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Seismic Hazards In Unreinforced Masonry Buildings In The Pacific Northwest

FINDINGS ON THE STRUCTURAL CONDITIONS OF UNREINFORCED MASONRY BUILDINGS IN SEVEN STUDY TOWNS

Fractured Facade Element

Prepared for
National Science Foundation
Earthquake Hazards Mitigation Program

SEISMIC HAZARDS IN UNREINFORCED MASONRY BUILDINGS IN SMALL TOWNS IN THE PACIFIC NORTHWEST

Findings on the Structural Conditions of Unreinforced Masonry Buildings in Seven Study Towns

Appendix--Volume 2

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15. Supplementary Notes

16. Abstract (Limit: 200 words)

This appendix to a report of seismic hazards in unreinforced masonry buildings in the Pacific Northwest presents the results of 35 case studies. Information provided for each of the buildings studied includes date built, history (ownership, use, and maintenance), and assessed value, as well as the results of a detailed field survey for seismic resistance evaluation. Both existing and potentially hazardous building elements are identified for each case.

17. Document Analysis a. Descriptors

Brick structures
Building codes
Earthquake resistant structures
Bricks
Buildings
Safety hazards
Masonry
Earthquakes
Surveys

b. Identifiers/Open-Ended Terms

Historic preservation
Oregon
Washington
Unreinforced masonry buildings

c. COSATI Field/Group DIS.

18. Availability Statement: NTIS	19. Security Class (This Report)	21. No. of Pages: 241
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(See ANSI-Z39.18) See Instructions on Reverse

OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce

Port Townsend	Case Study Number:1

Building Name : The Haven

Date Built : 1889

History :
--Original use apartments,offices,dry goods in the early 1900's

--1976 fire in second and third floor with extensive damage

--1977 sold for $25,000

--1982 sold to current owner for $325,000

Assessed Value :--$9,210 (25%MV) 1969

--$315,145 (100%MV) 1979

--$325,000 (100%MV) 1982

Ownership&Use :--The building has changed hands twice in the last 7 years

--The building is fully occupied with shops on the ground floor and apartments and offices above

Observations :--The building is one of the better maintained buildings in Port Townsend and did not display similar brick or mortar deterioration

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
STEEL PIPE COLUMN BEARS ON CENTRAL URM WALL.

B. FIRST STORY
OPEN STORE FRONTS ON WEST AND SOUTH ELEVATIONS WITH LINTELS OF UNDETERMINED BEARING(UDW-F)

C.SECOND, THIRD, FOURTH, ETC...
NONE OBSERVED

D. ROOF
NO

E. OTHER
NO

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE OBSERVED

B.IN INTERIOR OF BUILDING
NONE OBSERVED

C. OTHER LOCATIONS
NONE OBSERVED

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
YES: URM PILASTERS, LINTEL UNKNOWN

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES: URM PILASTERS, LINTEL UNKNOWN

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR

FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES- CENTRAL URM WALL TO FLOOR JOISTS

B. FIRST STORY TO SECOND
YES, BUT NON-ORIGINAL SUSPENDED CEILING PREVENTED DETERMINATION OF FLOOR TO FLOOR CONTINUITY.

C. SECOND TO THIRD, ETC.
YES- IN BOTH DIRECTIONS

D. TO ROOF
YES- IN BOTH DIRECTIONS

E. OTHER (MEZZANINE, ETC.)
MAIN FLOOR MEZZANINE- (UDW-F)

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
YES- ENGINEERED ROOF TRUSSES OF APPROXIMATELY FIVE FOOT DEPTH

B. SEPARATED
NO

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES

B. SECOND FLOOR
YES- (UDW-F)

C. THIRD FLOOR
YES- (UDW-F)

D. OTHER FLOORS
MEZZANINE, (UDW-F)

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- STAIRWELL AT NORTHWEST CORNER FROM BASEMENT TO THIRD FLOOR

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
PLYWOOD SHEATHING OVER PRE-ENGINEERED TRUSSES WITH HOT APPLIED ROOF OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
MAIN FLOOR- NONE OBSERVED
SECOND AND THIRD FLOORS- (UDW-F) ROOF- YES, TRUSSES TIED WITH ANCHOR BOLTS TO URM WALL

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- BUT ANCHORED TO ROOF TRUSSES AND BOND-BEAM CAP. CORNICE ANCHORING: (UDW-F)

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE OBSERVED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED

COMMENTS:
ENTIRE SECOND AND THIRD FLOOR CENTRAL LOAD IS CARRIED BY ONE SIX AND ONE HALF INCH COLUMN THAT BEARS ON URM WALL.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: PORT TOWNSEND, WASH.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
FURTHER EXAMINATION REQUIRED

2. PARAPETS (URM)
YES; PARAPETS TIED TO NEW ROOF TRUSS ASSEMBLY. NEW BOND BEAM CAST FOR PARAPET (INFORMATION SUPPLIED BY BUILDING CONTRACTOR)

3.OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE
10

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF. STAIRWELL AT NORTHEAST CORNER EXTENDING FROM BASEMENT TO THIRD FLOOR; STAIRWELL AT SOUTHEAST CORNER

FROM FIRST TO SECOND FLOOR

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES; FIRST FLOOR- NO EVIDENCE OF ANCHORAGE;SECOND FLOOR- UDW-F; THIRD FLOOR- UDW-F;CEILING AND ROOF ANCHORED TO ROOF TRUSSES

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL.FACE
NONE OBSERVED

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES, BUT UDW-F

5
III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
ENTIRE SECOND AND THIRD FLOOR CENTRAL LOAD IS SUPPORTED BY NEW SIX AND ONE HALF INCH DIAMETER PIPE COLUMN THAT BEARS ON A WIDE FLANGE SECTION THAT BEARS ON URM WALL. NO EVIDENCE OF WIDE FLANGE BEAM TO URM WALL ANCHORAGE

B. OTHER ELEMENTS

Port Townsend	Case Study: 2

Building Name : The Adams

Date Built : 1889

History :
--Hotel operated in the early 1900's

--1934 purchased by family to operate emporium

--1950 apartments rented at $15/mo

--1971 sold to current owner for $35,000

--Fire burned out most of third floor/roof

Assessed Value :--$45,000 (25% MV) 1969

--$45,000 (100%MV) 1978

--$300,000 (100%MV) 1981

Ownership&Use :--The current owner sold his building for $300,000 but the buyer forfeited on the contract, not unusual for small towns

--The upper floors have been unoccupied for sometime and his plans call for gradual rehabilitation as resources permit

Observations :--The high sales price of this building reflects the often inflated price assigned to historic buildings

Port Townsend	Case Study: 3

Building Name : The Dock

Date Built : 1890

History :
--Original use stores and rooms 1900's

--1950 unoccupied

--Purchased by current owner in 1980 for $125,000

--Rehabilitation of building in 1981 of $50,000-100,000

Assessed Value :
--$ 1,050 (25% MV) 1969

--$ 9,320 (100%MV) 1974

--$100,000 (100%MV) 1981

--$211,715 (100%MV) 1984

Ownership&Use :
--The current owner has held the building five years and today the building is completely occupied with offices and ground floor shops

--a minor amount of rehab 50,000-100,000 was spent on this building

Observations :
--Much of what was expended on this building was sweat equity the owner had developed a love/hate relationship with the building

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES- CENTRAL LONGITUDINAL FLOOR BEAM SUPPORTED BY INTERNAL ROW OF COLUMNS BEARS ON URM WALLS AT NORTH AND SOUTH ELEVATIONS.

B. FIRST STORY
YES- OPEN STOREFRONT AT NORTH ELEVATION AND LONGITUDINAL FLOOR BEAM AT BOTH NORTH AND SOUTH ELEVATIONS. SOUTH END OF BEAM BEARS ON URM WALL, NORTH END BEARS ON CAST IRON COLUMN. LINTEL BEARS ON URM WALLS AT EAST AND WEST AND CAST IRON COLUMN AT CENTER.

C. SECOND, THIRD, FOURTH, ETC...
NO

D. ROOF
NO

E. OTHER
NO

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE OBSERVED

B.IN INTERIOR OF BUILDING
NONE OBSERVED

C. OTHER LOCATIONS
NONE OBSERVED

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES- AT STORE FRONT; CAST IRON BEAM AND COLUMN AT CENTER, URM WALLS AT ENDS

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NO

B. FIRST STORY TO SECOND
YES- ONE IN NORTH-SOUTH DIRECTION (FRAME WALL WITH G.W.B.)
OTHER PARTITIONS STOP SHORT OF DIAPHRAGM ABOVE

C. SECOND TO THIRD, ETC.
LATH AND PLASTER CROSSWALLS IN BOTH DIRECTIONS TIED TO CEILING PLANE ONLY

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
MEZZANINE EXISTS BETWEEN BASEMENT AND FIRST FLOOR BUT IS NOT TIED TO URM WALLS. MEZZANINE WALLS ARE NOT CONTINUOUS FROM FLOOR TO FLOOR

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- CEILING JOISTS BEAR ON URM WALL. ROOF JOISTS BEAR ON CRIPPLE WALL THAT BEARS ON CEILING JOISTS. ROOF JOISTS HAVE NO CONNECTION TO URM WALLS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- UDW-F

B. SECOND FLOOR
YES- UDW-F

C. THIRD FLOOR
NOT APPLICABLE

D. OTHER FLOORS
MEZZANINE OF T&G DECKING PERPENDICULAR TO FRAME

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- STAIRWELL FROM FIRST TO SECOND FLOOR. MEZZANINE LEVEL (BASEMENT TO FIRST FLOOR) CONTACTS ONLY THREE WALLS

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
STRAIGHT EDGED BOARDS LAID PERPENDICULAR TO JOISTS WITH HOT MOP ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NO ANCHORS OR TIES OBSERVED AT ANY LEVEL INCLUDING MEZZANINE

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- METAL CORNICES; URM PARAPETS AT NORTH ELEVATION (APPROX. EIGHT FEET UNSUPPORTED). URM PARAPETS ON EAST AND WEST ELEVATIONS (APPROX. SIX FEET UNSUPPORTED)

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NO

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- AT WEST AND SOUTH ELEVATIONS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES- ESPECIALLY AT PARAPETS AND CHIMNEYS

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED

COMMENTS:

LARGE HEAT PUMP CENTRALLY LOCATED ON ROOF DIAPHRAGM ADJACENT TO SKYLIGHT OPENING

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: , PORT TOWNSEND, WASH.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NO; METAL CORNICE WORK

2. PARAPETS (URM)
YES; PARAPETS ON NORTH, EAST, AND WEST ELEVATION. APPROXIMATE PARAPET HEIGHT ON NORTH IS EIGHT FEET FROM CEILING PLANE; SIX FEET ON EAST AND WEST.

3.OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF LEVEL; STAIRWELL BETWEEN FIRST AND SECOND STORY ADJACENT TO WEST URM WALL.

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES; NO EVIDENCE OF FLOOR ANCHORAGE AT FIRST STORY; SECOND STORY UDW-F. CEILING AND ROOF HAD NO APPARENT ANCHORAGE.

F. GABLE ENDS OF URM WALLS
NO; SHEET METAL GABLE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE OBSERVED

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES; STEEL BEAM ON NORTH EXTERIOR ELEVATION BEARS ON CENTRAL IRON COLUMN AND ENDS ON URM WALLS. EXACT CONDITION UNKNOWN UDW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
LARGE HEAT PUMP PLACED ON ROOF DIAPHRAGM. MEZZANINE ADDITION BETWEEN BASEMENT AND FIRST FLOOR NOT ANCHORED TO URM WALLS.

B. OTHER ELEMENTS
NONE

Port Townsend	Case Study: 4

Building Name : The Water

Date Built : 1891

History :
--Original use as city hall at the turn of the century

--Fire broke out in the building in 1945

--Storm destroyed the tower and third floor in 1946

--Extensive rehabilitation occurred in 1971 of $300,000

Assessed Value :--This building has been occupied by city offices and was never assessed for tax purposes

Ownership&Use :--Built at the turn of the century to house city functions for a much bigger town of 20,000

Observations :--The building before it was rehabed was described to have had structural conditions found in other buildings in town today including water damaged timber framing, eroding mortar and spalling brick

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NO

B. FIRST STORY
YES; AT MUSEUM ENTRANCE LINTEL BEARS ON URM PILASTER; ALSO AT PUBLIC WORKS SHOP

C. SECOND, THIRD, FOURTH, ETC...
NO

D. ROOF
NO

E. OTHER
NONE OBSERVED.

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NO

B.IN INTERIOR OF BUILDING
YES; LARGE URM FOUNDATION FOR FIRST FLOOR VAULT.

C. OTHER LOCATIONS
NONE OBSERVED.

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES; AT DOORWAYS; LINTEL UDW-F, BEARING ON URM PILASTER.

E. INTERNAL
NONE OBSERVED.

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR

FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES; URM WALLS IN N-S; E-W DIRECTIONS.

B. FIRST STORY TO SECOND
YES; PARTITION WALLS OF LATH AND PLASTER OVER WOOD FRAMING IN BOTH N-S; E-W DIRECTIONS.

C. SECOND TO THIRD, ETC.
YES; SAME AS FIRST FLOOR, WITH EXCEPTION OF COUNCIL CHAMBERS.

D. TO ROOF
NONE OBSERVED.

E. OTHER (MEZZANINE, ETC.)
NOT APPLICABLE. (N.A.).

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO.

B. SEPARATED
YES; CIELING CONDITION VARIES. PORTIONS OF BUILDING HAVE HAD THIRD FLOOR REMOVED; FORMER FLOOR JOISTS STILL IN PLACE AT SOUTHERN END OF BUILDING. NEW ROOF FRAMED ON CRIPPLE WALLS THAT BEAR ON FLOOR JOISTS. ROOF FRAMING CONDITION VARIES AT DIFFERENT LOCATIONS.

C. CEILING TIED / ROOF UNTIED
NO.

D. CEILING AND ROOF TIED
NO.

E. OTHER
N.A.

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE OBSERVED.

B. EAST-WEST
NONE OBSERVED.

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; BUT DID NOT HAVE ACCESS TO MUSEUM AND PUBLIC WORKS SHOP.

B. SECOND FLOOR
YES WOOD FLOORING OVER UNDITERMINED SHEATHING.

C. THIRD FLOOR
N.A.

D. OTHER FLOORS
N.A.

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO.

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
PORTIONS OF SHIPLAP LAID PERPENDICULAR; OTHER PORTIONS UNDETERMINED. HOT MOP ROOF APPLIED OVER.

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO.

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
MAIN FLOOR: NO EVIDENCE OF ANCHORS. SECOND FLOOR: UDW-F. CEILING: NO EVIDENCE OF ANCHORS. ROOF: NO EVIDENCE OF ANCHORS.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES; URM PARAPETS. APPROXIMATE HEIGHT 4-5 FEET FROM CEILING LEVEL.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS?
YES; ON SOUTH AND WEST ELEVATIONS.

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES; ON EAST ELEVATION.

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES; ON EAST ELEVATION. BELT COURSE STONEWORK AT SOUTH AND WEST SHOWS SIGNS OF REPAIR AND CONTINUING DETERIORATION.

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED.

COMMENTS:
UNABLE TO DETERMINE SUPPORT CONDITION OF COFFERED CEILING OVER COUNCIL CHAMBERS.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: PRT TOWNSEND, WASH.-
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)

2. PARAPETS (URM)
YES; URM PARAPETS APPROXIMATELY FOUR TO FIVE FEET HIGH(FROM CEILING PLANE) WITH NO EVIDENCE OF ANCHORAGE.

3.OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
YES;ROOF CONDITION VARIES WITH PITCHES AND SLOPES IN SEVERAL DIRECTIONS.

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE
10

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF LEVEL; NONE AT FLOOR LEVELS

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES; FIRST FLOOR- NO EVIDENCE OF ANCHORS. SECOND FLOOR- UDW-F. CEILING AND ROOF PLANES SHOW NO EVIDENCE OF ANCHORS TO URM WALLS.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE OBSERVED

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- AT THE MUSEUM AND PUBLIC WORKS ENTRIES (UDW-F).

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
REMOVAL OF ORIGINAL THIRD STORY AND GABLED ROOFS RESULT IN VARYING CEILING AND ROOF CONFIGURATIONS.

B. OTHER ELEMENTS

Port Townsend	Case Study: 5

Building Name : The Tidepool

Date Built : 1889

History :
--Original use stores and tavern 1900's

--1925-33 brothel

--1950-60 underuse and deterioration

--1976 purchase of $137,000

--1976-84 rehabilitation of $250,000

Assessed Value :
--$ 3,600 (20% MV) 1969

--$126,700 (100%MV) 1976

--$325,000 (100%MV) 1981

Ownership&Use :
--The current owner has held the building for eight years today it is completely occupied with shops and rooms

--The building has been rehabilitated for $250,000 which was greater than most in town

Observations :
--The greatest % of rehabilitation has been cosmetic with a lesser amount spent on structural reinforcement

--The preservation push in the 1970's and the increase in tourism provided the economic justification for the rehabilitation expenditures

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NONE OBSERVED (N.O.)

B. FIRST STORY
YES. SOUTH AND EAST ELEVATIONS HAVE MAJOR LINTELS OF UNKNOWN MATERIAL (PROBABLY STEEL). UNABLE TO DETERMINE ACTUAL BEARING CONDITIONS OF LINTELS (CONTINUITY OF LOADS TO FOUNDATIONS) WITHOUT REMOVAL OF FINISH.

C. SECOND, THIRD, FOURTh, ETC...
PROBABLY, BUT UNABLE TO DETERMINE WITHOUT REMOVAL OF FINISH (UDW-F).

D. ROOF
INACCESSIBLE FOR OBSERVATION

E. OTHER

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
N.O.

B.IN INTERIOR OF BUILDING
YES, BUT THE NEW FIRE STAIR AT THE NORTHWEST CORNER IS DISCONTINUOUS AND UNTIED AT THE FOUNDATION.

C. OTHER LOCATIONS
N.O.

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
N.O.

B. SOUTH ELEVATION
YES- THREE BAYS SUPPORT URM WALLS ABOVE.

C. EAST ELEVATION
YES- SIMILAR TO SOUTH ELEVATIONS (UDW-F)

D. WEST ELEVATION
NO- PARTY WALL WITH ADJACENT BUILDING

E. INTERNAL

NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES. TWO MAJOR (N-S) URM WALLS

B. FIRST STORY TO SECOND
YES. BETWEEN STORES

C. SECOND TO THIRD, ETC.
YES. MANY HALLWAYS AND ROOM PARTITIONS

D. TO ROOF
NOT ACCESSIBLE FOR OBSERVATION

E. OTHER (MEZZANINE, ETC.)
N.O.

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NOT ACCESSIBLE FOR OBSERVATION(N.A.O.)

B. SEPARATED
(N.A.O.)

C. CEILING TIED / ROOF UNTIED
(N.A.O.)

D. CEILING AND ROOF TIED
(N.A.O.)

E. OTHER
(N.A.O.)

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
(N.A.O.)

B. EAST-WEST
(N.A.O.)

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- DIAGONAL SHIPLAP USED THROUGHOUT FIRST FLOOR.

B. SECOND FLOOR

(UDW-F)

C. THIRD FLOOR
(UDW-F)

D. OTHER FLOORS
(UDW-F)

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- MAJOR STAIRWELL OPENING FROM SECOND THROUGH FOURTH FLOOR IS ADJACENT TO URM WALL.

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
N.A.O.

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
YES- MAJOR SKYLIGHT OVER THE MAIN STAIRWELL (ADJACENT TO URM WALL)

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NO ANCHORS OBSERVED ON MAIN FLOOR LEVEL.UNABLE TO DETERMINE ANCHORAGE CONDITION AT OTHER LEVELS WITHOUT REMOVAL OF FINISH. THE ROOF WAS UNAVAILIBLE FOR OBSERVATION.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES, BUT UNABLE TO EXAMINE ACTUAL CONDITION.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
N.O.
XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
N.O. BUILDING HAS BEEN REPOINTED ON EXTERIOR HOWEVER INTERIOR BASEMENT MORTAR IS DETERIORATED (ESPECIALLY ALONG THE EAST WALL).

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
N.O., OTHER THAN THE FOUNDATION.WATER INFILTRATION MAY BE CAUSE OF FOUNDATION URM CRACKING.

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
N.O.

COMMENTS:
FIRST FLOOR DIAPHRAGM NO LONGER CONNECTED TO URM FOUNDATION WALLS DUE TO POWDER-POST BEETLE DAMAGE AND SUBSEQUENT RESHORING.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: PORT TOWNSEND, WASH.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)

2. PARAPETS (URM)
YES; BUT UNABLE TO DETERMINE ANCHORAGE CONDITION OR HEIGHTS BECAUSE OF INACCESSIBITY.

3.OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NOT ABLE TO OBSERVE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NOT ABLE TO OBSERVE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
YES; SKYLIGHT ADJACENT TO EAST URM WALL.STAIRWELL FROM SECOND TO TOP FLOOR ADJACENT TO URM WALL.

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES; FIRST STOREY- NO EVIDENCE OF ANCHORS.OTHER F:LOORS- UDW-F;CEILING AND ROOF LEVELS- NO ACCESS TO DETERMINE ANCHORAGE CONDITION.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES;PROBABLE CONDITION EXISTS, BUT UDW-F.

5
III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
DETERIORATION OF FIRST FLOOR FRAMING AT URM WALL INTERSECTION; NEW POST AND BEAMS ADDED BUT NOT ANCHORED TO URM WALLS.

B. OTHER ELEMENTs

McMinnville	Case Study: 6

Building Name : The Holly

Date Built : 1886

History :

--1900's hotel use at the turn of the century

--1930's movie house addition to ground floor

--1960's the hotel has been unoccupied on the upper floors for the last 20 years

Assessed Value :

--$121,344	1971
--$190,382	1980
--$184,332	1984

Ownership&Use :

--The building has been owned by two long-time town families since the building was constructed

--The upper floors which have been unoccupied for years have proved to be very difficult to rent or feasible to renovate

Observations :

--The building is unlikely to undergo any significant renovation by the current owners who admit they do not have the desire or resources to commit to such a a project, nor have they been able to to discover a use that made economic sense

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
THE CENTRAL BEAM BEARS ON MASONARY PIERS IN THE CRAWL SPACE OF THE BUILDING 10 BY 10 BEAM- IN BASEMENT IT BEARS ON 10 BY 10 POSTS WITH CONCRETE PIERS

B. FIRST STORY
ON NORTH AND WEST ELEVATIONS MAJOR LINTELS BEARING ON URM PILASTERS FOR THE STORE FRONT AS WELL AS MAIN THEATER ENTRANCE

C. SECOND, THIRD, FOURTH, ETC...
NO MAJOR CONCENTRATED LOADS APPARENT

D. ROOF
CEILING AND ROOF JOISTS BEAR ON URM WALLS

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
SOUTH WALL OF BUILDING REINFORCED CONCRETE WITH FLOORS AND ROOF TIED TO WALL PLANE (TYPE OF THIS UNKNOWN)- ALSO SHEETMETAL APPLIED TO BUILDING'S SOUTH WALLS WITH 2 BY 4 FRAMING STRIPS IMBEDDED INTO URM WALL FACE

B. IN INTERIOR OF BUILDING
NONE OBSERVED

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES- PROBABLY STEEL OR TIMBER BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION

YES- SAME AS NORTH ELEVATION

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
YES- BETWEEN STORES

C. SECOND TO THIRD, ETC.
YES- ROOM PARTITIONS IN BOTH AXES

D. TO ROOF
NO PARTITIONS FROM CEILING LEVEL TO ROOF

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
WITH CEILING JOISTS IMBEDDED IN URM WALL- ROOF JOISTS SEPARATED

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE

B. EAST-WEST
YES- BRACING FOR ROOF FRAMING OVER NORTHWEST PART- NONE IN OTHER AREAS OF ROOF

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- DIAGONAL SHIPLAP WITH WOOD STRIP OVER

B. SECOND FLOOR
SAME AS FIRST

C. THIRD FLOOR
SAME AS PREVIOUS FLOORS

D. OTHER FLOORS
NOT APPLICABLE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- AT THE STAIRWELL LEADING UP TO OTHER FLOORS

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO JOISTS WITH ROLL ROOFING OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
IN BASEMENT 3 BY 3 ANGLE LET INTO URM WALL AS SEAT FOR JOISTS- NO ANCHORS OR TIES OBSERVED AT OTHER FLOOR OR ROOF LEVELS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- CORNICE ON NORTH AND WEST SIDE AND ACTUAL PARAPET FROM CEILING JOIST LEVEL AT 3 TO 4 FEET

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE IN EVIDENCE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- PARTICULARLY SOUTH SIDE AND LIGHTWELL- SEVERE EROSION OF MORTAR INDICATED PROBABLE REASON FOR SHEETMETAL CLADDING OVER THESE AREAS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
SAME AREA AS (XIV) CAN BE SEEN IN LIGHTWELL BY MASONARY ARCH OVER WINDOWS

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
YES- ON SIDE OF (XIV) AND (XV) ABOVE- SOUTH AND CLAD SIDES PROBABLY DUE TO SETTLEMENT- SEVERE CRACKING IN SOME LOCATIONS

COMMENTS:
NONE

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
SHEET METAL CORNICES ON NORTH AND WEST SIDES

2. PARAPETS (URM)
PARAPET FROM CEILING JOIST LEVEL EXTENDS THREE TO FOUR FEET UNSUPPORTED

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; FLOOR TO FLOOR STAIRWELL FROM SECOND TO THIRD FLOORS

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE IN EVIDENCE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO ANCHORS AT FLOOR AND ROOF INTERSECTIONS VISIBLE AT ANY LOCATION

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- ON NORTH AND WEST ELEVATIONS- MAJOR LINTELS OF UNKNOWN (BUT PROBABLY IRON OR STEEL) MATERIAL BEAR ON URM PILASTERS

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
IN 1942 A PORTION OF THE BUILDING WAS REMOVED- REINFORCED CONCRETE WALL ABUTTING NEW THEATER CONSTRICTED ORIGINAL INTERSECTION OF URM WALLS TO REINFORCED CONCRETE WALL UNKNOWN

B. OTHER ELEMENTS
NONE

McMinnville	Case Study: 7

Building Name : The Gateway

Date Built : 1905

History :
--1912 two additional stories added to the original two stories

--1900's the building was used as a hotel

--1940's-50's rooms rented for $2/night

--1970 major rehab plans never went ahead

--1976 current owners bought the building

Assessed Value :

--$ 69,000	1971
--$ 50,000	1975
--$ 96,922	1980
--$230,000	1983

Ownership&Use :
--The building has not been used for a hotel for many years and the vacant upstairs was described by the owner as more suitable for the set of a Hitchcock film

--The ground floor is occupied with shops where most of the rehabilitation occurred

Observations :
--The partnership had great plans to rehab the building but it would not pencil out economically

--With almost 30,000 sqft it was not possible to use or rent the entire building for the town economy and population could not support it

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
BRICK FOUNDATION BEARS CENTRAL FLOOR BEAM- JOISTS POCKET INTO MASONRY WITH ANGLE IRON UNDERNEATH

B. FIRST STORY
STORE-FRONT WINDOW OPENINGS AND ENTRIES: RENOVATED SINCE ORIGINAL BUILDING CONSTRUCTED

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NO

E. OTHER
NO

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NO

B.IN INTERIOR OF BUILDING
NO

C. OTHER LOCATIONS
NO

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
YES- ENTRANCE

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES- OPEN STORE FRONT

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE OBSERVED

B. FIRST STORY TO SECOND
SOME CROSSWALLS IN BACK SECTION AND BETWEEN SHOPS

C. SECOND TO THIRD, ETC.
WALL PARTITIONS AT SECOND AND THIRD FLOORS- FOURTH FLOOR UNFINISHED- NO PARTITION WALL SHEATHING

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- CEILING JOISTS (AT THIRD AND FOURTH LEVELS) EMBEDDED IN URM WALL- ROOF RAFTERS REST ON CRIPPLE FRAMING EXTENDING FROM FOURTH LEVEL CEILING JOISTS

C. CEILING TIED / ROOF UNTIED
YES- THIRD AND FOURTH LEVEL CEILINGS ARE TIED INTO URM WALL- ROOF IS UNTIED

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- STRAIGHT SHIPLAP WITH WOOD STRIP OVER

B. SECOND FLOOR
SAME AS FIRST

C. THIRD FLOOR
SAME AS PREVIOUS FLOORS

D. OTHER FLOORS
FOURTH FLOOR- YES

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO ROOF JOISTS WITH HOT MOP ROOFING APPLIED ON TOP

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
YES- METAL ROD ANCHORS FOUND AT THIRD, FOURTH AND ROOF LEVELS. APPROXIMATE SPACING IS FOUR FEET ON CENTER

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- 10 FEET AT FRONT AND BACK; 4 FEET AT WEST SIDE; 8 FEET AT EAST SIDE; PARAPETS TIED TO CEILING JOISTS AT FOUR FEET ON CENTER; URM CORNICE WORK ON SOUTH AND WEST ELEVATIONS

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
YES- MASONARY CORBELING AT PARAPETS AROUND SOUTH AND WEST SIDES

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- SIGNIFICANT WATER DAMAGE TO MORTAR AT ALL LEVELS. SINCE THEN, SOUTH AND EAST WALLS HAVE BEEN REPOINTED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE OBSERVED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED

COMMENTS:
COLUMNS NOT TIED TO BEAMS AT BASEMENT- MAIN BEAM DAMAGE DUE TO PENETRATION OF PLUMBING LINE ON TENSION FACE. CRUSHING OF TIMBER PLATES EVIDENT THROUGHOUT BASEMENT LEVEL. PROBABLE CAUSE IS THE TWO STORIES ADDED IN 1920S OR 30S WITHOUT CHANGE OF LOWER STRUCTURAL SUPPORT SYSTEM

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
YES- ON SOUTH AND WEST ELEVATIONS

2. PARAPETS (URM)
YES- TEN FOOT PARAPETS ON NORTH AND SOUTH ELEVATIONS; FOUR FOOT PARAPET ON WEST WALL; EIGHT FOOT PARAPET ON EAST WALL; HOWEVER TIED TO CEILING JOISTS AT FOUR FEET ON CENTER

3.OTHERS
YES- MASONRY CORBELING AT PARAPETS AROUND SOUTH AND WEST WALLS

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NOT OBSERVED

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF OR FLOOR LEVELS

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO EVIDENCE OF FLOOR TIES TO URM WALLS AT FIRST AND SECOND FLOORS, BUT METAL ROD ANCHORS FOUND AT THIRD, FOURTH AND ROOF DIAPHRAGM LEVELS

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
YES- MASONRY CORBELING AT PARAPETS AROUND SOUTH AND WEST ELEVATIONS

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NO

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- SECOND FLOOR FRAMING OVER MAIN LOBBY AREA PROBABLY CONSISTS OF IRON BEAMS SUPPORTED BY URM PILASTERS ON THE EXTERIOR WALLS- INTERIOR WALLS APPEAR TO BE TIMBER; HOWEVER UDW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

McMinnville	Case Study: 8

Building Name : The Western

Date Built : 1885

History :

--1905 bank occupied building

--Mid 1900's the city water and light occupied the structure

--1984 owner purchase of building and rehab of $10,000-15,000 was completed

Assessed Value :

--$ 32,075	1971
--$ 36,886	1975
--$116,690	1984

Ownership&Use :

--Ownership has not changed over the years with one interfamily sale in 1973 of $44,000

--The upper floors have been unoccupied for the last 10 years

Observations :

--The new owner is eager to rehabilitate the structure though he admits that he does not have the resources to take advantage of investment tax credits that could be available, instead the rehabilitation would occur over many years

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
BRICK FOUNDATION WALLS IN SOME AREAS BEAR FLOOR BEAMS WHICH ARE RESTING ON SHIMS OF RUBBLE AND/OR TIMBER

B. FIRST STORY
LARGE STREET-FRONT WINDOW OPENINGS IN URM WALLS RENOVATED IN 1950'S; PROBABLE INFILL WALLS BETWEEN PILASTERS (URM)

C. SECOND, THIRD, FOURTH, ETC...
NONE OBSERVED

D. ROOF
NONE OBSERVED

E. OTHER
NO

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES- SEE (I-B); PROBABLE CONFIGURATION IRON BEAM BEARING ON URM PILASTER

B. SOUTH ELEVATION
NONE OBSERVED

C. EAST ELEVATION
YES- SEE (1-B); PROBABLE CONFIGURATION IRON BEAM BEARING ON URM PILASTER

D. WEST ELEVATION
NONE OBSERVED

E. INTERNAL

NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES- URM VAULT WALL

B. FIRST STORY TO SECOND
MASONARY CROSSWALL BEARING ON CRAWL SPACE- FOOTING CONDITION UNOBSERVED; SOME PARTITION WALLS EXTEND FROM FLOOR TO CEILING- MOST DO NOT AND RUN ONLY TO (LATTER) FURRED DOWN CEILING

C. SECOND TO THIRD, ETC.
PARTITION WALLS AT ROOMS AND HALLWAYS IN NORTH-SOUTH AND EAST-WEST DIRECTIONS

D. TO ROOF
MASONARY CROSSWALL EXTENDS INTO TRUSS SPACE BUT STOPS BELOW TOP CHORD OF FRAMING AND IS PENETRATED BY SERVICE CONDUIT OPENINGS

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
CEILING JOISTS ON URM WALL; ROOF RAFTERS SUPPORTED BY CRIPPLE WALL BEARING ON CEILING RAFTERS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
YES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE

FLOOR?

A. FIRST FLOOR
YES- STRAIGHT SHIPLAP

B. SECOND FLOOR
YES- straight shiplap with wood overlaid

C. THIRD FLOOR
NO

D. OTHER FLOORS
ATTIC- NO

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- AT THE STAIRWELL ON THE SOUTHERN WALL FROM THE FIRST TO SECOND FLOOR

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO JOISTS- ROOFING MATERIAL UNOBSERVED

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE OBSERVED

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- HEIGHT UNOBSERVED; PRESSED METAL PARAPET SYSTEM LATERALLY UNSUPPORTED

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
SIGNIFICANT MORTAR DETERIORATION AT BASEMENT, PARAPET CONDITIONS UNOBSERVED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES- AT BASEMENT LEVEL- SOME EXTERIOR BRICK (NEAR PARAPET) IS UNPROTECTED; SOME BRICKS MISSING AT CORNICE LEVEL

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED

COMMENTS:
PRESSED METAL PARAPET SYSTEM DETERIORATING

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE- BUT SHEET METAL CORNICES ON NORTH AND EAST ELEVATION SHOWS SIGNS OF SEVERE CORROSION AND SEPARATION FROM URM PARAPET

2. PARAPETS (URM)
YES- BUT NOT ACCESSIBLE FOR EXAMINATION- NO APPARENT ANCHORAGE AT ROOF OR CEILING DIAPHRAGM LEVELS

3.OTHERS
YES- NORTHEAST CORNER GABLE SHOWS SIGNS OF DETERIORATION

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NOT OBSERVED

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF- STAIRWELL OPENING THROUGH FLOORS ONE AND TO AT THE SOUTHEAST CORNER

D. URM WALLS WITH UNBONDED VENEER COURSES
INFILL AND RENOVATION OF FIRST STORY- HAS TILE APPLIED- ANCHORING SYSTEM UDW-F

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES- FIRST FLOOR UNTIED- SECOND FLOOR UDW-F; CEILING AND ROOF PLANES HAD NO APPARENT ANCHORS

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
YES- BRICK CORBELING AT BASE OF SHEET METAL CORNICE; BRICK WORK SHOWS SIGNS OF DETERIORATION; SOME MISSING BRICK OBSERVED

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NOT OBSERVED

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
PROBABLE CONDITION OF FIRST STORY ON NORTH AND EAST ELEVATIONS; HOWEVER UDW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICBLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

McMinnville	Case Study: 9

Building Name : The Cedar

Date Built : 1893

History :

--1893 building built for $12,500

--1900's family mercantile business operated in the building.They provided steam heat piped underground to owners

--1975 rehabilitation began on the building lasting for many years of $75,000-100,000

Assessed Value :

--$ 69,930	1971
--$103,956	1977
--$283,200	1983

Ownership&Use :

--The same family that built the building in 1893 owns it today and operates a very successful dress and gift shop

--The upper floor has been used for office space

Observations :

--The building houses one of the more successful businesses that can be found in a small town. The owner has combined skillful buying and marketing and can compete with the stores found in the larger malls of cities. The success of the business has allowed the owner to maintain the structure itself.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES- BEARING WALLS OF REINFORCED CONCRETE in back section but central floor beam bears on urm wall at north side

B. FIRST STORY
FLOOR JOISTS- LINTELS AT SHOP WINDOW OPENINGS AND ENTRIES (FRONT & SIDE)

C. SECOND, THIRD, FOURTH, ETC...
NONE OBSERVED

D. ROOF
NONE OBSERVED

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
(FRONT ELEVATION)- SHOP WINDOWS YES; PROBABLE IRON BEAMS BEARING ON URM PILASTER, HOWEVER UDW-F

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
LINTELED OPENING OF SIDE ENTRY; PROBABLE IRON BEAMS BEARING ON URM WALLS; HOWEVER UDW-F

E. INTERNAL

NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE OBSERVED

B. FIRST STORY TO SECOND
MEZZANINE LEVEL WALLS (AND FRAMING) AT ONE END- OTHERWISE OPEN

C. SECOND TO THIRD, ETC.
ROOM AND HALLWAY PARTITIONS; IN NORTH-SOUTH AND EAST-WEST DIRECTIONS

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
SEE (B)

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- CEILING JOISTS BEAR ON URM WALL; ROOF JOISTS BEAR ON CRIPPLE WALLS WHICH BEAR ON CEILING JOISTS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES- LADDER BRACING AND TIMBER TRUSSING

B. EAST-WEST
YES- 1 BY 6 DIAGONAL STRUTS

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- STRAIGHT SHIPLAP WITH THREE-FOURTHS INCH PLYWOOD SUBFLOOR

B. SECOND FLOOR
YES- STRAIGHT SHIPLAP WITH THREE-FOURTHS INCH PLYWOOD SUBFLOOR

C. THIRD FLOOR
NONE

D. OTHER FLOORS
ATTIC- NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- STAIRWAY TO SECOND FLOOR

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO ROOF JOISTS WITH HOT MOP ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
UDW-F AT FIRST AND SECOND FLOOR LEVELS; NONE OBSERVED AT CEILING-ROOF DIAPHRAGM LEVELS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- USUPPORTED MASONARY PARAPET APPROXIMATELY TWELVE FEET TALL- UNSUPPORTED AT FRONT AND SIDES. SHEET METAL CORNICES, URM PARAPETS TIED IN ONE LOCATION

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NO

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NO

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NO

COMMENTS:
NONE

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE- ALL CORNICES OF PRESSED SHEET METAL

2. PARAPETS (URM)
YES- UNSUPPORTED MASONRY PARAPET APPROXIMATELY TWELVE FEET TALL; UNSUPPORTED EXCEPT FOR ONE TIE FOUND AT NORTHWEST END

3.OTHERS
NO- BUT UNSUPPORTED SHEET METAL GABLE ON SOUTH ELEVATION

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; STAIRWELL OPENING TO MEZZANINE AND AT STAIRWAY TO SECOND LEVEL

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES- NO EVIDENCE OF ANCHORS BETWEEN ROOF AND FLOORS TO URM WALLS

F. GABLE ENDS OF URM WALLS
NO- GABLE ON STREET FRONT (NORTH WALL) APPROXIMATELY TWELVE FEET HIGH, BUT OF PRESSED SHEET METAL

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- POSSIBLE THAT CONDITIONS EXIST, BUT UDW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

McMinnville	Case Study: 10

Building Name : The Shady

Date Built : 1904

History :

--Built in 1904 has a hardware store and operated as such for 80 years

--The current owner is retiring after operating the business for 25 years

--In the early 1900's farmers would load their wagons of seed and hay from the basement of the building

Assessed Value :

--$ 55,460	1971
--$ 81,029	1978
--$268,430	1984

Ownership&Use :--The hardware store has been owned by only two different owners in its hisory both who ran the operation of the business

--The upper floors have been unoccupied for many years

Observations :--The hardware store is one of the longtime surviving businesses of the town. It has survived the many economic recessions and has prospered through the years. People will always buy tools and supplies even during the poorer times

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
CENTRAL BEAM OF MAIN FLOOR RESTS ON URM WEST WALL AT BASEMENT LEVEL

B. FIRST STORY
MAJOR LINTELS NORTH AND WEST SIDE THAT BEAR ON URM PILASTERS

C. SECOND, THIRD, FOURTH, ETC...
CENTRAL BEAMS REST INTO URM WALL ON EAST SIDE AND URM PILASTER ON WEST

D. ROOF
NO CONCENTRATED LOAD FOUND IN THIS AREA

E. OTHER
WOOD FRAME LIGHT WELL ON INTERIOR OF BUILDING BEAMS ON FRAMING BELOW

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE IN EVIDENCE

B.IN INTERIOR OF BUILDING
THE WOOD FRAME LIGHT WELL THAT CONNECTS FLOOR AND ROOF AND CEILING DIAPHRAGMS ALTHOUGH IT HAS A LOT OF PENETRATIONS

C. OTHER LOCATIONS
NONE OBSERVED

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES- STEEL BEAM SUPPORTED ON URM PILASTER

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES- STEEL BEAM SUPPORTED ON URM PILASTER

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR

FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
NONE

C. SECOND TO THIRD, ETC.
YES- THE PARTITIONS FOR APARTMENTS AND THE LIGHT WELL WALL THAT TIES CEILING AND ROOF DIAPHRAGM

D. TO ROOF
LIGHT WELL WALL

E. OTHER (MEZZANINE, ETC.)
NONE OBSERVED

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
UNTIED AT ROOF- CEILING LEVEL POCKETED INTO URM WALL

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES

B. EAST-WEST
YES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- DIAGONAL SHIPLAP WITH WOOD FLOOR OVER

B. SECOND FLOOR
SAME AS FIRST

C. THIRD FLOOR
NOT APPLICABLE

D. OTHER FLOORS
NOT APPLICABLE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- AT FRONT STAIRWELL TO SECOND STORY AND AT BACK WHERE RAMP EXTENDS DOWN TO BASEMENT LEVEL

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR- HOT MOP ASPHALT ROOFING

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE EITHER ON MAIN FLOOR, SECOND FLOOR CEILING OR ROOF LEVEL

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- FIVE FEET ABOVE ROOF LEVEL EXTENDING TO CEILING LEVEL FOR A TOTAL OF SEVEN TO EIGHT FEET OF UNTIED URM PARAPET

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- ON EAST FACE OF BUILDING NOW PAINTED OVER

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE OTHER THAN EAST FACE

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
AT PARAPET LEVEL DUE TO WEIGHT OF UNTIED PARAPET

COMMENTS:
SETTLEMENT OBSERVED IN EAST/WEST DIRECTION OF BUILDING WITH INTERIOR WALL CRACKING- NO CRACKS VISIBLE IN EXTERIOR URM BEARING WALLS

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
URM PARAPETS EXTENDING UPWARD FROM CEILING JOIST INTERSECTION SEVEN TO EIGHT FEET (UNTIED)

3.OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NO

2. ROOF EDGES PITCHED FOR DRAINAGE
NO

3. NORTH SKYLIT ROOFS
NO

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; MAJOR FRONT STAIR FROM FIRST TO SECOND FLOOR AND IN BACK OF BUILDING WHERE RAMP EXTENDS DOWN TO BASEMENT LEVEL

D. URM WALLS WITH UNBONDED VENEER COURSES

Vancouver	Case Study: 11

Building Name : The Daniels

Date Built : 1885

History :
- --Building built for mission of church that began in the mid 1800's
- --The church has been occupied with parish for the last 100 years
- --1970 repointing of brickwork was completed

Assessed Value :--No assessment record

Ownership&Use :--The building has been in constant use as a church from the day it was built.

Observations :--The church is an example of a building that has been well maintained over the years because it was always in use. Unlike other examples it did not experience the deterioration associated with unoccupied space.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES- CENTRAL FLOOR BEAMS AND INTERIOR COLUMNS OF CHURCH ABOVE BEAR ON URM PIERS IN THE CRAWL SPACE- THEY ARE @ 30" X 30" X 2'-0 IN HEIGHT

B. FIRST STORY
THE SUPPORTS FOR THE BALCONIES AT BACK OF CHURCH BEAR ON URM PILASTERS- THE FLOOR JOISTS BEAR ON RUBBLE WALLS IN CRAWLSPACE- BRICK WALLS BEAR ON THEIR OWN FOUNDATION

C. SECOND, THIRD, FOURTH, ETC...
STEEPLE HAS SEVERAL LEVELS ALL FRAMING INTO URM WALLS

D. ROOF
ROOF TRUSSES BEAR DIRECTLY ON URM WALLS AND PILASTERS WITH NO EVIDENCE OF ANCHORS SUPPORTING COFFERED CEILING BELOW- IRON TENSION RODS VERTICALLY SUPPORT CEILING- DISCONTINUOUS LATERAL TIES BECAUSE OF VAULTED CEILING OVER APSE

E. OTHER
STEEPLE- SEVERAL LEVELS GOING TO BELL TOWER LEVEL ALL BEAR DIRECTLY ON URM WALLS WITHOUT ANY ANCHORAGE SYSTEM APPARENT

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
BUTTRESSES

B. IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
ENTRY INTO CHURCH- GOTHIC BRICK ARCH

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE OBSERVED

B. FIRST STORY TO SECOND
ONLY IN STEEPLE

C. SECOND TO THIRD, ETC.
BETWEEN STEEPLE AND BALCONIES- THERE IS A CONTINUOUS WALL

D. TO ROOF
IN ATTIC SPACE NONE EXCEPT AT STEEPLE APSE SECTION

E. OTHER (MEZZANINE, ETC.)
BALCONIES AT TWO LEVELS

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
THERE IS A VAULTED COFFERED CEILING WHICH IS HUNG FROM THE ROOF TRUSSES BY MEANS OF IRON TENSION RODS- NO TIES OR ANCHORS EVIDENT TO URM WALLS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE

B. EAST-WEST
NONE

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- SHIPLAP LAID STRAIGHT WITH WOOD FRAMING OVER

B. SECOND FLOOR
BALCONY- NOT OBSERVED

C. THIRD FLOOR
STEEPLE- STRAIGHT SHIPLAP FOR FLOORS AT ALL LEVELS

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NONE

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS? TIMBER.
ROOF SHEATHING IS SHIPLAP LAID PERPENDICULAR OVER ~~TEMPER~~ TRUSSES AND ROOF JOISTS- COPPER STANDING SEAM ROOF APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
THE TRUSSES AND BEAMS ARE IMBEDDED IN THE URM WALL BUT NO EVIDENCE OF ANY OTHER ANCHORAGE SYSTEM AT FLOORS, ROOF OR BALCONY LEVELS EXISTS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- UNSUPPORTED TURRETS EXTENDING TEN FEET ABOVE ROOF URM INTERSECTION IN SEVERAL PLACES- ALSO SEVERAL GABLE ENDS ON EAST / WEST ELEVATIONS

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
THE CAST STONE WORK AROUND STAINED GLASS WINDOWS IS INTEGRAL WITH THE URM WALL- GOOD CONDITION

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
ON SOUTH FACE TOWARD BASE OF BUILDING- HOWEVER NOT TYPICAL

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
SOME DETERIORATION AROUND BASE DUE TO WATER RUNOFF

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
YES- IN THE STEEPLE AT THE BELL LEVEL DIAGONAL- CRACKS ORIGINATING FROM SMALL WINDOW OPENINGS TO CORNER OF STEEPLE

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
NONE

3.OTHERS
TURRETS LATERALLY UNSUPPORTED EXTENDING TEN FEET ABOVE ROOF URM INTERSECTION IN SEVERAL PLACES

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE OBSERVED

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE OBSERVED

3. NORTH SKYLIT ROOFS
NONE OBSERVED

4. OTHERS
NONE OBSERVED

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE OBSERVED

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
THE TRUSSES AND BEAMS ARE IMBEDDED IN URM WALLS BUT NO EVIDENCE OF ANY OTHER ANCHORAGE SYSTEM AT FLOOR, ROOF OR BALCONY LEVELS EXISTS

F. GABLE ENDS OF URM WALLS
GABLE ENDS UNTIED AT EAST AND WEST ELEVATIONS OF TRANSEPT

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
CAST STONE WORK AROUND STAINED GLASS WINDOWS ARE INTEGRAL WITH THE URM WALLS

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE OBSERVED

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
STEEPLE SECTION HAS NUMEROUS FLOOR LEVELS THAT ARE NOT ANCHORED TO THE URM WALLS- STTEPLE AREA HAS HIGHEST URM WALLS

B. OTHER ELEMENTS
NONE

Vancouver	Case Study: 12

Building Name : The Millplain

Date Built : 1900

History :
--1900's operated as a rooming and apartment house

--1982 was condemned by the city for unsafe structural conditions

--1983 rehabilitation began for offices that the county would purchase

Assessed Value :
--$24,910 (20%MV) 1965

--$130,000 (100%MV) 1978

--$230,400 (100MV) 1983

Ownership&Use :--The building in 1985 will be completed for offices for the county. It was purchased by a service organization of the bank when its use had been an apartment

Observations :--The building was rehabilitated at a cost of $700,000 to $800,000. It was one of the most extensive rehabilitation efforts that was surveyed. Because a tenant was found for the entire building it was economically feasible to completely renovate the building including reinforing the structure. For other owners who could not establish a market for space they did not have this option

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NONE OBSERVED

B. FIRST STORY
ENTRANCE WAY ON WEST ELEVATION

C. SECOND, THIRD, FOURTH, ETC...
NONE OBSERVED

D. ROOF
NONE OBSERVED

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE OBSERVED

B.IN INTERIOR OF BUILDING
ALL NEW INTERIOR WOOD FRAME WALLS TWO BY FOURS WITH ANCHORS AT ONE THIRD POINTS IN URM WALL AT ALL LEVELS FROM BASEMENT TO TOP FLOOR-ANCHORS LOCATED AT SIX FEET ON CENTER- THE FRAME IS COVERED WITH FIVE EIGHTH INCH G.W.B.

C. OTHER LOCATIONS
NO

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES- ONLY AT ENTRY SEGMENT- LEVEL CARRIED DOWN BY STEEL LINTEL (UNABLE TO DETERMINE WITHOUT REMOVAL OF FINISH)

E. INTERNAL

NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES- PRIMARILY WALLS IN NORTH-SOUTH DIRECTION BUT ALSO EAST-WEST DIRECTIONS TWO BY FOUR FRAME WITH FIVE EIGHTHS G.W.B.

B. FIRST STORY TO SECOND
YES- STACKED OVER WALLS BELOW

C. SECOND TO THIRD, ETC.
YES- STACKED OVER WALLS BELOW

D. TO ROOF
NOT ABLE TO OBSERVE AREA BETWEEN TOP FLOOR CEILING AND ROOF

E. OTHER (MEZZANINE, ETC.)
NO

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- BUT UNABLE TO OBSERVE CONDITION- NO ACCESS TO THE SPACE

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NOT ABLE TO OBSERVE

B. EAST-WEST
NOT ABLE TO OBSERVE

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES

B. SECOND FLOOR
YES

C. THIRD FLOOR
YES

D. OTHER FLOORS
YES- THE FLOORS ALL HAVE CONCRETE POURED OVER THE OLD FLOORING AT ALL LEVELS

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- AT THE BACK STAIRWELL GOING UP THROUGH ALL THE FLOORS FROM BASEMENT TO FOURTH FLOOR

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
PLYWOOD FIVE EIGHTHS OVER ENTIRE ROOF - WITH ROLL APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
TIES IMBEDDED IN URM WALL AT SIX FEET ON CENTER CAST INTO CONCRETE FLOORS AT FLOOR LEVELS- ANCHORS IMBEDDED FROM ROOF DIAPHRAGM TO URM WALLS AT 6 FEET ON CENTER- ALL THE ANCHORAGES ARE NEW AND ENGINEERED

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- THERE ARE PARAPETS BUT ALL ARE TIED WITH ANCHOR STRUTS AT FOUR FEET ON CENTER TIED BACK TO ROOF DIAPHRAGM

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
ALL MORTAR HAS BEEN RETUCKED ON WEST AND NORTH ELEVATIONS- SOUTH AND EAST ELEVATIONS THE BRICK HAS BEEN PAINTED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE OBSERVED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED

COMMENTS:
NEW STAIRWELL OF REINFORCED CONCRETE HAS BEEN ADDED TO THE SOUTH SIDE OF THE BUILDING- UNABLE TO DETERMINE ITS CONDITION
OVERALL CONDITION OF RENOVATION EXCELLENT WITH ALL WORK DONE TO REINFORCE BUILDING IN CASE OF A SEISMIC EVENT- GOOD EXAMPLE OF THOROUGH, COMPLETE RETROFIT

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE OBSERVED

2. PARAPETS (URM)
YES- ENGINEERED PARAPET ANCHORAGE THROUGHOUT

3.OTHERS
NOT OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NONE

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NO

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NO

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

Vancouver	Case Study: 13

Building Name : The Evergreen

Date Built : 1874

History :
--Established as part of the church mission in the mid 1800's as hospital and educational institution

--1891 addition to building bringing total to 48,000 sqft.

--1966 the last classes held in the facility

Assessed Value :--Non-tax paying entity until 1969

--$600,000 (100%MV) 1976

--$2,310,000 (100MV%) 1983

Ownership&Use :--The building was purchased in 1973 by the current owner and over a six year period approximately $250,000 has been spent on renovating space to rent to office tenants

Observations :--The structure is on the National Register of historic places and benefited from preservation movement of the 1970's when it was purchased to be converted from an educational institution into offices and shops. It has been well maintained over the years and low vacancy rates have provided the owners with the economic resources to rehabilitate and maintain the structure

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NO APPARENT CONCENTRATED LOADS BEARING ON URM IN FOUNDATION

B. FIRST STORY
WOODEN PORCHES BEAR ON FLOOR JOISTS AND URM PIERS

C. SECOND, THIRD, FOURTH, ETC...
NONE OBSERVED (ONLY FLOOR JOISTS)

D. ROOF
ONLY ROOF RAFTERS BEAR ON URM WALLS- ONLY CONCENTRATED LOAD IS AT HIP RAFTER

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B. IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL
NONE OBSERVED

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR

FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
MASONARY CROSSWALLS (BRICK) UNDER LOAD BEARING CONDITIONS

B. FIRST STORY TO SECOND
YES- MAIN HALL WALLS AND ROOM PARTITIONS CORRESPONDING TO FOUNDATION WALLS- LATH AND PLASTER OVER WOOD FRAMING

C. SECOND TO THIRD, ETC.
YES- AGAIN CORRESPONDING TO HALLWAYS- CONTINUOUS LINE OF WALLS FROM FOUNDATION UP

D. TO ROOF
SOME CROSSWALLS IN ATTIC SPACE WHERE CELLS ONCE WERE

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- THE CEILING OF THE TOP FLOOR IS THE BOTTOM CHORD OF THE TRUSS CONFIGURATION OF THE ROOF OVER MOST OF THE AREA- ONLY CHANGE IS OVER CHAPEL AREA WHERE THERE ARE LARGE TIMBER TRUSSES PRESENT

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE OBSERVED

B. EAST-WEST
NONE OBSERVED

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
NO- THERE ARE AREAS WHERE TILE WAS PLACED- WHERE THE FLOOR

SHEATHING ONLY GOES FROM JOIST TO JOIST

B. SECOND FLOOR
YES- STRAIGHT SHIPLAP WITH WOOD OVERLAYED

C. THIRD FLOOR
SAME AS SECOND FLOOR

D. OTHER FLOORS
ATTIC- STRAIGHT APPLIED SHIPLAP

5
VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- AT THE STAIRWELL BY THE MAIN ENTRANCE TO THE BUILDING

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO ROOF JOISTS WITH COMPOSITION ROOFING APPLIED ON TOP

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE OBSERVED AT BASEMENT AND ROOF LEVEL- NOT ABLE TO DISCERN ON FIRST OR SECOND FLOORS- PROBABILITY IS HIGH THAT THERE EXIST NO ANCHORS... OWNER SAYS HE HAS FOUND SOME IRON TIES TO THE FLOOR FRAMES DURING RENOVATIONS- SPACING AND IMBEDMENT ARE UNKNOWN

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
NO PARAPETS- CORNICES ARE OF WOOD- HAS SOME GABLE ENDS WHICH ARE UNTIED

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED ON BUILDING

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
OBSERVED ONLY IN SMALL QUANTITIES- THE REMAINDER OF THE MORTAR SEEMS TO BE IN GOOD CONDITION

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
A FEW AREAS AT CORNERS- STONE SHOWS SIGNS OF DETERIORATION; NOT A SIGNIFICAND PROBLEM

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED ON BUILDING, BUT SEVERE CRACKING ON INCINERATOR CHIMNEY- ONLY IMMEDIATE HAZARD OBSERVED- PROBABLE CAUSE IS SETTLEMENT OR WIND LOADS

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE (WOOD CORNICE WORK)

2. PARAPETS (URM)
NONE

3.OTHERS
TIMBER FRAMED STEEPLE; INCINERATOR CHIMNEY

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; STAIRWELL OPENING BETWEEN FIRST AND SECOND FLOORS AT ENTRANCE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NONE OBSERVED AT BASEMENT AND ROOF LEVEL; NOT ABLE TO DISCERN ON FIRST AND SECOND FLOORS- PROBABLY NO ANCHORS EXIST ALTHOUGH THE OWNER CLAIMS HE HAS FOUND SOME IRON TIES TO THE FLOOR FRAMES DURING RENOVATIONS; SPACING AND IMBEDMENT UNKNOWN

F. GABLE ENDS OF URM WALLS
GABLES ON BUILDING HAVE NO ANCHORS TO CEILING LEVEL

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
INCINERATOR STACK HAS MAJOR VISIBLE FRACTURING AND MORTAR DETERIORATION; UPPER THIRD OF THE STACK IS LATERALLY UNSUPPORTED

B. OTHER ELEMENTS
NONE

Vancouver	Case Study: 14

Building Name : The Esther

Date Built : 1911

History :
--1900's operated as a fraternal organization

--1925 addition made to existing structure

--1981 bought by current owner whose father belonged to the organization

--1982 rehabilitation of $400,000

Assessed Value :
--$46,920 (20%MV) 1965

--$200,000 (100%MV) 1975

--$410,000 (100MV%) 1983

Ownership&Use :
--There have been several owners over the years but the current owner who operates his business in the building plans to occupy the structure for many years

--The upper floors are unoccupied

Observations :
--The structure is on the National Register of Historic Places. The owner expended more on this building than most buildings that were surveyed. Seismic reinforcement was applied as an element of the rehabilitation estimated to be approximately 20% of the total rehab costs. It was one of only three buildings surveyed that were retrofitted to resist lateral forces.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
ONLY CENTER BEAM BEARS ON URM WALL OF FOUNDATION

B. FIRST STORY
NO CONCENTRATED LOADS BEARING ON URM WALLS

C. SECOND, THIRD, FOURTH, ETC...
SECOND AND THIRD FLOORS HAVE NO CONCENTRATED LOADS

D. ROOF
MAJOR TRUSSES FOR ROOF BEAR ON URM WALLS TIED WITH ANCHORS RETROFITTED INTO URM WALLS

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B. IN INTERIOR OF BUILDING
FIVE BY FIVE BY ONE QUARTER STEEL TUBES TIED TO FLOOR AND CEILING ON NORTH AND EAST SIDE WITH ANCHORS AT ONE THIRD POINTS INTO URM WALLS

C. OTHER LOCATIONS
36WF WITH DEADMAN IN BASEMENT WITH A HORIZONTAL BEAM TIED INTO A NEW REINFORCED CONCRETE FOUNDATION WALL WHERE UNDER-SIDEWALK ACCESS WAS ONCE AVAILABLE- NOW FILLED IN

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES- UNABLE TO DETERMINE WITHOUT REMOVAL OF FINISH- RETROFITTED WITH 36WF TO TAKE LATERAL LOADS IN THIS LOCATION-

WITH HORIZONTAL TIES INTO A REINFORCED CONCRETE WALL BETWEEN FORMER SIDEWALK SPACE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES- MAIN WALL THROUGH CENTER OF MOST OF SPACE- MANY OTHER CROSSWALLS

B. FIRST STORY TO SECOND
AT EAST END OF BUILDING IN NORTH / SOUTH DIRECTION

C. SECOND TO THIRD, ETC.
AT EAST END OF BUILDING IN NORTH / SOUTH DIRECTION- ON THIRD A NEW PLYWOOD WALL SHEATHED- CARRIED ALL THE WAY TO ROOF

D. TO ROOF
ROOF TIED WITH P.W. WALL IN NORTH / SOUTH DIRECTION

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
CEILING UNDER ROOF HAS NEW PLYWOOD APPLIED- ROOF TRUSSES AS PER ORIGINAL BUT TIED TO URM WALLS WITH ANCHORS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH-SOUTH
NONE

B. EAST-WEST
NONE

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- PLYWOOD APPLIED TO WOOD FLOORING LAID OVER DIAGONAL SHIPLAP

B. SECOND FLOOR
PLYWOOD LAID OVER ENTIRE FLOOR

C. THIRD FLOOR
PLYWOOD LAID OVER ENTIRE FLOOR

D. OTHER FLOORS
NO OTHERS

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
ONLY AT EAST END OF BUILDING AT THE STAIRWELL LOCATION

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR OVER ROOF TRUSSES WITH SPANISH CLAY TILE ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO DISCONTINUITIES

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
YES- RETROFITTED WITH ANGLE PLATES AT 6 FEET ON CENTER- TIED TO URM WALLS AND PLYWOOD DIAPHRAGMS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- TURRETS ON THE CORNERS OF BUILDING APPROXIMATELY 5 TO 6 FEET TALL

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE ON BUILDING

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
ALL MORTAR HAS BEEN REPOINTED WITH PORTLAND CEMENT-LIME MORTAR

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE

COMMENTS:

SURVEY OF HAZARDOUS BUILDING ELEMENTS

BUILDING:
VANCOUVER, WASHINGTON
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1910-1911 (URM CONSTRUCTION)
DATE OF ADDITION(S): 2 STORY ADDITION TO EAST BUILT AROUND 1945
DATE OF RENOVATION(S): CASSIDY AND ASSOCIATES, 1983

MAIN BUILDING CONSISTING OF 3 STORIES WITH A HIP ROOF AND TURRETS EXTENDING UPWARDS ON THE CORNERS OF THE BUILDING. LARGE SPACE VOLUMES ON ALL 3 STORIES. BRICK FOUNDATION OF MAIN BUILDING WITH CONCRETE FOUNDATION IN 1945 ADDITION. CONSTRUCTION OF ADDITION WITH CLAY TILE AND BRICK VENEER; MANSARD ROOF WITH SPANISH CLAY TILE AS IN ORIGINAL BUILDING WITH STORE FRONTS ON THE NORTH WALL. ONLY MAIN FLOOR OF 1945 ADDITION OCCUPIED. MAIN FLOOR AND BASEMENT OF 1910 BUILDING OCCUPIED.

EVALUATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
NONE

3.OTHERS
URM TURRETS ON BUILDING CORNERS

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NORTH ELEVATION OF 1945 ADDITION / WITH CLAY TILE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
TURRETS AT CORNERS / IRON FIRE ESCAPES ATTACHED TO URM

WALLS ON NORTH AND WEST ELEVATIONS

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; STAIRWELL OPENING THROUGH FLOORS 2-3

D. URM WALLS WITH UNBONDED VENEER COURSES
POSSIBLY ON 1945 ADDITION; WALLS ACTUALLY HOLLOW CLAY TILE WITH MASONRY (BRICK) VENEER

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NONE- 1945 & 1910 HAVE ADDED PLYWOOD TO ALL FLOORS AND ANCHORED WALLS TO DIAPHRAGM FROM ROOF DOWN TO MAIN LEVEL

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE- ALL CANTILEVERS ARE TIMBER FRAMING OF ROOF OR IRONWORK

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- SOFT FIRST FLOOR THAT HAS BEEN FITTED WITH A DEAD MAN AND 36WF VERTICAL THROUGH FIRST STORY FROM BASEMENT LEVEL. NEW CONCRETE (REINFORCED) WALL AT BASEMENT WITH HORIZONTAL STIFFENERS BOLTED TO NEW WALL (ON NORTH WALL, 1910 BUILDING ONLY). STEEL COLUMNS TIED TO PILASTERS ON WEST AND NORTH FACES.

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- NORTH ELEVATION, 1945 ADDITION

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

Vancouver	Case Study: 15

Building Name : The Main

Date Built : 1912

History :
--1912 bank housed in the ground floor for many years

--1950's dental and medical offices in the upper floors

--1970's unoccupied on the upper floors

--1983 current owner bought the building

Assessed Value :
--$25,410 (20%MV) 1965

--$ 72,000 (100%MV) 1976

--$107,000 (100MV%) 1984

Ownership&Use :
--The new owner has held the building for two years but plans to rehab the building for offices in the future. But for the last decade the building has not been in use

Observations :
--The structure is one of several that will benefit from street improvements that the city is undertaking in the vicinity. With the recent construction of the $15 million dollar Sea First building the owner is confident that the building can be rehabilitated for office use.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
FOUNDATION OF BUILDING IS CONCRETE WITH ALL NEW CONCRETE WALLS BETWEEN SIDEWALK SPACE AND BUILDING ON SOUTH AND WEST SIDES

B. FIRST STORY
YES-ON SOUTH AND WEST SIDES OPEN STORE FRONT BEARS ON MASONRY PILASTERS (STEEL COLUMNS WERE FOUND ON INTERIOR OF BUILDING EXTENDING FROM FOUNDATION THROUGH THE FIRST FLOOR LEVEL) SO IT IS POSSIBLE THESE COULD HAVE STEEL BEHIND THEM.

C. SECOND, THIRD, FOURTH, ETC...
NONE OBSERVED

D. ROOF
NOT ACCESIBLE FOR INSPECTION

E. OTHER
NO

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE OBSERVED

B. IN INTERIOR OF BUILDING
NONE OBSERVED

C. OTHER LOCATIONS
NEW REINFORCED CONCRETE WALLS IN FOUNDATION AREA

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
YES- BUT NOT ABLE TO DETERMINE EXTENT WITHOUT REMOVAL OF FINISH

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES- BUT NOT ABLE TO DETERMINE EXTENT WITHOUT REMOVAL OF FINISH

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
CONCRETE WALLS THAT MAKE VAULTS IN BASEMENT

B. FIRST STORY TO SECOND
ONLY AT VAULT AREA, OPEN COLUMNS ELSEWHERE

C. SECOND TO THIRD, ETC.
OFFICE AND HALL PARTITIONS EXTEND THROUGH ALL REMAINING FLOORS- WOOD FRAME WALLS WITH LATH AND PLASTER

D. TO ROOF
UNABLE TO ACESS CEILING AND ROOF SPACE

E. OTHER (MEZZANINE, ETC.)
NOT OBSERVED

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- BUT UNABLE TO DETERMINE CONFIGURATION DUE TO LACK OF ACCESS

C. CEILING TIED / ROOF UNTIED
NOT KNOWN

D. CEILING AND ROOF TIED
NOT KNOWN

E. OTHER
NOT KNOWN

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NOT KNOWN

B. EAST-WEST
NOT KNOWN- PROBABILITY IS HIGH THAT THERE IS SOME DUE TO OTHER BUILDINGS OBSERVED AND METHODOLOGY OF CONSTRUCTION

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
NO- PART OF FIRST FLOOR IS CONCRETE GIRDERS WITH STEEL REINFORCEMENT AND CONCRETE SLAB- OTHER PART OF FIRST FLOOR IS WOOD FRAME TWO BY FOURTEENS WITH DIAGONAL SHIPLAP AND WOOD FLOORING LAID ON TOP

B. SECOND FLOOR
YES- WOOD JOISTS WITH DIAGONAL SHIPLAP AND WOOD FLOORS OVER

C. THIRD FLOOR
SAME AS SECOND

D. OTHER FLOORS
SAME AS PREVIOUS FLOORS

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
ONLY AT STAIRWAY GOING THROUGH TO SECOND, THIRD, FOURTH, AND FIFTH FLOORS

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
INACCESSIBLE- NOT OBSERVED

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
YES- AT SKYLIGHT OPENING OVER STAIRWELL

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
THERE IS NO EVIDENCE OF FLOORS BEING ANCHORED INTO URM WALLS-JOISTS SIMPLY SIT IN POCKET OF URM WALL- ROOF WAS NOT OBSERVED

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
THERE ARE BOTH PARAPETS AND CORNICES ABOVE POTENTIAL ANCHORAGE POINT- ROOF WAS INACCESSIBLE BUT ESTIMATE PARAPET HEIGHT OF FOUR AND ONE-HALF FEET ON SOUTH AND WEST ELEVATIONS- PROBABILITY HIGH THAT THERE IS NO ANCHORING

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED ON BUILDING

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
MORTAR SEEMS IN GOOD CONDITION WITH PAINT APPLIED OVER BRICK- SOME WATER PENETRATION THROUGH URM WALLS- MOST INTERNAL DAMAGE DUE TO ROOF LEAKS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE OBSERVED ON BUILDING

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?

NO CRACKS VISIBLE ON ANY SEGMENT OF THE BUILDING

COMMENTS:
NONE

AV:cp

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g.

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:
DATE OF ADDITION(S):
DATE OF RENOVATION(S):

GENERAL DESCRIPTION:

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
UNABLE TO ACCESS ROOF TO DETERMINE CORNICE CONDITION

2. PARAPETS (URM)
YES- BUT UNABLE TO EXAMINE

3.OTHERS
URM CHIMNEY TIED WITH METAL RODS AT FLOOR LEVEL- NORTH ELEVATION

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NOT OBSERVED

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NOT OBSERVED

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
SKYLIGHT OPENING AT NORTH WALL; STAIRWELL OPENING ADJACENT TO NORTH URM WALL- FLOORS TWO THROUGH FIVE

D. URM WALLS WITH UNBONDED VENEER COURSES

NOT OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
FIRST FLOOR CONSISTS OF TWO DIFFERENT STRUCTURAL SYSTEMS: SOUTH HALF OF BUILDING HAS REINFORCED CONCRETE FLOORS, BEAMS AND COLUMNS; NORTH HALF IS TIMBER FRAMED- TIMBER FRAMING IS NOT ANCHORED TO FOUNDATION- NO APPARENT ANCHORAGE OBSERVED FOR FLOORS TWO THROUGH FIVE; NO ROOF ACCESS FOR ANCHORAGE DETERMINATION

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
POSSIBLE URM CORNICE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
BASEMENT CONSISTS OF MAJOR CONCRETE BEAMS (ORIGINAL) INTERSECTING NEW CONCRETE FOUNDATION WALLS ON SOUTH AND WEST ELEVATIONS- INTERIOR COLUMNS ARE BUILT UP COMPOSITE COLUMNS (IRON) EXTENDING THROUGH FIRST STORY

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
PROBABLE IRON OR STEEL BEAMS MAY REST ON URM PILASTERS; UDW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

EVIDENT IN THE EAST AND WEST ELEVATIONS. CONDITION OF BRICK/MORTAR STRENGTH SHOULD BE VERIFIED ON THESE WALL SECTIONS TO DETERMINE THEIR POTENTIAL LOAD CARRYING CAPABILITY.

Ellensburg	Case Study: 16

Building Name : The Pine

Date Built : 1888

History :
--1888 built for $20,000 one of the only buildings standing after the fire 1889

--1900's boot shop on ground floor and rooms above for rent

--1977 bought by current owner for $90,000

--1977-78 rehab of $85,000

Assessed Value :
--$ 9,850 (25%MV) 1961

--$ 14,880 (50%MV) 1970

--$120,600 (100MV%) 1980

--$174,400 (100%MV) 1983

Ownership&Use :--The current owner expended his own resources and time to rehabilitate the structure. It was one of the first rehabs in town and is fully occupied with shops on the ground floor and offices above

Observations :--The rehabilitation marked the beginning of this owner's interest in renovating buildings in the historic core. Because he was a builder he was able to do much of work himself thereby cutting the actual out-of-pocket costs.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES; MAIN CENTRAL BEAM BEARS ON URM WALLS AND RUBBLE PILASTERS IN CENTER OF SPACE.

B. FIRST STORY
YES; ON WESTERN ELEVATION STEEL BEAMS BEAR ON URM WALLS AND CAST IRON COLUMNS

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NONE

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
YES

D. WEST ELEVATION
YES

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
ONLY WALL BETWEEN TWO STORE FRONTS

C. SECOND TO THIRD, ETC.
MANY WALLS FOR OFFICES ON SECOND FLOOR

D. TO ROOF
NONE; ROOF SEPARATED FROM CEILING JOISTS

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES

C. CEILING TIED / ROOF UNTIED
YES

D. CEILING AND ROOF TIED
NO

E. OTHER
NOT APPLICABLE

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE OBSEVED

B. EAST-WEST
NONE OBSERVED

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; SHIPLAP WITH VARIETY OF FLOORINGS OVER

B. SECOND FLOOR
YES; SHIPLAP

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES; STAIRWELL ON SOUTH ELEVATION AND NEW STAIR CUT INTO NW CORNER OF BUILDING

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHEATHING NOT OBSERVED, HOT MOP ROOFING

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
YES; MAJOR SKYLIGHT IN N-S DIRECTION SEGMENTS THE ENTIRE ROOF INTO TWO UNITS

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE OBSERVED

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES, AT 3 TO 4 FEET ABOVE ROOF

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NORTH, EAST AND SOUTH ELEVATIONS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NORTH, EAST AND SOUTH ELEVATIONS

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
EAST ELEVATION; IN NEW OPENING FOR BARBER SHOP, MAJOR CRACKS FORMED IN PLACING NEW HEADERS. MANY CRACKS THROUGHOUT BUILDING ON WINDOW AND DOOR HEADS PROBABLY DUE TO SETTLEMENT.

COMMENTS:

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: ELLENSBURG, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1888
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1979 (?)

GENERAL DESCRIPTION:
TWO STORY MASONRY BUILDING WITH STORES ON MAIN FLOOR AND OFFICES ON SECOND FLOOR. EXTENSIVELY RENOVATED IN 1979 AND NOW FULLY OCCUPIED.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
URM CORBELLED CORNICES ON NORTH, SOUTH AND EAST ELEVATIONS

2. PARAPETS (URM)
ALL SIDES OF BUILDING AT 4-5 FEET

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NEW FIRE STAIR ADJACENT TO WEST URM WALL

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO INDICATIONS OF ANCHORAGE

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SOUTH AND EAST ELEVATIONS

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
PROBABLY, BUT UDW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
RUBBLE PIERS SUPPORTING MAIN BEAMS. CENTRAL SKYLIGHT BISECTS ROOF DIAPHRAGM WITHOUT LATERAL TIES. SEVERE FRACTURING AND DETERIORATION ON NORTH AND WEST SIDES.

B. OTHER ELEMENTS
NONE

Ellensburg	Case Study: 17

Building Name : The Sprague

Date Built : 1889

History :
--1890 under construction during the fire completed for $42,000

--1900's shops on the ground floor lodging rooms above

--1979 purchase by current owner $175,000

--1983-84 rehab of building $186,565

Assessed Value :
--$29,835 (25%MV) 1961

--$37,290 (50%MV) 1970

--$103,500 (100MV%) 1980

--$268,000 (100%MV) 1983

Ownership&Use :--The current owner rehabilitated the building after previous owner had significantly altered the structure for a health club. Today the building is well occupied with ground floor shops and offices above

Observations :--The rehabilitation of $200,000 was extensive for the community. With rents of .35/sqft,almost half of rents for similar space in Seattle historic buildings,the local economy would not support an extensive rehabilitation effort

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES; FLOOR SUPPORT BEAMS BEAR ON CMU BLOCK WALL AT EXCAVATED BASEMENT, REMAINDER IS CRAWL SPACE

B. FIRST STORY
YES; MAJOR COMPOSITE IRON BEAMS BEAR ON SQUARE IRON COLUMNS AND URM WALL, EMBEDMENT UNDETERMINED

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NONE

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NO

B. IN INTERIOR OF BUILDING
NO

C. OTHER LOCATIONS
NO

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
YES; SEE (I-B)

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES; SEE (I-B)

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
YES; WOOD FRAME, LATH AND PLASTER PARTITIONS BETWEEN STORE BAYS

C. SECOND TO THIRD, ETC.
SAME AS ABOVE

D. TO ROOF
NO

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING JOISTS BEAR ON URM WALLS, ROOF JOISTS RUN PERPENDICULAR TO CEILING JOISTS WITH NO EVIDENCE OF TIES

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES

B. EAST-WEST
YES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; PLYWOOD SUBFLOOR

B. SECOND FLOOR

YES; ONE-BY-FOUR TILE AND GROUT WITH NO SUBFLOOR

C. THIRD FLOOR
NOT APPLICABLE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
PERPENDICULAR SHIPLAP, ROOFING MATERIAL NOT OBSERVED

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
YES; LARGE SKYLIGHT AT INTERIOR LIGHTWELL SURROUNDED ON ALL SIDES BY ONE AND ONE HALF STORY URM WALLS

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
FIRST FLOOR: ALL NEW JOISTS AND SHEATHING BEARING ON TIMBER BEAMS AND COLUMNS NOT ADJACENT TO EXISTING BRICK FOUNDATIONS WITH NO ANCHORING SYSTEM OBSERVED
SECOND FLOOR: UNTIED
ROOF AND CEILING: UNTIED

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES; UNABLE TO DETERMINE EXACT CONDITION WITHOUT ROOF ACCESS (TURRET AND GABLE UNINSPECTED). CORNICES APPARENTLY OF SHEET METAL

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NO

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES; EAST ELEVATION AND BASEMENT FOUNDATIONS AT LIGHTWELL

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
EAST ELEVATION (SOFT BRICK FACE)

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
EAST ELEVATION, PROBABLE SETTLING

COMMENTS:
ROOF DIAPHRAGM CONSISTS OF MANY LARGE, UNTIED, BROKEN PLANES.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: ELLENSBURG, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 3

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1880'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1980'S

GENERAL DESCRIPTION:
TWO STORY URM BUILDING WITH LARGE STOREFRONTS ON MAIN LEVEL AND OFFICES ON SECOND FLOOR. EXTERNALLY RENOVATED IN 1984 & NOW FULLY OCCUPIED.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NO; METAL CORNICES, ROOF INACCESSIBLE

2. PARAPETS (URM)
YES; ON ALL SIDES, ANCHORAGE UNKNOWN

3.OTHERS
SHEET METAL GABLE, ANCHORAGE UNKNOWN
TURRET ON SOUTHWEST CORNER

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
CENTRAL LIGHTWELL SURROUNDED BY URM WALLS

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO EVIDENCE OF ANY ANCHORS

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
CAST IRON VERTICAL SUPPORT SYSTEM FOR STEEL/IRON BEAMS ON PERIMETER

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NEW FIRST FLOOR FRAMING INDEPENDENT OF FOUNDATION WALLS (NO ANCHORS)

B. OTHER ELEMENTS
NONE

Ellensburg	Case Study: 18

Building Name : The Alder

Date Built : 1889

History :
--1886 original building destroyed during fire

--1889 existing building rebuilt for $42,000

--1964 sheet metal covering of facade

--1980's rehab of $50,000 to ground floor

Assessed Value :
--$28,395 (25%MV) 1961

--$56,790 (50%MV) 1970

--$165,100 (100MV%) 1980

--$247,200 (100%MV) 1983

Ownership&Use :--The building has been owned by longtime town family the ground floor has been successful the upper floors have been unoccupied for many years.

Observations :--The building has had minor rehabilitation including a new heating system and improvment of rentable retail space. The unoccupied upstairs poses a difficult problem for the owner in determining an economic use that would justify the rehabilitation expense

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
Floor joists rest unattached on masonry ledge

B. FIRST STORY
Steel beam over storefronts supported by URM pilaster

C. SECOND, THIRD, FOURTH, ETC...
None observed

D. ROOF
None observed

E. OTHER
No

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
Yes--steel cladding (on two building elevations) fastened to two by four purlins at approximately six feet on center purlins are through bolted on URM walls

B. IN INTERIOR OF BUILDING
Not observed

C. OTHER LOCATIONS
Not observed

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
Yes--metal cladding obscured

B. SOUTH ELEVATION

C. EAST ELEVATION
Yes--exterior obscured metal cladding

D. WEST ELEVATION
NO

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES- URM WALLS APPROXIMATELY EVERY THIRTY FEET

B. FIRST STORY TO SECOND
YES- VARIES WITH STORE- TYPICAL CONDITION CONSISTS OF FALSE CEILING WITH PARTITIONS EXTENDING UP TO IT

C. SECOND TO THIRD, ETC.
YES- NUMEROUS, FREQUENT CROSS-WALLS EXTENDING FROM FLOOR TO CEILING IN BOTH NORTH-SOUTH AND EAST-WEST DIRECTIONS

D. TO ROOF
NONE- NO WALLS BETWEEN CEILING AND ROOF

E. OTHER (MEZZANINE, ETC.)
NOT OBSERVED

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- CEILING AND ROOF ARE SEPARATE FRAMING SYSTEMS- CEILING JOISTS POCKETED INTO URM WALLS- ROOF PLANE UNTIED

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
VARIABLE- STORES HAVE BEEN REMODELED- ORIGINAL FLOOR WAS STRAIGHT SHIPLAP

B. SECOND FLOOR
YES- THREE-FOURTHS INCH T&G APPLIED DIRECTLY TO JOISTS

C. THIRD FLOOR
NOT APPLICABLE

D. OTHER FLOORS
NOT APPLICABLE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO JOISTS WITH HOT MOP ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
YES- LARGE SKYLIGHT AT SOUTH END OF THE BUILDING- SPECIAL CONDITION EXISTS AROUND SKYLIGHT AREA OVER WEBSTER'S CAFE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE- NO ANCHORS EVIDENT AT FLOOR, CEILING OR ROOF LEVELS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- NORTH AND EAST PARAPETS ARE TIED WITH TWO BY FOUR PURLINS WITH METAL CLADDING- PARAPETS ON WEST ELEVATION AND LIGHT WELL AREA ARE UNTIED WITH APPROXIMATELY EIGHT FOOT UNSUPPORTED HEIGHTS

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- ONLY WEST ELEVATION WAS VISIBLE FOR OBSERVATION- SOFT BRICK AND ERODED MORTAR IN THIS LOCATION

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES- ON WEST ELEVATION

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NOT OBSERVED

COMMENTS:
CONDITION OF BUILDING WAS DIFFICULT TO EVALUATE SINCE FIRST AND SECOND FLOORS HAVE UNDERGONE EXTENSIVE COSMETIC RENOVATION

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING- ELLENSBURG, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .20 g. ATC ZONE 3

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1880'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1950'S-60'S (MAIN FLOOR ONLY)

GENERAL DESCRIPTION:
BUILT ORIGINALLY AS A HOTEL, THIS TWO-STORY MASONRY BUILDING NOW HAS ONLY MAIN FLOOR OCCUPIED WITH STORES AND A CAFE/BAR. EXTERIOR WAS CLAD WITH METAL SIDING AND STUCCO IN 1950'S.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
ALL CORNICES HAVE BEEN REMOVED

2. PARAPETS (URM)
YES- URM PARAPETS AROUND LIGHT WELL AND AROUND SOUTH AND WEST ELEVATIONS- NO INDICATION OF ANCHORAGE TO DIAPHRAGM- NORTH AND EAST PARAPETS CLAD WITH STEEL SIDING

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)

CENTRAL LIGHT WELL WALLS SURROUND SKYLIGHT TO CAFE BELOW; NO MAJOR FLOOR OPENINGS ADJACENT TO URM WALLS

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES- NO EVIDENCE OF ANCHORS AT FIRST, SECOND, CEILING OR ROOF LEVELS

F. GABLE ENDS OF URM WALLS
NO GABLES

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE OBSERVED

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
PROBABLE CONDITION EXISTS ON EAST AND NORTH ELEVATIONS; UOW-F

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

Ellensburg	Case Study: 19

Building Name : The Rodeo

Date Built : 1911

History :
--1900's built well after most of the downtown brick structures

--1920's Catholic Church owned the building

--Mid 1900's YMCA owned the structure

--1980 fraternal organization bought the building for $125,000

Assessed Value :--exempt from taxes under church ownership

--$ 50,650 (100MV%) 1976

--$121,600 (100%MV) 1981

Ownership&Use :--The building has changed ownership but has been fully occupied since it was built except for the basement facility

Observations :--The building was not made with the similar Ellensburg "soft brick" of the downtown buildings and was, as described by one owner, "sturdy as a rock." Because of its continual use and maintenance it did not display severe deterioration

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES; EAST WING CENTRAL FLOOR BEAMS BEAR ON NORTH AND SOUTH URM WALLS

B. FIRST STORY
YES; MAJOR BEAMS AT EAST WING BEAR ON URM WALLS. GYM TRUSSES BEAR ON MATERIAL (UDW-F)

C. SECOND, THIRD, FOURTH, ETC...
NO

D. ROOF
NO

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
NONE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
CMU BLOCK WALLS IN N-S AND E-W DIRECTIONS

B. FIRST STORY TO SECOND
NONE

C. SECOND TO THIRD, ETC.
N-S, E-W WOOD FRAME PLASTER AND LATH WALLS IN EAST WING

D. TO ROOF
NO WALLS

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING JOISTS BEAR ON URM WALL. ROOF JOISTS BEAR ON CRIPPLE WALL BEARING ON CEILING JOISTS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES (UDW-F)

B. SECOND FLOOR
YES, BUT WEST WING (AT GYM) HAS NO SECOND FLOOR

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP PERPENDICULAR TO JOISTS AND HOT MOP ROOFING

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NO (UDW-F ON FLOORS 1 AND 2)

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES; 13' TO 14' ABOVE CEILING JOISTS ON SOUTH ELEVATION, 7' UNSUPPORTED URM ON OTHER ELEVATIONS

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
YES (UDW-F)

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES, NORTH PARAPET, NORTHEAST WALL

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES; NORTH WALL (LACKS HARD BRICK FACING)

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE

COMMENTS:
FLOOR TWO DIAPHRAGM DISCONTINUOUS DUE TO TWO STORY GYM.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: ELLENSBURG, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 3

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1890'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): NONE

GENERAL DESCRIPTION:
TWO STORY URM BUILDING WITH LARGE BASEMENT AREA, INCLUDING ABANDONED POOL. FIRST STORY HAS LARGE GYM AND MEETING ROOMS. UPPER FLOOR FORMERLY YMCA RESIDENCE HALL, NOW UNOCCUPIED. BUILDING NOW USED AS FRATERNAL ORDER MEETING HALL

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
EAST, NORTH AND WEST ELEVATIONS 6 FEET ABOVE CEILING PLANE, NO ANCHORS

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO EVIDENCE OF ANCHORS

F. GABLE ENDS OF URM WALLS
UNSUPPORTED HEIGHT AT SOUTH ELEVATION OF 12-14 FEET

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
WEST WING HAS TWO STORY OPEN GYMNASIUM WITH LARGE TIMBER TRUSSES. BEARING CONDITION UDW-F

B. OTHER ELEMENTS

Ellensburg	Case Study: 20

Building Name : The Willow

Date Built : 1889

History :
--1889 built immediately after the fire like many of the downtown buildings

--1900's grocery store in the early years

--1920-1960's saddle shop,agricultural equipment shop,bicycle repair,auto sales

--1974 purchased for county museum $100,000

Assessed Value :
--$10,605 (25%MV) 1961

--$21,210 (100%MV) 1970

--$63,400 (100%MV) 1975

--$ 54,500 (100MV%) 1983

Ownership&Use :--The building has changed ownership many times in its history the more recent rehabilitation has occurred under the current ownership

Observations :--The rehabilitation that occurred included the tuckpointing of brick facade, improvement of storefronts, but rehabilitation resources were limited and a complete rehabilitation including structural reinforcement was not attempted

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NO FOR MOST OF THE STRUCTURE EXCEPT FOR ON NEW STEEL COLUMN AT THE FIRST FLOOR LEVEL

B. FIRST STORY
YES- ON THE NORTH ELEVATION THE STEEL BEAM BEARS ON A STEEL COLUMN AT ONE END AND A URM PILASTER AT THE OTHER END

C. SECOND, THIRD, FOURTH, ETC...
NOT OBSERVED

D. ROOF
NOT OBSERVED

E. OTHER
NOT OBSERVED

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NOT OBSERVED

B.IN INTERIOR OF BUILDING
NOT OBSERVED

C. OTHER LOCATIONS
NOT OBSERVED

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES- SEE (I-B.)

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
CRAWL SPACE ONLY- NO BASEMENT

B. FIRST STORY TO SECOND
URM WALLS IN NORTH-SOUTH DIRECTION

C. SECOND TO THIRD, ETC.
WALLS FROM FLOOR TO CEILING (ORIGINAL) EXIST IN NORTH-SOUTH DIRECTION- ALL NEW PARTITION WALLS EXTEND ONLY TO FALSE CEILING

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NOT APPLICABLE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- ORIGINAL RAFTERS INTERSECT URM WALLS- ROOF FRAMING NOT TIED TO URM WALLS- NEW FALSE CEILINGS NOT ANCHORED

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
ORIGINAL TIMBER FRAMING (FOUR BY SIXTEENS) BADLY DETERIORATED ON THE SOUTH SIDE- CONCRETE POURED OVER ONE BY EIGHT STRAIGHT FLOOR SHEATHING

B. SECOND FLOOR
YES- STRAIGHT SHIPLAP WITH PERPENDICULAR WOOD FLOORING OVER

C. THIRD FLOOR
NO

D. OTHER FLOORS
NO

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- MAIN STAIRWELL (NORTH ELEVATION)

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
STRAIGHT SHIPLAP WITH HOT MOP ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE- NO ANCHORAGE SEEN AT ANY FLOOR, CEILING OR ROOF PLANE

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- NORTH ELEVATION PARAPET (APPROXIMATELY EIGHT FEET FROM CEILING LEVEL) HAS TWO TIE-BACKS TO ROOF DIAPHRAGM- ALL OTHER PARAPETS HAVE NO TIES (HEIGHTS VARY FROM THREE TO FIVE FEET)- CORNICE WORK IS FORMED SHEET METAL

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- SEVERELY DETERIORATED MORTAR ON ENTIRE SOUTH ELEVATION- ERODED MORTAR ALSO DETECTED ON INTERIOR URM WALLS (NORTH-SOUTH WALLS)- WEST ELEVATION (STUCCOED ON FIRST FLOOR LEVEL) INTERIOR SURFACE SHOWS SEVERELY ERODED MORTAR

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
SEVERELY DETERIORATED BRICK ON SOUTH ELEVATION

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
YES- SOUTH ELEVATION; PROBABLY DUE TO DETECTABLE SETTLEMENT

COMMENTS:
SEVERE DETERIORATION OF FIRST FLOOR FRAMING TIMBERS IS CONTINUING

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: ELLENSBURG WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 G. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1880'S
DATE OF ADDITION(S): 1930'S
DATE OF RENOVATION(S): 1970'S

GENERAL DESCRIPTION: TWO STORY MASONRY BUILDING WITH STORES ORIGINALLY ON MAIN FLOOR AND APARTMENTS ON SECOND. RENOVATED IN 1930'S FOR CAR DEALERSHIP UNTIL IT WAS TURNED INTO COUNTY MUSEUM IN 1970'S. UPPER FLOOR STILL OCCUPIED AS APARTMENTS.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NO- URM CORNICES ARE OF PRESSED SHEET METAL ON NORTH ELEVATION; SHOWS SIGNS OF SEPARATION

2. PARAPETS (URM)
YES- URM PARAPETS ON ALL ELEVATIONS- NORTH ELEVATION PARAPETS EIGHT FEET TALL- SHOWS TWO ANCHORS TO ROOF DIAPHRAGM
OTHER PARAPETS APPROXIMATELY FOUR TO FIVE FEET ABOVE CEILING PLANE- NO ANCHORS OBSERVED

3. OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; NO OPENINGS ADJACENT TO URM WALLS AT FLOOR LEVELS

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
YES- NO ANCHORS OBSERVED AT FIRST, SECOND, CEILING OR ROOF LEVELS

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE- ALL SHHET METAL CORNICES

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES- NORTH ELEVATION

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NOT APPLICABLE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NOT APPLICABLE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
FLAT MASONRY ARCH OVER NORTHEAST BAY; SOUTH WALL SHOWS SIGNS OF SIGNIFICANT DETERIORATION OF BOTH BRICK AND MORTAR

B. OTHER ELEMENTS
NONE

Jacksonville	Case Study: 21

Building Name : The Laurelwood

Date Built : 1883

History :

--1884 first court cases convened in the building ,county seat in the 1900's

--1926 county seat moved to Medford, building vacated

--1949 historical society organized, to occupy the structure, 1950 opening

Assessed Value :--Government entity,no assessment

Ownership&Use :--The building has been a publicly owned structure since it was built 100 years ago. The current owner has owned the building for the last 35 years

Observations :--The building was one of the better maintained brick structures that the team surveyed in the study towns. The historic society had a yearly maintenance budget that could be applied to this building, and they could support the building with dues and were not dependent on the town economy like other owners

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
SECONDARY BEAMS ADDED AT MIDSPAN IN OLD BUILDING; CONCRETE BEAM AND COLUMN SYSTEM IN THE ADDITION AT REAR OF BUILDING

B. FIRST STORY
PORCH COLUMNS BEAR ON SANDSTONE PILASTERS. REMAINDER OF BUILDING URM BEARS DIRECTLY ON FOUNDATION. (THERE IS NO SOFT FIRST STORY.) BEAMS OF OPEN STAIRWELL BEAR ON URM.

C. SECOND, THIRD, FOURTH, ETC...
MASONRY ARCHWAY

D. ROOF
PITCHED ROOF- BRACED, WITH NO CONCENTRATED LOADS FROM ROOF TRANSFERRED TO MASONRY.

E. OTHER
BELVEDERE FRAMING AND CLADDING DOES NOT BEAR ON URM WALLS. BARN FRAMING. MAJOR LOAD OF AIR CONDITIONING UNITS ON ROOF OF ADDITION SHOULD BE EVALUATED FOR LATERAL LOAD RESISTANCE.

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
NONE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
ALL MASONRY WALLS FROM CRAWL SPACE THROUGH FIRST STORY BEAR ON FOUNDATIONS.

B. FIRST STORY TO SECOND
URM WALLS N-S AND E-W WITH ADDITION'S PARTY WALLS

C. SECOND TO THIRD, ETC.
LARGE OPEN COURT ROOM WITH N-S CROSSWALLS AT ENDS OF BUILDING ONLY

D. TO ROOF
NO CROSSWALLS TO ROOF; NEW FIREWALLS SEPARATE BUILDING AT THIRD POINTS.

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
PITCHED - GABLE ROOF

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
ROOF BEARS ON 24" PLATE ON WALLS.

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES

B. EAST-WEST
YES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- PERPENDICULAR SHIPLAP WITH HARDWOOD FLOORING OVER

B. SECOND FLOOR
YES- PERPENDICULAR SHIPLAP WITH HARDWOOD OVER

C. THIRD FLOOR
NONE

D. OTHER FLOORS
(ATTIC)NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES-FRONT STAIR

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
PERPENDICULAR SHIPLAP, PLYWOOD OVER NAILERS - COMPOSITION ROOFING

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
YES- AT BELVEDERE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE OBSERVED AT FIRST FLOOR. UDW-F AT SECOND FLOOR. NONE AT ROOF.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- CORNICES ABOVE; CORNICES ARE OF WOOD NOT URM. GABLE AT WEST ELEVATION IS OF WOOD.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED- MASONRY REPOINTED IN 1981 (ON EXTERIOR)

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE. THERE IS A CRACK IN SANDSTONE PILASTER FOR PORCH ON WEST ELEVATION.

COMMENTS:
AIR CONDITIONING UNITS ON ADDITION ARE A LARGE AND CONCENTRATED WEIGHT ON ROOF- CRACKING OBSERVED OF SUPPORTING REINFORCED CONCRETE. REMAINDER OF BUILDING IN GOOD CONDITION.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: . JACKSONVILLE, OREGON
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 2

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1880'S
DATE OF ADDITION(S): 1930'S
DATE OF RENOVATION(S): 1961

GENERAL DESCRIPTION:
LARGE TWO STORY URM BUILDING WITH TIMBER FRAMED AND CLAD STEEPLE. THERE IS A LARGE OPEN INTERIOR SPACE ON SECOND FLOOR. AN ADDITION HAS BEEN ADDED TO EAST ELEVATION.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE- ALL CORNICE WORK IS TIMBER OR WOOD CONSTRUCTION.

2. PARAPETS (URM)
MINIMAL PARAPET AT EAST ELEVATION ADDITION- UNABLE TO DETERMINE ANCHORAGE, IF ANY.

3. OTHERS
TWO LARGE (10 TON COOLING CAPACITY) AIR CONDITIONERS INSTALLED ON ROOF OF ADDITION. METHOD OF SUPPORT AND ANCHORAGE SHOULD BE EVALUATED FOR SEISMIC RESISTANCE.

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)

MAJOR STAIRWELL OPEN ACROSS THE WEST ELEVATION SHOULD BE EVALUATED FOR SEISMIC RESISTANCE OF ADJACENT URM WALLS.

D. URM WALLS WITH UNBONDED VENEER COURSES
UNABLE TO DETERMINE WALL CONSTUCTION OF ADDITION. IF VENEER BRICK HAS BEEN USED- ANCHORAGE OF BRICK SHOULD BE EVALUATED.

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
THERE WERE NO ANCHORS AT FIRST FLOOR LEVEL, NOR WERE THERE ANY AT ROOF URM INTERSECTION. SECOND FLOOR UDW-F. SEISMIC EVALUATION OF ANCHORAGES IS RECOMMENDED.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE- ALL ORNAMENTATION IS OF WOOD CONSTUCTION

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
AT MAIN BUILDING THERE IS NONE EVIDENT; ADDITION AT WEST ELEVATION HAS POTENTIAL NON-DUCTILE CONCRETE SYSTEM THAT SHOULD BE EVALUATED FOR SEISMIC RESISTANCE.

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE IN EVIDENCE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
SEE 1-3 (AIR CONDITIONING UNITS)

B. OTHER ELEMENTS
STEEPLE (DOES NOT BEAR ON URM WALLS) OF HEAVY TIMBER MORTISE AND TENON FRAMING SHOWS EXTERIOR NON-STRUCTURAL DAMAGE.

Jacksonville	Case Study: 22

Building Name : The Maple

Date Built : 1861

History :

--1880's a variety of commercial uses occupied the building

--1950's commercial use,market, unoccupied in the late 1960's

--1967 bought by current owner for $19,000

Assessed Value :

--$3,380	(25%MV)	1959
--$13,200	(100%MV)	1969
--$24,860	(100%MV)	1975*

*Tax assessment frozen 1975, historic structure

Ownership&Use :--The building has been occupied and unoccupied over the years with several different owners. The current owner has maintained an antique shop on the ground floor but the upstairs has not been used

Observations :--Major rehabiltation has not occurred in this building and the owner has not been interested in marketing the space for tenants. Routine maintenance of the roof has taken place

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NONE- ROTTED FLOOR JOISTS BEAR ON URM RUBBLE WALLS.

B. FIRST STORY
NONE- AT FRONT IRON TENSION BARS SUPPORT BOTTOM CHORD OF ARCHES.

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
UDW-F

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR

FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
PARTITION WALLS AT SOUTH END OF BUILDING

C. SECOND TO THIRD, ETC.
ONE PARTITION WALL AT SOUTH END

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES- PITCHED ROOF TO EAST AND WEST (N-S RIDGE). CEILING RAFTER CONDITION UNOBSERVED.

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
UDW-F

B. EAST-WEST
UDW-F

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- BOARDS ARE LAID PERPENDICULAR OVER ROTTED JOISTS; NEW CRIPPLES LOCATED AT THIRD POINTS.

B. SECOND FLOOR
YES- STRAIGHT FLOORING OVER JOISTS WITH NO APPARENT SHEATHING

OVER FLOOR.

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- STAIRWELL ON WEST SIDE ADJACENT FROM FIRST TO SECOND FLOOR.

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
UDW-F; HOT APPLIED ROOF

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE OBSERVED FOR FIRST FLOOR; UDW-F FOR SECOND FLOOR OR ROOF-CEILING CONDITION.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- NORTH END AT 5-6 FEET; REMAINDER OF PERIMETER AT 2 FEET. NO EVIDENCE OF ANY TIES.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
EROSION APPARENT ON ALL FACES OF BUILDING. DRAMATIC EROSION OF FOUNDATION RUBBLE MORTAR. ONLY THE NORTH ELEVAYION SEEMS RELATIVELY INTACT.

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
GENERAL DETERIORATION OVER ENTIRE BUILDING PARTICULARLY ON THE EAST AND SOUTH SIDES.

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
YES- AROUND OPENINGS THROUGH THE URM; PROBABLE CAUSE IS SETTLEMENT.

COMMENTS:
POOR CONDITION OF BUILDING

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 2

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1800'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): NONE

GENERAL DESCRIPTION:
SMALL TWO STORY BUILDING HOUSING A MUSEUM AND SECOND STORY APARTMENT. BASEMENT AREA VERY WET WITH MUCH DECAY OF TIMBER FRAMING.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
SMALL CORNICE AT NORTH ELEVATION

2. PARAPETS (URM)
PARAPETS ON ALL ELEVATIONS- NORTH PARAPET PROJECTS 5'-0" ABOVE ROOF LEVEL, OTHERS PROJECT 2'-0" ABOVE ROOF LEVEL. NO TIES WERE EVIDENT.

3.OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; SMALL OPENING FOR STAIRWELL AT WEST SIDE OF BUILDING.

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
MAIN FLOOR LEVEL HAS NO EVIDENCE OF ANCHORS. SECOND FLOOR UDW-F. ROOF UDW-F. PROBABILITY HIGH THAT NO ANCHORS EXIST AT THESE LEVELS.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SMALL AMOUNT AT NORTH ELEVATION

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
MODERATE TO SEVERE EROSION OF BRICK AND MORTAR ON SOUTH AND EAST ELEVATIONS. FOUNDATION RUBBLE WALL MORTAR IS SEVERELY DETERIORATED AND HAS A CLAY-LIKE CONSISTENCY.

B. OTHER ELEMENTS
TIMBER FLOOR FRAMING SERIOUSLY DECAYED. POSTS THAT HAVE BEEN ADDED SHOW DECAY AT BASE LEVEL. VERY HIGH MOISTURE CONTENT OF BASEMENT PROBABLE CAUSE OF ROT. MOISTURE MIGRATION THROUGH THE URM WALLS AT FLOOR JOIST LEVEL HAS CAUSED ROT OF JOIST ENDS.

Jacksonville	Case Study: 23

Building Name : The Stage

Date Built : 1884

History :
--1884 International order of Redmen built the structure

--1890's upstairs converted to offices

--1930's tavern has occupied the building for over 50 years

Assessed Value :
--$2,840 (25%MV) 1959

--$9,090 (100%MV) 1969

--$34,610 (100%MV) 1975*

*Tax assessment frozen 1975, historic structure

Ownership&Use :
--The current owner has owned the building for the last 20 years. The upper floors have not been occupied for decades. He has no plans for any renovation of the upstairs and has spent approximately $20,000 on the tavern on the ground floor

Observations :
--Like many of the buildings in town relatively little rehabilitation has taken place in this building. Because of the uncertain economy in town it was difficult to justify a major renovation

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NONE- SLAB ON GRADE SINCE THE SIXTIES.

B. FIRST STORY
NONE- CONTINUOUS JOISTS SPANNING THIRTY FEET

C. SECOND, THIRD, FOURTH, ETC...
NONE- CONTINUOUS JOISTS SPANNING THIRTY FEET

D. ROOF
NONE-PITCHED ROOF WITH TRUSSES UNIFORMLY LOADED BEARING ON URM WALLS

E. OTHER
MASONRY ARCHES ON NORTH ELEVATION

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES- THESE ARE SUPPORTED BY URM ARCHES THAT GO INTO URM PILASTERS

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
YES- NE CORNER

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
YES- AT SOUTH END OF BUILDING E-W DIRECTION

C. SECOND TO THIRD, ETC.
YES- BETWEEN THE SECOND FLOOR AND CEILING. ORIGINAL WALLS EXTEND ALL THE WAY IN N-S AND E-W DIRECTION. NEWER PARTITIONS EXTEND ONLY TO FALSE CEILING, WHICH IS SEVEN FEET BELOW ORIGINAL CEILING.

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
TRUSSES IN E-W DIRECTION WITH ROOF RAFTERS AND CEILING JOISTS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NONE

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
YES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
CONCRETE SLAB ON GRADE

B. SECOND FLOOR
TONGUE AND GROOVE LAID PERPENDICULAR TO JOISTS

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES- SOUTH END OF BUILDING HAS STAIRWELL THAT EXTENDS FROM FIRST TO SECOND FLOOR.

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
PLANKS LAID PERPENDICULAR TO RAFTERS, METAL ROOF WITH HOT MOP OVER.

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
FIRST FLOOR- NONE; SECOND- UDW-F; CEILING- NONE

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES- ON SIDES (EAST-WEST) APPROX. FOUR TO FIVE FEET; NORTH, TWO TO THREE FEET; SOUTH, HAS TIMBER ORNAMENTAL CORNICE OVER URM PARAPET.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE OBSERVED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
SOME CRACKS ON EAST SIDE; PROBABLY SETTLEMENT. GOOD CONDITION OVERALL.

COMMENTS:
UNABLE TO GET ON ROOF TO OBSERVE URM PARAPET CONDITIONS. NO INDICATIONS OF PARAPET TIES.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: JACKSONVILLE, OREGON
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 2

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1800'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1960'S

GENERAL DESCRIPTION:
TWO STORY URM BUILDING WITH STOREFRONTS ON MAIN FLOOR AND APARTMENTS ON SECOND. MAIN FLOOR NOW FILLED WITH GRAVEL AND CONCRETE. PRESENTLY ONLY MAIN FLOOR OCCUPIED.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
YES- MASONRY CORNICE WORK ON EAST AND NORTH ELEVATIONS; MORTAR AND BRICK CONDITION SHOULD BE EXAMINED. WOOD CORNICE WORK ON NORTH ELEVATION APPEARS TO BE IN GOOD CONDITION.

2. PARAPETS (URM)
YES- ON ALL ELEVATIONS - APPROXIMATELY THREE FEET HIGH - WERE UNABLE TO GET ROOF ACCESS. THESE SHOULD BE EXAMAINED FOR BRICK AND MORTAR CONDITION, AND WIDTH TO HEIGHT RATIO TO DETERMINE IF TIES EXIST OR ARE NECESSARY. NORTH ELEVATION TURRETS EXTEND ABOVE PARAPET- SHOULD BE EXAMINED FOR STABILITY.

3. OTHERS
SEE ABOVE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NOT OBSERVED

3. NORTH SKYLIT ROOFS
NOT OBSERVED

4. OTHERS

NOT OBSERVED

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF LEVEL; STAIRWELL AT SOUTH END SEPARATES SOUTH WALL FROM SECOND FLOOR DIAPHRAGM ACROSS THE ENTIRE BUILDING.

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO ANCHORS OBSERVED AT ROOF. URM INTERSECTION AT SECOND FLOOR: UDW-F. MAIN FLOOR: CONCRETE SLAB OVER FILL.

F. GABLE ENDS OF URM WALLS
NONE OBSERVED

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SOME ON EAST AND NORTH ELEVATIONS WITH MAXIMUM CANTILEVER OF TWO WYTHES. SHOULD BE EXAMINED FOR MORTAR CONDITION.

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
URM ARCHES AND URM PILASTERS AT MAIN FLOOR, AND NORTH AND EAST ELEVATIONS SHOULD BE EXAMINED TO DETERMINE LATERAL LOAD CAPABILITY.

B. OTHER ELEMENTS

Jacksonville	Case Study: 24

Building Name : The Miner

Date Built : 1864&1874

History :
--1864 first floor erected and later extended in 1874 to accomodate a brick second floor and a wood third floor

--1900 gabled third floor removed

--Built by prolific builder of the new "fire proof" commercial structures

--1984 purchase by current owner $350,000

Assessed Value :
--$1,880 (25%MV) 1959

--$8,020 (100%MV) 1969

--$122,340 (100%MV). 1975*

*Tax assessment frozen 1975, historic structure

Ownership&Use :--The owner of the restaurant and inn is in the process of buying the building the previous owner spent between $50,000 and $100,000 on the structure for the restaurant and inn. Both are very success-businesses

Observations :--The rehabilitation efforts on this building have been more extensive than any other in town. The businesses have been successful and have the owner has been able to take advantage of the tourist economy

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES- SEVERAL POINT LOADS;CENTRAL WALL HAS NEW CENTRAL BEAM WHICH BEARS ON URM WALL.THERE ARE MAJOR FRACTURES IN THE URM WALL.

B. FIRST STORY
NO.THE SOUTH ELEVATION BEARS ON TIMBER FRAMING ACROSS ENTIRE FRONT.

C. SECOND, THIRD, FOURTH, ETC...
YES: ON NORTH INTERIOR

D. ROOF

E. OTHER
STRUCTURE OF ADDITION INDEPENDENT OF THE URM STRUCTURE.

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
YES: AT FRONT, MASONRY SUPPORTED BY IRON (LINTEL?) ACROSS FRONT OF BUILDING WHICH HAS NEW SUPPORTING TIMBER BEAMS AND COLUMNS NOT BEARING ON URM.

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL

NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES: CENTRAL RUBBLE WALL RUNNING N-S,SOME WALLS RUNNING ON NORTH SIDE IN KITCHEN.

B. FIRST STORY TO SECOND
YES: PARTITION BETWEEN WINE SHOP AND HOTEL

C. SECOND TO THIRD, ETC.
MANY WALLS N-S;E-W PARTITIONS EXTEND THROUGH FROM FLOOR TO CEILING.

D. TO ROOF
NONE OBSERVED

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES:NEW FLOOR STRUCTURE OF BEAMS WITH TWO BY SIX DECKING OVER.

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE OBSERVED

B. EAST-WEST
NONE OBSERVED

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR

YES- NEW FLOOR STRUCTURE OF BEAMS WITH TWO BY SIX TONGUE AND GROOVE DECKING OVER

B. SECOND FLOOR
LIKELY, CONCEALED AND UDW-F.

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP LAID PERPENDICULAR TO JOISTS- HOT MOP ROOF OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE AT FIRST STORY; SECOND UDW-F. CEILING AND ROOF ARE UNTIED.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES: APPROXIMATELY 4-6 FEET HIGH WITH NO EVIDENCE OF ANCHORS.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE OBSERVED

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES; IN MANY LOCATIONS THROUGHOUT ALL ELEVATIONS- PARTICULARLY AT EAST AND NORTH WALLS.

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES- GENERAL DETERIORATION IS OCCURING THROUGHOUT IN THE BRICKWORK OF THE BUILDING.

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
MANY CRACKS, USUALLY ORIGINATING AT OPENINGS IN URM. SEVERE PROBLEMS OCCURRING LOCALLY THROUGHOUT THE ENTIRE BUILDING. THERE ARE CRACKS AND SEPARATION OCCURING AT BUILDING INTERIOR CORNERS. FOR EXAMPLE, MOST WINDOWS AT THE SECOND LEVEL SHOW CRACKING AT LINTELS AND SILLS. CENTRAL FOUNDATION WALL SHOWS HEAVY FRACTURING OCCURING. THIS CRACKING EXISTS THROUGHOUT; THE BUILDING SHOWS EVERY INDICATION OF DIFFERENTIAL SETTLEMENT.

COMMENTS:
THERE IS TIMBER FRAMING THROUGHOUT THE STRUCTURE FROM THE BASEMENT

LEVEL UP THROUGH THE SECOND FLOOR. MAJOR BEAMS, FRAMING FOR FORMER THIRD (AND POSSIBLY FOURTH) STORY EXISTS AT THE SECOND FLOOR CEILING LEVEL. INTERSECTION CONDITION (WHERE BRICK AND FRAME MEET)- UDW-F.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: JACKSONVILLE, ORE.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1800'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1970'S

GENERAL DESCRIPTION:
TWO STORY URM BUILDING THAT HAD TIMBER THIRD STORY AT ONE TIME. MANY ADDITIONS HAVE OCCURRED OVER THE YEARS. EXTENSIVELY RENOVATED IN 1970'S WITH STORES AND A RESTAURANT, NOW FULLY OCCUPIED.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
SMALL CORNICE ON SOUTH ELEVATION SHOULD BE EXAMINED FOR INDICATIONS OF ERODED MORTAR AND BRICK.

2. PARAPETS (URM)
URM PARAPETS SHOW NO INDICATION OF ANCHORAGE FOR AN UNSUPPORTED HEIGHT OF FOUR TO FIVE FEET- SHOULD BE EVALUATED FOR LATERAL STABILITY.

3. OTHERS
NO OTHERS OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE OBSERVED

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)

NONE IN EVIDENCE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE IN EVIDENCE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
GROUND FLOOR- NO INDICATION OF ANCHORAGE TO URM WALLS. SECOND FLOOR- FLOOR PLANE HAS NO TIES TO URM WALLS. CEILING/ROOF-PLANE HAS BEAMS WITH END PLATES ON ALL ELEVATIONS WHICH ACT AS PARTIAL ANCHORS OF URM WALLS AT THIS LEVEL.RECOMMEND EVALUATION OF ANCHORAGE LATERAL RESISTANCE.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SMALL CORNICE ON SOUTH ELEVATION. NO OTHER ORNAMENTATION OBSERVED.

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE IN EVIDENCE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
SOUTH ELEVATION MAY HAVE STEEL BEAMS WHICH BEAR ON URM WALLS AND URM PILASTER AT CENTER.ACTUAL CONFIGURATION SHOULD BE DETERMINED, AND EVALUATED FOR RESISTANCE TO LATERAL LOADS.

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

5
IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
SEVERE SETTLEMENT EVIDENT IN MANY PORTIONS OF BASEMENT, FIRST LEVEL, AND SECOND LEVEL HAS RESULTED IN MAJOR CRACKS ON ALL ELEVATIONS OF BUILDING. CAREFUL OBSERVATION OF CRACKING SHOULD BE MADE IN ORDER TO DETERMINE WHETHER THERE IS CONTINUING

SETTLEMENT OR OTHER PROBLEMS PERHAPS AGGRAVATED BY TUNNELS UNDER BUILDING OR VIBRATIONS FROM TRUCKS. A THOROUGH ENGINEERING EVALUATION IS NECESSARY
BEFORE ANY CONCLUSIONS CAN BE DRAWN ABOUT URM WALLS LATERAL AND SEISMIC LOAD RESISTANCE CAPABILITY.

B. OTHER ELEMENTS

PRIMARY LOAD BEARING SYSTEM OF TIMBER COLUMNS AND BEAMS IS INBOARD OF URM WALLS- EVALUATION OF ANCHORAGE OF THIS SYSTEM TO URM WALLS SHOULD BE MADE.

Jacksonville	Case Study: 25

Building Name : The Woodberry

Date Built : 1878&1881

History :

--1873 original wood frame building was destroyed and bricks fired in 1879 for the new structure

--1880's hotel operation

--1920's community center located in the old structure

--1960's ground floor rehabilitation for bank

Assessed Value :Historical society ownership and no assessment record

Ownership&Use :--The historic society owns the structure and has expended funds to maintain the structure over the years. Ground floor is occupied and the upper floor is rentable public space for events.

Observations :--The historic society has had to make choices on the extent of rehabilitation resources they would expend on the different buildings they own. This building has required extensive maintenance funds and it has raised concens within the Society over the growing costs of maintaining several historic structures

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NO. BASEMENT SLAB WAS POURED ON GRADE.

B. FIRST STORY
NONE NOTED. ALL WINDOW AND DOOR OPENINGS WERE DONE AS MASONRY ARCHES.

C. SECOND, THIRD, FOURTH, ETC...
NONE- NO SECOND OR THIRD FLOORS

D. ROOF
NO

E. OTHER
NONE

5
II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NO

B.IN INTERIOR OF BUILDING
NO

C. OTHER LOCATIONS
NO

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
NO

E. INTERNAL
NO INTERIOR URM WALLS

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
N.A.

B. FIRST STORY TO SECOND
YES. PARTITIONS IN BOTH E-W AND N-S DIRECTIONS

C. SECOND TO THIRD, ETC.
N.A.

D. TO ROOF
NO

E. OTHER (MEZZANINE, ETC.)
N.A.

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES. PITCHED RAFTERS WITH CEILING FRAMING. COFFERED CEILING IN BALLROOM AREA.

C. CEILING TIED / ROOF UNTIED
N.A.

D. CEILING AND ROOF TIED
N.A.

E. OTHER
STEEL TENSION RODS WITH TURNBUCKLES ADDED IN BATHROOM AREA (E-W DIRECTION).

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
CONCRETE SLAB THROUGHOUT

B. SECOND FLOOR

YES, SQUARE-EDGED FLOORING WITH HARDWOOD FLOORING OVER.

C. THIRD FLOOR
N.A.

D. OTHER FLOORS
N.A.

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
COMPOSITION ROOFING; PLYWOOD SHEATHING OVER 1BY NAILERS

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
YES- SECOND FLOOR OF NORTH WING(BALLROOM AREA) TIED WITH STEEL CABLES ANCHORED THRU URM WALL WITH HALF INCH CONTINUOUS STEEL PLATE. THIS CONDITION ALSO APPLIES AT ROOF- WALL INTERSECTION.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES. GABLE ENDS HAVE PARAPETS FOUR TO FIVE FEET HIGH; OTHER PARAPETS ARE APPROXIMATELY TWO FEET HIGH.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NO

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
ALL BRICK SANDBLASTED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
ONE CRACK NOTICED AT NORTH ELEVATION

COMMENTS:
SANDBLASTED BRICK
LARGE STEEL RODS AT ROOF AND SECOND FLOOR LEVEL
BUILDING WAS APPARENTLY BEING STRAIGHTENED DURING RENOVATION BY USING THE TENSION RODS.
ROOF RIDGE AND WALLS WERE NOTICEABLY OUT OF PLUMB AND/OR CROOKED.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: JACKSONVILLE, OREGON
10
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 2

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1880'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1970'S

GENERAL DESCRIPTION:
TWO STORY URM BUILDING, FORMERLY A HOTEL, NOW A BANK WITH MUSEUM AND OFFICES. EXTENSIVELY RENOVATED IN 1970'S, NOW FULLY OCCUPIED. LARGE BALLROOM ON SECOND FLOOR USED FOR COMMUNITY ACIVITIES.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
URM CORNICES ON SOUTH AND WEST ELEVATIONS WHICH SHOULD BE EXAMINED FOR CONDITION OF MORTAR AND BRICK.

2. PARAPETS (URM)
URM PARAPETS EXTEND 4-5 FEET ABOVE ROOF INTERSECTION WITHOUT ANY EVIDENCE OF TIES - URM CHIMNEYS EXTENDING ANOTHER THREE FEET HIGHER.

3. OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS

THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF; NONE AT FIRST AND SECOND FLOORS.

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
OVER BALLROOM STEEL RODS HAVE BEEN INSTALLED AT 10'-0"O.C. ACROSS COFFERED CEILING IN E-W DIRECTION. SECOND FLOOR TIED WITH CABLES USED TO STRAIGHTEN DEFLECTED WALLS. THESE SHOULD BE EXAMINED FOR LATERAL LOAD RESISTANCE.

F. GABLE ENDS OF URM WALLS
SOUTH ELEVATION SHOWS SOME SIGNS OF CRACKING, ALSO EAST ELEVATION.

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
ON SOUTH AND WEST ELEVATIONS- SHOULD BE EXAMINED FOR MORTAR AND BRICK CONDITIONS.

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
BRICK APPEARS TO HAVE BEEN SANDBLASTED- CONTINUED DETERIORATION OF MASONRY AT ACCELERATED RATE PROBABLE.

B. OTHER ELEMENTS
THE REPLUMBING OF URM WALLS DURING RENOVATION INDICATES THAT URM WALLS UNDERWENT CONSIDERABLE DEFORMATION WHICH IS STILL

Oakland	Case Study: 26

Building Name : The Cedar

Date Built : 1889

History :
--1889 built after the fire with local fired soft brick

--1900's housed a mercantile and drug store commonwall separating the two stores

--1968 bought by current owner who opened up the common wall for restaurant/antiques rehabilitation over the years of $100,000

Assessed Value :

--$ 960	(25%MV)	1957	*
2,370			*
--$ 680	(25%MV)	1967	
1,300			
-$12,300	(96%MV)	1977	
18,600			
-$19,780	(96%MV)	1984	
34,860			

*assessement of both buildings

Ownership&Use :--The current owner has owned the structures for the last 16 years and over that time has spent more on rehabilitation than any other owner in town for a successful restaurant and antique business

Observations :--The owner had taken advantage of the low value of the buildings when he purchased them in the early 1970's. Today with a good reputation and a tourist economy he has developed a profitable business; often quite unusual for a small town

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
CENTRAL FLOR BEAM BEARS ON URM PILASTER 24" X 24" X 4'-0", END OF BEAM BEARS ON URM FOUNDATION

B. FIRST STORY
MAJOR IRON OR STEEL BEAMS BEAR ON URM WALLS AT EDGES.

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NONE

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
YES; OPEN STORE FRONT WITH WALL ABOVE BEARING ON IRON OR STEEL BEAM BEARING ON URM SIDE WALLS

D. WEST ELEVATION
NO

E. INTERNAL
NO

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
NONE

C. SECOND TO THIRD, ETC.
NONE

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
PARTITIONS BELOW MEZZANINE LEVEL, NOT EXTENDING ABOVE.

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING JOISTS REST IN URM WALLS, ROOF JOISTS BEAR ON CEILING JOISTS WITH CRIPPLER.

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; TONGUE AND GROOVE FLOOR PERPENDICULAR TO JOISTS, NEW FLOORING GLUED.

B. SECOND FLOOR

NONE

C. THIRD FLOOR
NONE

D. OTHER FLOORS
MEZZANINE UDW-F

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP PERPENDICULAR TO JOISTS, ROLL ROOFING

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE IN EVIDENCE

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
4'-0" AT HIGHEST POINT

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES; WEST AND SOUTH ELEVATIONS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NORTH, SOUTH, WEST ELEVATIONS

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
LARGE FRACTURES ORIGINATING AT OPENINGS ON WEST ELEVATION

COMMENTS:
EVIDENCE OF DECAY ON ENDS OF SOUTH END JOISTS. SHORING FOR BEARING LOADS DONE IN THIS AREA.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: OAKLAND, ORE.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 1

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1800'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1920'S

GENERAL DESCRIPTION:
SINGLE STORY BUILDING WITH MEZZANINE LEVEL. STOREFRONT NOW CONVERTED TO RESTAURANT WITH ANTIQUES SHOWN IN PART OF SPACE (ORIS. 2 BUILDINGS) WITH EXTENSIVE RESTORATION.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
EAST ELEVATION CORNICE SHOULD BE CHECKED

2. PARAPETS (URM)
URM PARAPETS ON NORTH, EAST AND SOUTH ELEVATIONS, 3 FEET HIGH. UNABLE TO ACCESS FOR INSPECTION.

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO EVIDENCE OF ANCHORS

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SMALL PROJECTION FROM FACE OF WALL ON EAST ELEVATION

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
STEEL BEAM (CONFIGURATION UNKNOWN) BEARS ON URM WALLS, INTERMEDIATE TIMBER COLUMNS. SUPPORTS URM WALL AT 6 FEET ABOVE. ACTUAL CONDITION SHOULD BE DETERMINED FOR LATERAL RESISTANCE EVALUATION.

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
MEZZANINE LEVEL SHOULD BE ASSESSED WITH REST OF BUILDING FOR LATERAL LOAD IMPLICATIONS.

B. OTHER ELEMENTS
URM FOUNDATION PIER IN BASEMENT SUPPORTS MAJOR FLOOR BEAM.

Oakland	Case Study: 27

Building Name : The Oak

Date Built : 1887

History :

--1905 addition to existing building on the east side

--1900 hardware store has occupied the site for almost 100years

--1960-70's general upkeep of building reroofing,painting,

Assessed Value :

--$1,250	(25%MV)	1957
--$3,510	(25%MV)	1967
-$33,800	(96%MV)	1977
-$58,240	(96%MV)	1984

Ownership&Use :--The building has been in the family since it was built and a hardware store has operated there for nearly 100 years.It's one of the few buildings in town owned by the family that originally built the structure

Observations :--The hardware store has been able to survive for 100 years through event the bleakest economic times in the town. Farmers to turkey ranchers to retailors need hardware goods in the best and worst of times

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NO CRAWL SPACE; FIRST FLOOR MODIFIED TO SLAB OVER GRAVEL FILL.

B. FIRST STORY
NONE

C. SECOND, THIRD, FOURTH, ETC...
SECOND STORY CENTRAL BEAM BEARS ON URM (CONCENTRATED LOAD BEARS OVER LINTEL IN URM WALL; SEVERE CRACKING OBSERVED IN THIS AREA.)

D. ROOF
NO

E. OTHER
NO

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B. IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO; PARTY WALL TO ADJACENT BUILDING

B. SOUTH ELEVATION
YES; OPENING BETWEEN STORES SUPPORTED BY WOODEN LINTEL

C. EAST ELEVATION
YES; LONG DOUBLE WIDE OPENING FOR ACCESS TO STORAGE AREA; WOODEN LINTEL BEARING ON URM

D. WEST ELEVATION
NO. ENTIRE WEST ELEVATION IS TIMBER FRAMED WITH "TIN BRICK" OVER.

E. INTERNAL

NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. P'SEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
NONE

C. SECOND TO THIRD, ETC.
NONE

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
N.A.

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES

C. CEILING TIED / ROOF UNTIED
YES: CEILING JOISTS HAVE ANCHORS INTO URM WALLS ON NORTH AND SOUTH INTERIORS.

D. CEILING AND ROOF TIED
NO

E. OTHER
N.A.

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES- CONCRETE SLAB POURED OVER GRAVEL FILL

B. SECOND FLOOR
YES- TONGUE AND GROOVE FLOORING LAID PERPENDICULAR TO THE FLOOR JOISTS

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES; STAIRWELL OPENING AT INTERIOR SOUTH ELEVATION

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
TONGUE AND GROOVE LAID PERPENDICULAR WITH ROLL ROOFING OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
YES- SECOND FLOOR TIED WITH 5/8" DIA. ANCHORS AT 5'-0" O.C. CEILING TIED WITH STRAPS ON NORTH, ANCHORS ON SOUTH. ROOF UNTIED.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES, BUT VARIES- THREE FOOT MAXIMUM

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES- SEVERE EROSION OF MORTAR ON EAST ELEVATION. OTHER URM WALLS ARE PARTY WALLS.

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES- SEVERE DETERIORATION OF BRICK ON THE EAST ELEVATION

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
YES; MAJOR FRACTURE ON EAST ELEVATION ABOVE BEAM HEADING OPENING. THE CAUSE IS A CONCENTRATED LOAD OF THE SECOND FLOOR BEARING ON CENTER OF TIMBER LINTEL WHICH IS UNDERSIZED AND HAS BEEN DISPLACED OVER TIME.

COMMENTS:
AS ABOVE

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES; CENTRAL BEAM OF FIRST FLOOR BEARS ON URM WALLS E-W.

B. FIRST STORY
YES; OPEN STORE-FRONT ON WEST SIDE BEARS ON URM FACED WITH CAST IRON DECORATIVE WORKS.

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NONE

E. OTHER
MEZZANINE HUNG FROM CEILING JOISTS AROUND THREE SIDES OF MAIN BUILDING.

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B. IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO; PARTY WALL WITH ADJACENT STRUCTURE.

B. SOUTH ELEVATION
YES; WESTERN BAY HAS OPEN STORE-FRONT (UDW-F)

C. EAST ELEVATION
NONE

D. WEST ELEVATION
YES; OPEN STORE-FRONT WITH MAJOR LINTELS (POSSIBLE WOOD COLUMNS)- LINTEL MATERIAL AND CONDITION (UDW-F).

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
NONE

C. SECOND TO THIRD, ETC.
N.A.

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
OFFICE PARTITIONS UNDER MEZZANINE LEVEL

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING JOISTS BEAR ON URM WALLS, ROOF BEARS ON CEILING JOISTS.

C. CEILING TIED / ROOF UNTIED
YES- CEILING TIED WITH 3/8" DIA. BOLTS WITH ROSETTES THROUGH URM AT 5'-0" O.C.

D. CEILING AND ROOF TIED
NO

E. OTHER
N.A.

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
YES: BRACING ALONG CENTRAL PORTION OF THE ROOF.

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES: TONGUE AND GROOVE APPLIED PERPENDICULAR TO JOISTS

B. SECOND FLOOR
N.A.

C. THIRD FLOOR
NONE

D. OTHER FLOORS
MEZZANINE- UDW-F

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES; AT WEST END OF MEZZANINE LEVEL

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
ROLL ROOFING OVER SHIPLAP APPLIED PERPENDICULAR TO RAFTERS.

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
YES; ANCHORAGE WITH 5/8" DIA. BOLTS THROUGH URM AT MAIN FLOOR LEVEL AND CEILING LEVEL AT APPROX. 5'-0"O.C.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES; WEST END APPROX. 6-7' ABOVE CEILING ANCHORAGE. OTHER PARAPETS ARE 2-3' ABOVE CEILING LEVEL.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES; ON ALL ELEVATIONS OF BUILDING EXTERIOR

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
YES; ON ALL EXTERIOR ELEVATIONS.

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE OBSERVED

COMMENTS:
INDICATIONS OF SEVERE DECAY OF STRUCTURAL MEMBERS SUPPORTING MAIN FLOOR
UNUSUALLY WET BASEMENT
MEZZANINE SUSPENDED BY IRON RODS

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 1

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1902
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): NONE

GENERAL DESCRIPTION:
TWO STORY BUILDING, URM ON THREE SIDES WITH URM STREET FRONT USED FOR STORAGE AND DISPLAY FOR HARDWARE STORE NEXT DOOR

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
LOW PARAPETS ON EAST ELEVATION WITH NO TIES EVIDENT

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE AT ROOF. STAIRWELL AT SECOND FLOOR IS ADJACENT TO URM WALL.

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
CEILING LEVEL HAS STRAP ANCHORS TO URM AT EVERY FIFTH JOIST. SECOND FLOOR LEVEL HAS ANCHORS IN N-S DIRECTION. EAST WALL SHOWS NO INDICATION OF ANCHORS, AND SHOULD BE CHECKED TO DETERMINE ANCHORAGE.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
EAST WALL HAS MAJOR OPENING OF APPROX. 14-16 FEET WITH TIMBER BEAM ABOVE(8 BY 8). MAJOR CONCENTRATED LOAD BEARS ON CENTER OF SPAN. SEVERE CRACKING OF URM NOTED AT THIS AREA- WHICH SHOULD BE EVALUATED FURTHER FOR STRUCTURAL RESISTANCE TO GRAVITY AND LATERAL LOADS.

B. OTHER ELEMENTS
AS PER ABOVE

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING:.

EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 1

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION:1891
DATE OF ADDITION(S):NONE
DATE OF RENOVATION(S):NONE

GENERAL DESCRIPTION:
SINGLE STORY BUILDING WITH MEZZANINE IN CONTINUOUS USE AS A HARDWARE STORE SINCE BUILT.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
LOW PARAPETS EXTENDING 2'-0" OR LESS ABOVE ROOF PLANE; HOWEVER, CLOSEST ANCHORS ARE 2-3 FEET LOWER THAN ROOF.

3.OTHERS
NONE OBSERVED

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
ANCHORS FOUND AT CEILING LEVEL; NO OTHER ANCHORS AT MEZZANINE LEVEL OR MAIN FLOOR LEVEL.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONRY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SOME ON WEST ELEVATION

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
WEST ELEVATION HAS STEEL BEAM BEARING ON URM FILLED CAST-IRON COLUMNS(THREE SIDED)- THESE SHOULD BE EVALUATED FOR LATERAL LOAD RESISTANCE.

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
N.A.

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
N.A.

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
BASEMENT AREA VERY WET; JOISTS SHOW DECAY WHERE THEY INTERSECT URM WALL AT MAIN LEVEL.

B. OTHER ELEMENTS
NONE OBSERVED

Oakland	Case Study: 28

Building Name : The Valley

Date Built : 1890

History :

--1890's first of the existing brick building to be built

--1900 originally a drug store with doctor's offices above

--1940's grocery and apartments upstairs

--1970-80's general upkeep of interior apartments,painting,family labor

Assessed Value :

--$1,770	(25%MV)	1957
--$1,900	(25%MV)	1967
-$17,700	(96%MV)	1977
-$29,240	(96%MV)	1984

Ownership&Use :--The current owner bought the building to be part of the ownership of the town she had no specific plans for the building and did not anticipate any rehabilitation of it

Observations :--The building represents what is common in small towns when a building is passed from owner to owner with little or no rehabilitation,as a result the deterioration of of the structure can go uncorrected for years

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: OAKLAND, ORE.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 1

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: UNKNOWN
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1984

GENERAL DESCRIPTION:
URM TWO STORY SCHOOL BUILDING NOW BEING RENOVATED FOR USE AS A COMMUNITY PUBLIC LIBRARY AND SERVICE CENTER. ALTERATIONS PRINCIPALLY AT BASEMENT AND FIRST STORY.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
NONE

3. OTHERS
TWO TIMBER BELL TOWERS ON WEST ELEVATION, URM CHIMNEY. NEEDS TO BE EVALUATED FOR BRICK AND MORTAR CONDITION, LATERAL FORCE RESISTANCE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NORTH AND SOUTH MAJOR STAIRWELLS

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
SECOND FLOOR HAS TIES AT EVERY JOIST IN E-W DIRECTION. MAIN FLOOR UDW-F

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
ROOF/URM WALL INTERSECTION IN POOR CONDITION WITH ERODED MORTAR AND MISSING BRICK.

B. OTHER ELEMENTS
PLYWOOD APPLIED OVER 1X4 NAILERS FOR NEW ROOF. UNABLE TO DETERMINE EXACT CONDITION.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
REINFORCED CONCRETE. NO BEARING ON URM WALLS OR PILASTERS. COLUMNS BEAR ON CONCRETE OR STEEL BEARING PLATES.

B. FIRST STORY
NONE

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NONE

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B. IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
NONE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES; MANY WALLS (2X4'S WITH LATH AND PLASTER) IN BOTH N-S AND E-W DIRECTIONS

B. FIRST STORY TO SECOND
YES; CONTINUOUS FROM BASEMENT LEVEL

C. SECOND TO THIRD, ETC.
YES; CONTINUOUS FROM FIRST STORY

D. TO ROOF
NO WALLS TO ROOF LEVEL FROM CEILING

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING FRAMING BEARS ON URM WALLS. ROOF RAFTERS BEAR ON CEILING JOISTS

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO EVIDENCE OF TIES

E. OTHER
BELL TOWERS ARE OF TIMBER FRAMING EXTENDING ABOVE ROOF LEVEL

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
YES

B. EAST-WEST
YES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; DIAGONAL SHIPLAP WITH TONGUE AND GROOVE FLOORING LAID OVER.

B. SECOND FLOOR
SAME AS FIRST

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
MAJOR STAIRWELLS ON NORTH AND SOUTH HAVE INFILLS BY FIRE CODE; ANCHORAGES IN THESE SEGMENTS UDW-F

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
ONE BY FOUR NAILERS WITH PLYWOOD OVER ENTIRE ROOF

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
ANCHORS ON EVERY JOIST AT SECOND FLOOR DIAPHRAGM. NO ANCHORS SEEN ON MAIN FLOOR OR ROOF

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
NONE

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
YES; PARTICULARLY AT ROOF-WALL INTERSECTIONS WITH LOOSE AND MISSING BRICKS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
GENERAL DETERIORATION OVER ENTIRE BUILDING WITH NO PARTICULARLY SEVERE AREAS

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
ONE MINOR CRACK ON WEST ELEVATION, SEVERAL FRACTURED LIMESTONE SILLS AT CENTER OF SPACE

COMMENTS:
ENGINEERING SURVEYS HAVE BEEN DONE BY SEVERAL FIRMS, UNCLUDING ABK ENGINEERS. DISAGREEMENT AS TO THEIR STRATEGIES FOR SEISMIC REINFORCEMENT. POLITICAL CONTROVERSY EXISTS ABOUT BUILDING WITHIN LOCAL GOVERNMENT AND HISTORICAL PRESERVATION GROUPS.

Oakland	Case Study: 29

Building Name : The Apple

Date Built : 1906

History : --1900's built by a prominent doctor housed dentist office and restaurant

--1970-80's current owner rehabilitated the upper floors for residence and studio on ground floor

Assessed Value : Assessment not available

Ownership&Use :--The owner rehabilitated the structure for his own residence and the ground floor for his studio.

Observations :--The rehabilitation was one of the more extensive for a residence that the team observed in the towns. The quality of finishes and the attention to detail was striking. The owner did not depend on the building for income and owned a successful business within the county

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
SLABS OVER GRAVEL FILL REPLACE ORIGINAL FIRST FLOOR FRAMING

B. FIRST STORY
WEST ELEVATION; FOUR 2X10'S SCABBED AS MAJOR BEAMS BEARING ON URM PILASTERS COVERED WITH CAST IRON SHEATHING

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
NONE; UNIFORM BEARING OF JOIST ON URM WALLS

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NO

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
YES; OPEN STOREFRONT ON WEST SIDE; HEAVY CAST IRON WITH MASONRY INFILL

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
N/A

B. FIRST STORY TO SECOND
YES; AT EAST END OF BUILDING IN N-S, E-W DIRECTIONS EXTENDING WITH PLYWOOD SHEATHING

C. SECOND TO THIRD, ETC.
YES; PARTITION WALLS ON EAST END OF BUILDING, 2X4 WALLS NORTH WITH GWB OVER IN N-S E-W DIRECTIONS

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NO

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING JOISTS BEAR ON URM WALLS WITH ROOF FRAMING OVER

C. CEILING TIED / ROOF UNTIED
YES; CEILING RAFTERS HAVE FIVE EIGHTHS INCH TIES THROUGH URM WALLS AT 6'-0" O.C.

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE

B. EAST-WEST
NONE

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
CONCRETE SLAB

B. SECOND FLOOR
TONGUE AND GROOVE LAID DIAGONALLY WITH HARDWOOD FLOORING LAID PERPENDICULAR OVER. SOME AREAS OF PLYWOOD INFILL AT EAST END

C. THIRD FLOOR
NO

D. OTHER FLOORS
NO

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
INSIGNIFICANT OPENING AT EAST END. STAIRWELL AT NORTH WALL FROM FIRST TO SECOND STORY.

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP WITH PLYWOOD COVERS EAST PORTION OF ROOF

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
ON ALL BUT WEST ELEVATION. 6' FOR FLOORS, 12' FOR CEILINGS. TWO TIES ON EAST ELEVATION.

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES, AT 1'-0" ABOVE ROOF, FLASHED AND CAPPED.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
GENERAL EROSION OF MORTAR EVERYWHERE, MORE PRONOUNCED AT LOWER LEVELS

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
DETERIORATION OVER ENTIRE BUILDING, SEVERE OVER HEAD COURSE ON EAST ELEVATION

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
SMALL CRACKS IN SOUTHERN WALL AT WINDOW OPENING.

COMMENTS:

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: OAKLAND, ORE.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 1

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1890'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1982-83

GENERAL DESCRIPTION:
SMALL TWO STORY STOREFRONT BUILDING WITH APARTMENT ON SECOND FLOOR. LOWER FLOOR NOW USED FOR STORAGE WITH SECOND FLOOR EXTENSIVELY RENOVATED. CONCRETE SLAB ON MAIN FLOOR, ADDITIONAL STRUCTURAL WORK DONE.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
ALL OF WOOD, GOOD CONDITION.

2. PARAPETS (URM)
8" TO 2' AT NE AND SE CORNER

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
MAIN STAIRWAY ADJACENT TO NORTH WALL.

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
ALL HAVE TIES, FLOOR AT 12' O.C., ROOF AT 6' O.C. (VARIES) IN N-S DIRECTION.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE, CANTILEVERED WOOD BAYS IN GOOD CONDITION.

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
WOOD BEAMS BEARING ON URM PILASTERS SHEATHED WITH CAST IRON ON WEST ELEVATION

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
DISCONTINUITY OF WEST AND SOUTH URM WALLS. (SEPARATED BY CORNER BAY); UNABLE TO DETERMINE CONNECTION OF TIES.

B. OTHER ELEMENTS
EXTERIOR MORTAR NEEDS REPOINTING AND SEALING

Oakland	Case Study: 30

Building Name : The Turkeywing

Date Built : 1910

History : --1900's school use

--1970's no longer suitable for school use decision made not to rehabilitate for school purposes

--1980 sold to the town for $1.00

Assessed Value : No Assessment on school property

Ownership&Use :--The town has for the last five years worked out a rehabilitation plan and funding program for the structure, a library is planned for the ground floor and the work will be completed in 1985

Observations :--The rehabilitation effort created a controversy on the seismic strengthening of the structure. It was uncertain how much reinforcement was necessary and how it would be designed. It was one of the few examples where earthquake considerations became a component of the rehabilitation plans

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
URM PILASTER AT EAST END OF BUILDING BEARS A CENTRAL BEAM, WEST END BEARS ON URM WALL, 18X18 PILASTER AGAINST EAST WALL

B. FIRST STORY
UDW-F, PROBABLY NOT WITH CONTINUOUS FLOOR JOISTS FROM URM TO URM

C. SECOND, THIRD, FOURTH, ETC...
FLOOR JOISTS EXTEND ACROSS FROM URM TO URM

D. ROOF
NONE

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B. IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
STOREFRONT WITH URM PLATES OR BEAMS BEARING ON URM WALLS NORTH AND SOUTH.

D. WEST ELEVATION
NONE

E. INTERNAL

NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
NONE

B. FIRST STORY TO SECOND
ONE AT STAIRWELL IN N-S DIRECTION

C. SECOND TO THIRD, ETC.
ONE AT CEILING IN N-S DIRECTION

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; CEILING JOISTS BEAR ON URM WALLS, ROOF JOISTS BEAR ON CEILING RAFTERS

C. CEILING TIED / ROOF UNTIED
YES; CEILING TIED AT 5'-6" O.C. WITH ANCHORS EXTENDING THROUGH URM

D. CEILING AND ROOF TIED
NO

E. OTHER
NONE

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE

B. EAST-WEST
NONE

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
SQUARE EDGED BOARD LAID PERPENDICULAR TO JOIST SYSTEM.

B. SECOND FLOOR
UDW-F

C. THIRD FLOOR
NONE

D. OTHER FLOORS
NONE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SHIPLAP PERPENDICULAR TO ROOF JOISTS WITH ROLL ROOFING OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NO EVIDENCE AT FIRST AND SECOND FLOOR LEVELS, ANCHORS ONLY ON NORTH WALL AT CEILING LEVEL, NO ANCHORS FOR ROOF DIAPHRAGMS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
YES; 10-12 FEET FROM CEILING LEVEL ON EAST ELEVATION, OTHERS LOWER- 6'-8' TYPICAL, NO EVIDENCE OF TIES

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NO

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
GENERAL EROSION OVER ENTIRE BUILDING, LOCAL SEVERE SPOTS ON NORTH ELEVATION

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
SPALLED BRICK ON ALL FACADES, SEVERE LOCALLY ON PARAPET AND URM CORNICE, NORTH WALL DETERIORATED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NORTH WALL AT WINDOW OPENINGS

COMMENTS:
APARTMENTS WITH MID-LEVEL AT WEST END. TIES UDW-F, FALSE CEILINGS IN FIRST AND SECOND FLOORS; NO TIES TO URM. BASEMENT CENTRAL POSTS AND JOISTS SHOW SEVERE DECAY. BASEMENT AREA VERY WET, STANDING WATER IN SOME LOCATIONS.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: OAKLAND, ORE.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .05 g. ATC ZONE 1

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1800'S
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): NONE

GENERAL DESCRIPTION:
TWO STORY URM BUILDING WITH LIBRARY NOW OCCUPYING FORMER STORE FRONT. SECOND STORY HAS OCCUPIED APARTMENTS. LARGE METAL CANOPY OVERHANGS SIDEWALK.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
SOUTH AND EAST ELEVATIONS WITH DETERIORATED MORTAR AND MISSING BRICK

2. PARAPETS (URM)
ALL ELEVATIONS AT 5'-6" FROM CEILING JOISTS IN POOR CONDITION WITH NO EVIDENCE OF TIES.

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
SMALL STAIR OPENING ALONG WEST WALL

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
TIES ONLY ON NORTH ELEVATION, CEILING LEVEL. BUILDING NEEDS TO BE INVESTIGATED FOR OTHER TIES AND ANCHORS.

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
SOUTH, EAST ELEVATIONS AT ROOF AND SECOND FLOOR. BRICK AND MORTAR SHOULD BE CHECKED

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
URM PILASTER AT SE CORNER WITH STEEL LINTEL. DIFFICULT TO DETERMINE EFFECTIVENESS IN LATERAL RESISTANCE.

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
SPALLING, FRACTURED BRICK, MISSING MORTAR IN SOME AREAS, POOR OVERALL MORTAR CONDITION, ESPECIALLY PARAPET AND CORNICES

B. OTHER ELEMENTS
BASEMENT LEVEL VERY WET WITH SOME STANDING WATER. SERIOUS DECAY OF JOISTS AND COLUMNS, WHICH MAY NEED REPLACEMENT.

Bellingham	Case Study: 31

Building Name : The Bayview

Date Built : 1904

History :

--1900 Carnegie Foundation grant of $16,000 for construction

--1900's library use

--1939 stucco covering of brick exterior

--1984 rehabilitation of structure $300,000-400,000

Assessed Value :

--$6,100	(25%MV)	1961
-$24,600	(50%MV)	1971
-$935,000	(100%MV)	1982

Ownership&Use :--The building has been maintained as a library over the years and the city has been involved in a phased rehabilitation of the structure

Observations :--The building is one of the few Fairhaven unreinforced masonry building that is currently being rehabilitated with public funds available for the project

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
PIPE COLUMNS ON INSIDE HAVE PICKED UP BEAM LOADS ON EXTERIOR WALLS (SOUTH). MAJOR BEAM WOOD WITH "JI" SECTION BEAMS ON URM WALLS: 1930'S INSTALLATION AFTER BEAMS ROTTED OUT

B. FIRST STORY
MAJOR BEAMS ON MAIN FLOOR BEAR ON POSTS- POSTS DON'T COINCIDE

C. SECOND, THIRD, FOURTH, ETC...
NOT APPLICABLE

D. ROOF
NONE

E. OTHER
NONE OBSERVED

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE OBSERVED

B. IN INTERIOR OF BUILDING
NO COLUMN CONNECTIONS

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
NONE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES; PRIMARILY IN E-W DIRECTION

B. FIRST STORY TO SECOND
FEW PARTITIONS EXTEND TO THE FLOOR ABOVE, CEILING FOAMED

C. SECOND TO THIRD, ETC.
ONE CROSSWALL IN N-S DIRECTION, SHEATHED WITH PLYWOOD SPANS FULL LENGTH OF BUILDING

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
NO MEZZANINE...

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
PITCHED ROOF WITH CROSSTIE AT HALFWAY POINT, NO LATERAL TIES DIRECTLY ACROSS FROM URM INTERSECTION

B. SEPARATED
see (a)

C. CEILING TIED / ROOF UNTIED
NO TIES OBSERVED BETWEEN GABLE ENDS OF URM WALL AND ROOF FRAMING

D. CEILING AND ROOF TIED
NO

E. OTHER
NO EVIDENCE OF TIES AT ROOF INTERSECTION SHOWN ON DRAWINGS. NO RECOLLECTION BY WORKMEN OF THIS

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NONE

B. EAST-WEST
TRUSSING IN THIS DIRECTION

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
PLYWOOD LAID OVER FORMER FLOOR

B. SECOND FLOOR
DIAGONAL SHIPLAP OVER JOISTS WITH FURRING STRIPS AND TILE & GROUT FLOORING LAID OVER

C. THIRD FLOOR
NONE

D. OTHER FLOORS
BASEMENT SLAB ON GRADE

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
AT STAIRWELL EXTENDING FROM BASEMENT TO SECOND FLOOR WITH BAY

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
COMPOSITION SHINGLES OVER WOOD SHINGLES WITH NAILERS

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NO

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
18" ABOVE ROOF FRAMING INTERSECTION

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED; PLASTERED OVER ON NORTH, WEST AND SOUTH SIDES, BRICK ON EAST SIDE WAS PAINTED OVER

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
SANDSTONE OF FOUNDATION DETERIORATED, REPOINTED

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE ON EXTERIOR. PATCHING OF CEMENT VENEER NOTICED ON SOUTH ELEVATION, SOME CRACKS IN WEST ELEVATION ABOVE ENTRY

COMMENTS:
CHIMNEYS ARE TIED TO ROOF DIAPHRAGM

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: BELLINGHAM, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1905
DATE OF ADDITION(S): (ELEVATOR) 1984
DATE OF RENOVATION(S): 1983-84

GENERAL DESCRIPTION:
A CARNEIGY LIBRARY OF TWO STORIES AND BASEMENT. USED CONTINUOUSLY AS A LIBRARY. SECOND FLOOR NOW MAJOR OPEN SPACE FOR PUBLIC MEETINGS. PITCHED TIMBER FRAMED ROOFS WITH STUCCO OVER BRICKWORK.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
1-2 FEET ABOVE ROOF

3. OTHERS
TWO URM CHIMNEYS ON NORTH END OF BUILDING

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NONE IN EVIDENCE EVEN WITH MOST RECENT WORK

F. GABLE ENDS OF URM WALLS
YES- UNABLE TO DETERMINE METHOD OF SECURING TO ROOF

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

Bellingham	Case Study: 32

Building Name : The Kentucky

Date Built : 1891

History :
--1900's fraternal organization hardware store

--1920's vacated of uses

--1960's closed down as apartment house

--1970's current owner bought the building

Assessed Value :
--$ 721 (25%MV) 1961

-$ 3,600 (50%MV) 1971

-$156,000 (100%MV) 1984

Ownership&Use :--The building has been unoccupied for many years. The upstairs would require a major rehabilitation before rentable space could be created

Observations :--The owner does not have any plans to rehabilitate the building and would rather sell it then commit more resources to maintaining it.

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
CONCRETE FOUNDATION (REINFORCEMENT UNKNOWN); MAJOR FLOOR BEAMS BEAR ON BEAM SEATS INTO CONCRETE

B. FIRST STORY
UDW-F, BUT MAJOR BEAMS SEEM TO BEAR ON URM WALLS

C. SECOND, THIRD, FOURTH, ETC...
JOISTS BEAR ON URM WITH EVIDENCE OF HANGERS TIED TO WOOD IMBEDDED IN THE WALL.

D. ROOF
NONE OBSERVED

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
NONE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES; N-S DIRECTION

B. FIRST STORY TO SECOND
YES; MAIN WALL IN N-S DIRECTION, SEVERAL OTHERS IN E-W DIRECTION (STOCKS VERTICAL TO FLOOR ABOVE)

C. SECOND TO THIRD, ETC.
FREQUENT PARTITIONS IN E-W AND N-S DIRECTION. OPEN IN ATTIC ABOVE THIRD STORY

D. TO ROOF
OPEN ATTIC SPACE

E. OTHER (MEZZANINE, ETC.)
NONE

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES; PITCHED ROOF WITH HIPS ON ENDS, JOISTS BEARING ON URM WITH HANGERS. TOP PLATE ANCHORED TO WALL WITH THREE-FOURTHS INCH BOLTS AT 5'-0" O.C.

C. CEILING TIED / ROOF UNTIED
YES

D. CEILING AND ROOF TIED
NO

E. OTHER
NO

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; DIAGONAL SHIPLAP WITH WOOD FLOOR OVER.

B. SECOND FLOOR
SAME AS FIRST

C. THIRD FLOOR
SAME AS OTHERS

D. OTHER FLOORS
SAME

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
ONE-BY-FOUR NAILERS WITH WOOD SHINGLES AND COMPOSITION ROOFING

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE OBSERVED

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
APPEARS TO HAVE JOIST HANGERS INTO URM WALLS; BEAMS HAVE SEATS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
SOUTH SIDE AT EIGHTEEN INCHES

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
TERRA COTTA SILLS AND VENEERING OVER FOUNDATION APPEARS SECURE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE OBSERVED

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE

COMMENTS:
BUILDING APPEARS SOUND AND WITHOUT SETTLEMENT PROBLEMS. IN VERY GOOD CONDITION OTHER THAN TIMBER FRAMING PROBLEMS ON FIRST FLOOR OVER POOL AREAS. SHOULD BE CHECKED FOR STRUCTURAL DAMAGE, PARTICULARLY NEAR AIR EXCHANGE VENT OVER POOL.

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: BELLINGHAM, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1914-1915
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): NONE

GENERAL DESCRIPTION:
THREE STORY URM BUILDING WITH HABITABLE ATTIC. HAS BEEN USED AS A YWCA RESIDENCE SINCE CONSTRUCTION, WITH ALL ORIGINAL ROOMS AND PARTITIONS. SWIMMING POOL IN BASEMENT AREA.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
NONE

2. PARAPETS (URM)
NONE

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES

NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
INDICATIONS OF ANCHORS AND BEAM SEATS THROUGHOUT BUILDING

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
NONE

B. OTHER ELEMENTS
NONE

Bellingham	Case Study: 33

Building Name : The Garden

Date Built : 1890

History :

--1900's shops on the ground floor offices and later suites upstairs

--1970's major rehabilitation of structure for offices,shops $1,000,000

--1980's upper floor unoccupied retail on ground floor

Assessed Value :

--$ 290	(25%MV)	1961
-$ 1,570	(50%MV)	1971
-$548,500	(100%MV)	1981

Ownership&Use :--The building like many of the unreinforced masonry buildings in the 60's was under-utilized with assessed values under $2,000 It was the time when an entrepreneur could develop a market for space in historic structures

Observations :--The owner spent more on this rehabilitation then any other building we surveyed in the study towns. At the time it was renovated the preservation movement was in fashion but the historic district did not gain the economic strength that was predicted,as a result this rehabilitated structure has remained unoccupied on the upper three stories for several years

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
CRAWL SPACE INACCESSIBLE, UNOBSERVABLE

B. FIRST STORY
YES; NORTH AND WEST ELEVATIONS HAVE MAJOR LINTELS BEARING ON URM

C. SECOND, THIRD, FOURTH, ETC...
UNABLE TO DETERMINE BEARING CONDITION ON SECOND OR THIRD FLOORS; MEZZANINE ADDED BETWEEN THEM

D. ROOF
NONE

E. OTHER
MEZZANINE BEARING (UDW-F)

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
MAJOR TENSION COUNTERS IN E-W DIRECTION AT MEZZANINE, N-S AT THIRD FLOOR LEVEL

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
YES; STOREFRONTS ON NORTH, WEST ELEVATIONS

B. SOUTH ELEVATION
NO

C. EAST ELEVATION
NO

D. WEST ELEVATION
STOREFRONTS

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
INACCESSIBLE CRAWL SPACE

B. FIRST STORY TO SECOND
YES; N-S AND E-W

C. SECOND TO THIRD, ETC.
SAME AS ABOVE

D. TO ROOF
NONE

E. OTHER (MEZZANINE, ETC.)
MEZZANINE BETWEEN FLOORS ONE AND TWO

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
JOISTS BEAR ON URM; ROOF JOISTS BEAR ON CEILING JOISTS WITH CRIPPLE WALL

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NO EVIDENCE OF ANCHORS IN ROOF OR CEILING

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
UDW-F

B. SECOND FLOOR

DISCONTINUITY OF FLOORING MATERIALS WITH PLYWOOD PATCHES WHERE OLD FLOORING WAS REMOVED

C. THIRD FLOOR
SAME AS SECOND

D. OTHER FLOORS
NO

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
SQUARE EDGE BOARDS PERPENDICULAR WITH HOT MOP ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NO

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE IN EVIDENCE

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
5'-0" AT NORTH ELEVATION TIED BACK TO ROOF DIAPHRAGM

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE VISIBLE

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE VISIBLE

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE

COMMENTS:

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: BELLINGHAM, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1890
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1970'S

GENERAL DESCRIPTION:
THREE STORY URM BUILDING WITH TWO STREET FACES, RENOVATED IN 1970'S WITH LARGE OPEN INTERIOR COURT EXTENDING FULL THREE STORIES

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
TIED TO ROOF ON NORTH FACE, 5 FEET HIGH

2. PARAPETS (URM)
NONE

3. OTHERS
NONE

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
ALL BUILDING SEGMENTS FINISHED (UDW-F)

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
YES; ON NORTH AND WEST ELEVATIONS

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
BUILDING EXTENSIVELY REHABED AND MODIFIED, NOT ABLE TO DETERMINE IF THERE ARE ANY PROVISIONS FOR SEISMIC HAZARDS

B. OTHER ELEMENTS
NONE

Bellingham	Case Study: 34

Building Name : The Park

Date Built : 1892

History :

--1900's city hall building

--1940's museum has occupied the space

--1960 fire and beginning of phased rehabilitation

--1970's phased rehabilitation of $750,000 (66-74)

Assessed Value :

--$4,900	(25%MV)	1961
-$24,600	(50%MV)	1971
-$935,600	(100%MV)	1981

Ownership&Use :--The building has been in public and historical society ownership since it was built at the turn of the century, it has been well preserved with public funds and donations

Observations :--The structure has benefited over the years from fund drives and public funding as a result the phasing of rehabilitation and maintenance has kept this building in excellent condition, and reduced the potential hazards caused by deterioration

FIELD SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
NONE

B. FIRST STORY
UDW-F

C. SECOND, THIRD, FOURTH, ETC...
UDW-F

D. ROOF
NONE

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE

B.IN INTERIOR OF BUILDING
NONE

C. OTHER LOCATIONS
NONE

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
NONE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
YES; E-W AND N-S DIRECTIONS

B. FIRST STORY TO SECOND
YES; E-W AND N-S DIRECTION

C. SECOND TO THIRD, ETC.
NONE

D. TO ROOF
YES

E. OTHER (MEZZANINE, ETC.)
N-S AND E-W ON MEZZANINE LEVEL

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
YES

C. CEILING TIED / ROOF UNTIED
UDW-F

D. CEILING AND ROOF TIED
UDW-F

E. OTHER
NONE

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
NO

B. EAST-WEST
NO

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES

B. SECOND FLOOR
YES

C. THIRD FLOOR
YES; PLYWOOD WITH MASONITE

D. OTHER FLOORS
SAME AS THIRD

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
NO

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
METAL (TERNE METAL)- UNABLE TO DETERMINE UNDERNEATH

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
ARRANGEMENT INVOLVED MANY DIFFERENT CONFIGURATIONS

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
UDW-F

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
CORNICES ARE WOOD, NO PARAPETS

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
STONE BELTCOURSE IN GOOD CONDITION

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
NONE

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
NONE

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
NONE VISIBLE

COMMENTS:

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: BELINGHAM, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE 5

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1890's
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): 1970's

GENERAL DESCRIPTION:
MAJOR THREE STORY URM BUILDING WITH MANY TOWERS AND STEEPLES WITH LARGE OPEN SPACE TO SECOND STORY. FORMERLY CITY HALL, NOW RENOVATED INTO A COUNTY MUSEUM. EXTENSIVE ENGINEERED STRUCTURAL WORK DONE DURING RENOVATION.

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
ALL APPLICATIONS ARE WOOD

2. PARAPETS (URM)
NONE

3. OTHERS
URM TURRETS IN FOUR PLACES.

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
YES, BUT BASE OF MANSARD IS FLOOR

2. ROOF EDGES PITCHED FOR DRAINAGE
YES

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE OBSERVED

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NOT ABLE TO OBSERVE (UDW-F)

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
NONE

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
EXTENSIVE RENOVATION INCLUDES STRUCTURAL WORK (PLYWOOD SHEATHING ON INTERIOR BOLTED CONNECTIONS, ETC.) TO WITHSTAND LATERAL FORCES

B. OTHER ELEMENTS
NONE

Bellingham	Case Study: 35

Building Name : The Canada

Date Built : 1915

History : --1900's YWCA use of building

--1970's reroofing and general maintenance of structure

Assessed Value :--$4,150 (25%MV) 1961

-$20,750 (50%MV) 1971

-$615,535 (100%MV) 1981

Ownership&Use :--The building has been in constant use by the YWCA since it was built in the 1900's It is younger than most of the turn of the century buildings the team studied but was occupied through the years and well maintained

Observations :--The good condition of the structure can be attributed to the level of upkeep, the quality of construction, continuous occupation and a varity of factors that were not characteristic of other study buildings

FIELD
SURVEY FOR SEISMIC RESISTANCE EVALUATION
NSF SMALL TOWNS- SEISMIC GRANT

I. ARE THERE ANY BEAMS, TRUSSES OR MAJOR LINTELS THAT BEAR ON URM PIERS, PILASTERS OR WALLS?

A. FOUNDATION/ BASEMENT/ CRAWL SPACE
YES; MAJOR CENTRAL BEAM BEARS ON CHUCKANUT SANDSTONE PILASTERS; STEEL BEAM OVER GARAGE DOOR BEARS ON URM (WEST ELEVATION)

B. FIRST STORY
OPEN STOREFRONTS ON EAST ELEVATION HAVE LINTELS OF UNKNOWN MATERIAL BEARING ON URM WALLS AT ENDS. CENTRAL COLUMNS ARE CAST IRON

C. SECOND, THIRD, FOURTH, ETC...
NONE

D. ROOF
YES; LARGE TRUSSES IN N-S DIRECTION BEAR ON URM WALLS AT BOTH EAST AND WEST ENDS OF THE BUILDING

E. OTHER
NONE

II. ARE THERE ANY LOAD CARRYING SYSTEMS THAT MAY ACT AS TIES TO VERTICAL LATERAL LOAD RESISTING ELEMENTS?

A. ON EXTERIOR OF BUILDING
NONE OBSERVED

B.IN INTERIOR OF BUILDING
NONE OBSERVED

C. OTHER LOCATIONS
NONE OBSERVED

III. ARE THERE ANY URM WALLS THAT ARE DISCONTINUOUS TO THE BASE OF THE BUILDING?

A. NORTH ELEVATION
NONE

B. SOUTH ELEVATION
NONE

C. EAST ELEVATION
YES; OPEN STOREFRONTS WITH URM WALL ABOVE

D. WEST ELEVATION
NONE

E. INTERNAL
NONE

IV. ARE THERE ANY WALLS THAT ARE CONTINUOUS BETWEEN ROOFS OR FLOORS AND ROOF? (NOT NECESSARILY LOAD BEARING)

A. BASEMENT TO FIRST STORY
FRAME WALL BETWEEN CENTRAL PILASTERS IN E-W DIRECTION

B. FIRST STORY TO SECOND
TWO CROSSWALLS IN E-W DIRECTION ACROSS ENTIRE BUILDING

C. SECOND TO THIRD, ETC.
MANY CROSSWALLS IN BOTH N-S AND E-W DIRECTIONS
THIRD: CROSSWALLS IN N-S DIRECTION

D. TO ROOF
SKYLIGHT WELL WALLS EXTEND FROM CEILING TO ROOF

E. OTHER (MEZZANINE, ETC.)
MEZZANINE IN BACK OF SOUTH STORE ON MAIN FLOOR

V. ARE THE ROOF AND CEILING FRAMING...

A. THE SAME
NO

B. SEPARATED
CEILING AND ROOF SUPPORTED BY MAJOR TRUSSES IN N-S DIRECTION WITH SEPARATE CUTING JOISTS AND ROOF RAFTERS IN CENTER OF BUILDING. UNABLE TO LOCATE TIES OF TRUSSES

C. CEILING TIED / ROOF UNTIED
NO

D. CEILING AND ROOF TIED
NO

E. OTHER
NONE

VI. ARE THERE ANY "UNDESIGNED" TRUSSES THAT MAY GIVE STIFFNESS TO THE ROOF ASSEMBLY IN A PARTICULAR DIRECTION?

A. NORTH- SOUTH
MAJOR TRUSS LINES

B. EAST-WEST
EXTENSIVE CROSS-BRACING BETWEEN TRUSSES

VII. IS THERE CONTINUITY OF FLOORING MATERIAL OVER THE ENTIRE FLOOR?

A. FIRST FLOOR
YES; DIAGONAL ONE-BY-TWELVES WITH WOOD FLOORING LAID OVER

B. SECOND FLOOR
SAME AS FIRST

C. THIRD FLOOR
SAME AS FIRST

D. OTHER FLOORS
SAME AS PREVIOUSLY

VIII. ARE THERE ANY OPENINGS THROUGH FLOORS ADJACENT TO A URM WALL?
YES; CENTRAL STAIRCASE THROUGH TO SECOND FLOOR

IX. WHAT ARE THE ROOF SHEATHING AND ROOFING MATERIALS?
STRAIGHT BOARDS LAID PERPENDICULAR TO JOISTS WITH HOT MOP ROOFING APPLIED OVER

X. ARE THERE DISCONTINUITIES IN ROOF SHEATHING OR ROOFING MATERIALS ADJACENT TO URM WALLS?
NONE

XI. IS THERE ANCHORAGE OF URM WALLS TO FLOORS AND ROOFS?
NONE ON MAIN FLOOR, NOT OBSERVED ON OTHER FLOORS. MAJOR ROOF TRUSSES ARE TIED TO URM WALLS

XII. ARE THERE ANY PARAPETS/CORNICES ABOVE EXISTING ANCHORAGE LEVELS? (GIVE APPROX. HEIGHT)
ON SOUTH END URM PARAPETS ON NORTH, SOUTH AND EAST SIDES AT 4-5'-0" HIGH UNSUPPORTED. URM CORNICE ON EAST ELEVATION.

XIII. ARE THERE ANY TERRA COTTA, CAST STONE OR STONE FACINGS SECURELY ANCHORED?
NONE

XIV. ARE THERE ANY AREAS OF ERODED MORTAR?
SEVERE DETERIORATION OF MORTAR AND LARGE AREA OF MISSING BRICK ON SOUTH ELEVATION

XV. ARE THERE ANY AREAS OF DETERIORATED BRICK OR STONE?
SOUTH ELEVATION WHERE CEMENT PLASTER COAT COVERED POORLY

XVI. ARE THERE ANY CRACKS VISIBLE IN URM WALLS AND WHAT MAY HAVE BEEN THE CAUSE?
SMALL CRACKS ON WEST ELEVATION- NO MAJOR CRACKING.

COMMENTS:

IDENTIFICATION OF HAZARDOUS BUILDING ELEMENTS

BUILDING: BELLINGHAM, WA.
EPA (EFFECTIVE PEAK ACCELERATION) ZONE- .2 g. ATC ZONE B

DESCRIPTION OF BUILDING

DATE OF CONSTRUCTION: 1891
DATE OF ADDITION(S): NONE
DATE OF RENOVATION(S): NONE

GENERAL DESCRIPTION:
THREE STORY URM BUILDING WITH STOREFRONTS ON MAIN LEVEL, UPPER STORIES UNOCCUPIED. ORIGINALLY BUILT AS A MASONIC TEMPLE WITH LARGE MEETING ROOMS ON UPPER FLOORS. MAIN FLOOR LEVEL COSMETICALLY MODERNIZED IN THE 1950'S

IDENTIFICATION OF POTENTIALLY HAZARDOUS BUILDING ELEMENTS

I- EFFECTIVE PEAK ACCELERATION- 0.1 G.

A. EXTENSIONS OR ATTACHMENTS ABOVE UPPERMOST (OR POTENTIAL) ANCHORAGE LEVEL

1. CORNICES (URM)
URM CORNICES ON EAST ELEVATION OF BUILDING

2. PARAPETS (URM)
ON EAST, NORTH AND SOUTH ELEVATIONS. UNABLE TO DETERMINE HEIGHT OR TIES DUE TO INACCESSIBLE ROOF

3. OTHERS
CHIMNEYS ON SOUTH AND NORTH ELEVATIONS

B. URM WALLS ADJACENT TO ROOF ELEMENTS NOT CONTINUOUS WITH MAJOR PLANE OF ROOF SHEATHING

1. MANSARD ROOFS
NONE

2. ROOF EDGES PITCHED FOR DRAINAGE
NONE

3. NORTH SKYLIT ROOFS
NONE

4. OTHERS
NONE

C. URM WALLS ADJACENT TO SKYLIGHTS AND/OR OTHER OPENINGS THROUGH ROOF(S) AND/OR FLOOR(S)
NONE

D. URM WALLS WITH UNBONDED VENEER COURSES
NONE

E. URM WALLS WITHOUT ANCHORS TO ROOF(S) AND FLOOR(S) ABOVE GROUND
NO EVIDENCE OF ANCHORS ANYWHERE

F. GABLE ENDS OF URM WALLS
NONE

G. MASONARY ORNAMENTATION CANTILEVERING FROM URM WALL FACE
YES; ON EAST ELEVATION, CONDITION- POOR

II- EFFECTIVE PEAK ACCELERATION- 0.2 G.

A. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF A NON DUCTILE CONCRETE BEAM AND COLUMN SYSTEM THAT PROVIDES VERTICAL SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
NONE

B. VERTICAL LOAD CARRYING SYSTEM CONSISTING OF STEEL BEAMS SUPPORTED ON MASONARY PIERS OR COLUMNS THAT PROVIDES SUPPORT FOR A URM WALL THAT IS NOT CONTINUOUS TO THE BASE OF THE BUILDING
STEEL BEAMS RESTING ON URM PIERS AT EAST AND WEST ELEVATIONS

III- EFFECTIVE PEAK ACCELERATION- 0.4 G.

A. ALL URM WALLS WITH OR WITHOUT OPENINGS THAT EXTEND UPWARD FROM THE BASE OF THE BUILDING
NONE

B. ALL URM WALLS WITH OR WITHOUT OPENINGS FOR DOORS AND/OR WINDOWS THAT ARE NOT CONTINUOUS WITH THE BASE OF THE BUILDING
NONE

IV- UNUSUAL OR SPECIAL CONDITIONS

A. SPECIAL CONSIDERATIONS
SOME EROSION OF BRICK AND MORTAR ON NORTH FACE

B. OTHER ELEMENTS

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November 6, 1984

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Re: Earthquake Liability

The opinion letter below discusses those features of substantive law which could most obviously support liability claims against owners, former owners and public entities in the event of an earthquake. This letter will set forth a number of established legal rules that act as guidelines with respect to the liability issue. The outline of this letter is as follows:

I. Liability of Owners, Former Owners and their Agents

- A. Nuisance
- B. Trespass
- C. Negligence
- D. Fraud, Negligent Misrepresentation and Nondisclosure

II. Liability of Public Entities

- A. Washington Law
- B. Liability as Owner of Property
- C. Liability as Function of Governmental Service

III. Remedies

- A. Insurance
- B. Legislation
  - 1. State Historical Building Code

While an earthquake remains an "act of God", it effects on people and structures might not be so classified. This comes about as a result of scientific and technical advances as will as expanding fields of liability for property owners and public entities. This letter outlines the traditional grounds for liability and discusses in detail the current developments in the expanding tort liability field.

I. Liability of Owners, Former Owners and their Agents

A. Nuisance

The ownership of real property is not absolute. One of the common law concepts which recognizes and effects such limitations is the law of nuisance. Nuisance can be defined as a unreasonable interference caused by unreasonable use of property. Private nuisance is the interference with an individuals' right to

use and enjoy his property. Public nuisance is the interference with the rights of a considerable number of persons or their property (RCW 7.48.130).

The Washington Supreme Court has construed the law of nuisance to confer a cause of action for reasonable fear of harm to persons or property. Ferry v. Seattle, 116 Wash. 648 (1921), rehearing 111 Wash. 661 (1921). Thus, an adjoining landowner or public entity could obtain injunctive relief to force an offending party to correct an existing or threatened nuisance or trespass. Additionally, a public entity could take abatement and/or criminal action against public nuisances (RCW 9.66.010 and RCW 9.66.040). See also Uniform Building Code (UBC), Section 203- Unsafe Buildings or Structures and Seattle Municipal Code (SMC), Section 22.104.030 - Unsafe Building and Emergency Orders.

B. Trespass

Any unauthorized entry on another's land is a trespass. The entry need not be a direct one by a person. Indirect entry by a foreign material is actionable. Zimmer v. Stephenson, 66 Wn.2d 477, 463 P.2d 343 (1965).

C. Negligence

Possible Defendants in a negligence action include the architect, the developer, the contractor, the prior owner and the city, county or other public entity involved in a building damaged and/or causing damage in an earthquake. Because of the nature of negligence litigation numerous questions of joinder and cross-pleadings have to be considered and will most likely occur.

Plaintiff's burden of proving negligence in an earthquake case will not be onerous. Experience in analogous fields (i.e., landslide and wind damage cases) indicates that it is not difficult to convince judges and juries that when a building crumbles, someone involved in its maintenance, development and/or inspection must have been negligent. A jury can be expected to sympathize with a injured Plaintiff's plight.

Negligence is conduct falling below the standard established by law for the protection of others against unreasonable risk of harm. The essential elements of actionable negligence are as follows:

1. Legal duty owed by Defendant to Plaintiff;
2. Violation of that duty by Defendant; and
3. Injury to Plaintiff proximately caused by the violation.

Duty

The foreseeability of the risk is the first significant ground for determining the existence of a duty. In other words, could the Defendant reasonably foresee that his conduct would cause injury to the Plaintiff? This is a question of Law.

With regard to the foreseeability issue, it must be concluded that it is reasonably foreseeable in Western Washington that recuring quakes will occur of more or less intensity corresponding to intensity VII or higher on the Modified Mercalli Scale (UBC - Seismic Risk Map of United States).

The relationship/privity of the Plaintiff to the Defendant is the second significant ground for determining the existence of a duty.

The traditional rule held that a Defendant owed a duty only to those persons with whom he was in privity. This in effect insulated from liability for negligence a Defendant who did not have a direct contractual relationship to the injured party. The contractual privity rule has been substantially modified over the years. For example, in non-contractual privity cases the criteria for finding a duty and resultant liability have been described as follows:

> The determination whether in a specific case the Defendant will be held liable to a third person not in privity is a matter of policy and involves the balancing of various factors, among which are the extent to which the transaction was intended to affect the Plaintiff, the foreseeability of harm to him, the degree of certainty that the Plaintiff suffered injury, the closeness of the connection between the Defendant's conduct and the injury suffered, the moral blame attached to the Defendant's conduct, and the policy of preventing future harm.

Biakanja v. Irving, 49 C.2d 647, 320 P.2d 16 (1958).

Another ground for the establishment of a duty turns on whether the Plaintiff is within that class of persons who can qualify as third-party beneficiaries of a contract executed by others and, thus is owed a duty. For example, the owner of a building damaged by the crumbling of another recently renovated building could sue the architect of the crumbled building since the damage might be held to be reasonably foreseeable. In essence, the theory of recovery is that the architect of a renovated building knows, or should have known, that certain engineering principles could be used to minimize or eliminate potential earthquake damage. If the architect fails to employ accepted engineering principles to minimize the hazards to life or property, then it can be argued that he has been negligent.

Standard of Conduct

If the Defendant (owner or his agent) is found to have a duty with respect to a Plaintiff, then such duty involves some standard of conduct.

The standard of conduct for engineers and architects is to exercise the ordinary skill and competence of members of their profession as found in the State of Washington. The engineer or architect is not just liable to his client but also to anyone who foreseeably and with reasonable certainty may be injured by his failure to use ordinary care, even though his work has been accepted by the client.

The standard of conduct for the owner of a building is defined as to the status of the Plaintiff.

1. Persons Outside of Premises

There is a duty to exercise reasonable care with regard to activities on the premises and an affirmative duty to take reasonable steps to inspect the premises and keep them in repair. A building owner has a affirmative duty to see that his building is maintained so as not to be a source of danger (i.e., falling objects) to users on the street (Restatement of Torts 2d - Sections 364 and 365).

2. Persons on the Premises

The duty to persons on the premises depends upon the classification: trespasser, licensee or invitee. The duty owned to a trespasser is only not to injur through willfull or wanton negligence. The duty owned to a licensee is to exercise reasonable care with regard to any known dangerous condition when it can be reasonably anticipated that the licensee will not discover or realize its risk. The duty owed to an invitee is to use ordinary care to keep and maintain the premises in a reasonably safe condition. These rules have a number of exceptions for actual and/or constructive knowledge, children and attractive nuisances.

Another standard of conduct is one which is defined by statute, ordinance or administrative regulation. The violation of a statutory standard which defines a duty is negligence per se, and is conclusive on the issue of negligence. Cook v. Seidenverg, 36 Wn.2d 256, 217 P.2d 513 (1951). In order to find negligence per se based upon a violation of a statute, three requirements must be met:

a. The statute must have been intended to protect a class of persons which includes the Plaintiff;

b. The statute must have been intended to prevent the type of harm that occurred; and

c. The Defendant must have been able to prevent the violation by the exercise of ordinary care.

The State Building Code Act requires that the Uniform Building Code be in effect in all cities, towns and counties of the state and the respective local governments are required to administer and enforce the codes (RCW 19.27.050). However, a number of small towns in Washington do not enforce the building code as it pertains to earthquake regulations (UBC - Section 2312) because of the widespread belief that enforcement would be too expensive and/or their liability would be less if they did not enforce the code than if they enforced it inadequately. The public entities' liability for this type of attitude is discussed later in this opinion letter. The owner's or his agent's liability for their conscious or unconscious disregard of the State Building Code Act constitutes negligence per se.

The RCW 19.27.170 exemption for compliance with the State Building Code is narrowly limited to buildings officially designated by a legislative body as being of special historical or architectural significance and only when the restoration work will render the building less hazardous that the existing building.

Proximate Cause

Once a legal duty is established and failure to conform to the accepted standard is shown, the Plaintiff must still prove that his injury was proximately caused by the Defendant's action or lack of action. At this point, most Defendants plead that it was an "act of God" that caused the damage. However, there is growing and almost overwhelming willingness of the courts to discount the significance of the defense that contends all injuries resulting from natural disasters are unavoidable accidents. This change in judicial attitude results from technological advances which reduce the credibility of the act of God defense. Thus, while the earthquake itself remains an act of God, its effect on people and structures are foreseeable. It is possible to modify old buildings such that they do not pose serious hazards to life.

The act of God defense was ruled by the California Supreme Court to have no place in modern pleadings. Butigar v. Yellow Cab Co., 49 C.2d 652, 320 P.2d 500 (1958). The Washington Supreme Court has strictly limited the defense to an occurence which was not intended, and which, under all circumstances, could not have been forseen or prevented by the exercise of reasonable precaution (emphasis added). Van Ry v. Montgomery 58 Wn.2d 46, 360 P.2d 573 (1961).

An injury caused by a building damaged in an earthquake which was not repaired or maintained to withstand earthquakes expected for this area clearly does not fall within the unavoidable accident outlined by Van Ry, supra.

On the other hand, an earthquake is an act of God within the strict meaning of the phrase, when it is the sole cause of the injury complained of, without any intervening negligence on the part of the persons sought to be charged. Slater v. South Carolina R.R., 29 S.C.96, 6 S.E. 936 (1888).

Salter, supra, is the exception not the rule. The Courts have consistently held that the act of God defense will not apply where an intervening human agency contributes to cause the damage complained of or such damage could have been avoided by reasonable precautions. As stated in Riddle v. Baltimore & Ohio R. Co., 137 W. V.A. 733, 73 S.E. 2d 793 (1952) "that which reasonable human foresight, pains and care should have prevented may not be called an act of God". See also Southern Air Transport v. Gulf Airways, 215 L.A. 366, 40 So.2d 787 (1949) - Airplane blown over in exceedingly high winds was actionable due to failure of pilot to lock the breaks; Short v. Kern, 104 Ind. App. 118, 9 N.E. 2d 114 (1937) - Tree blown over in high wind was actionable due to improper maintenance of root base.

In Teter v. Olympia Lodge No. 1, 195 Wash. 185, 80 P.2d 547 (1938), the Washington Supreme Court ruled against the act of God defense as follows:

> While it is likely the wall would not have fallen on the night of the 16th if it were not for the occurrence of a strong gale, yet we do not conceive that this fact absolves the appellant from responsibility. The occurrence of strong winds in the winter months was reasonable to be expected. We are not persuaded that the wind on the night of February 16th, strong as it was, was so unprecedented as to fall within the definition of an act of God and the sole cause of the collapse. The most that can be said is that the strong wind concurred with the negligence of the appellant in producing the result. "In order that this rule may apply the act of God must be the sole cause of injury, for if an act of God and the negligence of an individual are concurring causes of an injury, the individual who was guilty of negligence is liable for the injury. One who is under a duty to protect others against injury cannot escape liability for injury to the person or property of such others on the ground that it was caused by an act of God unless the natural phenomenon which caused the injury was so far outside the range of human experiences that ordinary care did not require that it should be anticipated or provided against, and it is not sufficient that such phenomena are unusual or of rare occurrence. The fact that one was negligent in failing to take proper precautions against ordinary occurrences will not charge him with liability for an injury caused by an act of God, which would have caused the injury even had proper precautions been taken, but the fact that an injury was actually caused by a natural phenomenon of such unusual nature that it might be termed an 'act of God' will not excuse from liability where precautions which should have been taken to guard against occurrences which should have been expected were negligently omitted and such precautions would have prevented the injury." 45 C. J. 736, Section 127.

D. Fraud, Misrepresentation and Nondisclosure

Fraud

A false representation with the intent to mislead under the circumstances which entitle the Plaintiff to rely thereon and which Plaintiff did rely is actionable. Swanson v. Solomon, 50 Wn. 2d 825, 314 P.2d 655 (1957). The quantum of proof required for fraud is evidence that is clear, cogent and convincing. In practice, this means the evidence must be more than a prepondence (more likely than not as in negligence cases) and less than beyond a reasonable doubt (as in criminal cases).

The more general the representation, the more difficult it is to establish that the representation was one of fact on which the Plaintiff/Purchaser was entitled to rely and did. If the statement is construed by the Court to be mere opinion, or "sales talk", an action for fraud will not be successful. Lincoln v. Keene, 51 Wn. 2d 171, 316 P.2d 899 (1957).

Analogous cases can be found involving "solid ground" sales which in reality were "fill". 80 ALR 2d 1453 - Liability of vendor of structure for failure to disclose that it was built on filled ground; 141 ALR 967 - Duty of vendor of real property to disclose to purchaser conditions of builing which affect health and safety of persons using same; Rothstein v. Janss Inv. Corp., 45 CA 2d 64; 113 P.2d 465 (1941); Worthen v. Jackson, 139 CA 2d 615, 293 P.2d 797 (1956); Burkett v. J. A. Thompson & Son, 150 CA 2d 523, 310 P.2d 56 (1957); Cohen v. Vivian, 141 Colo. 443, 349 P.2d 366 (1960).

Negligent Misrepresentation

A false representation negligently made under circumstances which entitle the Plaintiff to rely thereon, and which Plaintiff did rely is actionable. Fraud to be actionable requires the intent to mislead. In negligent misrepresentation, the Defendant's conduct is measured by the duty of care in making the statement. The Defendant's good faith belief that the representation is true is no defense.

In Doran v. Millard Dev. Corp., 159 CA 2d 322, 323 P.2d 792 (1958), the Court held that the positive representation by a vendor that the building conformed to local ordinances and that the foundation was "properly built" was not mere sales talk and was actionable, even through the vendor believed it to be true since in fact the foundation was infested with wood-rot and did not comply with building ordinances of the City. In Liner v. Armstrong Homes, 19 Wn. App. 921, 579 P.2d 367 (1978), the Court held that a false representation (i.e., presence of well) as to a material fact is actionable although made through a honest mistake since the representation was made carelessly and without knowledge as to their truth of falsity.

Nondisclosure (Constructive Fraud)

The seller of real property and his agent are under an affirmative duty to disclose to a prospective buyer the facts materially affecting the value or condition of his property; suppression of material facts, with intent to mislead the buyer or induce him to alter his position to his injury or risk, constitutes constructive fraud.

Again analogous cases can be found in the nondisclosure of the "filled" condition of land. In Sorrell v. Young, 6 Wn. App. 220, 491 P.2d 1312 (1971), the Court held as folows:

> We conceive the essential "elements" in proof of constructive fraud by nondisclosure of the existence of a land fill to be: (1) a vendor, knowing that the land has been filled, fails to disclose that fact to a purchaser of the property, and (2) the purchaser is unaware of the existence of the fill because either he has had no opportunity to inspect the property, or the existence of the fill was not apparent or readily ascertainable, and (3) the value of the property is materially affected by the existence of the fill. When these three elements have been proved, a vendor's duty imposed by Obde's general standard of justice, equity, and fair dealing has been violated, and a purchaser of land is entitled to rescind.

Additionally, it could be argued that Doran, supra, and Liner, supra stand for the proposition that a silent seller may be held liable for failure to disclose a fact not known to him but which he would have discovered in the existence of reasonable care.

"As is" or "Inspection" Clauses

Sellers often try to obtain some protection against liability for fraud, negligent misrepresentation and nondisclosure by inserting exculpatory language in the sales contract. Typical clauses include:

1. The sold "as is"; or
2. The buyer has inspected the building and as a result of the inspection is satisfied with its condition.

As a general rule, it is better for the seller to disclose the specific condition than to attempt to exculpate himself against its nondisclosure.

The limited effectiveness of an "as is" clause was discussed in Lingsch v. Savage, 213 CA 2d 729, 410 P.2d 563 (1963):

> A provision in a contract of sale that the buyer takes the property in the condition in which it is , or "as is" does not necessarily confer on the seller a general immunity from liability from fraud.... We are of the opinion that, generally speaking, such a provision means that the buyer takes the property in the condition visible to or observable by him....Where the seller actively misrepresents...or fails to disclose the true facts of the property's condition not within the buyer's reach and affecting the value or desirability of the property, an "as is" provision is ineffective to relieve the seller of either his "affirmative" or "negative" fraud....An "as is" provision may therefore by effective as to a dilapidated stairway but not as to a missing structural member, a subterranean creek in the backyard or an unexploded bomb buried in the basement, all being known to the seller.

Of course, if the purchaser knows or through inspection "learns the true facts", then there is no claim since there is no reliance upon the seller's false, negligent or silent misrepresentations.

On the other hand, official approval by city/county inspectors of a building is not a defense to an action for seller's misrepresentations as to the condition of the building. Burkett, supra. Again, the purchaser must "learn the true facts" not just get approval from third-parties.

II. Liability of Public Entities

The basic question is an follows:

> Can public entities be held liable for injuries or losses in an earthquake by its failure to eliminate a hazard that they know of or should have known of?

The answer is yes with regard to public entities' ownership of property and it depends on the facts of the case with regard to public entities' provision of services.

There was a time when "the King could do no wrong" and suits against public entities were barred. During the first half of the twentieth century, a basic distinction was made between the "proprietary functions" of a public entity and its "governmental functions". If a tort was commited in pursuit of a governmental function, then the public entity was entirely immune; if, however, the tort occurred in the course of a proprietary function, then the public entity would be as liable as any private party.

A. Washington Law

Washington was a State whose legal rules were cut from the traditional cloth until 1967. In that year, the Washington Legislature enacted RCW 4.92.090 which provides that the State, "whether acting in its governmental or proprietary capacity, shall be liable for damages arising out of its tortious conduct to the same extent as if it were a private person." This rule extends to all political subdivisions within the State (RCW 4.96.010).

Despite the explicit statutory language, the Washington Supreme Court has erected two barriers to governmental tort liability. The first is the "discretionary governmental acts" exception, which reinstates complete governmental immunity for high-level policy-making acts. Evangelical United Brethern v. State, 67 Wn.2d 246, 407 P.2d. 440 (1965). The second is the public duty doctrine, which prevents recovery unless the Plaintiff can show a "special relationship" with the public entity. J & B Development v. King County, 100 Wn.2d 299, 669 P.2d 468 (1983).

The first exception is not of great significance to the subject at hand since the Court has ruled that the "discretionary governmental acts" exception is extremely limited in this state. Haslund v. Seattle, 86 Wn.2d 607, 407 P. 2d 440 (1965). In Haslund, supra, the issuance of a building permit was held not to meet the criteria for the "discretionary governmental acts" exception. The Court noted that the questions of policy and discretion were settled at the time the ordinance was adopted not at the time of the issuance of the permit.

The key determination is whether the governmental decision was made at a level high enough within the public entity so as to create public policy, and not whether the government agent exercised judgment when rendering a decision. Chambers-Castanes v. King County, 100 Wn.2d 275, 669 P.2d 451 (1983). In essence, a negligent lower-level governmental decision that implements public policy is not immune from tort liability just as any private corporate decision made negligently is not immune.

The second exception to RCW 4.92.090 and RCW 4.96.010 is, however, of great significance to the subject at hand. The public duty doctrine examines the implementation of government decisions (i.e., permits and inspections) and analyzes how they affect specific individuals or groups.

The public duty doctrine provides that the duties of government agents arising from government activities are owed to the public general and not to any specific individual. Strictly applied, the public duty doctrine would reinstate complete sovereign immunity and thus the Washington Court recognizes an exception to the doctrine where the Plaintiff can show special circumstances creating a special relationship or duty.

In J & B Development, supra, the Court set forth the special relationship exception to the public duty doctine as providing that "for one to recover from a municipal corporation in tort it must be shown that the duty breached was owed to the injured person as an individual and was not merely the breach of an obligation owed to the public in general (i.e., a duty to all is a duty to no one)".

Under existing Washington law, an injured person can show the requisite duty in five ways:

1. A duty exists if a statute or ordinance indicates a clear legislative intent to protect a specified and identifiable class of persons, and if the injured person is a member of the protected class. Halvorson v. Dahl, 89 Wn.2d 673, 574 P.2d 1190 (1978) - Hotel resident died due to fire code violations.

2. A duty exists if the injured person relied on express or implied assurances made by a government agent with whom the injured person had direct contact. J & B Development, supra - Building permit issued erroneously to builder.

3. A duty exists if a government agent is under a statutory obligation to abate a specific known and dangerous condition but fails to do so. This duty applies to persons reasonably within the ambit of the danger involved. Campell v. City of Bellevue, 85 Wn.2d 1, 530 P. 234 (1975) - Neighbor electrocuted in creek by improper wiring known to be improper by city inspector.

4. A duty exists if a government agent undertakes the activity of warning or aiding a person in danger and fails to exercise reasonable care and the offer to render aid is relied upon by either the person to whom the aid is to be rendered and by another who, as to result of the promise, refrains from acting on the victim's behalf. Under this exception, the public entity is liable even if the agent acts gratuitously or beyond his statutory authority. Brown v. Macpherson's Inc., 86 Wn.2d 293, 545 P.2d 13 (1975) - Warning by avalanche expert was not conveyed to area residents even through government employee promised to due so.

5. A duty exists if a government agents fails to abate a known hazard. Adams v. State, 555 P.2d 235 (1976) - State fire inspector held liable for failure to abate after discovery of a known fire hazard (case cited approvingly in Chambers-Castanes, supra). In contrast is Georges v. Tudor, 16 Wn. App. 407, 556 P.2d 564 (1976) in which the Washington Court of Appeals held that a negligent building inspection, (i.e., negligent failure to discover hazard) did not give rise to any liability to lessees and buyers whose property interests were damaged by the building's later collapse.

The public duty doctrine is consistent with general tort principles that the injured party can recover only by showing that the tortfeasor owed him a duty. (See earlier discussion under negligence for owners, former owners and their agents). The doctrine is inconsistent with traditional tort analysis in that

the duty arises only from a special relationship. As noted earlier, traditional tort law imposes a duty upon any one of the following grounds:

(1) Foreseeability of Risk:
(2) Privity/Special Relationship; or
(3) Third-Party Beneficiaries.

The special relationship requirement has been subject to criticism. For example, an recent Washington Law Review article noted the following:

> The special relationship requirement restricts the number of individuals to whom the government owes a duty. Thus, the government is favored over private parties in defending negligence actions. For example, suppose a city fire inspector, pursuant to a statutory inspection program, discovers fire violations in a building but does nothing to force an abatement of the fire hazard. A fire results from this hazard, destroying the building and an adjacent structure owned by the Plaintiff. Plaintiff sues, alleging negligence from the inspector's failure to force compliance with the fire code. Under existing cases, the city would probably not be liable to the Plaintiff in this situation unless the fire code or inspection statutes created a protected class or otherwise clearly imposed liability, or unless direct contact between the Plaintiff and the inspector created reliance. However, under these same circumstances, a private party obligated to inspect buildings for fire hazards would probably be liable to the adjacent landowner. The risk of harm from the negligent fire inspection foreseeably flowed to the neighboring structure.
>
> * * * *
>
> Justice Utter of the Washington Supreme Court, an ardent critic of the public duty doctrine, suggests that the approach used in Washington may not differ significantly from traditional tort analysis. However, any prediction about the future of the public duty doctrine is mere conjecture. The few Washington Supreme Court decisions dealing with the public duty doctrine present such compelling factual situations for finding of governmental liability, and are so narrowly confined to the specific factual situation in each case, that they do not provie a solid basis for determining the boundaries of the public duty doctrine. The doctrine further confuses traditional tort analysis of duty, an already cloudy area of the law.
>
> * * * *

> By using the public duty doctrine instead of traditional tort law, the court is not bound by the historic development of tort principles. Thus, the retention of the public duty doctrine allows the court the opportunity to retreat from conventional tort principles and to relieve the government of the liability through failure to find a special duty.

59 Wash L. Rev. 553 (1984).

III. Remedies

A. Insurance

Although "Earthquake" is normally an excluded risk under standard fire insurance or comprehensive homeowners' policies, it is possible to secure earthquake coverage by payment of an additional premimum. For further discussion on the availability of earthquake insurance, See 47 La. Bar Bulletin 155 (1972) - Insuring the Earthquake Hazard.

B. Legislation

1. State Historical Building Code.

In practice, the legislative and case law outlined above are not woking to reduce lateral force hazards in historical buildings. The laws should be providing clear guidance and incentives to eliminate or minimize the loss of life and property. Rather the laws are uncertain and unpredictable. For example, would local government be liable for damage due to lateral forces if it issued a certificate of occupancy based on a negligent building inspection?

This case would turn on a number of factual issues:

(a) The particular wording of the inspection ordinance.

(b) Any express or implied assurances made to the owner or neighbors in which the government agent had direct contact.

(c) The actions of the local government to abate the hazard once it was known to them.

(d) The actions of the local government to correct their negligent practices once it was known to them the dangers inherent in their existing practices or policies.

This case would also turn on a number of legal issues:

(a) Is the strict public duty/special relationship doctrine clearly adopted by the Washington Supreme Court?

(b) Is the opinion of Justice Utter (concurring in the result) in J & B Development, supra, correct that the Washington Supreme Court has, or if not, should adopt the traditional tort analysis of duty (i.e., foreseeability test).

The existing case law in effect acts as a disincentive to hazard reduction. Tort law can impose certain obligations once a public entity has "actual knowledge" of a hazard. This rule discourages local governments from aggressively seeking information through regular inspection or surveys. Tort law can impose certain obligations once a public entity "undertakes" to provide services. This rule discourages local governments from passing ordinances dealing with ways to improve the structural intregrity of historical buildings.

California has a State Historical Building Code which declares cities and counties not liable for damage to persons or property resulting from earthquakes, on the basis of any earthquake hazard assessment or evaluation (Calif. Health & S. C. section 19161). This statute allows city and county officials to identify and assess seismic hazards without fear of liability costs.

Another alternative within a state historical building code would be to adopt an "earthquake life-safety standard" which would be less rigorous than current standards. When such standards are implemented, local governments would not be liable for personal injuries sustained in earthquakes in any building which complies with said standards.

There is a need for a comprehensive earthquake hazard reduction program. A state historical building code which limits liability is one alternative to allow public entities to establish a "special relationship" (i.e., permits and inspections) with private property owners without opening the door on liability. Attorney's Guide to Earthquake Liability, Association of Bay Area Governments (1979) and Will Local Government be Liable for Earthquake Losses, Association of Bay Area Governments (1979).

IV. Conclusion

As the above opinion letter discusses, there are many areas of potential earthquake liability. The areas of liability primarily relate to hazardous conditions of private and public property and/or the failure to adequately discharge duties either mandated or voluntarily undertaken. Because of the many areas of potential libility, it is the hope of this author that steps will be taken by our State and local governments, as well as private individuals, to counter the potential earthquake liability by clarifying legal uncertainties and actively undertaking a comprehensive hazard reduction program.

Sincerely,

R. Patrick McGreevy

RPM:ms

Washington State Earthquakes 1859-1973

Year	Date	Intensity	Locality
1859	Apr. 2	V	Olympia. Crockery rattled.
1872	Dec 15	VIII+	Olympia. Severe shock. Strong Wenatchee/Chelan
1877	Oct 12	VIII	Cascade Mountains Oregon.
1880	Aug 22	VI	NW Washington.
1880	Dec 13	VI	Puget Sound.
1885	Oct 9	V	Olympia.
1885	Dec 9	V	Woke sleepers in Olympia.
1891	Nov 29	VI	Elevator jammed in Seattle people rushed from buildings in Port Townsend
1892	Apr 17	VI	Near Olympia
1893	Mar 7	VII	Umatilla, Oregon
1903	Mar 14	V	Sharp at Tacoma, Seattle
1904	Mar 17	VII	Seattle,Victoria,Olympic Peninsula. In Seattle people thrown from their feet
1906	June 1	V	Seattle
1909	Jan 11	VII	NW Wash. Walls cracked at Blaine, plaster thrown down at Bellingham
1913	July 29	V	Mt. Rainier
1913	Dec 25	V	Seattle
1914	Sep 5	V	Olympia,Auburn,Tacoma,
1916	Jan 2	V	Tacoma, Seattle, Olympia
1917	Mar 28	V	Ashford Pierce County
1917	June 9	V	Longmire and Pierce and Lewis County
1917	Nov 12	VI	Mt. Rainier
1917	Nov 14	V	Longmire, Pierce County
1918	Dec 6	VIII	Severe in Victoria B.C. Felt in Seattle
1920	Jan 24	VII	NW Wash. Walls cracked at Bellingham and Anacortes
1928	Feb 2	VI	Startup. Plaster crack
1930*	July 7	III	Sultan
1930*	Aug 18	IV	Sultan
1930*	Sept 3	V	Rodna
1931*	April 17	III	Bellingham to Van. B.C.
1931*	June 11	III	Sultan
1931*	Dec 8	IV	Chelan
1931	Dec 31	VI	Walls cracked Lilliwap
1932	Jan 5	V	Bellingham
1932*	Jan 14	V	Portland, Or.,Longview,Wa.
1932*	Feb 10	III	Sultan
1932*	Feb 19	III	Sultan
1932*	April 23	III	Sedro Woolley
1932*	June 10	IV	Granite Falls
1932	July 18	VI	Tolt River and Sultan.

			Widely felt. Near epicenter, very difficult to stand. Some buildings damaged in Everett.
1932	Aug 6	VI	Seattle. Strong local shock. A few chimneys demolished, others badly damaged.
1932	Aug 7	V	Near Sultan
1932*	Aug 15	III	Chelan
1932*	Aug 25	III	Seattle
1932*	Aug 30	III	Sultan
1932*	Sept 5	III	Lakeside
1932*	Sept 19	III	Sultan
1932*	Oct 5	IV	Anacortes
1932*	Oct 5	III	Ferndale
1933*	Jan 2	III	Seattle
1933*	Mar 18	III	Sultan
1934*	Feb 6	III	Seattle and Tacoma
1934*	Mar 10	III	Chelan
1934	April 28	III	Everett
1934*	May 4	IV	Seattle to Vancouver B.C.
1934*	Sept 27	V	Ellensburg (more than twenty shocks)
1934*	Nov 1	III	Ellensburg (ten distinct shocks felt)
1934*	Nov 3	III	Seattle and Tacoma
1937*	Feb 8	III	Walla Walla
1937*	Nov 1	IV+	Olympia
1937*	Nov 11	III	Olympia
1938	Jan 6	V	Kingston, Pt. Orchard, Seattle. Many awakened, some frightened.
1938*	Feb 19	VI	Vancouver B.C.
1939	Nov 13	VII	Olympia. Chimneys fell at Auburn, Brooklyn, Centralia, Elma, Oakville, Tacoma.
1940*	Mar 23	III	Seattle
1940*	April 25	III	Seattle
1940	Oct 27	V	Strongest at Pt. Angeles, Pt. Townsend and Everett
1940*	Nov 13	III	Olympia, Tacoma
1941*	April 7	VI	Mazama
1941*	Dec 29	VI	Lower Columbia River
1942*	Jan 30	VI	Pt. Angeles
1942*	Feb 23	V	Wenatchee
1942*	Oct 14	V	Northern Chelan County
1942*	Nov 1	V	Northeastern Washington, Northern Idaho, Western Montana
1943*	April 23	VI	Entiat
1943*	Oct 6	V	East-Central Washington

1943*	Nov 28	VI	Northwestern Washington
1944*	Mar 3	III	Seattle and Olympia
1944	Mar 31	V	Sharp shock at Grapeview, Olympia, Orting, Shelton, Tacoma
1944*	Oct 31	V	North-Central Washington
1944	Sept 18	V	Many awakened in Tacoma and Olympia
1944*	Dec 6	VI	Hoquiam
1945*	Jan 3	V	Entiat
1945*	Jan 27	VI	Stanwood
1945	Jan 28	VI	Stanwood. Felt by many. Some plaster fell.
1945	April 29	VII	Plaster, windows and chimneys cracked in North Bend. Large rock slide at Mt. Si.
1945*	June 15	V	Strait of Georgia near Pt. Roberts, Wa.
1945*	Nov 11	VI	Northern Puget Sound region
1946	Feb 15	VII	Caused damage at Bremerton, Burton, Olympia, Seattle and Tacoma. Several people killed. $250,000 damage in Seattle.
1946	Feb 23	VI	Olympia. Small objects moved and loosened plaster fell.
1946	June 23	VIII	Georgia Strait, Vancouver B.C. One of the strongest shocks on record for the Puget Sound area. Heavy damage in epicentral region. Felt strongly at Olympia, Seattle, Tacoma, Raymond, and Bellingham.
1946*	Dec 27	III	Seattle
1947*	Jan 5	III	Southern part of Seattle
1947	Jan 12	V	Strongest at Bothell and Snoqualmie Falls
1947	April 1	V	Olympia
1947*	Sept 20	V	Puyallup, Tacoma
1948*	Jan 12	V	Chelan County
1948	Aug 3	V	Snoqualmie Falls
1948	Sept 24	V	Felt throughout Puget Sound area.
1949	April 13	VIII	Nearly all large buildings in Olympia damaged. Heavy property damage over wide area of Wa., Oregon.
1949	Aug 22	X	Queen Charlotte Islands. Felt from Portland, Or.

			to southern Alaska. Broke water mains in Seattle.
1950	April 14	VI	Pt.Townsend-Langley area
1950	Dec 3	V	Mukilteo. Several sharp tremors.
1951*	Jan 4	IV	Chelan
1951*	July 19	III	Marysville
1952	Aug 6	V	Seattle
1954	Mar 16	V	Mt. Rainier
1954	May 5	V	Tacoma
1954	May 15	VI	Slight damage at Belfair, Lake Stevens, North Bend, Seattle
1955	Mar 26	VI	House foundation cracked near Everett
1955	Nov 3	V	Felt throughout Snohomish County
1956	Jan 7	V	Burly-Pt. Dieringer
1957	Jan 26	VI	Plaster fell at Clear Lake
1957	Feb 11	VI	North Bend, Snoqualmie
1957	May 4	V	Dash Point
1959	Oct 14	V	Felt by all at Monroe, Sultan and Pinehurst
1960	Jan 7	V	Felt principally in Lewis, Pierce, and Thurston Counties
1960	April 11	VI	Seattle
1960	April 10	VI	Bremerton and Seattle
1962	Dec 31	VI	West of Mt. Rainier
1963	Jan 24	VI	Plaster and walls cracked at Maple Valley, Tacoma
1964	July 30	V	Near Seattle
1964	Oct 15	V	Near Seattle. Felt principally in King and Snohomish Counties
1965	April 29	VIII	Seattle. Extensive chimney damage in W. Seattle, seven killed. Damage $12.5 million.
1965	Oct 23	VI	Felt at Bremerton, Everett, Olympia, Tacoma, Seattle
1967	Mar 7	V	Felt throughout Puget Sound
1969	Oct 9	V	Elbe and Packwood
1969	Nov 1	V	Northwest Washington
1970	Feb 10	V	Principally felt in Puget Sound region.
1970	Oct 24	V	Northwest Washington
1973	June 9	V	Strongest at Snoqualmie and Carnation.

Note: The list of Washington State Earthquakes is a compilation of USGS:"Earthquakes affecting the Puget Sound area 1859-1973" (USGS, A Study of Earthquakes in the Puget Sound, Washington Area, Open File Report 75-375,1975) and "A Summary of Washington Earthquakes" by Howard A. Coombs, Bulletin of the Seismological Society of America, Jan. 1953

*

Those entries marked with an * are the Coombs listings

MODIFIED MERCALLI INTENSITY SCALE OF 1931

I. Not felt except by a very few under especially favorable circumstances.

II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.

III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.

IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls made creaking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.

V. Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbance of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.

VI. Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.

VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.

VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Disturbed persons driving motor cars.

IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.

XI. Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipe lines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.

XII. Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.

See (Wood and Neumann, 1931) for complete details of this Intensity Scale.