

APPENDIX B

Transcona Aquatic Park - Mechanical Design Build RFP

Our File: 34-063ME

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PART 1 MECHANICAL SUMMARY

1.1 MECHANICAL SUMMARY

- .1 The following performance specification provides contractors with the minimum required performance and expectations on systems, materials, and equipment that are required for the completion of the work.
- .2 The mechanical work is to be completed without interruption to the existing facility or its functions whenever possible.
- .3 All pool work to be completed in strict accordance with the following standards:
 - .1 Manitoba Regulation 132/97 - Swimming Pools and Water Recreational Facilities, including all amendments.
 - .2 Manitoba Building Code.
 - .3 ASTM APSP1 - Standard for Public Swimming Pools.
 - .4 All applicable local codes, by-laws, and standards.
- .4 All pool drains, outlets, pumps, anti-entrapment devices and related components shall be designed in strict accordance to the following standard:
 - .1 ASME/ANSI A112.19.8 - Suction Fittings for use in Swimming Pools, Wading Pools, Spas, and Hot Tubs.

PART 2 DELIVERABLES

2.1 REQUIRED SUBMISSIONS

- .1 Refer to bid submission requirements section.

PART 3 SCOPE OF WORK

3.1 REMOVAL OF EXISTING POOL

- .1 All existing mechanical systems and equipment associated with the existing pool are to be removed.

- .2 All equipment within existing pool underground mechanical room to be removed.
- .3 Existing 50mm (2") water service within existing pool underground mechanical room to be removed back to City of Winnipeg water main and capped.
- .4 Existing 150mm (6") sanitary line within existing pool underground mechanical room to be removed back to City of Winnipeg sanitary main and capped.
- .5 Provide restoration of all private and public roads, sidewalks, boulevards and landscaped areas to City of Winnipeg Standard Construction Specifications
- .6 Provide details of demolition as per bid submission requirements.

3.2 ADDITIONS / MODIFICATIONS TO EXISTING SPRAY PAD

- .1 Provide appropriate modifications of the existing spray pad system to accommodate two (2) new water spray features as per the conceptual plan.
- .2 Provide all required mechanical equipment, piping, and controls system modification/provisions to allow operations of new features with existing system.
- .3 Existing buried spray pad supply piping to be relocated south around new pool proposed beach entry location. Refer to existing spray pad mechanical drawings for precise locations.
- .4 Existing spray pad 150mm (6") drainage piping to be excavated and lowered to suitable depth to accommodate installation of new pool and spray pad structure.
 - .1 A new lift station consisting of pit, pump, sensor, and control system to be provided adjacent to the existing spray pad mechanical room.
 - .2 Existing lowered spray pad drain line to run to new pit.
 - .3 Lift station pump to discharge existing storage tank within existing spray pad mechanical room.
- .5 New supply water piping for new features to be routed underground adjacent to relocated existing supply piping.
- .6 Provide details of proposed system as per bid submission section.
- .7 Refer to architectural section for water cannon specifications.

3.3 NEW POOL, WATERSLIDES, AND BEACH ENTRY SPRAY FEATURES

- .1 GENERAL
 - .1 Provide complete, fully functional mechanical pool system including waterslides and beach entry spray features in accordance with Section 1.1.
 - .2 All mechanical equipment for new pool, waterslides, and beach entry spray features to be located in mechanical room located in the basement of the existing pool building, provided for this purpose under a separate contract.

- .3 Provide all required mechanical equipment, piping, and control systems to allow operation of pool, including simultaneous operation of waterslides and beach entry spray features in accordance with all current applicable standards, and be "VGB" compliant.
- .4 System components include but are not limited to those listed in Sections 3.3.2, 3.3.3, and 3.3.4.

.2 POOL

- .1 Provide duplex pump system to allow one complete pool water change of 1000 m³ (265,000 gal) every six hours, approximately 47 L/s (740 gpm).
- .2 Provide one (1) ultraviolet (UV) water filter of appropriate size and capacity for pool volume of approximately 1000 m³ (265,000 gal), and flow rate of 47 L/s (740 gpm).
- .3 Provide one (1) sand filter of sufficient size to accommodate pool volume of 1000 m³ (265,000 gal) and flow rate of 47 L/s (740 gpm).
 - .1 Appropriate measures must be taken to ensure sanitary line is of sufficient capacity to handle back wash cycle.
- .4 Provide one (1) chlorination system of appropriate size and capacity for pool volume of approximately 1000 m³ (265,000 gal), and flow rate of 47 L/s (740 gpm).
- .5 Provide a minimum of two (2) natural gas fired pool heaters of sufficient capacity to accommodate pool volume of 1000 m³ (265,000 gal) and flow rate of 47 L/s (740 gpm).
- .6 Provide pool supply, return, and vacuum piping from pool mechanical room to pool perimeter for fixture connections.
 - .1 Piping to be buried beneath deck surrounding pool. An open utilidor concept will not be permitted.
 - .2 All buried piping serving perimeter pool fixtures to be supported via brackets mounted to pool structure where possible. Brackets to be no further than 1m (39in) apart on center.
- .7 Provide skimmers, vacuum outlets, drains, supply outlets, and appropriate piping connections in accordance with all current applicable standards. All components must comply with ASME/ANSI A112.19.8 per Section 1.1.5.1.

.3 BEACH ENTRY SPRAY FEATURES

- .1 Provide all required mechanical equipment, piping, and control systems to allow operation of all spray features in accordance with all current applicable standards.
- .2 Spray feature pump to be located in pool mechanical room.
- .3 Provide spray feature supply piping from pool mechanical room.
 - .1 Spray feature piping to be buried beneath pool deck adjacent to pool piping.

- .2 All buried piping serving spray features to be supported via brackets mounted to pool structure where possible. Brackets to be no further than 1m (39in) apart on center.
- .4 Spray features to be operated simultaneously.
 - .1 Spray feature control to be operated by programmable timer and wind sensor c/w manual override.
 - .2 Wind sensor to allow spray feature operation only when wind is sufficiently low to prevent overspray.
 - .3 Wind sensor to be mounted at high level on security light.
 - .4 Manual override c/w lockable cabinet to be mounted in suitable nearby location.
 - .5 Provide additional interlock to prevent spray feature operation when pool system is not running.
- .5 Refer to architectural section for beach entry spray feature specifications.

.4 WATERSLIDES

- .1 Provide all required mechanical equipment, piping, and control systems to allow simultaneous operation of all water slides in accordance with all current applicable standards.
- .2 Provide minimum 10 m³ (2640 gal) buffer tank for waterslide system. Buffer tank to be located underground adjacent to pool.
- .3 Waterslide pumps to re-circulate water from buffer tank and be located in pool mechanical room.
 - .1 Provide individual pump c/w valving for each slide as follows:
 - .1 Slide 1: 50 L/s (800 gpm) pump @ approximately 40' HD.
 - .2 Slide 2: 13 L/s (200 gpm) pump @ approximately 40' HD.
 - .3 Slide 3: 13 L/s (200 gpm) pump @ approximately 32' HD.
 - .4 Slide 4: 44 L/s (700 gpm) pump @ approximately 30' HD.
- .4 Waterslide piping to be buried beneath pool deck adjacent to pool piping.
- .5 All buried piping serving waterslides to be supported via brackets mounted to pool structure where possible. Brackets to be no further than 1m (39in) apart on center.
- .6 Waterslides to be capable of operating simultaneously.
 - .1 Waterslide control to be by programmable timer c/w manual override.
 - .2 Manual override c/w lockable cabinet to be mounted in suitable nearby location.
 - .3 Provide additional interlock to prevent waterslide operation when pool system is not running.
- .7 Refer to architectural section for waterslide specifications.