

August 10, 2019

**717-743 W 28th Ave.
 Passive House Townhouses
 Design Intent and Relaxations – RM 8A**

We are attempting to design a compact townhouse project paying close attention to the best practises for delivering an economical low energy passive house project, while still meeting the requirements of the marketplace.

The principles are working with are:

- Compact building massing. *(This is compromised by the top floor setback in the zoning envelope for the rear building, the work around for tree preservation, the desire to have direct access to the parkade and the roof access stairwells).*
- Solar Shading to south, east and west windows using overhangs and shrouds as appropriate.

Site Description

The site is 150 ft wide 125 ft deep. It slopes down 4'6" from the east to the west and about 2' from the street to the lane.

Massing and Building Organization

The building massing consists of a front building with a row of 8 two bedroom townhouses stacked over 8 one bedroom ground level units with a rear line of 7 non stacked 3 bedroom units, a two bedroom unit over the parkade entry ramp and a two level two bedroom unit planned around tree preservation and the pad mounted transformer requirements. A 2m wide fire fighter access path is provided along the west property line. The 2m path extends through the courtyard which is 26'10" wide at the ground level, 30'10" wide at level 2 and 40'4" wide at level 3. Rain and sun protected south facing porches and decks have been provided for most of the units.

Parking

Parking is accessed off the lane. The parkade is used for individual bike cages as well as garbage and recycling. Ground floor units have direct access from the parkade to a basement storage space. The parkade is aligned with the exterior walls above to leave a substantial portion of the site perimeter on natural grade.

Exterior Materials

We are using Hardie 2.0 field painted cladding with metal panel accents. Guardrails are aluminum with glass panels. The lower panel will be obscure glass to screen the balconies. The roof hatches will be clad in standing seam metal roofing.

Design Guidelines

The design is a courtyard row house.

- Entries to the front row are oriented to the street with porches and balconies activating the street frontage.

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- The stair and circulation to the parkade access door is included for each unit that has direct access to the parkade. The balance of the room is not included.

Height

- The height relaxations we are requesting apply only to the west end of the site where the grade is lowest.
- We are requesting a height relaxation for the rear building of .5m for a small portion of the top level to account for the 9' ceilings on the second floor and thicker roof insulation to allow for the installation of the HRV ducting in accordance with 10.18.4. We have used an 8' ceiling on the third level to mitigate the extension.
- We are using the provisions of 4.3.4 to create a compact 3 storey front building meeting the 11.5m height envelope.
- We are requesting that the height envelope be relaxed 1.1m for the front building to allow roof top patio access in accordance with section 10.18.5 (d) and (e) of the bylaw plus an additional .15m to account for insulation thickness for a total relaxation of 1.25m.

Front Yard

- We are proposing to use the relaxed porch setback provisions to provide south face shading to the larger living room windows. We are also then incorporating private deck space with rain and sun shading to provide amenity for the unit occupants. The relaxation allows a 1.8m extension. With a .6m overhang this would be 2.4m as drawn.

Rear Yard

- We have met the rear yard provisions of the bylaw. All the three level units meet the 3.0m setback in the bylaw when a 2 ½ level structure is being provided.
- The structure over the parkade entrance is 2 storeys high and meets the 1.8 m rear yard provisions in the bylaw.

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- All units have light and ventilation on both the south and north exposures.
- The upper units have access to a roof through a roof door/window, which can enhance natural ventilation through the stack effect.
- The courtyard width exceeds the minimum 24' prescribed in the guidelines for levels one and two and 32' prescribed for level 3.
- Ceiling heights are generally 9 ft, which is helpful to allow installation of the heat recovery ventilation system.
- Landscaping in the courtyard buffers the ground floor bedroom windows, which have been oriented to the corner to allow for an angled rather than a direct view.
- Double stud separating walls and concrete topped party floor assemblies will enhance acoustic separation.
- All units have a high level of privacy with direct access to the entry porches.
- A 2m wide path for firefighting has been located on the west side.
- A pathway to the lane has been provided on the east side. The west side tree preservation strategy makes this challenging along the west edge.
- All units have generous storage rooms.
- The lot with and unit widths exceed the minimums prescribed in the guidelines
- The front units are three storeys in building height with roof deck access protruding through the height envelope. The rear units are 2 ½ storeys in height.
- The project exceeds the maximum building width of 90 ft. The design is 128' wide. We have chosen to have the main access along the west property line where the preserved trees will add a soft focal point. To mitigate the length we have articulated the façade and the parapet in plan and section, used a material and colour change and created a front porch and deck structure to reduce the visual width of each section to about 28'. This enhances the compactness important for passive house design efficiency and allows us to get a proper separation on the parkade exits.
- The front stacked units have generous outdoor porches and covered balconies that face the street and also serve to shade the south facing windows.
- Exterior materials are cementitious and metal siding for durability.
- The lanescape is enhanced with a series of private landscaped yards with gates off the lane.
- Garbage and recycling is stored in the parkade.
- The courtyard provides south facing private patios for the rear units overlooked by the kitchen.
- Living rooms are oriented to the lane or the street to provide access to light and privacy. The exception to this is the unit over the garage entry which has a raised private patio in the courtyard which also looks west to the preserved trees
- We have preserved a pair of trees at the west end of the site, which will enhance the character of the courtyard.

Tree Protection

- We will remove two trees toward the front of the site.
- We are saving two trees at the west edge of the site that shield the courtyard from the neighbour.

Floor Space

- We are using the 5% density bonus available for Passive House projects in accordance with 11.34.
- We are exempting the additional wall thickness for additional insulation.

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ISSUE / REVISION DATE:

01	Issued for BP	Aug 12, 2019
02	Issued for Review	Aug 22, 2019
03	Issued for Review	Sept 04, 2019
04	Issued for Review	Sept 04, 2019

PERMIT NUMBERS:

Development Permit: DE
 Building Permit: BU

LEGAL:

PLAN OF LOTS 10, 11 AND 12, ALL OF BLOCK 718, DISTRICT LOT 526, PLAN 7090

SEAL (IF REQ'D):

THESE DRAWINGS ARE NOT VALID FOR PERMIT ISSUANCE UNLESS SIGNED & SEALED

PROJECT:

Townhouses
 717 - 773 W 28th Avenue, Vancouver B.C.

ZONING:

RM-8A

DRAWING TITLE:

DESIGN RATIONALE

PLOT/ISSUE DATE: Sep 04, 2019	REVIEWED: -	DRAWN: A.A.
PROJECT NO.: 1906	SCALE (U.N.O.): 1/8" @ 22X34" - 1/16" @ 11X17"	
REVISION: 04	DRAWING NO.: A0.1_1	