

**THE UNIVERSITY OF COLORADO DENVER
ANSCHUTZ MEDICAL CAMPUS AND DOWNTOWN CAMPUS**

**UC DENVER
DESIGN AND CONSTRUCTION STANDARDS**

**PART 1.0
POLICIES PROCEDURES AND RESPONSIBILITIES**

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1.0 POLICIES, PROCEDURES AND RESPONSIBILITIES (PP&P):**1.1 UC Denver Departments – Identifications:**

A. The UC Denver departments most directly involved with the process of planning, design and construction of projects are as follows:

1. Facilities Management
 - a. Facilities Projects
 - b. Campus Building Official (CBO)
 - c. Fire Life Safety Officer
 - d. Environmental Services (ES)
 - e. Grounds
 - f. Parking and Transportation (PT)
2. Information Systems (I/S)
3. Environmental Health Safety Department (HSD)
4. University Police (UP)
5. Mail Services

1.2 UC Denver Departments' PP&R:

A. Facilities Management: This department encompasses Facilities Projects, Building Maintenance and Operation, Engineering, Environmental Services, Grounds, and Parking and Transportation whose PP&R's are included in the following:

1. Responsibility for Compliance in Design: The A/E is responsible for producing a design that complies with applicable codes and regulations. If the Program Plan requirements conflict with codes or regulations, the A/E shall notify the Owner's Representative, in writing, and provide a recommendation for resolution of the A/E's recommendation through the UC Denver Project Manager who will advise the A/E how to proceed.
2. Air permit regulations: Air permit regulations require that certain equipment such as emergency generators, engine-powered fire pumps, boilers, emissions from printing facilities, and air pollution control devices be permitted by the Colorado Department of Public Health and Environment (CDPHE). Application for such permits need to be initiated seven months before the start of any construction activities. This process applies when modifying existing equipment as well as to installing new equipment. A/E's shall notify the UC Denver Project Manager if a project will include this type of equipment.
3. Building Design Service Life Expectancy:
 - a. UC Denver facilities shall be designed with either a 50 or 25 service life expectancy.

Design Life of Building	Inaccessible, or Structural Components	Components where replacement is expensive or is difficult (incl. below ground drainage)	Major, replaceable components	Services, installations and external works
50 plus years	50 years	50 years	25 years	25 years

4. Live Load Design:
 - a. Floors of office, classroom, laboratory, and similar general purpose facilities of flexible use shall be designed for a uniformly distributed live load of 100 pounds per square foot, including partition loads.
 - b. Floors of mechanical rooms shall be designed for the equipment provided, but not less than 150 psf. Underground structures shall be designed for the appropriate fill and vehicle loading. Pay particular attention to structures that could be subject to fire truck or other vehicular traffic.
 - c. The design development drawings should show the design live loads for all floors, roofs, and underground structures. Areas of heavier than standard design loading should be clearly delineated.
5. Mechanical and Electrical Equipment Rooms/Spaces/ Locations:
 - a. Typical maintenance procedures includes weekly, monthly, quarterly, and annual preventative maintenance work on Fire Alarm systems, cooling towers, steam systems, lighting, chillers, roof top units, clean out of roof drains, roof

- repair, change filters, clean air handling units, lubricate bearings on motors, plumbing fixtures, etc.
- b. Mechanical and electrical equipment shall be designed and installed so that it is accessible for preventative maintenance and repair work.
 - c. UC Denver complies with Federal Law, the Occupational Safety and Health Act, 29 CFR 1910 General Industry Standard for the preventative maintenance and repair work conducted by the Maintenance and Operations Staff in UC Denver buildings.
6. Energy Conservation Design:
- a. Design Objectives:
 - 1) One of the design objectives for UC Denver new construction and renovation projects is to produce energy efficient buildings and meet The State of Colorado High Performance Building Program. Architects, Engineers, and other Design Consultants shall design energy efficient buildings that provide the environment required by our teaching and research faculties to carry out their work in an effective manner.
 - 2) The A/E shall utilize energy modeling to assist its efforts to design an energy efficient project. These services consist of modeling the projected energy use of proposed designs, suggesting strategies to reduce the projected energy use, and providing life-cycle cost analysis for suggested strategies. Verify the suggested, project specific energy conservation strategies with UC Denver Facilities Operations.
 - 3) Strategies not proven under field operation conditions are not acceptable.
 - 4) The responsibility for choosing and incorporating energy efficiency strategies into the design remains that of the design team and the UC Denver and to be compliant with State of Colorado High Performance Building Program.
 - 5) Include the means to measure the results of the energy efficient design strategies in all projects.
 - 6) Use Demand Control ventilation where possible consistent with ASHRAE.
 - b. Glass Area: Where glass is employed, consideration shall be given to the economic feasibility of insulating glass and blinds or other shading devices.
 - c. Mechanical Systems:
 - 1) Plumbing, heating, cooling, ventilating, and control systems shall be designed to insure minimum consumption of energy consistent with necessary environmental conditions. Consider heat recovery and recycling where economically feasible.
 - d. Lighting Systems: Design lighting systems and controls to ensure minimum consumption of energy while providing quality illumination for the visual tasks

in each room or space. Avoid general high levels of illumination except in the most critical applications. Provide specialized supplementary lighting sources at the task area in lieu of uniform high level illumination throughout. Switching or other lighting control devices shall provide for flexible levels of lighting. Minimize decorative lighting. Consider the principles of “day lighting” for new buildings.

- e. Evidence of Compliance: The A/E shall submit calculations and other data with the Design Development Documents to demonstrate compliance with the conservation policy and the estimated cost impact on construction and operation.
7. Hazardous Materials Management:
- a. Prohibited: UC Denver prohibits the installation of any material or equipment that contains asbestos. See Bidding Requirements for the procedure that will be followed to identify existing hazardous materials.
8. Primary Electrical Transformers:
- a. Approval: The plan for primary electrical service for a project shall be reviewed and approved by UC Denver Facilities Operations before the A/E’s formal presentation of the schematic design.
 - b. Upgrading existing Service: Transformers required for upgrading of service to an existing building where there is no major renovation project are also required to be installed in transformer rooms within the affected building. If such location is determined to be impractical, construct a subsurface transformer space on an exterior wall of the building.
9. Site Data:
- a. UC Denver will engage a Registered Land Surveyor to prepare a topographic plan showing adjacent property lines, existing building lines, grades, pavements, trees, adjacent conditions, existing structures, and utilities for use in preparation of a construction site plan coordinated with existing conditions.
 - b. The A/E shall review the topographic plan and report any inconsistencies or incomplete information to the UC Denver Project Manager.
 - c. The A/E shall define contract and construction limits and outside staging areas on the site construction site plan.
10. Universal Access Requirements:
- a. General Information:
 - 1) The A/E shall address the needs of persons with disabilities, both in the building design and within the contract and construction limits. Indicate on the drawings, circulation patterns and disability parking which may be affected by the construction.
 - 2) Areas adjacent to the construction project shall remain accessible to persons with disabilities. Conduct construction activities to control potential hazards to disabled persons.

- 3) Projects shall be designed according to the Americans with Disabilities Act Accessibility Guidelines. **Use International Building Code** requirements where they are more restrictive.
- 4) The contract documents will use terms such as “disability” or “accessible” in lieu of the word “handicap” due to the perceived negative or derogatory connotation.

11. Landscape Plans:

- a. Landscaping plans shall be reviewed with UC Denver Facilities Operations, no later than the Design Development phase.

B. Campus Building Official PP&R's:

1. Policy:

- a. The State of Colorado mandates that the International Building Code (IBC) and related standards be the recognized authority for the public health and safety and continuity of all State owned buildings. The University of Colorado is charged with the responsibility of ensuring that the provisions of these standards are met on its campuses. The UC Denver campus has the specific task to review and examine buildings and construction documents, to permit and inspect construction and/or demolition to insure conformance to these standards on its campus and issue certificates of occupancy if satisfactory conformance is demonstrated.
- b. To this end the UC Denver has a building authority to carry out the duties and responsibilities stated above. The authority is executed by the UC Denver Campus Building Official (CBO) who has the responsibility to perform all the duties set forth in the IBC, other applicable Codes and Standards (listed in paragraph 5 below) and as deemed necessary and advisable by the CBO to ensure the public health and safety as they pertain to UC Denver campus buildings.

2. Permits and Inspections:

a. Permits:

- 1) Permit Requirement: No building or structure regulated by the IBC and other applicable Codes and Standards shall be erected, constructed, enlarged, repaired, moved, removed, converted or demolished unless a separate permit for each project has first been obtained from the office of the CBO.
- 2) Exempted Work: A building permit shall not be required for the following:
 - a) Fences not over 6 feet high.
 - b) Movable cases, counters and partitions not over 5 feet, 9 inches high with no electrical or plumbing.
 - c) Platforms, walks and driveways no more than 30 inches above grade and not over any basement or story below.

- d) Painting, papering and similar finish work.
 - e) Various other work at the discretion of the CBO.
- b. Application for Permit:
- 1) Application: To obtain a permit, the applicant shall first file an application for permit in writing. A permit application form can be obtained from the office of the CBO by calling (303) 724-0676.
 - 2) Construction Documents Submittal:
 - a) Two legible copies of drawings and specifications and one copy of each engineering discipline's calculations, where such calculations are required, shall be submitted with the application for permit. Drawings shall be drawn to scale, organized and be of sufficient clarity to indicate the location, nature and extent of the work proposed; and shown in sufficient detail to indicate conformance to the provisions of IBC, other applicable Codes and Standards and all relevant laws, ordinances, rules, and regulations. A stamped, dated and signed by the responsible architect or engineer should be provided to UC Denver Project Manager.

Exception: The CBO may waive the submission of construction documents if findings include that the nature of the work applied for is such that the reviewing of those documents is not necessary to obtain compliance with the IBC and other applicable Codes and Standards.
 - b) The engineer or architect responsible for the structural design work shall include in the construction documents provisions for structural and other special inspections required by the IBC and other applicable Codes and Standards. These inspections shall be established with the CBO during the design phase of the project.
 - c) Permits will not be issued until a renovation project has received a Notice of Compliance from the CBO or from the state's 3rd party code consultant for new buildings or major additions.
- c. Construction Documents Review:
- 1) The CBO and UC Denver Project Manager shall review drawings, specifications and engineering calculations pertinent to the request for permit to verify the completeness of the submittal.
 - 2) At the discretion of the CBO, a third party review may be required to verify compliance with the IBC and other applicable Codes and Standards this will generally occur for new buildings and major additions.
- d. Issuance of Permit:

- 1) After the review of an applicant's application and construction documents submitted for permit, if the CBO finds that the submittal conforms to the requirements of the IBC, other applicable Codes and Standards and other pertinent laws and ordinances, he shall issue a permit to the applicant.
 - 2) Disposition of Construction Documents: The CBO shall retain one set of approved drawings, specifications and other data for a period of not less than 90 days after the date of completion of the work covered therein. The contractor will be required to keep one set of stamped drawings and specifications available at the project site.
- e. Suspension or Revocation of Permit:
- 1) The CBO may, in writing, suspend or revoke a permit issued in error or on the basis of submitted information that is incorrect or that is violation of the IBC and other applicable Codes and Standards.
- f. Posting of Permit:
- 1) The permit applicant shall post the permit in a visible and protected location near the access to the project in question.
- g. Code Inspections:
- 1) Inspection Record Card: As the permitted work is commenced, the permit holder or agent shall have posted a current state building inspection record at the project site and an inspection record sheet, supplied by the CBO, to allow the CBO to make the required entries thereon regarding the inspection of the work.
 - 2) General: All construction or work for which a permit is required shall remain accessible and exposed for inspection purposes. Neither the CBO nor UC Denver Project Manager shall be liable for expense entailed in the removal or replacement of any material required to allow for inspection(s).
 - 3) Inspection Request: It shall be the duty of the person doing the work authorized by a permit to notify the CBO that such work is ready for inspection. The CBO may require that every request be filed, in writing, two working days before such inspection is desired. It shall be duty of the person requesting inspections required by the IBC and other applicable Codes and Standards to provide access to and means for inspection of such work, if required. Inspection requests shall be made on forms which can be obtained from the CBO by calling (303) 724-0676. Contractors must also contact City of Aurora for all site utility inspections and state plumbing and electrical boards for new buildings and major addition projects.
3. Certificate of Occupancy (CO):
- a. General Building Use and Occupancy:
 - 1) No building or structure shall be used or occupied and no change in the existing occupancy classification of a building or structure, or portion thereof, shall be made until the CBO has issued a "CO" as provided

herein, and completed the most current State Buildings Use and Occupancy Form

b. Issuance of a CO:

- 1) Issuance of a “CO” shall not be construed as an approval of a violation of the provisions of the IBC, other applicable Codes and Standards or of other ordinances of jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of these codes or of other ordinances of jurisdiction shall not be valid.
- 2) Change in Use: Changes in the use of a building shall not be made except as specified in Section 502 of the IBC or applicable chapter in current IBC
- 3) CO Issued: After the CBO inspects the building or structure and finds no violations of the provisions of the IBC, other applicable Codes and Standards, or other laws which are enforced by UC Denver EHS, the CBO shall issue a “CO” which shall contain the following:
 - a) The building permit number.
 - b) The address of the building.
 - c) The name and address of the owner.
 - d) A description of the portion of the building for which the certification is issued.
 - e) A statement that the described portion of the building has been inspected for compliance with the requirement of these codes for the group and division of occupancy and the use for which the proposed occupancy is classified.
- 4) Temporary Certificate of Occupancy (TCO): If the CBO finds no substantial hazard will result from occupancy of any building or portion thereof before the same is completed, he may issue a “TCO” for the use of a portion or portions of a building or structure prior to the completion of the entire building or structure. Contractor must also be substantially complete with work as defined by the contract and complete current CU Denver and State Buildings form.
- 5) Posting of CO: The “CO” shall be posted in a conspicuous place on the premises and shall not be removed except by the CBO at initial occupancy. A copy should be provided to UC Denver Project Manager.
- 6) Revocation of CO:

The CBO may, in writing, suspend or revoke a “CO” issued under the provisions of the code whenever the certificate is issued in error or on the basis of submitted information that is incorrect, or when it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of the IBC or other applicable Codes and Standards.

4. Appeals Process:

- a. There may be times when the applicant may disagree with and wish to contest decisions or determinations made by the CBO. For this purpose, there exists an appeals process. This process involves a presentation to and review by a committee of members qualified by experience and training to address building construction issues.

5. Applicable Codes and Standards:

The following approved building codes and standards have been adopted by State UC Denver Buildings Programs (SBP or current UC Denver program) as the minimum requirements to be applied to UC Denver buildings and physical facilities including capital construction and controlled maintenance construction projects (verify at time of design the current codes and standards in effect - <http://www.colorado.gov/dpa/dfp/sbrep/code.htm>): and current additional UC Denver codes/references. Architect/Engineer and Contractor should be provided with most current version by UC Denver Project Manager.

1.3 Design Review Board Procedure:

A. Introduction:

The following information is for staff, planning and design consultants, and contractors as a reference guide during the project design or modification process for both campus building and site development projects. Prior to commencement of any physical work, such Plans and Specifications necessary to demonstrate conformance of the project with these Guidelines must be submitted to the University of Colorado Design Review Board (DRB) for review and approval.

B. General:

1. Scope:

The submittal of plans and securing of the approvals pertains to all exterior components of the building architecture and site development including, but not limited to:

- a. General campus character;
- b. Building siting, massing, expansion, materials selection, and architectural character;
- c. Campus landscaping, plant selection, and location;
- d. Vehicular circulation routes, patterns, materials, parking lot locations, and parking ratios;
- e. Pedestrian circulation routes, patterns, amenities and materials;
- f. Campus site furnishing, lighting and signage design, location, and quantity; and
- g. General campus infrastructure systems.

2. Meetings:

The DRB generally meets bi-monthly.

3. Procedures:

There are procedures involving deadlines, submittal and review of documents that all building and site development projects must follow. Formal presentations to the DRB are mandatory.

The DRB process is to assist with the preparation and approval of plans for any specific site where development is being considered. Certain improvements do not require all review phases. The DRB determines which steps are necessary for an individual project. The DRB may also require additional information or studies as they determine needed or useful.

For most campus projects, a four-step review process is required for the DRB's approval.

Step 1: "Pre-Design"; Step 2: "Conceptual Design"; Step 3: "Schematic Design"; and Step 4: "Design Development." Six (6) sets of Plans and Specifications and other related documentation must be submitted, at each step in the process, to the UC Denver Resident Architect at least ten (10) days prior to the scheduled meeting.

C. Pre Design:

1. The pre-design phase is intended to be an informal discussion between members of the DRB, UCH and UC Denver representatives (or Children's Hospital or University of Colorado Hospital), and the consultant to review project issues, concerns, and expectations. Presentation materials are at the discretion of the project team; however, drawings, photographs and contextual information should be provided so that the DRB has sufficient comprehension to understand the extent of the project.

D. Conceptual Design:

1. For any new building project, addition or site improvement, the review of the conceptual design by the DRB will be concerned with the overall development of the site in the context of the existing campus and the environs as defined by the Master Plan. The submittal is to include a "Micro-Master Plan" (MMP) which is an urban design study of the project in the context of the campus environs. At a minimum, the limits of the MMP are to include a study of the spaces and structures surrounding the site. It is to include the extent of all principle open spaces that are part of the site context, whether such spaces are existing, proposed by this project, or proposed by the Master Plan. The MMP is to explore site layout, building form and placement, expansion, general architectural treatment and associated site development, and specific site parameters such as orientation, pedestrian and vehicular circulation, parking and service requirements, emergency access, utilities, setbacks, and jurisdictional restrictions, if any.
2. The most appropriate time to discuss variances and interpretations of the Campus Planning and Design Guidelines is during the Conceptual Design meeting.
3. For review of conceptual building and site development, the following information must be submitted:
 - a. Brief narrative statement of the project's intent, anticipated schedule, and general programmatic requirements.
 - b. General plan of existing campus at a scale of 1" = 200' and plan of the existing site and context showing topographical data, roads, easements and significant features including existing trees three (3) inches in caliper and larger.
 - c. Site analysis diagram including critical environmental influences and surrounding conditions and known Plans.
 - d. Conceptual planning studies and preliminary site MMP development (at a scale not smaller than one 1" = 50", indicating:
 - 1) Adjacent buildings.
 - 2) Building location and critical dimensions (including setbacks) and potential expansion zones.
 - 3) Drives, parking locations and sidewalks.
 - 4) Approximate finished floor elevations.
 - 5) Site topography.
 - 6) Projected number of students, faculty, staff and visitors.

- 7) Amount and location of employee and visitor parking.
- 8) Truck loading and service vehicle access.
- 9) Emergency vehicle and Fire Department access, if applicable.
- e. Massing model including the physical context and topography.
- f. General building and site materials being considered.
- g. Conceptual elevation studies indicating general architectural character.
- h. Principal site section(s) showing existing developed condition.
- i. General landscape concept with existing significant vegetation and site features.

E. Schematic Design:

1. This step consists of a review meeting with the DRB that continues to address building and site development planning, architectural character, relationships to surrounding context, and other specific site parameters. This presentation will also include a further review of the MMP for the site development placed in the context of the campus and Master Plan.
2. Submittal requirements for this Step include:
 - a. Micro-Master Plan (at a scale not smaller than one 1" = 50", indicating:
 - 1) Proposed and future building(s) location and build-out phasing scenarios.
 - 2) Drives, parking locations and sidewalks.
 - 3) Zones for potential building expansions.
 - 4) Finished floor elevations.
 - 5) Grading plan.
 - 6) Truck loading and service vehicle docks and access routes.
 - 7) Emergency vehicle and Fire Department access route, if applicable.
 - 8) Landscape design.
 - b. Site plan (at a scale not smaller than on 1" = 20'.
 - c. Grading and drainage plan.
 - d. Building floor plans.
 - e. Building elevations (all sides).
 - f. Sections (at a scale not smaller than one 1" = 20'.
 - g. Building and site materials including color samples.

- h. Architectural Model, if required.
- i. Roof plan.
- j. Critical exterior architectural details.
- k. Landscape plan (including type, size, and location of existing plant material to be retained and proposed plant material).
- l. Amount and location of all site accessories such as bicycle racks, benches, trash receptacles, signs, flag poles, etc.

F. Design Development:

- 1. This final step consists of a review with the DRB that addresses, in sufficient detail, the intent of all architectural and structural design, site work and landscape, including materials and finishes.
- 2. Submittal requirements for this step include:
 - a. Revised MMP Plan incorporating the DRB Schematic Design comments.
 - b. Phasing plan.
 - c. Site plan and sections
 - d. Grading and drainage plan.
 - e. Building floor plans.
 - f. Building elevations (all sides)
 - g. Architectural model, if required.
 - h. Roof plan showing all visible roof equipment such as mechanical and satellite dishes.
 - i. Architectural details.
 - j. Landscape plan.
 - k. Site lighting plan.
 - l. Site accessories package and location plan.
 - m. Signage plan with details, if applicable.
 - n. Building and site materials types and color samples.

1.4 UC Denver Design Review Procedure:**A. Purpose:**

1. UC Denver design review is intended to meet the functional needs of the campus as follows:
 - a. Provide an expeditious review process for minor projects.
 - b. Establish a separate review procedure which in coordination with review a by the DRB can further facilitate the review and approval of projects.
 - c. Provide a consistent and appropriate standard for the quality, character and appearance of new and remodeled facilities at the campus.
 - d. Provide a mechanism for the improved coordination of project and site development at the campus.

B. Projects Subject to Internal Design Review:

1. All projects on the campus which involve exterior improvements or modifications of buildings or site development shall be subject to “internal” design review.
2. Exceptions:
 - a. Projects where the improvement or modification will be removed entirely within one year of the date of installation or construction are exempted.
 - b. Projects which are following standard prescribed review procedures of the DRB as set forth in Part 1, 1.3 of the Manual.

C. Required Reviews:

1. Review shall typically occur at four phases of design: pre-design, concept, schematic design and design development (preliminary construction document phase), unless otherwise determined by the UC Denver design review committee through the UC Denver Project Manager. Certain minor projects may be exempted from one or more review phases.

D. Review Period:

1. A period of two weeks shall be allowed for review of each phase. When additional documentation is required by the design review committee to adequately describe the project and its components for the purposes of review, the review period may be adjusted accordingly.

E. Submittal Requirements:

1. Submittal materials shall be appropriate to the project phase as outlined in the A/E agreement and required by the DRB review.

F. Design Review Recommendations:

1. Consistent with University of Colorado Administrative Policy Statement of “Developing, Requesting and Monitoring Capital Construction Projects” the DRB comments are advisory and encouraged but not binding.

1.5 UC Denver Planning and Technical Review Procedure:

A. Purpose:

1. The UC Denver planning and technical reviews are intended to facilitate the approval of a project in coordination with the DRB and/or UC Denver design reviews.
 - a. The planning review is intended to:
 - 1) Verify compliance with the requirements of the Program Plan;
 - 2) Review the function(s) of the space planning versus the needs(s) of the user(s);
 - 3) Review the size(s) and location(s) of spaces for the project's support facilities and functions with relation to Part 3.0 – Project Planning and Design Guidelines/Considerations; and
 - 4) Review the space planning with relation to issues of compliance with code and life safety requirements.
 - b. The technical review is intended to:
 - 1) Review the materials proposed for use throughout the project and the details associated with those materials; and
 - 2) Review of the design of the project's various systems for being applicable to the project and in compliance with the requirements of Part 4.0 – Project Materials Standards and Systems Design.
 - 3) Ensure compliance with approved codes (exhibit D of Architect / Engineer Contract) through UC Denver CBO or 3rd Code Consultant.
 - c. City of Aurora Review (for projects with underground utilities)
 - 1) City of Aurora will review site work and utilities for conformance to the latest City of Aurora standards. The must be submitted formally to the City for permit.
 - d. Grant Review (for projects with grant funding)
 - 1) Project with grant funding will require specialize review and conformance. It will vary based on the grant requirement. The design team should confirm special grant requirement at the State of Design.

B. Projects Subject to Reviews:

1. All new and remodel projects on the campus shall be subject to planning and technical reviews.

C. Required Times for Reviews:

1. Reviews shall typically occur at the schematic design, design development and construction documents phases of the design process unless determined otherwise by the UC Denver Project Manager. Certain minor projects may be exempted from one or more of these phases.

D. Submittal Requirements:

1. Submittal materials shall be appropriate to the phase of the design process as outlined in the A/E Agreement.

E. Review Process:

1. The review materials shall be submitted to the UC Denver Project Manager, who will distribute the materials to the UC Denver departments outlined in 1.1 above, as applicable, for their reviews. All review comments will be put in written form and transmitted back to the design team.
2. The design team will provide written responses to the review comments with explanations, clarifications and/or action items related thereto. If an action item indicates a change to be incorporated into the ensuing phase documents, an appropriate notation as to the location of that change shall accompany said documents so that the change can be confirmed.

F. Review Period:

1. Typical review will be 2 weeks unless a project specific arrangement is made with UC Denver Project Manager.

1.6 Architect/Engineer Responsibilities:

A. General:

1. UC Denver Facilities Projects takes an active role in the design process with the Architect/Engineer (A/E) and expects to have strong input and involvement during all phases of a project.
2. At the start of a project, the A/E must furnish to the UC Denver Project Manager a proposed schedule of the work for the entire design process, which shall include all required meetings, submittal dates, etc. The A/E will update the schedule at the end of each phase of the design process.
3. All meetings attended by the A/E during the design process shall be recorded by the A/E with accurate minutes reported in a summary format and distributed by them to all attendees.
4. Most projects will require mandatory pre-bid walk-through. Dates and times shall be coordinated with the UC Denver Project Manager.
5. The A/E shall submit a list of any proposed methods, materials, equipment, etc. that varies from the requirements of The Manual, with reasons for variance, to the UC Denver Project Manager for review and approval.
6. UC Denver Architect/Engineer, Contractor should realize that change as in room number may occur late in a project after construction documents are issued and look for practical ways to fully adjust or locally adjust numbering to best suite long and short term needs.

B. Room Number Standards:

1. Scope:

It is the goal of UC Denver Facilities Projects that occupants and visitors are able to find their way through the buildings on campus with minimal effort. To facilitate this, a building designation and a room numbering system have been developed. Other concerns to be addressed by these systems include, but are not limited to:

- a. Emergency Response;
- b. Space Management;
- c. Asset tracking;
- d. Security;

It is expected that each room numbering plan will be unique. Illustrations in the "Process" section of the "Room Numbering Standards" are examples only and are not prescriptive, and are based on the Anschutz Medical Campus format. The building designator referenced in the illustrations and examples shall be A99; this designator is for demonstration purposes only and is not to be used as the actual designator. Room numbering will be an interactive process between the Architect/Engineer and the UC Denver GIS Coordinator.

2. Applications:

It is the goal of UC Denver Facilities Projects that all rooms have a number that is unique and not duplicated in this building or any other building on campus.

Each room number shall reference the building that it is in.

All design documents shall have UC Denver Facilities Projects room numbers that shall be used on the plans as well as all schedules, electric panel circuit designations and any other component of the drawing set or specifications or correspondence that references room numbers.

The mounted room number signs shall match the room numbers on the design documents.

The types of rooms or spaces that will receive numbers on the design documents as well as room number signs, shall include, but are not limited to:

- a. Standard rooms.
- b. Open-rooms.
- c. Lobbies.
- d. Vestibules.
- e. Closets.
- f. Loading Docks.
- g. Alcoves
- h. Linear Equipment Rooms

All room types listed above are to have room number signs mounted as per section 10400 of these standards.

The types of rooms or spaces that will receive numbers on the drawings but shall not have any room number signs mounted, shall include:

- a. Corridors.

The types of rooms or spaces that will receive numbers on the drawings, but shall require a different type of signage as per section 10400 of these standards shall include:

- a. Stairs

3. Terminology:

Alcove: - a slightly closed in or indented area - where the space function differs from that of the surrounding area. An example of this might be where a fume hood is used.

Building designator (Anschutz Medical Campus): - a unique three character alpha/numeric title that is assigned to each building on campus by the GIS Coordinator.

Building designator (Downtown Denver Campus): - a unique set of alpha characters that is assigned to each building.

Linear equipment room: - a room that has the appearance of a corridor but is in fact an intermediate space between a true corridor and other rooms. It is a multi-user, multi-functional space. This room has floor to ceiling walls and its limits are usually defined by fire doors.

Modular lab: - A large room divided into subsections based on temporary features like casework, possibly incorporating surrounding rooms into its function and room number structure.

Open room: - generally with partial walls, or without walls - where the space function differs from that of the surrounding area. An example of this might be a reception area adjacent to a corridor or lobby. Open rooms might also be used to describe modular labs.

Standard room: - generally with floor to ceiling walls and a doorway - such as offices, laboratories, restrooms, and mechanical rooms.

Zone: - Divisions in the floor plan established at the introductory meeting. The purpose of the room number zone is to establish a transition point where numbers ascend or descend into the next number group, for example from the twenty's group to the thirty's group. Zones might be established based on: columns, column lines, fire doors, or many other architectural features. Once a zone is established it applies to every floor of a building unless specified otherwise by the GIS Coordinator.

4. Meetings and Review:

See Section 1.6.E. Meetings and Review

5. Process

a. Existing Buildings:

The A/E shall meet with UC Denver Facilities Projects to determine if an existing building is to be assigned a new numbering format or maintain and established one. The A/E shall assign new room number if a remodel adds or deletes rooms in a building or if room access is altered.

b. New Buildings:

- 1) No floor shall be designated "ground floor".
- 2) Grade level of the main entrance shall be the first floor.
- 3) Floor designations shall be as follows:

Basement: "0" (First primary floor that is located directly under the first floor).

First floor: "1"

Second floor: "2"

Third floor: "3"

Etc.

Tenth floor: "10"

Etc.

Penthouses shall be assigned room numbers as well. The floor designator shall be one number higher than the designator number of the floor immediately below the roof. For example if the top floor of a building is designated "8", the penthouse floor shall be designated "9".

Levels might exist in a building that is understood to be between floors, such as interstitial space, intermediate floors or mezzanine's. This level shall be assigned the floor designator of "M". If there is more than one level of this type in a building the Architect/Engineer shall meet with the GIS Coordinator to address options.

A floor might exist in a building that is located one level below the basement. This floor designator shall be "U".

A floor might exist in a building that is located below level "U", if this occurs add a second "U" so that the floor designator is "UU".

If the number of below basement floors exceeds this point, the Architect/Engineer and the GIS Coordinator shall meet and address alternatives.

- 4) Buildings will have two categories of room numbers.
 - a) General room number types.
 - b) Classified room number types. The classified differs from the general in that it uses an alpha instead of a number in the sixth character position to note room/space type.

There is also an (Alternate) General number Type that is similar to the General room number type except that it integrates the linear equipment room into the process.

The basic number portion of the General and Classified room number shall look like this:

A99-123

c. General Room Number Type:

- 1) General numbers are used in the following types of rooms:
 - a) Standard rooms
 - b) Open-rooms
 - c) Closets
 - d) Alcoves
 - e) Loading docks

d. General Number Structure:

- 1) The first, second and third characters are the building designator, and indicate which building the room is located in. The Architect/Engineer shall obtain these characters from the UC Denver GIS Coordinator. Alphas in the building designator shall always be uppercase. The building designator looks like this:

A99

- 2) The fourth character shall be a hyphen. With this addition the number looks like this:

A99-

- 3) The fifth character shall designate the floor on which the room is located. If a floor designator reaches 10 or higher two characters shall be used, this will effect the examples given in the remainder of the "General room number type" portion of the construction standards by increasing the position count of a character by one. For example, "The sixth character" shall read as "The seventh character". For the purposes of this standard, use a floor designator of one character. Do not insert a "0" before a single character floor designator. With this addition the number looks like this:

A99-1

- 4) The sixth character shall indicate the zone of the floor where the room is located. With this addition the number looks like this:

A99-12

- 5) The seventh character shall indicate the specific room within a zone. Number assignments start over after a zone is crossed. With this addition the basic number portion is complete and looks like this:

A99-123

- 6) All rooms, which are entered from a corridor, lobby, stairwell, or vestibule, are assigned a unique basic number.

- 7) The above (Items: "1" through "6") address the basic number portion of the general room number. The remaining Items ("8" through "14") address possible additions to the basic number portion of the general room number.

- 8) If the subject room is entered from another room or is inside a room with a basic number an eighth character shall be assigned which shall be an alpha. This will result in a number that look s like this:

A99-123A

All alpha characters shall be assigned in a clockwise order starting from the entrance of the primary room (the room with the basic room number). This alpha shall always be uppercase.

The Architect/Engineer shall not use the letters “I” or “O” when assigning alpha characters.

- 9) If the subject room is inside a room that has been assigned an alpha as its eighth character, then a ninth character shall be assigned, which shall be a numeric. This will result in a number that look s like this:

A99-123A1

All post alpha, numeric characters shall be assigned in a clockwise order starting from the entrance of the room with the alpha designation.

In some applications there might be rooms inside of these rooms which in turn might have rooms inside of them and so on. If this scenario occurs continue to add characters assigned in a clockwise order starting from the entrance of the room, if the last character was numeric add an uppercase alpha or if the last character was an alpha add a number. If this becomes extreme the Architect/Engineer and the GIS Coordinator shall meet to consider alternatives.

- 10) In some applications basic room numbers may be exhausted before entering a new zone. At this time, an eighth character, which shall be a hyphen followed by a ninth character which shall be numeric is assigned. This will result in a number that looks like this:

A99-123-1

If this becomes necessary, it is preferable that a common space, closet, mechanical room, or rest room be assigned the number with the hyphen, and that the basic number be reserved for prime assignable space such as labs or offices.

- 11) The location of the main entrance of a room shall determine the zone in which the room is located. Note, for example, that most of a room may be located in the 40’s zone; however, the main entrance is in the 30’s zone and the room shall have a 30’s zone designation.
- 12) Intermediate spaces that lead to rest rooms, stairs or auditoriums but are separated from those spaces by a door are regarded as part of the room they lead to. Such a space shall not be assigned a room number of its own.
- 13) In some applications open-rooms might be numbered in reference to a modular lab concept, this part (“I”) is only to be referenced if the Architect/Engineer is specifically directed to use the modular lab concept.

In this scenario a large room is divided into subsections. This group of subsections will share a common basic number that might be:

A99-123

However this basic number – on its own – is never to be assigned to any part or subsection of the lab.

Each subsection shall be assigned an uppercase alpha resulting in a group of numbers that look like this:

A99-123A

A99-123B

A99-123C

These subsections shall constitute 100% of the open room space.

In some applications open rooms might be the primary access to alcoves that are understood to be a part of the over all modular lab, even if these alcoves have direct access to a corridor. These alcoves are to be included when numbering the subsections. In most cases one or more alcoves are associated with a subsection and should be numbered accordingly. An example of this might be:

A99-123A	Subsection
A99-123B	Alcove
A99-123C	Alcove
A99-123D	Next subsection

These numbers are assigned so that they ascend with the flow of pedestrian traffic in the building. This numbering system is subject to change at the Initial review meeting.

- 14) To address safety and security issues it is necessary to further identify the function of certain types of rooms by using a lowercase alpha at the end of the room number. Those types of rooms are as follows:

- a) Electrical: All electrical rooms and closets shall be designated with an “e” resulting in a number that looks like this:

A99-123e

- b) Mechanical: All mechanical rooms and closets shall be designated with an “m” resulting in a number that looks like this:

A99-123m

- c) Telecommunications: All Telecommunications rooms and closets shall be designated with a “t” resulting in a number that looks like this:

A99-123t

- d) Fire Command: All fire command rooms shall be designed with an “f” resulting in a number that looks like this:

A99-123f

- f) In some applications the subject room might have an alpha as its eighth character, when this occurs the lower case alpha for the above room types must still be applied, resulting in a number that might look like this:

A99-123Am

If there is a room inside of a room with a safety and security alpha but that room does not perform a function that qualifies it for a safety and security alpha, it does not receive one. For example, if a mechanical room titled "A99-123m" has a storage room inside that contains no mechanical equipment the "m" is not assigned to the storage room number.

e. Classified Room Number Type:

- 1) Classified numbers are used in the following types of rooms:

- a) Corridors
- b) Lobbies
- c) Stairs
- d) Vestibules

f. Classified Number Structure:

- 1) The first, second and third characters are the building designator, and indicate which building the room/space is located in. The Architect/Engineer shall obtain these characters from the UC Denver GIS Coordinator. Alphas in the building designator shall always be uppercase. The building designator looks like this:

A99

- 2) The fourth character shall be a hyphen. With this addition the number looks like this:

A99-

- 3) The fifth character shall designate the floor on which the room/space is located. If a floor designator reaches 10 or higher, two characters shall be used, this will effect the examples given in the remainder of the "Classified room number type" portion of the construction standards by increasing the position count of a character by one. For example, "The sixth character" shall read as "The seventh character". For the purposes of this standard, use a floor designator of one character. Do not insert a "0" before a single character floor designator. With this addition the number looks like this:

A99-1

- 4) The sixth character shall indicate the classification. Those types of rooms are as follows:

Corridors: All corridors shall be designated with an uppercase “C” with this addition the number looks like this:

A99-1C

Lobbies: All lobbies shall be designated with an uppercase “L” with this addition the number looks like this:

A99-1L

Stairs: All stairs shall be designated with an uppercase “S” with this addition the number looks like this:

A99-1S

Vestibules: All vestibules shall be designated with an uppercase “V” with this addition the number looks like this:

A99-1V

- 5) Assignments of corridor room/space numbers shall be based on the flow of pedestrian traffic in the building, which is established during the introductory meeting. Room/space numbers are assigned to segments of corridors. The extents of these segments (Transition points) are defined by fire doors and sometimes by right angle turns.

The corridor number shall be based on where it begins within a room number zone; if that zone is 01 (One’s) with this addition the number is complete and looks like this:

A99-1C01

If the corridor crosses a transition point before entering a new room number zone the number shall ascend by one. Resulting in a new corridor segment number that looks like this:

A99-1C02

If the corridor crosses a transition point after entering a new room number zone the number shall reflect the new zone. For example if a corridor started in zone 01 (One’s) and ended in zone 10 (Ten’s) the new corridor number looks like this:

A99-1C10

Bridges and suspended walkways within the building shall be numbered as part of the corridor numbering system, unless they are of sufficient size to be regarded as a room by the GIS coordinator.

The corridor numbers might be assigned differently based on unforeseen factors, and the numbering system is subject to change at the Initial review meeting.

It is understood that the above application of corridor numbers might not coincide with the Architect/Engineers need to reference specific

areas of the corridor. In this scenario the Architect/Engineer and the GIS Coordinator shall meet to address those needs.

- 6) Assignments of lobby room/space numbers shall be based on the flow of pedestrian traffic in the building, which is established during the introductory meeting. Room/space numbers are assigned at the Initial review meeting with the GIS Coordinator.
- 7) Stair (Stairwell) numbers are generally assigned ascending in a clockwise direction starting at the main entrance of the building. This numbering system is subject to change at the Initial review meeting.
- 8) Vestibule numbers are generally assigned ascending in a clockwise direction starting at the main entrance of the building. This numbering system is subject to change at the Initial review meeting.

g. (Alternate) General Room Number Type:

- 1) This type only applies if the Architect/Engineer is specifically directed to use it.

(Alternate) General numbers are used in the following types of rooms:

- a) Standard rooms
- b) Open-rooms
- c) Closets
- d) Alcoves
- e) Loading docks
- f) Linear equipment rooms

h. (Alternate) General Number Structure:

- 1) The structure of the (Alternate) General number type is the same as the structure for the General room number type, except that linear equipment rooms are now part of the design and will affect room numbering in the following ways.
 - a) Linear equipment rooms are assigned basic room numbers because they are entered from corridors, lobbies, or stairs.
 - b) Linear equipment rooms are access ways to other rooms, however those other rooms are assigned basic room numbers as if they are entered from a corridor, or lobby.

C. Elevator Numbering Standards:

1. Scope:

It is the goal of UC Denver Facilities Projects that occupants and visitors are able to find they're way through the buildings on campus with minimal effort. To facilitate this, an

elevator designation system has been developed. Other concerns to be addressed by these systems include, but are not limited to:

- a. Emergency Response;
- b. Space Management;
- c. Security;

It is expected that each elevator numbering plan will be unique. Illustrations in the "Process" section of the "Elevator Numbering Standards" are examples only and are not prescriptive, and are based on the Anschutz Medical Campus format. The building designator referenced in the illustrations shall be A99; this designator is for demonstration purposes only and is not to be used as the actual designator. Elevator numbering will be an interactive process between the Architect/Engineer and the UC Denver GIS Coordinator.

2. Applications:

It is the goal of UC Denver Facilities Projects that all elevators have a number that is unique and not duplicated in this building or any other building on campus.

Each elevator number shall reference the building that it is in.

All design documents shall have UC Denver Facilities Projects elevator numbers, that shall be used on the plans as well as all schedules, and any other component of the drawing set, specifications or correspondence that references elevator numbers.

All elevators are to have signs mounted as per section 10400 of these standards. The elevator numbers referenced shall correspond to the elevator numbers on the design documents.

3. Meetings and Review:

See Section 1.6.E. Meetings and Review

4. Process:

The complete elevator number has three components and looks like this:

ELV-A99-001

- a. The first three characters of the elevator number are the equipment type component. This component is always the same and looks like this:

ELV

- b. The fourth character shall be a hyphen. With this addition the number looks like this:

ELV-

- c. The fifth, sixth and seventh characters are the building designator component, and indicate which building the elevator is located in. The Architect/Engineer shall obtain these characters from the UC Denver GIS Coordinator. Alphas in the building designator shall always be uppercase. With this addition the number looks like this:

ELV-A99

- d. The eighth character shall be a hyphen. With this addition the number looks like this:

ELV-A99-

- e. The ninth, tenth, and eleventh characters are the series number component, it has three numeric characters assigned in ascending order starting with this number:

001

With this addition the complete number looks like this:

ELV-A99-001

- f. The overall pattern of number assignment shall be established in the introductory meeting.
- g. If elevators are positioned side by side with no elevators across a lobby or corridor from them, series numbers shall be assigned in ascending order from left to right as you face them.
- h. If elevators are face to face across a lobby or corridor, series numbers shall be assigned in ascending order in a clockwise direction. The starting point shall be where a pedestrian might first encounter the elevators assuming they are following the direction of pedestrian traffic in the building, established in the introductory meeting.
- i. The elevator number on all elevator signage shall correspond to the elevator number on the construction documents, however the signage shall differ in that it will not have an equipment type component, and the series number shall be reduced to its simplest form by dropping any zeros to the left of the critical digit. For example:

ELV-A99-001 Shall read: A99-1

ELV-A99-002 Shall read: A99-2

ELV-A99-003 Shall read: A99-3

Etc.

ELV-A99-010 Shall read: A99-10

Etc.

- j. Floor buttons in the elevator cars shall match the floor designator used in the drawings, for example:

When the floor designator used in a room number is a “4” then the elevator fourth floor button shall use a “4”. This is typical of all floors with numeric designators with the exception of elevators that provide access to roofs or penthouses. In this scenario room/space designators may have a floor designator such as “9” however the floor button in the elevator car shall read “R” (Roof) to

accommodate non-UC Denver emergency personnel. Variations in building configuration may require that alternative assignments be devised with the UC Denver GIS Coordinator.

When the fifth character used in a room number on the mezzanine floor is “M” then the elevator mezzanine floor button shall use “M”.

When the fifth character used in a room number on the mezzanine floor is “U” then the elevator mezzanine floor button shall use “U”.

D. Door Numbering Standards:

1. Scope:

It is the goal of UC Denver Facilities Projects to support UC Denver Electronic Security and Access Control as well as the UC Denver Facilities Operations Lock Shop in their efforts to insure that occupants, visitors, resources, and facilities are secure. To facilitate this, a door designation system has been developed. Other concerns to be addressed by these systems include, but are not limited to:

- a. Emergency Response;
- b. Lock and Door Maintenance;

It is expected that each door numbering plan will be unique. Illustrations in the “Process” section of the “Door Numbering Standards” are examples only and are not prescriptive, and are based on the Anschutz Medical Campus format. The building designator referenced in the illustrations and examples shall be A99; this designator is for demonstration purposes only and is not to be used as the actual designator. Door numbering will be an interactive process between the Architect/Engineer and the UC Denver GIS Coordinator.

a. Applications:

It is the goal of UC Denver Facilities Projects that any door shall have a number that is unique and not duplicated in this building or any other building on campus.

Each door number shall reference the building that it is in.

All design documents that reference doors shall use UC Denver door numbers, they will be used on the plans as well as all schedules, and any other component of the drawing set, specifications or correspondence that references door numbers.

There are three types of door numbers, they are as follows:

- a. Exterior
- b. Corridor
- c. Room

Exterior doors (and/or entry points) are to have door number signs mounted as per section 10400 of these standards.

Corridor doors are to have door number signs mounted as per section 10400 of these standards.

Room doors are not required to have door number signs mounted unless there is more than one entrance to the room.

3. Meetings and Review:

See Section 1.6.E. Meetings and Review

4. Process:

a. Exterior doors:

1) The complete exterior door number looks like this:

A99-1A

2) Exterior door numbers are assigned to any entry point on any floor that can be opened into the building, where people or materials might pass through. This includes but is not limited to:

- a) Standard doors.
- b) Loading dock doors.
- c) Garage doors.
- d) Emergency exits.
- e) Balcony / Deck doors.
- f) Roof access doors.
- g) Penthouse doors.
- h) Rooftop access hatchways.
- i) Bridge access doors.

3) The exterior door number has three components.

4) The first, second and third characters are the building designator component, and indicate which building the door is located in. The Architect/Engineer shall obtain these characters from the UC Denver GIS Coordinator. Alphas in the building designator shall always be uppercase. The building designator looks like this:

A99

5) The fourth character shall be a hyphen. With this addition the number looks like this:

A99-

6) The fifth character begins the second component and shall designate the floor on which the door is located. The floor shall be referenced like this:

Basement: "0"

First floor "1"

Second floor "2"

Third floor "3"

Etc.

Tenth floor "10"

Etc.

With this addition the number looks like this:

A99-1

Note: Do not use a "0" before a single character floor designator.

- 7) The sixth character is the third component; it is an uppercase alpha and shall designate the specific door. With this addition the complete number looks like this:

A99-1A

- 8) Starting in the Southwest corner of the building, proceeding in a clockwise direction the first door encountered shall be assigned an "A". The next door shall be assigned a "B" and so on. The Architect/Engineer shall not use the letters "I" or "O". The exact starting corner of the building will be determined during the introductory meeting.
- 9) If all alphas are exhausted the Architect/Engineer shall use double alphas. For example after "Z" is used the next alpha assignment would be "AA" followed by "AB" and so on.
- 10) Alpha assignments are based on doorways each door or set of double doors shall be assigned an alpha.
- 11) Once a floor is complete the Architect/Engineer shall move to the next floor and start assigning alphas again in the same format starting over with "A".

- 3) Corridor doors:

Corridor door number assignments are based on doorways – each door or set of double doors shall be assigned a number.

The complete corridor door number looks like this:

A99-12dA

- 1) The first, second and third characters are the building designator component, and indicate which building the door is located in. The

Architect/Engineer shall obtain these characters from the UC Denver GIS Coordinator. Alphas in the building designator shall always be uppercase. The building designator looks like this:

A99

- 2) The fourth character shall be a hyphen. With this addition the number looks like this:

A99-

- 3) The fifth character begins the second component and shall designate the floor on which the door is located. With this addition the number looks like this:

A99-1

- 4) The sixth character shall designate the zone (in reference to the room number zone) in which the door is located. For example a door may be located in the “20’s” or “200’s” room number zone and shall receive a “2”. With this addition the number looks like this:

A99-12

- 5) The seventh character shall be a lowercase “d”. With this addition the number looks like this:

A99-12d

- 6) The eighth character shall designate the specific door within a zone. This character is an uppercase alpha and is assigned based on the flow of pedestrian traffic in the building, which is established during the introductory meeting. For example as you enter a new room number zone you enter a new corridor door number zone. The first corridor door you encounter will be an “A”, the next you encounter shall be a “B” and so on in alphabetic order, skipping “I” and “O”. With this addition the number looks like this:

A99-12dA

- 4) Room door numbers:

The complete room door number looks like this:

A99-123

- 1) Room door numbers are the same as the room number provided there is only one entrance to the room.
- 5) If there is more than one door accessing a room each doorway must be assigned a unique number. This number uses the room number followed by lowercase “d” followed by a door count number. A “0” shall precede all single digit door count numbers. The door count number shall be assigned in a clockwise direction starting from the main entrance of the room. For example, if a room numbered A99-123 has three doors, the numbers shall look like this:

A99-123d01

A99-123d02

A99-123d03

E. Meetings and Review:

1. Scope:

The Purpose of this section is to provide a framework for meetings and review of the above sections:

Room Numbering Standards:

Elevator Numbering Standards:

Door Numbering Standards:

There shall be three meetings and reviews:

Introductory Meeting;

Initial Review Meeting;

Primary Review Meeting;

Each meeting shall address all three Numbering Standards sections.

2. Meetings and review are scheduled through the Facilities Projects Department's Project Manager.

3. Meetings and review shall include, but are not limited to:

a. Introductory meeting:

When: This meeting is to occur during the schematic design phase before any attempt is made by the Architect/Engineer to number the building.

Agenda: If the subject is an existing building, the GIS Coordinator will determine if it is to be assigned a new numbering format or maintain the established one. If the subject building is new, the Architect/Engineer is given the building designator. Issues will be addressed such as locating the main building entrance, direction of pedestrian traffic in the building; application of zones, and patterns of number ascension shall be determined.

Expectations: The Architect/Engineer shall bring hard copies of floor plans for study. The Architect/Engineer shall be required to replicate any noted plans and submit them back to the GIS Coordinator.

b. Initial Review Meeting:

When: This meeting is to occur during the design development phase after the Architect/Engineer's room numbering approach is added to the floor plans.

Agenda: The GIS Coordinator will review the Architect/Engineer's room numbering, elevator numbering and door numbering approach, and direct the Architect/Engineer to make any changes required. The corridor, lobby, stair, and vestibule numbering schemes shall be defined.

Expectations: The Architect/Engineer shall provide to the GIS Coordinator floor plans of the numbering approach for study. They shall be supplied in advance of this meeting, no less than six workdays for hard copies or no less than seven workdays for electronic media. The Architect/Engineer shall be required to replicate any noted plans and submit them back to the GIS Coordinator.

c. **Primary Review Meeting:**

When: This meeting is to occur during the design development phase before the Architect/Engineer reaches a point of drawing development where room numbering changes adversely effect schedules and drawing production.

Agenda: The GIS Coordinator will review the Architect/Engineer's room numbering, elevator numbering and door numbering approach, and direct the Architect/Engineer to make any changes required.

Expectations: The Architect/Engineer shall provide to the GIS Coordinator floor plans of the numbering approach for study, they shall be supplied in advance of this meeting, no less than six workdays for hard copies or no less than seven workdays for electronic media. The Architect/Engineer shall be required to replicate any noted plans and submit them back to the GIS Coordinator.

F. Equipment Identification Numbers

1. The A/E shall work through the UC Denver Project Manager and UC Denver Building Maintenance Project Representative to establish an equipment identification system that maps to Siemens Building Automation System and preventive maintenance schedule.

F. Drawing Production Standards:

1. It is the intention of UC Denver to have the A/E produce drawings as per the following Production Standards and deliver drawings in two formats:
 - a. Electronic media will be per latest Architect contract supplemental conditions.
 - b. If the Architect/Engineer uses any supplemental application such as a 3D modeling program, any as-built files or review files must be delivered in a format that is viewable and editable in the above version of AutoCAD without the use of that supplemental application.
2. No project requiring drawings shall be closed without acceptance of drawings by UC Denver Facilities Projects.

3. Before drawing production begins or fees are proposed for projects on existing buildings the A/E and the UC Denver Project Manager shall meet with the GIS Coordinator. The Graphic Database is collection of floor plans of the campus buildings in AutoCAD format. The Graphic Database may provide existing plans of a space to be remodeled, reducing investigation time and drafting time, therefor reducing consulting fees and drawing production schedules.
4. AutoCAD Drawing File Requirements:
 - a. Once project drawings are accepted by UC Denver Facilities Projects, they will be filed unaltered for future reference. The drawings will also be assimilated into the Graphic Database to maintain current floor plans. To do this the following requirements must be followed.
 - 1) The A/E shall:
 - a) Follow the American Institute of Architects Layering Convention.
 - b) Provide written descriptions of any layers that are added.
 - c) Only add layers if an existing layer cannot be used.
 - d) Not use custom fonts. All fonts must be standard AutoCAD fonts.
 - e) Minimize drawing byte size by seeing that lines are not stacked or multi-segmented where one line will suffice.
 - f) On the table of contents for a drawing set, each drawing listed shall include its AutoCAD file name. This includes all drawings by a Sub-Consultant.
 - 2) When provided with backgrounds, the A/E shall never alter columns, column grid, or any feature that is not specifically included in the Scope of Work to be altered.
 - 3) All support files required for drawing completion such as “X-REF’s” must be delivered with the primary drawing files. For Record Drawing files any x-ref file shall be bound to its respective drawing file using the bind type insert. This includes all drawings by Sub-Consultant. The A/E shall include the name and phone number of a contact person who is able to answer questions regarding the AutoCAD drawing files.
 - 4) At the point of delivery of Construction Drawings and again as record Drawings, include any database or spreadsheet files (such as Excel) that are produced for the purpose of adding to an AutoCAD file. This includes all drawings by a Sub-Consultant.
 - 5) The A/E shall confirm all critical room dimensions.
5. Drawing Content:
 - a. Title Block:

- 1) The A/E shall use its own title block. In addition to information the title block normally contains, it shall include the following:
 - a) Project Title: Project description including the name of the building or area where project is located.
 - b) Drawing Title: Description of specific drawing sheets, including contents.
 - c) Designed by: A/E assigned to project.
 - d) Drawn by: Draftsperson.
 - e) Drawing Date:
 - f) Scale:
 - g) Sheet No.:
 - h) File Title: AutoCAD drawing file name (*****.dwg).
- b. General Drawing Content:
 - 1) Information documents shall include:
 - a) Design CFM air quantity for each grille, register, diffuser, and fume hood, and show direction of airflow.
 - b) Equipment shall be identified (See "Equipment Identification Number Standards").
 - 2) Drawings are diagrammatic in nature; however the producer of the drawing shall avoid drawing items in manner that might promote construction or maintenance conflicts, such as showing piping crossing an access panel to a VAV box.

G. Furniture:

1. Movable furniture and equipment will normally be purchased and install by UC Denver under a separate contract and should not be included in the A/E specifications. Installation may be specified by the A/E depending upon circumstances. A/E should coordinate furniture layout and modular furniture layout with building utilities.
2. Room dividers and screens (movable wall partitions) will normally be purchased and installed as movable equipment, unless otherwise approved. The A/E will be expected to coordinate with the client in this design and specification.

H. Electrical System Isolation:

1. UC Denver is a continuously operating facility. Construction of new and maintenance of existing electrical utility systems, equipment and distribution requires adequate capability of isolation of equipment, systems, and branches of the distribution system. It is therefore imperative that the design and installation of new and modified utility systems include sufficient isolation capability. All work involving the central electrical utility systems whether upgrade or the system or tie-in to the central system must include provisions for system isolation.

2. An isolation plan shall be submitted to the UC Denver Project Manager as part of the Schematic Design and Construction Document phases of the project. The UC Denver Project Manager will be responsible for approval of the plan and coordination with the Design Team.