

Canadian Brownfields Case Study

New Eva's Phoenix



Source: www.dizeen.com

PROJECT SUMMARY

New Eva's Phoenix is a youth homeless shelter that was restored from a long-time Toronto works yard. The new shelter resides on the northeast corner of Richmond St West and Brant St, and is comprised of ten townhouse-styled living quarters, each with a shared living space and private bedrooms. The location can be seen on the map below. An expansion of the western portion of the buildings crawl space has been converted into a usable basement⁵. The shelter provides residence for one year to 50 youth, while simultaneously providing them with education and employment training opportunities².

Site Characteristics

The current building is a 2-storey (eastern part) and 2 ½ -storey (western part) structure that connects with a larger adjacent building to the west. The footprint of the building occupies the entirety of the lot⁴.

Build Toronto retained Terrapex to undertake environmental, hydrological and geotechnical services in order to support the planned redevelopment. Terrapex provided several services, including site investigations, filing a Record of Site Condition and risk assessment, as well as the documentation of the certificate of approval⁵.

This project won the Brownie award in 2017 for the REBUILD category, which recognizes 'excellence in site-specific responses to public policy initiatives that accelerate the pace resulting from redevelopment'¹.

Site History

The site was once the location of Toronto's Water Works building, which is a designated heritage property as it was once home to the St. Andrews market from 1830 to the early 1900's. The City formerly used the site as a storage facility and for office space. It was designated as industrial while the Phase One ESA determines that the initial use of the site was commercial for use of a public market in the 1830's.

QUICK FACTS

Location

Toronto, Ontario

Project type

Restoration

Land uses

Commercial, residential

Keywords/special features

Homeless youth shelter, restoration

Website

www.evas.ca

Project address

60 Brant Street
Toronto, Ontario

Brownfield Awards

2017 Brownie Awards Winner: REBUILD – Redevelopment at the Local, Site Scale

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Case studies were prepared as a course assignment by students enrolled in PLG845: Brownfield Reuse & Development, Cleaning up the Past and Building the Future, School of Urban and Regional Planning, Ryerson University (Winter 2019). Information for the case studies was obtained from online sources, available reports, and, in some cases, site visits and direct communication with stakeholders.

If you are aware of any errors or updates to the case studies, please contact chris.desousa@ryerson.ca.

The opinions expressed in this case study are those of the authors only and do not represent the opinions and views of either Ryerson University, the School of Urban and Regional Planning, or the Canadian Brownfields Network.



Redevelopment Project Description

This project did not require a large cleanup process. Instead, the foundation of the building and a new basement acted as a barrier preventing potential exposure pathways. When submitting the Site Specific Risk Assessment, Terrapex utilized the existing and planned building structures as physical barriers against contaminants in order for the Record of Site Condition to be submitted without the need for any additional remedial efforts. The soil that was extracted for the construction of the basement was sent for analysis and soil that was determined contaminated was disposed of⁶.

Several contaminants of concern have been found in three locations throughout the site. The primary concern was for the polycyclic aromatic hydrocarbons (PAHs), as well as metallic and inorganic material, which include lead, selenium and electrical conductivity. These contaminants were found in the soil throughout the entire site. The southwest portion of the site showed levels of BTEX and PHC's from gasoline and associated products stored in fixed tanks in the soil and groundwater. The northern section of the site also had PHC's and VOC's, affecting the groundwater from garages and gasoline and associated products⁴.

The old Eva's Phoenix shelter had been slated for demolition six years prior to the opening of the new building. When previous graduates of the Eva's program and supportive community members heard of the closing of the old shelter, a large amount of support was given in the form of donations and advocacy for the new shelter³.

As mentioned previously, the building is currently comprised of a 2 storey and 2 ½ storey mix that comprises the entire lot. The proposed redevelopment would add a basement to the crawl space of the existing building. As the building is listed in Toronto's Heritage Properties Inventory, the existing roof and brick walls that coincide with the adjacent western building ave been retained as a part of the redevelopment process⁴.

Financing

Eva's Phoenix required \$11.6 million in order to properly fund this project. The building and \$5 million were donated by the City for renovation costs. The lead building partner, Home Depot

APEC	LOCATION OF APEC ON PHASE ONE PROPERTY	POTENTIALLY CONTAMINATING ACTIVITY (as set out in Column A of Table 2 in Schedule D of O. Reg. 153/04)	LOCATION OF PCA (On-site or Off-site)	CONTAMINANTS OF POTENTIAL CONCERN	MEDIA POTENTIALLY IMPACTED (Groundwater, Soil, and/or Sediment)
APEC 1	- Entire Site	- (30) Importation of Fill Material of Unknown Quality	- On-site - PCA 189	- PAHs - Metals & Inorganics	- Soil
APEC 2	- Southwestern portion of the Site	- (28) Gasoline and Associated Products Storage in Fixed Tanks	- Off-site - PCA 1	- BTEX - PHCs	- Soil - Groundwater
APEC 3	- Northern portion of the Site	- (27) Garages - (28) Gasoline and Associated Products Storage in Fixed Tanks - (33) Metal Treatment, Coating, Plating and Finishing - (34) Metal Fabrication - (49) Salvage yard, including automobile wrecking - (52) Storage, maintenance, fuelling and repair of equipment, vehicles	- Off-site - PCA 145, 146, 147, 148, 149	- VOCs - PHCs	- Groundwater

BTEX: benzene, toluene, ethylbenzene, xylene
 PAHs: polycyclic aromatic hydrocarbons
 PHCs: petroleum hydrocarbons (Fractions F1 to F4)
 VOCs: volatile organic compounds

Canada Foundation, donated \$1 million. Another \$5 million was raised by Eva's Phoenix from charitable donations, leaving them \$1.4 million of their target as of 2016³.

Key Challenges

As a heritage structure, the building needed to be maintained and incorporated into the redeveloped space. Because the building occupies the entire site, below grade investigations had to be completed from within the building. These investigations were supplemented by other investigations that were undertaken in off-site locations proximate to the site⁴.

The land use of the site also posed a constraint. Since the land was being used as a City of Toronto office and storage space, site investigations needed to be completed after hours or on weekends to limit disruption to City staff⁵.

The configuration of the building was limiting to a number of construction tools. The type and size of boring equipment that could be used was chosen by conducting site reconnaissance visits with potential drilling contractors in order to determine the site specific requirements⁵.



Source: www.dazem.com

The basement, which was one of the planned design features, required geotechnical review and design recommendations prior to construction in order for the foundation to be properly built and installed. It was discovered that placing a foundation below-grade would be suitable since the remaining contaminants were below the building, and the building itself would block off any potential exposure pathway. During construction of the new basement, excess soil was segregated and submitted for analysis, leading to the disposal of any contaminated soil. Utilizing a basement floor as a physical barrier reduced the cost for the owners to implement and maintain risk mitigation measures⁵.

Benefits and Lessons Learned

One of the biggest benefits to this site is that the building acts as a barrier for any potential exposure pathway. Since the building itself is its own mitigation measure, the owners saved money on having to maintain or implement any other type of measures. Semi-annual inspections of the basement are still required to ensure the integrity of the foundation. They will be conducted by regular maintenance personnel, as per the proposed risk management measures, which guarantees the owners will not have to retain consultants or specialized service providers.

As the building is considered a Heritage Property, the roofs and walls will be retained in order to keep the existing form. This can create complications in the redevelopment process, however it also benefits the developer by providing a cost effective alternative to demolishing.

By completing the Site Specific Risk Assessment which utilized the existing and future structures from preventing any contact with contaminants, Terrapex was able to submit the Record of Site Condition without any extra need for remedial efforts. This lesson shows the value of working with the current and proposed features on the site in order to make the project easier and less expensive.



Source: www.newswire.ca

Endnotes

1. ERA. (2017). ERA Architects. Retrieved from <http://www.eraarch.ca/2017/evas-phoenix-wins-a-canadian-brownfields-network-brownie-award-and-signals-a-transformational-start-to-the-redevelopment-of-the-water-works/>
2. Eva's Phoenix. (n.d.). Evas Phoenix. Retrieved from <https://www.evas.ca/where-we-are/evas-phoenix/>
3. Monsebraaten, L. (2016). Homeless youth welcome fresh start under new roof: Eva's Phoenix reopens on new site donated by city after original site sold.
4. Terrapex. (2015, September 21). Record of Site Condition.
5. Terrapex. (2016, December). Brownfield Redevelopment New Eva's Phoenix.