PART 1 GENERAL
A. Manufacturers on this list falls into four categories:
   1. **Preferred Manufacturer**: Approved manufacturer for use on CU projects.
   2. **Conditional approval**: Manufacturers approved for certain projects. Contact CU Facilities for approval to use on new projects
   3. **Under Consideration**: Manufacturers being evaluated. Do not specify unless approved in writing from CU Facilities.
   4. **Hold / Removal**: Manufactures have been removed, generally for poor performance or unresolved issues on past projects. These manufacturers should not be specified for any projects.

B. This list is intended to cover major equipment vendors formerly listed in the Specification section. Often, auxiliary vendors used to construct the equipment are listed within the specification section. This list does not absolve the Engineer of Record from reading and complying with the requirements set forth in the Specification Sections and sound engineering practices.

C. The University maintains a “Preferred Manufacturers List” for major and often used equipment and materials. This list is updated regularly. The A/E shall use this list in developing construction document specifications.

D. Where specific manufacturers are specified in the detailed specifications other approved manufacturers listed may be substituted provided a model with similar quality exists and the substitution is approved in writing by CU Facilities.

E. Equipment not listed on the Preferred Manufacturers list must be presented to CU Facilities for review and approval prior to specifying. A mock-up or samples of the equipment may be requested to review quality and to verify maintenance access requirements.

PART 2 CORRECTIONS / SUBSTITUTION
A. If there are errors in model numbers or manufacturers listed, or if a model is no longer available, notify CU Facilities in writing for a clarification. A response regarding the Correction or Submission will be provided.

PART 3 EQUIPMENT PREFERRED MANUFACTURERS LIST
A. **Machine**
   1. Hollister Whitney

B. **Controller**:
   1. Motion Controller Engineering (MCE) - Preferred
   2. Otis Elevator Company thru United Technology (for GEN2 application only)

C. **Drive Unit**
   1. Siemens
   2. Otis

D. **Safety Edge**:
   1. Tritronic
   2. Otis Elevator Company thru United Technology

E. **Fixtures**:
   1. Monitor Controls

F. **Emergency Phone**:
   1. K-Tech (Columbia Issue)

G. **Door Equipment**:
   1. G.A.L.

H. **Landing System**:
   1. Motion Control Engineering (MCE) = LS-QUAD

I. **Roller Guide**
   1. ELSCO

J. **Top of car Inspection**
   1. GAL
2. Otis Elevator Company- thru United Technology

K. **Key and Key Switches:**
1. Northeast Lock
2. Mul-T-Lock
3. Yale

L. **Air Conditioning:**
1. Mitsubishi Split System

M. **Governor:**
1. Hollister Whitney
BASIC ELEVATOR REQUIREMENTS FOR TRACTION ELEVATORS

Part 1  GENERAL

A. The following requirements cover the standard new installation and or modernization of passenger traction elevator at the Columbia University, New York, NY
   1. All requirements per ASME code and RS-18 to bring the elevator to current code compliance, including ADA requirements.
   2. An elevator consultant shall be provided for new installation of any elevators system for specification review, incorporating Columbia standard requirements, monitoring of installation up to completion.

B. The purpose of this instruction for the new installation and or modernization of the elevator system is to provide a standard documentations required above and beyond basic trade installation and code regulation and to include any additional requirements other than industry standard trade installation. See Division 14, Section 14210 for Traction Elevators and Section 14250 for Elevator Cab.

Part 2  PROFILE OF EQUIPMENT

A. Operation; Automatic / Attendant
B. Controller MCE-IMC AC with TORQMAX F5 16K PWM
C. Safety type: Gradual
D. Cab enclosure: New (refer to Section 14250 under Elevator Cab)
E. Door operator: Install new GAL programmable-AC MOVFR/VVVF
F. Car and corridor Fixtures: Install New Car Operating Panel by Monitor Controls
G. Positioning Indicators Install New COP with 2” High and Hall 1” high by Monitor
H. Governor: NO FLYBALL TYPE
I. Machine Type: Traction-Geared machine mfr By Hollister Whitney
J. Hoist motor type: AC Induction motor

PART 3  HOISTWAY EQUIPMENT

A. Pit Equipment
   1. New Installation or upgrade shall provide and install sump pump shall be installed. Pump shall be covered and protected by plate.

B. LS QUAD LANDING CONTROL SYSTEM (MCE)
   1. New Installation or upgrade shall provide and install MCE LS QUTE landing system.

C. Hoistway Pipe and Wiring
   1. Shall furnish and install new hoistway trough.
   2. Spare wires equal to 15% shall be provided in the new traveling cable.
   3. Shall include a two (2) coaxial cable for video signal equipment

D. Terminal Stopping and Slowdown Devices:
   1. Shall use MCE (TLS-Terminal Limit Switch) model no. (TLS-C-12) AND model no. (TLS-C-16) for normal and final devices.

E. Roller Guides
   1. Shall use High or Low Speed ELSCO rollers based on the speed of the elevator system.
   2. Encoder Pit-tensioning Sheave:
      a. New Installation shall install new governor and encoder pit tensioning sheave
      b. Shall mount sheaves and frame on pit support member to guide rail.
      c. Shall provide with guides or pivot point to enable free vertical movement and proper tension of cable/tape.

PART 4  Pit Equipment

A. Provide a single-tube continuous fluorescent light fixture strip (full height of hoistway) with guard.

PART 5  MACHINE ROOM EQUIPMENT

A. Drive Motor
   1. It shall be three (3) phase induction motor.
2. Motor shall be reversible with high starting torque and low starting current meeting a severe loads encountered in elevator service,
3. It shall be shall be energy efficient

B. Machine
1. Machine shall new geared traction machine specifically designed for the elevator.

C. Controller
1. Microprocessor Controllers shall be new, manufactured by Motion Control Engineering. Drive shall be MCE IMC-AC equipped with Full ACE security system. The microprocessor system shall be design specifically for elevator applications and shall use multiple processors, at least one of which shall be 32-bit high performance RIIS processor. Each elevator controller shall use at least four microprocessors in multi-tasking/multi-processing environment and have the capacity of 2 megabyte RAM, 2 mega byte EPROM, and 32 kilobytes of EEPROM.

2. Full Access Control for Elevator (ACE) security system shall be included.

D. Brake
1. It shall be equipped with disc brake system.

E. Solid State Motor Drive
1. It shall be a solid state motor drive employing internal gate, bi-polar transistors (IGBT) equipped with TORQMAX F5 16K PWM(Pulse Width Modulation AC Drive, with MCE Power Back AC Regeneration System
2. Shall provide an isolation transformer

F. Feedback Speed Control (Tachometer)
1. Tachometer or encoder shall be new provided and installed, mounted on the existing hoist motor and accommodate new closed loop controller system.
2. Do not use electro-mechanical stepper switches.
3. Parts shall be readily accessible for easy adjustments.

H. Governor
1. Provide a new governor and shall operate at a speed of more that 125% of contract speed in the down direction.
2. Shall not use fly ball governor.

I. Telephone:
1. Shall provide a dedicated telephone line in the machine room.
2. Shall provide a dedicated telephone unit inside the elevator motor room.

PART 6 KEY SWITCHES APPLICATION
A. Independent/Attendant key Mul-T-Lock CU# M7.1
B. Fire Fighter’s Service Yale, key #2642 and 1620
C. Elevator Machine Room Mul-T-Lock Master keyed to M6 elevator master
D. Car Operating Panel J201 keyed “OFF” the master “FP”.
E. Service Panel J201 keyed “OFF” the master “FP”.
F. Floor Lock out Mul-T-Lock “OFF” the master “FP”.
G. Final and Bottom Access Switch J217 keyed “OFF” the master “FP”.

PART 7 CAR EQUIPMENT
A. Car Stations
1. Faceplates shall be hinged
2. Shall be constructed of brush stainless steel No. 4.
3. Shall be stainless steel flush mount
4. Shall have lockable service compartment
5. Shall be manufactured by Monitor Controls

B. Ventilation: See Section 14250 under Cab Standard
1. Provide a Morrison centrifugal fan capable of developing 0.1 inch static pressure differential with a minimum capacity of 450 CFM.

C. Lighting: See Section 14250 under Cab Standard

D. Car Emergency Light
1. Stand by lighting and Alarm:
2. Install new car-mounted battery unit with solid state charger to operate alarm bell and car emergency light fixture.
3. Battery shall be rechargeable with minimum 5-year life expectancy

E. TOP OF CAR INSPECTION
1. Top of Car Inspection Station shall be mounted on top of each car. This device shall be activated by a switch located in the Car Operating Panel and shall include: Use GAL Unit
a. Up and Down Direction Buttons
b. Stop Switch
c. A 110-Volt GFCI Duplex Receptacle
d. A Work Light with Wire Guard and an “Off” - “On” Switch.

PART 8  DOOR EQUIPMENT
A. Door Operator
   1. It shall be and AC VVVF MOVFR Closed Loop High Performance with encoder less VVVF drive, ½ HP motor, heavy duty sprocket, chain, belt and sheaves shall be provided and installed.
B. Door Control Device
   1. Shall be Tri-tronic infrared
   2. Otis 3D Lambda is acceptable and no other.
C. Hoistway Door Unlocking Device:
   1. Provide escutcheon unlocking device in door panel at all floors.
D. Gibs
   1. Shall install new fire gibs.

PART 9  COMMUNICATION
A. Car Operating Panel
   1. Car Emergency Phone shall be K-Tech, model # E201-A
   2. Provide new and dedicated telephone line for the emergency phone programmed to connect directly to Public Safety Desk at 212-854-5555.
B. Machine Room
   1. Shall provide a new telephone in the machine room.
   2. Shall provide a new dedicated CU phone line. Installation and monthly charges shall be included within the New Installation Warranty period.
   3. Shall provide and install new Ethernet line with Static IP address for remote monitoring of the controller. Installation and monthly charges shall be included within the New Installation Warranty period.
   4. Shall provide and install a dedicated analog phone line capable of outside connection for outside line monitoring. Installation and monthly charges shall be included within the New Installation Warranty period.

PART 10  ENGRAVING
A. Car Operating Panel
   1. Car Capacity etched on top section of the car operating panel
   2. Car CU # etched on top of the car operating panel directly below the car capacity. CU# will be provided by Columbia University Vertical Transportation.
   3. No Smoking etched on top of the car operating panel directly below the car CU#.
   4. City Id no. ------- etched on top of main car operating panel
B. Car Service Access Panel
   1. Car Certificate stating “INSPECTION CERTIFICATE ON FILE AT THE FACILITIES MANAGEMENT VERTICAL TRANSPORTATION OFFICE FOR INFORMATION CALL 212-854-2222”

PART 11  SIGNAL SYSTEM
A. Car Operating Panel
   1. Car Call buttons shall be model TR-1100, 1 3/8” Halo Clear plastic
B. Hall Station
   1. Hall buttons shall use stainless steel flush mount, model TR-1100, 1 3/8” Halo Clear plastic
   2. Hall button at all floors shall be with digital Positioning Indicator, (1”) inch in high manufactured by Monitor Control.
C. Positioning Indicators:
   1. It shall be digital.
   2. Inside car positioning indicator shall be two (2) inch high.
   3. Hall station positioning indicator shall be one (1) inch high.
D. Car Direction Indicator (Lantern)
   1. Provide new, large car lantern in the car door jambs to meet the requirements of ADAAG.
   2. Wire lanterns shall be flushed mounted.
PART 12 MONITORING:
A. One (1) Laptop, Dell system with minimum 2.8 Giga-Hertz microprocessor speed, equipped with DVD ROM/Burner drive, 3.5” disk drive Bidder will provide centralized local system for monitoring of all elevators equipped with Motion Controllers Software. The minimum requirement is a Pentium dual processor, 2.8 GH minimum, 500 GB hard drive with 4GB Ram of memory x DVD Writer with Ethernet port. It shall be equipped with high speed Ethernet wireless card. Provide a separate 35inch flat screen LCD monitor and HP laser printer with internet capability.

PART 13 SOFTWARE AND DRAWING
A. The contractor/Installer shall provide written guarantee from the controller manufacturer, to include in the base price software upgrades for a period of ten (10) years at o additional cost.
B. Solid–State Control Drawing
   3. Supply at the completion of the installation, with changes incorporated as necessary to corresponds to the completed installations, flow diagrams and Boolean Diagrams showing the operations of any solid state systems or devices employed.

PART 14 ELECTRICAL WIRE AND WIRING CONNECTIONS
A. Conductors and connections
   1. Shall have no splices or similar connections in wiring except at terminal blocks, control compartments, junction boxes, or condulets.
   4. Shall provide 15% spare conductors throughout. Run spare wires from car connection points to Individual elevator controllers in the machine room
   5. Shall have four (4) pairs of spare shielded communication wires in addition to those required to connect specific items.
C. Provide five (5) pairs of spares conductors from controller to Car operating panel
B. Conduit
   1. Painted galvanized steel conduit and duct. Conduit size is ½” minimum.
D. Traveling Cables
   1. Type ET flame and moisture-resistant outer cover.
   2. Provide 2 RG-59 coaxial CCTV cables within traveling cable from car controller to car top.
   3. Floor Numbers Inside hoistway:
   4. Stencil paint 4” high floor designations in contrasting color on inside face of hoistway door at each landing and adjacent to the leading edge of the door.
E. Electrical Diagrams
   1. Supply wiring diagrams and data as required for the execution of the work herein described.
   2. Supply, at the time of the final acceptance, three prints and one sepia of the wiring and schematic diagrams revised to show all changes that have been made.
   3. If, in the course of the maintenance contract, changes are made to the wiring and controls, supply two sets of marked-up prints of the altered schematics and field wiring diagrams showing the changes.

PART 15 PAINTING
A. Ensure that all newly installed equipment, except for machine surfaces and non-rusting surfaces, is protected with two heavy double coats of rust inhibiting primer of a neutral color. After completion of machine room work, apply one coat of paint to the machine room floor and also a coat of paint to the pit equipment and pit floor.

PART 16 SPARE PARTS
A. Shall provide One (1) of each power supply used by the microprocessor system
B. Five (5) of each mass terminal connector used to connect external wiring to the system as well as those used to connect different parts to the system. This also includes connectors used on the main computer electric bus.
C. Five (5) each of all buses used in the system.
D. A list of vendors for all parts used in the installation.
E. The controller manufacturer must guarantee availability of exact replacement parts (no modifications) of every type for a period of not less than five (5) years.
F. Supply parts on request for a period of fifteen years subsequent to final acceptance of the equipment, at then prevailing prices.
G. Where purchased components are used, ensure that the original manufacturer’s name and component designation are clearly mark on the part or in the parts catalogue supplied in accordance with this specification.
PART 17  ADDITIONAL REQUIREMENTS:
A. Elevator Motor Room
   1. Lighting Fixtures - Install new high energy efficient fluorescent fixtures with FO32T8 lamps adequate for the illumination of the machine room. All fixtures shall be equipped with lens covers.
   2. Paint: The elevator motor room floor shall be painted with Epoxy paint Navy Battleship Gray on the floor and semi-gloss Linen white on walls and ceiling.
   3. Air Conditioning: Contractor shall provide proper cooling by installing a dedicated split system such as Mitsubishi units.
   4. Door: Furnish and install new fire retardant door and adjust to properly align door hardware and to meet squareness of door buck. Install new door check to provide self-locking and self-closing. Columbia Issue Mul-T-Lock elevator master lock system (M6 or 499AA) shall be installed to secure the door.
   5. Communication: High-speed LAN Ethernet connection to controller

B. OWNER’S PROPERTY
   1. Diagnostic Tools: At the completion of the work, the contractor shall provide items listed. The items shall become the Owner’s property.
      a. One (1) complete set of all diagnostic tools and equipment required for the complete system maintenance of all aspects of the control and dispatch system and solid-state motor drive units. The diagnostic system shall be an integral part of the controller and provide user-friendly interaction between the serviceman and the controls. All such systems shall be free from secret codes and decaying circuits that must be periodically reprogrammed by the manufacturer. Diagnostic equipment shall be permanently mounted in the control cabinet.

PART 18  SIGNAGE
A. The elevator motor room door shall have signage on door stating “ELEVATOR MACHINE ROOM”.
B. All elevator controllers shall have ASME 17.1/17.2/17.3 regulation signage in front of the controller door.

PART 19  FEES AND PERMITS
A. Filing and Fees
   1. All filing fees and permits to be provided by the Elevator Contractor
   2. Shall include filing for the 5-year testing.

PART 20  INSTALLATION WARRANTY MAINTENANCE
A. General: After Final Acceptance, provide the following maintenance for a period of 12 months.
B. Examinations: Weekly, including adjustments, cleaning and lubrication of equipment. Include cleaning of hoistway and machinery spaces.
C. Replacement: Replaced components were required, using parts produced by original manufacturer.
D. Call Backs: Provide 24-hour emergency call back service at no expense to Owner. Call back must be provided within one (1) hour from the time contractor is notified.
E. Extension of Maintenance Period: Where shutdowns exceed an average value of one per month, extend maintenance period one month for each month in which shutdowns exceed specified average value at no additional cost to Owner.
F. Records: Maintain complete maintenance records including check charts, lubrication logs and activity logs: provide check charts and lubrication logs for the elevator

THE END