

GEORGIA DEPARTMENT OF CORRECTIONS Standard Operating Procedures		
Policy Name: Mechanical, Electrical, Plumbing Design Standards		
Policy Number: 410.06	Effective Date: 10/26/2017	Page Number: 1 of 6
Authority: Commissioner	Originating Division: Executive Division (Engineering & Construction Services)	Access Listing: Level I: All Access

- I. Introduction and Summary:** This policy provides guidance for Mechanical, Electrical, and Plumbing Design Standards to be met for all new construction, renovations, or additions for facilities and the Central Training Academy planned or administered by the Engineering and Construction Services section of the Georgia Department of Corrections (GDC). Engineering and Construction Services endeavors to meet the highest performance standards for supporting operations of the GDC. This policy is specifically targeted to meet the guidelines promulgated by the American Corrections Association (ACA).
- II. Authority:**
- A. GDC Board Rules: 125-2-2-.03, 125-2-3-.02, 125-2-3.03, 125-2-3.04, and 125-2-3.05;
 - B. GDC Standard Operating Procedure (SOPs): 410:05 Capital Planning and 410.04 Space Planning;
 - C. Safety and Health Regulations for Construction, Occupational Health and Environmental Controls, Code of Federal Regulations (CFR) Part 29 Subpart D 1926.56, Occupational Safety and Health Administration (OSHA) Illumination Standards;
 - D. (OSHA) Technical recommendation Section III- Chapter 2 (A) (1-3) - Engineering Recommendation for Ventilation and Air Treatment; and
 - E. ACA Standards: 2-CO-1A-06-1, 2-CO-2A-01, 1-CTA-2A-01, 1-CTA-2B-01, 1-CTA-2B-02, 1-CTA-2B-03, 1-CTA-2D-01, 1-CTA-2D-02, 1-CTA-3E-02, 4-4123, 4-4137-1, 4-4138-1, 4-4139-1, 4-4145, 4-4146 (Revised Jan 2008), 4-4150 (Revised Jan 2012), 4-4151 (Ref. 3-4144) (Revised July 2012), 4-4152 (Ref. 3-4145), 4-4153 (Ref. 3-4146), 4-4216, and 4-4330 (Ref. 3-4311) (MANDATORY).

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III. Definitions:

- A. **New Construction** - Facilities or structures which have been modified or completed after January 1, 1990, unless otherwise noted with a later date
- B. **Accreditation Cycle** - Three-year recurrence interval in which facilities are audited for compliance with American Corrections Association guidelines.
- C. **Engineering and Construction Services (ECS)** - Section of the Georgia Department of Corrections that is responsible for facility design, construction and maintenance.

IV. Statement of Policy and Applicable Procedures:

- A. When facilities are designed for new construction or renovations, ECS will utilize the most cost effective lighting, equipment and mechanical support systems available at the time of design to conserve electricity. If renewable resources are available at reasonable cost, these resources will be used.
- B. When facilities are designed for new construction or renovations, ECS will utilize plumbing standards and equipment that promote water conservation.
- C. Engineering and Construction Services will use licensed design professionals to ensure all buildings are designed and built to meet the standards listed in this policy and ensure buildings conform to applicable federal, state, and/or local building codes. The review of construction or renovation plans shall include an examination of issues of safety, code compliance, energy efficiency, security, efficiency of operations, health codes and compliance to ACA standards. All construction will be designed and built to meet current standards at the time of design.
- D. New Facilities shall be designed and built to allow offenders access to toilets and hand-washing facilities 24 hours per day. Offenders shall be able to use toilet facilities without staff assistance when they are confined in their cells/sleeping areas. Toilets shall be provided at a minimum ratio of one (1) for every twelve (12) offenders in facilities housing males and one (1) for every eight (8) offenders in facilities housing females. Urinals may be substituted for up to one-half of the

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toilets in male facilities. All housing units with three (3) or more offenders shall have a minimum of two (2) toilets. These ratios apply unless national or state building or health codes specify a different ratio. ECS utilizes the International Plumbing codes in design planning.

- E. ESC design professionals shall design facilities to ensure offenders have access to operable washbasins with hot and cold running water in the housing units at a minimum ratio of one (1) basin for every twelve (12) occupants, unless national or state building or health codes specify a different ratio. ECS utilizes the International Plumbing codes in design planning.
- F. ECS design professionals shall design facilities to ensure offenders have access to operable showers with temperature-controlled hot and cold running water, at a minimum ratio of one shower for every twelve (12) offenders, unless national or state building or health codes specify a different ratio. Water for showers shall be thermostatically controlled to temperatures ranging from 100 degrees to 120 degrees Fahrenheit, to ensure the safety of offenders and to promote hygienic practices. ECS utilizes the International Plumbing codes in design planning.
- G. Facility and Central Training Academy lighting design plan will be established at minimum to meet Occupational Safety and Health Administration (OSHA) regulation 1926.56, while matching lights with tasks to be performed. Other factors that may be considered in determining lighting requirements are: interior surface finishes and colors, type and spacing of light sources, outside lighting, and shadows and glare. Lighting minimums for specific areas of the facility, unless such would jeopardize the security and/or safety of the area are:
 1. Offender Rooms/Cells (20 Foot candles at desk level);
 2. All the following measurements are at face level and in measured in Foot candles:
 - a. Offender Grooming Area (20);
 - b. Kitchen (45);

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- c. Dining Halls (10-20);
- d. Conference Rooms (27-40);
- e. Corridors/Stairways (10-18);
- f. Classrooms [General] (40-100);
- g. Classrooms [Lecture] (100-200);
- h. Training Rooms (45);
- i. Libraries (20-50);
- j. Lobbies, Lounge, Reception Areas (15-20);
- k. Washrooms (20);
- l. Storage Rooms (10);
- m. Office (50);
- n. Maintenance Shops (10-20);
- o. Mechanical Rooms (18);
- p. Fire Stations (20-50);
- q. Laundry Washing (20-50).

H. Laundry Press 50-100 offender housing levels shall be designed so that noise levels do not exceed 70 dBA (A Scale) during daytime hours and 45 dBA (A scale) during nighttime hours. Testing must be done annually, with at least one measurement being conducted during daytime and nighttime hours.

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- I. (Renovation, New Construction Only after January 1, 1990). Mechanical systems shall be designed to provide circulation of at least 15 cubic feet of outside or recirculated filtered air, per minute, per occupant, for cells/rooms, officer stations, and dining areas, as documented by a qualified technician and should be checked not less than once per Accreditation Cycle.
- J. (Existing Construction completed before January 1, 1990) Mechanical systems shall be designed to provide circulation of at least 10 cubic feet of fresh or recirculated filtered air, per minute, per occupant, for offender rooms/cells, officer stations, and dining areas, as documented by an independent, qualified source and should be checked not less than once per Accreditation Cycle.
- K. Mechanical systems shall be designed to provide temperatures in indoor living and work areas appropriate to the summer and winter comfort zones. Thermostats in areas with HVAC systems will be set at 68-78 degrees Fahrenheit.
- L. ECS will work with Facilities Division to obtain a listing of emergency equipment required for the planned facility during the design phase and determine what must be supported by emergency generators or other sources to ensure continuation of critical operations and offender/staff safety during emergencies.
- M. The institution's potable water source and supply, whether owned and operated by the public water department or the institution, shall be certified by an independent, outside source to be in compliance with laws and regulations. ECS and Design professionals shall ensure that systems have the capabilities of meeting current and near future needs of the size facility to support all areas of the facility to include: drinking water, laundry, food service, bathing, restrooms, firefighting and planned Correctional Industries plants.
- N. Noise levels, and air circulation levels should be in compliance with the present standards of the Occupational Safety and Health Administration (OSHA), published in the latest revision of 1910.95 and OSHA Technical Manual Section III: Chapter 2 (V.1., 2.,3.) Engineering recommendations for ventilation.

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O. Training Academy mechanical systems controlling indoor air temperatures and comfort levels for work areas and dorms shall be designed to at a minimum meet Occupational Safety and Health Administration (OSHA) 1910.1000. Thermostats in areas with HVAC systems will be set between 68-78 degrees Fahrenheit.

P. Any New Training Academies as Built: Plumbing and mechanical systems shall be designed to provide adequate toilets, wash basins and shower facilities. Designs will ensure that toilets are provided to at a minimum meet the most recently posted OSHA 1910.141 (c) (1) (i) regulation.

V. **Attachments:** None

VI. **Record Retention of Forms Relevant to this Policy:** None