Ordinance No. 646 , N.S.

AN ORDINANCE OF THE CITY OF EL PASO de ROBLES, AMENDING THE UNIFORM CODE FOR BUILDING CONSERVATION ADOPTED BY THE CITY OF PASO ROBLES

Be it ordained by the City Council of the City of El Paso de Robles, that the following ordinance amending Appendix Chapter 1, of the Uniform Code for Building Conservation as part of a program, addressing unreinforced masonry bearing wall structures within the City of El Paso de Robles is hereby adopted.

Section 1: Chapter 17.18, is hereby adopted to read as follows:

"Chapter 17.18, Amendments to the Uniform Code for Building Conservation for strengthening of unreinforced masonry bearing wall buildings."

SECTION 17.18.010, PURPOSE.

The purpose of this chapter is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on existing unreinforced masonry bearing wall buildings.

The provisions of this chapter are intended as minimum standards for structural seismic resistance and established primarily to reduce the risk of life loss or injury. Compliance with these provisions will not necessarily prevent loss of life or injury, or prevent earthquake damage to rehabilitated buildings.

SECTION 17.18.020 SCOPE.

The provisions of this chapter shall apply to all existing buildings having at least one unreinforced masonry bearing wall. Except as provided herein, all other provisions of the Building Code shall apply.

Exceptions:

Detached one or two-family dwellings and detached apartment houses containing less than five dwelling units and used solely for residential purposes.

SECTION 17.18.030, ADMINISTRATION - SCHEDULE FOR IMPLEMENTATION.

1. Notification of property owners.

Within **twelve (12) months** of the adoption of this Chapter, the Building Official will provide the property owners with copies of the Chapter, notifying them of the requirements of the Chapter.

2. Recordation of the City's findings.

a. Within **eighteen (18) months** of the adoption of this Chapter, the Building Official will file with the County Recorder's Office, a certificate stating the subject building is within the scope of this Chapter and is a potentially earthquake hazardous building.

b. The certificate shall state that in accordance with the time frame established under this Chapter, the owner thereof will be required to structurally analyze the building and to structurally alter or demolish it where compliance with this Code has not been demonstrated by the established time frame.

	ALLOWABLE VALUES(#4)
	Same as specified in Table 25-J of the 1988 Uniform Building Code for blocked diaphragms
	225 lbs per foot
	1.33 times the value specified in Table 25-K-1, Uniform Building Code for shear walls
	50% percent of the values in Tables 47-I of the 1988 UBC
	33% of the specified values in Table No. 47-I of the 1988 UBC

3. TENSION BOLTS

Bolts extending entirely through unreinforced masonry walls secured with far side of plates in the lowest wythe at least 16 square inches of area (#2,#3)

c. Drywall or plaster applied to sheathing over wood studs

Drywall or plaster applied directly over wood studs

b. Drywall or plaster applied directly over existing plywood shall be given to no value

2. CROSSWALLS

a. Plywood sheathing applied directly over wood studs

Plywood sheathing applied directly over existing boards

Plywood sheathing applied directly over existing straight sheathing with ends of plywood sheets or bearing on joists or rafters and edges of plywood located on centers of individual sheathing boards

	ALLOWABLE VALUES(4)
minimum of 8 inreinforced masonry cs shall be centered in diameter hole with the pack or non-shrink grout ound circumference of bolt(1,3)	133⅓ of the values for plain masonry specified for solid masonry in Tables No. 24-E of the Uniform Building Code. No values larger than those given for ¾ shall be used.
6. COMBINED TENSION AND SHEAR BOLTS a. Through Bolts - Combined Shear and Tension. Bolts meeting the above requirements for tension bolts and shear bolts(1,2,3)	Tension: Same as for tension bolts. Shear: Same as for shear bolts.
b. Embedded Bolts - Combined Shear and Tension. Bolts extending to the exterior face of the wall with a 2½ inch round plate under the head and drilled at an angle of 22½ degrees to the horizontal. (installed as specified for shear bolts, foot notes numbers 1, 2, & 3 at the end of this section.	Tension: Same as for tension bolts. Shear: Same as for shear bolts.

ALLOWABLE VALUES OF NEW MATERIALS USED
IN CONJUNCTION WITH EXISTING CONSTRUCTION
(continued)

NEW MATERIALS OR CONFIGURATIONS OF MATERIALS	ALLOWABLE VALUES(4)
7.INFILLED WALLS	
Reinforced masonry infilled openings in existing unreinforced masonry walls. Provide keys or to match reinforcing.	Same as values specified for reinforced masonry walls in table 24-H of the 1988 UBC
8. REINFORCED MASONRY(5)	
Masonry piers and walls reinforced per Chapter 24 of the 1988 Edition of the Uniform Building Code	Same as values specified in Section 2409
9. REINFORCED CONCRETE	
Concrete footings, walls and piers reinforced as specified in Chapter 26 of the 1988 Edition of the Uniform Building Code and designed for tributary loads	Same as values specified in Chapter 26 of the Uniform Building Code.

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[1] Bolts to be tested as specified in Section A104 of the 1991 Edition of the Uniform Code for Building Conservation.

[2] Bolts to be ½ - inch minimum in diameter.

[3] Drilling for bolts and dowels shall be done with in electric rotary drill. Impact tools shall not be used for drilling holes or tightening anchors and shear bolt nuts.

[4] A one - third increase in allowable stress is not allowed.

[5] Consistent with the installation of a foundation system capable of resisting all shear, deadload and 50% of the calculated overturning moment.

If any section, subsection, sentence, clause or phrase of the chapter is, for any reason, held to be invalid or unconstitutional, such decision shall not effect the validity or constitutionality of the remaining portions of the regulations. The City Council for the City of Paso Robles hereby declares, that it would have passed this chapter, and each section, subsection, clause, or phrase hereof, irrespective of the fact that any one of sections, subsections, sentences, clauses and phrases be declared unconstitutional.

This ordinance, and the rules, regulations, provisions, requirements, orders and matter established herein, are hereby adopted and shall take effect and be in full force and effect thirty (30) days after the date of its second reading and adoption.

PASSED AND ADOPTED THIS 17th day of November, 1992 by the following role call vote:

AYES: Heggarty, Macklin, Martin, Picanco, and Iversen

NOES: None

ABSENT: None

ABSTAIN:

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MAYOR, CHRISTIAN E. IVERSEN

ATTEST:

RICHARD J. RAMIREZ, CITY CLERK

c. If the building is either demolished, found not to be within the scope of this Chapter, or is structurally capable of resisting minimum seismic forces required by this Code as a result of structural alterations or an analysis, the Building Official shall file with the office of the County Recorder a form terminating the status of the subject building as being classified within the scope of this Chapter.

3. *Time Line for Compliance:*

Parapets and exterior wall appendages:

Parapets and exterior wall appendages shall be made to comply with the requirements of Section 17.18.130 of this Chapter. All parapet and appendage work must be completed within two years of the property owner having received notice in accordance with Section 17.18.030 of this Chapter.

Full Compliance:

Full compliance with the requirements of this Chapter must be completed within fifteen years from the date of official notice of action, except for essential and high risk buildings, which shall be in compliance within seven years of official notice of action.

SECTION 17.18.040, CONTENT OF NOTIFICATION.

a. The notice shall be in writing and shall be served either personally or by certified or registered mail upon the owner as shown on the last equalized assessment roll, or upon the person, if any, in apparent charge or control of the building.

b. The notification shall specify the "Risk Level" classification of the building as set forth under Section 17.18.100 of this Chapter, and shall be accompanied by a copy of Section 17.18.130, of this Chapter, "Upgrade Design," which sets forth the owner's alternatives and time limits for compliance.

SECTION 17.18.050, NOTIFICATION - PRIORITY OF SERVICE.

Priorities for the Notification of owners of buildings within the scope of this code shall be as follows:

(i) The priority of the Notice of Order shall be based upon the occupant load of the building, as computed using Table 33 of the Uniform Building Code adopted by the City.

(ii) The owners of the buildings housing the largest occupant loads shall be served first.

SECTION 17.18.060, APPEAL OF NOTIFICATION.

a. The owner of the building may appeal the initial determination that the building is within the scope of this Code to the Building Official for the City of Paso Robles.

b. As a prerequisite to an appeal, the owner shall substantiate the appeal through the presentation of verifiable testing data supporting the position that the structure(s) being questioned are not subject ~~the~~ WITHIN THE scope of this chapter. Such appeal shall be filed with the City within 120 days from the service date of the order.

c. Any such appeal shall be scheduled for consideration no later than 90 days after receipt of the written request. Appeals or requests for modifications from any other determinations, orders or actions by the Building Official pursuant to the Chapter shall be made in accordance with the procedures established in Sections 108 and 109 of the Building Code.

SECTION 17.18.070, ENFORCEMENT.

a. If the owner in charge or control of the subject building fails to comply with any order issued by the Building Official pursuant to this code within the time limits set forth in Section 17.18.030, Administration - Schedule for Implementation, the Building Official shall verify that the recorded owner of this building has been properly served.

b. If the notification has been served on the recorded owner, then the Building Official shall order that the entire building be vacated and that the building remain vacated until such order has been complied with.

c. If compliance with such order has not been accomplished within 90 days after the date the building has been ordered vacated or such additional time as may have been granted by the City Council, acting as the Board of Appeals for the Strengthening of Unreinforced Masonry Buildings, the Building Official may order its demolition in accordance with the provisions of Section 203 of the Building Code. Any demolition would be subject to those conditions set forth in the City's Demolition Ordinance contained in Chapter 17.16 of the Municipal Code.

SECTION 17.18.080, FULL STRENGTHENING REQUIRED PRIOR TO TIME FRAMES PROVIDED FOR UNDER SECTION 17.18.030

The Building Official shall require full compliance with the minimum seismic standards contained within this Chapter and the Uniform Code for Building Conservation, before the time frames set forth under Section 17.18.030, subject to the following conditions:

a. Any change or conversion of an unreinforced masonry structure excluded from the requirements of this Chapter as a result of its existing use, to that of a more intensive use covered by this Chapter.

b. The remodel of a structure covered by this chapter, in an amount equaling 50% of the structure's value as determined using the latest edition of the Building Standards Valuation, published by the International Conference of Building Officials.

c. The change of a structure covered by this Chapter to a higher risk category as set forth in Section 17.18.100.

d. The Building Official may, upon receipt of a written request from the owner, order such owner to bring his building into compliance with this Code prior to the normal service date for such building set forth in this Chapter.

SECTION 17.18.090, CERTIFICATE OF COMPLIANCE.

a. In accordance with Chapter 3, Section 70(d)(3) of the Revenue and Taxation Code, the Building Division shall, upon the completion of a seismic retrofit, file a Certificate of Compliance with the County Assessor's Office on or before the following April 15.

b. The Certificate of Compliance shall establish that the work associated with the seismic retrofit was the result of a local ordinance related to seismic safety, and therefore shall not add value to the assessment role.

SECTION 17.18.100, DEFINITIONS

For the purpose of this chapter, the applicable definitions shall be in addition those contained in Uniform Building Code and Uniform Code for Building Conservation as adopted and modified by the City of El Paso de Robles.

ESSENTIAL RISK BUILDING: Any building housing a hospital, or other medical facility having surgery or emergency treatment areas; fire and police stations; municipal government disaster operation and communication centers.

HIGH RISK BUILDING: Any building not classified as an essential building having an occupant load (as determined by Table 33A of the UBC) of one hundred occupants or more. Examples include, but are not limited to, theaters, meeting halls, churches, dance halls, restaurants, larger retail stores and manufacturing buildings.

MEDIUM RISK BUILDING: Any building, not classified as a high risk building or an essential building, having an occupant load (as determined by Table 33A of the UBC) of twenty occupants or more. Examples include, but are not limited to, apartment houses, office buildings, smaller retail stores and manufacturing buildings.

LOW RISK BUILDINGS: Any building, not classified an essential building having an occupant load (as determined by Table 33A of the UBC) of less than twenty occupants. examples include, but are not limited to, warehouses, small hotel\motel, commercial and industrial buildings.

CROSSWALL is a wall is a wood framed wall sheathed with any of the materials described in Tables I & II. A crosswall is not a shear wall.

DIAPHRAGM EDGE is the intersection of the horizontal diaphragm and a shear wall.

FLEXIBLE DIAPHRAGM is a diaphragm of wood construction or other construction of similar flexibility.

NORMAL WALL is a wall perpendicular to the direction of seismic forces.

OPEN FRONT is an exterior building wall plane found on one side only, without vertical elements of the lateral force resisting system in one or more stories. Structures where wall openings are 30% or greater than the contiguous walls shall be considered open front structures.

POINTING is the partial reconstruction of the bed joints of a unreinforced masonry wall as defined in U.B.C. Standard No. 24-42.

QUALIFIED HISTORICAL BUILDING means any structure included on any list of historic or cultural resources, including but not limited to the National Register of Historic Buildings, the State list of Significant Historic Buildings, or the 1981 - 1984 Historic Resources Survey conducted by the Community Development Department.

SEISMIC ZONE(S) is that zone or geographic area referenced under the State Building Code and Chapter 23 of the Uniform Building Code published by the International Conference of Building Officials, establishing the potential earthquake hazard of a given area.

UNREINFORCED MASONRY (URM) WALL is a masonry wall in which the area of reinforcing steel is less than 25 percent of the minimum required by the 1988 Building Code for reinforced masonry, with a height to thickness ratio greater than six.

UNREINFORCED MASONRY BEARING WALL. A URM wall which provides the vertical support for a floor or roof for which the total superimposed load exceeds 100 pounds per linear foot of wall.

UPGRADING means all work necessary to comply with the requirements of chapter.

SECTION 17.18.110, REQUIREMENTS FOR PLANS - STRUCTURAL ENGINEERING

The following construction information shall be included in the plans required by this chapter:

1. Dimensioned floor and roof plans showing existing walls and the size and spacing of floor and roof framing member and sheathing materials. The plans shall indicate all existing and new crosswalls and their materials of construction. The location of the crosswalls and their openings shall be fully dimensioned or drawn to scale on the plans.

2. Dimensioned wall elevations showing openings, thicknesses, heights, the type of veneer, its thickness and its bonding and/or ties to the structural wall masonry shall also be reported.

3. The extent and type of existing wall anchorage to floors and roof when used in the design.

4. The extent and type of parapet corrections which were previously performed, if any.

5. Repair details, if any, of cracked or damaged unreinforced masonry walls.

SECTION 17.18.120, MATERIAL REQUIREMENTS

a. General. All materials permitted by this chapter,including their appropriate allowable design values and those existing configurations of materials specified herein, may be utilized to meet the requirements of this chapter.

b. Existing Materials. All existing materials utilized as part of the required vertical load carrying or lateral force-resisting system shall be in sound condition or shall be repaired or removed and replaced with new materials.

SECTION 17.18.130, UPGRADE DESIGN - Requirements for expanded or continued use of a structure.

General:

a. Except as modified herein, the analysis and design relating to the alteration of, or addition to an existing building shall be in accordance with the Uniform Building Code.

b. Contractors providing structural upgrades shall be licensed by the State of California in the trade(s) being performed to accomplish the upgrade.

c. Design documents and specifications pertaining to structural upgrades shall be prepared by a Architect, Structural Engineer, or Civil Engineer specializing in structural work, licensed by the State of California to practice as such.

Design documents and specifications shall include but not be limited to the following standards:

Parapets:

Parapets and exterior wall appendages shall be removed, braced, or otherwise stabilized to ensure that the parapets and appendages remain in their original position during an earthquake.

The maximum height of an unbraced, unreinforced masonry parapet shall not exceed 1½ times the thickness of the parapet wall. Heights shall be measured from either the level of the tension anchors or roof sheathing, which ever is the lower of the two.

If the parapet height exceeds the this maximum height, a bracing system designed for the force factors specified in Table No. 23-P of the 1988 Edition of the Uniform Building Code for walls shall made to support the top of the parapet.

Structures:

All structures subject to the requirements contained within this chapter shall be strengthened through the installation of roof and floor diaphragms producing 400 pounds per square foot of seismic shear.

Existing wood diaphragms:

The following values may be assigned to existing wood diaphragms:

1. Straight sheathing with the roof covering applied directly to the sheathing; 100 pounds per foot for seismic shear.

2. Roofs with diagonal sheathing, with the roof applied directly to the sheathing; 300 pounds per foot for seismic shear.

3. Floors with straight tongue and groove sheathing; 100 pounds per foot for seismic shear.

4. Floors with straight sheathing and finished wood flooring perpendicular to sheathing; 300 pounds per foot of seismic shear.

5. Floors with diagonal sheathing and finished wood flooring; 400 pounds per foot of seismic shear.

Anchorage:

Walls shall be anchored to all floors and roof diaphragms. Such anchorage shall provide a positive direct connection capable of resisting the horizontal forces equal to 200 pounds per lineal foot of wall. Wall anchors shall not exceed four feet on center.

In structures with existing wall anchors, twenty - five percent of the existing anchors shall be tested. The allowable value shall be shall be forty percent of the average value determined by said tests.

Crosswalls:

Structures where the length to width ratio exceeds two to one shall incorporate crosswalls or moment resisting frames into their design. Crosswalls shall meet the following requirements:

A. Spacing of crosswalls shall not exceed 40 feet on center measured perpendicular to the direction of consideration, and shall be placed in each story of the building. Crosswalls shall extend the full story height between diaphragms.

B. Crosswall shear capacity. Within any 40 feet measured along the span of the diaphragm, the sum of the crosswall shear capacities shall be at least 30 percent of the diaphragm shear capacity of the strongest diaphragm at or above the level under consideration.

C. Existing crosswalls. Existing crosswalls shall have a length to height ratio between openings of not less than 1.5. Existing crosswall connections to diaphragms need not be investigated as long as the crosswall extends to the framing of the diaphragm above and below.

D. New crosswalls. New crosswall connections to the diaphragm shall develop the crosswall shear capacity. New crosswalls shall have the capacity to resist an overturning moment equal to the crosswall shear capacity times the story height. Crosswall overturning moments need not be cumulative over more than two stories.

E. Other crosswall systems. Other systems, such as special moment resisting frames, may be used as crosswalls provided that the yield story drift does not exceed one inch in any story.

F. **Moment frames.** Moment frames used in place of shear walls shall be designed as required in Chapter 23 of the 1988 Edition of the Uniform Building Code except that the forces shall be as specified in Section A109(d)6A of the Uniform code for Building Conservation and the inter-story drift ratio shall be limited to 0.005, except as further limited in Section A109(e)3B.

G. **Buildings with open fronts.** A building with an open front shall have crosswalls parallel to the open front and shall be designed by the following procedure:

1. Effective diaphragm span, L_i, shall be determined in accordance with the following formula:

$$L_i = 2[(W_w/W_d) \times L + L]$$

2. Diaphragm demand/capacity ratio shall be calculated as :

$$DCR= 0.83Z(W_d + W_w)/[(v_uD) + V_c \text{ , or:}$$

3. Shear resistive elements may be installed in the open front which shall provide a 75% design shear capacity as calculated in accordance with the provisions of the 1988 Uniform Building Code provisions. Overturning moments need not be cumulative over more than two stories.

SECTION 17.18.140, SPECIAL REQUIREMENTS FOR QUALIFIED HISTORICAL BUILDINGS.

1. Plans for seismic upgrading of qualified historical building shall be reviewed by the City Planner and the City's Architectural Review Committee. The basis of review shall be the Design Guidelines established by the City, and the Secretary of the Interior's Standards, with the following special requirements:

a. Features of architectural or historical significance shall be retained and reattached, braced, or stabilized, as required.

b. In-wall anchors shall be used on qualified historical buildings instead of through-wall anchors, especially on the principal facade.

c. Through-wall anchors on other facades may be permitted, provided that their locations and treatment are approved by the Architectural Review Committee.

d. Closure of historic openings on the principal facade shall not be permitted and shall be discouraged on secondary facades. If closure of such openings on secondary facades is unavoidable, the materials used shall be compatible with the existing exterior materials of the secondary facade wall.

e. Historic parapets shall be braced rather than removed.

f. Historic architectural veneer posing a safety hazard shall be stabilized and re-anchored to the building.

2. The purpose and intent of the plan review and guidelines shall be to minimize the effects of seismic strengthening on the exterior appearance of the building.

3. In order to minimize the effect on the exterior appearance of a qualified historical building, plans showing proposed shear test locations shall be submitted for review and approval by the City Planner and the City's Architectural Review Committee, prior to any testing of the structure taking place.

Repairs after testing shall match the original adjacent existing building facade materials.

TABLE I

ALLOWABLE VALUES FOR EXISTING MATERIALS

EXISTING MATERIALS OR CONFIGURATIONS OF MATERIALS(#1)	ALLOWABLE VALUES
1. HORIZONTAL DIAPHRAGMS(#4)	
a. Roofs with straight sheathing and roofing applied directly to the sheathing.	100 lbs per foot for seismic shear
b. Roofs with diagonal sheathing and roofing applied directly to the sheathing.	250 lbs per foot for seismic shear
c. Floors with straight tongue and groove sheathing.	100 lbs per foot for seismic shear
d. Floors with straight sheathing and finished wood flooring with board edges offset or perpendicular	300 lbs per foot for seismic shear
e. Floors with diagonal sheathing and finished wood flooring	400 lbs per foot for seismic shear
2. CROSSWALLS(#2,#4)	
a. Plaster on wood or metal lath	Per side: 200 lbs per foot for seismic shear
b. Plaster on gypsum lath	175 lbs per foot for seismic shear
c. Gypsum wall board, unblocked edges.	75 lbs per foot for seismic shear
d. Gypsum wall board, blocked edges	125 lbs per foot for seismic shear

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