

## 14200 Elevators

### Part 1: General

- 1.01 It is the goal of NC State to have all buildings equipped with a minimum of one elevator that complies with all of the requirements in the Americans with Disabilities Act Standards for Accessibility.
- 1.02 The elevator systems at NC State include equipment of all types from most major manufacturers. It is the University's intent to provide elevator systems that are reliable and serve the campus community. The University currently utilizes a contractor to perform all maintenance and repair of elevator systems. The elevator inspector within Facilities Operations oversees the daily functions of the elevator maintenance contractor.
- 1.03 The designer of renovated elevator systems should coordinate with the staff of Facilities Planning and Design to obtain the most up-to-date information and history of elevators to be renovated. This information can be obtained from the elevator maintenance inspector in the Facilities Operations department.

### Part 2: Design Guidelines

- 2.01 Base Bid - It is the University's intent to install non-proprietary elevator control systems. This will ensure several elevator maintenance companies are capable of bidding on and providing the required maintenance and repair. The University also believes that these systems will provide the best long-term reliability and the lowest operational and maintenance costs. The designer will provide in the base bid an elevator system that meets the program needs and all of the Department of Labor requirements for elevator systems. In addition, the elevator system shall meet the following requirements:
  - Provide non-proprietary microprocessor based elevator control system that is serviceable and maintainable by any qualified elevator maintenance provider capable of maintaining apparatus of similar design and complexity. Elevator control system shall not require any external proprietary service tool.
  - Elevator control system shall be non-proprietary. All tools, programmers, CRT with keyboard, Hand Held or Lap top computer, software etc., necessary to maintain, service and/or trouble shoot the elevator system shall be furnished to the owner and permanently left on the job site. Instructional manuals etc., and training in the operation of these tools, programmers, etc., are to be provided to the owner.
  - The manufacturer of the Non-proprietary elevator system must provide technical support.
  - The manufacturer of the Non Proprietary elevator controls and other components must have an established reputation. Their products must have performed satisfactorily under normal conditions in not less than twenty-five other elevator installations of equal or greater capacity and speed for a minimum of one and a half years within the United States and a minimum of three installations in North Carolina. Names and address of owners and buildings in which the proposed combinations of controllers and elevator components has performed is to be provided to the owner upon request.

- Designers should use the specification guideline criteria for traction and hydraulic elevators as developed by the North Carolina Department of Labor – Elevator Division. This guideline should be obtained by all designers preparing elevator specifications. The following guideline additions or modifications shall be included in specifications for projects at NC STATE University.
1. The elevator telephone shall be a “handsfree”, vandal resistant Gaitronics, Model No. 297 and shall be wired back to the elevator machine room. The contractor must include the procurement and installation of the telephone device for the elevator as part of the work. NC State Communications Technology will provide the wiring from the Building telecom room to the machine room where the elevator controller will be located. The final connection of that telephone circuit in the controller is to be made by the elevator contractor and should be coordinated with NC State Telecommunication.
  2. The stop switch in the car must be wired to the alarm bell.
  3. At the car top inspection station a light should be connected to a 6’ to 8’ cord hardwired to the car top inspection station with the light switch located at the light. The car top inspection station is to have a GFCI receptacle.
  4. ENGRAVING, SIGNS, DISPLAYS, AND ANNUNCIATORS:
    - a. Engrave the elevator capacity with black lettering at the top of the Car Operating Panel and Fire Service Phase II operating instructions with red lettering above the Fire Service key switch, jewel and call cancel button.
    - b. Engrave the Fire Service Phase I operating instructions with red lettering directly above or below the Fire Service key switch on the first floor, terminal Hall Button Station.
    - c. Furnish and Install Door Jamb Braille plates on the elevator door jambs at each floor per code requirements.
    - d. Appendix "H" text and graphics indicating "In case of fire, do not use elevators, use stairways" are to be integral with and permanently engraved above the stainless steel face plate of the call button station at each floor.
    - e. All other key switches and/or Owner required signage are to fully integrated into the single call button station faceplate at each floor. Match Owner's existing additional signage.
    - f. Specify that the color of digital displays in the elevator cab to be green and black in lieu of the typical red and black displays.
    - g. Specify that the elevator’s audible signals are to be replaced with a digital voice annunciator. The annunciator shall be a female-recorded voice with adjustable volume and tone controls. The recorded message shall state the floor location of the cab and the direction of travel when the cab doors open.

5. The elevator contractor shall provide three complete sets of electrical and solid state wiring diagrams and operating and maintenance manuals. Two sets of diagrams and manuals shall be delivered to the Designer who will deliver one set to the engineering officer of the facility; and one set to the Contract Administrator for Elevators.
  6. Tools, programmers, CRT with keyboard, Hand-held or Laptop computer, software, etc. necessary to maintain and/or trouble-shoot the elevator system shall be furnished to the owner. Provide instructions manuals, etc., in the operation of these special tools.
  7. Provide Owner with Three (3) complete sets of all keys labeled as to their function. Provide one (1) emergency elevator door key.
- 2.02 Alternate Bid – The University is attempting to standardize the elevator control systems on campus. The designer shall prepare the design and specifications to accept an alternate bid to meet the following requirement:

Elevator control system shall be non-proprietary and manufactured by Motion Control Engineering (MCE).

The digital voice annunciator shall be a Digitized Floor Annunciator by CE Electronics, Inc.