

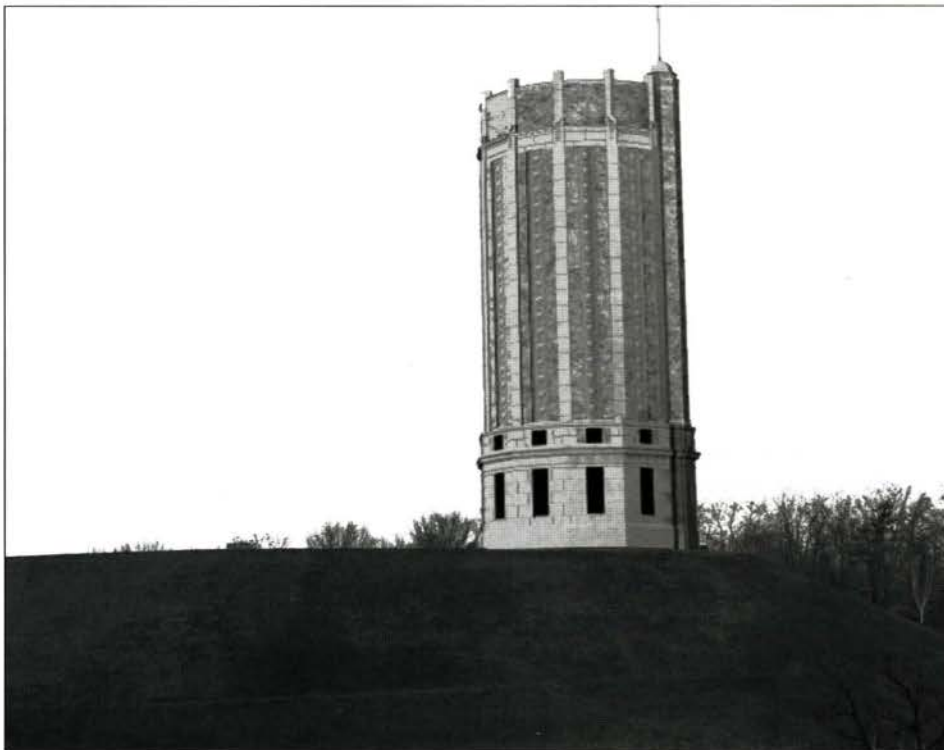
# TORONTO'S TOWER OF PURE WATER: A LOST CIVIC VISION

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## ABSTRACT

The Toronto Water Works Extension (TWWE) project of 1913-1955 proposed a comprehensive water supply and distribution system in the context of a vision of public works as a great civic deed, demanding a great civic architecture. The St. Clair Reservoir was the first completed element of the TWWE, comprising a covered reservoir topped by a public park giving on to a developed ravine landscape. Organized in relation to views from new civic roadworks—the Spadina Road Bridge and the boulevarded St. Clair Avenue—the intended climax of the reservoir landscape was the ornamental St. Clair overhead tank. The proposed rich dressing of brick, limestone, and copper masks a large steel water tank, giving monumental architectural expression to prosaic engineering function in a manner that would characterize the architecture of the TWWE. The cancellation of the tank project by Toronto's Board of Control indicates a deep gulf between Harris and his political overseers regarding the value and importance of monumental architectural expression to the TWWE project and to public works in general. A contemporary reconstruction of the tank, using architectural CAD modeling and renderings constructed in accordance with archival documents, reveals the rich architectural expression of the tank design, while photomontages using archival photographs of the reservoir demonstrate the full civic vision of the reservoir landscape as a whole.



THE DISTRICT NO. 3 OVERHEAD TANK AS PROPOSED BY POMPHREY AND HARRIS WITH BRICK AND STONE CLADDING, VIEWED FROM THE SPADINA ROAD BRIDGE, SHOWING THE TUNNEL PORTAL AND VALVE HOUSE BUILDINGS IN THE CENTRE OF THE VIEW, WITH STEPS GIVING ACCESS FROM THE RESERVOIR TOP DOWN INTO THE RAVINE PARK. | PHOTOMONTAGE, RENDERING AND DIGITAL MODEL: BENJAMIN CHECKWITCH, STEVEN MANNELL, WILLIAM RAWLINGS. BASE PHOTO: ARTHUR GOSS. SOURCE: CITY OF TORONTO ARCHIVES, RGS, SERIES 72 ITEMS 1166 & 1167



FIG. 1. THE TOWER OF PURE WATER: DIGITAL RECONSTRUCTION OF THE UNBUILT DISTRICT NO. 3 OVERHEAD TANK, VIEWED FROM ABOVE SHOWING THE FRONT FAÇADE OF THE TANK FACING THE PLAYING FIELDS ON TOP OF THE ST. CLAIR RESERVOIR. THE DOORWAY WITH BROKEN PEDIMENT AND MONUMENTAL URN IS AT THE BASE; THE ROOFTOP CUPOLA ACCOMMODATES THE ROOF ACCESS LADDER. | RENDERING AND DIGITAL MODEL: BENJAMIN CHECKWITCH, STEVEN MANNELL, WILLIAM RAWLINGS

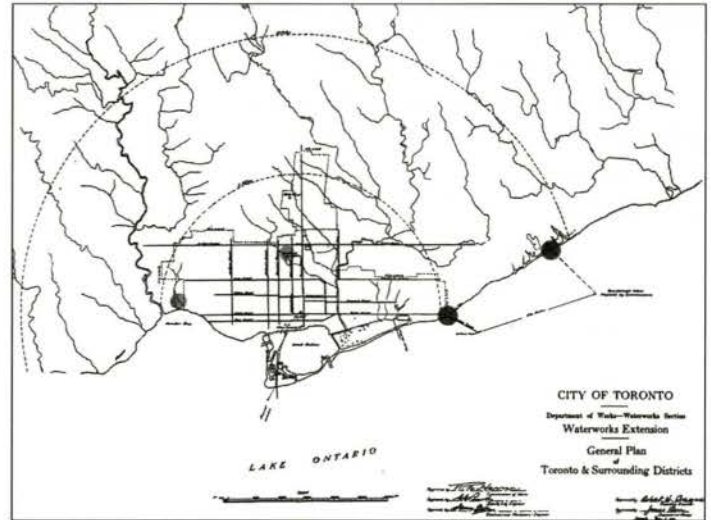


FIG. 2. GENERAL LAYOUT OF WATER WORKS EXTENSION, FROM THE 1913 COMMISSIONER'S REPORT. DARK GRAY CIRCLES ARE VICTORIA PARK (LEFT) AND SCARBOROUGH HEIGHTS (RIGHT). LIGHT GRAY CIRCLES ARE PARKDALE (LEFT) AND ST. CLAIR (TOP). | DIAGRAM: R.C. HARRIS, 1913, REPORT OF THE COMMISSIONER OF WORKS ON ADDITIONS AND EXTENSIONS TO THE TORONTO WATERWORKS PUMPING AND DISTRIBUTION PLANT, TORONTO, CITY OF TORONTO ARCHIVES PLATE NO. 1

## INTRODUCTION

The Toronto Water Works Extension (TWWE) project of 1913-1955 proposed not only a comprehensive water supply and distribution system, but also embodied a highly developed vision of civil engineering and public works as great civic deeds, demanding a great civic architecture.<sup>1</sup> The St. Clair Reservoir was the first completed element of the TWWE, comprising a covered reservoir topped by a public park and giving on to a developed ravine landscape. The complex was organized in relation to the view from the monumental new bridge carrying Spadina Road to its intersection with the proposed civic boulevard of St. Clair Avenue. The architecture and landscape vision of the TWWE was the product of the collaboration of architect Thomas Canfield Pomphrey with his patron, commissioner of works R.C. Harris; the climax of that collaboration was the ornamental St. Clair overhead tank, proposed for the southern prow of the reservoir at the head of the ravine, which would have dominated views from the ravine and from the Spadina Bridge.

The cancellation of the tank project by Toronto's Board of Control indicates the deep gulf between Harris and his political overseers regarding the value and importance of monumental architectural expression to the TWWE project, and to public works in general.

## PRELUDE: THE TORONTO WATER WORKS EXTENSION PROJECT

In 1913, newly installed Toronto works commissioner R.C. Harris presented his *Report of the Commissioner of Works on Additions and Extensions to the Toronto Waterworks Pumping and Distribution Plant*. Urgently prepared in rebuttal to the 1912 *Report of the Board of Water Commissioners* sponsored by Harris's disgraced predecessor Charles Rust, Harris's 1913 *Commissioner's Report* proposed construction of a duplicate waterworks just beyond the eastern city limit at Victoria Park. A vision of public works as civic works pervaded the *Commissioner's Report*: "It is proposed to erect handsome buildings, which, in conjunction with the park district and the beach, will consti-

tute one of the most beautiful areas in Toronto."<sup>2</sup> Harris's report further suggested linking the new waterworks to a proposed encircling carriage drive and parkway system for the city.

The civic dimension was very dear to Harris. He had a hand in various manipulations of the Bloor Viaduct design process before becoming commissioner of works, and there is much evidence for his ongoing close relations with key figures in the Guild for Civic Art.<sup>3</sup> The Guild was a progressive planning advocacy group, including such architects as Edmund Burke and John Lyle, dedicated to implementing City Beautiful ideals in Toronto. Projects included:

- The Guild's 1909 *Report on a Comprehensive Plan for Systematic Improvements in Toronto*;
- The Civic Plan Commission of 1911, recommending ornamental space on roadways, boulevards between curb and sidewalks, and the beautification of St. Clair Avenue (by 1909, St. Clair

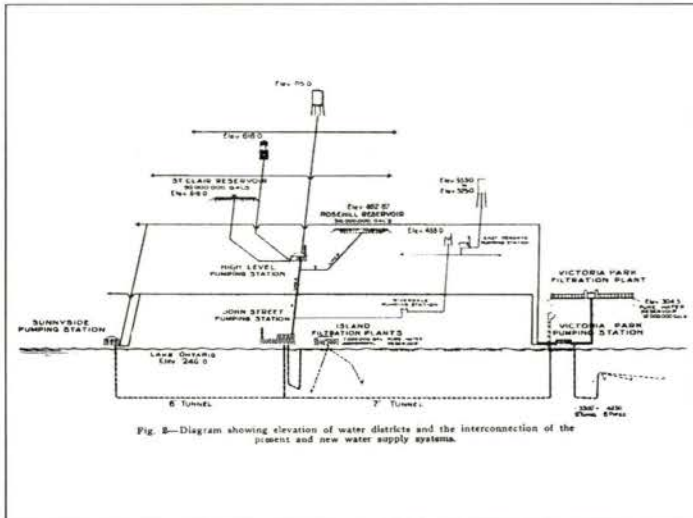


FIG. 3. ELEVATION SCHEMATIC OF THE TWWE PROJECT OF 1926. THE ST. CLAIR RESERVOIR AND DISTRICT NO. 3 OVERHEAD TANK ARE AT THE UPPER LEFT. | DIAGRAM: WILLIAM GORE, 1929, «FOURTEEN MILLION DOLLAR EXTENSIONS TO TORONTO'S WATER SUPPLY SYSTEM», *CONTRACT RECORDS AND ENGINEERING REVIEW*, VOL. 43, JUNE 19, P. 728, FIG. 2

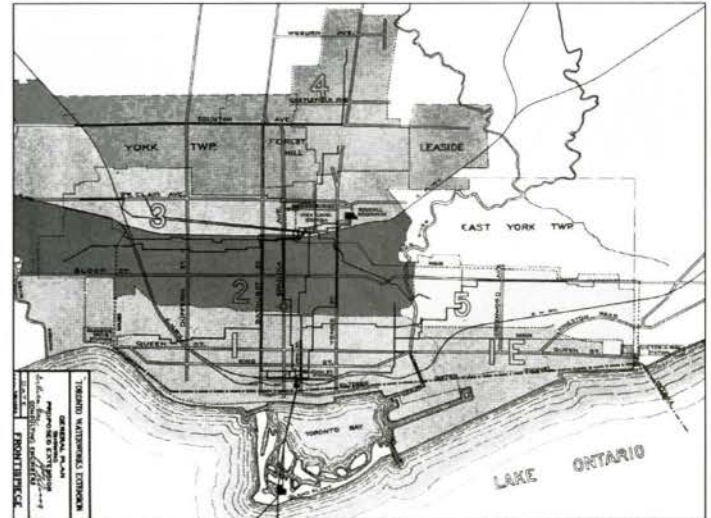


FIG. 4. PLAN OF THE TWWE DISTRICTS, FROM THE 1926 REPORT. DISTRICT NO. 3 IS TONED BLUE AT THE UPPER LEFT. | DIAGRAM: H.G. ACRES AND WILLIAM GORE, 1926, *REPORT ON PROPOSED EXTENSIONS TO THE WATER WORKS SYSTEM*, TORONTO, CITY OF TORONTO ARCHIVES, RG1 REPORTS, BOX 4, PLATE 1

was the main east-west street at the northern limit of the city);

- Study of alternative alignments of the Bloor Viaduct (1911);
- A proposal for a Don Valley Parkway (1912);
- A proposal for a system of encircling parks and parkways with boulevard carriage drives (1913).

Harris also sat on the Civic Transportation Committee with the Hydro-electric Power Commission of Ontario's chief engineer F.A. Gaby and the Toronto Harbour Commission's chief engineer E.L. Cousins. The group produced the 1915 *Report to the Civic Transportation Committee on Radial Railway Entrances* and arrangements within the city, advocating a major east-west electric-powered commuter rail line along waterfront, connecting to a north-south line up Yonge Street to Summerhill Avenue. Ridership increases of 500 to 1000 percent were predicted to result from the use of electric—rather than steam—loco-

motives, and would be accompanied by significant improvements in social and market conditions in the city.<sup>4</sup> As well, Harris was certainly intimate with the contemporary report prepared by Cousins and the Harbour Commission on the future of the waterfront and port, which proposed a continuous belt of parks with scenic boulevard carriage drives along the western waterfront, then swinging south across the Toronto Harbour islands and lagoons before returning to Woodbine Beach at the east.<sup>5</sup>

### WATER SUPPLY PROBLEMS IN NORTHWESTERN TORONTO

Concerns regarding water pressure and supply interruptions in the northwestern pumping District 3 were raised throughout the late teens and early twenties. That district was largely above the level of the main reservoir at Rosehill, and thus dependent on steam and later electric pumps for supply, rather than gravity feed. The Works Department's in-house studies resulted in a proposal for a water tank located on Bathurst Street (one ma-

JOR block west of the eventual site), just below St. Clair Avenue.<sup>6</sup> Upon submission of the drawings for approval in 1924, the City Architect wrote to Harris: "The suggested masonry housing is not specified, though shown on the drawing."<sup>7</sup> This suggests that the tank was considered and developed in ornamental terms, with an intention for decorative form, an impulse in keeping with recent trends in public works thinking. That tank proposal was killed by the Board of Control in June 1924 due to (in Harris's words) the "strong protest from property owners in the area."<sup>8</sup> Other sites were mooted along the alignment of St. Clair Avenue, but none were developed due to the commissioner's perception of likely neighbourhood opposition.

### THE ST. CLAIR RESERVOIR

War and recession had combined to place the 1913 report on hold. Finally, in 1925, an external consulting engineer's report was commissioned from H.G. Acres and William Gore. Their report, issued in 1926, declared: "The scheme above described

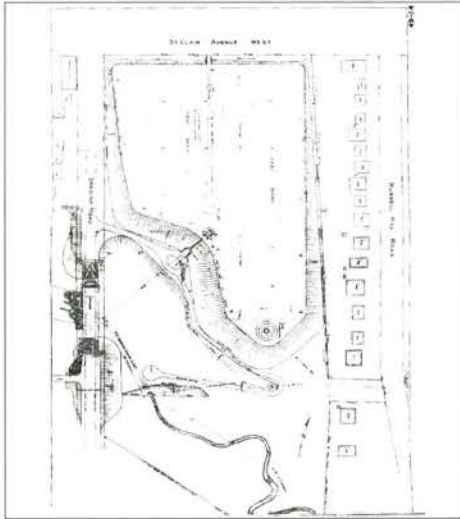


FIG. 5. SITE PLAN LAYOUT OF THE GROUNDS AND BUILDINGS ATOP THE ST. CLAIR RESERVOIR AND OF THE SPADINA ROAD BRIDGE. | DRAWING: H.G. ACRES & CO. LTD. AND GORE, NASMITH & STORRIE, 1929, WATER WORKS EXTENSION: ST. CLAIR RESERVOIR CONTRACT DRAWINGS, TORONTO, CITY OF TORONTO DEPARTMENT OF WORKS, SHEET R-1

is substantially in harmony with the conception of the Commissioner of Works, as outlined in his 1913 Report.”<sup>9</sup> However, the waterworks project had become much more comprehensive than in 1913 and proposed an overall strategy for the entire city. The full scope of the 1926 scheme comprised:

- A new duplicate waterworks (including filtration, pumping and reservoirs) at Victoria Park, the eastern edge of the city;
- A new Sunnyside pumping plant with surge tower at the western edge of the city, adjacent to the new Lakeshore Boulevard with its amusement parks, beach, and bathing station;
- A new reservoir and overhead tank at St. Clair and Spadina, at the north edge on the city’s central axis;
- A new surge tower at the existing John Street pumping station, at the centre of the city;

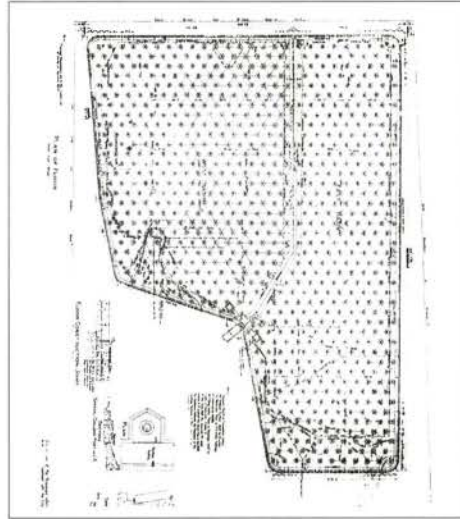


FIG. 6. PLAN LAYOUT OF THE ST. CLAIR RESERVOIR SHOWING HEXAGONAL LAYOUT OF CONCRETE COLUMNS. | DRAWING: H.G. ACRES & CO. LTD. AND GORE, NASMITH & STORRIE, 1929, WATER WORKS EXTENSION: ST. CLAIR RESERVOIR CONTRACT DRAWINGS, TORONTO, CITY OF TORONTO DEPARTMENT OF WORKS, SHEET R-3

- A new filtered water tunnel across the lakefront from Victoria Park to John Street and Parkdale;
- No changes to the existing Island filtration and pumping works (centre south).<sup>10</sup>

Together with the development of St. Clair Avenue as the city’s northern boulevard, the establishment of Lakeshore Boulevard at the southwest, and the proposed north-south carriage drives, the waterworks projects mark out the key points of a diagram of an encircled, quadrate Toronto.

The proposed development of the St. Clair site comprised two waterworks components, a reservoir serving pumping District 2, and an overhead tank-serving district 3.<sup>11</sup> The St. Clair and Spadina site was identified as early as 1925 for the reservoir location by Acres and Gore, and was finally purchased from the estate of Sir John Eaton in 1930, after the reservoir had been tendered. The expropriation process was controversial due to the city’s initial attempt to take only the high

ground and leave the ravine lands, worthless in the eyes of both city officials and the Eaton trustees.<sup>12</sup>

St. Clair Avenue was a hot point for the activities of the Guild for Civic Art. The Guild’s summary of accomplishments ranks the widening of St. Clair as number one in importance among the successes of its early years, along with the establishment of boulevards at the centre and between curb and sidewalk along St. Clair as number five in importance.<sup>13</sup> For Harris, the St. Clair site offered an opportunity to bring together in one project his multiple obsessions of waterworks, bridges, boulevard streets, and public parks. The park character of the reservoir design was confirmed in a letter from Gore to Harris dating from early 1926, before the Water Works Extension report was issued: “The whole will be sodded over and sidewalks and flower pots could be placed on same. The whole area will be closed with an ornamental fence.”<sup>14</sup> By 1929, the civic ambitions of the design were more ambitious: “The reservoir has been made to conform to extensive improvements in roads and bridges in the vicinity, and the grounds are to be laid out and planted for use as a public park.”<sup>15</sup>

Road bridges were as prominent as waterworks in Harris’s vision of a renewed Toronto. Design of the Prince Edward Viaduct (1909-1919) involved significant collaboration with architects and designers outside of the Works Department, much public debate about alignment and image, and some degree of political interference.<sup>16</sup> Perhaps in an effort to maintain tighter control of the very many bridges projected for the near future, Harris moved to develop in-house capacity for bridge design. By the late 1920s, the Works Department’s designers had developed a characteristic bridge design based loosely on the Viaduct, with steel truss substructure surmounted by



FIG. 7. VIEW OF RESERVOIR AND BRIDGE UNDER CONSTRUCTION. | PHOTO: ARTHUR GOSS, CITY OF TORONTO ARCHIVES, RGB, SERIES 65, ITEM 71



FIG. 8. VIEW OF INTERIOR OF RESERVOIR UNDER CONSTRUCTION, SHOWING HEXAGONAL COLUMN GRID. | PHOTO: ARTHUR GOSS, CITY OF TORONTO ARCHIVES, RGB, SERIES 65, ITEM 81

concrete road deck, pylons, and rails. Deployed in various situations around the city, the consistency of the language of those bridges reinforced the systematic nature of public works in Harris's vision of the city. At the St. Clair site, the in-house engineers of the Works Department designed a steel truss and concrete bridge to replace the old wooden trestle on Spadina Road south of St. Clair, simultaneous to the reservoir design process of 1927 to 1929. The Spadina Road Bridge provides an appropriate frame and viewing platform for the reservoir park, along with a grand approach to the new boulevard of St. Clair Avenue. The reservoir and bridge were tendered together as one contract in 1929, with Nelson River Construction the successful bidder.<sup>17</sup> Included in the contract were just two visible architectural elements, the tunnel portal and gatehouse buildings, along with steps and terraces and the foundations for an octagonal overhead tank, though not the tank itself.<sup>18</sup> In describing the completed design, Gore noted that "[t]he tunnel portal has been featured architecturally and provides access both inside and out to the reservoir and grounds."<sup>19</sup>

### DISTRICT 3 OVERHEAD TANK

In a letter from Gore to Harris in June 1927, the architectural ambitions of the tank were established: "The tank will be protected from frost and heat by a building to an architect's design conforming with the gate house and pipe tunnel portal of the service reservoir and suitable to the surroundings."<sup>20</sup> During the period from late 1928 through early 1929, the language, layout, and detail of the Victoria Park works were finally resolved to the satisfaction of Harris, who was both particular and demanding in his review of drawings, and very concerned to avoid plain, workmanlike buildings. By mid-1931, Harris had become anxious to view the tank design. In September 1931, William Storrie replied to Harris: "Our architect Mr. Pophrey is on holiday at the present time and as soon as he comes back we will have this matter attended to."<sup>21</sup>

Harris was compelled to repeat his request for architectural drawings a number of times, including twice in January 1932; Storrie replied on January 20, 1932

that "Within the next few days we hope to place before you the design which we have selected out of a number of sketches that have been prepared for this Water Tower." That letter also noted that the tank plan had been changed to a dodecahedron from the original octagon, based on the advice of the steel tank manufacturer.<sup>22</sup>

### THOMAS CANFIELD POMPHREY

Thomas Canfield Pophrey was apprenticed as an architect in Scotland before immigrating to Toronto, where he worked for John Lyle and Darling & Pearson, among other firms. He was badly wounded in the right shoulder during the war and spent a number of years in convalescent hospitals before resuming his practice in Toronto. In 1925, Pophrey and William Ferguson won the competition for the Toronto Cenotaph and, from 1927 (at the latest), he was staff architect for Gore, Nasmith & Storrie.<sup>23</sup>

Pophrey's relationship to Commissioner Harris appears to have undergone a



FIG. 9. VIEW OF THE VALVE HOUSE (UPPER LEVEL) AND TUNNEL PORTAL (LOWER LEVEL) AT THE CROOK OF THE RESERVOIR. | STEVEN MANNELL



FIG. 10. DETAIL OF THE ORNAMENTAL STONework AT THE TUNNEL PORTAL PEDIMENT. | STEVEN MANNELL

significant shift in course of the TWWE project. In October 1932, Harris complained to the engineers that Pomphrey alone had signed approval on drawings: "Will you please ensure that in future this approval is indicated on the drawings by a member of your firm and not by just one of the staff."<sup>24</sup> By the mid-1930s, however, Harris had a very different attitude towards Pomphrey. The commissioner of buildings had written to Harris, concerned that "[f]rom time to time Mr. Pomphrey of Messrs. Gore, Nasmith & Storey [sic] makes decisions on the Job in respect to materials and details, or interprets the specifications [...] I would be glad to know if this meets with your approval," to which Harris replied: "Mr. Pomphrey [...] when advising on the aforesaid work will request the presence of your Inspector so that he may be fully informed;"<sup>25</sup> an oblique but nonetheless definitive delegation of decision-making authority. From that point forward, Pomphrey was to be considered Harris's agent in all matters architectural—a delegation of authority that he never bestowed on the engineers, on a project where he

otherwise insisted that all approvals be issued over his signature alone.

### THE TOWER OF PURE WATER

The valve house and pipe tunnel portal buildings delineated in the 1929 reservoir contract drawings are the first expressions of the monumental architectural language to be deployed in the TWWE. Ornament conforms to a fairly generalized neo-classical manner, using such devices as urns, deep rustication, and prominent pediment forms, and contains none of the stylized references to water supply engineering process that characterize the later buildings at Victoria Park. In the plumpness of form and depth of modeling, the decorative carving of the portal has affinities to the details of Ferguson and Pomphrey's Toronto cenotaph of 1925.

The overhead tank at St. Clair was intended to be a centrepiece of the Water Works Extension project, and its design was developed by Pomphrey under Harris's careful scrutiny over a period of

three years following the tender of the reservoir. Situated on a triangular earthen prow at the south end of the St. Clair Reservoir, the tank was to command views from both the new Spadina Road Bridge and from the eventual Ravine Park below. William Storrie noted, somewhat laconically: "In keeping with the surroundings this tank is of an ornamental type [...] In general the building is to be faced with brick of first quality grey stock with stone base, pilasters and trim cut from the best quality Queenston limestone."<sup>26</sup> As proposed in the 1932 contract drawings, a standard steel water tank (capacity of 460,000 gallons, or five million pounds of water) is encased by vertical limestone pilasters, projecting above the tank top in copper-capped finials. Continuous, deep relief copper spandrel panels bearing the "TWW" device are set between the pilasters, flanked by panels of yellow brick. The north side, facing the playing fields atop the reservoir, features a rusticated limestone portal, topped by a broken pediment with monumental urn. Towards the ravine and bridge, the tank presents a continuous projecting bay housing a

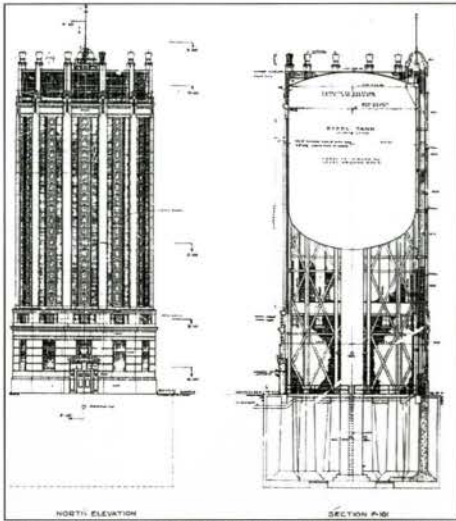


FIG. 11. DISTRICT NO. 3 OVERHEAD TANK; WORKING DRAWING ELEVATION AND SECTION SHOWING THE STEEL TANK CONCEALED BEHIND A MASONRY MASK. | DRAWING: H. G. ACRES & CO. LTD. AND GORE, NASMITH & STORRIE, 1929, *WATER WORKS EXTENSION: ST. CLAIR RESERVOIR CONTRACT DRAWINGS*, TORONTO, CITY OF TORONTO DEPARTMENT OF WORKS; SHEET R-101

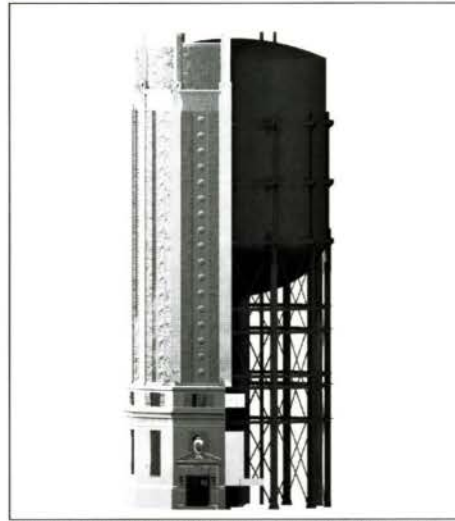


FIG. 12. DISTRICT NO. 3 OVERHEAD TANK; DIGITAL MODEL SHOWING THE MASONRY MASK PARTLY REMOVED TO REVEAL THE STEEL WATER TANK. | RENDERING AND DIGITAL MODEL: BENJAMIN CHECKWITCH, STEVEN MANNELL, WILLIAM RAWLINGS

roof access ladder extending above the parapet and culminating in a small dome and flagpole.

The classical language and the brick, limestone, and copper material palette of the overhead tank relate to those of the adjacent tunnel portal and the valve house, but with variations signalling the future direction of development of the architectural language of the TWWE. Deeply modeled horizontal limestone mouldings, neo-Greek urns, and heavy rustication around the tower doorway are carried over from the tunnel portal. Wall surfaces of the tower are brick panels framed by slightly projecting limestone pilasters, anticipating the Victoria Park filter building; other foreshadowing elements are the limestone finials that extend the pilasters above the roofline, and the metal decorative elements: flat incised copper panels and bronze grillage. Unlike the later buildings at Victoria Park, the decorative elements of the tower do not give figural rhetorical expression to the elements of engineering process. There are no carved equivalents to the stylized turbines of the

Victoria Park pumping station, though the strong blue-green vertical panels of copper vividly signal the reserve of pure water stored within the tower.<sup>27</sup>

Commissioner Harris's satisfaction with the design of the tower is expressed somewhat indirectly in articles on the TWWE published in engineering journals in the late 1920s and 1930s. Water filtration, pumping, and distribution are the principal focus of those articles, along with discussion of structural and material issues, and construction logistics. Architectural expression is touched upon only lightly in the texts, as in William Gore's 1929 mention that "The architectural appearance [...] should be quite pleasing."<sup>28</sup> That article was accompanied by a large reproduction of a lovely inkwash rendering of the plan and elevation of the filter and administrative building at Victoria Park, done in *beaux-arts* manner. As the lead image in the article, dominating its first page, the filter building rendering unequivocally declares the central role of monumental architectural expression in the TWWE project. Following the comple-

tion of the St. Clair tower design in 1932, a large line drawing of the tower elevation takes the place of the Victoria Park rendering in articles on the TWWE, with the tower now acting as the exemplar of architectural quality and ambition.<sup>29</sup>

The matter of the name of the tank runs somewhat counter to the rhetoric of the architecture. In February 1932, Harris's assistant James Milne proposed "The St. Clair Water Tower," which Harris rejected as misleading: "I think that the name given to this tower should indicate the purpose of the tank, i.e., the district to be served, and to this end the structure might be designated 'District No. 3 Water Tower.'" Milne's chastened reply was: "District No. 3 Water Tower is a very descriptive and most suitable name."<sup>30</sup>

## A FAMILY OF TOWERS IN THE TWWE

The creation of expressive towers out of operational necessity is a theme of the architecture of the TWWE. There are no purely honorific towers, rather each tower is incited by some necessary aspect of the purification or distribution of water:

- The overhead storage tank at St. Clair is the founding tower design from 1932, and was to contain a reserve of water at high level to ensure pressure and supply in a power outage. As described above, the tank was to provide a monumental and visible sign of the vast subterranean reservoir; the column of water within expressed in bright blue-green verticals of the oxidized copper panels on eleven of the twelve faces.
- The surge tanks at John Street (on an octagon plan, designed 1933) and Sunnyside (Parkdale—on a round plan, designed 1934, redesigned 1938) both contain a regulating chamber allowing

for variations of pressure in the main waterfront distribution tunnel.

- The alum feed tower at the Victoria Park pumping station, designed 1934, is a rectangular prism with battered walls housing two gravity feed alum flocculant hoppers and the associated head pump equipment. At the very top of the tower is a tall room with no defined function, featuring tall, round arched windows that act as a beacon on the landscape when illuminated after dark.

An explicit architectural hierarchy among the towers is clear, and was consciously established. The alum tower and overhead tank were intended as high-order expressive architecture, rendered in panels of yellow brickwork (traditionally referred to in Toronto as “grey” or “stone” brick), framed by substantial limestone pilasters and cornices, with copper flashings and decorative panels and bronze ornamental screens, and Harris insisted on closely following their design development. The surge tanks were lower-order work, rendered in red utility brick with minimal flashing and stone detailing. That differentiation was established by direct order of the commissioner, well before any concerns for fiscal retrenchment. In March 1932, Harris wrote to the engineers: “It has been decided to erect the surge tanks at John Street and Parkdale pumping stations without embellishments.” The consultants were forced to write back to clarify such instruction, as a masonry skin was essential to protect the tanks from the elements, and certain “decorative” stone elements in fact had key structural or weather protection roles.<sup>31</sup>

Towers also play significant roles in the composition of other waterworks designed by Pomphrey for Gore, Nasmith, Storrie around the same period, at Calgary and Ottawa.

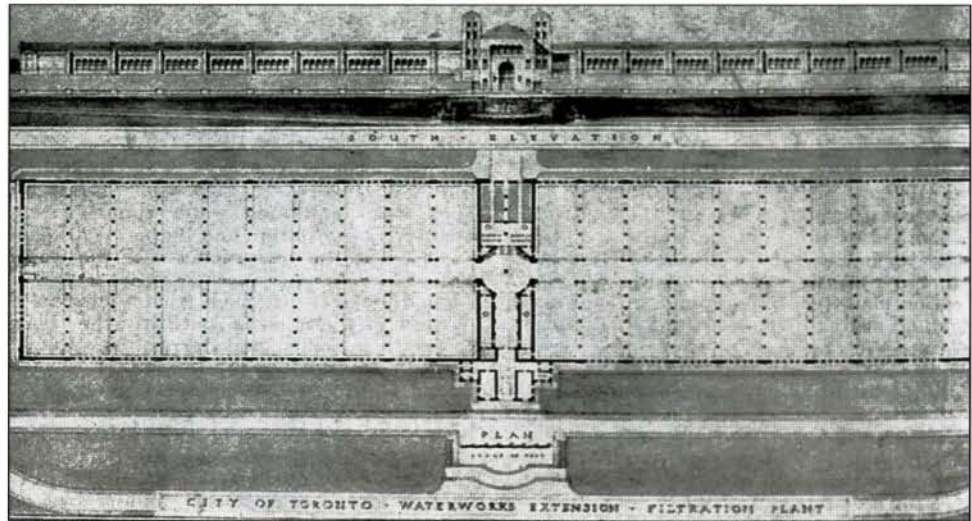


FIG. 13. RENDERED PLAN AND SECTION OF THE ADMINISTRATION AND FILTER BUILDING AT VICTORIA PARK, 1929. THIS IMAGE REPRESENTED THE ARCHITECTURAL AMBITIONS OF THE TWWE IN THE ENGINEERING PUBLICATIONS OF THE LATE 1920S. | DRAWING: WILLIAM GORE, 1929. « EXTENSIONS TO WATER WORKS AT TORONTO », *THE CANADIAN ENGINEER*, VOL. 57, NO. 2, JULY 9, P. 151

Those are both associated with the gravity feed of alum flocculant to the screened intake water. High-level viewing balconies are another shared feature, though they were not part of the public tour routes through the works. In those waterworks, as at Victoria Park and St. Clair, the tower is a device for organizing and orienting the overall composition. For Pomphrey, the tower is not an element of the literal, physically habitable public space of the architecture; instead, the towers acted in a manner analogous to the folly temple or hermitage of the English garden tradition, providing a focus for distant views and a place for imagined inhabitation. Any tower is a symbolic connection of earth to sky; in the context of the TWWE, where the overwhelming majority of the physical construction is hidden below ground in the form of main and supply tunnels, and underwater in the form of the intake crib and tunnel, the tower also symbolically connects distribution and use of water back to the sky and its clouds and rain, closing the hydrological cycle. That cosmological understanding of the TWWE towers provides a point of linkage to Ferguson and Pomphrey’s Cenotaph in terms of symbolism.

The Cenotaph’s geometry follows that of Lutyens’s prototypical 1920 Cenotaph in London, which manifests the *axis mundi* between the centre of the earth and dome of the sky through entasis of the sides towards a point 1000 feet in the sky, and with the steps and string courses following a curve centred 900 feet below the surface of the earth.<sup>32</sup> Towers are also a recurring theme in waterworks development more generally, including such icons of water supply as Chicago’s Water Tower. The role of the tower in the image of water supply as a public service is emphasized in a number of early twentieth-century publications, including numerous articles in *The American City* and the 1890 Architectural Competition for Water Towers sponsored by *The Engineering Record*.<sup>33</sup>

## THE END OF THE TANK

Design work on the District No. 3 overhead tank was completed by early 1933, and tenders were returned in September of that year.<sup>34</sup> Construction (or not) of the tank quickly became highly controversial, with Toronto’s Board of Control unwilling



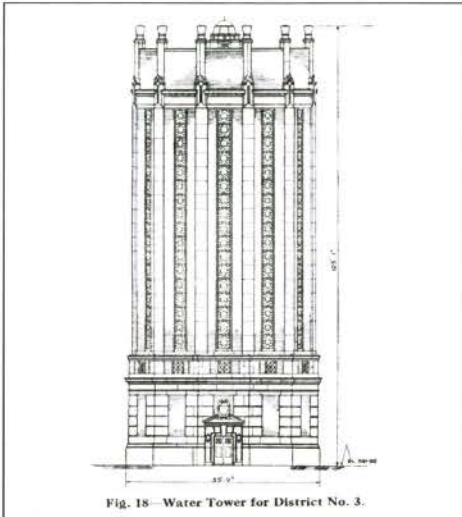


Fig. 14—Water Tower for District No. 3.

FIG. 14. LINE DRAWING OF THE FRONT ELEVATION OF THE DISTRICT NO. 3 OVERHEAD TANK. THIS IMAGE REPLACED THE VICTORIA PARK RENDERING AS REPRESENTATIVE OF THE ARCHITECTURAL AMBITIONS OF THE TWWE IN THE ENGINEERING PUBLICATIONS OF THE EARLY 1930S. [DRAWING: WILLIAM STORRIE, 1935, « THE TORONTO WATERWORKS EXTENSIONS », *ENGINEERING JOURNAL*, VOL. XVIII, NO. 2, FEBRUARY, P. 71, FIG. 18

to support the estimated \$62,000 cost of the ornamental cladding (out of a total low bid of \$113,347). Commissioner Harris composed a rare, signed memo to file, describing the events following upon his being “summoned to appear before the Board of Control” to justify the expenditure.<sup>35</sup> He immediately met with his senior staff engineer Mr. Powell, and William Storrie, to discuss strategy.

The *Toronto Telegram* supported the opposition with the headline “Bill for Camouflage a Trifle Large.” The local residents and the *Toronto Star* were generally in favour of the cladding scheme, as being “a credit to the city and to the fine district in which it will be erected,” but at a time of economic difficulty, many felt the local district alone should bear the cost of the dressing. Given that the tank was intended to serve a different district of the city entirely, it was an ironic proposition. Harris had done little to ensure strong local support. A.E. LePage, in support of the tank also wrote to the mayor: “the ratepayers of the Hill should have the privilege, through the newspapers, of

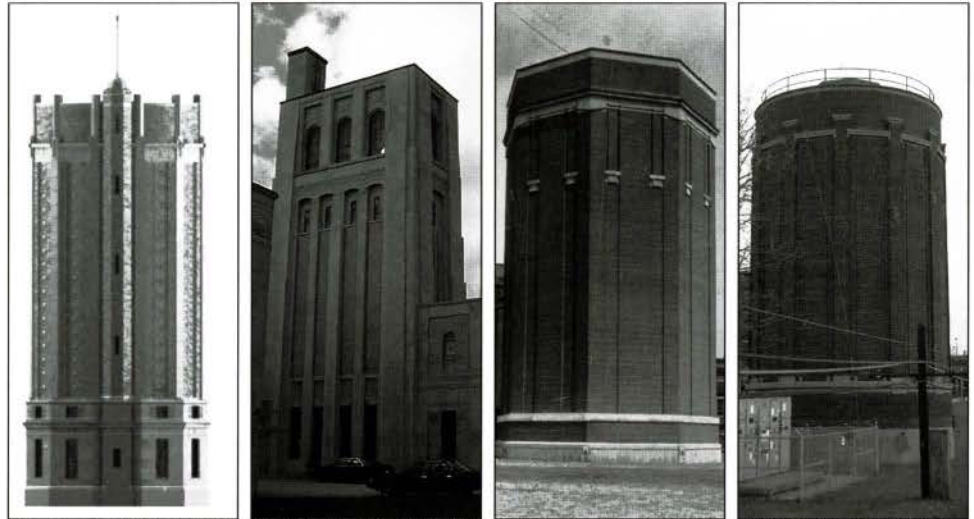


FIG. 15. THE FAMILY OF TOWERS IN THE TWWE. FROM LEFT: DISTRICT NO. 3 OVERHEAD TANK, REAR ELEVATION OF THE DIGITAL MODEL SHOWING THE PROJECTING BAY AND CUPOLA HOUSING THE ROOF ACCESS LADDER; THE ALUM FEED TOWER AT VICTORIA PARK; THE SURGE TOWER AT THE JOHN STREET PUMPING STATION; AND THE SURGE TOWER AT THE PARKDALE / SUNNYSIDE PUMPING STATION. [FROM LEFT: RENDERING AND DIGITAL MODEL OF DISTRICT NO. 3 TANK; BENJAMIN CHECKSWITCH, STEVEN MANNELL, WILLIAM RAWLINGS. PHOTO OF JOHN STREET SURGE TOWER: ARTHUR GOSS, CITY OF TORONTO ARCHIVES, R68, SERIES 65, ITEM 13. PHOTOS OF VICTORIA PARK ALUM FEED TOWER AND PARKDALE SURGE TOWER: STEVEN MANNELL

seeing the designs, with and without ornamentation, together with a plan showing its exact location.”<sup>36</sup>

On September 27, Harris sent a memo to the Board of Control along with a book of photos of exposed steel water tanks, provided by the fabricator. Regarding the exposed tanks, he wrote: “A few of these structures have been built in the United States. I have not seen any of them and therefore cannot advise as to their appearance. The designs however do not appeal to me.” In regards to a more modest “dressed” tank, he advised: “[...] we have made further study of the design and have concluded that modification cannot be made without such sacrifice of appearance as to make it relatively unsightly.”<sup>37</sup>

Harris’s rather haughty tone did little to appease the Board of Control. Consequently, on September 30, “in view of the existing financial conditions, the Board decided not to award a contract for this work [...] and directed the commissioner of works to give the question of design further study with a view to

having a new specification prepared for a less elaborate design.”<sup>38</sup> The consulting engineers prepared drawings for an unadorned steel tank, but Harris preferred to cancel the tank altogether for the time being. Time proved to be the enemy of the tank, however. Designed to provide thirty minutes of pressure and supply during power outages, the need for the tank became increasingly reduced as both the number and the duration of power outages dropped steadily and dramatically through the late 1930s and early 1940s. By the time the Victoria Park works were operational in 1941, the data in the Works Department’s annual reports show that power interruptions had become negligible, eliminating the problem the tank was meant to solve.<sup>39</sup>

The foundations had been constructed under the 1929 reservoir contract, and were diligently maintained, protected by a timber hoarding. Commissioner Harris passed away in 1945, having jealously protected the tank foundations through the intervening years. His vision of the Water Works Extension was maintained

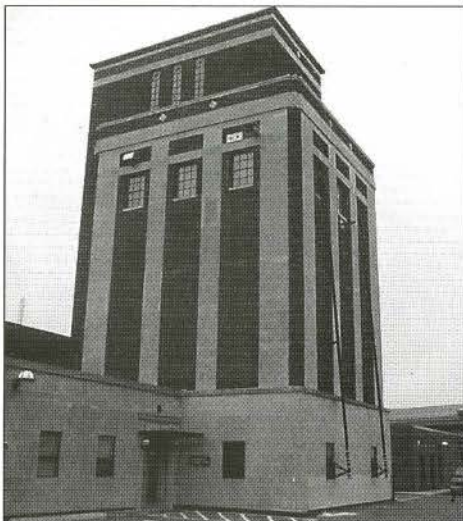
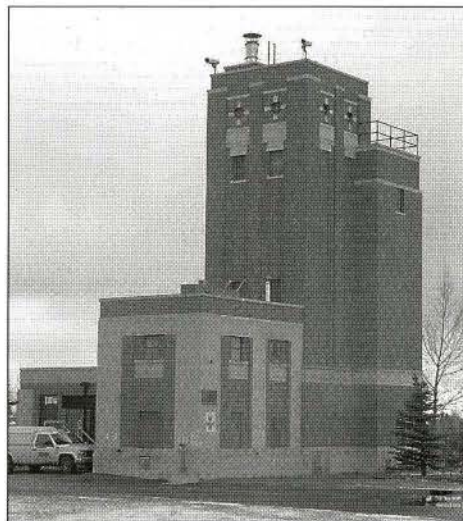


FIG. 16. EXTENDED FAMILY OF WATERWORKS TOWERS DESIGNED BY POMPHREY AND GNS. FROM LEFT: LEMIEUX ISLAND WATER WORKS, OTTAWA; GLENMORE WATER WORKS, CALGARY. | STEVEN MANNELL



by his immediate successors as commissioner of works, most of who had worked closely with Harris in the original vision and execution of the project. In 1947, the Ward 4 Committee of Women Voters wrote to Commissioner G.G. Powell complaining of the unsafe and unsightly condition of these foundations, asking that they be removed. Powell instead ordered the foundations to be protected by new hoardings. Evidently, even at that late date, Commissioner Harris's dream for the tower of pure water remained alive.<sup>40</sup>

### BUILDING THE VIRTUAL TANK

In a posthumous effort to redress the commissioner's frustrations, the archival model of the District No. 3 overhead tank has been constructed in strict accordance with the 1933 contract drawings, and is a full, three-dimensional representation of all physical elements of the tank. The model was constructed in Vector Works, a 3D CAD (computer-aided design) program, then exported to 3D Studio MAX for fine tuning and rendering. The texture

and material maps are based on scans of the present state of the materials of the gatehouse and tunnel portal building at the St. Clair site, and of materials at the Victoria Park filtration plant. Views of the model were then rendered and mapped onto scans of site and archival photographs using PhotoShop. Model construction is by Benjamin Checkwicz and material maps, renderings, and photomontages by William Rawlings, graduate students in the School of Architecture at Dalhousie University.

Archival models and digital reconstructions offer an opportunity to honour the fullness of an original design, uncovering particulars and qualities that may not be immediately evident in the surviving documents. In the case of the overhead tank, the building was fully designed and construction drawings were complete when the project was cancelled, so little interpolation was required in the modeling. In effect, we carried out digitally what had been intended as a physical and material act in the 1930s, and the work was very literal-minded

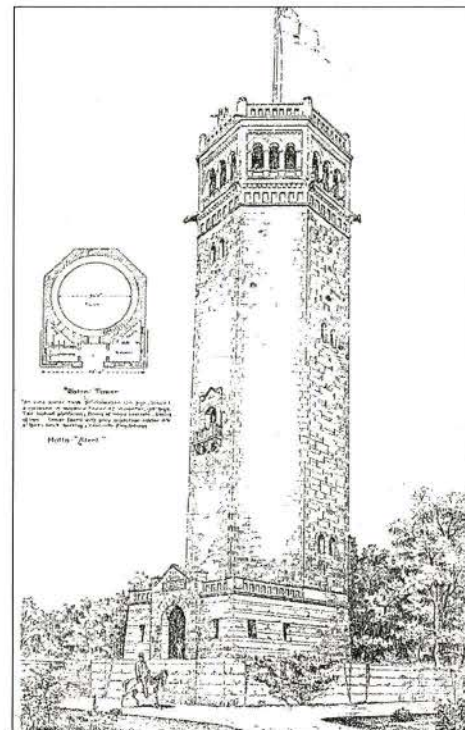


FIG. 17. HONOURABLE MENTION DESIGN FOR A WATER TOWER BY "ALERT" (O. VON NERTA, WASHINGTON D.C.), FROM THE 1893 ENGINEERING RECORD COMPETITION FOR WATER TOWER, PUMPING AND POWER STATION DESIGNS. | DRAWING: [ENGINEERING RECORD EDITORS], 1893, WATER TOWER, PUMPING AND POWER STATION DESIGNS, NEW YORK, ENGINEERING RECORD



FIG. 18. FERGUSON & POMPHREY, COMPETITION-WINNING DESIGN FOR THE TORONTO CENOTAPH, 1925. | SOURCE: CITY OF TORONTO ARCHIVES, FONDS 2008, SERIES 372, SUB-SERIES 41, ITEM 250

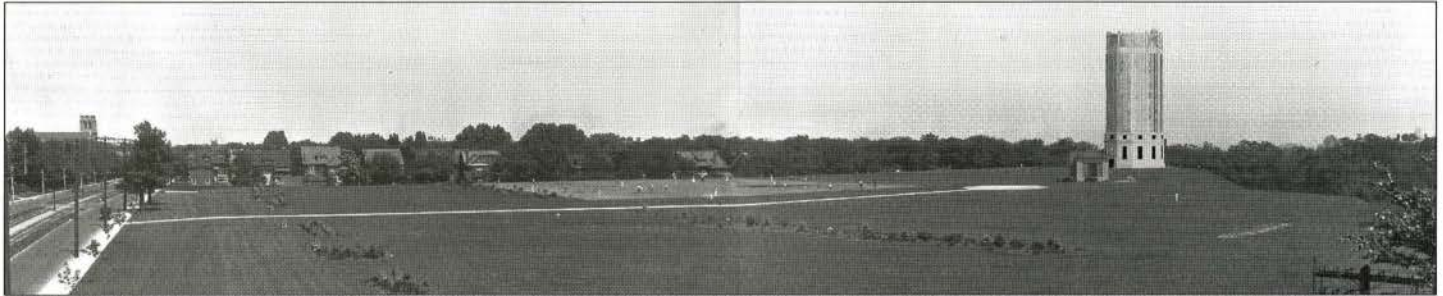


FIG. 19. RENDERED CAD MODEL OF THE DISTRICT NO. 3 OVERHEAD TANK AS PROPOSED BY POMPHREY AND HARRIS WITH BRICK AND STONE CLADDING, COLLAGED INTO ARCHIVAL PANORAMIC PHOTOGRAPHS BY WORKS STAFF PHOTOGRAPHER ARTHUR GOSS. AERIAL VIEW FROM THE CORNER OF ST. CLAIR AVENUE AND SPADINA ROAD, SHOWING THE PLAYING FIELDS ON TOP OF THE RESERVOIR. | PHOTOMONTAGE, RENDERING AND DIGITAL MODEL: BENJAMIN CHECKWITCH, STEVEN MANNELL, WILLIAM RAWLINGS. BASE PHOTOGRAPH: ARTHUR GOSS, CITY OF TORONTO ARCHIVES, R88, SERIES 65, ITEMS 157-158

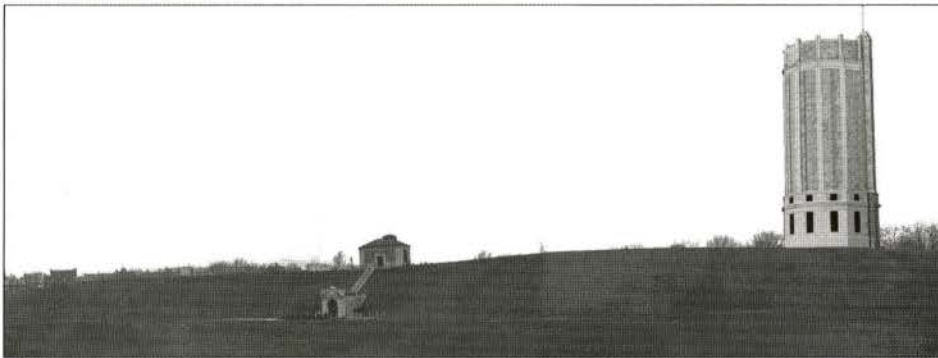


FIG. 20. THE DISTRICT NO. 3 OVERHEAD TANK AS PROPOSED BY POMPHREY AND HARRIS WITH BRICK AND STONE CLADDING, VIEWED FROM THE SPADINA ROAD BRIDGE, SHOWING THE TUNNEL PORTAL AND VALVE HOUSE BUILDINGS IN THE CENTRE OF THE VIEW, WITH STEPS GIVING ACCESS FROM THE RESERVOIR TOP DOWN INTO THE RAVINE PARK. | PHOTOMONTAGE, RENDERING AND DIGITAL MODEL: BENJAMIN CHECKWITCH, STEVEN MANNELL, WILLIAM RAWLINGS. BASE PHOTO: ARTHUR GOSS. SOURCE: CITY OF TORONTO ARCHIVES, R88, SERIES 72 ITEMS 1166 & 1167

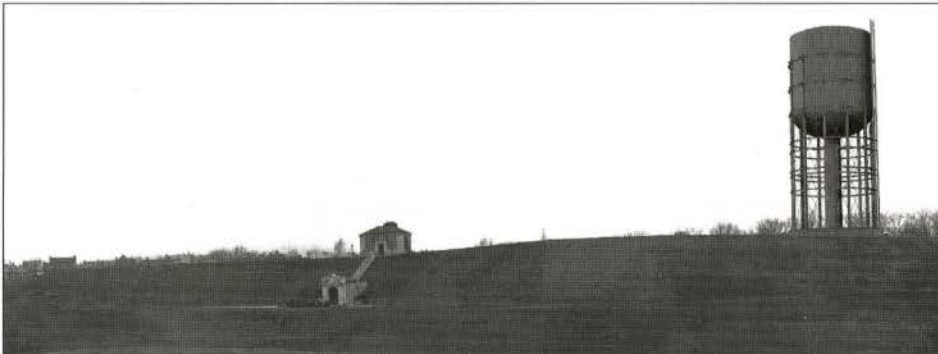


FIG. 21. THE SAME VIEWPOINT AS ABOVE, SHOWING THE "UNADORNED" STEEL TANK, AS PROPOSED BY THE BOARD OF CONTROL. | PHOTOMONTAGE, RENDERING AND DIGITAL MODEL: BENJAMIN CHECKWITCH, STEVEN MANNELL, WILLIAM RAWLINGS. BASE PHOTO: ARTHUR GOSS, CITY OF TORONTO ARCHIVES, R88, SERIES 72 ITEMS 1166-1167

and somewhat pedantic. Yet, there were real discoveries to be made in the process. The exquisite quality of the original ink on linen construction drawings tend to focus the observer on their inherent qualities as artefacts, and distract from an appreciation of the building that the drawings were intended to project into the world. After some time working with

the drawings, one tended to envision the tank in terms of its outlines and linear surface renderings, or with some effort it could be pictured as a grey-toned object. Material rendering of the model with colour and texture was startling—we were completely unprepared for the vivid blue-green verticals of the copper spandrels, which at first seemed lurid. A fast

rechecking of all the material notes on the original drawings confirmed the model, and overturned our preconceptions. Similarly, the scale of the tank had become loosely associated with the scale of the existing Parkdale surge tank; once the rendered model views were montaged into the site photographs, it became clear that the District No. 3 overhead tank was at least half again as large as we had envisioned, with a corresponding increase in our sense of its monumental presence on the site.

## NOTES

1. For an overview of the Toronto Water Works Extension project along with a detailed account of the Victoria Parks Water Works component of the project, see Mannell, Steven, 1999, « The Palace of Purification », *Journal of the Society for the Study of Architecture in Canada*, vol. 24, no. 3, p. 18-26. The author wishes to acknowledge the generous financial support of the Social Sciences and Humanities Research Council. As well, important assistance has been provided by the Water Supply Division of the City of Toronto Works and Emergency Services Department, The City of Toronto Archives (especially Lawrence Lee, Sally Gibson and Mark Cuddy), and Wayne Reeves. Manda Vranic of the Metro Toronto Archives and Records Centre (now City of Toronto Archives) identified the contract documents and drawings related to the overhead tank at the St. Clair Reservoir during research for the 1995-1997 MTARC (Metropolitan Toronto Archives and Records Centre) exhibition *Pipe Dreams: The History of Water and Sewer Infrastructure in Toronto*; these were brought to the author's attention by Wayne Reeves and Lawrence Lee.

2. Harris, R.C., 1913, *Report of the Commissioner of Works on Additions and Extensions to the Toronto Waterworks Pumping and Distribution Plant*, Toronto. For the preceding report: The Board of Water Commissioners, *Report Upon the Existing Water Works System and Upon an Additional Water Supply*, Toronto, 1912.
3. Reports, articles, clippings, diagrams, and sketches relating to the Civic Plan Commission, the boulevard design for St. Clair Avenue, the Don Valley Parkway, and other proposals are found loose among the Toronto Guild of Civic Art papers in The Baldwin Room, Toronto Reference Library.
4. Harris, R.C., F.A. Gaby, and E.L. Cousins, 1915, *Report to the Civic Transportation Committee on Radial Railway Entrances and Rapid Transit for the City of Toronto*, Toronto.
5. Toronto Harbour Commissioners, *Toronto Waterfront Development 1912-1920*, Toronto, 191-?
6. City of Toronto Archives (CTA), Series 13, *Water Supply Section Correspondence*, file 136.
7. Taylor, Thomas, internal Works Department memorandum to G.G. Powell, April 23, 1924. CTA, series 13, file 136.
8. Harris, R.C., letter to James C. Forman, Esq., commissioner of assessment, April 22, 1925. CTA, series 13, file 136.
9. Acres, H.G., and William Gore, 1926, *Report on Proposed Extensions to the Water Works System*, Toronto, p. 4.
10. Acres and Gore : 3-4, 36-38.
11. Acres and Gore : 4, 35, 38.
12. See correspondence, press clippings, and extracts from minutes of the Board of Control in CTA, series 13, file 781. Of course, Toronto's ravine systems now form the basis of the city's only coherent parks network; ironically, the preservation of the ravine lands is entirely due to the early twentieth century sense of their worthlessness.
13. Guild papers, Baldwin Room, Toronto Reference Library.
14. Gore, William, letter to R.C. Harris, May 7, 1926. CTA, series 13, file 781.
15. Gore, William, 1929, « Extensions to Water Works at Toronto », *The Canadian Engineer*, vol. 57, no. 2, July 9, p. 154.
16. For a brief discussion of the viaduct design process, see Mannell : 22.
17. Correspondence related to the bidding and contract award for the reservoir and bridge are contained in CTA, series 13, file 261.
18. H.G. Acres & Co. Ltd. and Gore, Nasmith & Storrie, 1929, *Water Works Extension: St. Clair Reservoir contract drawings*, Toronto, City of Toronto Department of Works.
19. Gore, William, 1929, « Extensions to Water Works at Toronto », *The Canadian Engineer*, vol. 57, no. 2, July 9, p. 154.
20. Gore, William, letter to R.C. Harris, June 28, 1927. CTA, series 13, file 137.
21. Gore, William, letter to R.C. Harris, September 2, 1931. CTA, series 13, file 138.
22. Storrie, William, letter to R.C. Harris, January 20, 1932. CTA, series 13, file 137.
23. Mannell, Steven, and Wayne C. Reeves, 1997, *Thomas Canfield Pomphrey: Vita and Works*, (unpublished paper).
24. Harris, R.C., letter to William Gore, October 4, 1932. CTA, series 13, file 261.
25. Gillies, K.S., commissioner of buildings, letter to R.C. Harris, November 2, 1933; Harris, R.C., letter to K.S. Gillies, November 6, 1933. CTA, series 13, file 141.
26. Storrie, William, 1935, « The Toronto Waterworks Extensions », *Engineering Journal*, vol. XVIII, no. 2, February, p. 70-71.
27. H.G. Acres & Co. Ltd., and Gore, Nasmith & Storrie, 1933, *Water Works Extension: Overhead Tank District No. 3 Contract Drawings*, Toronto, City of Toronto Department of Works.
28. Gore, William, 1929, « Extensions to Water Works at Toronto », *The Canadian Engineer*, vol. 57, no. 2, July 9, p. 153.
29. Storrie, William, 1935, « The Toronto Waterworks Extensions », *Engineering Journal*, vol. XVIII, no. 2, February, p. 71.
30. Milne, James, memorandum to R.C. Harris, February 17, 1932; Harris, memorandum to Milne, February 23, 1932; Milne, memorandum to Harris, February 24, 1932. CTA, series 13 file, 138.
31. Harris, R.C., letter to William Gore, March 31, 1932; Gore, William, letter to R.C. Harris, April 5, 1932. CTA, series 13, file 282.
32. Crompton, Andrew, 1997, « The Secret of the Cenotaph », AA Files 34, p. 64-67. « Toronto Cenotaph Competition », *The Journal of the Royal Architectural Institute of Canada*, January-February 1925, p. 4.
33. Maxwell, Donald H., 1912, « Architectural Treatment of a Water Tower », *The American City*, vol. 7, October, p. 345. Pollard, A.A., 1911, « Water Towers », *Western Architect*, vol. 17, November, p. 101-102. [Engineering Record Editors], 1893, *Water tower, pumping and power station designs*, New York, Engineering Record.
34. The lowest bid was submitted by the Foundation Company of Ontario, as indicated in James Milne's analysis of tenders; Milne, memorandum to Harris, August 24, 1933. CTA, series 13, file 138.
35. Harris, R.C. Memorandum [to file] re « Water Tower for District No. 3 », September 6, 1933; CTA, series 13, file 138.
36. « Bill for Camouflage is a Trifle Large », *The Evening Telegram*, Toronto, September 5, 1933; « Tank to be Nice but City Balks at \$70,000 Price », *Toronto Daily Star*, September 6, 1933; LePage, A.E., letter to Mayor W.J. Stewart, September 19, 1933; all in CTA, series 13, file 138.
37. Harris, R.C., letter to W.J. Stewart, Esq. (Mayor) and members of the Board of Control, September 27, 1933. CTA, series 13, file 138.
38. Somers, J.W. (City Clerk), letter from Board of Control, Toronto, to R.C. Harris, commissioner of works, September 30, 1933. CTA, series 13, file 138.
39. Statistics on the number of power outages at the various waterworks facilities are contained in the annual City Engineer's Reports from the late 1930s and early 1940s. CTA, series RG-8, box 41.
40. Mowat, M. Winifred, secretary-treasurer, Women Electors Association of Ward 4, letter to commissioner of parks Chambers, May 15, 1947; Chambers, C.E., commissioner of parks, letter to G.G. Powell, Esq., commissioner of works, June 5, 1947 (referring Mrs. Mowat's letter to the Works Department); Powell, G.G., commissioner of works, letter to Mrs. H.A. Mowat, June 14, 1947. The commissioner of works' letter indicates that it was drafted by "Mr. Sanderson." A.U. Sanderson was first assistant waterworks engineer at the start of construction in the late 1920s, under chief waterworks engineer James Milne, and became chief waterworks engineer upon Milne's early death in 1935. G.G. Powell was deputy city engineer through the period of the Water Works Extension project. Both men worked closely with Harris on the design, contract administration, and operation of the various Water Works Extension project components. (CTA, series 13, file 138.) The only present-day evidence of the tank is a mysterious circular concrete path at the prow of the reservoir; the concrete ring is actually the top of the tank foundation wall. Based on review of aerial photographs, the tank foundations were protected by hoardings until 1964-1965, when they were filled and landscaped. Hoardings are present in the 1963 photograph and the concrete ring surrounding a circle of grass is present in the 1965 photograph; the 1964 photograph is missing. (CTA, series 12, *Aerial photographs of the Metropolitan Area*, 1962 through 1969.)