

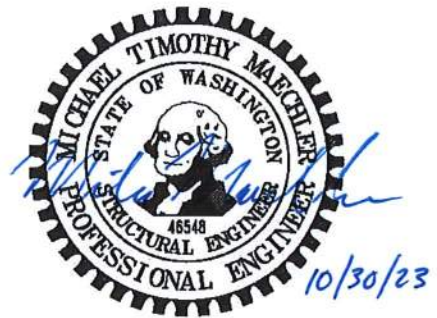


civil & structural
engineering & planning

STRUCTURAL ASSESSMENT REPORT

City of Port Townsend Mountain View Pool

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CG Project No.: 23286.10
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PURPOSE AND SCOPE

CG Engineering was retained by the City of Port Townsend to perform a visual assessment of the Mountain View Pool building's structure. The purpose of the assessment is to assist the City with determining the scope and cost of rehabilitating the pool building. It is our understanding that the City will also retain an architect and MEP consultant to provide additional recommendations for rehabilitation.

Our findings are summarized in this report. Our observations and recommendations are limited to areas of the structure that were visible and accessible. Destructive investigations and tests were not carried out as a part of this assessment. Our observations were limited to the structure itself and did not include any observations of architectural components or MEP systems.



Site Aerial

BUILDING DESCRIPTION

The Mountain View Pool was constructed in 1962. The pool was originally open air, and the pool building roof and walls were built in the early 1970s. The pool building is connected to a gymnasium and childcare center that was also built in the 1970s. The building was re-roofed in the 1990s, and a new vinyl coating had been installed on the roof surface in September 2023.

The pool building's roof structure consists of tongue-and-groove car decking over glulam purlins that run in the north-south direction. The purlins are supported by a glulam ridge beam that runs in the east-west direction. The ridge beam is supported by the exterior concrete walls and two steel pipe columns in the building interior. All exterior walls are full-height concrete. The interior walls of the locker rooms and bathrooms are CMU. Wood-framed attic spaces are located over the locker rooms and lobby area. Little is known about the existing roofing, except that it is TPO over rigid insulation according to City staff. The original construction drawings for the pool and pool building were not available for our review at the time of this report.

The pool deck is primarily slab on grade. Portions of the north and west sides of the pool deck span over an existing concrete mechanical access tunnel. A mechanical equipment room is located below the men's locker room. The ceiling of the mechanical room (and men's locker room floor) is framed with reinforced concrete slab, beams, and columns. The mechanical room floor is slab-on-grade. A second 3' wide by 4' tall mechanical access tunnel runs from the mechanical room to the adjacent building. The existing foundation system is unknown, but it is assumed to be conventional spread footings.

STRUCTURAL OBSERVATIONS

During our site visit on 10/10/23, we observed water staining on the existing roof framing showing signs of potential water damage. We probed the stained areas with a steel awl to determine if there was rot damage. We also visually assessed the condition of the concrete walls and slabs/ceilings in the pool area, mechanical rooms, locker rooms, and mechanical access tunnels.

- **Roof T&G Decking**
The roof decking appeared in good condition. Many areas of the soffit were observed with substantial water staining. However, probing of the wood revealed these stains were superficial.
- **Glulam Purlins and Ridge Beams**
The glulam roof beams appeared in good condition. While significant water staining was observed in some beams, these were all determined to be superficial.
- **Glulam Steel Hangers and Fasteners**
The steel hangers and post caps at the glulam beams appeared in good condition. Minor surface rust was observed at the east ridge beam connection to the exterior wall.
- **Steel Pipe Columns**
The existing steel pipe columns appeared in good condition. A small superficial rust spot was observed at the base of the central steel column.

- **Concrete Walls**
The existing concrete walls appeared in good condition. Minor temperature cracking was observed over the exit door on the southeast corner of the building. This crack is visible from the interior and exterior of the building. A horizontal crack was observed in an exterior concrete wall at the northwest corner of the building. In some locations, cracks were observed in the glass block windows along the eastern exterior wall.
- **Pool Room Equipment Pad**
The existing equipment pad in the pool room is a concrete-over-steel-deck slab sitting on a concrete house-keeping pad. The steel deck had rusted and corroded away entirely in some locations. The concrete slab also had minor localized spalling. The concrete house-keeping pad appeared in good condition.
- **Men's Locker Room Floor Slab/Mechanical Room Ceiling Slab**
There is a large crack in the mechanical room ceiling just inside the mech room entrance door. This crack is directly below the men's locker room, but no crack was found in the locker room floor slab. The crack appeared to be a shrinkage crack and likely does not affect the structural integrity of the floor slab.
- **Locker Room CMU Walls**
A hairline crack was observed in the men's locker room CMU walls. This crack is likely due to temperature and shrinkage of the masonry and does not affect the structural integrity of the wall.
- **Mechanical Access Tunnels**
The metal decking in the mechanical tunnels was severely rusted and corroded. In the observed locations, the decking had fallen away from the concrete slab above and was hanging loosely. The decking appears to be non-structural and was likely formwork used during the original construction. Moisture was observed on the mechanical room tunnel floor suggesting water leakage from above. Cracking was observed in the sidewalk slab directly above the tunnel. The sidewalk slab is likely a non-structural topping slab, and the cracking is due to the temperature differential between the tunnel and sidewalk slab. All observations were made from the tunnel entrance as conditions were deemed unsafe for access due to limited airflow in a confined space.

RECOMMENDATIONS

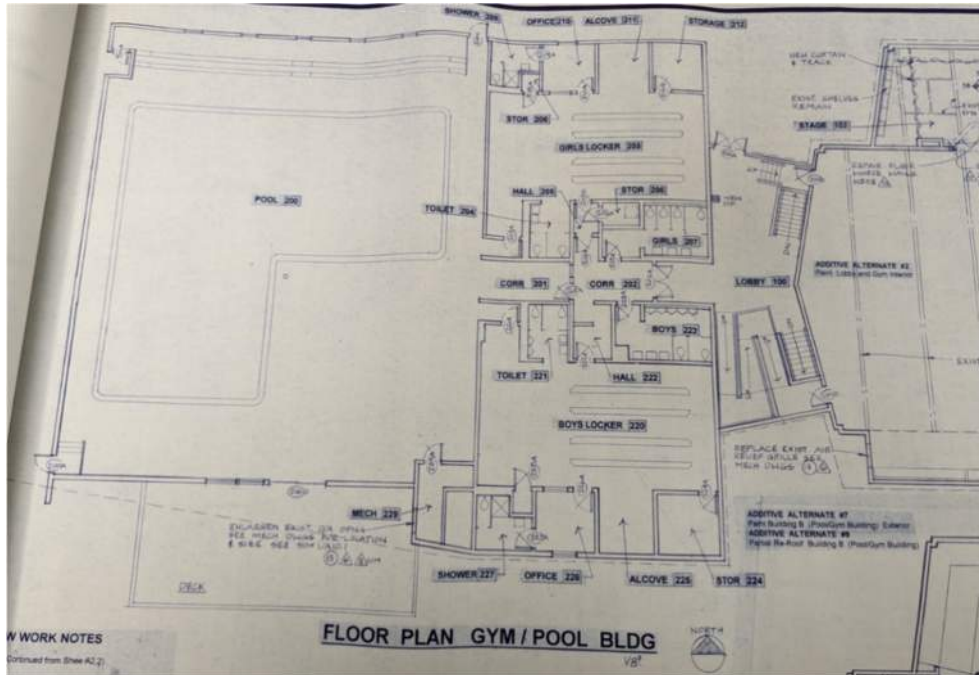
Generally, we found minimal damage to the existing structure. Water staining and rust on the roof framing and steel connectors appeared superficial. The recently added vinyl roof coating appears to have been successful in temporarily preventing further water intrusion to the structural framing. Minor cracks in the concrete/CMU walls and concrete slabs appeared to be temperature and shrinkage related and should not affect the integrity of the structure. As part of the overall rehabilitation of the building, we recommend the following.

- **Non-structural repairs/refinishing**
Water-stained areas of the roof framing shall be cleaned and treated with an antimicrobial product prior to repainting. We recommend that the rusted portions of the steel hangers and steel columns be sand blasted (or other means) down to bare metal prior to repainting.
- **Mechanical Access Tunnels**
All corroded/damaged metal decking in the tunnels shall be removed. Water leaking into the tunnel, particularly the tunnel under the exterior courtyard, will continue unless the tunnel is waterproofed. If waterproofing is deemed necessary by the City, we recommend that a waterproofing consultant be retained to provide recommendations. Waterproofing will likely involve saw cutting the existing sidewalk and installing a membrane over the tunnel's roof.
- **Mechanical Room Housekeeping Pad**
The mechanical housekeeping pad shall be demolished and replaced with a new pad. The size and location of the new pad depends on what new equipment will be needed in the room and should be coordinated with the mechanical engineer.
- **Reroof**
We recommend retaining a building envelope consultant to determine the remaining service life of the existing roof. When the roof is replaced, the top of the roof decking shall be inspected for water and rot damage. If areas of rot are discovered, particularly over the glulam beams, then the decking shall be removed to determine if the beams have sustained any damage.
- **Seismic Evaluation and ADA Improvements**
Rehabilitation of the ADA and MEP systems may trigger a seismic evaluation and retrofit of the structure. The seismic evaluation requirements depend on the extent of the overall project work area and will need to be determined after the scope of the ADA and MEP improvements have been determined. Seismic retrofits could add substantial cost to the overall project. Additionally, any ADA improvements may necessitate additional structural work and cost.

DISCLAIMER

This observation is the professional opinion of CG Engineering PLLC based on the information available during this assessment or evaluation. This report does not warrant or guarantee that all conditions were discovered at the time of the observation. This report was prepared subject to the standard of care applicable to professional services at the time the services were provided.

EXISTING FLOOR PLANS



MAIN FLOOR PLAN



LOWER FLOOR PLAN

ESTIMATE OF PROBABLE COSTS

OWNER City of Port Townsend	SPECIFICATION NO.		A-EFIRMNAME CG Engineering		SHEET 1 of 1			
PROJECT TITLE Mountain View Pool	ESTIMATED BY Dirk Rogstad		CHECKED BY Mike Maechler		DATE 10/30/2023			
	STATUS OF DESIGN Preliminary Structural Cost Estimate				PROJECT NUMBER 23286.10			
DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
General Requirements								
Mobilization	1.0	ls	2000.00	2,000.00	2000.00	2,000.00	4,000.00	4,000.00
Demobilization	1.0	ls	1000.00	1,000.00	1000.00	1,000.00	2,000.00	2,000.00
Clean up / Restoration	1.0	ls	2000.00	2,000.00	2000.00	2,000.00	4,000.00	4,000.00
Mechanical Tunnel Water Proofing								
Removal & replacement of slab	1.0	ls	1000.00	1,000.00	2000.00	2,000.00	3,000.00	5,000.00
Waterproofing membrane	1.0	ls	1000.00	1,000.00	1000.00	1,000.00	2,000.00	4,000.00
Miscellaneous								
Ceiling stain removal & repainting	1.0	ls	1000.00	1,000.00	5000.00	5,000.00	6,000.00	6,000.00
Steel connection touch up	1.0	ls	1000.00	1,000.00	2000.00	2,000.00	3,000.00	3,000.00
Mechanical Housekeeping Pad Replacment	1.0	ls					5,000.00	5,000.00
New Roof System (TBD)								
TPO	Roofing quote by others provided to the City of Port Townsend						300,000.00	
Rigid Insulation								TBD
Deck inspection + refurbishing								TBD
Seismic Retrofit (TBD)								TBD
Sub Total							\$333,000.00	

Contingency	25.00%	\$83,250.00
General Requirements	4.00%	\$13,320.00
Overhead & Profit	20.00%	\$66,600.00
Bonding & Insurance	3.00%	\$9,990.00
Taxes	9.10%	\$30,303.00
Total		\$536,463.00



SITE PHOTOS OF EXISTING CONDITIONS



Overall Building View Looking Southeast



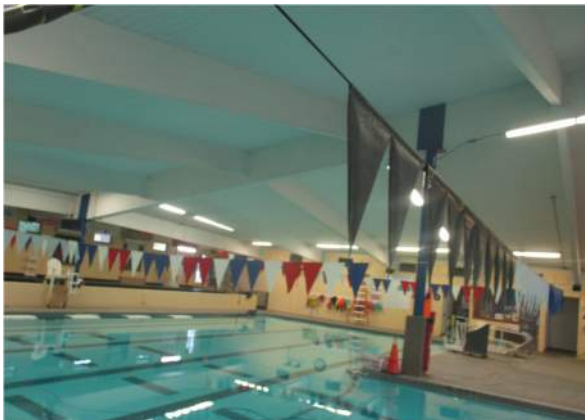
Overall Interior Pool View Looking Southwest



Overall Building View Looking Northeast



Overall Interior Pool View Looking East



Overall Interior Pool View Looking Southeast



Typical Water Staining on Glulam Beam/Purlin and T&G Decking



Water Staining at Western Ridge Beam End



Rust at Base of 8" \varnothing Pipe Column



T&G Decking Water Staining at Eastern Wall



Roof Framing in Attic Space Above Lobby



Superficial Rusting on Ridge Beam Hanger at West Wall



Roof Framing in Attic Space Above Lobby



Minor Stair-step Mortar Crack in Men's Locker Room CMU Wall



Temperature Cracking over Northeast Exit Door (Exterior)



Minor Crack in Men's Locker Room Floor Slab



Cracking at Northwest Corner of Pool Building



Temperature Cracking over Northeast Exit Door (Interior)



Cracked Glass Block Window at Eastern Wall



Northwest Ventilation Tunnel Looking Northeast



Cracking in Slab Above Mechanical Room Ventilation Tunnel



Exposed Rebar in Northwest Ventilation Tunnel



Pool Room Equipment Pad with Corroded Metal Deck and Spalling Slab



Mechanical Room Ventilation Tunnel Looking Northeast



Cracking in Mechanical Room Ceiling Below Men's Locker Room