City of Burnaby

Community Heritage Commission
c/o Office of the City Clerk

B. Zeinabova, Acting City Clerk
E. Prior, Acting Deputy City Clerk

INTER-OFFICE MEMORANDUM

TO: CHAIR AND MEMBERS
PARKS, RECREATION AND CULTURE
COMMISSION

DATE: 2020 SEPTEMBER 29

FROM: ADMINISTRATIVE OFFICER

FILE: 2410-20

SUBJECT: PROTECTION AND PRESERVATION OF THE ALTA VISTA RESERVOIR VENT - 5172 MCKEE STREET
(ITEM 5.1, REPORTS, COUNCIL MEETING 2020 SEPTEMBER 28)

Burnaby City Council, at the Open Council meeting held on 2020 September 28, received the above noted report and adopted the following recommendations contained therein:

1. THAT Council approve the reinstallation of the Alta Vista Reservoir Vent at 5172 McKee Street, as outlined in this report.

2. THAT Council request staff to prepare a Heritage Designation Bylaw for the Alta Vista Reservoir Vent to be advanced to First Reading and to a Public Hearing at a future date.

3. THAT Council approve the addition of the Alta Vista Reservoir Vent to the Burnaby Community Heritage Register as a "protected" heritage landmark.

4. THAT Council forward a copy of this report to the Parks, Recreation and Culture Commission for their information.

As directed, a copy of the report is *attached* for your information.

Monica Macdonald

Monica Macdonald
Administrative Officer

COMMUNITY HERITAGE COMMISSION

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

SUBJECT: PROTECTION AND PRESERVATION OF THE ALTA VISTA RESERVOIR VENT, 5172 MCKEE STREET

RECOMMENDATIONS:

1. THAT Council approve the reinstallation of the Alta Vista Reservoir Vent at 5172 McKee Street, as outlined in this report.

2. THAT Council request staff to prepare a Heritage Designation Bylaw for the Alta Vista Reservoir Vent to be advanced to First Reading and to a Public Hearing at a future date.

3. THAT Council approve the addition of the Alta Vista Reservoir Vent to the Burnaby Community Heritage Register as a “protected” heritage landmark.

4. THAT Council forward a copy of this report to the Parks, Recreation and Culture Commission for their information.

REPORT

The Community Heritage Commission, at its meeting held on 2020 September 10, received and adopted the ***attached*** report seeking Council authorization to conserve and designate the Alta Vista Reservoir Vent as a civic heritage feature.

Respectfully submitted,

Councillor C. Jordan
Chair

Councillor J. Wang
Vice Chair

Copied to:	City Manager
	Director Planning & Building
	Director Corporate Services
	Director Engineering
	Director Finance
	Director Parks, Recreation & Cultural Services
	City Solicitor

City of Burnaby

Meeting 2020 September 10

COMMISSION REPORT

TO:	CHAIR AND MEMBERS COMMUNITY HERITAGE COMMISSION	**DATE:**	2020 September 1
FROM:	DIRECTOR PLANNING AND BUILDING	**FILE:**	77000 05
SUBJECT:	**PROTECTION AND PRESERVATION OF THE ALTA VISTA RESERVOIR VENT, 5172 MCKEE STREET**		
PURPOSE:	To seek Council authorization to conserve and designate the Alta Vista Reservoir Vent as a civic heritage feature.		

RECOMMENDATIONS:

1. **THAT** Council approve the reinstallation of the Alta Vista Reservoir Vent at 5172 McKee Street as outlined in this report.

2. **THAT** Council request staff to prepare a Heritage Designation Bylaw for the Alta Vista Reservoir Vent to be advanced to First Reading and to a Public Hearing at a future date.

3. **THAT** Council approve the addition of the Alta Vista Reservoir Vent to the Burnaby Community Heritage Register as a "protected" heritage landmark.

4. **THAT** Council forward a copy of this report to the Parks, Recreation and Culture Commission for their information.

REPORT

1.0 BACKGROUND

At its 2020 June 18 meeting, the Community Heritage Commission requested that staff prepare a report for conservation and protection of the Alta Vista Reservoir Vent as a civic heritage feature.

The Alta Vista Reservoir Vent is an original feature of the Alta Vista Reservoir, which was located at 5172 McKee Street. In March 2019, Council approved a plan to demolish the 1913 Alta Vista Reservoir to expand the playground at the Alta Vista Reservoir park site onto the City-owned lot at 5172 McKee Street. During this project, the heritage value of the surviving Alta Vista Reservoir Vent was identified by City staff. The vent was removed from the reservoir during demolition, and transferred to off-site storage by staff.

The City of Burnaby's Municipal Heritage Policy for Municipally-Owned Buildings and Sites, approved by Council on 1991 July 8, includes review and expansion of the City's inventory of civic heritage resources as potential sites and resources are identified. The Alta Vista Reservoir Vent is a unique industrial artifact, and serves as a reminder of an early civic infrastructure project that shaped the community's development. This report proposes conservation and protection of the Alta Vista Reservoir Vent, and re-instatement in its original location at 5172 McKee Street as a heritage feature.

2.0 POLICY FRAMEWORK

Protecting and designating significant heritage resources owned by the City aligns with the following goals and sub-goals of the *Corporate Strategic Plan*:

- **A Dynamic Community**
  - City facilities and infrastructure – Build and maintain infrastructure that meets the needs of our growing community.
- **A Thriving Organization**
  - Reliable services, technology and information – Protect the integrity and security of City information, services and assets.

In addition to these goals, Burnaby's Official Community Plan includes the direction under its Heritage Policy (12.4.4) that the City continue its stewardship of civic heritage resources.

3.0 HERITAGE DESIGNATION BYLAW

3.1 *Local Government Act* – Heritage Designation Bylaw Process

Under the terms of the *Local Government Act*, provision is made for the designation by bylaw of property that "...has heritage value or character..." (Section 611). Such a bylaw may apply to a landscape feature. The intention of a designation bylaw is to protect a unique heritage feature.

Section 612 of the *Local Government Act* specifies the formal procedures for the designation process which includes a public hearing, notification of all persons with registered interest in the property and its occupants, publication of newspaper notices, and preparation of a report. The report is to be made available to the public and is to include: the heritage character of the property; the compatibility of conservation with the official community plan and other community planning objectives; the compatibility of conservation with lawful uses of the property and adjoining lands; the condition and economic viability of the property; and, the possible need for financial or other support to enable appropriate conservation. The City is required to give notice of the completed bylaw to the Land Title Office and to the owners.

3.2 Heritage Designation Report

The following provides the information required under Section 612 (5) of the *Local Government Act*.

3.2.1 Heritage Character Statement

The Alta Vista Reservoir Vent is a concrete vent stack that consists of a cast iron pipe inside a concrete column with a cast iron grate at the top. It was constructed as part of the Alta Vista Reservoir at 5172 McKee Street in Burnaby in 1913, and remained intact until 2019 when the reservoir was demolished, and the vent was removed and moved to storage at a City works yard.

The reservoir site is located adjacent to 5192 McKee, which has been the site of a City-owned playground since 1967, and is today known as Alta Vista Reservoir Park (see ***Attachment 1***). The vent is a tapered octagonal concrete column constructed around a cast iron pipe, giving the vent a decorative quality. Standing at over 3.6 metres (12 feet) on a high point of land, the vent served as a visible reminder of the engineering works that lay beneath the ground, and was a landmark in the neighbourhood (see ***Attachment 2***).

The Alta Vista Reservoir was constructed from reinforced concrete, with pillars supporting an arched ceiling (***Attachment 3***). It consisted of a large main chamber, with smaller intake and outlet chambers on either end. All water entered the reservoir through the intake chamber, where a float valve system automated shut down of the flow of water into the reservoir to prevent over-filling. The large cast iron and concrete vent was constructed over the intake chamber to release air pressure.

The Alta Vista Reservoir was part of a waterworks system delivering water from Seymour Creek in North Vancouver to Burnaby homes and businesses that began operation in 1912. The system was a significant engineering work in 1912, and enabled the young municipality to support development and population growth. The event was marked by the Municipality with an official civic holiday known as "Splash Day" that was celebrated in Central Park with speeches and fanfare.

The early waterworks system used pumps to deliver water to reservoirs located on high points of land in the community, including Capitol Hill and Alta Vista. Distribution of the water from the reservoirs to customers relied on gravity.

The heritage value of the Alta Vista Reservoir Vent lies in its association with Burnaby's early waterworks system, which significantly impacted the community's growth and development. It is the only remaining physical evidence of the Alta Vista Reservoir, and will be re-incorporated into the Alta Vista Reservoir site as a historical feature to commemorate the site's former use and history.

3.2.2 Compatibility of Conservation with Community Plan and Adjoining Lot Uses

Planning for the conservation of heritage resources is outlined in Burnaby's Official Community Plan (OCP). Burnaby has an established goal "to provide opportunities for the increased awareness and the conservation of the City's unique natural, cultural, archaeological, and built heritage." The conservation and protection of this heritage landmark enables its continuing presence in the neighbourhood where it has been located for over a century.

The subject City-owned property is currently zoned R4, and is being developed by the Parks, Recreation and Cultural Services department to expand the playground located on the adjacent property at 5192 McKee Street. The retention, conservation, and designation of the Alta Vista Reservoir Vent will support the City's goals for providing public access to heritage resources, and add a significant heritage landmark to the City.

3.2.3 Condition and Economic Viability of the Property

A condition assessment of the vent was undertaken by an engineering consultant to determine the suitability of it being reincorporated into a park setting for display as a historical artifact. The 24 June 2020 report found the vent to be in fair condition and recommends repairs to improve its condition (see ***Attachment 4***). The concrete was found to be of sufficient strength to support its proposed use. Once repairs have been completed and the vent has been re-installed at 5172 McKee Street, it will be monitored and maintained by Parks staff as part of ongoing maintenance of the Alta Vista Reservoir Park.

3.2.4 Possible Need for Financial Support to Enable Conservation

Work to repair and conserve the vent is required, as well as construction of an engineered footing at the Alta Vista Reservoir Park to facilitate re-installation of the vent. An interpretive sign will be installed adjacent to the vent to share the vent's significance with park visitors. The estimated cost is $40,000.

4.0 NEXT STEPS

With authorization from Council to prepare a designation bylaw, staff will request one-time funding of $40,000 for conservation and re-installation of the vent as part of the 2021-2025 Financial Plan. Staff in Parks, Recreation and Cultural Services and Planning and Building will coordinate conservation and re-installation of the vent, in addition to creation of an interpretive sign to communicate its significance and coordination of an event to celebrate its conservation as a civic heritage resource.

5.0 CONCLUSION

The designation of the historic Alta Vista Reservoir Vent through a Heritage Designation Bylaw would provide an opportunity to preserve and add another significant heritage resource to

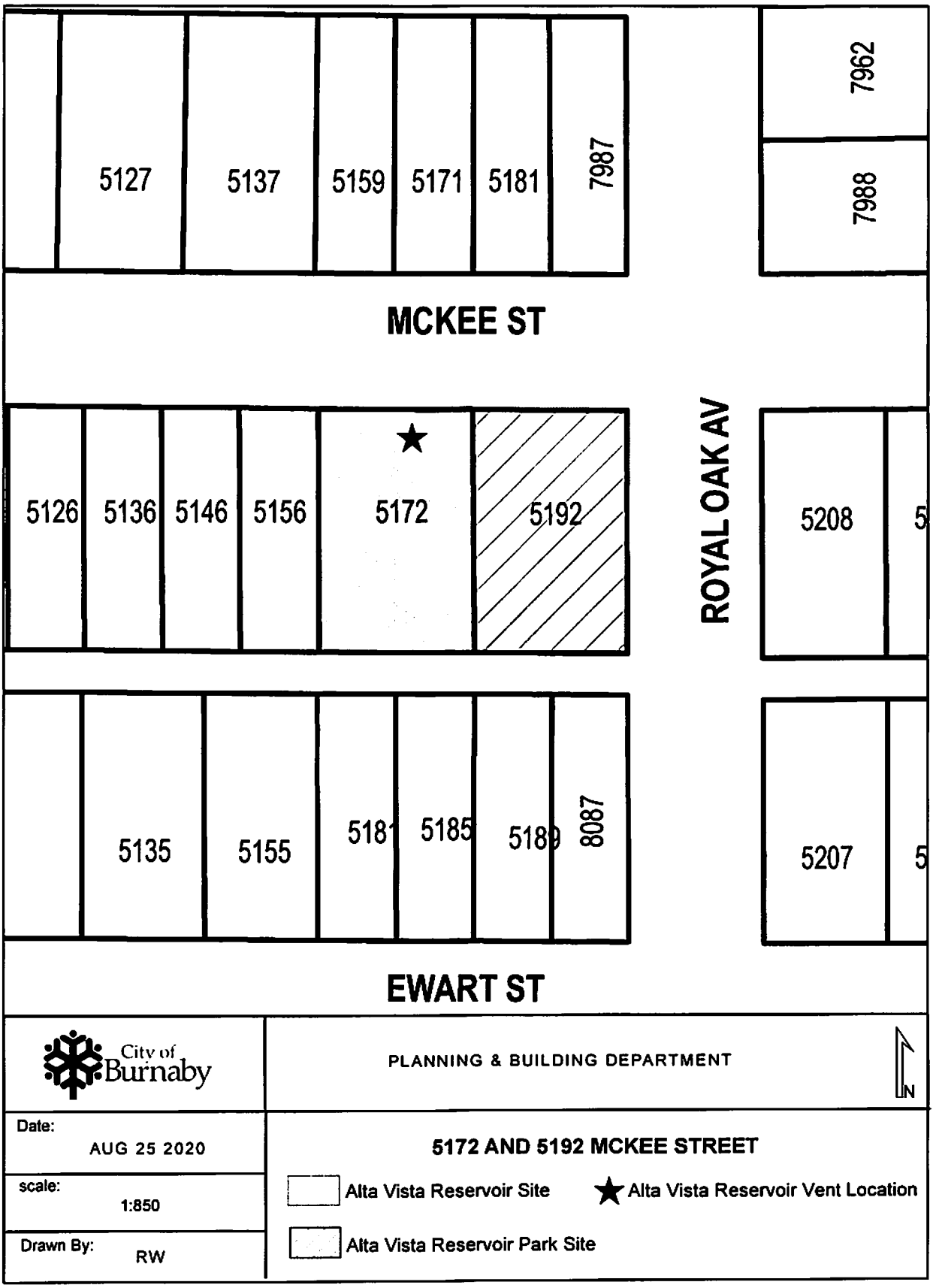
Burnaby's Heritage Register. The proposed bylaw will acknowledge the importance of the Alta Vista Reservoir to the history of Burnaby's early waterworks infrastructure. The designation would contribute to achieving preservation of a diverse range of heritage resources as it would be the first example of formal protection of an industrial resource on Burnaby's heritage register, and would be the third heritage resource in the historic Alta Vista neighbourhood to be formally protected.

Following the protection of the Alta Vista Reservoir Vent by bylaw, this feature will have legal protection as authorized under the *Local Government Act*. Any future proposed changes to its location or design would require Council authorization through a Heritage Alteration Permit. With Council approval of the recommendations of this report, the subject bylaw would be advanced to a Public Hearing at a future date.

E.W. Kozak, Director
PLANNING AND BUILDING

LC:sa
Attachments

Copied to: City Manager
City Clerk
Director Corporate Services
Director Engineering
Director Finance
Director Parks, Recreation and Cultural Services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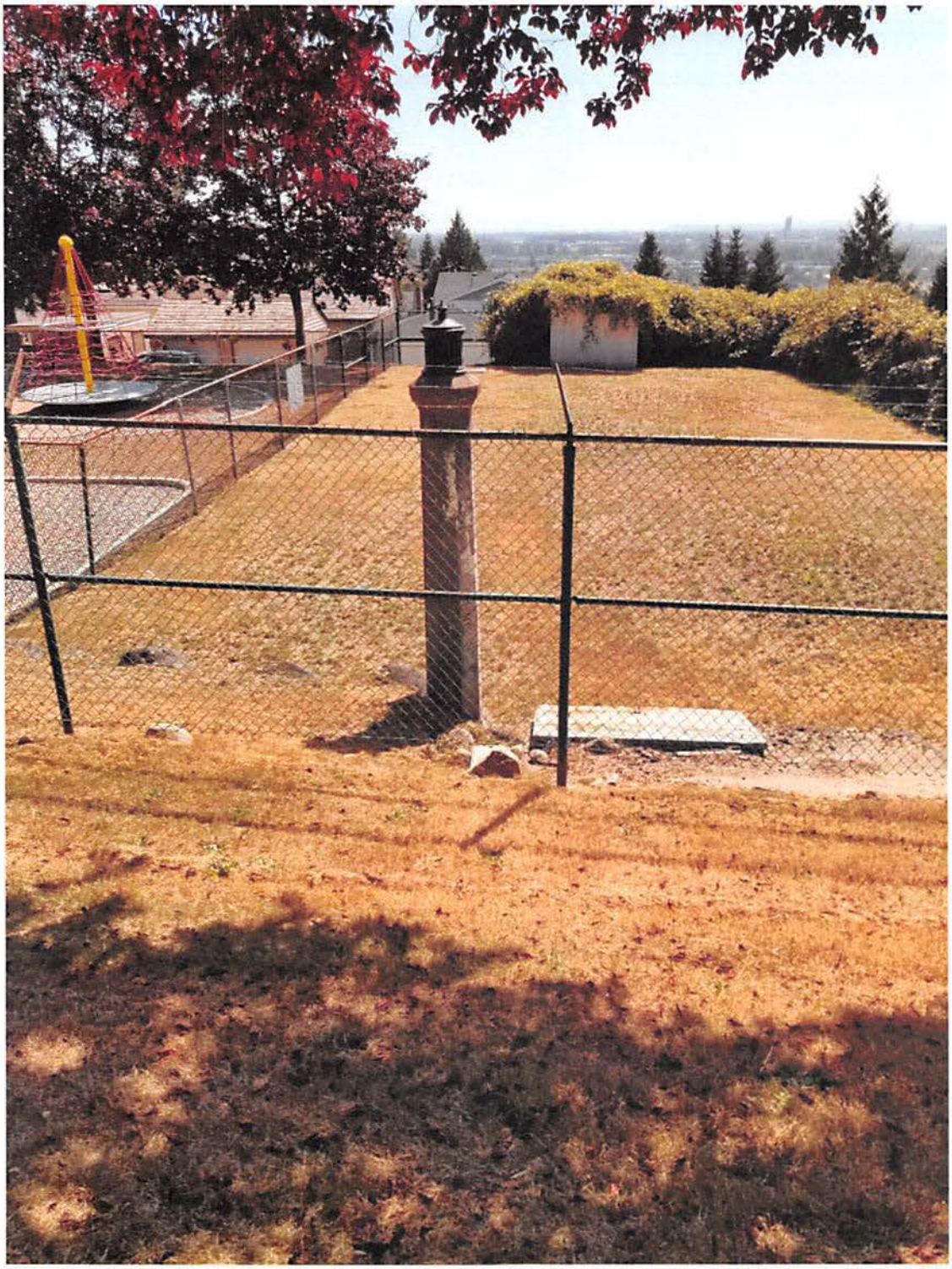
5172 AND 5192 MCKEE STREET
Alta Vista Reservoir Site
Alta Vista Reservoir Vent Location
Alta Vista Reservoir Park Site

Alta Vista Reservoir Vent prior to demolition of the reservoir, 2019.



The Alta Vista Reservoir site in 2019, with the Alta Vista Reservoir vent in the foreground.

RDH BUILDING SCIENCE

RDH Building Science Inc.
4333 Still Creek Drive #400
Burnaby, BC V5C 6S6

Making Buildings Better™

TO **Lisa Codd**
EMAIL **lisa.codd@burnaby.ca**
City of Burnaby
4949 Canada Way
Burnaby BC V5G IM2

R-05804.013
City of Burnaby Buildings | Alta Vista Vent Condition Assessment
DATE August 26, 2020

REGARDING

Dear Ms. Codd,

As requested by City of Burnaby, RDH Building Science Inc. (RDH) is pleased to provide you with this report for a condition assessment of the Alta Vista Vent.

1 Background

The Alta Vista vent is a concrete vent stack that was constructed as part of the Alta Vista reservoir in approximately 1913. The concrete vent stack is approximately 12' tall and tapers from a 24"± square at the base to approximately 16" at the top. The concrete vent encapsulates a 9" cast iron pipe to facilitate ventilation of the reservoir below. The top of the vent is fitted with a metal ventilator to cap the cast iron pipe.

Figure 1.1

An image of the Alta Vista vent provided by the City of Burnaby. The image was taken in approximately 2019, prior to its removal from the reservoir.

Given the age of the structure, limited information is available pertaining to the original construction. As part of the information package provided to us, 6 pages of general specifications pertaining to the construction of the reservoir were reviewed.

We understand that the City of Burnaby is considering the re-use of the vent, by incorporating it into a park setting for the purposes displaying it as a historical artifact.

2 Observations

RDH attended the City of Burnaby Parks yard located at Texaco Drive to review the vent in its current location. The vent was strapped with dimensional lumber along the length of the stack to prevent damage during the removal and transportation process. The strapping was removed to facilitate our review, and was scheduled to be reinstalled afterwards.

Given the age of the concrete vent, it generally appears to be in fair condition. A portion of the concrete near the cast iron vent head is delaminated, and a few pieces have spalled away. This has likely occurred due to some corrosion of the cast iron vent head, and the outward pressure the corrosion has applied on the concrete. While some corrosion of the exposed ventilator head was noted, it is in fair condition for its age. The exposed cast iron didn't show significant section loss due to the corrosion.

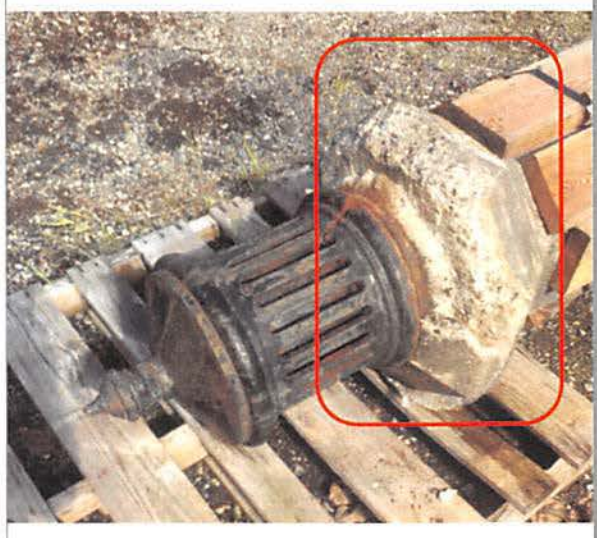


Figure 2.1

The concrete around the perimeter of the ventilator head is in poor condition, is delaminated and has spalled.

Some moderate cracking in the concrete was observed towards the top quarter of the structure. The cracking occurred radially around the perimeter of the structure, and are approximately 2mm wide. The concrete in the vicinity of the cracks is generally sound.

Figure 2.2

Localized cracking was observed near the top of the structure. While the concrete remained in sound condition adjacent to the cracking, the cracks should be addressed to prevent water ingress.

It appears that previous targeted repairs have been made to the concrete. Minor discrepancies in the finish and colour of the concrete were noted in isolated locations. While the finish appearance of the concrete at these locations is slightly off, the concrete patches appear to have bonded well.

The concrete structure was sounded for delaminations using a chain-drag method and hammer sounding. Other than the delaminated concrete near the ventilator head, no other major concerns of delamination or spalled were noted. In addition to sounding, Schmidt-Hammer testing was utilized to estimate the strength of the concrete. Measurements were sampled at approximately 10 locations throughout the structure, and the resulting strength was approximately 40 MPa ± 5 MPa. For the proposed purposes of the vent this is a sufficient concrete strength.

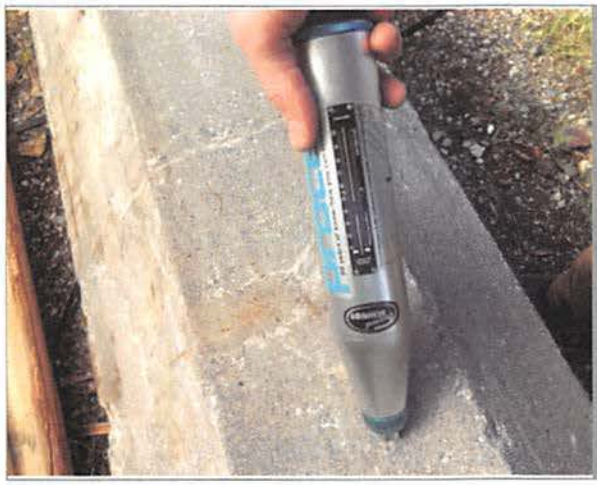


Figure 2.3

Concrete strength was estimated using a Proceq Schmidt-Hammer. Generally, the concrete strength was found to be approximately 40 MPa.

3 Discussion and Next Steps

As noted above, the overall condition of the vent is fair given its age. It appears that some previous maintenance has occurred, which has likely helped the vent to age more gracefully. It will be important that this regular maintenance and monitoring of the condition of the vent is allowed for in the future.

Prior to any work being completed on the structure, detailed dimensions and documentation of the existing condition should be made. While the documentation is critical for historic purposes, the detailed dimensions will help re-form damaged areas of concrete.

Corrosion of the cast iron ventilator head has contributed to deterioration of the adjacent concrete. This may be a long term concern and reducing the likelihood of additional corrosion should be prioritized. To achieve that, the existing ventilator head should be sandblasted to bare metal and painted or powder coated. If the ventilator head can be removed, the exposed underlying cast iron vent pipe should also be prepped and painted in-situ. Future maintenance of regular re-coating should be budgeted for.

In addition to re-conditioning the exposed cast iron metal, the existing concrete requires repair in select locations. At the top of the structure adjacent to the ventilator head, the spalled and delaminated concrete should be removed to sound concrete, and prepped to receive new formed-in-place concrete. The cracking in the concrete should be addressed as part of the concrete repairs scope of work. Care will be required to ensure the new concrete is adequately bonded, and that the appearance of the new concrete best matches the existing. Given the natural porosity of concrete, a penetrating sealer should be applied to the exterior of the concrete to help improve its ability to shed water, and reduce the amount of moisture that infiltrates to the embedded reinforcing and cast iron pipe. Limiting the amount of corrosion that occurs within the concrete will help improve the longevity of the structure. It is importance to consider the vapour permeance of the concrete sealer to ensure that any incidental moisture doesn't get trapped within the concrete.

In addition to the above recommended maintenance, a structural footing will be required accommodate the vent. This footing will likely be constructed of reinforced concrete and will need to be designed taking the existing configuration of the vent in mind. A steel connection will need to be made between the footing and the vent that anchors the vent against lateral forces such as earthquake and wind.

It should be noted that the work discussed above should be documented in a scope of work, specifications and construction drawings prior to being implemented.

Yours truly,

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encl.