

The Schreiber Wood Project

3D Reconstruction of A Cultural Landscape: Interpreting Shadowmere of the Schreiber Estate

Kiara KIM, Yunfei LIN

Department of Anthropology, University of Toronto Mississauga

Land Acknowledgement: We wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Introduction/Background

The Schreiber Wood Project documents a late 19th to early 20th century, settler-colonial landscape located on the property of the University of Toronto Mississauga campus, once owned by Weymouth Schreiber and his family (Figure 1). In the 1880's, the family moved onto the property, and three houses were constructed during their occupancy: Mount Woodham, home to Weymouth and his wife, Charlotte Schreiber; Lislehurst, and Iverholme, homes to each of their sons and their families. During this time, an artificial lake by the name of Shadowmere was also constructed near Iverholme (Brand 2018).

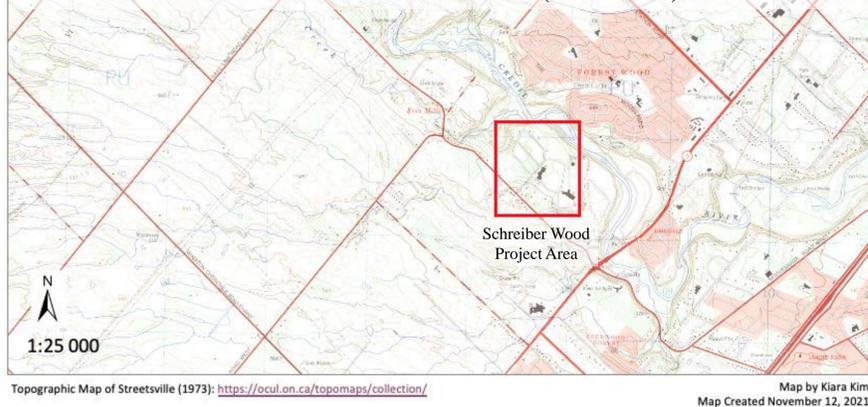


Figure 1. The location of the Schreiber Wood Project area on the University of Toronto Mississauga campus

Background of Shadowmere

Private landscaping in early settler-colonial Ontario were largely influenced by picturesque garden trends from Britain and other parts of Europe (Stewart & Buggiey 1975). Ponds were a common element, and artificial ponds were often created by damming existing water sources (National Gallery of Art 2021). In addition to its integrality to design, ponds served a variety of practical uses, including irrigation, wetting roads, firefighting, and stocking fish (National Gallery of Art 2021). A photo of Shadowmere from *The Globe* (1895) is captioned as a “fish pond” (Figure 2).



Figure 2. Photo of Shadowmere from *The Globe* (1895), captioned as, “FISH POND SHADOW MERE – A SCENE NEAR MRS. SCHREIBER RESIDENCE”. This is the only historical documentation of Shadowmere.

Shadowmere currently sits in a dried ravine, and its remains include an earthen dam, bridge, stone steps and surrounding pathways (Figure 3). The transportational function of several features suggest that Shadowmere was accessed from various directions leading to different houses on the property, simultaneously serving as a transitional and scenic space for its residents.

Purpose of the Research

To further contextualize these features within the Schreiber family's lives, we documented the remains of Shadowmere to estimate the original water level, water surface area and water body volume. This research is a part of the assignment for the Advanced Archaeological Fieldwork course in Fall 2021.

Methods and Procedure

Part 1. Visualization of Shadowmere

- The data collected included Total Station and GPS waypoints. The GPS waypoints were used for the orientation of Total Station points in ArcGIS.
- The area of interest was limited between the remains of an earthen dam and bridge. These features were the two clearest surviving anthropogenic modifications on the landscape related to Shadowmere.
- The maps and analyses were constructed with ArcMap and ArcScene (ArcGIS 10.8.1).

Part 2. Estimation of Size and Volume of Shadowmere

- The potential water level was estimated based on the height of the remains of the earthen dam.
- The size and water volume were estimated by calculating the volume below the potential water level from raster data in ArcScene.

Results

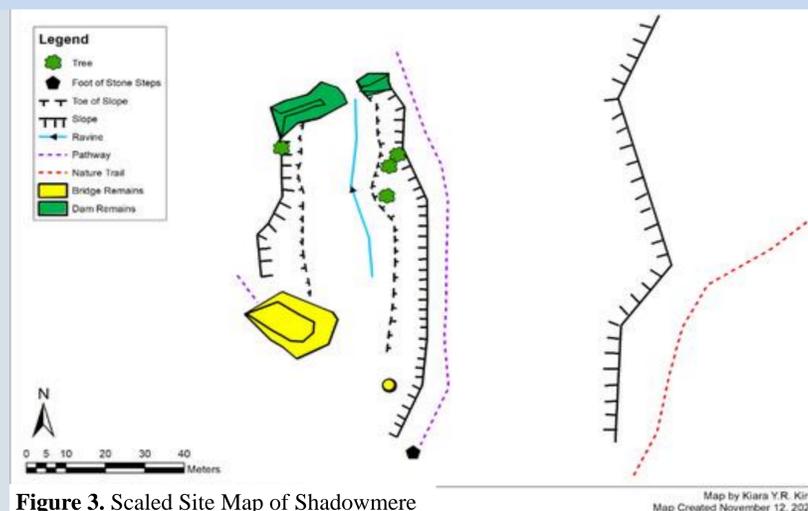


Figure 3. Scaled Site Map of Shadowmere

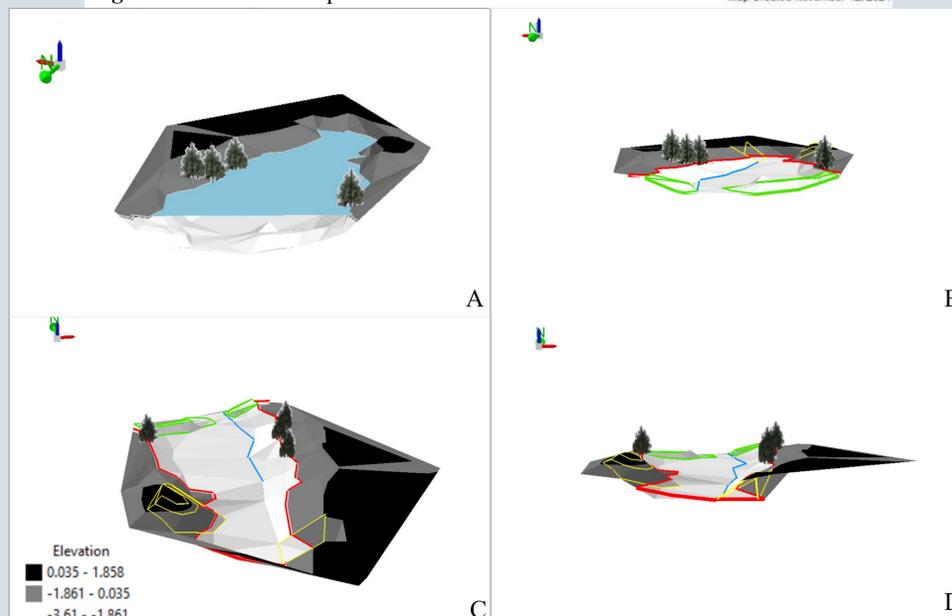


Figure 4. Shadowmere in different 3D views: (A) downward oblique angle looking south with the estimated water surface; (B) horizontal view looking south; (C) downward oblique angle looking north; (D) horizontal view looking north. The legends are the same as in Figure 3. The red line represents the estimation of water line.

Discussion

Estimation of the Size of Shadowmere

- We started with the assumption that the maximum height of the remains of the earthen dam would represent the height of the dam when Shadowmere was present
 - Therefore, the difference between the lowest point on the waterbed to the height of the dam should represent the potential depth of Shadowmere.
 - Based on elevation data created by ArcScene, the depth of Shadowmere is 1.75 meters
- Area and Volume estimations were based on raster data of the 3D map
 - Approximate volume: 595 m³
 - Approximate water surface area: 615 m²

Tree Significance and Potential Research Direction

- During the collection and analysis of the data, we noticed that several trees were located below the estimated water surface (Figure 4A). This suggested that the earthen dam was destroyed before the trees grew.
- Three pine trees on the east side of Shadowmere with the diameter at breast height (DBH) ranged from 52.1 to 63.5 cm. One maple tree on the west side of Shadowmere, had a DBH of 70 cm.
- Further examination of the dendrochronology of trees could provide insights into the history of the landscape, such as when the earthen dam was destroyed.

Significance of Reconstruction of Shadowmere

- There is only limited documentation of Shadowmere in the historical record, therefore, reconstruction can provide a visualization of the modification of the landscape by the Schreiber family in the 19th century.

Limitations

- The limitations of the reconstruction of Shadowmere is that we did not account for the natural or artificial modification of the landscape after the departure of the Schreiber family.
- For this reconstruction of Shadowmere, we only focused on the extent between the earthen dam and the stone bridge created by the Schreiber family. As a result, the full extent of Shadowmere was not fully captured and interpreted.

Conclusion

This project reports the documentation Shadowmere, an artificial landscape used during the Schreiber family's occupancy in the late 19th to early 20th century. 2D and 3D-maps were used to estimate the size and water level of Shadowmere. Based on 3D spatial reconstruction, we estimate that the depth was 1.75 meters, water surface area is 615 m² and the water volume is 595 m³.

The reconstruction of Shadowmere contributes to the larger reconstruction of early European settler-colonial lives in Erindale. Our documentation of Shadowmere is limited to its characterizing features as they were relevant to estimating the original water level, and due to time constraints. Future projects that aim to document the entirety of Shadowmere to capture its full extent and dendrochronology examination are suggested.

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Acknowledgement

This project would not have been possible without the assistance of Michael Brand, Amy Fox, Lindi Masur, Sarah Ranlett, Trevor Orchard, and GIS support from Tanya Kenesky and Andrew Nicholson, University of Toronto Mississauga

Contact Information

Kiara Kim: kiara.kim@mail.utoronto.ca
Yunfei Lin: yunfei.lin@mail.utoronto.ca