

# Canadian Brownfields Case Study

## Bata Shoe Factory Redevelopment



Source: The Dalton Group Ltd.

*The redeveloped Bata Shoe Factory, photographed in 2019<sup>1</sup>.*

### PROJECT SUMMARY

The Bata Shoe Factory, located in Batawa, Ontario, is a nationally recognized example of innovative, sustainable brownfields redevelopment. Reconstruction of the Bata Shoe Factory included the adaptive re-use and conversion of an historic five-storey building, which once served as the centrepiece for the planned community of Batawa. The converted space features mixed-use retail, commercial and public space amenities, as well as 47 residential units ranging in size and affordability. This case study will highlight the distinctive use of historic preservation, environmental remediation measures, community engagement procedures, and sustainable building technologies that make the Bata Shoe Factory an exemplary brownfields redevelopment project. Through the provision of housing, employment, and recreational services, the Bata Shoe Factory project has successfully been able to ensure sustainable growth while re-establishing rich historic ties within the community.

### QUICK FACTS

#### Location

Batawa, Ontario

#### Project type

Historic Site Redevelopment

#### Site size

4.4 hectares

#### Land uses

Mixed Use Development

#### Keywords/special features

Adaptive Re-use, Historic Building, Soil and Groundwater Remediation, Mixed Use Development, Sustainable Building Technologies

#### Project Awards

2020 Brownie Award - Best Small Project  
2020 Canadian Green Building Award

#### Website

<https://www.livebatawa.com/>

#### Project address

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Batawa, Ontario

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Case studies were prepared as a course assignment by students enrolled in PL8312/PLE845: Brownfields & Sustainable Development, School of Urban and Regional Planning, Ryerson University (Winter 2021). Information for the case studies was obtained from online sources, available reports, and, in some cases, site visits and direct communication with stakeholders.

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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.



### Site History and Characteristics

The T&A Bat'a Shoe Company (now Bata Corporation) was originally founded in 1894 near Zlín, Czechoslovakia<sup>2</sup>. In the first decades of operation, the company quickly established itself as a multinational footwear designer and manufacturer. However, despite rapid growth of the business, the German invasion at the start of World War II signalled the need for operational restructuring due to fears of industrial nationalization<sup>3</sup>. As a result, Thomas J. Bata, the son of founder Tomáš Bat'a, decided to relocate business operations away from the existing headquarters in Czechoslovakia. In 1939, Bata, along with 100 other Czech families, emigrated

to Canada<sup>4</sup>. Shortly after arriving, Bata purchased a 1,500-acre parcel of land near the village of Frankford, Ontario to begin construction on the Bata Shoe Factory. This site was chosen due to its proximity to Toronto and Montreal, both of which represented the two largest markets for shoes in the country at that time. To support the factory, Bata began planning a community to house the primarily Czech workers. The planned community would be called Batawa - a portmanteau of the words "Bata" and "Ottawa", paying homage to both the importance of honouring cultural heritage while proudly embracing a new Canadian identity<sup>5</sup>.

The community of Batawa was built on the foundations laid down by the Bata Shoe Factory.

Public services, including schools, churches, and sports facilities, were constructed to accommodate workers at the factory<sup>6</sup>. A machinery shop was also constructed to support the shoe manufacturing in the main factory. For a brief period during World War II, the shop served as a temporary wartime machine manufacturing facility<sup>7</sup>. At its peak production in 1989, the Bata Shoe Factory employed over 1,500 workers in the main factory, supported by 380 workers in the engineering department<sup>8</sup>. The history of the Bata Shoe Factory is ingrained within the community, having provided a source of housing, services, and pride for residents. Unfortunately, due to increased costs and automation, the Bata Shoe Factory ceased operations in 2010<sup>9</sup>. Despite closing, the community of Batawa has retained close ties to the factory, and redevelopment efforts have respected both the history and public interest in the project.

### Site Assessment and Cleanup

Preliminary studies for environmental remediation at the Bata Shoe Factory were initiated prior to the plant officially shutting down in 2010. Records of site assessment date back to 1992, when a team of hydrogeologists conducted a study of the groundwater conditions on site<sup>11</sup>. To date, the results of all site assessment and environmental impact reports are summarized in the Record of Site Condition (RSC). The most detailed environmental assessment report, the *Phase II Conceptual Site Model* prepared by Golder Associates in 2016, identified the areas of potential environmental concern and provided recommendations for site remediation<sup>12</sup>. All recommendations centred on the control of potential soil and groundwater contamination due to past industrial use.

To measure the level of potential contaminants, boreholes and monitoring wells were drilled across the site<sup>13</sup>. Areas of potential environmental concern were identified based on the historical operations of the factory. These areas of concern included the main factory building and ancillary machine manufacturing facility, as well as several industrial dumping sites across the property. An abandoned rail spur recently converted into a recreational rail trail on the eastern edge of the property was also tested<sup>14</sup>. Lab analysis of the soil found that the site was severely contaminated by the presence of heavy metals, petroleum hydrocarbons (PHCs) and volatile organic compounds (VOCs)<sup>15</sup>. Analysis of



*The Bata Shoe Factory main building, photographed in 1955<sup>10</sup>.*

Source: Canadian Architect

the groundwater revealed similar contaminants, as well as the introduction of benzene, toluene, ethylbenzene, and xylenes (BTEX) rendering the groundwater non-potable<sup>16</sup>.

Remediation efforts were focused on site soil and groundwater conditions. To meet the requirements for RSC, consultants produced a soil and groundwater management plan to control contaminated areas across the site<sup>17</sup>. To address the soil management requirements, a series of measures were taken to control the potential for soil contamination. These measures included the removal of 435 cu. m of soil, construction of fill cap and hard cap barriers, and the installation of vapour barriers on existing building floor slabs and walls to minimize the potential for vapour intrusion from soil contaminants<sup>18</sup>. To address

the groundwater management requirements, the owner was responsible for decommissioning all wells on site to prevent the potential for contaminated drinking water<sup>19</sup>.

### Planning and Regulatory Issues

The Bata Shoe Factory represents the centrepiece of development for the Batawa Urban Service Area District, as defined by the Official Plan for the City of Quinte West<sup>21</sup>. The Official Plan lays out several key policies required within this district. Policies focus on sustainable growth of housing and employment within the community of Batawa. Municipal infrastructure would also be required to support the expected growth<sup>22</sup>. Infrastructure improvements include capital investment from both the city and the

*Aerial Imagery of the Bata Shoe Factory site, showing the community of Batawa to the west and converted rail trail to the east<sup>20</sup>.*



Source: City of Quinte West Public GIS Maps

developer to provide adequate municipal services. Roads, sewers, and wastewater infrastructure have been planned to promote future development in the area<sup>23</sup>.

To address regulatory requirements in the Official Plan, the property owner commissioned a report of planning policy and public engagement on the redevelopment of the main factory building and surrounding areas. This study is titled, Planning Report for the Batawa Special Policy Area<sup>24</sup>. The planning report summarizes the planning and regulatory framework for the site. Most notably, it specifies permitted land use, density targets and construction of municipal services to support growth in the area<sup>25</sup>.

In May 2005, the first public town hall meeting relating to the project was held in Trenton, Ontario<sup>26</sup>. It was after this meeting that the initial plan to demolish the entire main factory building was abandoned<sup>27</sup>. Subsequent public meetings shaped future policy for the district based on community concerns surrounding increased density, as well as the provision of suitable housing and commercial land uses<sup>28</sup>. Throughout the redevelopment process, the landowner demonstrated their commitment to ensuring that the community was well informed through public engagement consultation by providing equitable access to planning information.

### Financing

The redevelopment of the Bata Shoe Factory

was privately funded by the Batawa Development Corporation (BDC), with an estimated cost of CA\$34 million<sup>29</sup>. The BDC was founded in 2005 by Chairman Sonja Bata, the wife of the late Thomas J. Bata<sup>30</sup>. This organization was created to transfer ownership and control of the 1,600 acres of property formerly owned by the Bata Shoe Corporation. The goal of the current organization is to work with community partners to rezone and develop the lands around Batawa to promote sustainable growth of housing, employment, and recreational space in the area<sup>31</sup>.

### Building

Redevelopment of the 4.4-hectare site primarily concentrated on the restoration and conversion of the main factory building. The five-storey building was converted to feature mixed residential, commercial, and retail spaces, with shared community amenities such as a children's daycare and an outdoor playground<sup>32</sup>. The building features 47 residential units, ranging in size, layout, and price to reflect community housing needs. In total, over 7,930 sq. m. (85,400 sq. ft.) of mixed-use space was created as part of the Bata Shoe Factory project<sup>33</sup>.

The site is a leading example of environmental sustainability in Canada and was recognized with the "2020 Canadian Green Building Award" for its features and implementation. The environmental controls used on site complement the socially sustainable practices used during the public

engagement and design process. Sustainable architecture and building design were crucial elements reflected in the vision for the project from design to construction. Firstly, the adaptive reuse of the site allowed for the main factory building to remain intact, reducing the building's embodied carbon footprint tied to concrete pouring by 80%<sup>34</sup>. The Bata Shoe Factory also features the use of sustainable building materials, such as interior/exterior cladding produced from 100% renewable sources, and carpeting made from recycled finish nets<sup>35</sup>. In addition, the construction of the building allowed for the use of environmentally sustainable technologies. Due to the requirements for protection against vapour intrusion, heating and cooling for the site was designed in a closed-looped system. To supply energy for this system, a total of 63 geothermal boreholes were drilled near the site parking lot<sup>36</sup>. The adaptive re-use of the factory main building, combined with green technologies, have made this project an innovative example of sustainable brownfields redevelopment.

### Challenges, Benefits and Lessons Learned

Key challenges on the site can be broken down into three main categories: 1) site remediation, 2) adaptive re-use of an historical building, and 3) municipal servicing improvements. Site remediation has required extensive monitoring of the soil and groundwater to detect potential contaminants from past industrial use<sup>38</sup>. Due to the proximity of the community of Batawa to the factory, additional measures have been required in order to control potential contaminants. As an example, dust control measures, such as the installation of heavy-duty sediment fence, were utilized during the construction of the fill cap and hard cap barriers on site<sup>39</sup>.

Several issues were also tied to the adaptive re-use of the building. To prevent airborne contamination, a separate ventilation system was installed at ground level to prevent the potential for vapour intrusion to the rest of the building<sup>40</sup>. To allow for public patio space and amenities, the roof in its entirety needed to be reconstructed due to the poor condition of the original structure<sup>41</sup>. The final area of challenge for the redevelopment of the Bata Shoe Factory was the site servicing improvements required as part of the City of Quinte West Official Plan<sup>42</sup>.



Photo of the Bata Shoe Factory demolition in February 2014, showing exposed building interior and floor slabs<sup>37</sup>.

To support community growth, the developer was responsible for front-ending the costs of capital infrastructure improvements. This regulation necessitated the delivery of road and sewer infrastructure improvements, as well as an agreement to expand the capacity of municipal services to accept waste and sewage produced on site<sup>43</sup>.

The redevelopment of the Bata Shoe Factory has provided many benefits to the community of Batawa and amalgamated City of Quinte West. The municipality has worked extensively with the BDC to ensure that housing, employment, and recreational services provided in the project would be accessible and sustainably designed. Child daycare is one of many community amenities provided by the project. Along with the direct benefits outlined, BDC and the city has committed to providing additional services to support future development in the area.

The project has received national recognition for its sustainable design and adaptive re-use of an historical building. It was the recipient of the “2020 Best Small Project” Brownie for sustainable brownfields development, as well as the distinguished Canadian Green Building Award<sup>44</sup>. Organizations involved with the project have since been retained to share guidance for the redevelopment of Bata factories across the world most notably a similar Bata Shoe factory site in East Tilbury, UK<sup>45</sup>. Guidance for future redevelopment projects focus on construction challenges and public engagement within master planned communities<sup>46</sup>. The redevelopment of the Bata Shoe Factory is an innovative design which respects local history while incorporating sustainable land uses.

## Endnotes

<sup>1</sup> The Dalton Company Ltd. (2020, January). Reflecting on the Remarkable Construction Story of the Bata Shoe Factory: Part One. Retrieved from The Dalton Company Ltd.: <https://www.daltonbuild.com/post/reflecting-on-the-remarkable-construction-story-of-the-bata-shoe-factory-part-one>

<sup>2</sup> Batawa Development Corporation. (2021). Batawa History. Retrieved from Batawa Development Corporation: <https://batawa.ca/history-c3.php>

<sup>3</sup> *Ibid*

<sup>4</sup> *Ibid*

<sup>5</sup> *Ibid*

<sup>6</sup> *Ibid*

<sup>7</sup> *Ibid*

<sup>8</sup> *Ibid*

<sup>9</sup> *Ibid*

<sup>10</sup> Canadian Architect. (2020, September). Bata Shoe Factory, Batawa, Ontario. Retrieved from Canadian Architect: <https://www.canadianarchitect.com/bata-shoe-factory/>

<sup>11</sup> MOECP. (2016, March 14). Record of Site Condition - 58 Plant Street. Retrieved from Ontario Ministry of the Environment, Conservation and Parks: <http://www.downloads.ene.gov.on.ca/files/besr/RSC%20221630.pdf>

<sup>12</sup> Golder Associates. (2016). Phase Two Conceptual Site Model. Mississauga: Golder Associates

<sup>13</sup> *Ibid*

<sup>14</sup> *Ibid*

<sup>15</sup> *Ibid*

<sup>16</sup> *Ibid*

<sup>17</sup> MOECP. (2016, March 14). Record of Site Condition - 58 Plant Street. Retrieved from Ontario Ministry of the Environment, Conservation and Parks: <http://www.downloads.ene.gov.on.ca/files/besr/RSC%20221630.pdf>

<sup>18</sup> *Ibid*

<sup>19</sup> *Ibid*

<sup>20</sup> City of Quinte West. (2021). Public GIS Maps. Retrieved from City of Quinte West: <https://quintewest.maps.arcgis.com/apps/webappviewer/index.html?id=6f9d5bae46044c9587c21cd8cf9b098f>

<sup>21</sup> City of Quinte West. (2018, August). Official Plan. Retrieved from City of Quinte West: <https://www.quintewest.ca/en/your-city-hall/resources/Planning/Quinte-West-Official-Plan-Consolidated-to-Amendment-12.pdf>

<sup>22</sup> *Ibid*

<sup>23</sup> *Ibid*

<sup>24</sup> RFA Planning Consultant Inc. (2007, August). A Model for Sustainable Development In the Community of Batawa: Planning Report for the Batawa Special Policy Area. Retrieved from Batawa Development Corporation: <https://batawa.ca/photos/custom/New%20Batawa%20Secondary%20Plan%20August%202007.pdf>

<sup>25</sup> *Ibid*

<sup>26</sup> *Ibid*

<sup>27</sup> *Ibid*

<sup>28</sup> *Ibid*

<sup>29</sup> The Dalton Company Ltd. (2020, January). Reflecting on the Remarkable Construction Story of the Bata Shoe Factory: Part One. Retrieved from The Dalton Company Ltd.: <https://www.daltonbuild.com/post/reflecting-on-the->

[remarkable-construction-story-of-the-bata-shoe-factory-part-one](https://www.daltonbuild.com/post/reflecting-on-the-remarkable-construction-story-of-the-bata-shoe-factory-part-one)

<sup>30</sup> Batawa Development Corporation. (2021). Batawa Development Corporation. Retrieved from Batawa Development Corporation: <https://batawa.ca/batawa-development-corporation-c11.php>

<sup>31</sup> *Ibid*

<sup>32</sup> Mendelson, R. (2021, February 9). BDP Quadrangle Turns a Former Shoe Factory Into a Community Hub. Retrieved from GB&D Magazine: <https://gbdmagazine.com/bdp-quadrangle/>

<sup>33</sup> *Ibid*

<sup>34</sup> *Ibid*

<sup>35</sup> *Ibid*

<sup>36</sup> *Ibid*

<sup>37</sup> JERM, I. (2014, February). Retrieved from Flickr: <https://www.flickr.com/photos/jerm9ine/12310021036/in/photostream/>

<sup>38</sup> MOECP. (2016, March 14). Record of Site Condition - 58 Plant Street. Retrieved from Ontario Ministry of the Environment, Conservation and Parks: <http://www.downloads.ene.gov.on.ca/files/besr/RSC%20221630.pdf>

<sup>39</sup> *Ibid*

<sup>40</sup> *Ibid*

<sup>41</sup> The Dalton Company Ltd. (2020, January). Reflecting on the Remarkable Construction Story of the Bata Shoe Factory: Part Two. Retrieved from The Dalton Company Ltd.: <https://www.daltonbuild.com/post/reflecting-on-the-remarkable-construction-story-of-the-bata-shoe-factory-part-two>

<sup>42</sup> City of Quinte West. (2018, August). Official Plan. Retrieved from City of Quinte West: <https://www.quintewest.ca/en/your-city-hall/resources/Planning/Quinte-West-Official-Plan-Consolidated-to-Amendment-12.pdf>

<sup>43</sup> *Ibid*

<sup>44</sup> Dubbleddam Architecture + Design. (2020, September). Bata Shoe Factory receives Canadian Green Building Award. Retrieved from Dubbleddam Architecture + Design: <http://dubbeldam.ca/news/bata-shoe-factory-receives-canada-green-building-award>

<sup>45</sup> The Dalton Company Ltd. (2018, November). Architect Looks to Dalton for Insights into Former Bata Shoe Factory Site Redevelopment in UK. Retrieved from The Dalton Company Ltd.: <https://www.daltonbuild.com/post/architectinterviewbatacondos>

<sup>46</sup> *Ibid*