



## **BROWNFIELD REDEVELOPMENT NEW EVA'S PHOENIX – 60 BRANT STREET 2017 BROWNIES AWARD WINNER**

**Client:** Build Toronto Inc.

**Site Land Use:** Residential

**Media Addressed:** Soil, Groundwater

**Location:** Toronto, ON

**Project Duration:** May 2012 to December 2016

**Contaminants of Concern:** Metallic & Inorganic Parameters  
Polycyclic Aromatic Hydrocarbons (PAHs)

**Project Description:** In 2011, the City of Toronto and Build Toronto worked with Eva's Phoenix to transform a portion of a long-time Toronto works yard at the northeast corner of Richmond Street West and Brant Street into the new Eva's Phoenix youth homeless shelters. The new facility included ten townhouse-style living quarters with private bedrooms and shared common space that opens onto a bright, three-storey atrium as well as expansion of the western portion of the building crawl space into a usable basement.

Build Toronto retained Terrapex to undertake environmental, geotechnical and hydrogeological services to support the planned redevelopment, including the filing of a Record of Site Condition to permit a change in property use from industrial to residential.

Upon completion, the project (both Build Toronto and Terrapex) was awarded the 2017 Brownie Award for Category 4 – Best Redevelopment at the local/site scale.

**Services Provided:** Terrapex completed the following work programs at these sites.

**Site Investigations –** Site investigations for environmental, geotechnical and hydrogeological purposes were undertaken in 2012 and 2013 that: identified concentrations of a number of PAHs, metals, and inorganic parameters in excess of Ministry of the Environment and Climate Change (MOECC) standards; established design recommendations for the planned basement expansion based on in-situ soil conditions below the western portion of the building; and, establish water management measures during construction.

**Risk Assessment and Record of Site Condition Filing –** Terrapex completed a Site Specific Risk Assessment (Risk Assessment No. 2214-9CCQFH) that utilized existing and planned building structures as physical barriers to contact with site contaminants, allowing the Record of Site Condition (RSC) for the property to be submitted without the need for additional remedial efforts.

**Certificate of Approval documentation –** The MOECC issued Certificate of Property Use (CPU) No. 1027-9NKP9Y requiring implementation and maintenance of the risk management measures (RMMs) documented in the "as built" drawings prepared by Terrapex illustrating the physical barrier created following construction of basement floors and foundation elements in the building.

**Construction Supervision –** Terrapex staff were present to oversee the installation of risk mitigation measures and provided additional site inspection and materials testing services to document that the planned redevelopment proceeded as intended.

### **Challenges, Constraints, & Solutions:**

- 1) **Building Conditions.** As a heritage structure, the existing building needed to be maintained and incorporated into the repurposed space. Since the building also occupied the entirety of the site, below grade investigations were completed from within the building supplemented by investigations undertaken from off-site (exterior) locations proximate to the site.
- 2) **Current Site Use.** As the building was still being used by the City of Toronto for office and storage space, site investigations were conducted after hours and on weekends and work areas restored to minimize disruption to City staff.
- 3) **Building Configuration.** The size and type of boring equipment that could be used within the building crawl space was selected by scheduling site reconnaissance visits with potential drilling contractors to identify site specific requirements.

- 4) **Planned Design Features.** The construction of additional below-grade living space (new basement) underneath the western portion of the existing building required geotechnical review and design recommendations prior to construction so that the foundation could be properly built and installed to support planned RMMs (see below).
- 5) **Excess Soil Management** – during construction of the new basement, excess soil generated was segregated and submitted for laboratory analyses. Contaminated soil was subsequently disposed at an MOECC licensed facility.
- 6) **Location of Remaining Contaminants below the building.** Given planned redevelopment, conventional remedial excavation was not practical or cost effective. Terrapex recognized that the building itself would block the potential exposure pathways (direct contact) for both human health and ecological receptors posed by the contaminants of concerns.
- 7) **Risk Mitigation of Remaining Impacts below Building.** The future building construction was incorporated into the RMMs developed for the site. Utilizing the basement floor and foundations as a physical barrier reduced the owners' costs to implement and maintain risk mitigations measures.
- 8) **CPU Filing.** The Proposed RMMs were specifically developed so that the ongoing obligations can be satisfied by semi-annual inspections by regular maintenance personnel to confirm the integrity of basement floors at the site and corresponding record keeping (i.e., the owner does not need to retain consultants or other specialized service providers). Additional obligations under the CPU will only be triggered in the event that additional excavation is completed within the building basement.

**Project Deliverables:** Terrapex' deliverables for this project are described below.

**Reports** – A Phase One Environmental Site Assessment (ESA), Geotechnical and Hydrogeological Investigation reports were provided in 2012. A Phase Two ESA report was prepared following the completion of supplemental investigation work in 2013. (Both the Phase One ESA and Phase Two ESA report were updated in 2015 to support the eventual RSC filing). Numerous Risk Assessment reports and technical updates were prepared and submitted to the MOECC over the project.

**Permits** – No permits were obtained for this work program as the hydrogeological investigation determined that a permit to take water (PTTW) would not be required for the proposed basement excavation works.

**RSC** – RSC No.219506 was acknowledged by MOECC on September 21, 2015.

**Key Project Personnel and Roles:** Ms. Anne Marie Hoekstra, E.P. – Project Manager and Logistics, Mr. Vic Nersesian, PEng. – geotechnical investigations and recommendations, Mr. Steven Ruminsky, PEng, PGeo - hydrogeology, Mr. Peter Sutton, PEng. – Risk Assessment/Risk Management and Ms. Sara Sutherland, Mr. Mike Deans and Mr. Ben Takev - Site Supervisors