GENERAL GUIDELINES FOR CLASSROOM DESIGN ON THE AURARIA CAMPUS

Prepared by the Auraria Higher Education Center Planning Department and the Faculty Advisory Committee to the Auraria Board (FACAB)

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I. Background

1.1 The Auraria Campus, which serves the Community College of Denver, Metropolitan State University of Denver and University of Colorado Denver (henceforth known as “the institutions”), has a wide range of classroom facilities to meet the needs of its teaching and learning mission. General assignment classrooms are centrally scheduled and managed, and are designed to serve the entire campus community. The Auraria Higher Education Center (AHEC) manages the general assignment classrooms for the use of the institutions.

1.2. The Faculty Advisory Committee to the Auraria Board (FACAB) collaborated with the Auraria Higher Education Center Planning Department to develop guidelines for the design of classrooms, emphasizing general assignment classrooms. Our objective in creating this document was to provide a standard for new construction and renovation of classrooms that reflects the pedagogical needs of most faculty on the Auraria Campus, as well as other concerns (such as, accessibility, safety, security). These guidelines, which were available for review by all three institutions, are a direct result of that effort. Because standards change with time, FACAB should review these guidelines biannually.

1.3. These guidelines are not intended to replace faculty participation and consultation during the design and construction of new and renovated classrooms. Faculty should have a voice in all stages from design through construction, including revisions thereof.

1.4 General assignment classrooms include rooms that range from small seminar classrooms to larger auditoriums. These classrooms should be sufficiently flexible to meet pedagogical requirements of the many departments, faculty and students who use them.

General assignment classrooms are allocated to one of the institutions that have first right to schedule the room. If the room is not scheduled by the allocated institution, it is then able to be scheduled by any of the other two institutions. Therefore, flexibility and the ability to work for a number of different faculty is important.

While these guidelines should be adhered to as much as possible for all general assignment classrooms, they may be specified by the institutions for use within their proprietary classrooms — classrooms that are owned and expected to be used by just one institution.

1.4 The standards contained in this document are required for all Auraria Campus general assignment classrooms. The FACAB further recommends that these guidelines be applied by institutional officials to the design of other classrooms as appropriate.

1.5. These guidelines should be applied to both new construction as well as renovation of existing buildings and/or classrooms. While renovating existing classrooms to meet these guidelines is likely costlier, providing classroom space that appropriately meets the teaching and learning needs is of the upmost importance. If elements of these guidelines are not able to be implemented in a renovation, those aspects should be
discussed with the assigned building committee (or other appropriate entity established to review aspects of the project) to determine if other options are available to meet the intent of these guidelines.

II. Guidelines

2.1. General assignment classroom design definitions and requirements preface:

2.1.1. Projection Capable Classroom: A classroom that has data/video projection capabilities, document camera, internet connectivity at the instructor’s station, a DVD and/or other input device, and a user-friendly computer connection. Projection capable classrooms use standardized control/interface systems and employ a standardized operational protocol. All general assignment classrooms must meet this minimum standard. Contact AHEC Classroom Support Services at 303-556-2426 for technical details.

2.1.2. Seminar Room: A teaching space for small-section classes with a capacity of approximately 20 students. The level of technology necessary should be confirmed on a room-by-room basis during the design phase.

2.1.3. Case Study Room: A tiered teaching space with a capacity of approximately 50 students that facilitates interaction between instructors and students. Each student has a computer connection, however, that may be provided via wireless access as a hard-wired connection is typically no longer needed.

2.1.4. Lecture Hall: A tiered teaching space with a capacity of 100 students to approximately 250 students that is most suitable for traditional lectures, multi-media presentations, and demonstrations.

2.1.5. The teaching and learning environment in classrooms involve many elements. Considerations include, but are not limited to, acoustics, lighting, HVAC, fittings, furnishings, and audiovisual systems. Faculty may request classrooms and classroom configurations that meet their respective teaching needs. The following sections provide requirements in the aforementioned areas for general assignment classrooms.

2.2. General Requirements

2.2.1. All general assignment classrooms must meet the projection-capable classroom standard (see 2.1.1). These classrooms should also meet the various needs of today’s students (e.g., electrical outlets).

2.2.2 New construction and renovation of classrooms should accommodate the needs of the users of the classroom, such as an individual with a disability that precludes their use of existing seating.

2.2.3 Classroom technology is dynamic. As such, current classroom technology should be explored by each institution to address institutional needs during the construction and renovation of classroom.

2.2.4. Classroom Signage
a. Signage must be placed on the exterior of all classroom doors in accordance with ADA code. The sign must include the room number and room capacity.

b. Emergency signage must be placed in classrooms that illustrate campus policies and procedures.

c. Signage that indicates how to report problems with the room and with the equipment must be placed in the instructor’s area.

2.2.5. Accessibility

a. New classrooms must be accessible to students and faculty and must meet ADA requirements.

b. Renovated classrooms must be brought up to as high a level of accessibility for students and faculty as reasonable.

c. For classrooms with fixed seating, a portion of the seating must be ADA accessible.

d. Teaching stations must be ADA accessible.

e. For classrooms with movable seating, ADA furniture can be provided by contacting AHEC Classroom Support Services at 303-556-2426.

2.2.6. Doors

a. Door hardware must meet building code requirements and ADA accessibility criteria and operate quietly. Include bumpers, gaskets and nylon brushings to muffle the noise of the doors closing.

b. Access control must be provided at each door to allow the classrooms to be opened via a set schedule and to ensure that doors can be remotely locked from Auraria Campus Police in the event of a campus emergency. Additional consideration should be given to allow for individual door lock capabilities.

c. Classroom entrance doors must have a glass observation window panel, but not a glass sidelight. This glass observation window panel must be shatter resistant safety glass. The glass panel should be located in such a way to prevent someone from being able to break the glass panel, and then reach inside the door to gain entry.

d. When possible, doors to enter classrooms should not be adjacent to the front of the room or teaching area. Instead, doors should be located in the rear or side of the classroom to prevent disruption if the door is used while class is in session.

e. Doors must not be located on the presentation wall.

2.3 Acoustical Requirements

2.3.1. The acoustics in a classroom can affect how well the listeners can understand verbal communication. Factors include the speaker’s voice and the background noise and reverberation time in the room.
2.3.2. Room wall and ceiling treatments should be explored in the design as they can greatly reduce the reverberation time in a classroom.

2.3.3. Additional consideration should be give to ensure that all rooms, particularly those over 50 seats, consider hearing impaired students in the acoustical design of the space.

2.4 Lighting Requirements

2.4.1. A variety of lighting that is easily controlled is desired in general classrooms to ensure that multiple presentation methods are possible including standard lectures, video, presentations, etc.

2.4.2. General classrooms should have two lighting zones:
   a. Zone 1: the presentation (instructor’s) area of the room
   b. Zone 2: the student area of the room – additional student zones in large classrooms may be located in other areas of the room

2.4.3. Auditorium/large classrooms should have at least three control lighting zones and variable illumination levels:
   a. Zone 1: the presentation (instructor’s) area of the room
   b. Zone 2: the student area of the room (multiple student zones and may require different illumination levels)
   c. Zone 3: instructor spotlights for seeing the instructor while showing slides

2.4.4. Installation and selection of markerboard lighting should ensure that the lamps in the fixtures will not be directly visible from the student seating area. In addition, if the projection screen lowers below the presentation surface lighting fixtures, that section of the lighting system directly behind the projection screen(s) should be separately controlled.

2.4.5. Presentation lighting fixtures should not directly be in contact with or interfere with the movement of the projection screen(s).

2.4.6. If a classroom door cannot, for whatever reason, be placed according to Section 2.2.4., the placement of emergency lighting should be considered so that undue glare is not placed on the presentation board or projection screen(s).

2.4.7. Lighting Controls
   2.4.7.1. Locations
      2.4.7.1.1. Basic classroom lighting controls should be placed at all classroom entrances.
      2.4.7.1.2. Controls for presentation- and writing-surface lighting should be placed on both sides of the front wall.
2.4.7.1.3. For new construction, lighting controls for the presentation writing surface should be configured to allow the projection screen and accessible writing surface to be used simultaneously. That is, the lights over the writing surface should be controlled in separate sections to provide illumination of a portion of the presentation writing surface while a projection screen is in use.

2.4.7.1.4. Lighting controls should be labeled clearly to indicate which zones are being controlled.

2.5 Presentation Wall

2.5.1. Presentation Writing Surfaces

2.5.1.1. Markerboards must be installed across as much of the front (instructor’s) wall as possible.

2.5.1.2. Additional markerboards should be mounted on secondary classroom surfaces, when possible. This need should be discussed during the design process with the building committee.

2.5.1.3. Markerboards must be mounted 36 inches above the finished floor, with consideration for overall height and line of sight.

2.5.1.4. Markerboards should have trays that run the full length of the markerboards.

2.5.1.5. Markerboards should have non-removable map hooks placed at the top of the boards.

2.5.1.6. Refer to lighting requirements of markerboards in Sections 2.4.4. and 2.4.5. of this document.

2.5.1.7. All classroom-presentation writing surfaces must have useable space for markerboard(s) while the primary projection system is in use.

2.5.1.8. Markerboards must be securely fastened/mounted on a wall (not freestanding).

2.5.1.9. Large classrooms should be designed for multi-sectional (side-to-side) markerboards. Such markerboards should have many horizontal or vertical panels in each section to provide more space for writing.

2.5.1.10. Markerboards must have high quality surfaces and other construction to ensure that they can withstand continued use.

2.6 Windows and Window Treatments

2.6.1. There should be no windows on front (presentation) walls.

2.6.2. Windows must have an STC rating sufficient to reduce exterior environmental noise levels to meet classroom acoustical standards.
2.6.3. Window treatments and electrical or mechanical methods that at a minimum reduce the amount of light entering the classroom are required in order for projection images to be visible. While AV equipment continues to improve in quality, glare and direct light on presentation surfaces remain problematic and, as such, window treatments must be effective at reducing or eliminating glare and direct light.

2.6.4. Two types of window treatments may be allowed – one that would help reduce glare and not be fully opaque and one that is capable of entirely eliminating outside light from entering. The design team involved with any new construction or renovation may make a determination on whether one or two treatments will be used depending on the exterior lighting and the selection of AV equipment. This should ensure that the equipment will be able to work with the amount of outside light entering the room.

2.6.5. When possible, window treatments should be remotely controlled.

2.7 Teaching Stations

2.7.1. A teaching station must be provided at the front of the room adjacent to the presentation wall. Alternate teaching station options may also be considered.

2.7.2. If teaching stations are not desired by the building committee or not feasible in a renovation, that should be discussed with the design team and future end users of the space. As such, teaching stations do not need to be provided, if this is supported by the building committee. If that is the case, then projection system controls and AV equipment locations need to be reviewed by the building committee to ensure placement does not interfere with presentation surface(s) or markerboard(s).

2.7.2. The teaching station should include the controls for the projection capable system, an internet connection (may be hard wired or provided via wireless), and space for an instructor’s computer and other material.

2.7.3. The preferred teaching station should be mobile so it can be moved around the front of the room as necessary. To allow this movement, floor electrical boxes must be provided along the front of the room at evenly spaced intervals of eight feet. Stationary teaching stations may also be used, but consideration must be given relative to the placement of the stationary teaching station to the markerboard so that enough width is provided to allow appropriate movement, including wheelchair access.

2.7.4. A DVD and any other input devices must be mounted on a rack to the side of the presentation space so as not to block the presentation/markerboard surface, ideally away from classroom doors. All racked equipment must be accessible to instructors or students who use wheelchairs or other assistive devices.
2.7.5. A campus phone must be provided at the front of the room near the mounted devices in 2.7.4. above. The phone must be clearly labeled with information about safety, equipment use, etc.

2.8 Emergency Preparedness Mounting Information

2.8.1. The Auraria Higher Education Center provides a number of documents for classrooms to provide information needed in the event of an emergency. All of the documents listed below will be provided to each general assignment classroom. However, it is the project’s responsibility to provide the Plexiglas holders as well as mount them per the specified location.

2.8.1.1. Evacuation Plan – A legal-sized evacuation plan will be prepared for each room showing the evacuation route one should take in case of an emergency. This plan is in landscape orientation, and a legal-sized, landscape-oriented, Plexiglas holder is required for this plan.

2.8.1.2. Emergency Procedure Guide – A letter-sized emergency procedure guide with a portrait orientation must be placed in each room adjacent to the Evacuation Plan. A letter sized, portrait-oriented, Plexiglas holder is required for this guide.

2.8.1.3. Emergency Preparedness DVD – A DVD along with playing instructions must be provided to each classroom. This DVD and instructions should be placed in a letter-sized, portrait-oriented, Plexiglas holder.

2.8.2. Mounting Locations

2.8.2.1. The Evacuation Plan and Emergency Procedure Guide must be mounted inside the classroom adjacent to the classroom door that is closest to the front of the room.

2.8.2.2. The Emergency Preparedness DVD should be mounted adjacent to the rack holding the DVD and other equipment.

2.9 Design Documentation and Review

2.9.1. During design of general assignment classrooms, the Architect/Engineer or design consultant shall provide drawings to the assigned building committee to review at each stage of the design-review process. These plans may be scaled drawings or electronic PDFs. Classroom layouts must include detail sufficient to ensure compliance with these design guidelines. The drawings must be separate documents that are prepared with furniture and A/V consultants.

2.9.2. The building committee should include end users, specifically faculty representatives from each institution for general assignment classrooms.

2.9.3. As noted in section 1.3, faculty should have a voice in all stages of construction and renovation from design through implementation, including revisions thereof.