



CITY OF VANCOUVER

ENGINEERING SERVICES

General Manager, D.H. Rudberg, P. Eng.

Deputy City Engineer, T.R. Timm, P. Eng.

February 8, 2001

BICYCLE PARKING DESIGN SUPPLEMENT

As part of the City's review of Development Applications, effective October 17, 1995, bicycle parking provisions must be in compliance with regulations contained within the Parking By-law and within the Building By-law. The Parking By-law includes requirements relating to the amount, location, and design of bicycle parking, including specifications governing enclosures, racks, security, and clothing lockers. The Building By-law includes corresponding requirements for showers and change rooms. This publication is provided to clarify the intent and provide examples of solutions in compliance with the by-law regulations. In conjunction with these guidelines, good engineering practices are to be followed in all circumstances to ensure public safety.

Facilities provided in response to bicycle parking and associated requirements, including bicycle spaces, bicycle lockers, rooms and/or enclosures, doors, windows, security lights, wheel ramps, lockers, and access aisles shall be detailed on the Development Application drawings. That these and other required features comply with all of the specifications of the By-laws, either demonstrated in detailing or attested to in statements of specifications from suppliers, contractors, or outfitters with compliance noted on the drawing(s) forms part of the Development Application.

The following explanations describe how the various regulations will be interpreted and applied.

PARKING BY-LAW

Section 6.1 - Number of Bicycle Spaces

6.1.2 Bicycle Space Requirement Exemptions

How applied: For any building existing on October 17, 1995, and for which there are subsequent additions, alterations, or changes of use, bicycle parking provisions would be required only if the by-law standards calculation including the additions, alterations, or changes of use represented an increase of at least 10 percent over the by-law calculation for the building as of October 17, 1995. Otherwise, the additions, alterations, or changes in use would be exempted from the bicycle space provision.

Section 6.3 - Class A Bicycle Spaces

These are normally 0.6m x 1.8m and primarily designed to serve employees and residents.

6.3.2 Bicycle Room Requirement

This section outlines that there are four acceptable formats for providing bicycle spaces:

- In a bicycle room;
- In an individual garage;
- In a bicycle compound; or
- In bicycle lockers.

6.3.3 Bicycle Room Security

The motion-activated light's "tamper-proof" housing shall make it difficult for someone to incapacitate the light. Protective methods could include recessing the light, shielding it with unbreakable or reinforced glass or plexiglass (or other similarly protective material), or providing a locked steel mesh cage. Wiring must not be easily severable. The unit, if not recessed, must be mounted in an upper corner or on the ceiling so it cannot be simply pried off the wall.

Also, the requirement for "solid opaque walls" shall not preclude provision of security windows (comparable to those required in the Building By-law for stairwells and elevator vestibules) in the walls.

6.3.4 Bicycle Room Doors

The "tamper-proof" hinges would not be dislodged by the use of a wrench, screwdriver, crowbar, or boltcutter; rather, it should require either extreme force (e.g. sledgehammer or acetylene torch) or a custom design tool to dislodge.

6.3.6 Bicycle Room, Compound, or Locker Access

The location of bicycle parking "no lower than the first complete parking level" below grade means that it shall be above or within the first level of automobile parking, where the automobile parking occupies an entire floor plate, or above or within the first two levels of automobile parking where the automobile parking steps down in levels occupying roughly half of the floor plate, below grade. The bicycle parking may be located further below grade if an elevator provides a direct link to the outside. By "direct" it is meant that the elevator is conveniently located to the bicycle parking below grade and, at the surface, either opens directly to the outside or is located such that the bicyclist can gain access to the outside without traversing either significant distances or any gathering place such as a lobby.

6.3.10 Bicycle Space Access

The discretionary trade-off between the widths of the bicycle space and the access aisle used for manoeuvring will be applied as follows:

BICYCLE SPACE WIDTH (m)	ACCESS AISLE WIDTH (m)
0.60	1.2

0.65	1.1
0.70	1.0
0.75	0.9

No manoeuvring access aisle less than 0.9m wide will be approvable.

6.3.12 Bicycle Rack Design and Security

Bicycle racks shall be approved by the CSA, (or similar approving agency) and/or approved for use on City streets (subject to modification to satisfy space width requirements). “Secure theft-resistant anchoring” means that the rack cannot be dislodged by the use of a wrench, screwdriver, crow-bar, or boltcutter; rather, it should require either extreme force (e.g. sledgehammer or acetylene torch) or custom-designed tool to dislodge. Methods which incorporate recessed boltheads and/or grouted-in anchoring are appropriate. Bicycles shall be supported above the centre of gravity (approximately 0.5m above the floor for horizontal parking) so that they cannot be knocked down easily when secured.

6.3.13 Horizontal and Vertical Bicycle Spaces

Standard vertical spaces are 0.6m x 1.0m, typically with one tire on the floor and with the frame and one wheel secured to a wall-mounted rack or brackets. Floor-mounted or ceiling-mounted brackets and systems designed to store bicycles above the floor are considered among the “vertical” 50 percent of spaces and may not be positioned above horizontal, on-the-floor spaces (and be counted toward the number of spaces required). The same access aisle requirements are effective for horizontal and vertical spaces.

6.3.14 Bicycle Compound Security

“Equivalent or greater security” may include expanded metal (diamond mesh), or similar material, with maximum short way opening 19mm (3/4 in.) and nine gauge minimum strand size requirement, used to enclose the compound. No reinforcement would be required, but the expanded metal should be securely welded to a steel frame. “Tamper-proof” here should be interpreted as in section 6.3.4 (see above).

6.3.15 Bicycle Compound Doors

Horseshoe-type door latches, commonly used for chain-link gates, are not acceptable.

Section 6.4 - Class B Bicycle Spaces

These are 0.3m x 1.8m and primarily designed to serve customers and visitors.

6.4.3 Bicycle Space Access

The requirement of a minimum of 0.5m clearance behind the bicycles means that racks must be set back from walls, planters, etc.

6.4.4 Bicycle Rack Design and Security.

See comments under section 6.3.12 above.

Section 6.5 - Clothing Lockers

6.5.1 Clothing Lockers

The clothing lockers should be located within shower and change rooms, where provided.

BUILDING BY-LAW

Article 3.6.4.4 (2) - It is noted that while shower and change requirements associated with bicycle parking requirements may be satisfied within the provisions of an employee fitness centre, there is no requirement that such facilities be available free of charge.

If you have any questions on the above information, or require any other information concerning bicycle parking and associated facility design standards, please contact the Parking Branch at 873-7217 or 873-7917.

<SIGNED>

I. Adam, P.Eng.
Assistant City Engineer,
Transportation