

INTRODUCTION

These Standards are our “contract design document” with Consultant(s). Consultants are expected to adhere to them, revising their specifications and design strategies accordingly. They shall be used by Standing-Order Contractors (Contractor) in the absence of other construction documents. These standards are complementary to specific project program requirements, and, as noted, can be modified at the discretion of the CSM Project Manager.

Some Divisions and Sections of the Specifications will not have any information listed. All such areas are to be left to the design control of the Executive Architect(s). The Executive Architect shall consult with the Project Manager regarding Design Guidelines to use for specific applications not covered in this Manual. Guidelines for specific applications may be developed as the need arises.

These design standards are not meant to dictate design solutions, as this is properly the function of each project's executive design professional. However, these standards are meant to assure that CSM is provided with functional and durable buildings, based on experience with existing campus buildings.

The Standards include design criteria, guidelines and acceptable products. The Colorado School of Mines (CSM) assumes tacit agreement with them by the Consultant/Contractor, and will not accept liability for their use, since the Consultant/Contractor has the right to disagree with them or request a waiver, which shall be done in writing. CSM will then take any of three actions:

1. Issue a waiver.
2. Issue a waiver and change the Standards
3. Request that the Consultant/Contractor abide by them. The Consultant/Contractor may submit a letter wishing to be released from responsibility on the matter for which a waiver was requested and denied.

If the Consulting/Contracting firm disregards the Standards, it will be held accountable for the cost to achieve compliance, and may be grounds for not performing any more work at the CSM campus.

Before proceeding with design, the Consultant is strongly encouraged to review any questions, doubts, optional designs, etc. with CSM staff in order to avoid duplication of work. The CSM project manager will gladly set up a meeting for this purpose.

A. University Philosophy:

1. This University, since its inception, has been intimately involved in fairly large construction projects and has had to live with these projects long after the original designers moved on. In living with and maintaining these projects, certain facts have evolved which have become elemental bases in the design of any new project.

2. A building designed for a specific department may not always be used by that department.
3. While there are no hard and fast criteria set forth on how to design a building so that it can later be used by a completely unknown department, there are certain basic facts which make this later transition somewhat easier. Such things as uniform window placement, reasonable sized windows, reasonable ceiling heights, adequate electrical facilities, easily adapted heating and cooling systems, adequate mechanical rooms, ample stairways, and other related items shall be made early in the design stage.
4. Buildings must sometimes be enlarged. Whenever this likelihood exists, provisions should be made to accomplish interconnections, upgrading and installation of mechanical systems.
5. It is basic policy to study the possibility of future needs (expansion, new equipment) at the time the basic design is being formulated. At least one layout shall be made showing expansion possibilities.
6. The University is extremely conscious of maintenance costs. We therefore look with concern on new and "untried" materials. We are opposed to *experimentation* on our projects. However, we look forward to considering *innovative* designs.
7. Exterior mechanical installations must not only be designed for proper functions, but must be considered in the aesthetics of building design. Large and unsightly installations shall be located so as to be hidden from public view or shall be appropriately enclosed.
8. Drawings of elevations of structures must show mechanical and electrical installations, including installations projecting above parapet walls. If due consideration of aesthetics are not observed, the University will require complete re-design elevations until a pleasing, well integrated design is achieved.
9. Basic design services shall provide sufficient room for an orderly arrangement of equipment, piping, and conduit and the University shall continually monitor the work of Consultants to see that appropriate arrangements are achieved. Special consideration shall be given to heights of floor to ceiling spaces to allow for maintenance and concealment of systems, as much as practical.
10. Special attention shall be given early in the design process to provide for sufficient and safe access **space** for maintenance and of infrastructure. Sufficient space implies the capability to replace major components with minor impact to the building. Equipment shall be designed to be accessible and maintainable from floor level whenever possible. When not possible, permanent structures will be designed to minimize the necessity of such tools as ladders, hoists and portable lighting (i.e.: platforms and permanent ladders for overhead work, rail systems for removal of pumps in pits, adequate permanent lighting, etc.). The University shall not accept designs unless the drawings clearly indicate locations of ceiling and wall access panels and other necessary access space. **This needs to be emphasized to the contractors before and during construction.**

11. Consideration needs to be given to the cleanability/accessability of both interior and exterior spaces. For example, if lift is required to clean or change a light bulb in a multi-story vaulted space, provisions should be made for getting the lift in the building post-occupancy.

12. Space is a precious commodity on campus. When equipment, wiring, piping, telecommunications cable, etc. is disconnected or "abandoned," it must be physically removed and disposed of as part of the project.

B. Building Construction Requirements:

1. All projects should strive for LEED qualified buildings designing for energy efficiency and sustainability. Based on the High Performance Certification Program (HPCP) Policy OSA-HPCP Issued 09/01/2007, LEED Gold is the targeted standard as well as attaining a US EPA Energy Star Rating.

2. The exterior envelope shall be given careful consideration. University maintenance, security, and utility costs indicate the need for restraint in the use of large areas of glass. If large areas of glass are required for aesthetics, careful orientation of these areas for reduction of heat loss and heat gain must be made. Low emissivity glazing shall be used, with double glazing set 3/4 inch apart, as a minimum.

3. Windows, insofar as practicable, shall be provided with operable vent sections of minimum size in non-public areas only.

4. Walls shall have R-19 or greater thermal resistance factor.

5. Roof and ceiling combinations shall have R-30 or greater thermal resistance.

6. Infiltration should not exceed ASHRAE Guidelines.

7. Daylighting is encouraged, but with minimal glare and solar heat gain.

C. Authority Having Jurisdiction

Colorado School of Mines is a *State Building Programs Delegated Agency*, all consultants should review the Office of the State Architect Policies and Procedures with that in mind.

The City of Golden has additional design standards regarding site, utilities and easements that The Colorado School of Mines must strictly adhere to

The Golden Fire department needs a scheduled document review session at the end of Design Development and must receive a final set of documents for review.

D. There should be no construction activity on Graduation day. Absolutely no noise producing activity should occur during finals week. Contact Capital Planning and Construction to confirm those dates.

END OF SECTION