

3.0 DEVELOPMENT PERMIT AREA 2: MOODY CENTRE

3.1 PURPOSE OF DESIGNATION CATEGORY

Pursuant to subsection 919.1(f) of the Local Government Act, the purpose of this designation is to establish objectives for the form and character of commercial, industrial, intensive residential, or multi-family residential development.

3.2 JUSTIFICATION

Description of Heritage Value and Heritage Character

Moody Centre is the historic core of the City, with much of its early development related to the completion of the first transcontinental railroad in 1885. The early commercial core along Clarke Street, located near the junction of the railway and working waterfront, developed at a time when Port Moody was growing rapidly as a mill town. The heritage value of the Clarke Street commercial area is associated with its development as an early twentieth century small resource industry town in the pre-automobile era. A number of significant commercial, residential and institutional buildings have survived in Moody Centre, many of them typical of a working mill town with modest vernacular architecture. The heritage character of the Clarke Street commercial core is defined by its pedestrian orientation and unified streetscape consisting of one and two storey wood frame commercial buildings built close to the street frontage.

In response to the emergence of the automobile, St. Johns Street, one block south of the Clarke Street commercial core, later developed as a service corridor and thoroughway linking Port Moody with the Lower Mainland. The buildings on St. Johns Street were constructed to higher densities and were larger in scale to service the greater traffic volume. Residential neighbourhoods were developed adjacent to the downtown and were based on the imposition of a regular grid system on irregular topography and the development of houses on spacious lots with rear lane access. Houses were typically of wood frame construction, modest in form and scale and often included the use of pitched roofs, porches and verandas, wood siding and wood sash windows.

Vision for Development in Moody Centre

The City wishes to reflect this history in the future development of Moody Centre in order to preserve and enhance the neighbourhood's heritage character and to provide for continuity between the community's past and future. Much of the commercial activity in Moody Centre has traditionally been comprised of highway commercial uses. The community has

expressed a desire to create a more complete community within Moody Centre to serve the daily needs of residents in this area, reduce reliance on vehicle use and enhance its pedestrian environment.

Moody Centre is regarded as an area where significant economic growth is possible. In order to encourage this growth, the area needs the ability to attract new residents and businesses by striking a balance between preservation of its heritage character and natural environment, and the facilitation of new development that meets future demand for housing and commercial services.

With the presence of the Evergreen Rapid Transit Line through Moody Centre, the area is anticipated to evolve into a walkable, mixed use village with local serving shops and services and a mix of housing types concentrated near local transit hubs.

Objectives of the Moody Centre Development Permit Area

Given the diverse character of Moody Centre, the objectives of this Development Permit Area designation are:

- to retain the single family character of residential properties when associated with Adaptive Commercial uses
- to ensure that commercial development contributes to the economic revitalization of the area and the creation of a more complete community, as well as remaining sensitive to the residential component in mixed-use buildings
- to ensure that multi-family development respects the character of surrounding low density residential uses through siting, design and exterior finishings
- to discourage single storey commercial development along St. Johns Street to reduce the commercial "strip" image of the street
- to create a distinctive, pedestrian-friendly residential, shopping, office and cultural district that serves the needs of local residents but also attracts visitors from around the region
- to integrate transit-oriented development principles as part of the redevelopment of Moody Centre, particularly in those areas within a 400 to 800 metre radius of transit stations
- to encourage a variety of building forms and architectural diversity while still providing for an overall cohesive neighbourhood.

3.3 MULTI-FAMILY RESIDENTIAL DEVELOPMENT

3.3.1 DEVELOPMENT STANDARDS

Specific standards for development have been established in the City of Port Moody zoning and subdivision bylaws and through other pertinent development controls. Reference should be made to City bylaws in all cases.

3.3.2 FORM AND CHARACTER OF DEVELOPMENT

3.3.2.1 GENERAL GUIDELINES

All design guidelines pertaining to the form and character of multi-family residential development in DPA1 apply to multi-family residential development in DPA2, as follows:

(a) Building Materials

(i) Low-rise Development

Building materials should be residential in character, including materials for siding, roofs, and other external details. Exterior materials which are considered acceptable include wood, standard dimension brick, stone, smooth finish stucco with wood highlights, and siding which simulates a wood appearance, and, in certain circumstances, painted concrete when done to a high quality of design and finish. Materials such as reflective glass, metal sheeting, and fiberglass are not acceptable. Roof materials for low-rise development should be limited to wood shingles, architectural asphalt shingles similar in colour to wood, or other materials which accomplish the same objectives of colour and texture. Along St. Johns Street and within the Moody Centre TOD area where a more urban form of development is encouraged, building materials for multi-family low-rise development should be consistent with section (ii) below.

(ii) Mid-rise and High-rise Development

Building materials for mid-rise and high-rise development exceeding four storeys in height should be of a quality befitting a town centre, including materials for roofs, balconies, and accent details. Exterior materials considered acceptable include painted concrete done to a high quality of design and finish, stucco, metal panels, brick, and glass. Where pitched roofs occur in high-rise developments, roof materials such as metal and glass are encouraged.

(b) Building Foundations

Concrete block of any type is not to be used as a primary exterior building material, although it is acceptable for building foundations and retaining walls when it is finished with stucco (or another suitable finishing material), or when textured concrete blocks are used. Lock blocks are not acceptable under any circumstances. Exposed concrete foundation and retaining walls should be finished with:

- brick
- paint
- sandblasting
- applied stucco
- reveals
- exposed aggregate finish and/or camouflaged with adequate landscaping

(c) Building Form

Towers must display interesting articulation and fenestration in order to create a quality design facade. Towers of identical design are not permitted, except in cases where it can be clearly demonstrated that this is required for symmetry as part of the overall image of the development. Where low-, mid-, and high-rise buildings comprise a single development, the siting and design and building materials [notwithstanding Guidelines (a) and (b)] must ensure that the form and character of the buildings contribute to an overall integrated appearance of the development.

(d) Building Colours

Building colours should reflect the common colour palette of the surrounding area. Traditional tones such as muted tones of green, brown, grey, beige, sepia, ochre, and yellow are encouraged. Bright, fluorescent or strong primary colours are not acceptable. These colour guidelines apply to any accessory or detail features appearing on concrete high-rise buildings. The number of exterior building colours on any one building should be limited to no more than three (3). Additional colours should be used only as accents or trim. Where a number of buildings comprise a single development, any variation in colour among the buildings should contribute to an integrated appearance for the development. Other site improvements such as accessory buildings, fencing, signage, and railings should be compatible with the colour scheme of the site's principal building(s).

(e) Compatible Elevations

Any building elevations which are visible from an adjacent public roadway should have their building face remain compatible with the front elevation. This includes foundations, building walls, roof materials, and roof lines.

(f) Human Scale

Both low-rise and high-rise buildings should provide for a level of detail and quality that results in a comfortable and interesting street level experience. Upper storeys should be set back from the street face to provide a comfortable pedestrian scale street edge.

(g) Facades

Building faces should provide visual interest by means of articulation of surfaces, fenestration, and/or vertical elements to break up the horizontal scale of the building and delineate individual units, changes in material/colours, and creative design of balconies. Entrances to ground-oriented units should be easily identifiable and include front doors that face the street.

(h) Rooflines

All buildings in low-rise developments should have a pitched roofline, with a minimum slope of 5 in 12. The pitched roof should extend for the full length of the building, and may include false mansards or parapets. For mid and high rises, the

roof shape should incorporate covers for mechanical functions which are architecturally integrated with the design of the building. All larger residential buildings should achieve a varied roofline which complements surrounding rooflines and any natural backdrop, and be designed so as to break up massing blocks into individual components by means of, for example, hipped and gable roof forms, mansards, and turrets.

(i) Bird-Friendly Design

Light pollution reduction techniques should be used to reduce light trespass from buildings and sites and its impact on the nocturnal environment. Examples of such techniques include the installation of lighting which projects downward thereby reducing spill lighting; treating glass with a visual marker to reduce glass reflection; and employing bird friendly site ventilation grates. For a comprehensive listing of bird friendly design guidelines, please see City of Toronto Green Development Standard, Bird Friendly Design Guidelines, March 2007.

(j) Incorporating Natural Systems

Where possible, buildings should be designed to incorporate natural systems in place of mechanical equipment (e.g. sunlight and wind patterns could be used to improve internal illumination and ventilation for occupants while reducing energy consumption). Existing vegetation should be preserved and landscape features incorporated to moderate temperature extremes and maintain or enhance the natural drainage pattern.

(k) Children's Play Area

Residential developments which include family-oriented housing are encouraged to provide an outdoor play area on-site for children. This area should be located so that it receives surveillance from several units, and where possible is a safe distance from areas of vehicle parking or circulation, or where this is not possible, fenced. Children's play areas should be designed so as to provide:

- seating for supervising adults
- play activity equipment
- separation of play areas for pre-school and older children, if possible

(l) Parking Areas – Location

Where required off-street parking is provided at grade, it should be located to the rear of the building(s), wherever possible, and preferably enclosed within a structure. Within the Moody Centre TOD Area, required off-street parking should be underground. Pedestrian pathways and vehicle access should be clearly separated. Surface parking may not be accommodated between the property line and the front face of the building where a pedestrian environment is intended. Exposed surface parking is discouraged. When it is necessary that surface parking be located along a pedestrian walkway, or roadway, it should be adequately screened by solid fencing or landscaping, or a combination of the two.

(m) Parking Areas – Materials

Surface parking areas should be paved, appropriately marked, and drained. The use of a variety of paving materials is encouraged for internal roadways and pedestrian pathways. Large expanses of pavement using a single paving material are to be avoided, and to this end, will require landscaping and/or other treatment, (e.g., pavers, stamped concrete, or concrete bands). Materials and treatments such as grasscrete and paving stones are encouraged to increase permeability and reduce the volume of stormwater runoff.

(n) Screening of Utility/Garbage Areas

Garbage/recycling containers, utility boxes, fans, vents, and unenclosed outdoor storage areas should be located at the rear of buildings and screened from public view. This can be accomplished by a solid or lattice wood fence which features landscaping along its perimeter. All roof-mounted mechanical, electrical, and external communication equipment, such as satellite dishes and microwave towers, shall be screened from public view and architecturally integrated into the building design. Every effort should be made to eliminate existing utility poles and overhead wiring as part of new development.

(o) Fencing

Any fencing on-site should be wood, standard dimension brick, ornamental metal work, or a combination of these materials. Chain-link fencing is not generally acceptable as perimeter fencing for fencing any residential site. However, residential sites abutting a public pathway or public park/green area may use chain-link perimeter fencing, or bollard fencing, when such fencing is coloured, and of a design that is compatible with a residential context. During a construction phase, any perimeter chain-link fencing used should be camouflaged with wood panels if the construction period is to exceed six (6) months.

(p) Transition Areas

Multi-family residential developments abutting single-family houses should strive to achieve a “soft edge” transition between the two uses, where it is anticipated that the single-family housing will remain over time. This can be accomplished by a variety of means such as rooflines, building heights, building materials, and landscaping. Where appropriate, consideration should be given to activating or enhancing secondary streets such as St. Andrews, Spring, and Hope Streets through building orientation, landscaping, and opportunities for direct pedestrian access.

(q) Design Repetition

The foregoing guidelines are intended, in part, to ensure visual interest and diversity along the blockfronts in multi-family residential areas. To this same end, designs for multi-family residential buildings which demonstrate identical or fundamentally similar building elevations cannot be repeated within this DPA, unless it can be demonstrated that such repetition on one site is required

for symmetry as part of the overall image of the development. To be different means to demonstrate a significant change in features such as roof slopes, size, and location of windows and doors, colours and finish materials. A change of colours or materials alone, or reversing the plan layout, is not sufficient.

(r) City of the Arts

Given Port Moody's designation as "City of the Arts" there is an expectation that a building's design and/or landscaping will incorporate unique features that promote and enhance this designation.

(s) Views

For new development, view corridors to Burrard Inlet and the North Shore will be identified and buildings sited to minimize impacts.

On-site landscaping should be located so as to prevent blocking of any view corridors available to the upper storey dwelling units when plantings are mature.

3.3.2.2 HISTORIC AND HERITAGE CHARACTER BUILDINGS

Moody Centre Heritage Conservation Area

Portions of Moody Centre have been identified by the community as having special heritage value and heritage character. Council has designated a portion of Moody Centre as a Heritage Conservation Area to provide for the long term protection of its community heritage resources. The Heritage Conservation Area (HCA) are contained within the broader Development Permit Area for Moody Centre and includes the core heritage area west of Kyle Street consisting of multi-family residential, historic commercial, and adaptive commercial uses. The boundaries of the Moody Centre HCA is shown on Map 3. The Moody Centre HCA contains a concentration of heritage buildings, including four designated properties and 18 properties listed on the heritage register. Exterior alterations to these legally protected heritage properties are subject to the *Standards and Guidelines for the Conservation of Historic Places* (Parks Canada 2003).

The remaining properties in the HCA are considered to be non-heritage but still significant because they contribute to the overall character of the Moody Centre core historic area. For this reason, Design Guidelines have been prepared to guide exterior alterations and new construction for the non-heritage properties within the Moody Centre HCA. These Guidelines have been developed to preserve the character of Moody Centre by managing change – not preventing it. The Guidelines recommend that existing non-heritage buildings be renovated in a way that is consistent with their era of construction and context; it is not intended that inappropriate ornamentation be applied to non-heritage buildings to achieve a "heritage look".

The Moody Centre Heritage Conservation Area Guidelines are included as Appendix 4 in this Official Community Plan document. If there are inconsistencies between the HCA Design Guidelines and the Development Permit Area 2 Design Guidelines relating to the non-heritage properties within the Heritage Conservation Area, the HCA Design Guidelines shall prevail.

Permit Requirements for Heritage Properties

Owners of heritage and non-heritage properties within the Moody Centre Heritage Conservation Area must first obtain a Heritage Alteration Permit before undertaking the following:

- Subdivision of property
- Addition or alteration to the exterior of a building
- Construction of a new building
- Demolition of a building.

Heritage Alteration Permits are not required for interior renovations, exterior building maintenance and repair or for landscaping.

Moody Centre Heritage Character Area

A Heritage Character Area has also been identified encompassing a larger area surrounding the core HCA which includes multi-family, commercial and mixed use commercial/residential uses. Both the Heritage Conservation Area and Heritage Character Area for portions of Moody Centre are illustrated on Map 3. Design Guidelines for development of properties within the Heritage Character Area are contained throughout section 3 of the DPA 2 Guidelines.

Portions of Moody Centre outside the Heritage Conservation Area and the Heritage Character Area contain some heritage character buildings, most of which have not been formally identified as heritage sites by either the municipality or the Province. However, they are important to address in any design guidelines for the area because they present important opportunities for the preservation of heritage character in Port Moody, and for ensuring the complementary integration of new development within this area.

(a) New Development

In addition to the preservation of heritage character buildings, the City encourages new and infill development to achieve a form and character which is compatible with the style, era and character of historic buildings. With respect to new multi-family residential development or infill buildings in the Heritage Character Area, the following design criteria apply:

(i) Setbacks

The compatibility of setbacks with existing conditions on the blockfront.

(ii) Additions

The use of historically accurate add-on structures as the principal means of making an addition to existing historical buildings, while protecting their heritage value. The addition should be physically and visually compatible with, subordinate to and distinguishable from the historic building.

(iii) Building Form

Except for major new community/public use buildings where complexity of form may be required, the form of a new building in infill development should echo the simplicity/complexity of other heritage character building forms on the street.

(iv) Building Height Transitions

Building height transitions shall be used to ensure compatibility between multi-storey buildings and lower intensity development on adjacent properties.

(v) Rooflines

Roof forms for new residential buildings can vary, but should relate to neighbouring historic buildings in terms of type, roof pitch, level of complexity, and materials.

(vi) Building Face

New building faces should be compatible with historic buildings with respect to the ratio of solid (wall) to voids (windows and doors). On residential buildings, most windows should have a vertical proportion (being taller than they are wide).

(vii) Heritage Character Features

New development should be compatible with the style, era and character of surrounding historic buildings.

(viii) Lighting

The use of lighting fixtures which are understated and compatible with the heritage design and quality of the surrounding area is encouraged. In residential areas, lighting should be restricted to porch lights for private outdoor areas, and security lighting to illuminate pedestrian pathways and parking areas, both of which should be of a design so as to prevent light-spill onto adjacent properties.

(ix) Crime Prevention

Guidelines for Crime Prevention Through Environmental Design should be followed.

(x) Accessory Structures

Accessory Structures should be compatible with the principal building.

(xi) Utility elements

Utility elements such as wires, utility poles, antennae, vents, fans, and exterior heat exchangers should be placed in unobtrusive locations on site or screened with landscaping, or fencing, or both.

(xii) Signage

Signage materials and colours should be compatible with surrounding historic buildings. Residential signs can be freestanding signs placed perpendicular to the house in the front yard, or small projecting/flat signs attached to the wall at the first floor. Backlit acrylic signs are not appropriate.

(xiii) Spacing of Buildings

The siting of new buildings should reflect the existing spacing of buildings along the blockfront.

(xiv) Parking

Surface parking should be limited to driveways which occur to the side and rear of the building.

(xv) Fencing

New/infill development should incorporate fencelines/walls when adjacent to historic properties with fencelines/walls, and the fencing should be of compatible materials and colours. Chain link fences are not acceptable.

(b) Restoration of Buildings

Owners of properties containing historic buildings or heritage character buildings are encouraged to evaluate the architectural value of each structure prior to any major renovation or addition, to changes to the site layout of the property, or to any building improvements which will alter the facade of the building. Owners are encouraged to research their properties by consulting historic photographs or archival records before undertaking any work. In addition, owners should consider ways to improve the energy performance of their properties without destroying heritage character defining elements.

Any facade change is encouraged to remain in keeping with the architectural traditions found on the site. Specifically, this may be accomplished by:

- returning the exterior of the building to its original condition
- making renovations which are sympathetic to historical styles
- making improvements which maintain architectural styling of the building and provide for its longevity.

3.3.3 LANDSCAPING

(a) Natural Landscape Areas

Residential development which occurs adjacent, or in proximity, to areas of natural landscape should reflect a combination of both natural and urban treatments. Wherever possible, pockets of natural landscaping reflecting the vegetation heritage of the area should be maintained or installed in appropriate locations so as to provide visual relief in the surrounding built environment. Compliance with the City's Naturescape Policy is required.

(b) Landscape Groundcovers

Areas of a multi-family site not developed with hard surfaces should be landscaped with solid landscaping of ground covers, shrubs and similar planting. Extensive use of mulches, gravel, artificial turf or other similar types of soft materials as the primary ground cover is not acceptable.

(c) Interplanting for Expenses of Paved Areas

Areas of a multi-family site which are paved should have clusters of trees and/or other landscaping or alternate paving materials such as stamped concrete, banding, or pavers, installed in order to break the image of any extensive asphalt surface. Such landscaping is required for large outdoor parking areas, or for paved outdoor recreation/amenity areas.

Plantings in parking areas should be provided with ornamental guardrails in order to prevent damage from vehicles.

(d) Conservation of Mature Vegetation

The retention of mature vegetation on site is encouraged for all new development and redevelopment. Where retention cannot be achieved, replanting with appropriate tree species and other vegetation will be required. All plantings will be of a quality and specifications acceptable to the City.

(e) Landscape Screening/Buffering

Landscaped screening should be provided between all multi-family development and adjacent single-family areas, as well as between any residential area adjacent to commercial or mixed-use buildings in the Historic and Mixed Use Commercial and Residential Areas.

All residential areas should be screened with landscaping, fencing, berming, or a combination thereof, from arterial roads and other major transportation corridors. The screening will be designed so as to restrict noise and prevent vehicle headlight intrusion into residential units, as well as to prevent visual intrusion from passing vehicles.

(f) Amenities

All common outdoor areas on-site should be landscaped, and provided with seating.

(g) Landscaping Materials

Where wood is used for landscaping, squared or rounded timber ties of a minimum dimension of 4 x 4 inches in size should be used.

(h) Signage

Signage should be structurally integrated into the design of buildings. The location of signage should be shown at the time of the Development Permit application. Signage design submitted later for municipal review should clearly demonstrate all signage as being architecturally compatible with the building(s), and with the surrounding area in which it is proposed.

Building and site signage should be of a type which is compatible with a residential area. Indirect illumination of signs is acceptable, but the signage should be softly lit, and integrated into the overall design of the building and site.

Free-standing signage will be limited to a height of approximately 1.8m (6 ft.) from grade. The base of the sign should be surrounded by landscaping such as grass, shrubs or flowers. Artificial turf and chain link fencing are not acceptable as part of the landscaping.

3.3.4 LIVABILITY

(a) Siting

All buildings should be located or configured so as to:

- maximize natural light penetration into dwelling units and corridors/stairwells
- minimize shadow impacts upon adjacent sites and upon common outdoor areas of the subject site
- retain or create view corridors from the subject site, wherever possible
- maintain a spatial separation that maximizes privacy for all dwelling units on the site.

(b) Balconies/Decks

All multi-family dwelling units should be provided with private outdoor space in the form of decks, patios, and balconies. Balconies should be a minimum dimension of 1.8m (6 ft.) by 2.4m (8 ft.). Ground-level private outdoor areas should exceed this minimum, wherever possible.

Balconies for multi-family units which occur in a building intended to accommodate families with young children will be of a material and design which provide safe outdoor space for young children.

Screening by means of fencing, landscaping, or both, will be provided between ground-level private outdoor spaces. Balconies sharing a common flank will be provided with a separation of some screening material which provides each balcony with visual privacy.

Balconies/decks will be configured so as to minimize visual intrusion or shadowing from adjacent commercial/mixed-use buildings.

(c) Screening of Entrances

Outdoor private entrances to multi-family townhouse units will be screened/landscaped in a way that will provide privacy while still allowing sufficient visibility for security considerations.

(d) Bicycle Storage

Appropriately located secured storage for bicycles is encouraged.

(e) Lighting

Lighting of walkways and common entrances on-site will be sufficient to provide residents and visitors with a sense of personal safety and ease.

(f) Crime Prevention

Guidelines for Crime Prevention Through Environmental Design (CPTED) should be followed.

3.3.5 CIRCULATION AND ACCESS

(a) Treatment of Internal Circulation Routes

Surface materials and landscaping are to be used for both vehicular and pedestrian circulation on-site in such a manner that entranceways to the site, and important site elements are highlighted, and that public circulation areas are clearly differentiated from private and semi-private areas.

(b) Universal Accessibility

Wherever possible, all common areas of a multi-family development site are to be accessible to persons with physical disabilities. To this end, all site furnishings such as lighting, bollards, signage, guardrails and seating are to be located so as to not impede easy passage for persons in a wheelchair or persons who are visually impaired.

(c) Access to Natural Amenity Areas

Wherever development occurs adjacent to a public greenbelt, ravine, watercourse or other natural amenity, a pathway or other means of access from the subject site to these areas should be provided.

(d) Lighting

Lighting on site of walkways, parking lots, common areas, and public entranceways should be accomplished by means of lamp standards or light bollards which contribute to a consistency in design character throughout the site, and with the adjacent public street lighting, wherever possible.

Site lighting shall be of a design which prevents “light-spill” onto adjacent properties, and into the bedroom areas of dwelling units on the site.

(e) Vehicular Access

Vehicular access to underground parking, loading, and service areas should be provided from the rear. If this is not possible, any entrance from the street should minimize interruption to pedestrian movement, and to the building face on the street.

(f) Pedestrian Pathways

Interference between pedestrian movement/pathways and vehicle access should be minimized. Wherever pedestrian pathways on site intersect with areas of vehicular access to parking, the pedestrian right-of-way will be emphasized by means of painted road lines, raised pavers or some such other design feature intended to alert motorists to the pedestrian crossing.

3.3.6 RESIDENTIAL DEVELOPMENT IN PROXIMITY TO A RAILWAY CORRIDOR

When designing or assessing new residential development in proximity to a railway corridor, the following principles for mitigation design should be considered:

- Standard mitigation measures such as appropriate setbacks, acoustical and/or security fencing, berms, foundation isolation and sound and vibration attenuation measures
- In instances where standard mitigation measures are not viable, alternative development solutions may be considered to achieve the same objectives
- All mitigation measures should be designed to the highest possible urban design standards.

(a) Noise Mitigation

For new residential development in proximity to a railway corridor, a noise impact study prepared by a qualified acoustic consultant will be required to assess the impact of all noise sources affecting the proposed development and to determine the appropriate layout, design and required control measures.

The Canadian Transport Agency (CTA) report, Railway Noise Measurement and Reporting Methodology (2011) should be consulted for guidance and recommended content and format of a noise impact study for these affected areas.

(b) Siting

Careful consideration of the location and orientation of buildings can minimize exposure of sensitive spaces to railway noise. Site design should take into consideration the location of the rail corridor, existing sound levels, topography and nearby buildings. Noise barriers, acoustic shielding from other structures, and the use of appropriate windows, doors, ventilation and façade materials can all minimize the acoustic impacts of railway operations.

(c) Noise Barriers

Noise barriers must be constructed adjoining or parallel to the railway right-of-way. They must be constructed without holes or gaps and should be made of a durable material with sufficient mass to limit noise transmission to accepted standards. Masonry, concrete, or other specialist construction is preferred in order to achieve a minimum noise reduction combined with longevity.

Consideration should be given to limiting the visual impact of noise barriers in order to maintain a high level of urban design in all new developments, and to discourage vandalism. This can be accomplished by incorporating public art into the design of the barrier, or through the planting of trees and shrubs on the side of the barrier facing the development, particularly where it is exposed to regular sunlight.

Alternatively, the barrier itself may be constructed as a living wall, which also has the benefit of providing additional noise attenuation.

(d) Podiums

Outdoor rail noise can be substantially reduced by building residential apartments on top of a podium or commercial building space. If the residential tower is set back, then the podium acts to provide increased distance from the railway corridor, thus reducing the noise from the corridor and providing extra shielding to the lower apartments.

(e) Balconies

Providing enclosed balconies can be an effective means of reducing noise entering a building. Where enclosed balconies are used, acoustic louvres and a fan to move air into and out of the balcony space should be considered to address ventilation requirements.

(f) Vegetation

Vegetation such as trees and shrubs can be used to create the perception of reduced noise levels. Vegetation is also valuable for improving the aesthetics of noise barriers and for reducing the potential for visual intrusion from railway operations.

(g) Walls

In order to reduce the transmission of noise into the building, it is recommended that masonry or concrete construction or another form of heavy wall be used for buildings in close proximity to railway corridors. This will aid in controlling the sound-induced vibration of the walls that rattles windows, pictures, and loose items on shelving.

(h) Windows

Careful consideration should be given to the effects of windows on the acoustic performance of any building façade in

proximity to a railway corridor. The Sound Transmission Class (STC) rating system which compares the noise reduction that different windows provide should be consulted. Reducing the size of windows (i.e. use of punched windows instead of a window wall or curtain wall) should be considered.

(i) Doors

In order to ensure proper acoustic insulation of doors, heavy, thick and/or dense materials should be used in the construction of the door. Windows within doors should be considered as they exhibit a higher acoustic performance than the balance of the door material. Sliding patio doors should be treated as windows when assessing attenuation performance.

(j) Vibration Mitigation

For new residential development in proximity to a railway corridor, a vibration impact study prepared by a qualified acoustic or vibration consultant will be required. The report should include details of the assessment methods, summarize the results and recommend required vibration control measures given the particular conditions of the development site in question.

(k) Safety Barriers

Setbacks and berms should typically be provided together in order to afford a maximum level of mitigation. Where a standard berm and setback are not technically or practically feasible, due for example to site conditions or constraints, then a Development Viability Assessment should be undertaken to evaluate the conditions specific to the site, determine its suitability for development, and suggest alternative safety measures such as crash walls or crash berms.

3.4 TWO-FAMILY DWELLINGS

3.4.1 DEVELOPMENT STANDARDS

Specific standards for development have been established in the City of Port Moody zoning and subdivision bylaws, and through other pertinent development controls. Reference should be made to City bylaws in all cases.

3.4.2 FORM AND CHARACTER OF DEVELOPMENT

(a) Building character

New two-family dwellings/duplexes should respect the character of surrounding residential uses in terms of their siting, design, scale, massing and height. Side-by-side dwelling units should be individuated as much as possible and take the form of separate units rather than a single monolithic structure. "Mirror image" facades are discouraged. For up/down or front to back forms this appearance may vary, though the scale, massing and height should also take into account the neighbourhood's character.