized.
- 3.5. Cost estimates and pricing within this report are based on historical data from previous projects with a similar degree of complexity and do not reflect the details of these various scopes of work, which can only be determined through a detailed investigation and design process. To establish accurate installation costs, we strongly recommend feasibility studies be undertaken to accurately define the final scope of work, following which, design documents, including specifications and drawings, should be prepared to allow competitive pricing to be received from the appropriate contractors. All pricing shall be considered report class, with an accuracy no greater than +/-30%. Where cost estimates and pricing are to be used for budget planning before further analysis has been completed, we recommend that a 15% contingency and 20-30% variance be added to the cost estimates depending on the project complexity.
- 3.6. All cost estimates are in Canadian dollars and are based on current equipment costs and labor rates.



1. EXECUTIVE SUMMARY

Smith + Andersen were retained to perform an Electrical assessment at the Hillary House located at 15372 Yonge Street, Aurora, Ontario. This consisted of an in-depth review of the major Electrical systems at the building including main service, electrical distribution, Lighting, emergency lighting and fire protection systems.

Most Electrical systems at the building have been installed according to single dwelling residential standards.

The building electrical wiring appear to be replaced recently and there is no sign of knob and tube wiring in the building.

Main electrical is located at the North side of building and is fed from overhead line at Yonge Street. Main electrical panel is located in ground floor north side and is an Schneider 200A load center. Existing lighting fixtures are varying decorative type of lighting fixtures with recently replaced LED lamps. Some fixtures have been replaced with new types of fixtures. Lighting switches look to be old and some of them are not working. It was observed that lighting circuit are plugged into the receptacles.

The building distribution and grounding system has been upgraded in multiple stages in recent years.

The emergency lighting is based on batteries and covers public corridors and stairs. There are smoke /heat detectors that are connected to a security monitoring system. Smoke alarms are installed in hallways and sleeping rooms.

2. INTRODUCTION

The report is an in-depth review of the existing electrical systems at Hillary House located at 15372 Yonge Street, Aurora, Ontario. The report is focused on providing descriptions of the various systems with picture representation and identifying the component life expectancies and the remaining life, prior to replacement being necessary. The report will provide system upgrade recommendations along with high level budget estimates.

All systems have been reviewed from a residential building standard perspective.

Information for this report was collected during our site assessment on September 26, 2023. An interview with Ms. Kathleen Vahey - Curator/Manager was also carried out. Documentation provided by Ms. Vahey in connection with previous repairs at the building was also used as part of our assessment.



Project Name: Hillary House Building Assessment
S+A Project No.: 23609.001.M.001

2024-01-19
Page 4

3. BUILDING ELECTRICAL SERVICE

- 3.1. Building is fed from overhead line located at the east side of Yonge Street. Service mast is installed on the east side of building and overhead line transitions to underground cable, and to the electrical meter at north side of the building. The service cable and mast are in close proximity to the existing tree in the property. This could cause damage to the service cables during storm and windy weather conditions. It is recommended that the service mast be relocated to proper area or the major branches of the tree need to be cut.

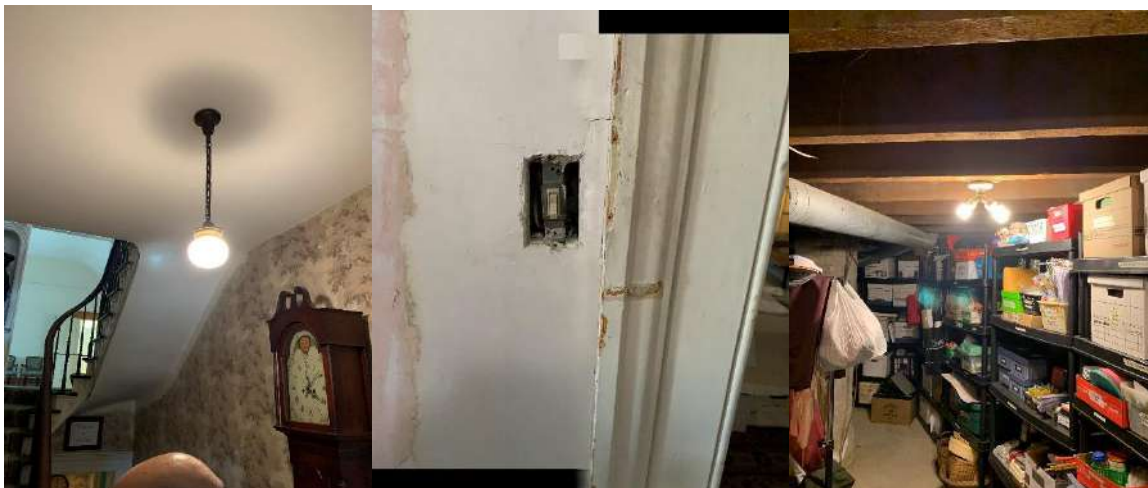


Main electrical panel is located at the north side of ground floor and is a 120/240V, 200A Square D load center with 40 spaces. Panels appear to be in fair condition and without space for new breakers. Panel schedule needs to be prepared/updated.



4. BUILDING LIGHTING SYSTEM AND RECEPTACLES

- 4.1. The lighting system of building appears to be replaced /renewed in different stages recently. The lighting fixtures are mix of vintage luminaires, recently replaced LED recessed downlights and looks to be in fair condition. Service rooms have LED lamps installed in low height and without protection that is recommended to be replaced with fixtures with wire cage to prevent damage.
- 4.2. Lighting switches are mostly old and in some cases are not working. They have been kept in place but the circuit has been redirected to local plugs to control the lights. Cover plates in some cases are missing

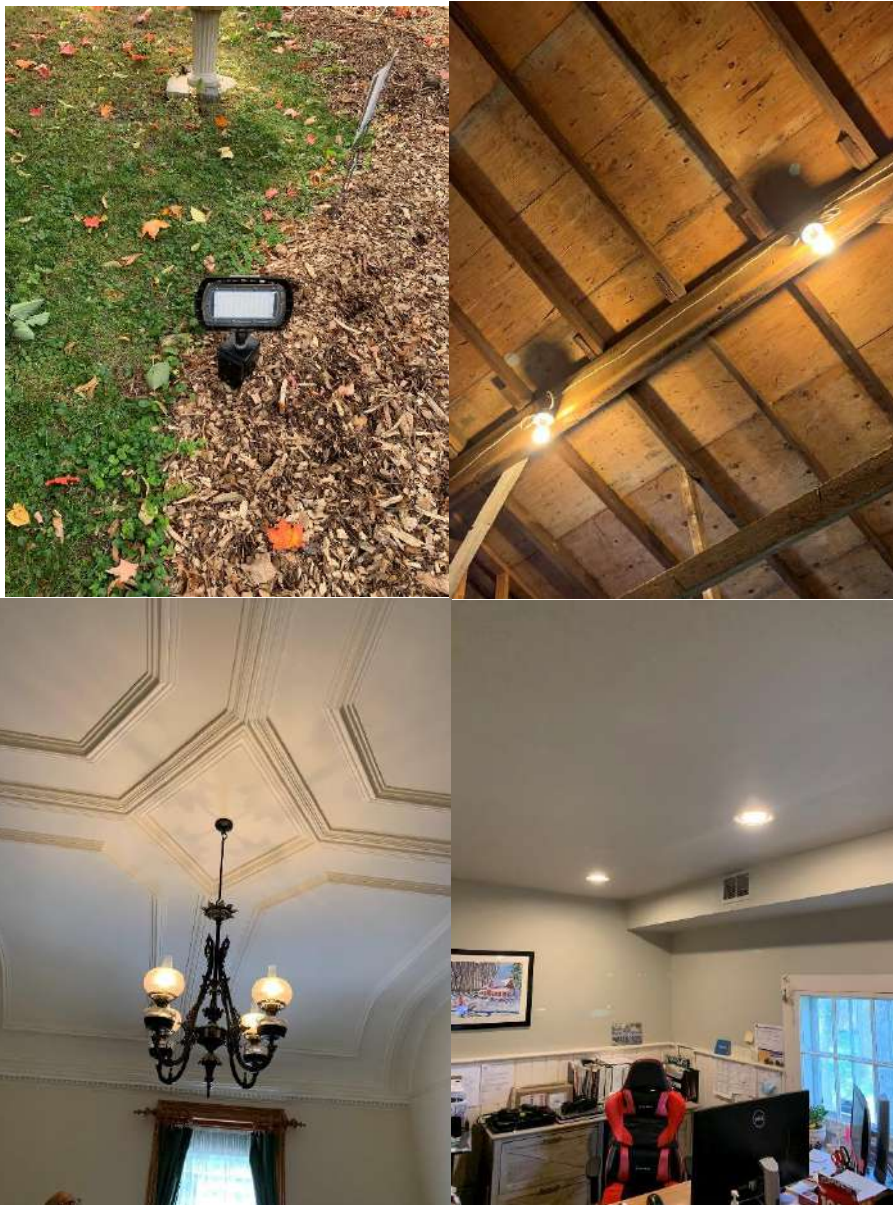




Project Name: Hillary House Building Assessment
S+A Project No.: 23609.001.M.001

2024-01-19
Page 6

- 4.3. There is no emergency generator in the building. Emergency lighting system is based on batteries and local remote heads located in corridors and stairs. Emergency lighting needs periodic inspection to ensure batteries are in good shape and will provide enough duration of power when required. Two service rooms in basement and stairs do not have sufficient emergency light.
- 4.4. Outdoor lighting is LED flood light and looks to be installed recently and controlled via time clock.





Project Name: Hillary House Building Assessment
S+A Project No.: 23609.001.M.001

2024-01-19
Page 7

5. ELECTRICAL WIRING

- 5.1. In general building wiring in indoor areas is concealed type. In basement service rooms and storage rooms there are some exposed wiring without proper mechanical protection in some cases. Overall wiring appears to be replaced in recent past and in fair condition.



6. FIRE PROTECTION SYSTEM

- 6.1. There is no Fire alarm panel in the building and existing FA devices are connected to a security monitoring system.
- 6.2. Three (3) battery type Smoke alarms have been installed in Halls and Lower dinning room.
- 6.3. Five (5) Smoke detectors are installed in Halls, bedrooms and office area.
- 6.4. Two (2) heat detectors are installed in service rooms.



Project Name: Hillary House Building Assessment
S+A Project No.: 23609.001.M.001

2024-01-19
Page 8





1100 – 100 Sheppard Ave. East, Toronto ON M2N 6N5
t 416 487 8151 f 416 487 9104 smithandandersen.com

**MECHANICAL SYSTEMS ASSESSMENT – HILLARY HOUSE,
15372 YONGE STREET, AURORA**

**FOR
ERA ARCHITECTS**

**OUR PROJECT NUMBER:
23609.001.M.001**

**DATE:
2024-01-19**

ISSUED / REVISION: FINAL





Project Name: ERA architects
S+A Project No.: 23609.001.M.001

2024-01-19
Page 2

LIMITS OF LIABILITY ASSOCIATED WITH THIS DOCUMENT

1. HAZARDOUS MATERIALS

- 1.1. It is understood that hazardous materials may be present (e.g. asbestos, mould, PCB's, etc.) within the existing building. The identification of and abatement recommendations with respect to hazardous materials is outside the scope of services provided by Smith + Andersen.

2. THIRD PARTY USE

- 2.1. Any use that a third party makes of this document, or reliance on or decisions to be based on it, are the responsibility of such third party. Smith + Andersen accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based upon this document.

3. GENERAL LIMITS

- 3.1. The review of existing installations was general in nature and limited to casual, visual observation without removal of ceilings, chases, destructive testing or dismantling. The review was not exhaustive and was performed to acquire a general understanding of the condition of existing systems. Very limited existing drawings were made available for the review of existing systems.
- 3.2. This document has been prepared solely for the use of ERA and its team associated with **Hillary House Building Assessment**. The material contained in this document reflects Smith + Andersen's best judgement in light of the information available at the time of preparation. There is no warranty expressed or implied. Professional judgement was exercised in gathering and assessing information. The recommendations presented are the product of professional care and competence and cannot be construed as an absolute guarantee.
- 3.3. Where expected or anticipated equipment life is provided it is based on ASHRAE Median Service Life statistics. Actual life of equipment may vary depending on variables such as operation, service and maintenance frequency.
- 3.4. Where equipment sizing is provided it should be considered order-of-magnitude only as the project details that may affect systems (e.g. envelope quality, occupancy loads, equipment loading) sizing have not been established or finalized.
- 3.5. Cost estimates and pricing within this report are based on historical data from previous projects with a similar degree of complexity and do not reflect the details of these various scopes of work, which can only be determined through a detailed investigation and design process. To establish accurate installation costs, we strongly recommend feasibility studies be undertaken to accurately define the final scope of work, following which, design documents, including specifications and drawings, should be prepared to allow competitive pricing to be received from the appropriate contractors. All pricing shall be considered report class, with an accuracy no greater than +/-30%. Where cost estimates and pricing are to be used for budget planning before further analysis has been completed, we recommend that a 15% contingency and 20-30% variance be added to the cost estimates depending on the project complexity.
- 3.6. All cost estimates are in Canadian dollars and are based on current equipment costs and labor rates.



1. EXECUTIVE SUMMARY

Smith + Andersen were retained to perform a mechanical assessment at the Hillary House located at 15372 Yonge Street, Aurora, Ontario. This consisted of an in-depth review of the major mechanical systems at the building including heating and air conditioning systems, ventilation systems, as well as plumbing and drainage systems.

Most mechanical systems at the building have been installed according to residential standards. Although the furnace and air conditioning systems sufficiently serve the spaces, there is significant room to improve heating and cooling distribution. Currently, no dedicated make up air system or higher efficiency filtration is provided and if the occupancies of the house increase in future the additional of a dedicated ventilation is recommended.

Our recommendations have generally focused on replacing mechanical equipment/systems to a state of good repair only.

Significant mechanical upgrades have taken place in the recent years, with most upgrades having been carried out in the last 10-15 years.

The observations, discussion and recommendations in this report and associated summary have focused on addressing the systems in the building, which are; code violations, health and safety concerns, and components nearing their end of life and energy conservation measures. We have identified solutions with options, where options can be provided in replacing and upgrading the components, with high level budget estimates incorporated.

Most mechanical upgrades required are associated with end of life scenarios including the furnace and air conditioning systems. Plumbing and drainage systems have been upgraded in the past; however, drainage systems should be inspected and/or cleaned periodically.

Small repairs to mechanical systems are assumed to be carried out on an as needed basis.

2. INTRODUCTION

The report is an in-depth review of the existing mechanical systems at Hillary House located at 15372 Yonge Street, Aurora, Ontario. The report is focused on providing descriptions of the various systems with picture representation and identifying the component life expectancies and the remaining life, prior to replacement being necessary. The report will provide system upgrade recommendations along with high level budget estimates.

All systems have been reviewed from a residential building standard perspective.

Information for this report was collected during our site assessment on September 26, 2023. An interviews with Ms. Kathleen Vahey - Curator/Manager was also carried out. Documentation provided by Ms. Vahey in connection with previous repairs at the building was also used as part of our assessment.



Project Name: ERA architects
S+A Project No.: 23609.001.M.001

2024-01-19
Page 4

3. HEATING AND COOLING SYSTEMS

- 3.1. The building is generally heated and cooled through two independent gas fired furnaces complete with electric (DX) air conditioning units.



East Mechanical Room Furnace and associated outdoor air conditioning unit.



West Mechanical Room Furnace and associated outdoor air conditioning unit.



- 3.2. Conditioned air is distributed through galvanized ductwork throughout the house. Most ductwork is newer and utilizes some of the historic floor registers.
- 3.3. Air conditioning unit No. 1 was sitting at an angle which should be addressed; the unit is also at the end of its normal life and replacement should be considered in the near future.
- 3.4. Some areas were noted to be lacking distribution ductwork with some ductwork missing grilles; ductwork would not normally need replacement unless it is damaged or corrodes due to water damage.
- 3.5. Ductwork, grilles, registers, etc. should be replaced on an as needed basis. In areas where it is difficult to run ductwork, small portable units can be installed (heat/cooling units) to provide localized spot heating or cooling as needed.
- 3.6. A major heating and cooling system upgrade project could be considered to address the distribution within the various areas of the house. A future upgrade could also consider conversion to a fully electric based heating solution that would meet a low carbon or full decarbonization based solution. This would involve replacing the existing natural gas-based equipment such as the furnaces with electric based heating equipment such as a heat pump-based solution.
- 3.7. Both furnaces are provided with evaporative type humidifier using the domestic water supply; evidence of leakage was noted around the units and the operation of the units is unknown.
- 3.8. Dehumidification units were noted in both mechanical rooms as well as the archive room. These units are all standalone units. The units in the basement are Aprilaire Model 1850. Only the unit in the East mechanical room was noted be operational.
- 3.9. The east mechanical room unit has significant pooling of water around it; the unit did not appear to be sitting level and its possible water is leaking as a result. Further investigation is required to determine the exact cause.
- 3.10. Careful monitoring of the humidity levels in all spaces should be undertaken by installing high quality humidity sensors. These should be monitored to determine if additional provisions for dehumidification (or possibly humidification) are required. Depending on the internal environment that must be maintained, a study should be completed to determine if additional equipment is required which may also require building envelope or room construction upgrades.
- 3.11. Refer to the Mechanical Systems Summary table for additional information on these systems.



Project Name: ERA architects
S+A Project No.: 23609.001.M.001

2024-01-19
Page 6

4. DOMESTIC WATER SYSTEMS

- 4.1. Domestic cold-water service enters at the east basement mechanical room with a 3/4" water service pipe.



- 4.2. Domestic hot water is generated through a tank type gas fired water heater. The heater appears to be a rental from Enercare.



- 4.3. The piping from the services generally appears to be Type M copper distribution piping and serves the kitchen, washrooms, hose bibs and humidification systems.
- 4.4. No issues with the domestic water system were noted.
- 4.5. Refer to the Mechanical Systems Summary table for additional information on the systems.



Project Name: ERA architects
S+A Project No.: 23609.001.M.001

2024-01-19
Page 7

5. DRAINAGE SYSTEMS

- 5.1. Where visible, most sanitary drainage piping consists of copper DWV (drainage, waste, vent) piping with bronze cast fittings. Some ABS piping was also noted. Some older cast iron piping was also noted, however, we understand this is not used (noted within 2nd floor washroom).
- 5.2. The buried sanitary piping was likely rehabilitated in 1996 as part of a project to reline 75 meters of 9-inch piping and replace 75 meters of 8-inch piping.
- 5.3. The visible sections of this storm drainage piping within the basement appeared to be PVC piping. Most piping appears to have been part of the 2016 drainage project.
- 5.3.1. In each mechanical room, a single sump pump is provided complete with prefabricated sump, controller and battery back up. This appears to have been added to address foundation/ground water issues in 2016.



- 5.4. Rain water leaders appear to be welded steel construction capturing water from the roof and directing to grade level. Most rain water leaders terminate into PVC drainage piping that is directed away from the foundation. Some sections of this piping were noted to be broken.



- 5.5. The PVC drainage system at the exterior is a higher risk of freezing as no insulation and/or heating cables were noted. The installation of heating systems can reduce the risk of cracked piping and ensure that even in winter drainage water move away from the foundation.
- 5.6. The use of galvanized steel drainage piping is recommended; this can be selected to match the existing piping (and painted to suit) complete heat tracing to reduce the risk of ice damage.
- 5.7. We assume that smaller repairs and/or replacement of broken sections of piping to be carried out as needed; the current broken sections of piping should be replaced now to avoid water pooling near the foundation walls.
- 5.8. Refer to the Mechanical Systems Summary table for additional information on the systems.

6. WASHROOM PLUMBING FIXTURES

- 6.1. Toilets within the washroom are porcelain type with tanks. Similarly, the washroom vanities are fitted with porcelain type sinks with chrome plated fixtures.
- 6.1.1. No issues with these systems was reported; replacement of fixtures should be considered as part of washroom renovation project or on an as needed basis.

7. VENTILATION AND FILTRATION SYSTEMS

- 7.1. Ventilation systems at the building are what would commonly be expected of this age of building including small localized exhaust fans at the washroom, however, no exhaust fan was noted within the kitchen above the range.
- 7.2. Filtration is provided directly at the furnaces; the efficiency (MERV rating) of the filter used was not noted.



Project Name: ERA architects
S+A Project No.: 23609.001.M.001

2024-01-19
Page 9

- 7.3. Given that the house operates as a museum, consideration to greater ventilation (and filtration) can be considered if there are high occupancies. Although the building envelope would be considered leaky, fan forced ventilation or energy recovery ventilation with increased filtration should be considered in future.
- 7.4. Refer to the Mechanical Systems Summary table for additional information on the systems.

8. FIRE PROTECTION SYSTEM

- 8.1. No centralized fire protection system is installed at this home.
- 8.1.1. The installation of a fire protection system can be installed if there is a desire to address a fire in future and potentially limit damage. The use of specialized fire protection systems can also be installed that do not use water which can prevent the risk of damage to historic and/or archived materials and documents.
- 8.1.2. Further discussion and analysis is required to determine the feasibility of a fire projection system installation as well as determination of the building occupancy type.

9. NATURAL GAS SERVICE

- 9.1. The main natural gas service is located at the north west side of the property with natural gas piping being black steel piping.
- 9.2. Some surface corrosion was noted on the piping; this should be monitored in future and localized corrosion paint be applied or partial replacement for large scale replacement.

Structural Condition Assessment Report



Site Address: 15372 Yonge St, Aurora
Project NO: 001-23-035

Visit Date: September 26, 2023
Site Reviewer: Joel Luis; P.Eng

Sent To: Dominique Seydoux <DominiqueS@eraarch.ca>

1.0 Introduction & Summary

Eternity Engineering Inc. was requested to be at the above noted address for the purpose of reviewing the existing condition of the structural components of the home including, framing and foundations. Our report can be used to help the contractor create a preliminary budget for structural scope items.

The following summary itemizes action items within this report:

- a. The Roof, Attic, Insulation and Ventilation have deficiencies which **require attention**.
- b. The Exterior Components have deficiencies which **require significant attention**.
- c. The Basement, Foundation, Crawlspcace and Framing have deficiencies which **require significant attention**.
- d. The Interior Components do not appear to have any structural deficiencies which require attention.



2.0 General Description of Structure

The structure appears to have been built in the mid-1800's and has gone through four (4) phases of major construction/additions. The structure consists of both double-wythe brick exterior walls (Phase 1 & 2) and likely a conventional balloon framed exterior wall (Phase 3) and a standard wood framed wall (phase 4). All roof structures appeared to be conventionally wood framed. The foundation systems for the structure consist of cobbled stone foundations (Phase 1 & 2), non- frost protected structural slab on grade (Phase 3) and a shallow non-frost protected slab on grade and non-frost protected footings (Phase 4). The roof shingles do not appear to be original and were likely replaced within the last 30 years.

It should be noted that there is an existing accessory barn structure on site. The foundations are not frost protected and are failing. The existing framing has several deficiencies which require remediation. It is not fit to be used use for occupancy or storage.

We trust the information in this report is suitable for your needs. Please contact us anytime.

We can be reached by email Info@Eternity.Design or by phone 647-939-5750.

3.0 Roof, Attic, Insulation and Ventilation Summary

1. Roof Covering Materials & General Structure

- a. The roof covering materials were reviewed from the ground level and generally was in good condition.
- b. The type of roof covering materials observed was wood shingle or shake.
- c. The roof framing was reviewed from the attic access and was generally in good condition.
- d. The general structure of the roof consisted of tied wood rafter framing.
- e. The original sheathing of the roof consisted of 1x planks.

Comments:

The cedar shake roof was also observed from the attic access hatch. Our observations showed that the roof appeared to have been reinforced with new collar ties within the original structure. Daylight in the attic was minimal suggesting that the roof sheathing was in good condition.

2. Gutters

- a. The gutters were reviewed from ground level and generally were in good condition.

Comments:

It should be noted that some gutters appeared to have low points mid span.

3. Downspouts

- a. The downspouts were reviewed from ground level and generally were in good condition.

Comments:

There was some hard piping PVC in the North corner (photo 1) of the building which was damaged and appeared to be allowing water to erode the earth adjacent to the structure/foundations. This needs to be addressed as it is damaging the structure.

4. Eaves, Soffits and Fascia

- a. The eaves, soffits and fascia were reviewed from the ground level.
- b. The eaves, soffits and fascia appeared to be exposed wood construction.

Comments:

The eaves, soffits and fascia are exposed wood to the elements. In some areas, there are signs of peeling paint.

5. Roof Vents, Flashing, Skylights Chimney and Other Roof Penetrations

- a. The chimneys were reviewed from the ground level and generally were in good condition.

Comments:

It appears that some of the bricks were showing signs of weathering but were in good condition for the age.

6. Attic and Wall Insulation

- a. The attic and wall insulation were present but not installed to code.

Comments:

It should also be noted that temperature-controlled areas typically have a minimum attic insulation of R60 to help prevent the attic temperatures and condensation from damaging the ceiling structure.

7. Ventilation of Unfinished Spaces

- a. Attic ventilation could not be reviewed as there was none installed.

Comments:

It should also be noted that temperature-controlled areas typically have attic vents to help the roof breathe and control extreme attic temperatures.

4.0 Exterior Summary

1. Exterior Wall Covering Materials, Flashing and Trim

- a. The wall covering materials, flashing and trim were reviewed from the ground level.
- b. The type of covering materials observed was exposed painted wood.
- c. The type of flashing materials observed was powder coated aluminum.
- d. The type of trim materials observed was exposed painted wood.

Comments:

The wood siding and trim are exposed wood to the elements. In some areas, there are signs of rot and peeling paint. This is likely due to the lack of water management on the roof.

2. Exterior Doors and Windows

- a. The exterior doors were not reviewed in depth as they were not part of this scope of work.

Comments:

The exterior door was fully operational. The windows did not fully operate.

3. Surface Drainage, Retaining Walls, and Grading of the Property

- a. The surface drainage, retaining walls, and grading of the property were reviewed from the ground level.

Comments:

There are issues with grading around the entire building as multiple swales and paths are sloping towards the building foundations (Photo 2). The adjacent structure also has a downspout which is discharging to corner of the building (Photo 1). There are signs of cracking and damage in the foundations and double wythe brick walls likely caused by saturated washing away from excessive water. It appears that the cracks were repaired (repointed) at one point in time but it is unclear when this happened (Photo 3). The original structure was also underpinned, which would normally be a repair solution for this type of problem. It is unclear if the underpinning was done before or after the repointing. Additional excavation/review is required. The remediation for this deficiency is to have the entire area regraded to control the water shed away from the structure.

There are two basement window wells on the property, both window wells do not appear to have proper working water management systems. One window well has been abandoned and filled with hay (south side). The other window well granular is too high in the window (required to be 12" below the windowsill) and does not appear to have a drainage tile. (Photo 4)

The basement walk-up stair access does not have a floor drain at the base of the stairs for water management (Photo 5). This needs to be addressed as it is allowing exterior water to enter the basement structure below the porch.

4. Stairs, Steps Stoops Stairways and Ramps

- a. The stairs, steps stoops stairways and ramps were reviewed from the ground level.

Comments:

The grading of the ramps may want to be addressed as it current provide a path for water from Yonge St to the home.

5. Porches, Patios, Decks, Balconies and Carports

- a. Most of the porches and decks could not be reviewed as there was no proper access.
- b. A section appeared to have rot damage and improper bearing/connections under the south suspended area.

Comments:

Sections of the porch should be expected to need repair/replacement throughout the structure.

6. Railings, Guards and Handrails

- a. The railings, guards and handrail could not be reviewed as there were none installed.

Comments:

None

We trust the information in this report is suitable for your needs. Please contact us anytime.

We can be reached by email Info@Eternity.Design or by phone 647-939-5750.

5.0 Basement, Foundation, Crawlspaces and Framing Summary

1. Foundation

- a. The foundations were reviewed from the ground level. Depending on the phase, they varied between cobbled stone foundations and unreinforced slab on grade.
- b. The cobbled foundations were observed as underpinned.
- c. The walk-up entrance foundation walls were observed as concrete block (CMU) foundations.

Comments:

The walk-up entrance foundation walls were not level (bowing at mid wall) and showed signs of previous remediation with metal plates and soil anchors (Photo 6). We are assuming these were repaired under the direction of an engineer but do not have any drawings or reports to reference.

The existing phase 1 and phase 2 foundations appeared to cobbled foundations which were underpinned at a later renovation. We have drawings showing underpinning details suggesting this was completed at the direction of an engineer. It should be noted with the water management problems, it is common for these types of foundations to have the grout joints deteriorated below grade. We recommend additional investigation be completed at poor water manages areas to review the foundation wall condition below grade. Any loose stones will need to be reset and pointed.

Phase 3 foundations are currently an occupied slab on grade which does not appear to be frost protected. The movement in the slab could be contributing to the cracking in the foundation wall/double wythe brick of phase 2 (Photo 7). The front porch and retaining wall for phase 3 is also poured on grade and should be remediated (Photo 8). In Ontario, the minimum frost protection is 4 feet to prevent frost movement. The remediation for this deficiency is to have the entire foundation underpinned to 4'-0" or add rigid insulation (Similar to Figure 1).

2. Basement & Crawlspaces

- a. The crawlspace could not be reviewed as there was none installed.
- b. The basement was reviewed for phase 1 and phase 2 only.

Comments:

If structural work is required in the crawlspace, a more accessible hatch may be required.

3. Structural Floor Assembly

- a. The floor assembly was reviewed from the basement as 2x10s at ~19" o.c. @ ~14.25 feet unbraced.
- b. The floor assemblies as consistent with the structural drawings we were provided.

Comments:

For the use as residential space at 40 psf live load; the floor assemblies are passing code minimum but are at 78% vibration which would explain the additional supports mid floor (Photo 9). There is no documentation on why the support was added and if it was by the direction of an engineer.

One of the rooms on the second floor is being used as a storage area (Photo 10). Storage racks and stacked boxes can quickly exceed standard floor live loads of 40 psf. Even though the area is not showing signs of cracking in the ceiling joists below, we recommend either the storage area is moved to a slab on grade within the structure, moved off site or temporary shoring is added to the structure until the storage has been addressed.

6.0 Interior Summary

1. Floors, Walls, and Ceilings

- a. The floors, walls and ceilings were reviewed from the ground level.
- b. The floor appeared to be wood plank construction and was relatively in good condition.
- c. The walls and ceilings appeared to be planks on lathe construction and showed signs of cracking at a few locations.

Comments:

The cracking in the walls and ceilings were likely caused by the non-regulated humidity.

We trust the information in this report is suitable for your needs. Please contact us anytime.

We can be reached by email Info@Eternity.Design or by phone 647-939-5750.

7.0 Recommendations

We recommend reviewing the above information with your general contractor to help prepare a construction budget and final scope of work. Preparing drawings for permit and completing structural design review and detailing will be the next step once a budget and scope of work has been finalized.

8.0 Limitations of Liability

It should be noted that this structural report is based on visual inspection of the existing structure. During this review, no architectural cladding was removed, and reviews were performed on a random basis with no attempt made to review every element of the building. The purpose of this review was to determine the overall quality of work as well as visually obvious deficiencies. We have not carried out an analysis of the gravity resisting systems or lateral load resisting systems of the building. Our comments are not a guarantee or warranty of any aspect of the condition of the structure.

This report was prepared by **Eternity Engineering Inc.** for the account of **ERA Architects**. The materials contained reflect the existing structural condition of the building to our best judgement and with the information made available to us at the time of preparation. Any third-party use of this report is the responsibility of such party. **Eternity Engineering Inc.** accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made based on this report.

The following items have not been examined by nor are they considered as part of our engagement:

- Building envelope condition issues
- Weatherproofing and waterproofing systems or considerations
- Plumbing, mechanical or electrical systems or considerations
- Fire prevention system requirements, condition, or considerations
- Detailed review or evaluation of original structural design
- Presence of hazardous materials such as asbestos, PCBs or toxic industrial waste

We hope the above meets your current requirements. Should you have any questions or related comments, feel free to contact our office at your convenience.

End of Structural Report

Regards,



Joel Luis. P.Eng



9.0 Photos



Photo 1: Damaged downspout hard piping.



Photo 2: Adjacent grading (typical at multiple locations)



Photo 3: Cracking double brick wall



Photo 4: Improper water management at window well



Photo 5: Missing drain at base of walk-up stairs

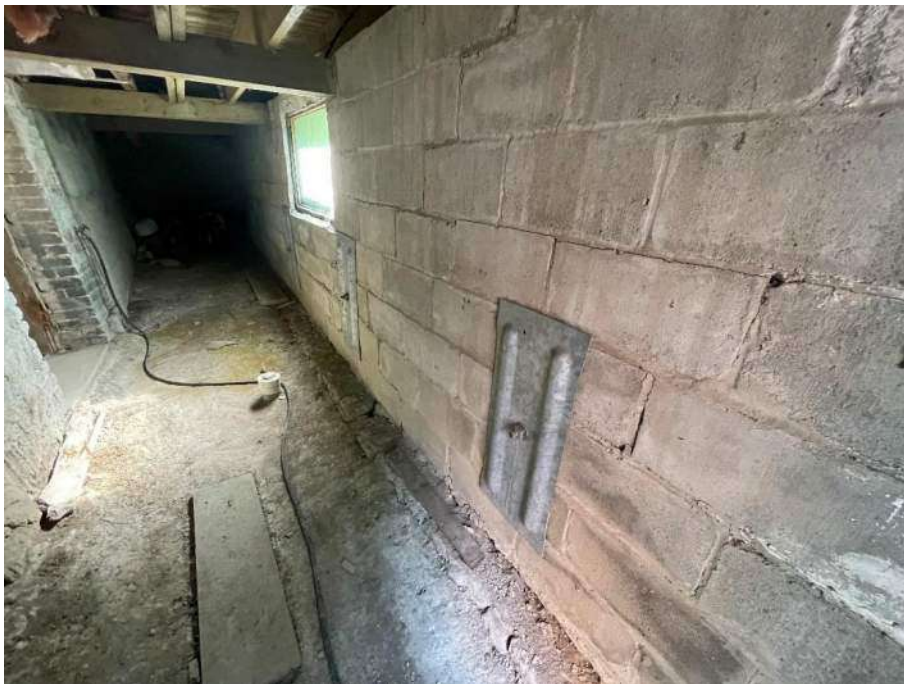


Photo 6: Previous repairs to south foundation wall



Photo 7: Phase 3 construction appears to be slab on grade.



Photo 8: Phase 3 porch slab on grade without proper frost protection



Photo 9: Over spanned floors in basement (Phase 1) – temporary supports added



Photo 10: Stacking load on second floor

10.0 Figures

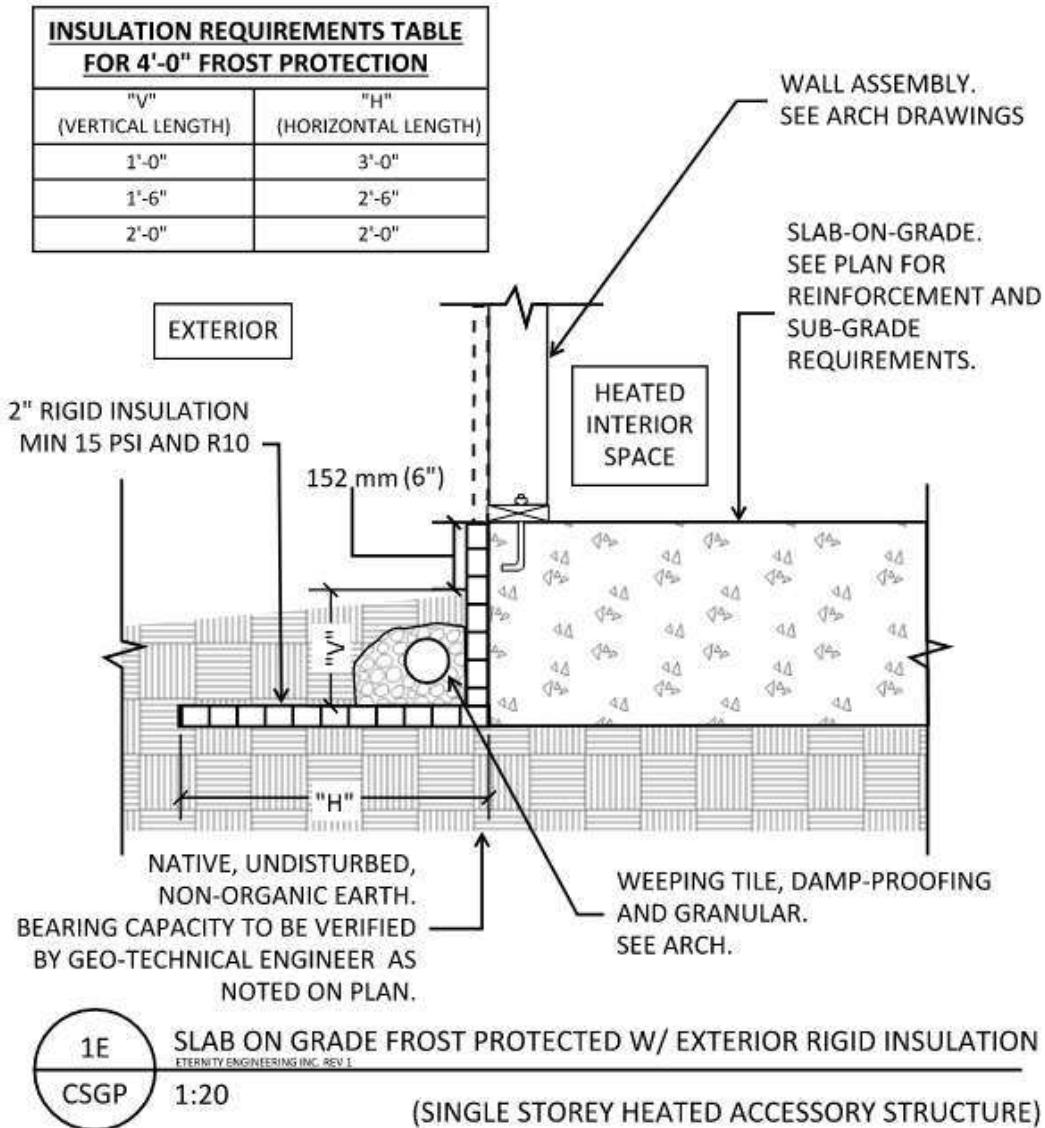


Figure 1: Shallow Frost Protection Example with Rigid Insulation for a Heated Structure.

15372 Yonge Street, Aurora

Hillary House

Mechanical Systems Summary
Mechanical Systems Assessment
15372 Yonge Street, Aurora
Project Number:23609.001.M.001
2024-01-19
FINAL

Priority
The following numbers, associated with the line item, indicates the following
#1 - Life Safety Compliance
#2 - Code Requirement
#3 - Risk of System Failure / Building Service Disruption / Tenant Comfort
#4 - End of Life Cycle
#5 - Energy Savings
#6 - Redundancy

	Equipment	Location	Description/Notes	Present / Estimated Age (Years)	ASHRAE Life	ASHRAE Life Remaining	Estimated Life Remaining (Years)	Notes:	Priority	Cost
	Heating and Cooling Systems									
	Furnace No. 1	East Mechanical Room	Keeprite Natural Gas Furnace, Model C9MVX080J20A1, Serial Number A113458486. 2 Stage, Heating input of 80,000 btu/hr (high), 56,000 btu/hr (low). Complete with System 636® CPVC vent and intake piping.	12	18	6	6	Budget to replace existing furnace with a similar unit. Replace unit at time of AC unit replacement.	3,4,5	\$ 8,000.00
	Air Conditioning No. 1	East Mechanical Room	Split System air conditioning system with indoor evaporator coil installed above furnace and outdoor condensing unit installed at the north end of the property, utilizing R-22 refrigerant. Condensing Unit: International Comfort Products Model CA5530VKD2, Serial no. L991163335., 2-1/2 tons nominal cooling capacity. Indoor Coil: Unknown make/model; presumed to be installed at the same time as outdoor unit.	23	15	0	0-2	Budget to replace existing air conditioning unit with a similar unit (higher efficiency); evaporator coil expected to surpass outdoor unit, however, these units are generally replaced at the same time.	3,4,5	\$ 7,500.00
	Humidifier No. 1	East Mechanical Room	Aprilaire Model 550 Humidifier. Evaporative type humidifier using municipal water supply. No water softener was noted as part of the installation.	12	N/A	N/A	0	Service unit including replacement of media and control valve or replace full unit including humidistat.	3,4,5	\$ 500.00
	Furnace No. 2	West Mechanical Room	Keeprite Natural Gas Furnace, Model C9MVX060F12A1, Serial Number A113158830. 2 Stage, Heating input of 60,000 btu/hr (high), 42,000 btu/hr (low). Complete with System 636® CPVC vent and intake piping and condensate pump.	7	18	11	8	Budget to replace existing furnace with a similar unit. Replace unit at time of AC unit replacement.	3,4,5	\$ 7,000.00
	Air Conditioning No. 2	West Mechanical Room	Split System air conditioning system with indoor evaporator coil installed above furnace and outdoor condensing unit installed at the north end of the property, utilizing R-410 refrigerant. Condensing Unit: International Comfort Products Model NXA624GKA100, Serial no. E160706065., 2 tons nominal cooling capacity. Indoor Coil: Lennox Model C33-24A-2, Serial No. 6002C58513; presumed to be installed at the same time as outdoor unit.	7	15	8	8	Budget to replace existing air conditioning unit with a similar unit (higher efficiency); evaporator coil expected to surpass outdoor unit, however, these units are generally replaced at the same time.	3,4,5	\$ 7,000.00
	Humidifier No. 2	West Mechanical Room	Aprilaire Model 550 Humidifier. Evaporative type humidifier using municipal water supply. No water softener was noted as part of the installation.	7	N/A	N/A	0	Service unit including replacement of media and control valve or replace full unit including humidistat.	3,4,5	\$ 500.00
	Ductwork	Central	Galvanized sheet metal ductwork running throughout house (typical) include central return as well as various air registers and grilles.	N/A	N/A	N/A	0	Some areas were noted to be lacking ductwork or grilles covering the ductwork openings; ductwork would not normally need replacement unless it is damaged or corrodes due to water damage. Ductwork, grilles, registers, etc. should be replaced on an as needed basis. In areas where it is difficult to run ductwork, small portable units can be installed (heat/cooling units) to provide localized spot heating or cooling as needed.	3,4	\$ -
	Dehumidification Units (including environmental control)	East and West Mechanical Rooms, Archives Rooms	Dehumidification units were noted in both mechanical rooms as well as the archive room. These units are all standalone units. The units in the basement are Aprilaire Model 1850. Only the unit in the East mechanical room was noted be operational.	Varies	N/A	N/A	Varies	The east mechanical room unit has significant pooling of water around it; the unit did not appear to be sitting level and its possible water is leaking as a result. Further investigation is required to determine the exact cause. Careful monitoring of the humidity levels in all spaces should be undertaken by installing high quality humidity sensors. These should be monitored to determine if additional provisions for dehumidification (or possibly humidification) are required. Depending on the internal environment that must be maintained, a study should be completed to determine if additional equipment is required which may also required building envelope or room construction upgrades.	3,4	\$5,000 to replace Aprilaire units; smaller units are less than \$500.00
	Domestic Water System									
	Domestic Water Piping Systems	Full House	Generally consists of copper distribution piping for domestic water system serving kitchen and washrooms and miscellaneous plumbing fixtures. Copper was noted to be Type M copper. The water meter is located in the east mechanical room with a 3/4" entering water service.	Varies	N/A	N/A	0-5	Localized repairs to be addressed as needed. Large scale replacement can be considered in a phased approach or as part of a larger renovation project. No active leakage was noted.	3,4	\$ -

15372 Yonge Street, Aurora

Hillary House

Mechanical Systems Summary
Mechanical Systems Assessment
15372 Yonge Street, Aurora
Project Number:23609.001.M.001
2024-01-19
FINAL

Priority
The following numbers, associated with the line item, indicates the following
#1 - Life Safety Compliance
#2 - Code Requirement
#3 - Risk of System Failure / Building Service Disruption / Tenant Comfort
#4 - End of Life Cycle
#5 - Energy Savings
#6 - Redundancy

	Equipment	Location	Description/Notes	Present / Estimated Age (Years)	ASHRAE Life	ASHRAE Life Remaining	Estimated Life Remaining (Years)	Notes:	Priority	Cost
	Domestic Water System - Hot Water									
	Domestic Hot Water Heater/Storage Tank	28th Floor Mechanical Room	Power vent domestic storage water heater. AO Smith Model G850S4ON-PV-ES2, Serial Number 2150127554522. 50 US gallon tank with heating input of 40,000 Btu/hr. and recovery rate of 45 US gallons/hour. Complete with System 636® CPVC vent. Tank appears to be of rented through Enercare with an installation date of 2022.	2	N/A	N/A	8	Repairs and/or replacement to be carried out by Enercare.	3,4	\$ -
	Washroom Plumbing Fixtures									
	Plumbing Fixtures	Various	Toilets within the washroom are porcelain type with tanks. Similarly, the washroom vanities are fitted with porcelain type sinks with chrome plated fixtures.	Varies	N/A	N/A	Varies	Replacement of fixtures should be considered as part of washroom renovation project or on an as needed basis. We have carried an allowance for replacement of the office washrooms fixtures in the next five years.	4,5	\$ 1,500.00
	Drainage Systems									
	Drainage Systems - Sanitary	Various	Where visible, most sanitary drainage piping consists of copper DWV (drainage, waste, vent) piping with bronze cast fittings. Some ABS piping was also noted. Some older cast iron piping was noted, however, we understand this is not used (noted within 2nd floor washroom). The buried sanitary piping was likely rehabilitated in 1996 as part of a project to both reline 75 meters of 9 inch ping and replace 75 meters of 8 inch piping.	Varies	N/A	N/A	Varies	Full scale replacement is generally not completed as it is both costly and intrusive. Localized repairs/replacement are presumed to be carried out as needed versus planning for a partial/full scale replacement. At the time of our visit, no active leakage was noted. CCTV camera surveys can be carried out at periodic intervals to determine the internal condition of piping.	3,4	\$ -
	Drainage Systems - Storm	Various/Exterior	Sections of visible piping appeared to be PVC piping. Most piping appears to have been part of the 2016 drainage project.	Varies	N/A	N/A	Varies	Repairs and/or replacement to be carried out as needed.	3,4	
	Storm Sump Pumps	East and West Mechanical Room	In each mechanical room, a single sump pump is provided complete with prefabricated sump, controller and battery back up. This appears to have been added to address foundation/ground water issues in 2016.	N/A	10	0	0	Pump, controls and battery replacement to be replaced as needed.	3,4	
	Sump pump piping and fittings	Basement Level	Discharge piping serving sump pumps mainly comprised of ABS piping.	N/A	N/A	N/A	0	The pressure rating of the ABS piping was not noted. Although ABS piping can be used in certain drainage applications, it is generally not suitable for pressurized piping applications, the use of copper or galvanized steel drainage piping is suitable for high pressure ratings.	3,4	
	Site Drainage/Rain Water leaders	Exterior	Rain water leaders appear to be welded steel construction capturing water from the roof and directing to the grade level. Most rain water leaders terminate into PVC drainage piping that is directed away from the foundation. Piping that also connects to the PVC piping is the storm system piping within the basement. The PVC drainage system at the exterior is a higher risk of freezing as no insulation and/or heating cables were noted. The installation of heating systems can reduce the risk of cracked piping and ensure that even in winter drainage water move away from the foundation. The use of galvanized steel drainage piping to match the existing piping (and painted to suit) complete heat tracing is recommended.	Varies	N/A	N/A	0	Small repairs and/or replacement of broken sections of piping to be carried out as needed; the current broken sections of piping should be replaced now to avoid water pooling near foundation walls. We have provided a budget to replace the existing PVC piping with galvanized metal drainage piping with heating cable (estimated length of 75 ft). New piping can be coloured to meet any heritage requirements.	3,4	\$ 12,000.00
	Ventilation Systems									
	Washroom Exhaust Fans	Washrooms	Both the office and guest washroom are provided with exhaust fans; the termination route for the fans was not noted but presumed to be directly to the exterior (2 vents are noted at the north of the property).	Varies	N/A	N/A	Varies	Repairs and/or replacement to be carried out as needed.	3, 4	

15372 Yonge Street, Aurora

Hillary House

Mechanical Systems Summary
Mechanical Systems Assessment
15372 Yonge Street, Aurora
Project Number:23609.001.M.001
2024-01-19
FINAL

Priority
The following numbers, associated with the line item, indicates the following
#1 - Life Safety Compliance
#2 - Code Requirement
#3 - Risk of System Failure / Building Service Disruption / Tenant Comfort
#4 - End of Life Cycle
#5 - Energy Savings
#6 - Redundancy

	Equipment	Location	Description/Notes	Present / Estimated Age (Years)	ASHRAE Life	ASHRAE Life Remaining	Estimated Life Remaining (Years)	Notes:	Priority	Cost
	Fire Protection									
	Fire Protection System	N/A	No centralized fire protection system is installed at this home.	N/A	N/A	N/A	N/A	The installation of a fire protection system can be installed if there is a desire to address a fire in future and potentially limit damage. The use of specialized fire protection systems can also be installed that do not use water which can prevent the risk of damage to historic and/or archived materials and documents. Further discussion and analysis is required to determine the feasibility of a fire projection system installation.	3,4	
	Miscellaneous Mechanical Systems									
	Natural Gas Service	Various	The main natural gas service is located at the north west side of the property with natural gas piping being black steel piping.	N/A	N/A	N/A	N/A	Some surface corrosion was noted on the piping; this should be monitored in future and localized corrosion paint be applied or partial replacement for large scale replacement.	2,3,4	
							Totals			\$ 44,000.00

1 All prices indicated are report estimates. Prices shall be confirmed by a cost consultant.

2 This table to read in conjunction with report

TABLE 1

Electrical Systems Summary

15372 Yonge Street, Aurora,ON
Project Number:23609.001.E.001
2024-01-19
FINAL

Note
The following numbers, associated with the line item, indicates the following
#1 - Life Safety Compliance
#2 - Code Requirement
#3 - Risk of System Failure / Building Service Disruption / Tenant Comfort
#4 -End of Life Cycle
#5 - Energy Savings
#6 - Redundancy

	Equipment	Location	Description/Notes	Present / Estimated Age (Years)	ASHRAE Life	ASHRAE Life Remaining	Estimated Life Remaining (Years)	Notes:	Priority	Cost
	Main Electrical Distribution									
	Main Electrical Service	North side of building	200 A service fed from hydro pole on east side of Yonge Street	30	NA	NA	5 to 10	The service cable and mast is in close proximity to the tree by Yonge St. and may cause service interruption due to falling or swinging branches. It is recommended to trim the branches or relocate the service to a more suitable location. Cost would depend on the preferred option.	3	\$5,000 to \$20,000
	Main Electrical Panel	washroom in ground floor	200A ,240/120V, Square D , Cat# QO-40M-2 , 40 space,	20	N/A	N/A	10	Panel has no additional space to connect new circuits. It is recommended to replace the panel with a larger one to allow for future expansion.	4,6	\$ 6,000.00
	Indoor Lighting Fixtures	Entire building	Different types of vintage luminaires generally in fair condition. Lamps mostly have been replaced with LED	Different range of age	N/A	N/A	different range	The lamps will need to be replaced on as needed basis as part of ongoing maintenance activities.	N/A	\$ -
	Indoor Lighting Switches	Entire building	Different type of vintage lighting switches. Some are not functioning and are decorative and lighting control by a plug	30	N/A	N/A	5	The lighting switches recommended to be inspected by an electrical contractor, some of them should be rewired (keep existing switch as decorative and add lighting control circuit seperately).there are switches without coverplate that will need to be provided ASAP	2,3	\$ 5,000.00
	Outdoor Ligting	Outdoor areas	Mostly installed in ground, LED flood type fixtures, Controlled by timer switch	5	N/A	N/A	15	Looks in fair condition	N/A	\$ -
	Emergency Lighting	Stairs, corridors	Remote head fed from batteries, located in stairs and main corridor	10	N/A	N/A	10	Two basement stairs and also mechanical room in basement doesn't have emergency light and recommended to be added. Emergency lighting needs to be periodically tested	2,3	\$ 3,000.00
	Smoke Detectors/Alarms	Stairs, corridors	Smoke detector and smoke alarms are installed in main corridors and stairs	Varying	N/A	N/A	Varying	The smoke detectors are connected to a security monitoring/alarm system	N/A	\$ -
	Wiring	Entire building	Wiring in interior areas are concealed and good conditions , no Knob and tube wiring was observed	20	N/A	N/A	20	All new installations shall conform to current ESA regulations	N/A	\$ -

1

All prices indicated are report. Prices shall be confirmed by cost consultant.

2

All items/recommendations shall be read in conjunction with the associated building assessment report.

3

All estimates reflect pricing at the time of issue and does not account for inflation in the upcoming years.



Dear Members of the AHS,

On behalf of the Board of Directors, thank you for your attendance at the Special Members Meeting last night, to discuss long-term sustainability solutions for Hillary House.

After some discussion, the following Motion was presented by Tim Jones and Seconded by Bob McRoberts:

“THAT the Membership of the Aurora Historical Society authorize the Board of Directors to enter into discussions with the Town of Aurora to explore options with respect to ensuring the long-term sustainability of Hillary House, and to report back to the Membership.”

This Motion received unanimous approval.

As a point of clarification, this Motion only authorizes the Board to enter into discussions with the Town about the future of Hillary House National Historic Site.

It does not authorize any other action (such as transfer of ownership).

While the Board is committed to reporting back to the Membership on the discussions, it will be a least several weeks before we have anything to report.

Thank you again for your attendance and your commitment to the AHS!

Best regards,

A handwritten signature in black ink, appearing to read 'Geoffrey Dawe', written in a cursive style.

Geoffrey Dawe

A handwritten signature in black ink, appearing to read 'Alan Lambert', written in a cursive style.

Alan Lambert

Co-Presidents, Aurora Historical Society