

CC Design Guidelines

GENERAL REQUIREMENTS

1. Municipal Accommodations Division is responsible for the short and long term maintenance of all City-owned facilities which emphasizes maximum life cycling of equipment. The various building codes are considered to be a minimum guideline. Where feasible, upgrade of equipment and construction details is most desirable for all design considerations.
2. City of Winnipeg facilities are exposed to high volumes of patrons with unique programming resulting in accelerated deterioration and vandalism to the facilities. Any design shall be based on an Institutional and Penitentiary Construction Technique as a template. Examples, designing a fresh air plenum that would not allow unlawful entry by a person into the facility or providing guards on exterior piping to prevent climbing onto a roof .
3. Each person proposed to perform Work under contract within any City facility shall be required to obtain a security clearance by the police service having jurisdiction at his/her place of residence.
4. The City of Winnipeg is currently committed to a 10 year (2002 to 2012) Manitoba Hydro Power Smart Program for all potential utility savings (electrical, natural gas or water). All equipment specified must be reviewed by Manitoba Hydro prior to tender and installation. Specific information and details will be provided during project process. Failure to comply with the terms and conditions will be subject to lawsuit.
5. Consideration of design and selection shall be based on Access, Safety, Maintenance, Servicing (MASS) for all equipment installed.
6. Obtain all necessary certificates e.g. “Building Location Certificate”, “Occupancy Load Certificate” “Occupancy Load Card”, “Surveyor’s Certificate” (new construction) etc.,.
7. “As Builts” and Operation & Maintenance Manuals shall be submitted by completion of project
8. Proposed project to be submitted utilizing AutoCad, maximum drawing size shall be A1 (841mm X 594mm), (11” X 17” preferred for smaller projects).
9. Drawing document format: new construction may be submitted in metric, renovation or addition to existing facility that was originally constructed in imperial, drawing format to remain imperial.
10. Upon completion of project, submit 1 (one) complete total updated drawings on AutoCad, 1 (one) complete sealed mylar drawings including stamped APEGM Certificate of Authorization as required by authority having jurisdiction.
11. Provide specific information on quality control testing, i.e. concrete, compaction, pile inspection, pressure testing etc.,.

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12. Minimum 48 hours of notification to Municipal Accommodations Division of the Planning Property & Development Department is required for placing of any piles or concrete work or any critical construction technique. All construction work will be halted if notice is not adhered to
13. The drawings and specifications shall have a note to read as follows :

PROMPTLY REPORT ALL ACCIDENTS AND POTENTIAL LIABILITY CLAIMS TO THE CONTRACT ADMINISTRATOR.
14. Consultant to submit all design calculations for project review upon request.
15. Municipal Accommodations will provide a copy of current inventory control data for Asbestos and PCB's.
16. The contract documents shall contain a clause that the contractor must have a written workplace safety and health program in accordance with the Workplace Safety and Health Act (Manitoba).
17. The contract documents must stipulate that the contractor shall be the Contractor and shall serve as, and have the duties of the Contractor in accordance with the Workplace Safety and Health Act (Manitoba).
18. Provide a Fall Protection System for any type of structure to the satisfaction of the authority having jurisdiction prior to construction of facility.
19. Fall Protection Anchoring device (s) as per Dept. of Labour requirement, Manitoba Regulation 189/85 section 15(1) under the Workplace Safety and Health Act. As a minimum there shall be one anchor set back a minimum of 10 feet from the edge of the roof for each 20 linear feet of unprotected roof edge and where a eyebolt is used as an anchor, the interior opening of the eye shall be at least 1 ½".
20. Graffiti control and removal shall be considered for selection of all building components.
21. A Building Commissioning audit shall be performed upon completion of the facility by a professional recognized agency. Mechanical and Electrical Building Systems Commissioning shall be based on the National Environmental Balancing Bureau (NEBB Procedural Standards 2000).
22. For equipment that develops high levels of sound transmission, provide all necessary design and signage to ensure a safe workplace as defined by Manitoba Labour Workplace Safety and Health Division.

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23. The City of Winnipeg adopted a Universal Design Policy as of December 12, 2001 which is a worldwide movement based on a concept that all products, environments and communications should be designed to consider the needs of the widest possible array of users. Therefore, where possible and practical this policy shall be considered for all projects. Where compliance is “technically infeasible” the Consultant must provide an equivalent design solution which meets the intent of the Accessibility Design Standards. For more info regarding this policy and to obtain the Accessibility Design Standards manual, contact Judy Redmond, Universal Design Coordinator at 986-2131 or e-mail jredmond@winnipeg.ca.
24. Upon completion of project, update or develop a new Fire Safety Plan to meet current Fire Department regulations and locate and post plan in facility.
25. Contract documents shall contain a total completion date and also a liquidated damages clause for late completion of project.
26. “Friendly Finishes” shall be incorporated where it is practical and economically feasible for all aspects of the project.
27. This document is reviewed and updated regularly; please ensure latest version is obtained during design process.

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SITE CONDITIONS

1. Provide site protection during all renovation/construction projects based on Department of Labour, Workplace Health and Safety regulations. This is a minimum requirement; additional protection may be required and maintained depending on site situations, ex., high youth traffic areas, playground adaptation etc.
2. Final building and site grades to be approved by Building Services
3. Surface Drainage – Catch Basins with moderate slope.
4. Provide asphalt “speed bumps” on areas of roadways to reduce mischief play.
5. Adequate drainage from building.
6. Vandal Proof Downspouts.
7. Splash pads with anchor pin shall be Barkman Concrete 51” model # 45-41001.
8. Saw Cuts – c/w approved joint filler
9. Protection Board required if steel wall cladding is used
10. Wire Mesh or Plexi-Glass over all windows
11. Totally enclosed fencing around any exterior mechanical equipment and to be non-climbable onto building
12. Yard lighting to be incorporated in design (see electrical for details)
13. All exterior light pole installation shall have a concrete pile with a minimum exposure of 30” above grade.
14. Wire Guards over All exposed fixtures.
15. Ensure that all buried debris such as rotted fence posts are removed before placing pavement for walkways or roadway.

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ARCHITECTURAL

1. Non climbable Structure
2. Min. finished ceiling heights – interior 9’-0”
3. Min. exterior height of building – 10’-0”
4. Well designed building envelope, eg, (weep holes that work)
5. Provide mortar-less joints for weep holes at top and bottom courses of masonry to ensure unobstructed air circulation.
6. All exterior and interior finishes shall be deigned with low maintenance durability.
7. Specifications include the Application of Air/Vapour Barrier Membrane & Materials for Building Construction as approved by the National Air Barrier Association. The air barrier Contractor shall be, formally recognized as a Licensed Contractor by the National Air Barrier Association (NABBA). Each worker who is installing air barriers must be a certified applicator and have a minimum of three years experience with installation of this system. Work performed must be licensed under NABA Quality Assurance Program.
8. All Architectural woodwork and millwork shall be in accordance with the Architectural Woodwork Manufacturers Association of Canada.
9. Two-tier weeping tile for entire structure
10. Sump Pit to be complete with high level alarm (PIL alarm switch)
11. All exterior windows shall be commercial grade aluminum or fiberglass.
12. Steel Door & Frames – heavy-duty grade, minimum 14 gauge welded seams for frames, 16 gauge welded seams for doors (mechanical seams not acceptable).
13. “Best Lock” Exterior, “Schlage” locks Interior, all equipment and fencing that require padlocks shall incorporate the use of “Master Lock” model 3KA.
14. The keying system for the facility shall be standardized for use of master and sub-master keys for appropriate personnel usage.
15. Flooring material selection must be based on the majority intended use for the area served
16. Consultant shall consider sub-floor material selection that best suits flooring selection to meet desirable effect, example, moisture barrier or quick curing concrete alternatives.

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17. During flooring installation, flooring manufacturer representative and flooring sub-contractor shall conduct on-site meetings for installation procedures and techniques for entire flooring installation.
18. Where drywall panels are specified for high traffic areas, corridors or wall surfaces that are subjected to vandalism, Abuse-resistant VHI Abuse Resistant drywall panel shall be used. Fiberock brand
19. Sound attenuation consideration shall be provided for Gymnasium, Boardroom, mechanical areas, etc.
20. Toilet partitions shall be solid core, approved manufactures : Comtec series S200, Capitol Partitions Poly-Pro P3 - Congress Basic, Santana Poly-Mar HD
21. Dressing Rooms – collapsible clothes hooks. (Shanahan’s Building Specialties Limited)
22. Operable and Accordion partitions shall be HUFCOR manufacture by Richelieu/Panel Products.
23. Provide appropriate sized access doors for servicing of mechanical components.
24. Consultant may design structure to reduce the quantity of fall protection devices by creating a parapet wall 36” high or a combination of a parapet and handrail of aircraft cables fencing as an example.

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ROOFING COMPONENTS

1. Flat roof construction shall be Modified Bitumen SBS (Styrene Butadiene Styrene) roofing as manufactured by Soprema.
2. Metal Roof construction shall incorporate a snow/ice guard system to prevent avalanching to ground.
3. Heat tracing required on eavestrough and downpipes.
4. After placement of mechanical equipment on roof curbs, flood test the equipment to ensure watertight seal.
5. THALER Jack Stacks shall be used on all plumbing vents.
6. All drain hubs shall be cast and drain screens shall be cast aluminum.
7. Where an addition is constructed to an existing facility, ensure that the new wall finish stops a minimum of 12” from the top surface of any adjoining roofing. (12” of water stripping shall be left exposed) This will ensure proper roof maintenance in future.

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STRUCTURAL

1. For any addition to a facility, a structural review must be completed of the existing facility. Any additional loads caused by the new addition shall be addressed to the existing structure.
2. All concrete min. 30 mpa. All exterior and below grade concrete Type 5 sulphate resistant, all other Type 10
3. Structural Slabs required
4. Pile Caps for all piles
5. Void form shall be inverted trough or cardboard type **ONLY**. (strawmat void form not acceptable, no substitutes permitted)
6. All entrance slabs shall be designed to prevent any type of movement from the building.
7. Min. width of any grade beam shall be 10”
8. Roadway concrete 35 mpa air-entrained c/w T & B steel

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MECHANICAL

1. Mechanical/Ventilation design to ANSI/ASHRAE Standard 62-2001 for any Multipurpose Rooms to be with MUA unit's c/w Air Conditioning.
2. Provide necessary humidification or dehumidification as required for occupancy use.
3. Gas Fired Appliances vs. Electric
4. Indirect Heaters shall be vs. Direct Fired
5. Approved manufacturers, Trane, Lennox, Carrier, Bryant, Modine, Engineered Air, AAON, Keeprite, and York. A minimum 10 year warranty on all equipment installed. All equipment shall have lockable doors or vandal proof locking devices to prevent unauthorized access.
6. All equipment and controls shall be fully BACnet compatible and be capable of integration to existing City of Winnipeg Municipal Accommodations Division Central Control - METASYS operating systems.
7. All VFD and VSD's to have N2/BACnet interface built into the device. ABB would be an acceptable manufacturer.
8. All condensers/compressors shall be equipped with crank case heaters, refrigerant line sight glass, and the following safeties: high and low pressure refrigerant switches, low temperature ambient lockout switch, timer to prevent compressor short cycling, and fan air flow switch wired into the compressor control circuit.
9. Set Back Thermostats and Spring Wound Timers to override Thermostats c/w metal protection covers. Approved type thermostat, Honeywell TB8220 Vision – Pro Commercial.
10. All equipment filters shall be of a permanent type, washable and long lasting under normal usage.
11. Design HVAC for future anticipated heating loads, e.g. slush machine, can drink machine, coffee maker, refrigerator, popcorn makers, deep freezers, etc.
12. Air balancing required on all ventilation equipment conforming to ASHRAE Standard 111, SMACNA'S HVAC Systems, Testing, Adjusting and Balancing 2nd Edition. After

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completion of air balancing, mechanically fix the adjusted dampers by taping or securing dampers to prevent tampering or movement.

13. Provide suitable approved access doors for all fire dampers. Minimum size shall be 12"x12". Air balance contractor shall verify all access locations.
14. Provide sufficient crawl space ventilation controlled by a humidistat and space thermostat wired in series.
15. No ductwork shall be installed on any exterior surfaces
16. Vandal Proof Fixtures
17. Domestic water heaters shall be natural gas.
18. All plumbing fixtures shall have service valves for maintenance purposes.
19. Water closets shall be American Standard Cadet Elongated Pressure-Assisted Toilet or approved equal.
20. Pressure balance, scald guard devices for all showers
21. Vandal Proof Shower Heads
22. All Vanities/countertops shall have steel support brackets to support patrons sitting on the vanities.
23. Drinking Fountain to be refrigerated and physically challenged approved.
24. Install Backflow Prevention Devices to the satisfaction of the authority having jurisdiction. Where practical provide devices that do not require annual certification testing.
25. All piping shall be insulated; type of fluid and flow direction shall be indicated on all piping.
26. All exterior pad mounted mechanical equipment shall be located a minimum of 3 feet above grade.

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ELECTRICAL

1. Underground service is preferred vs. overhead. If overhead service is proposed, a non-climbable rack shall be designed.
2. Main distribution shall be three phase 4 wire
3. 25% additional capacity on electrical service and 40 % additional capacity on sub-panels
4. Commercial/spec grade devices c/w s.s.covers for all outlets
5. Minimum wire size #12 AWG copper
6. All new equipment shall be located on a 6” concrete housekeeping pad including reinforcing steel.
7. Lamacoid riveted labels on all devices or “P-Touch” mylar labels
8. Separate circuits for anticipated loads, i.e. drink machines, ice machines, etc.
9. Light levels to IES standards (based on usage criteria) and weighting factors of (+) 1 for illuminance categories.
10. Remote ballast for any gym application c/w safety chain, wire guards and lexan lens with metal halide light fixtures.
11. Metal halide lamps shall be double coated self-extinguishing to prevent lamp explosion and u.v. emission.
12. Fluorescent fixtures to be T8 electronic
13. Electrical fixtures shall be specified such that replacement lenses and serviceable parts are available and cost efficient.

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14. Exterior light fixtures shall be vandal resistant luminaries as manufactured by Cooper Lighting “Fail-Safe” (life time warranty on lens)
15. Provide service lighting and power to crawl space areas for service work or inspection.
16. Night light system design included into security provisions
17. All exterior lighting and rink lighting shall be designed to minimize light pollution.
18. All exterior lighting and rink lighting shall be controlled by contactors/timers/photocells
19. Provide low temperature ballasts for normally cold areas.
20. Complete fire alarm and emergency lighting
21. Emergency lighting pak for entire structure using variable sensing relays as required, battery pak shall have a min. capacity of 60 minutes. All remote heads shall be 2 head fixtures.
22. Security system to be integrated into facility
23. CCTV required for high profile/vandalism areas
24. Facility shall contain a doorbell or buzzer. Front entrance or delivery entrance shall include a vandal-proof door switch. Locate door switch min. 6’-0” above grade.
25. Public Address System where required for facility
26. Carbon Monoxide detector required in all rooms that contain gas fired appliances.
27. Ceiling fans to be complete with wire guards, safety chain, reversible direction and variable speed.