SECTION 14 20 00: ELEVATORS AND LIFTS

1. GENERAL

A. Elevator products and components to be provided by:
- Kone
- Otis
- Schindler

B. Third party non-installer manufacturers:
- GAL Corporation: door equipment and controllers
- Hollister Whitney
- Imperial Electric
- Titan
- Motion Control Engineering
- Smart Rise
- Monitor Elevator Fixtures

C. Applicable Codes and Standards:
- ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts
- ASME A17.1 - Safety Code for Elevators and Escalators
- ASME A17.5 - Elevator and Escalator Electrical Equipment
- NFPA 70 - National Electric Code
- ADA Accessibility Guidelines

D. Warranty and Service Agreement:
1. Provide new elevator and lift installations with a minimum 24-month warranty and service period after date of acceptance. Include all required monthly elevator preventative maintenance visits, parts replacements, labor, incidentals and trouble calls. Also, include required annual State elevator inspections and testing as a part of this warranty service as well as the annual load test prior to the expiration of the warranty.
2. During the warranty period, elevator service providers shall provide, at a minimum, monthly documented Preventive Maintenance (PM) services. Scheduling shall be coordinated with Brown University prior to each service visit. Documentation shall be provided to Brown University in an acceptable electronic format. For each month that this service is not performed, the warranty period shall be automatically extended by a month.
3. During the warranty period, the elevator contractor shall provide emergency service on a 24-hour basis, at no additional cost, with a response time of 2 hours. In the event that a qualified mechanic is not available within this timeframe, the first response of the University's qualified elevator service technician shall not void any warranty terms, and the elevator contractor shall be liable for related repair expenses.

2. SYSTEM DESIGN & PERFORMANCE REQUIREMENTS

A. Contractor to provide all levels of codes and/or passwords to gain access to the elevator control system for the complete adjusting, diagnosing (to recall faults), troubleshooting, etc. of each unit; information also to be provided on a flash drive.

B. For microprocessor-based elevator controls, provide a microprocessor control testing device, tool or maintenance terminal required for service and diagnostics. The device will:

1. Have the highest possible level (all levels) password access to allow for troubleshooting, system adjustment/modification, and maintenance to the particular type of installed elevator controls.
2. Be the sole property of the owner and of the non-self-destructible and/or of the non-self-changeable type. The device will not be leased, borrowed or returned to the manufacturer. Any need to re-calibrate, replace with a newer version, adjust and/or modify the device in any way will be provided to Brown University by the elevator contractor at no additional cost during the warranty period.
3. Any replacement or newer unit will be delivered to Brown University within three working business days of a written notice from Brown University. The unit must come with complete instructions and operating techniques required to operate and access all functions of the device.

C. Provide hydraulic elevator pits with sump pit only—no pumps or drains are to be included in the under elevator pit.

D. Hydraulic Elevators:

1. Piston will be of the single acting, plunger-cylinder hydraulic unit type
2. Minimum speed of 125 fpm
3. Well hole & casing:
   - Outer casing: steel, minimum of 18" diameter with welded, waterproof bottom
   - Sleeve: schedule 40 PVC, watertight sleeve over jacket cylinder
   - Fill void between PVC sleeve and steel casing with sand
4. Hole-less hydraulic units are acceptable up to four landings.

E. Electric Traction Elevators:

1. Geared traction type for speeds up to 400 fpm; manufactured by Hollister Whitney Corp
2. Gearless traction type for speeds of 400 fpm and greater; manufactured by Hollister Whitney Corp. and Imperial Electric
3. Minimum speed of 200 fpm.

F. Provide heavy duty automatic door openers with the following:

1. Direct current or variable frequency, variable voltage, AC motors
2. Nudging feature
3. Minimum 40-beam, infrared, non-contact door reversing system

G. Signals:
   1. Submit call button signage to Brown FM for review
   2. Position indicators in the car and corridor or lobby at level of discharge
   3. Both visual audible signal and verbal announcements are required for accessibility standards.

H. Cab to be of sound, insulated steel shell construction, with sub flooring of metal or two layers of marine plywood. Interior cab walls must be reinforced to reduce deflection and noise.

I. Provide cab components that are designed to be tamper-proof to prevent or minimize unsafe conditions or inconvenience attributable to vandalism or deliberate tampering.

J. Car sills should be of a design to withstand the capacity of the elevator.

K. Each elevator to be provided with a dedicated emergency intercom style phone, wired and configured to dial five digits: 34111.

L. Provide mounting clips and removable wall blankets for each installed elevator.

M. Where building emergency power, such as an emergency generator or central lighting inverter is installed, connect a dedicated emergency circuit for car emergency lighting and emergency call bell to building emergency power.

N. Where no central building emergency system is installed, provide each car with a dedicated emergency lighting battery unit.

O. Power supply: Brown preference is to power elevators from standby / legally-required power sources where available. Otherwise, provide each elevator with an emergency "power down" feature that will allow the elevator to travel to the ground floor / discharge level and open the doors in the event of an elevator power outage.

P. Machine-Room-Less Elevators:
   1. Controllers for "machine-room-less" elevators shall be located in a dedicated, fire-rated space adjacent to the elevator shaft. Controllers located within the shaft are not acceptable.
   2. Access doors to the controller space shall be lockable per the University keying protocol.
   3. Elevator electrical service disconnect switches for machine-room less elevators shall be housed in the elevator controller space.
   4. Elevator controllers mounted within the elevator shaft will only be allowed if the elevator has a separate, supplemental battery and control system that allows for supervised operation to raise the car to the level required for access to the controller in the shaft for service in the event of a main drive system failure.

Q. Labeling and Signage:
   1. Provide engraved labels, with contrasting letters and backgrounds, minimum 1" high lettering, on elevator machine room doors, control room doors and access locations housing elevator controllers and service disconnects.
   2. Provide engraved signage at elevator controllers denoting the room location of service disconnects if they are located remote from the controller locations.

3. Main Floor Signage: Provide a permanent sign mounted on the head jamb of the main floor elevator entrance to read: "MRL-CONTROL SPACE LOCATED in Room XXX". The letter size shall be a minimum of 1 " with letters of contrasting color to the background.
4. Submit sign templates to Brown for review and approval prior to installation.

R. Elevator access control requirements shall be coordinated with Brown University's Department of Public Safety and their vendor of record.

S. All new and replacement elevators shall be equipped with all available energy conservation options such as regenerative add-on modules.

3. LIMITED USE / LIMITED APPLICATION ELEVATORS

A. Limited Use / Limited Application (LULA) elevators may be considered for limited applications to provide for ADA access to a building. LULAs shall be considered only for the following applications, as an alternate to a wheelchair lift:

- Maximum travel distance of two floors or less (25 feet maximum).
- Maximum weight capacity 1,400 pounds.
- Maximum occupancy of two people at a time.
- Not intended for use by the general public.
- Normal operating speed of 30 feet per minute.

B. Acceptable manufacturers: Garaventa, Symmetry

C. Warranty and Service Agreements: Refer to section 1.D.

D. System Design and Performance Requirements: Refer to section 2 and as noted below:

- Provide with hydraulic drive, over-speed valve and emergency manual lowering valve.
- Automatic bi-directional floor leveling
- Stop key switch and button in the car
- Automatic door operation with full height photo-electric door sensors
- Comply with ASME A17.1 Section 5.2 LU/LA Elevators

E. O&M Manuals and Project Turnover Requirements: Refer to section 5.

4. VERTICAL PLATFORM LIFTS

A. Vertical platform lifts may be considered for limited applications to provide for wheelchair and ADA accessibility to a building. They typically are intended for use by only one person at a time and are not intended for use by the general public. Two major types are: unenclosed and fully enclosed. Both are typically rated for 750 pounds capacity, and operate at 15 feet per minute. Unenclosed types are intended for use with travel distances of five feet or less. Enclosed types are intended for use with travel distances of 15 feet or less.

B. Acceptable manufacturers: Garaventa, Symmetry

C. Warranty and Service Agreements: Refer to section 1.D.

D. System Design and Performance Requirements: Refer to section 2 as applicable, and as noted below:
   - Provide with hydraulic drive and emergency manual lowering valve.
   - Provide with a battery powered emergency power option.
   - Provide unenclosed lifts with power gate operator, keyed platform controls, audible illuminated emergency stop/alarm switch and emergency phone.
   - Provide enclosed lifts with interior illumination, power door and gate operators, continuous pressure directional controls, and emergency phone.
   - Lifts installed outside or on the exterior of buildings shall be fabricated of corrosion-resistant materials and fasteners; their controls and all wiring methods shall be rated for use in exterior wet locations (NEMA 4x / IEC IP54 rated).

5. O&M MANUALS AND PROJECT TURNOVER REQUIREMENTS

A. Provide a signed affidavit upon completion by the elevator manufacturer that all equipment installed is non-proprietary and all the documentation, codes, technical support (via phone and/or on-site) and service tools are available to any elevator contractor and have been turned over to Brown University.

B. Include the following with the project O&M information:
   i. Construction and installation drawings
   ii. Service manuals
   iii. Wiring diagrams
   iv. Interface tools, and any other information needed to troubleshoot

C. Service manual information is required for, but not limited to, the specific models of the controller, door operator, hoist machine, hoist motor, drive unit, and roller guides. Include serial number of each elevator control, operating and drive board. Service manuals shall include the specific maintenance, troubleshooting and testing requirements for the installed elevator equipment.

D. Provide a backup of all final operating software on a flash drive for each elevator installed.

E. Provide 1 set of required maintenance hardware, such as keyboards or any other tool or device, for each elevator.

END OF SECTION