



# COMcheck Software Version 3.7.0 Envelope Compliance Certificate

**2006 IECC**

## Section 1: Project Information

Project Type: **Addition**

Project Title : Colorado Mountain College Dillon Addition

Construction Site:  
333 Fledler Avenue  
Dillon, CO 80435

Owner/Agent:  
Sam Skramstad  
Colorado Mountain College  
831 Grand Avenue  
Glenwood Springs, CO 81601  
970-947-8406  
sskramstad@coloradomtn.edu

Designer/Contractor:  
Jerry Westhoff  
BHH Partners, Planners/Architects  
P.O. Box 2113  
560 Adams Avenue  
Silverthorne, CO 80498  
970-513-1000  
jwesthoff@bhpartners.com

## Section 2: General Information

Building Location (for weather data): **Dillon, Colorado**  
Climate Zone: **7**  
Vertical Glazing / Wall Area Pct.: **9%**

<b>Activity Type(s)</b>	<b>Floor Area</b>
School/University	776

## Section 3: Requirements Checklist

**Envelope PASSES: Design 0.1% better than code.**

### Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor <sup>(a)</sup>
Orientation: NORTH					
Exterior Wall 2: Steel-Framed, 16" o.c.	230	19.0	7.5	0.060	0.064
Window 2: Metal Frame with Thermal Break:Double Pane, Tinted, SHGC 0.01, PF 0.22	32	---	---	0.500	0.500
Orientation: EAST					
Exterior Wall 3: Steel-Framed, 16" o.c.	320	19.0	7.5	0.060	0.064
Door 1: Insulated Metal, Swinging	21	---	---	0.800	0.700
Orientation: WEST					
Exterior Wall 1: Steel-Framed, 16" o.c.	320	19.0	7.5	0.060	0.064
Window 1: Metal Frame with Thermal Break:Double Pane, Tinted, SHGC 0.01, PF 0.22	48	---	---	0.500	0.500
Orientation: UNSPECIFIED ORIENTATION					
Roof 2: Insulation Entirely Above Deck	650	---	25.0	0.039	0.039
Floor 1: Slab-On-Grade:Unheated, Vertical 3 ft.	87	---	7.5	---	---

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

### Air Leakage, Component Certification, and Vapor Retarder Requirements:

- 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.
- 2. Windows, doors, and skylights certified as meeting leakage requirements.

- 3. Component R-values & U-factors labeled as certified.
- 4. Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
- 5. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
- 6. 'Other' components have supporting documentation for proposed U-Factors.
- 7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
- 8. Cargo doors and loading dock doors are weather sealed.
- 9. Recessed lighting fixtures are: (i) Type IC rated and sealed or gasketed; or (ii) installed inside an appropriate air-tight assembly with a 0.5 inch clearance from combustible materials and with 3 inches clearance from insulation material.
- 10. Building entrance doors have a vestibule equipped with closing devices.

*Exceptions:*

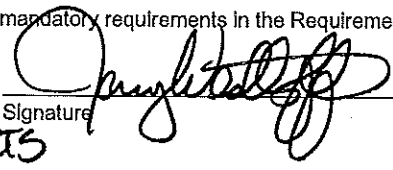
Building entrances with revolving doors.

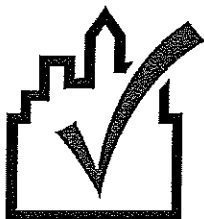
Doors that open directly from a space less than 3000 sq. ft. in area.

- 11. Vapor retarder installed.

### Section 4: Compliance Statement

*Compliance Statement:* The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2006 IECC requirements in COMcheck Version 3.7.0 and to comply with the mandatory requirements in the Requirements Checklist.

<b>JERRY WESTHOFF, ASSOCIATE</b>		<b>11/16/09</b>
Name - Title	Signature	Date
<b>BHH PARTNERS, PLANNERS/ARCHITECTS</b>		



COMcheck Software Version 3.6.1

# Mechanical Compliance Certificate

2006 IECC

## Section 1: Project Information

Project Type: **Addition**

Project Title : DILLON CAMPUS ADDITION

Construction Site:

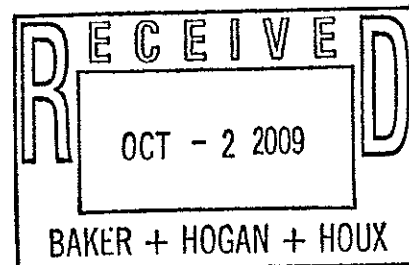
COLORADO MOUNTAIN COLLEGE  
333 FIEDLER AVE  
DILLON, CO

Owner/Agent:

COLORADO MOUNTAIN COLLEGE  
831 GRAND AVE  
GLENWOOD SPRINGS, CO  
970.947.8406

Designer/Contractor:

DMCE  
5737 W. 6TH AVE.  
LAKEWOOD, CO  
303.421.3208



## Section 2: General Information

Building Location (for weather data): **Eagle, Colorado**  
Climate Zone: **6b**  
Heating Degree Days (base 65 degrees F): **8106**  
Cooling Degree Days (base 50 degrees F): **1595**

## Section 3: Mechanical Systems List

### Quantity System Type & Description

- | Quantity | System Type & Description  |
|----------|--|
| 1        | HVAC System 1: Cooling: Rooftop Package Unit, Capacity 63 kBtu/h, Air-Cooled Condenser / Single Zone |
| 1        | HVAC System 2: Heating: Unit Heater, Electric, Capacity 14 kBtu/h                                    |

## Section 4: Requirements Checklist

### Requirements Specific To: HVAC System 1 :

- 1. Equipment minimum efficiency: Rooftop Package Unit: 9.7 SEER
- 2. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- 3. Integrated air economizer required

### Requirements Specific To: HVAC System 2 :

None

### Generic Requirements: Must be met by all systems to which the requirement is applicable:

- 1. Load calculations per 2001 ASHRAE Fundamentals
- 2. Plant equipment and system capacity no greater than needed to meet loads
  - Exception: Standby equipment automatically off when primary system is operating
  - Exception: Multiple units controlled to sequence operation as a function of load
- 3. Minimum one temperature control device per system
- 4. Minimum one humidity control device per installed humidification/dehumidification system
- 5. Automatic Controls: Setback to 55 degrees F (heat) and 85 degrees F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
  - Exception: Continuously operating zones
  - Exception: 2 kW demand or less, submit calculations
- 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum
- 7. R-5 supply and return air duct insulation in unconditioned spaces R-8 supply and return air duct insulation outside the building R-8 insulation between ducts and the building exterior when ducts are part of a building assembly
  - Exception: Ducts located within equipment

- Exception: Ducts with interior and exterior temperature difference not exceeding 15 degrees F.
- Exception: Continuously welded and locking-type longitudinal joints and seams on ducts operating at static pressures less than 2 inches w.g. pressure classification
- 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
- 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics
- 10. Hot water pipe insulation: 1 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in. Chilled water/refrigerant/brine pipe insulation: 1 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in. Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.
  - Exception: Piping within HVAC equipment.
  - Exception: Fluid temperatures between 55 and 105 degrees F.
  - Exception: Fluid not heated or cooled.
  - Exception: Runouts <4 ft in length.
- 11. Operation and maintenance manual provided to building owner
- 12. Balancing devices provided in accordance with IMC (2006) 603.17
- 13. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
  - Exception: Gravity dampers acceptable in buildings <3 stories
  - Exception: Gravity dampers acceptable in systems with outside or exhaust air flow rates less than 300 cfm where dampers are interlocked with fan
- 14. Stair and elevator shaft vents are equipped with motorized dampers

## Section 5: Compliance Statement

*Compliance Statement:* The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2006 IECC requirements in COMcheck Version 3.6.1 and to comply with the mandatory requirements in the Requirements Checklist.

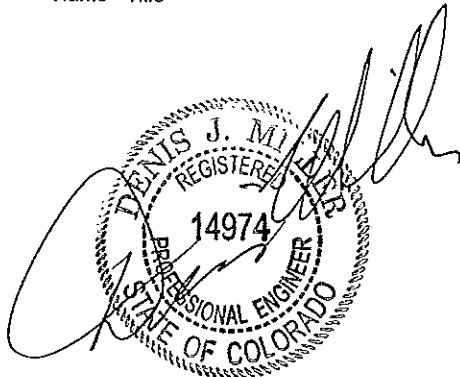
*Brentan Wartner - Designer*

Name - Title

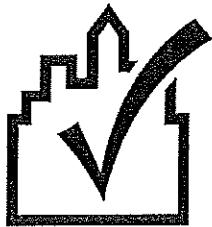
Signature

Date

*9/30/09*

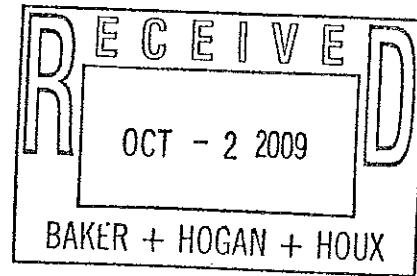


SEP 30 2009



COMcheck Software Version 3.6.1  
**Interior Lighting Compliance  
 Certificate**

2006 IECC



**Section 1: Project Information**

Project Type: **New Construction**  
 Project Title : DILLON CAMPUS ADDITION

Construction Site:  
 COLORADO MOUNTAIN COLLEGE  
 333 FIEDLER AVE.  
 DILLON, CO

Owner/Agent:  
 COLORADO MOUNTAIN COLLEGE  
 831 GRAND AVE.  
 GLENWOOD SPRINGS, CO

Designer/Contractor:  
 ALAN ELY  
 DMCE  
 5737 W. 6th. ve.  
 Lakewood, CO 80214  
 303.421.3208

**Section 2: General Information**

Building Use Description by: **Activity Type**

<u>Activity Type(s)</u>	<u>Floor Area</u>
School/University	844

**Section 3: Requirements Checklist**

**Interior Lighting:**

- 1. Total proposed watts must be less than or equal to total allowed watts.

<u>Allowed Watts</u>	<u>Proposed Watts</u>	<u>Complies</u>
1013	965	YES

**Controls, Switching, and Wiring:**

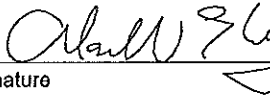
- 2. Independent controls for each space (switch/occupancy sensor).  
*Exceptions:*  
 Areas designated as security or emergency areas that must be continuously illuminated.  
 Lighting in stairways or corridors that are elements of the means of egress.
- 3. Master switch at entry to hotel/motel guest room.
- 4. Individual dwelling units separately metered.
- 5. Each space provided with a manual control to provide uniform light reduction by at least 50%.  
*Exceptions:*  
 Only one luminaire in space;  
 An occupant-sensing device controls the area;  
 The area is a corridor, storeroom, restroom, public lobby or sleeping unit.  
 Areas that use less than 0.6 Watts/sq.ft.
- 6. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.  
*Exceptions:*  
 Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security.
- 7. Photocell/astronomical time switch on exterior lights.  
*Exceptions:*  
 Lighting intended for 24 hour use.
- 8. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).  
*Exceptions:*  
 Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

## Section 4: Compliance Statement

*Compliance Statement:* The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2006 IECC requirements in COMcheck Version 3.6.1 and to comply with the mandatory requirements in the Requirements Checklist.

Alan W. Ely, PE

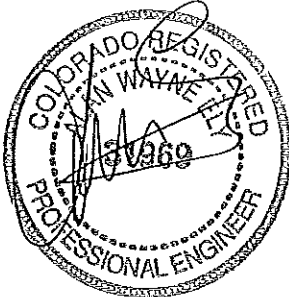
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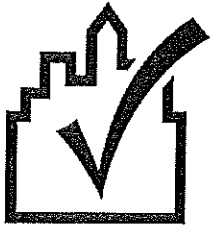
Signature

7/22/09

Date



SEP 30 2009



COMcheck Software Version 3.6.1  
**Interior Lighting Application  
 Worksheet**

2006 IECC

**Section 1: Allowed Lighting Power Calculation**

A Area Category	B Floor Area (ft <sup>2</sup> )	C Allowed Watts / ft <sup>2</sup>	D Allowed Watts (B x C)
School/University	844	1.2	1013
Total Allowed Watts =			1013

**Section 2: Proposed Lighting Power Calculation**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
School/University (844 sq.ft.)				
Linear Fluorescent 1: A: 2X4 / 48" T8 32W / Electronic	3	9	95	855
Compact Fluorescent 1: B: 6-INCH CAN / Triple 4-pln 42W / Electronic	1	1	45	45
Linear Fluorescent 2: DE: 2X4 / 48" T8 32W / Electronic	2	1	65	65
Total Proposed Watts =				965

**Section 3: Compliance Calculation**

If the Total Allowed Watts minus the Total Proposed Watts is greater than or equal to zero, the building complies.

Total Allowed Watts =	1013
Total Proposed Watts =	965
Project Compliance =	48

**Interior Lighting PASSES: Design 5% better than code**