# APPENDIX C

## SEISMIC SCREENING FORM

## SEISMIC SCREENING INVENTORY FORM

89 Prideaux Parks and Rec Equipment Bays
City of Nanaimo Building No. B104

Comments:

- Single Storey (14 FT)
- Load bearing masonry walls - exterior
- Load bearing interior wood frame walls
  cw ½" ply sheathing and diagonal X-Bracing
  (sheathing one side only)
- stiff soils (visible rock outcrops)
- wood joists and shiplap sheathing roof

## SEISMIC SCREENING FORM

p. 1 of 2 | ITEM No.: B104

| | | | |
|---|---|---|---|
| Address: 89 Prideaux | Postal Code: V9R2M6 | | Bldg. Name: Equipment Bays |
| No. of storeys: 1 | Total Floor Area: 144 m² | Year Built: 1970 | Design NBC: 1965 |
| Primary use (see list on p. 2): Storage | | | Heritage Designation: N/K |
| Inspector: GK | Date: April 17/2012 | | Checked by: |

See attached

*Sketch*

See attached

*Photo*

TYPE OF STRUCTURE (circle appropriate descriptors) see 4.3.2

| | | | BM |
|---|---|---|---|
| Wood | WLF | Wood Light Frame | 90 |
| | WPB | Wood, Post and Beam | |
| Steel | SMF | Steel Moment Frame | 90 |
| | SBF | Steel Braced Frame | |
| | SLF | Steel Light Frame | |
| | SCW | Steel Frame with Concrete Shear Walls | |
| | SIW | Steel Frame with Infill Masonry Shear Walls | |
| Concrete | CMF | Concrete Moment Frame | 85 |
| | CSW | Concrete Shear Walls | |
| | CIW | Concrete Frame with Infill Masonry Shear Walls | |
| | PCF | Precast Concrete Frame | |
| | PCW | Precast Concrete Walls | |
| Masonry | (RML) | Reinforced Masonry Bearing Walls with Wood or Metal Deck Floors or Roofs | 90 |
| | RMC | Reinforced Masonry Bearing Walls with Concrete Diaphragms | |
| | URM | Unreinforced Masonry Bearing Wall Building | |

BUILDING IRREGULARITIES (circle appropriate descriptors) see 4.3.3

| | |
|---|---|
| 1. Vertical Irregularity | Abrupt changes in plan dimensions over height (e.g. setback or building on hill) |
| 2. Horizontal Irregularity (Torsion) | Irregular building shapes such as "L", "V", "E", "T", eccentric stiffness in plan (e.g. shear wall on only one side of building) |
| 3. Short Concrete Columns | Short columns restrained by partial storey height walls (structural or infill) or deep spandrels |
| 4. Soft Storey | Severe reduction of stiffness caused by discontinuous shear walls, openings, etc. |
| 5. Pounding | Separation between buildings less than 20 $Z_v$ x no. of storeys (in mm) |
| 6. Major Modifications | Any change in function, use or addition which results in significant increase in loading or weight |
| 7. Deterioration | Structural elements are damaged, poor condition of building is apparent (corroded reinforcement or steel, rotted wood, poor concrete or masonry) |
| 8. (None) | None of the irregularities listed above is present. |

NON - STRUCTURAL HAZARDS (Circle appropriate descriptors) see 4.3.4

$F_1$ Falling Hazards to Life:
Exterior: Masonry chimneys, parapets, veneer or stone / precast panels, non-safety glass, or canopies over exits and walkways
Interior: Heavy components; masonry partitions; non-safety glass in egress areas; storage shelves which may collapse onto areas of human occupancy

$F_2$ Hazards to Continuous Operation of Special Buildings: Equipment or lifelines required for continuous operation of special facilities. The owner or authority should provide a list of critical items needed for continuing operations.

From: Manual for Screening of Existing Buildings for Seismic Investigation, IRC / NRC, Canada, Ottawa, September 1992

## SEISMIC SCREENING FORM

p. 2 of 2 | ITEM No.: B104

SEISMIC PRIORITY INDEX: Circle appropriate value and enter each result on right side. Use asterisk (*) with uncertain values

**A — Seismicity** — A = 1.3

| Design NBC | Effective Seismic Zone ($Z_v$, or $Z_v$ + 1 if $Z_a > Z_v$) 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Pre - 65 | 1.0 | 1.5 | 2.0 | 3.0 | 4.0 |
| 65 - 84 | 1.0 | 1.0 | (1.3) | 1.5 | 2.0 |
| Post - 85 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

**B — Soil Conditions** — B = 1.0

| Design NBC | Soil Category: Rock or Stiff Soil | Stiff Soil > 50 m | Soft Soil > 15 m | Very Soft or Liquefiable Soil | Unknown Soil |
|---|---|---|---|---|---|
| Pre - 65 | 1.0 | 1.3 | 1.5 | 2.0 | 1.5 |
| Post - 65 | 1.0 | (1.0) | 1.0 | 1.5 | 1.5 |

**C — Type of Structure** (BM = Benchmark year, see p.1) — C = 2.5

| Design NBC | Construction Type and Symbol (see p. 1): Wood WLF | Wood WPB | Steel SLF | Steel SMF | Steel SBF | Steel SCW | Concrete CMF | Concrete CSW | Precast PCF | Precast PCW | Masonry Infill SIW, CIW | Masonry RML, RMC | Masonry URM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pre - 70 | 1.2 | 2.0 | 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 2.0 | 2.5 | 2.0 | 3.0 | (2.5) | 3.5 |
| 70 - BM | 1.2 | 2.0 | 1.0 | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.8 | 1.5 | 2.0 | 1.5 | 3.5 |
| Post - BM | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | – |

**D — Building Irregularities** — D = product of circled Numbers (Max of 4.0) = 1

| Design NBC | 1. Vertical | 2. Horiz. | 3. Short Concrete Columns | 4. Soft Storey | 5. Pounding | 6. Modification | 7. Deterioration | 8. None |
|---|---|---|---|---|---|---|---|---|
| Pre - 70 | 1.3 | 1.5 | 1.5 | 2.0 | 1.3 | 1.3 | 1.3 | (1.0) |
| Post - 70 | 1.3 | 1.5 | 1.5 | 1.5 | 1.3 | 1.0 | 1.3 | 1.0 |

**E — Building Importance** — E = 1.4

| Design NBC | Low Occupancy N < 10 | Normal Occupancy N = 10 - 300 | School, or High Occupancy N = 301 - 3000 | Post Disaster, or Very High Occup. N > 3000 | Special Operational Requirements |
|---|---|---|---|---|---|
| Pre - 70 | (0.7) | 1.0 | 1.5 | 2.0 | 3.0 |
| Post - 70 | 0.7 | 1.0 | 1.2 | 1.5 | 2.0 |

N = Occupied Area x Occupancy Density x Duration Factor* = ...144... x ....01... x ....1.... = 1.4

| Primary Use: | Occupancy Density Persons / m² | Average Weekly Hours of Human Occupancy |
|---|---|---|
| Assembly | 1 | 5 - 50 |
| Mercantile, Personal service | 0.2 | 50 - 80 |
| Offices, Institutional, Manufacturing | 0.1 | 50 - 60 |
| Residential | 0.05 | 100 |
| Storage | (0.01 - 0.02) | (100) |

* Duration Factor is equal to the average weekly hours of human occupancy divided by 100, not greater than 1.0

**SI — STRUCTURAL INDEX = A · B · C · D · E =** → **SI = 4.5**

**F — NON - STRUCTURAL HAZARDS**

| | Description (see p. 1) | | None | Yes | Yes * |
|---|---|---|---|---|---|
| $F_1$ Falling Hazards to Life | | Pre - 70 NBC | (1.0) | 3.0 | 6.0 |
| | | Post - 70 NBC | 1.0 | 2.0 | 3.0 |
| $F_2$ Hazards to Vital Operations | | Any Year | (1.0) | 3.0 | 6.0 |

* applies only if one or more of the following descriptors on page 1 are circled: SMF, CMF, soft storey, torsion

F = max ($F_1$, $F_2$) = 1

**NSI — NON - STRUCTURAL INDEX = B · E · F =** → **NSI = 1.4**

**SPI — SEISMIC PRIORITY INDEX = SI + NSI =** → **SPI = 5.9**

Comments: Low Priority

From: Manual for Screening of Existing Buildings for Seismic Investigation, IRC / NRC, Canada, Ottawa, September 1992

| **SEISMIC SCREENING INVENTORY FORM** Attach asterisks (*) to uncertain values | | | | | | Page No.: |
|---|---|---|---|---|---|---|
| Item No. | Address and/or Name of Building | **SI** Structural Index | **NSI** Non-Structural Index | **SPI** Seismic Priority Index | Priority for Evaluation | Comments |
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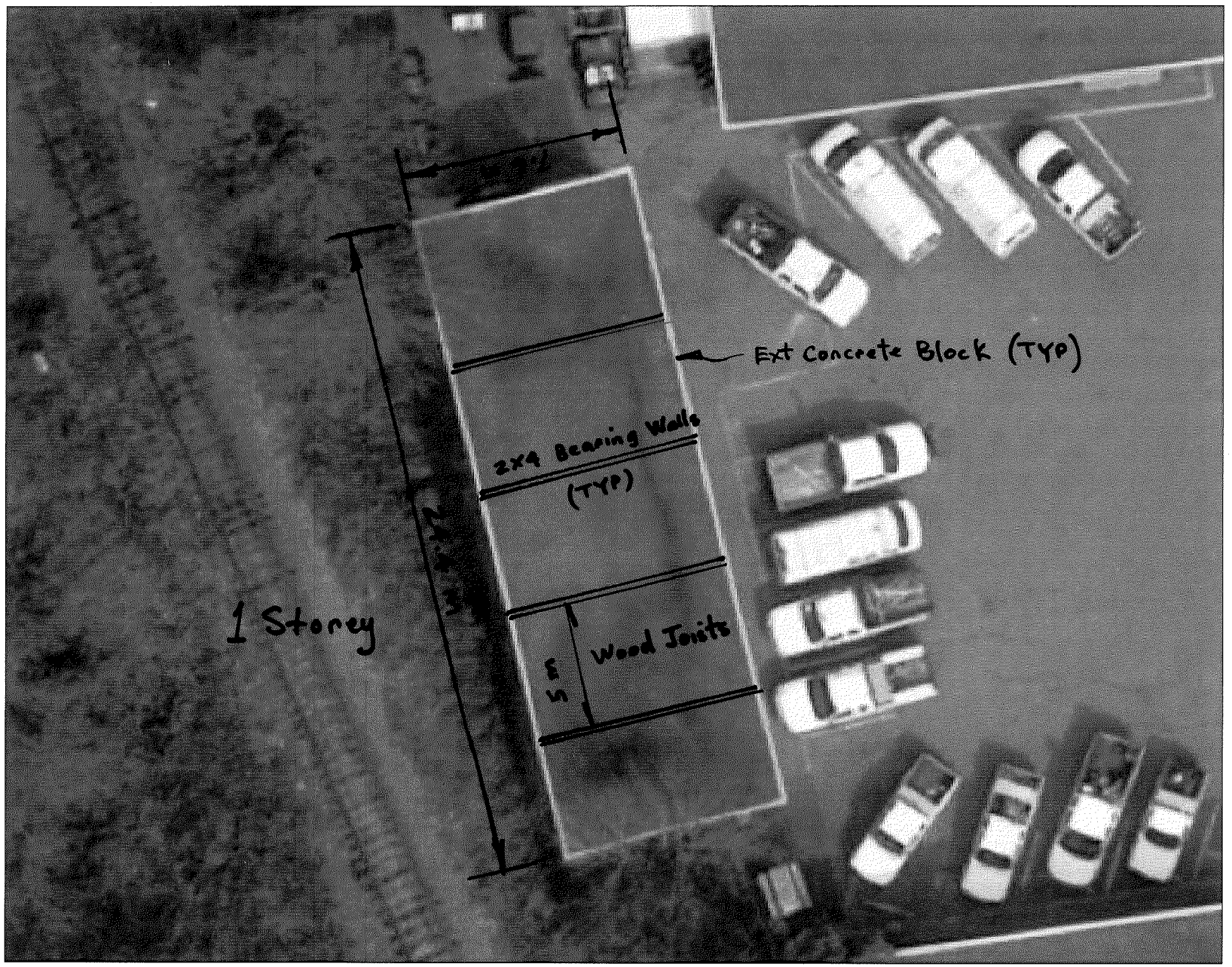
# City of Nanaimo



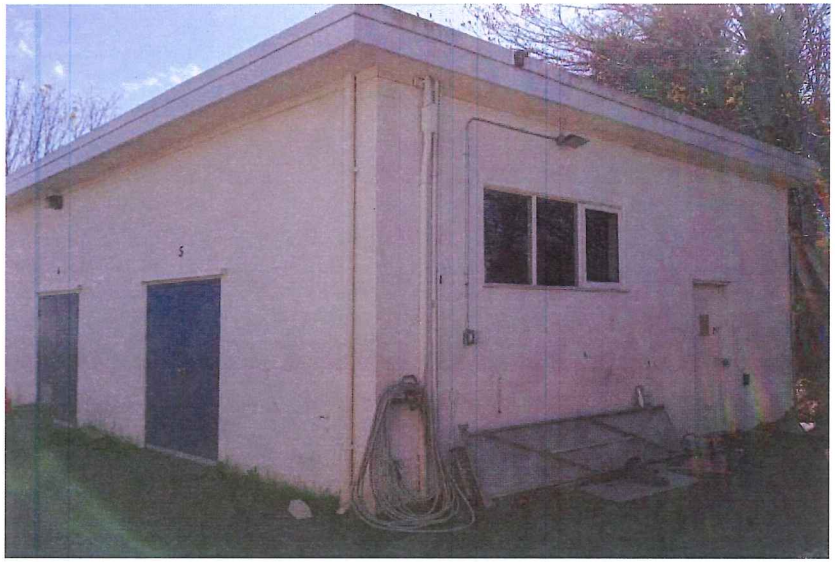

SCALE 1 : 219

20 0 20 40 60

FEET

89 Prideaux
Parks Equipment

N



NORTHEAST VIEW

EAST VIEW

SOUTHWEST VIEW

# APPENDIX "G"
## BUILDING COST ANALYSIS
### CITY OF NANAIMO
### PARKS MAINTENANCE EQUIPMENT BAYS
### 89 PRIDEAUX STREET

APPRAISAL BUILDING #: B104
GROSS FLOOR AREA: 2,000 $FT^2$ CLASS: C
EFFECTIVE DATE: FEBRUARY 8, 2008
YEAR(S) BUILT: CIRCA 1970

| BELOW GRADE ASSETS | CRN | CRNLD |
|---|---|---|
| EXCAVATION, BACKFILL AND SITE PREPARATION: | 3,200 | 1,500 |
| FOUNDATIONS: | 8,300 | 4,100 |
| ARCHITECTURAL OR ENGINEERING FEES: | 800 | 400 |
| **TOTAL BELOW GRADE ASSETS:** | **12,300** | **6,000** |

| ABOVE GRADE ASSETS | | |
|---|---|---|
| BUILDING FRAMING: | 3,500 | 1,700 |
| FLOOR STRUCTURE: | 10,700 | 5,200 |
| INTERIOR CONSTRUCTION, MEZZANINES, STAIRS: | 29,400 | 14,300 |
| FLOOR AND CEILING FINISHES: | - | - |
| PLUMBING SYSTEM, FIXTURES, AND SEWERAGE: | - | - |
| HEATING, VENTILATION AND AIR CONDITIONING: | 1,000 | 500 |
| ELECTRICAL AND LIGHTING: | 4,000 | 1,900 |
| EXTERIOR WALL CONSTRUCTION, BALCONIES: | 48,600 | 23,700 |
| ROOF STRUCTURE, ROOF COVERING, AND CANOPIES: | 8,500 | 4,100 |
| FIRE PROTECTION: | - | - |
| ELEVATORS: | - | - |
| ADDITIONAL CONSTRUCTION: | - | - |
| ARCHITECTURAL OR ENGINEERING FEES: | 7,800 | 3,800 |
| **TOTAL ABOVE GRADE ASSETS:** | **113,500** | **55,200** |

| TOTAL BELOW AND ABOVE GRADE ASSETS: | 125,800 | 61,200 |
|---|---|---|

| BUILDING CODES & BYLAWS | | | |
|---|---|---|---|
| PARKING SPACES | **MEETS CODE** | - | - |
| SPECIAL NEEDS ACCESS | **MEETS CODE** | - | - |
| FIRE PROTECTION | **MEETS CODE** | - | - |
| **TOTAL BUILDING CODES & BYLAWS:** | | - | - |

| TOTAL YARD IMPROVEMENTS: | 4,900 | 4,900 |
|---|---|---|

| TOTAL CRN COST: | 130,700 | 66,100 |
|---|---|---|

| | |
|---|---|
| **FOUNDATIONS:** | REINFORCED CONCRETE FOUNDATIONS |
| **FRAMING:** | LOAD BEARING MASONRY WALLS & PART STEEL COLUMNS |
| **FLOOR STRUCTURE:** | REINFORCED CONCRETE SLAB ON GRADE |
| **INTERIOR CONSTRUCTION:** | PLYWOOD ON WOOD FRAME PARTITIONS, EXPOSED ROOF STRUCTURE |
| **PLUMBING SYSTEM:** | NIL |
| **H.V.A.C.:** | PARTIAL ELECTRIC HEAT |
| **ELECTRICAL AND LIGHTING:** | NIL |
| **EXTERIOR WALLS:** | PAINT CONCRETE BLOCK |
| **ROOF:** | WOOD JOIST & WOOD DECK WITH BUILT-UP ROOFING |
| **FIRE PROTECTION:** | NIL |
| **ELEVATORS:** | NIL |
| **ADDITIONAL CONSTRUCTION:** | NIL |