

Malahat Multi-Purpose Cultural Centre, Malahat, BC
Outline Building Code Analysis
BCBC 2012

Project: Proposed two storeys multi-purpose building with health centre, daycare centre and recreational centre.

1.4.1.2 Building Area 10,676 sq ft

1.4.1.2 Building Height 2 storeys

3.1.2.1 Major Occupancy A2-Assembly
 B3 Care
 D Business and Personal Services Occupancies

3.1.17 Occupant Load
Gross floor area = 10,676 sq ft:

A2 Assembly occupant load:

Office	155 sq.ft./100.1=	2 persons
Kitchen	305 sq.ft./100.1 =	4 persons
Multi-Game Court	1,735 sq.ft./10.23=	170 persons
Lounge	813 sq.ft./19.91=	41 persons
Pantry/Storages	263/495=	1 person
Total occupant load		218 persons

Daycare	1,117 sq.ft./107.64=	11 persons
Kitchen	85/100.1=	1 persons
Storages	134/495=	1 person
Total occupant load		13 persons

D Business and Personal Services occupant load:

Reception/Offices	988 sq.ft./100.1=	10 persons
Exam Rooms	508/100.1	6 persons
Storages	353/495=	1 person
Total occupant load		17 persons

Entrance, lobby, waiting, meeting rooms, corridor, lounge, janitor, and washrooms are transitory occupancies

3.2.2 Building Size and Construction Relative to Occupancy

3.2.2.26 Group A, Division 2, up to 2 Storeys, Sprinklered

3.2.2.26(1)(a) Sprinklered throughout

3.2.2.26(1)(b) Not more than 2 storeys

3.2.2.26(1)(c)(ii) Not more than 25,833 sqft in building area

3.2.2.26(2) Combustible or noncombustible construction permitted

3.2.2.26(2)(a) Floor assemblies shall have 45 min fire separation if of combustible construction

- 3.2.2.26(2)(c)(i)(ii) Loadbearing walls, columns and supports shall have fire resistance rating of 45 min or be of noncombustible construction

3.2.2 Building Size and Construction Relative to Occupancy

3.2.2.45 Group B, Division 3, up to 2 Storeys, Sprinklered

3.2.2.45(1)(a) Sprinklered throughout

3.2.2.45(1)(b) Not more than 2 storeys

3.2.2.45(1)(c)(ii) Not more than 17,222 sqft in building area

3.2.2.45(2) Combustible or noncombustible construction permitted

3.2.2.45(2)(a) Floor assemblies shall have 45 min fire separation

3.2.2.45(2)(c)(i)(ii) Loadbearing walls, columns and supports shall be not less than supported assembly

3.2.2 Building Size and Construction Relative to Occupancy

3.2.2.61 Group D, up to 2 Storey, Sprinklered

3.2.2.61(1)(a) Sprinklered throughout

3.2.2.61(1)(b) Not more than 2 storey

3.2.2.61(1)(c)(ii) Not more than 25,833 sqft in building area

3.2.2.61(2) Combustible or noncombustible construction permitted

3.2.2.61(2)(a) Floor assemblies shall have 45 min fire separation if of combustible construction

3.2.2.61(2)(b)(i)(ii) Loadbearing walls, columns and supports shall have fire resistance rating of 45 min or be of noncombustible construction

3.2.2.45 building classification governs as this is the most restrictive: B3 Care Occupancy

3.2.3 Spatial Separation and Exposure Protection

Table 3.2.3.1.D	Face area	l.d.	up to permitted	construction req'd
	North	Vacant	100%	0 min. f.r.r
	West	59.43'	100%	0 min. f.r.r
	South	40.84'	100%	0 min. f.r.r.
	East	Street	100%	0 min. f.r.r.

3.2.4 Fire Alarm and Detection Systems

3.2.4.1(1) A fire alarm system is required as the building is sprinklered.

3.2.4.5(1) The fire alarm is to be installed to CAN/ULC-S524 "Installation of Fire Alarm Systems".

3.2.4.5(2) The fire alarm is to be verified to CAN/ULC-S537 "Verification of Fire Alarm Systems".

3.2.4.8(4) The fire alarm system is to be designed to notify the fire department to CAN/ULC-S561 "Installation and Services for Fire Signal Receiving Centres and Systems".

3.2.4.9(1) A fire alarm annunciator is to be installed near the principal entrance.

3.2.4.12(1)(e) Smoke detectors are required in each exit stair shaft.

3.2.4.17(1)(a)+(b) Manual (pull) stations are required at the principal entrance and at every exit.

3.2.5 Provisions for Firefighting

3.2.5.4(1)(a) An access route for fire department vehicles is provided to the principal entrance

3.2.5.5(1) The access route is to be between 9.84' and 49.2' of the principal entrance

- 3.2.5.5(2)(a) Building provided with fire department connection, a fire department pumper vehicle can be located adjacent to the hydrants (refer to article 3.2.5.15(2).
- 3.2.5.8 A standpipe system is not required for the building
- 3.2.5.15(2) The fire department connection for an automatic sprinkler system shall be located so that the distance from the fire department connection to a hydrant is not more than 147.6 m and is unobstructed.
- 3.2.5.16(1) Portable fire extinguishers to be provided and installed in accordance with British Columbia Fire Code
- 3.2.7 Lighting and Emergency Power Systems
- 3.2.7.1(1) The exits and corridors providing access to exit to have a minimum illumination of 50 Lx at the floor
- 3.2.7.3(1) Emergency lighting to be provided in exits, routes providing access to exits, corridors, lounge, gymnasium, mezzanine/viewing platform, meeting room and gym to minimum 10 Lx at floor level provided for a minimum of 30 minutes
- 3.3 Safety Within Floor Areas
- 3.3.1.1 The building is considered as one suite.
- 3.3.1.5(1)(b) Minimum 2 egress doorway required for Multi-Game Court.
- 3.3.1.5(1)(b) A single egress doorway is permitted from other rooms as the occupant load of each room is less than 60,
- 3.3.1.5(1)(d)(i & ii) The travel distance to the egress doorway is less than 82.0' and the rooms are less than 1,076 sq ft in area each
- 3.3.1.11(2) The egress doorways from all rooms do not have to swing in the direction of travel to an exit as the occupant load of each room is less than 60 persons
- 3.3.1.13(10)(b)(i) Doors providing access swinging in to have a clear and level area 5'-0" long with a minimum of 2'-0" clear space on the latch side of the door.
- 3.3.1.13(10)(b)(ii) Doors providing access swinging out to have a clear and level area 4'-0" long with a minimum of 1'-0" clear space on the latch side of the door.
- 3.3.1.17(2) The width of corridors and doorways far exceeds the minimum widths required for capacity of access to exits in all area (6.1mm/persons)
- 3.3.1.21(3) The janitor room is to be separated from the rest of the floor area by a fire separation with 0 hour fire resistance rating required.
- 3.4 Exits
- 3.4.2.1(1) At least 2 exits are provided from building
- 3.4.2.5(1)(b)(c) The travel distance from any point to at least one exit is <131.2' for business and personal services occupancy and <147.63' for other occupancies.
- 3.4.3.2(1) The doorway, corridor width and stair width exceed the occupant load requirements
- 3.4.4.2(2) Exit through lobby.
- 3.4.5.1 Exits signs are required and provided at all exit doors and in the egress corridors
- 3.4.5.1(2)(b) Every exit sign shall consist of a green pictogram and white or lightly tinted graphical symbol meeting the colour specifications referred to in ISO 3864-1, "Graphical symbols – Safety colours and safety sign – Part 1: Design principles for safety signs in workplaces and public areas,"
- 3.4.5.1(2)(c) Every exit sign to conform to the dimensions indicated in ISO 7010, "Graphical symbols – Safety colours and safety signs – Safety signs in workplaces and public areas,"

3.4.6.16(2)(a) All egress/exit doors from multi-game court and all exit doors to have door “panic” release hardware

3.6.2 Service Rooms

3.6.2.1(2) Service rooms with fuel-fired appliances that serves only 1 suite not required to be separated from the rest of the building

3.6.2.1(8) Service rooms contains service equipment, and the service equipment constitutes a fire hazard or is essential to the operation of fire safety systems (i.e. sprinkler system) in the building is required to be separated from the rest of the building by 1 hour fire separation

3.7 Health Requirements

3.7.2.2(6) Assembly occupancy: based on an occupant load of 218 persons, 3 male water closets and 5 female water closets required. Provided are 4 male water closets and 4 female water closets and an accessible toilet room.

Care occupancy: based on an occupant load of 13 persons, 1 male water closet and 1 female water closet required. Provided 5 universal water closets.

D occupancy: based on an occupant load of 17 persons, 1 male water closet and 1 female water closet required. Provided are 4 male water closets and 4 female water closets and an accessible toilet room with shower.

3.8 Building Requirements for Persons With Disabilities

3.8.2.1(1) The building shall be accessible

3.8.2.3(1)(a) Access is provided from the street to the main entrance.

3.8.2.3(1)(b) Accessible parking is provided in the parking

3.8.2.3(2)(a) Universal toilet room provided.

3.8.2.3(2)(b) With the building occupant load exceeding 150, all other public washrooms are also required to be accessible in the A2 occupancy except daycare facility has the washroom are not for public use.

3.8.3.5(4)(c) A power operated door is required at front entry in both directions.