

ORDINANCE NO. 70-B

AN ORDINANCE OF THE TOWN OF MEAD, WELD COUNTY COLORADO REGARDING ESTABLISHMENT OF ENERGY EFFICIENT CONSTRUCTION AND RENOVATION STANDARDS FOR NON-RESIDENTIAL BUILDINGS AS REQUIRED BY ARTICLE 12, TITLE 29, COLORADO REVISED STATUTES, 1973, AS AMENDED, ADOPTING BY REFERENCE THE "ENERGY CONSERVATION STANDARDS, COLORADO MODEL ENERGY EFFICIENCY CONSTRUCTION AND RENOVATION STANDARDS FOR NON-RESIDENTIAL BUILDINGS, 1978" PROMULGATED IN 1978 BY THE COLORADO BOARD FOR ENERGY EFFICIENT NON-RESIDENTIAL BUILDING STANDARDS AS A PART OF THE TOWN OF MEAD BUILDING CODE; AMENDING OTHER PORTIONS OF THE TOWN OF MEAD BUILDING CODE; PROVIDING FOR THE REPEAL OF INCONSISTENT ORDINANCES; AND PROVIDING FOR THE EFFECTIVE DATE OF THIS ORDINANCE.

WHEREAS, Colorado State Law requires every municipality having a building code to adopt energy efficient construction and renovation standards as part of its building code, and

WHEREAS, the Board of Trustees of the Town of Mead has determined to comply with the mandate of state law.

BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF MEAD, COLORADO:

Section I. Standards Adopted. Section II(B)(1) of the Town of Mead Building Code is hereby repealed and re-enacted as follows:

II. B. Additional Standards.

1. Energy Conservation Standards.

a) Non-Residential - The "ENERGY CONSERVATION STANDARDS, COLORADO MODEL ENERGY EFFICIENCY CONSTRUCTION AND RENOVATION STANDARDS FOR NONRESIDENTIAL BUILDINGS," promulgated in 1978 by the Colorado Board for Energy Efficient Nonresidential Building Standards, is incorporated by reference as a part of this building Code for the purpose of establishing energy conservation standards for the construction of non-residential buildings in the Town of Mead, Colorado with the following modifications and additions:

(1) Section 105.0 of the above incorporated code is amended to read "with each application for a building permit, plans, specifications, and a statement of design compliance with the Code shall be submitted. Where State statutes require design by an architect or engineer, the statement of compliance shall be prepared by an architect or engineer."

(2) Section 302.1, Exterior Design Conditions, shall use the following values:

Winter Design Dry Bulb	-5° F
Summer Design Dry Bulb	88° F
Summer Design Wet Bulb	63° F
Degree Days Heating	6639
Degrees North Latitude	40° F

(3) Table 5-1 shall use the following values:

For Nonresidential Buildings<sup>1</sup>

Element:	Mode:	Value:
Walls	3 Stories or less Heating	U <sub>0</sub> 0.26
	Cooling	OTTV 33.5
Walls	Over 3 Stories Heating	U <sub>0</sub> 0.32
	Cooling	OTTV 33.5
Roof/Ceiling	Heating or Cooling	U <sub>0</sub> 0.07
Floors over unheated Spaces	Heating	U <sub>0</sub> 0.08
Slab on Grade	Heating	R-Value*
Solar Factor	Cooling	127

-----  
<sup>1</sup>Values shall be determined by using the graphs (figures 2, 3, 4, 5, and 6) using heating degree days as specified in Section 302-1.

\*See Figure 2

(4) Heating system ducts in crawl spaces with a furnace installed in the crawl space may be uninsulated. Heating system ducts in a crawl space without a furnace shall be insulated with the equivalent of R-4 insulation.

b. Residential

(1) Definitions

- (a) Renovation - Any structural alteration or repair to a residential building which results in, or is likely to result in, a fifty percent or greater increase in the value of the building.
- (b) Residential building - Any building designed or used as a living unit, including single and multifamily dwellings, apartments, condominiums, hotels and motels regardless of size, but not including private garages, carports, sheds, agricultural buildings, tanks, factory-constructed housing and towers.
- (c) R-Value - The reciprocal of the average overall coefficient of heat transmission in Btu's (British Thermal Units) per hour. The term is applied to usual combinations of insulation materials, as generally recognized and accepted in the residential

0# 70-B / pg. 2 of 7

building construction industry.

- (2) In addition to the requirements of the Uniform Building Code, 1976 Edition, insulation in residential buildings in Town of Mead, Colorado shall conform to the following standards:

<u>Portion of Building</u>	<u>R Factor</u>
Ceilings	R-19
Sidewalls	R-11
Subfloors over unheated crawlspaces	R-11

- (b) Insulation having a minimum R-Value of 11 shall be used in all exterior walls contiguous to unheated areas above grade.
- (c) Insulation having a minimum R-value of 19 shall be used in all exterior ceilings of heated areas above grade.
- (d) All windows above grade shall be double-glazed.
- (e) All exterior doors or doors leading to unheated areas above grade shall be weather stripped and sliding glass doors shall be double-glazed.
- (3) Computation submitted by a licensed architect or engineer that the total energy required in a residential building, through design or otherwise, equals or is less than the total energy used if the building is built or renovated according to standards contained in Subsection 1 of this Section, shall be considered an acceptable alternative for conformance with the prescriptive standards set forth in Subsection (2) of this Section. The total energy required shall be computed as the annual estimated Btu's necessary to heat, cool, and light the proposed residential building. For purposes of this calculation, the exterior walls shall consist of no more than the equivalent of 20% doors and windows.
- (4) Crawl spaces shall be insulated by insulating the foundation wall with insulation having an R-value of 11 if the crawl space in un-vented and heated as described below:

**\*Floors and Crawl Spaces**

Floors over crawl spaces may be insulated either by insulating the foundation walls if the crawl space is unvented, or if the crawl space is vented by placing insulation between the joists. The former method, as described below, is usually more economical.

Place the vapor barrier (polyethylene film) covering the crawl space ground against the wall, using occasional pieces of tape to hold it against the wall until the insulation has been put into place. If the inside surface of the crawl space wall is not over 21 inches high, use nominal 2 foot wide blanket insulation, or if the wall is not over 12-13 inches high, use nominal 16 inch wide insulation. Place one edge of insulation on top of foundation wall,

0# 70-B / pg. 3 of 7

taping it temporarily in place as needed. The remainder of the insulation should drape over and against the inside of the wall. Insulation is held permanently in place by the sill plate or header joist if no sill plate is used. If the bottom of the insulation stands away from the wall, use stones, bricks or blocks spaced as needed to hold it against the wall. The vapor barrier on the insulation should face inward (the warm side in winter). In this method of installation, the insulation also serves as a sill sealer. Walls of unvented crawl space. also may be insulated by fastening rigid insulation board to the inside face of the wall extending from ground to top of wall. Follow manufacturer's instructions for method and type of adhesive or fasteners.

Section 2. Uniform Building Code Amended. Section II(A)(1) of the Town of Mead Building Code is amended to read as follows:

1. Uniform Building Code.

The publication of the International Conference of Building Officials, known as the Uniform Building Code, 1976 Edition, is incorporated by this reference as a part of this Building Code for the purpose of establishing standards for the construction and inspection of dwellings, buildings, and structures and the issuance of building permits in Town of Mead, Colorado, with the following amendments:

a) The last sentence of Section 1404 of said code concerning exit facilities is amended to read: "Where windows are provided as a means of egress of rescue they shall have a finished sill height not more than 48 inches above the floor."

b) Section 2517(c)6 concerning foundation ventilation is amended to read as follows: "Underfloor areas shall be ventilated by an approved mechanical means or by openings in exterior foundation walls. If the ground is covered with a membrane the ventilation area can be one fifteen hundredths of the area. If the ground is not covered with a membrane such opening shall have a net area of not less than one and a half square feet for each twenty five linear feet of exterior wall. Opening shall be located as close to corners as practicable and shall provide cross ventilation on at least two approximately opposite sides. They shall be covered with corrosion resistant wire mesh not less than one quarter inch nor more than one half inch in any dimension. Either open or closeable type vents may be used. If a closeable type vent is used and there is a furnace in the crawl space a positive supply must be installed for combustion air requirements."

Section 3. Uniform Mechanical Code Amended. Section II(A)(2) of the Town of Mead Building Code is amended to read as follows:

2. Uniform Mechanical Code.

The publication of the International Association of Plumbing and Mechanical Officials and the International Conference of Building Officials known as the Uniform Mechanical Code 1976 edition is incorporated by this reference as a part of this Building Code for the purpose of providing for the inspection of heating, ventilating, cooling, and refrigeration equipment and the issuance of mechanical permits in Weld County, Colorado with the following amendments:

a) Section 2215 concerning liquified petroleum gas facilities and piping sub-sections 5 and 6 is amended to read:

5. "Liquified petroleum gas facilities shall not be located in any pit, under show windows or interior stairways in engine, boiler, heater or electric meter rooms. When not prohibited by any other regulation, approved liquified petroleum gas metering devices may be located in the open under exterior stairways."
6. "Liquified petroleum gas piping shall not serve any gas water heater located in a pit where heavier than air gas might collect to form a flammable mixture."

b) Section 2215 is further amended by the addition of a subsection 10 to read: "Liquified petroleum gas facilities may be used in crawl spaces upon approval by the Director of Building Inspection if appropriate sensors are installed or if the topography surrounding the structure allows for a natural drainage of the gas away from the structure."

c) The first paragraph of Section 1005 of the Uniform Mechanical Code 1976 edition is amended to read as follows: "Every supply and return air duct and plenum of a heating or cooling system shall be insulated with not less than the amount of insulation set forth in Table No. 10-D except for ducts and plenums used exclusively for evaporative cooling systems and except for heating system ducts and crawl spaces with a furnace installed in the same crawl space. Heating system ducts in a crawl space without a furnace shall be insulated with the equivalent of R-4 insulation."

Section 4. Uniform Plumbing Code Amended. Section II(A)(4) of the Town of Mead Building Code is amended to read as follows:

4. Plumbing Code.

The Publication of the International Association of Plumbing and Mechanical Officials known as the Uniform Plumbing Code, 1976 edition, is incorporated by this reference as a part of this Building Code for the purpose of providing standards for the inspection of plumbing systems and the issuance of plumbing permits in Weld County Colorado with the following amendments:

a) Section 409 (a) of said code concerning drainage below curb and main sewer level is amended to read, "Drainage piping serving fixtures the flood level rims of which, are located below the elevation of the curb or property line, at the point where the building sewer crosses under the curb or property line, and above the crown level of the main sewer, shall drain by gravity into the main sewer, and may be protected from back flow of sewage by installing an approved type back water valve, and each back water valve shall be installed only in that branch or section of the drainage system which receives the discharge from fixtures located below the elevation of the curb or property line."

0# 70-B / pg. 5 of 7

b) Section 904(b) of said Code relating to connections is deleted.

c) Section 1215 of said Code concerning Liquified Petroleum Gas Facilities in Piping subsections (e) and (f) are amended to read as follows:

(e) "Liquified Petroleum Gas Facilities shall not be located in any pit, under show windows or interior stairways in engine, boiler, heater, or electric meter rooms. When not prohibited by another regulation approved liquified petroleum gas metering devices may be located in the open, under exterior stairways."

(f) "Liquified Petroleum Gas Piping shall not serve any gas water heater located in a pit, where heavier than air gas might collect to form a flammable mixture.

d) Section 1215 of said Code is further amended by the addition of a subsection (j) to read:

"Liquified Petroleum Gas Facilities may be used in crawl spaces upon approval by the Director of Building Inspection if appropriate sensors are installed or if the topography surrounding the structure allows for a natural drainage of the gas away from the structure."

Section 5. Additional Amendments. Section III (P) of the Town of Mead Building Code is amended to read as follows:

P. Alternate materials and modifications.

1. Alternate materials authorized - The provisions of this Building Code are not intended to prevent the use of any material or method of construction not specifically prescribed by this Building Code, providing any such alternate has been approved.
2. Approval - The Director of Building Inspection may prove any such alternate provided he finds that the proposed design is satisfactory and that the material method or work offered is for the purpose intended at least the equivalent of that prescribed in this Building Code in quality, strength, effectiveness, fire resistance, durability and safety. The Director of Building Inspection shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use.
3. Modifications - Whenever there are practical difficulties involved in carrying out the provisions of this Code the Director of Building Inspection may grant modifications for individual cases provided he shall first find that a special individual reason makes the strict letter of this Code impractical and that the modification is in conformity with the spirit and purpose of this Code, and that such modification does not lessen any fire protection requirements or any degree of structural integrity. The details of any action granting modification shall be recorded and entered in the files of the Division of Building Inspection.

Section 6. Validity. Should any section, clause, sentence or part of this Ordinance be adjudged by any Court of competent jurisdiction to be unconstitutional and/or invalid, the same shall not affect the validity of the Ordinance as a whole or part thereof, other than the part so declared to be unconstitutional or invalid.

Section 7. Conflicts. Any Ordinance or part thereof in conflict with this Ordinance is hereby repealed.

Section 8. Effective Date. This Ordinance shall be in full force and effect from and after FIVE (5) days from the date of final passage approval and publication.

Passed, adopted, signed and ordered published this \_\_\_\_\_ day of \_\_\_\_\_, 1978.

Mayor:

\_\_\_\_\_  
Robert A. Clark

ATTEST:

Town Clerk:

\_\_\_\_\_  
Virginia Frei

( S E A L )