Geotechnical Engineering

Environmental Engineering

Hydrogeology

Geological Engineering

Materials Testing

Building Science

Archaeological Studies

patersongroup

Phase I Environmental Site Assessment

St. Michael & All Angels Anglican Church
2112 Bel-Air Drive
Ottawa, Ontario

Prepared For

The Anglican Diocese of Ottawa

June 6, 2016

Report: PE3747-1

Paterson Group Inc.

Consulting Engineers
154 Colonnade Road South
Ottawa (Nepean), Ontario
Canada K2E 7J5

Tel: (613) 226-7381
Fax: (613) 226-6344
www.patersongroup.ca

TABLE OF CONTENTS

EXECUTIVE SUMMARY ii

1.0 INTRODUCTION 1

2.0 SITE INFORMATION 1

3.0 SCOPE OF INVESTIGATION 2

4.0 METHOD OF INVESTIGATION 3
- 4.1 Historical Research 3
- 4.2 Field Assessment 4

5.0 FINDINGS OF THE ENVIRONMENTAL ASSESSMENT 5
- 5.1 Historical Review 5
- 5.2 Exterior Assessment 7
- 5.3 Interior Assessment 8
- 5.4 Adjacent Properties 9

6.0 CONCLUSION 10
- 6.1 Assessment 10
- 6.2 Conclusion 10

7.0 STATEMENT OF LIMITATIONS 11

Appendix

Aerial Photographs
Figure 1 – Key Plan
Drawing PE3747 – 1 – Site Plan

EXECUTIVE SUMMARY

Assessment

A Phase I - Environmental Site Assessment was carried out for the property addressed as 2112 Bel-Air Drive, in the City of Ottawa, Ontario. The purpose of this environmental assessment was to research the past and current use of the subject site and adjacent properties and identify any environmental concerns with the potential to have impacted the subject property.

The review of the historical data indicated that the subject site was vacant prior to the construction of the subject building in 1965. The property has since always been occupied by the church. No historical potentially contaminating activities with the potential to generate an area of potential environmental concern on the subject site were identified on neighbouring properties.

The building was formerly heated with oil prior to natural gas. The date of removal of the former oil underground storage tank (UST) from the subject site is unknown. No detectable concentrations of petroleum hydrocarbon (PHC) parameters, benzene, toluene, ethylbenzene or xylenes (BTEX) were encountered in confirmatory soil samples obtained from the area of the former UST during our recent investigation. The soil samples were in compliance with the MOECC Table 3 standards for the subject site.

A designated substance survey identified asbestos containing ceiling stipple, suspended ceiling tiles, vinyl floor tiles and pipe fitting insulation. Paint exceeding the lead-definable limit was identified in the basement storage room. All ACMs were observed to be in good condition. An asbestos management plan was completed for the subject site and issued under separate cover.

Following the historical research, a site inspection was conducted to assess existing potential areas of concern. The subject site is occupied by St. Michael & All Angels Anglican Church. The building is currently heated by a natural gas fired boiler. No significant environmental concerns were identified during the site visit with the current use of the subject site or neighbouring properties.

Conclusion

Based on the findings of the Phase I-ESA, in our opinion, **a Phase II-Environmental Site Assessment is not required for the subject property.**

1.0 INTRODUCTION

At the request of the Anglican Diocese of Ottawa, Paterson conducted a Phase I - Environmental Site Assessment (ESA) of the St. Michael & All Angels Anglican Church property located at 2112 Bel-Air Drive, in the City of Ottawa, Ontario.

This report has been prepared specifically and solely for the above noted project which is described herein. It contains all of our findings and results of the environmental conditions at this site.

2.0 SITE INFORMATION

Address:	2112 Bel-Air Drive, Ottawa, Ontario.
Location:	The subject site is located on the south side of Bel-Air Drive, between Field Street and Garfield Avenue, in the City of Ottawa, Ontario. Refer to Figure 1 - Key Plan for the site location.
Latitude and Longitude:	45° 21' 42" N, 75° 45' 44" W

Site Description:

Configuration:	Irregular.
Legal Description:	Part of Lot 27, Concession 2, Nepean Township, Ottawa Front.
Area:	8,000 m^2 (approximate).
Current Use:	The subject site is occupied by St. Michael & All Angels Anglican Church.
Services:	The subject site is located in a municipally serviced neighbourhood.

3.0 SCOPE OF INVESTIGATION

The scope of work for this Phase I - Environmental Site Assessment was as follows:

- Investigate the existing conditions present at the subject site by carrying out a field study and historical review in general accordance with CSA Z768-01.
- Present the results of our findings in a comprehensive report.
- Provide a preliminary environmental site evaluation based on our findings.
- Provide preliminary remediation recommendations and further investigative work if contamination is encountered or suspected.

4.0 METHOD OF INVESTIGATION

4.1 Historical Research

The methodology for the Phase I - Environmental Site Assessment program was carried out in two segments. The first consisted of a historical review which included a brief research of the past use of the site. This portion of the program was carried out by Paterson personnel from the Environmental Division. The following is a list of the key information sources reviewed by our firm.

Federal Records

- Maps and photographs (Geological Survey of Canada surficial and subsurface mapping).
- Air photos at the Energy Mines and Resources Air Photo Library.
- National Archives.
- PCB Waste Storage Site Inventory.

Provincial Records

- MOECC document titled “Waste Disposal Site Inventory in Ontario”.
- MOECC Brownfields Environmental Site Registry.
- MOECC Freedom of Information Request.
- Office of Technical Standards and Safety Authority, Fuels Safety Branch.

Municipal Records

- The Corporation of the City of Ottawa.
- City of Ottawa document entitled “Old Landfill Management Strategy; Phase 1 - Identification of Sites, City of Ottawa, Ontario”; finalised October 2004.

Local Information Sources

- Previous engineering reports.
- Personal Interviews.

4.2 Field Assessment

The second segment of the Phase I-ESA consisted of a site visit which included a walk-through inspection and detailed visual assessment of the environmental conditions of the subject property. The site visit was carried out on February 11, 2016 by personnel from our Environmental Division.

As part of the field assessment, the site was inspected for signs of the following:

- ❑ Evidence of previous or existing fuel storage tanks.
- ❑ On-site use or storage of hazardous materials.
- ❑ On-site handling or disposal of liquid or solid waste materials.
- ❑ Aboveground piping systems, including pumps, valves, and joints.
- ❑ Truck or rail loading or unloading areas.
- ❑ Electrical conduits, abandoned pipelines or pumping stations.
- ❑ Remnants of old buildings.
- ❑ Signs of surficial contamination (ie: staining, distressed vegetation).
- ❑ Unnaturally discoloured, ponded, or flowing waters.
- ❑ Surficial drainage, wetlands, natural waterways, or watercourses through the property (ie: ditches, creeks, ponds, poor drainage).
- ❑ Any evidence of potable water supply wells or groundwater monitoring wells (such as leak detection monitoring wells for underground storage tank systems or abandoned systems).
- ❑ Any abnormal odours associated with the site, whether from on-site or off-site sources.
- ❑ The presence of any recent soil disturbances such as soil removal, filling, tilling, grading, etc.
- ❑ Asbestos containing materials (ACMs).
- ❑ Urea formaldehyde foam insulation (UFFI).
- ❑ Products containing Polychlorinated Biphenyls (PCBs).
- ❑ Ozone depleting substances (ODS).
- ❑ Lead-containing materials.

5.0 FINDINGS OF THE ENVIRONMENTAL ASSESSMENT

5.1 Historical Review

Air Photo Research

Historical air photos from the National Air Photo Library were reviewed in approximate ten (10) year intervals. Based on the review, the following observations have been made:

1958 The subject site and adjacent land to the north, east and south is vacant or used for agricultural purposes. Residential dwellings are located adjacent to the west.

1963 No significant changes appear to have been made to the subject site. Residential dwellings have been built further to the east and Highway 417 has been built further to the north. Charlotte-Lemieux and J.H. Putman public schools have been built on the north side of Bel-Air Drive.

1965 (City of Ottawa Website) The existing structure is under construction at this time. No significant changes have been made to surrounding properties.

1975 The subject site is occupied by the existing Anglican Church. No other significant changes appear to have been made to the subject site or surrounding properties.

1984 No significant changes appear to have been made to the subject site or surrounding properties.

1995 No significant changes appear to have been made to the subject site or surrounding properties.

2011 (City of Ottawa Website) No significant changes have been made to the subject site or surrounding properties.

Laser copies of selected aerial photographs reviewed are included in Appendix 1.

National Archives

City directories at the National Archives were reviewed in approximate 10 year intervals from 1960 to 2010 as part of the Phase I ESA. The subject property was first listed as St. Michael & All Angels Anglican Church in 1966. The subject property has always been listed as church property with the exception of 1999/2000 when it was listed as the Ottawa Children's Montessori Centre.

Neighbouring properties in the area of the subject site consisted primarily of residential single family homes.

Sheet 429 of Volume 4 of the 1956 City of Ottawa Fire Insurance Plans (FIPs) were reviewed as part of the Phase I ESA. The subject property is occupied by St. Michael & All Angels Anglican Church, in its present day configuration. The property to the north, opposite Bel-Air Drive, is occupied by the Bel-Air Public School which is heated by oil. The Ste. Croix School, located to the southwest along Lazard Street is heated by oil. Based on the separation distance and inferred groundwater flow direction, these two (2) schools are not considered areas of potential environmental concern for the subject site.

No concerns were identified with respect to the city directories and FIPs.

Natural Resources Canada (NRCAN)

The Geological Survey of Canada website on the Urban Geology of the National Capital Area was consulted as part of this assessment. Based on the information from NRCAN, bedrock in the area of the site consists of shale of the Rockliffe Formation. Based on the maps, the thickness of overburden ranges from 2 to 5 m and consists of offshore marine sediments.

PCB Inventory

A search of national PCB waste storage sites was conducted. No PCB waste storage sites were identified within a 250 m radius of the subject site.

Technical Standards and Safety Authority (TSSA)

The TSSA, Fuels Safety Branch in Toronto, was contacted on February 8, 2016 to inquire about current and former underground/aboveground storage tanks, spills and incidents for the subject site and neighbouring properties. No records were found for the subject site or neighbouring properties.

Ontario Ministry of Environment and Climate Change (MOECC)

The Ontario Ministry of Environment and Climate Change document entitled “Waste Disposal Site Inventory in Ontario, 1991" was reviewed as part of the historical research. This document includes all recorded active and closed waste disposal sites, industrial manufactured gas plants and coal tar distillation plants in the Province of Ontario. No active or closed waste disposal sites were identified within 500m of the subject site.

A search of the MOECC Brownfields environmental site registry was conducted electronically on February 8, 2016. The site was not listed in the MOECC site registry. No records of site condition were listed within 250 m of the subject site.

City of Ottawa Old Landfill Document

The document entitled "Old Landfill Management Strategy, Phase I - Identification of Sites, City of Ottawa", was reviewed. No former landfills were identified within the study area.

Previous Engineering Reports

Paterson has completed multiple geotechnical and environmental investigations in the area of the subject site. A review of these reports did not identify any sources of potentially contaminating activities within the vicinity of the subject site.

Paterson has also just completed an Underground Storage Tank (UST) Assessment. Based on plans for the original building construction a 4,500 L UST was present on site to store oil. An excavation in the area of the UST was completed, although it was determined that the UST had previously been removed. Soil analyses did not identify any signs of furnace oil contamination. Details of this investigation are provided under a separate report.

Personal Interviews

Ms. Laura Dallas, a parishioner at the Anglican Church provided site access and was interviewed at the time of the site visit. Ms. Dallas indicated that she has been a parishioner at the Church for approximately six (6) months. Ms. Dallas was unaware of any potential environmental concerns associated with the subject site or the neighbouring properties.

5.2 Exterior Assessment

Building

The building addressed as 2112 Bel-Air Drive, which is St. Michael & All Angels Anglican Church, is a single storey building, with a single basement level. The exterior of the building is finished with brick and a flat membrane roof. No other buildings are present on the subject site.

Site

The subject site is occupied by the aforementioned building and a gravel parking area to the south of the subject building with landscaped areas and walkways on the north side of the building. Drainage consists of infiltration in the grassed areas and gravelled areas. Site and regional topography slopes northward towards Highway 417. No signs of staining were observed during the site visit, however, the subject site was snow covered at the time of the site visit.

Potential Environmental Concerns

- **Fuels and Chemical Storage**

  No ASTs or evidence of USTs was observed on the exterior of the subject site. The exterior assessment did not identify any concerns with respect to fuels and chemical storage at the subject site.

- **Waste Management**

  Waste is stored in bins and collected by the municipality. No concerns were identified with respect to waste management practices at the subject site.

- **Polychlorinated Biphenyls (PCBs)**

  A pole mounted transformer was identified on the east side of the subject building. No signs of leaks or staining were identified on the transformer or pole. No concerns with respect to PCBs were identified on the exterior of the subject site.

- **Wastewater Discharge**

  The subject building is serviced by municipal sewer services. Wastewater created at the subject building is discharged to the municipal system. No concerns were identified with respect to wastewater discharge at the subject site.

5.3 Interior Assessment

A general description of the interior of the building is as follows:

- The floors throughout the building consist of concrete, vinyl floor tiles, linoleum, carpet, and laminate.
- Wall materials consisted of drywall, stipple and concrete.
- The ceilings consisted of suspended ceiling tiles and stippled plaster.
- Lighting throughout the building was provided by incandescent and fluorescent fixtures.

Potentially Hazardous Building Products

- **Asbestos Containing Materials and Designated Substances**

  A designated substance survey was conducted concurrently with this report. Refer to the Designated Substance Survey and Asbestos Management Plan (Report: PE3747-LET.01) for further details on asbestos containing materials and other designated substances throughout the building.

- **Polychlorinated Biphenyls (PCBs)**

  No concerns with PCBs were identified during the interior inspection.

Other Potential Environmental Concerns

- **Fuels and Chemical Storage**

  Chemicals stored at the subject site were limited to household cleaning supplies.

  A levelometer and copper piping were observed in the basement boiler room at the time of the site visit. An Underground Storage Tank Assessment Report was subsequently completed to address the potential presence of an abandoned UST. It was determined that the tank had previously been removed and that no detectable concentrations of PHC/BTEX parameters were encountered in the area of the former UST. The former UST and associated piping are not considered to have impacted the soil on the subject property. Refer to the UST Assessment Report (PE3747-LET.02) for further details.

  A hydraulic oil tank for the elevator was observed in the basement. No stains or leaks were observed around the hydraulic oil tank at the time of the assessment.

  There are no concerns with respect to fuel and chemical storage at the subject site.

  Wastewater Discharges

  The liquid discharged from the subject building consists of sewage and wash water. A sump pit is located in the basement boiler room. No visual or olfactory evidence of contamination was noted. No concerns were identified with respect to wastewater at the subject site.

5.4 Adjacent Properties

Land use adjacent to the subject site was as follows:

- North - Bel-Air Drive, followed by Charlotte-Lemieux Public School;
- East - Vacant land, followed by residential dwellings;
- South - Vacant land, followed by Iris Street;
- West - Residential dwellings, followed by Field Street.

No concerns were identified with the use of adjacent properties. Current land use of adjacent properties is illustrated on Drawing PE3747-1 - Site Plan in the appendix.

6.0 CONCLUSION

6.1 Assessment

A Phase I - Environmental Site Assessment was carried out for the property addressed as 2112 Bel-Air Drive, in the City of Ottawa, Ontario. The purpose of this environmental assessment was to research the past and current use of the subject site and adjacent properties and identify any environmental concerns with the potential to have impacted the subject property.

The review of the historical data indicated that the subject site was vacant prior to the construction of the subject building in 1965. The property has since always been occupied by the church. No historical potentially contaminating activities with the potential to generate an area of potential environmental concern on the subject site were identified on neighbouring properties.

The building was formerly heated with oil prior to natural gas. The date of removal of the former oil underground storage tank (UST) from the subject site is unknown. No detectable concentrations of petroleum hydrocarbon (PHC) parameters, benzene, toluene, ethylbenzene or xylenes (BTEX) were encountered in confirmatory soil samples obtained from the area of the former UST during our recent investigation. The soil samples were in compliance with the MOECC Table 3 standards for the subject site.

A designated substance survey identified asbestos containing ceiling stipple, suspended ceiling tiles, vinyl floor tiles and pipe fitting insulation. Paint exceeding the lead-definable limit was identified in the basement storage room. All ACMs were observed to be in good condition. An asbestos management plan was completed for the subject site and issued under separate cover.

Following the historical research, a site inspection was conducted to assess existing potential areas of concern. The subject site is occupied by St. Michael & All Angels Anglican Church. The building is currently heated by a natural gas fired boiler. No significant environmental concerns were identified during the site visit with the current use of the subject site or neighbouring properties.

6.2 Conclusion

Based on the findings of the Phase I-ESA, in our opinion, **a Phase II-Environmental Site Assessment is not required for the subject property.**

7.0 STATEMENT OF LIMITATIONS

This Phase I - Environmental Site Assessment report has been prepared in general accordance with the requirements of CSA Z768-01. The conclusions presented herein are based on information gathered from a limited historical review and field inspection program. The findings of the Phase I - ESA are based on a review of readily available geological, historical and regulatory information and a cursory review made at the time of the field assessment. The historical research relies on information supplied by others, such as, local, provincial and federal agencies and was limited within the scope-of-work, time and budget of the project herein.

Should any conditions be encountered at the subject site and/or historical information that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of the Anglican Diocese of Ottawa. Permission and notification from the Anglican Diocese of Ottawa and Paterson Group Inc. will be required to release this report to any other party.

Paterson Group Inc.

Xavier Redhead, B.Eng.

Mark S. D'Arcy, P.Eng.

Report Distribution:

- ❑ The Anglican Diocese of Ottawa (2 copies)
- ❑ Paterson Group (1 copy)

APPENDIX

AERIAL PHOTOGRAPHS

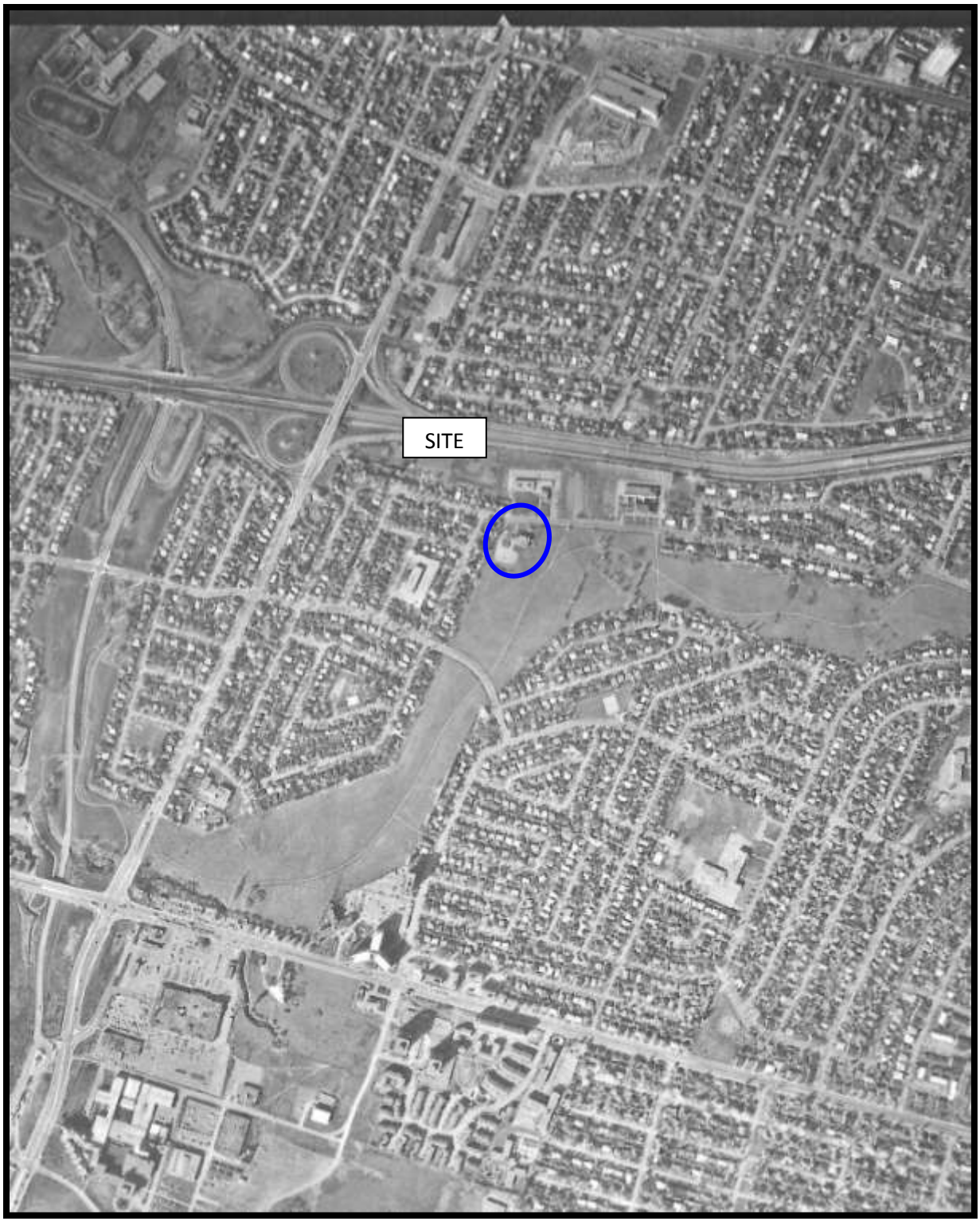
FIGURE 1 - KEY PLAN

DRAWING PE3747-1 - SITE PLAN

AERIAL PHOTOGRAPH
1958

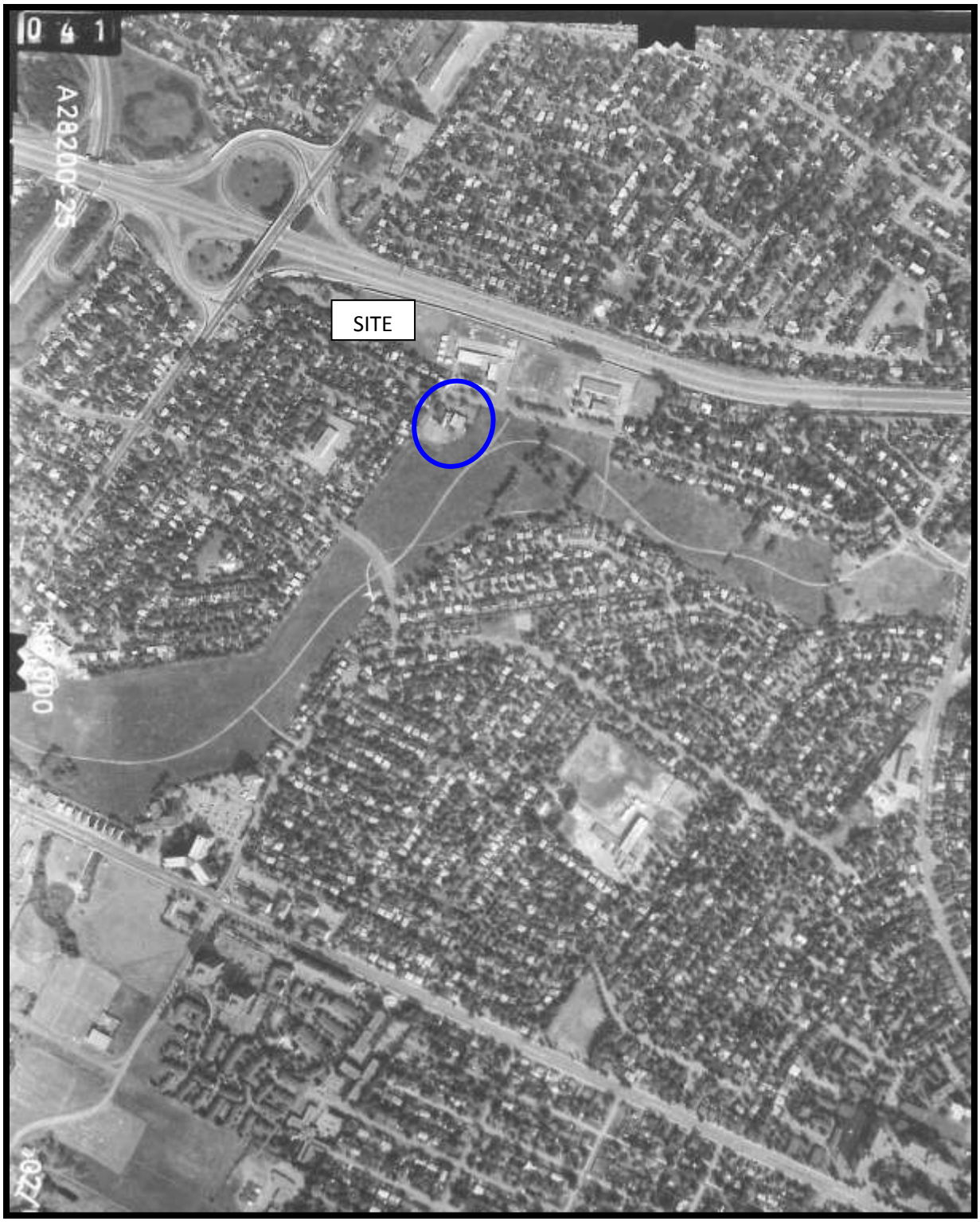
AERIAL PHOTOGRAPH
1963

AERIAL PHOTOGRAPH
1975



AERIAL PHOTOGRAPH
1984

patersongroup



AERIAL PHOTOGRAPH
1995

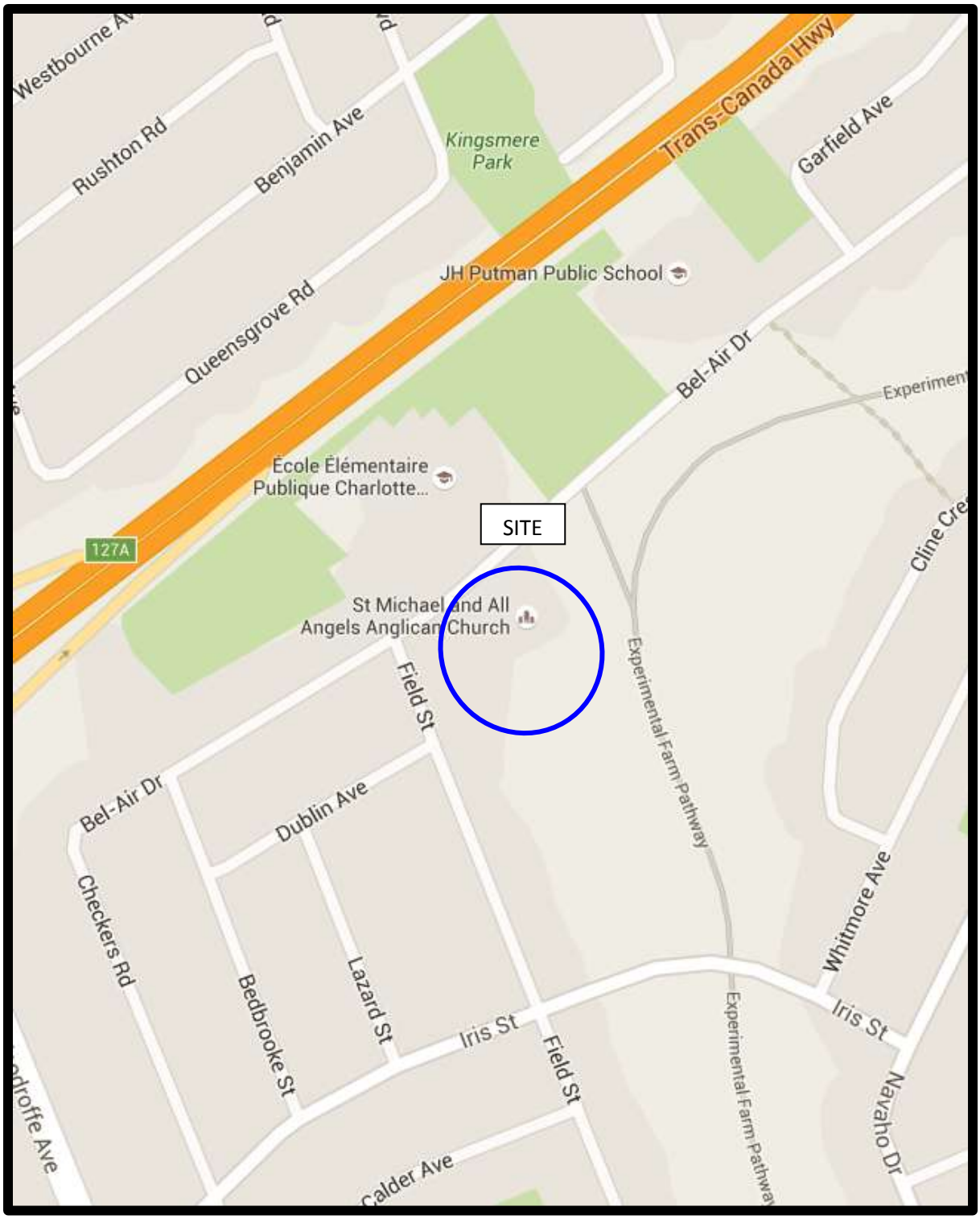
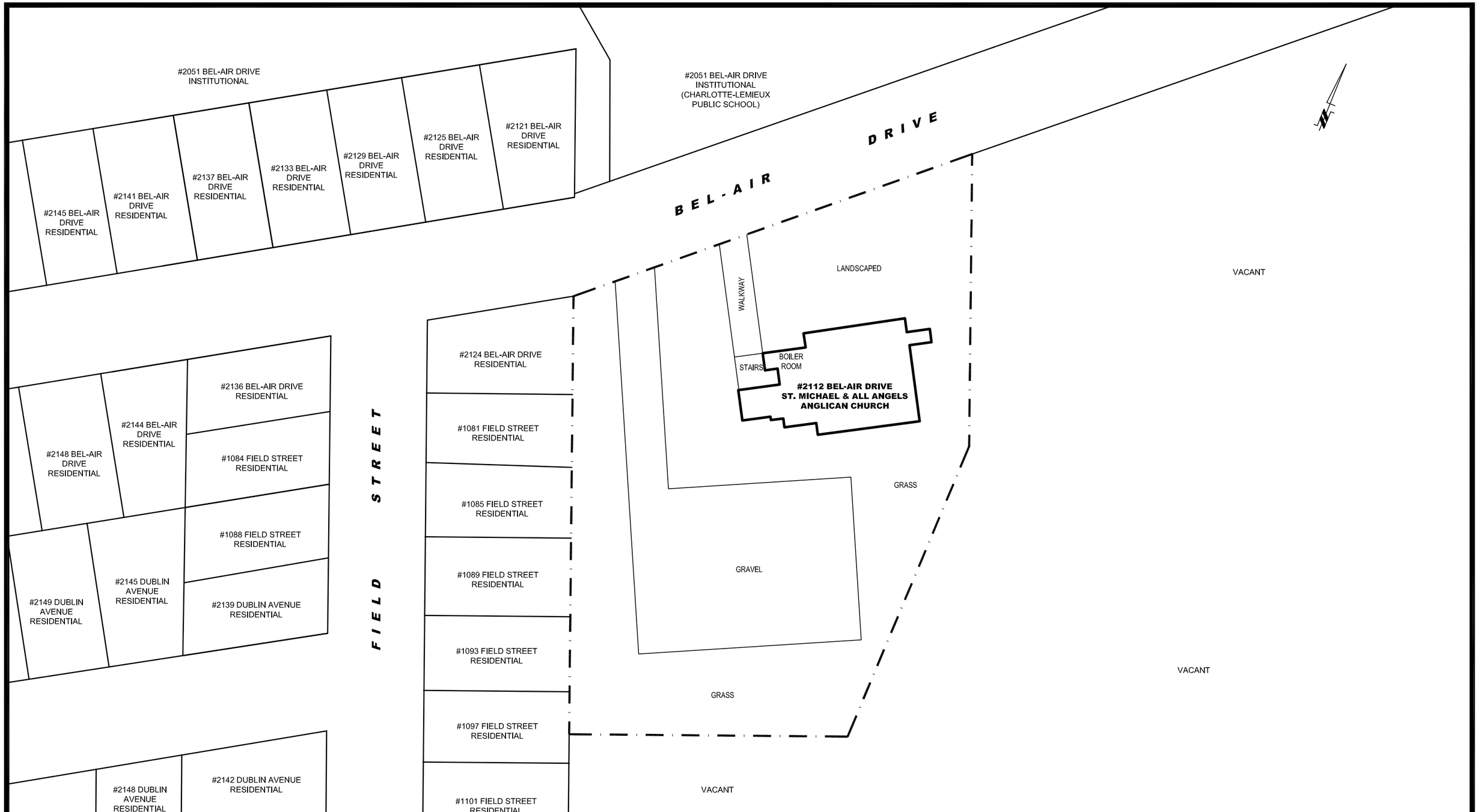


FIGURE 1

KEY PLAN



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

NO.	REVISIONS	DATE	INITIAL
0			

THE ANGLICAN DIOCESE OF OTTAWA

PHASE I - ENVIRONMENTAL SITE ASSESSMENT
ST. MICHAEL & ALL ANGELS ANGLICAN CHURCH - 2112 BEL-AIR DRIVE
OTTAWA, ONTARIO

Title:
SITE PLAN

Scale: 1:750	Date: 06/2016
Drawn by: XR	Report No.: PE3747-1
Checked by: XR	Dwg. No.: PE3747-2
Approved by: MSD	Revision No.: 0

p:\autocad drawings\environmental\pe37xx\pe3747\pe3747-2 site plan.dwg