

SECTION 142000 - GENERAL ELEVATOR REQUIREMENTS

1.0 General:

- A. The Elevator Contractor shall be required to fully and completely abide by all of the University of Pennsylvania Design Standards and requirements prior to the submission of their bids.
- B. All equipment and products shall be of the non-proprietary type as defined by the University of Pennsylvania or their Elevator Consultant. Any proprietary type of equipment, substitute or experimental equipment shall **NOT** be accepted and could result in bid disqualification.
- C. Acceptable controller manufacturers shall include Motion Control Engineering (M.C.E.) "i-Control" model, Computerized Elevator Corporation (C.E.C.), "Futura" model only, as well as Elevator Systems Inc. (ESI) (microprocessor hydraulic control system only; in very selected buildings, and as approved by the University and/or their Elevator Consultant). No other substitutes shall be allowed.
- D. The University of Pennsylvania Project Manager shall have the sole right to approve or reject any manufacturer or product that the University of Pennsylvania Project Manager or their Elevator Consultant deems, in their opinion, to be proprietary or non-conforming to the University of Pennsylvania Design Standards.
- E. In the event a product is rejected for use on the project, the Elevator Contractor shall be required to submit a non-proprietary alternate manufacturer to the University of Pennsylvania Project Manager for the final approval. **The Elevator Contractor shall absorb any cost differential for product or manufacturer substitutes, including labor, without exception.**
- F. **It shall be the sole responsibility of the Elevator Contractor to ensure that all of the University of Pennsylvania Design Standards, as noted in these documents, for elevators are being met, and that all associated costs shall be absorbed by the Elevator Contractor in the event that a non-approved product has been purchased and/or installed without prior approval by the University of Pennsylvania or their Elevator Consultant.**
- G. Only the University of Pennsylvania Project Manager or their Elevator Consultant shall be allowed to provide product approvals on any project at the University of Pennsylvania campus. Acceptance of equipment and/or products by any individual, company or organization other than those previously noted could result in rejection of equipment and the absorption of costs by the Elevator Contractor as identified in Item F above.
- H. The Elevator Contractor must specify and identify in the bidding documents all major components which are to be used on a particular project. The information required, but not limited to, is the type and specific model of controller, door operator, hoist machine, hoist motor (insulation type "H"; manufactured by Imperial, Rueland, or approved equal), drive unit, roller guide type and model, door detector type and model, governor type and model, cab manufacturer, complete hydraulic power unit, including pump, motor (120-starts per hour) and valve type and model, power gate manufacturer (freight application only), fixture manufacturer, etc.
- I. All equipment described and identification will be submitted to the University of Pennsylvania Project Manager or their Elevator Consultant for final approval prior to material procurement.
- J. The Elevator Contractor shall be prohibited from procuring any equipment that has not been approved by the University of Pennsylvania Project Manager or their Elevator Consultant.
- K. Any microprocessor control system being recommended for this project shall be constructed from industrial strength components and capable of operating in difficult machine room conditions.
- L. Power: Elevator machines shall be powered from the building's power system at 480 or

- 208V, three phase, three or four wire, 60 Hz as indicated on the project electrical single line diagrams. Provide UL listed control panel(s) containing all motor controllers, sequencing equipment, etc., which shall be rated to withstand the available fault current from the building's power supply system without requiring supplemental over-current protective devices. The available fault current shall be as shown on the electrical single line diagrams for the switchboard, panel board, or other distribution equipment that is the source for the feeder to the elevator, unless specifically permitted otherwise by the University Engineering Department.
- M. Power: HVAC: Elevator machine rooms shall be cooled with either a fan-coil unit with chilled water coil OR a dedicated split system 'DX' air conditioner (heat pump type preferred). Utilize fan coil with chilled water when building chilled water is available all year AND when the elevator is not on emergency power. Utilize split system unit otherwise
- N. The controller drive unit shall be manufactured by Magnetek or KEB. A MCE 12-Pulse drive shall be acceptable on certain M.C.E. controllers where Magnetek drive units are not an option. No other substitutes are permitted.
- O. Elevator regenerative drives shall be given consideration for each project. The University's representative shall make the final determination whether to accept the installation of the regenerative drive unit.
- P. Each controller shall contain a Leviton TVSS surge suppressor, or approved equal, which shall be mounted integrally in the new controller.
- Q. Any design changes and/or software upgrades available to either the controller and/or drive assembly shall be provided by the Elevator Contractor and by the Controller and drive manufacturer at no additional cost to the University of Pennsylvania for a period of two (2) years following the date of turnover of each elevator.
- R. All geared hoist machines shall be manufactured by Hollister Whitney and shall contain a drum brake assembly.
- S. A Hollister Whitney manufactured "Rope Gripper" shall be required on all new or rehabilitated traction elevators. The Elevator Contractor shall follow all manufacturers' guidelines for proper installation and testing of the rope gripper assembly.
- T. All governors shall be manufactured by Hollister Whitney and shall be capable of tripping in both the "UP" and "DOWN" directions of travel.
- U. A total of two (2) co-axial cables and six (6) sets or pairs of number eighteen (#18) gauge individually shielded wire, along with the necessary conductors required, shall be provided in the traveling cable of each elevator.
- V. At least ten percent (10%) spare for other wires shall be provided in the traveling cable of each elevator with the additional spares being properly marked and tagged.
- W. All power door operators shall be manufactured by G.A.L., model MOVFR, and shall be of a closed-loop, variable voltage variable frequency (VVVF) type.
- X. All car and counterweight roller guides shall be manufactured by ELSCO.
- Y. Fixed slide guide assemblies may be installed in certain unavoidable conditions; however, prior written approval has to be received from the University's project Manager, or their Elevator Consultant prior to procurement.
- Z. The University' preference is for non-conventional in-ground hydraulic elevators to be installed on campus.
- AA. All hydraulic power units shall be manufactured by CEMCO, and shall be constructed of heavy gauge metal that shall not warp or deflect. The corners of the tank shall have at least a two inch (2") overlap at each corner that is welded to the sides of the tank reservoir. Welds located at any corner of the tank assemblies are not permissible.
- BB. All hydraulic pump motors shall be rated for 120 starts per hour.
- CC. All hydraulic valve assemblies/units shall have a heat range of up to 150 degrees Fahrenheit, or more, as shall be the highest industrial strength rating available for the application.
- DD. Approved fixture manufacturers are Innovation Industries and EPCO.
- EE. Approved cab manufacturers and interior rehabilitation vendors are Bostock Cabs, Curtis Cab, EDI/ECI, Gunderlin and Unitech Industries.

- FF. Approved hoistway door panel manufacturers are EDI/ECI, Gunderlin and Unitech Industries.
- GG. All new hoistway door panels shall contain a removable rubber astragal with a minimum width of 3/8" which would be capable of being replaced if damaged or worn. Each door panel section shall contain an astragal.
- HH. All car and hoistway door gibs shall be manufactured by S.E.E.S., "Enforcer" type to each door panel. Galvanized screws shall be installed in all pre-drilled holes. One (1) additional metal fire gib shall be installed in each door panel, in addition to the "Enforcer" gibs.
- II. Approved hoistway door frame manufacturers are EDI/ECI, Gunderlin and Unitech Industries.
- JJ. Only PEELLE manufactured components shall be allowed for use on any freight elevator applications.
- KK. All key switches shall be manufactured by BEST, and shall contain a removable core. The Elevator Contractor shall be responsible for the final coring, as required by the University of Pennsylvania Project Manager, prior to final turnover of each elevator.
- LL. All fire service Phase 1 and Phase 2 key switches shall be an MFD-1 key.
- MM. All Emergency Access key switches shall be provided with BEST key switches that shall utilize a #100 BEST key.
- NN. When the total elevator travel is greater than sixty feet (60') or more, a "house" phone shall be installed in the lobby area nearest the elevator, as well as a separate "house" phone in the elevator machine room area, which will allow for two-way voice communication means for each elevator, in order to meet with current code requirements for operation. The "house" phone shall be provided and installed by University personnel; however, the Elevator Contractor shall provide assistance, where necessary. (Coordinate with the University's ISC department.)
- OO. All hoistway jamb Braille plates shall be 4" wide by 4" high, black background with stainless steel numerals, and shall be in a .032" thickness containing four (4) holes with drive pins, with an adhesive back and secured by 6/32 weld studs. Braille plates shall be located on each side of the hoistway door jamb at a height of sixty inches (60") off of the finished floor in order to meet A.D.A. requirements.
- PP. A lockable, metal parts cabinet shall be provided in each elevator machine room area, and shall become the property of the University of Pennsylvania after project completion.
- QQ. The parts cabinet shall be manufactured by Tennsco, in a size 36" wide x 18 3/4" deep x 42 1/2" tall, or approved equal.
- RR. The prospective bidders to any project at the University of Pennsylvania may not alter, clarify, modify or delete any of the aforementioned items from their bid(s).
- SS. The Elevator Contractor shall be prohibited from making any further or additional changes to any previously submitted contractual documents after a purchase order has been received.
- TT. The Elevator Contractor shall provide any overtime, at no additional cost to the Owner, in order to meet their submitted project completion schedule.

2.0 Submittals:

A. Submittal Requirements:

1. Provide two (2) sets of neatly bound, written information necessary for proper installation, maintenance, troubleshooting, and adjustment of the equipment at least two (2) weeks prior to the day of final acceptance of the elevator(s) to the University of Pennsylvania Project Manager. Information is also be copied onto a CD or flash drive.
2. Provide one (1) set of laminated, job-specific wiring diagrams, as well as two (2) additional sets of job-specific wiring diagrams to the Elevator Consultant at least two (2) weeks prior to project completion. The laminated set of wiring diagrams

- shall contain a metal grommet in the upper-left corner of each laminated page, and a metal clip shall hold all of the laminated pages together. The Elevator Contractor shall define and maintain any circuit changes made during the course of installation on each set of the wiring diagrams. These diagrams will be the property of the University of Pennsylvania.
3. Provide two (2) sets of lubricating instructions, including recommended grade of lubricants. If lubricant is only purchased through an OEM supplier, list a suitable replacement brand of lubricant that can be used with this equipment. Information is also be copied onto a CD or flash drive.
 4. Provide two (2) sets of complete parts catalogs for all replacement parts, including ordering forms and instructions. Information is also be copied onto a CD or flash drive.
 5. Provide two (2) sets of general instructions for the proper recommended equipment maintenance schedule including function and frequency of required service. Information is also be copied onto a CD or flash drive.
 6. Provide two (2) sets of recommended spare parts list for each elevator. Information is also be copied onto a CD or flash drive.
 7. Provide the highest possible level (all levels) of microprocessor control testing device, tool or maintenance terminal suitable for all, but not limited to, troubleshooting, system adjustment/modification, emergency or special code required adjustment and maintenance procedures, etc. relating to the particular type of installed controls. This device shall be the sole property of the owner and shall be of the non self-destructible and/or of the non self-changeable type. The unit(s) will not be leased, borrowed or returned to the manufacturer. Any need to recalibrate, replace with a newer version, adjust and/or modify the unit in any way shall be provided to the University of Pennsylvania by the Elevator Contractor at no additional cost. Any replacement or newer unit will be delivered to the University of Pennsylvania within three (3) working (business) days of a written notice from the University of Pennsylvania. The unit must come with complete instructions and operating techniques required to operate all functions of the device. At no time, and for the life of the equipment, will the manufacturer be allowed to install and/or modify the control system to be of the self-destructible and/or self-changeable type.
 8. Provide one (1) set of required hardware, such as keyboards or any other tool or device for each elevator.
 9. Provide all levels of codes and/or passwords to gain access to the elevator system for the complete adjusting, diagnosing (to recall faults), troubleshooting, etc. of each unit. Information is also be copied onto a CD or flash drive.
 10. Provide one (1) set of complete replacement boards, job specific pre-programmed EPROMS, PROK, EEPROMS, device program tapes, disks, etc., for the microprocessor control and operating system, including SCR drive boards. If any changes are made to the programming of any elevator, a new complete set of the aforementioned device will be provided and the former devices will be returned to the manufacturer.
 11. List the cost and serial number of each control, operating and drive board, along with a not-to-exceed cost per year for price escalations on each specific board, or provide a formula for yearly escalations for at least a ten (10) year period. Information is also be copied onto a CD or flash drive.
 12. Any supplied board must come with a written guarantee that the board(s) is new and not reconditioned. If new board(s) is determined to be defective in any way, for a period of ten (10) years, the manufacturer will replace the defective board with a new non-reconditioned board(s) within 24-hours at no additional cost to the University of Pennsylvania. The manufacturer will have the right to keep the defective board(s).
 13. Provide two (2) sets of any and all technical and non-technical bulletins, modifi-

cation notices and any technical or non-technical notices of any kind pertaining to each elevator type in a timely manner (within five (5) working days of information release) for the life of the equipment or for at least a ten (10) year period following the acceptance of the last elevator. To insure (ensure) compliance with this request, the manufacturer is instructed to place the University of Pennsylvania on the manufacturer's mailing list for the (this) aforementioned information.

14. Provide two (2) sets of any information, manuals, instructions, etc., for each elevator, not specifically mentioned in this specification but that is required for each elevator(s), to the University of Pennsylvania representative at no additional cost for at least a ten (10) year period. The University's project manager shall submit all deliveries to the UPENN and data and documentation (archive) center.
15. Provide a backup of all final operating software on magnetic media, or other applicable device, for each elevator installed.
16. Two (2) signed copies of the manufacturer's Warranty/Guaranty provisions which are in accordance with the terms and conditions of the specification.

3.0 Additional Requirements:

- A. All manufacturer's technical and engineering support personnel must be immediately (within 4 hours) available to the University of Pennsylvania designated representative for direct assistance at any time during regular and normal hours of the elevator trade. This assistance must be available for at least a ten (10) year period from the acceptance of the last elevator, whether or not the original elevator installer is currently the elevator maintenance provider on campus.
- B. The manufacturer and/or installer of the controller must agree to make any type of changes to the program as requested by the University of Pennsylvania, such as in the case of government agency, building code or A.D.A. requirement, etc., and will be made at reasonable costs at industry accepted rates, for the life of the equipment or for at least a ten (10) year period. In addition, any discretionary building feature (change) change will be handled in the same aforementioned manner. All changes will be made in a timely manner and will not exceed fifteen (15) working days to complete.
- C. The control system will NOT be allowed to have a built-in modem for remote monitoring unless specifically requested by the University of Pennsylvania representative.
- D. In the event that the University of Pennsylvania Project Manager changes at any time during the life of the equipment or for at least a ten (10) year period from the acceptance of the last elevator, the obligations of the elevator manufacturer/installer will be assigned to the new University of Pennsylvania representative.

Non-Proprietary Equipment Agreement and Affidavit

The elevator control equipment proposed for the project identified below shall be Non-Proprietary in nature, as solely defined by the University of Pennsylvania and/or their Elevator Consultant. The following provisions comprise a warranty and agreement representing compliance with established standards for Universal Serviceability and Maintainability of Elevator and Escalator equipment at the University of Pennsylvania. The Elevator Contractor and their designated suppliers must adhere to the provisions set forth in this document. Failure to meet the provisions described herein shall result in the Elevator Contractor removing the equipment and installing new equipment as designed by the University of Pennsylvania and/or their designated representatives. The costs of installing any new devices shall be absorbed by the Elevator Contractor at no additional cost to the Owner.

1. Unrestricted Equipment Purchase

- Any University of Pennsylvania approved Elevator Contractor shall be allowed to purchase and install the equipment.
- The manufacturer shall provide all installation instructions as required.

2. Spare Parts

- Spare parts shall be made available for immediate sale for replacement or stock (within 24-hours of notice) and shall be maintained at the job site in order to maintain the equipment.
- Exchange-only provisions shall not be allowed to restrict parts purchase.
- Prior approval from the University of Pennsylvania representative shall not be required prior to the processing of any parts ordered.

3. Diagnostics

- The control system shall include all available diagnostic tool function, either onboard or in a separate device.
- The maintenance, adjusting and troubleshooting device, tool or system shall provide unrestricted access to all parameters, levels of adjustment, and flags necessary for maintenance of the equipment.

4. Training

- Complete and total factory and/or onsite training shall be made available from the original equipment manufacturer for enrollment by anyone who wishes to learn about installation, adjustment, maintenance and troubleshooting of the equipment.
- The training fee cost shall be identified in the space provided by the equipment manufacturer.
- 24-hours of non-cumulative on-site training shall be made available yearly at no added cost.

5. Engineering Support

- The original equipment manufacturer shall provide technical and engineering support to anyone designated by the U of P at any time and at no additional cost.

6. Documentation & Mailing List

- All specified manuals, drawings, diagrams, tools, boards, devices, etc., shall be provided with the equipment at time of delivery.
- Individual board costs shall be provided on a list to be supplied to the Owner.
- The U of P representative and/or their Elevator Consultant shall be placed on a mailing list for all future bulletins, technical information, etc., associated with any of the equipment installed on campus.

7. Technical Support Hotline

- A toll-free hotline telephone number for technical support shall be provided by the original equipment manufacturer whereby anyone shall be able to obtain assistance for installation, adjustment, maintenance or troubleshooting.
- This service shall be provided at no additional costs for all University of Pennsylvania locations having equipment from this manufacturer.

AGREEMENT/AFFIRMATION

The Undersigned equipment manufacturer agrees, swears and affirms that the conditions described above are hereby made part of the proposed equipment and the University of Pennsylvania, any Elevator Contractor, and/r Elevator Consultant shall rely upon these provisions.

Project/Building Name

Controller Manufacturer

Authorized Signature of Controller Manufacturer

Signature of Officer of Installing Elevator Company.

Printed Name, Title and Date

\$ _____
Per Diem Cost for Training After 24-Hours/Year