

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for access controls and equipment and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Construction Waste Management:
 - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
 - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for access controls and equipment for incorporation into manual.
 - .1 Include:
 - .1 System configuration and equipment physical layout.
 - .2 Functional description of equipment.
 - .3 Instructions of operation of equipment.
 - .4 Illustrations and diagrams to supplement procedures.
 - .5 Operation instructions provided by manufacturer.
 - .6 Cleaning instructions.

1.4 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
- .3 Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.

1.5 WARRANTY

- .1 The 12 month warranty period prescribed in General Conditions is extended to 60 months.

1.6 SYSTEM
DESCRIPTION

- .1 Door access control system shall include programmable control panel, input modules, output modules, power supplies, communication devices, card readers, control station, and related equipment and software, as well as wiring and conduit that will provide features and functionalities as indicated below:
 - .1 Allow for minimum 100 card users.
 - .2 Maintain entry records for card users.
 - .3 Programmable scheduled control.
 - .4 Provision for connection to fire alarm and intrusion systems.
 - .5 User friendly interface with system control panel via software to allow for access to entry records, adjustment on scheduled control and priority events and administrative control for card users.
 - .6 System shall be programmed as per below required control schemes:
 - .1 Unless the system is operated on scheduled control, all doors under the control of the system shall be locked at all times and the equipped automatic door operators are disabled unless access is

1.6 SYSTEM DESCRIPTION (Cont'd)	.1 (Cont'd)	
	.6 (Cont'd)	
	.1 (Cont'd)	granted by authorized card users or via control station.
	.2	Upon granting access the electric exit device on door shall release the lock and the automatic door operator becomes operational. The system shall have adjustable time delay ranging from 1 - 120 seconds to ensure the equipment to be maintained in the "accessible" state. Exact time delay to be determined during the commissioning.
	.7	The main entrance door and the entrance door from the vestibule will be interlocked with an intercom system to allow the Operations Room to release those doors and allow access.

PART 2 - PRODUCTS

2.1 SYSTEM CONTROLLERS	.1	Provide all wiring harnesses, connectors, and cabling required for properly interconnecting controller and accessories.
	.2	Install all controller(s) in NEMA 1 sprinkler proof keyed metal enclosure.
2.2 12 VDC POWER SUPPLY	.1	12 VDC power supply with adequate capacity to meet the requirements of item .6 below and integral battery charger.
	.2	To be used to power controller(s) as well as card readers, control station, and other devices as required.
	.3	ULC listed.
	.4	Power supply shall provide dry-contact power fault output.
	.5	Voltage regulation, ripple current, and other such tolerances shall be in accordance with manufacturer's guidelines.

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- 2.2 12 VDC POWER SUPPLY
(Cont'd)
- .6 Provide backup batteries to maintain system operation for minimum 24 hours.
- .7 Provide battery wiring harness as needed to properly connect batteries to power supply. Wiring harness shall provide in-line fuses or other type of over-current protection.
- 2.3 ENCLOSURES
- .1 Unless specified otherwise all control equipment, relays, modules, circuit boards, and other such devices shall be contained within NEMA 1 sprinkler proof enclosures of all-metal construction.
- 2.4 CARD READER
- .1 Provide and install proximity card reader as indicated.
- .2 Provide all necessary accessories, including mounting brackets, mounting kits, connectors, cables, installation tools, and other such components necessary for a complete installation.
- .3 Contractor shall provide trim plates, adapters, or back boxes for card readers as needed. The color and finish of all trim plates, adapters or back boxes used shall match that of card reader.
- .4 Each card reader shall be single stage reader and communicate to controller via shield cable up to 2000 feet without any additional power supplies.
- 2.5 ACCESS CARDS
- .1 Passive, no-battery design allows for infinite number of reads.
- .2 Compatible with both XSF and 26-bit Wiegand formats.
- .3 Strong, flexible and resistant to cracking and breaking.
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- 2.5 ACCESS CARDS (Cont'd)
- .4 Capable of being programmed to customer-specified ID number.
 - .5 100 cards shall be supplied to owner.
- 2.6 OUTPUT RELAY
- .1 Output relay shall be supplied and installed for energizing amber light in "lock-down" mode.
 - .2 Contact rating: 120Vac, 20Amp minimum.
 - .3 Control voltage: required by control system.
- 2.7 WIRING
- .1 Provide and install wiring between all control system equipment in accordance with manufacturer's requirements. All control and communication wiring shall be shielded unless otherwise specified by manufacturer.
 - .2 Wire and cable shall be sized to provide minimum resistance and minimum voltage drop to the devices being supplied. Voltage delivered to all devices shall be within the tolerance specified by the device manufacturer.
 - .3 No conductor shall be smaller than #22 AWG.
 - .4 All wiring shall be installed in conduit.
- 2.8 DOOR CONTACTS
- .1 Magnetic door contacts.
 - .2 Maximum gap of 32 mm.
 - .3 Form C relay contacts.
 - .4 Must be compatible with system components.
- 2.9 SOFTWARE
- .1 1 Capable of interrupting and integrating all system components.
 - .2 Shall be a complete package fully installed and operational.
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- 2.9 SOFTWARE
(Cont'd)
- .3 Must be operational on the computer indicated, and fully capable of being integrated into the network.
 - .4 Shall be password protected.
 - .5 Refer to system description, functions in specification section and detail on drawings for full system requirements.
 - .6 Must be a complete end to end system.

PART 3 - EXECUTION

- 3.1 INSTALLATION
- .1 Install system in accordance with manufacturer's instructions.

- 3.2 FIELD QUALITY CONTROL
- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results.
 - .2 Perform intelligibility tests.
 - .3 Shall be a complete, operational and functional end to end system.