

MAISON SENIOR LIVING • WEST VANCOUVER, BC

A MUCH NEEDED PREMIERE ASSISTED LIVING AND MEMORY CARE COMMUNITY

REZONING, OCP AMENDMENT, DEVELOPMENT PERMIT APPLICATION • JANUARY 27, 2014 • COUNCIL

December 13, 2012

District of West Vancouver
Planning Department
750 - 17 Street
West Vancouver, BC
V7V 3T3



Attention: Geri Boyle, Manager of Community Planning

Re: Maison Senior Living Residence
Rezoning, OCP Amendment & DP Application

Milliken Developments is pleased to be submitting the enclosed Rezoning, OCP Amendment & DP Application requirements for the Maison Senior Living Residence located at the northwest corner of Taylor Way and Keith Road. Assisted living housing, especially with memory care services, is a significantly under-serviced sector in West Vancouver and the Maison project proposes to directly address this community need with a 93 suite / 110-residence facility.

Policy H3 of the OCP contemplates applications with the exact characteristics of the Maison project and "recognizes that opportunities occur in limited site-specific situations where a housing need may be addressed in a manner that is consistent with the Principles of the OCP." With support of this OCP policy among numerous others, we are confident that this proposal meets the high expectations that are expected of an OCP Amendment.

The vision for this project was led by Milliken Developments with the assistance of NORR and several other specialty consultants. Valuable design and analysis was undertaken to ensure the feasibility of this project as well as to produce a very high quality proposal that maximizes all site opportunities and adequately mitigates any impact.

Enclosed in this booklet, as outlined in the following page, is the design rationale and design drawings to support our submission.

We look forward to your feedback on our submission. We strongly believe in the vision of the Maison project and are committed to its success, so please do not hesitate to contact Milliken Developments if you require any clarifications or additional information.

Sincerely,

Kate Milliken Binns
kbinns@millikendevelopments.com

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**SECTION 1: DESIGN BRIEF – RATIONALE FOR PROPOSED DEVELOPMENT & NEIGHBOURHOOD
CONSULTATION SUMMARY**

MAISON SENIOR LIVING RESIDENCE DESIGN BRIEF - RATIONALE FOR PROPOSED DEVELOPMENT

REZONING, OCP AMENDMENT & DEVELOPMENT PERMIT APPLICATION

The proposed Maison Senior Living, private pay, boutique assisted living and memory care (Alzheimers and dementia) community is spearheaded by long time West Vancouver residents Don Milliken and Mark Coleman. Don and Mark are the founding partners of Maison Senior Living. Maison's proposed 91 suite / 103 residences community at the northwest corner of Taylor Way and Keith Road is intended to address a serious need for high quality seniors' care in West Vancouver. At present, according to a recent study by the Altus Group there is an unmet demand for 900 assisted living and memory care, private pay (i.e. not government funded) beds in West Vancouver alone. The available supply of this style and quality of seniors' care in West Vancouver is 70 beds. These 70 beds are divided between Hollyburn House and Amica. In each of these communities it is very difficult to be accepted as an assisted living or memory care resident unless you previously lived as an independent resident in the same facility.

The sad state of affairs is that residents in comfortable independent living focused communities such as Hollyburn House, Amica and even the future Westerleigh usually progress to the point that they require more care than is available at these communities. At that point these seniors, and their families, often face the prospect of either moving to a publicly funded facility or moving outside of West Vancouver. Unfortunately, individuals who have resided in West Vancouver for decades are often forced to leave their home community to live elsewhere in the lower mainland. This is usually not the first choice of the senior or their families. Don Milliken experienced exactly this situation with his father beginning 8 years ago. His father and mother had lived in West Vancouver for over 30 years. His father's deteriorating condition led to home care, which worked for a while. When home care was no longer practical he was forced to move to a community outside of West Vancouver. His Alzheimer's excluded him from being accepted at Hollyburn House and Amica and it was the family's choice not to put him on a waiting list for West Vancouver government funded communities. Literally hundreds of West Vancouver families are facing similar situations. Maison Senior Living is intended to fill this much needed care for seniors in West Vancouver.

The generally accepted description of the levels of senior's care in Canada is independent living, assisted living and memory care.

Independent living can be generally described as senior's living together in a community for social interaction and group activities and often dining in a common dining room rather than preparing meals

themselves. Independent living accommodations vary but often include one and two bedroom apartments with kitchens. Examples in West Vancouver of high quality, private pay independent living focused communities are Hollyburn House, Amica and the future Westerleigh. Assisted living communities provide a higher level of care for seniors who have somewhat of a level of physical and/or mental disability. In an assisted living community a senior may have some level of, perhaps, Alzheimers and/or may have difficulty, for example, getting dressed or showering themselves. They may also be taking some medications which may require management. In West Vancouver, Hollyburn House and Amica provide 35 beds each for seniors with assisted living needs. Generally, though, a senior will only be accepted as an assisted living resident in these communities if they have already been living in the community as an independent living resident. Memory care refers to seniors with Alzheimers or dementia. Because their memory has deteriorated, these seniors require considerably more assistance and guidance with most day to day activities. Memory care seniors may or may not require physical assistance. In West Vancouver there is no private pay memory care available.

The proposed Maison West Vancouver is a community designed for 66 residents with assisted living care needs and 37 residents with memory care needs. There will be no independent living seniors residents in Maison West Vancouver. Maison's building design reflects the two levels of high quality senior's care being provided. At the south facing front entrance to Maison West Vancouver, on Keith Road, there is a spacious ground floor patio adjacent to a large common area living room with library, fireplace, theatre, a games and meeting area, and a bistro. Upstairs, accessed via an elevator or winding grande staircase, is a large dining room with fireplace, an expansive outdoor deck, and a private dining room. This second level also includes the kitchen, staff offices, and a lobby connection to the covered parking. These two levels are for the use of Maison's seniors with assisted living care needs.

Behind the facilities described above are three residential floors. The lowest floor is designed exclusively for a maximum of 36 senior's with memory care needs. This floor has expansive outdoor areas with south facing patios and a large outdoor patio and walkway to the north. The outdoor area to the north is very private and peaceful as a result of retaining walls and the site's topography. In addition to large activity areas, this floor has its own spacious private dining room with large deck with a view of the Lion's Gate Bridge and Stanley Park.

Thirty eight seniors will occupy each of floors 2 and 3 with assisted living care needs. These assisted living floors each provide large activity areas, including a library area on each floor and both have generous south facing deck areas and excellent views. Seniors on the assisted living floors will dine, use the bistro, use the private dining room for a family gathering, watch a movie, sit by one of two fireplaces and generally gather and interact with other residents in those areas adjacent to the front entrance and described above.

From a regulatory perspective, the Maison Senior Living project requires a rezoning and amendment to the Official Community Plan if it is to be realized. It is clear that such an amendment is both anticipated and strongly supported by Policy H3 in the Housing chapter of the OCP because of the great improvement to housing diversity that comes with the Maison project. Detailed in this design brief, the enclosed design drawings are the specifics as to how the Maison project manages to meet and go beyond the H3 policy intent:

- minimal impact on established areas in terms of access, traffic, parking, and obstruction of views;
- provides a degree of physical separation (e.g. a road, green belt, alternate use, or change in natural grade) from the surrounding neighbourhood
- housing types include low-rise multiple family housing and supportive housing
- housing is intended for people with special accessibility needs, including certain forms of seniors' housing, should be located on relatively flat sites, close to transit, services and amenities
- siting, design and building forms contribute to desired neighbourhood character

With this, it is anticipated that the Maison application will be recognized as a noteworthy example of an appropriate OCP amendment that aligns with the District of West Vancouver planning principles and meets long-term community needs.

COMMUNITY CONTEXT

Demographic trends in North America, British Columbia and West Vancouver are well recognized with the largest segments of our population quickly approaching retirement and senior-status. The OCP for the District of West Vancouver repeatedly acknowledges this statistic reality and further reveals that this trend is amplified in West Vancouver, where populations are notably older than neighbouring municipalities:

“Over the decades, West Vancouver’s demographic profile has shifted from a fairly homogeneous population of mostly young families with children, to one of a greater proportion of older residents and smaller families.

BC Stats projections indicate that the aging trend in West Vancouver will continue, with fewer young children and youth and significantly more older people than today.

The Maison Senior residence in West Vancouver is a specific reaction to address these new population characteristics and to ensure a known void is filled for the future needs of the community.

Specifically, the Maison project is targeted at a segment of the aging population that can no longer live independently. Assisted living with memory care is a critical component of housing diversity which many communities continually strive to develop, so older residents can remain in their neighbourhoods and close to family. Along with the specific statistics that are provided in the Altus report, this reality is also clearly recognized in the OCP:

“West Vancouver’s growing proportion of older residents will require a considerable increase in health, support and housing services to meet their varied needs.”

Further support for the project within a community context is found in the Social Planning chapter of the OCP where greater accessible is encouraged for buildings with more diverse health and wellness services. These specific elements of social planning are main tenets in Maison Senior Living community.

SITE CONTEXT AND LAND USE

This application proposes to consolidate and rezone the properties 707 Keith Road and 825 Taylor Way, located the northwest corner of Taylor Way and Keith Road. Currently zoned RS3, the resultant zone will be a Comprehensive Development (CD) zone fitting for a seniors’ specific use.

ADJACENT LAND USES ARE:

NORTH: two single-family lots zoned RS3. The lots are up-slope of the Maison site with several mature trees existing within the setback area on each side of the property line.

SOUTH: across Keith Road, the Evelyn project is zoned CD with a mix of residences ranging from single family houses to apartment buildings.

EAST: five single-family lots zoned RS3, across 4 to 5 lanes of Taylor Way. The homes are east of a soil bank and a line of trees that line Taylor Way. Only a very small portion of houses are visible from the street.

WEST: two single-family lots zoned RS3. Several mature trees exist within the setback area on each side of the property line.

A summary of the site statistics for the proposed 3 to 4 storey Maison residence is as follows:

PROPOSED ZONE CHARACTERISTICS

Site size	6434.55 sqm
Building Coverage	42%
Floor Area Ratio (FAR)	0.98
Maximum Height	14.5 m

Note: statistics are generated from the gross site area before accounting for a 172 sqm road dedication

As indicated above, the H3 policy recommends an OCP amendment for single family properties such as the an RS3 zone to a denser form if the resulting use is contextually appropriate, sensitively designed and notably beneficial to housing diversity in a meaningful way. The relationship of this relatively denser project to Taylor Way is supported by strong planning logic that often points to denser forms along main transportation corridors. Such developments along busier roads provide an effective transition to the less dense, single family neighbourhoods further from the road and are a common urban design strategy. The wider width of this arterial road also provides good distance between the single family houses to the east, in addition to the heavy tree cover that exists along the road as a screen. The Evelyn project to the south is just north of Park Royal and includes a multi-family development in the scale proportional and greater than the Maison proposal. From a land use perspective, the Maison development provides a logical extension of slightly increased density moving north from the important commercial hub of Park Royal, especially for a needed seniors’ facility like the Maison residence. Lastly, the strategies to ensure an appropriate interface with the single-family homes to the north and west are described in the Design sections below.

Also relevant in the assessment of the Maison proposal are other OCP amendments recently transacted in the District of West Vancouver. The above mentioned Evelyn project is a relevant example for the Maison project as is the recent Westerleigh development. The Evelyn project reinforces the OCP vision of increasing density in sites close to commercial centres with a diversity of housing. The OCP amendment for the Westerleigh seniors’ project was supported under the framework of the H3 policy for also filling a housing need in the community. Both the site and policy context of these precedent examples lend strong support for the OCP amendment rationale for the Maison project. Notably, the Westerleigh does not provide the breadth and diversity of assisted living and memory care services that will be available at the Maison residence. As a result, the housing niche filled by the Maison project is arguably even more beneficial to the community than the Westerleigh.



SITE, BUILDING AND ARCHITECTURAL DESIGN

The enclosed Maison design drawings illustrate the various considerations and treatments that were given for the facility and surrounding interfaces. The final design was derived through an iterative process including conscious design and valuable input from District planning staff and the development review committee. The building orientation and aesthetics were systematically designed and redesigned to arrive at a solution that best considers the site and neighbourhood context.

The Maison property slopes consistently down from the northwest to the southeast. This aspect of the site along with the adjacent single-family houses to the north and west provide the main considerations for siting the building and designing the appropriate form given the interfaces to the adjacent properties. In this regard, a notable design decision was to locate the building closely to and along Taylor Way. The majority of the building mass was purposefully directed at the east side of the site and set into the natural site grade. This yields a maximum distance between the Maison building and the adjacent house at the southwest along with a much shorter building height adjacent to the northern houses. The east elevation of the building illustrates that the south portion of the building is 2-storeys stepping up to 4-storeys. Moving further north, the increasing grade decreases the building height to 3-storeys, eventually revealing a building height of no more than 2-storeys above existing grade. The building is in fact 3-storeys at the north end, but has been purposefully recessed into the existing site topography to create an appropriate interface with the northern houses. Similarly, the north elevation reveals that the building is even more recessed at the northwest corner yielding a building height of only 1.5- storeys above existing grade. The building siting and form were also informed by various internal modifications such as the reposition of the kitchen to front Taylor Way rather than be closer to the existing house. In all, the exercises to continually refine these building elements led to a building form and location that fully considers the site context and respects the neighbouring properties. These design decisions are one example where the proposal is consistent with Policy NE 2, which is intended to minimize visual impacts of new development through design and construction.

The architectural aesthetic of the Maison residence is contemporary coastal style and has been thoughtfully designed to appropriately integrate into the local community and context. The horizontal roof planes of the building allow for a lower building profile to reduce visual impact and overshadowing. Elements of the façade with generous use of wood and glazing give a cadence to the building walls, and together with the various decks and courts, the building generates a unique character. The use of stone at the building base, cement board siding and panel systems for the upper floors and use of timber structure and detailing give the building a classic West Coast expression. A natural colour palette will also be used to ensure the building blends into the natural surroundings.

Given that the Maison residence will be an on-going operation, there is vested interested in incorporating sustainable and green building elements that will make the residence both energy efficient and a more enjoyable place to live. To this end, a number of components have been woven into the building design that meets the intent of superior environmental design stated in OCP Policy BF-A1. A benefit of this is also the relative reduction in greenhouse gas emissions that is targeted in the Climate Action chapter of the OCP. Included in the efficiency elements of the project will be lower flow plumbing fixture for water reduction and strict insulation and glazing measures. Mechanical systems will be optimized during detailed design to ensure the best balance of personal comfort and system efficiency for reduced consumption. In relation to other experiential components, local and regional materials and systems will be used whenever possible, including the use of wood structure for accents and exterior deck elements. Low emitting materials and paints will be specified and are in line with wellness goals of the facility. The south facing façade of the building is also an important component that will provide daylight and views from key gathering areas in the residence. Lastly, a vegetated roof over the common amenity area and a reflective roof over the remainder of the building will be provided to significantly reduce heat-island effect from the new building and help further realizing the intent of Policy NE 2, by helping to minimize environmental and visual impacts of the building.

In conclusion, numerous design strategies were utilized to ensure the suitable integration of the Maison residence into the surrounding area. The result is a building that strives and successes to contribute positively to the neighbourhood character.

LANDSCAPE DESIGN

An Environmental Site Inspection and an Arborist Report were completed for the project, which meets the intent of Policy NE 7 to inventory natural assets on site. As detailed in these reports, the existing site is predominately in a natural condition with a broad range of native plant material mixed in with several invasive species. While there are a number of valuable trees, many of the existing trees have previously been topped and are in fair to poor condition. The more valuable trees are located along the north property line and will prove valuable in their retention. The siting of the building and the creation of usable landscape open space is in direct response to the site opportunities. The proposed landscape design demonstrates continuity with the surrounding environment by maintaining the pre-existing site contours.

The overall landscape strategy for this project is to provide a calming natural environment for the use and enjoyment of residents and visitors. The front yard will have a slightly more ornamental feel picking up some of the character of Taylor Way above the Upper Levels Highway with a formal row of cherry trees and under plantings. The treatment of the corner of Keith Road and Taylor Way will provide a balance of a strong corner treatment with the provision of some views for the residents. Low retaining walls and site signage will be clad in natural stone.

The rear yard and flanking side yards respond directly to the natural forest character of the site. Tree retention and restoration to a healthy natural condition has been a priority with an exhaustive tree inventory and analysis forming the basis of the tree management planning and retaining wall configuration. This again supports the intent of Policy NE 2 to minimize or mitigate environmental impact through restoration practices. Particular attention has been paid to trees along the north and west edges of the site to maintain dense screening between the project and adjacent homes. Where gaps in the existing planting do exist, additional evergreen and deciduous trees will be planted in a natural pattern. The existing dense mixed hedging along the Taylor Way frontage will also be retained to provide screening to the building. Understory plantings will be predominately native to maintain a consistency with the existing site and in response to solar access.

A range of open spaces has been provided for the use of residents and with an understanding of the range of capabilities. Each space has a unique character in response to its solar orientation and views. At grade patios have been provided at the north and west faces with an accessible path connection around to the front of the building to a generous south facing terrace.

Elevated patios are also provided adjacent to amenity and dining areas and at key locations with sun exposure and distant views.

Sustainability has been further addressed in part through the protection and enhancement of the retained site, the use of a native drought tolerant plant palate, and through the introduction of storm water management strategies including rain gardens to detain storm flows.

INFRASTRUCTURE

A Servicing Brief completed by CREUS Engineering and it has been determined that the requirements of the proposed Maison development can be accommodated within the existing capacity of the District civil infrastructure. Given the central and urban location of this redevelopment, it is clear that the project does not unduly burden the existing infrastructure. Specific to stormwater management, the project is also committed to the intent of OCP Policy NE 8 and to deliver a stormwater management solution in a location and manner that promotes site sensitive design.

A Traffic Impact Study completed by the MMM Group indicates that there would be no major traffic or parking impacts generated from the Maison project. The nature of a seniors' residence, especially with memory care services, typically does not generate a high level of traffic or parking impact and any minor impact can and has been readily mitigated. As a result, filling this housing need with a facility such as the Maison project consequently fulfills the Transportation & Mobility Policy T2 and T5, to reduce vehicular dependency. Specifically addressed in the report is that "The north and southbound left-turn lanes at the Keith Road / Taylor Way intersection are anticipated to accommodate future traffic volumes such that vehicle queues (generated by left-turning traffic) will not spill back into the through traffic lanes on Taylor Way." This statement is true in a condition with or without the Maison development. The overall minimal impact associated with the traffic and parking requirements of the Maison project is consistent with expectations of the H3 policy.

CONCLUSIONS

We are confident that that the Maison Senior Living project will be a significant benefit to the housing diversity of West Vancouver given the community demographic trends and local assisted living statistics. The proposed location for the Maison residence is ideal for a small, high-quality assisted living and memory care community as the site offers very convenient access to family members and staff taking transit and provides for beautiful views for residents from a number of terraces and balconies. Our project team has invested a great each of thoughtfulness, working with the existing site topography and features, to create a building and landscape design that integration sensibly into the natural surroundings. Numerous sustainable features are also incorporated to enhance the living experience for residents and lessen the impact on our environment. We are proud that this application meets the very high standards set for the Maison Senior Living project and we look forward to taking the next steps toward realizing the vision for this important residence to West Vancouver.

NEIGHBOURHOOD CONSULTATION SUMMARY - JANUARY 27, 2014

From the initial meeting until present day, there have been 14 opportunities for interested parties/neighbours to obtain information, discuss their views and ask questions about the proposed development.

1. June 6, 2012 (6 months prior to application submission) – On June 5th, Don Milliken and Kate Milliken Binns sent introduction letters to the homeowners of 736, 752 and 760 Eden Place (the immediate adjacent neighbours), expressing our willingness to meet to introduce our proposed project and show them preliminary plans. Denise Beck and Robert Koby responded and a meeting was set for the evening of June 6th. At this meeting, preliminary plans and studies were reviewed, and Don and Kate reiterated several times their desire to work with the immediate neighbours to effectively screen our building and to provide a comfort level with the proposed development. We left our business cards, offered to return to meet with Denise and Robert at any time and encouraged them to contact us with suggestions, questions or concerns. We also offered to try to incorporate any reasonable design suggestions that the Beck/Kobys might have. We didn't hear directly or proactively from the Beck/Kobys again.
2. June 7, 2012 (6 months prior to application submission) – On the evening of June 7th, Don and Kate met with representatives of the Cedardale Ratepayers Association and ADRA (including Curt Shepard and Gordon Ward Hall), as well as a few immediate and non-immediate neighbours, at the West Vancouver Recreation Centre, to introduce our proposed development at the corner of Taylor Way and Keith Road. There were approximately 10-15 people present. Don introduced Milliken Developments and gave a brief company background, and then we discussed the strong need for assisted living and memory care beds in West Vancouver. We reviewed highlights of the Altus demand study and then went through a preliminary plan package. We left our business cards and encouraged attendees to contact us with comments, thoughts or questions. We didn't hear back from any attendees.
3. June 26, 2012 (5 ½ months prior to application submission) – Don and Kate met with the owners of 736, 752 and 760 Eden Place, and two people who live on Capilano Road (apparently friends of the hosts). We had already met with the owners of 760 Eden Place at their neighbouring home on June 6th, and the owners of 736 Eden Place attended the information meeting we held at the West Vancouver Recreation Centre on June 7th. What was planned as a 2-4 person meeting turned out to be 8 people, plus Don and Kate. The meeting was a result of the introductory letter sent on June 5th to the immediately adjacent neighbours. Don and Kate gave the Eden Place neighbours a brief background on Milliken Developments and some basic information on our Calgary seniors' development. We then discussed the strong need for assisted living and memory care in West Vancouver and went through a plan package. Four of the people present had already seen the information at previous meetings. Construction timing and duration were briefly discussed, as was the fact that we haven't made an application to the District yet, as we wanted to meet with the neighbours and receive their feedback prior to our submittal.

The meeting concluded with Don and Kate leaving three sets of the plan package with the Eden Place neighbours along with business cards. We offered to return for a follow-up meeting if desired and to incorporate any reasonable design suggestions that any of the group might have. We did not hear anything further from any attendees.
4. December 12, 2012 – Rezoning, OCP Amendment and Development Permit Application submitted.
5. April 8, 2013 – Council meeting to request Council's approval to move forward with Community Consultation and the Design Review Committee. Council unanimously approved the request. No neighbours attended or spoke at this meeting.
6. May 28, 2013 – Community Consultation Meeting took place at the West Vancouver Public Library. This meeting was noticed and advertised per proper District of West Vancouver protocol, and was attended by the three immediate Eden Place neighbours, among others. At this meeting, Geri Boyle gave an overview of the application as it relates to zoning and the OCP etc. Don Milliken, Ron Poon (architect) and Gerry Eckford (landscape architect) then presented the proposed development. Studies, plans and images were reviewed, and the applicant team responded to questions about traffic, parking, landscape screening and neighbourhood impact. Denise Beck (resident of 760 Eden Place) asked why we hadn't taken photos from her home/property as part of our contextual background work. We replied that we were happy to do so and would be in touch to set up the photos, as we would require her specific permission to access her property.
7. Early June, 2013 – Kate contacted the owners of 736, 752 and 760 Eden Place to attempt to set up a time to access the three properties, to take the photos that Denise Beck had requested at the public meeting. When Kate spoke with Denise, Denise asked "Why would you be taking these photos?", and when Kate reminded her about her request at the Community Consultation Meeting, Denise said "Oh, ok. I'll have to strategize with my neighbours and get back to you." Nothing further was heard from any of the neighbours until June 28th, when Diamond Karim (owner of 752 Eden Place) sent an email to Kate, advising that "we have requested and are awaiting further clarification from the District of West Vancouver". We are still unsure as to why the District needed to be consulted about a request made by Denise Beck. Finally, on July 19th, Andrew Franks emailed Kate to advise that access to the properties was granted, and his list of homes to photograph had expanded to include 770 and 780 Eden Place, which are non-adjacent properties to our site. In the spirit of cooperation, we agreed to include these homes in our photo session. Andrew Franks granted us access just days before our July 25th DRC meeting, and as a result, the photos couldn't be included in that package, so we elected to attempt to schedule the photos right after the DRC meeting.
8. July 25, 2013 – Design Review Committee meeting, where Immediate neighbours were in attendance. Some of the immediate neighbours elected to make comments at the end of the meeting expressing their opposition to the development. DRC recommended resubmission to address several relatively minor items.
9. August 16, 2013 – After much scheduling difficulty due to the homeowners' schedules (vacation etc), photos were taken by a professional photographer of 736, 752, 760, 770 and 780 Eden Place, with Don and Kate in attendance. The photo locations were chosen by the homeowners. The owners of all homes except for 770 Eden Place were present for the photos (they had directed us to take exterior shots only), and a lengthy, friendly and informative discussion was had with the owner of 780 Eden Place, Christopher Loat during the photo session. It was clear that Christopher Loat was confused about the height of our building, and we attempted to clarify this item for him, as well as explain about the significant greenbelt we are creating between our building and the neighbours' homes. The meeting ended on a very friendly note.
10. October 5, 2013 - On Saturday, October 5th, Don and Kate met with the owners of 736, 752, 760, 770 and 780 Eden Place to discuss updated plans and images of the proposed development. The meeting took place in the Karim's (752 Eden Place) home. In advance of this meeting, Don sent the email contained in the fourth attachment to this email. The homeowners didn't offer much feedback in response to the information presented, and once again, Don and Kate reiterated that any reasonable suggestions from the group would be incorporated into our design and plans. No such suggestions were made at this meeting. We also offered to come back for further discussion if any of the group requested it.
11. October 7, 2013 - Council meeting where District Staff reported on the Community Consultation process. The immediate neighbours spoke in opposition, along with a few non-immediate neighbours. Council directed an additional Community Consultation meeting to occur prior to making a decision on whether to move the project forward.
12. October 17, 2013 – Design Review Committee meeting. Immediate neighbours were in attendance. Some of the immediate neighbours elected to make comments at the end of the meeting in opposition of the proposal. It was also made apparent at this DRC meeting that several of the DRC members had been approached by the immediate neighbours outside of the formal DRC meetings, to ask the members to come to their homes so the homeowners could further discuss their opposition to the development proposal. At least one DRC member accepted this offer and discussed his visit to the neighbours' homes at the DRC meeting. The DRC recommended resubmission to address five minor items.
13. November 21, 2013 - DRC meeting where the proposal received unanimous support. Immediate neighbours were in attendance. During the comment period, it was made apparent that several of the DRC members had, at the neighbours' invitation, visited the immediate neighbours' homes. Their findings generally were that the neighbours' concerns were perhaps overstated and the proposal received unanimous support.
14. December 5, 2013 – Open House at the West Vancouver Seniors Centre. The Open House was 4 ½ hours long and was advertised according to District protocol. The neighbours were permitted by the District to set up display materials, hand out information and engage with Open House attendees alongside the development team. Comment cards were available to be filled out and all received correspondence has been posted on the District's website. Approximately 75 people in total attended the Open House.

A follow-on meeting to discuss the development took place immediately after the Open House. The invitees for the meeting were those who spoke in opposition of the development proposal at the October 7th Council meeting. Fewer than half of the invitees attended the meeting. The meeting was attended by Councillor Cameron, Councillor Soprovich, Councillor Booth, Lisa Berg, Bob Sokol, the development team and the opposing speakers that elected to attend. The meeting lasted for an hour and a half, and speakers had full opportunity to ask questions and make comments to any of the participants.

From the initial meeting until present day, there have been 14 opportunities for interested parties/neighbours to obtain information, discuss their views and ask questions about the proposed development.

SECTION 2: ARCHITECTURAL RENDERINGS & SITE CONTEXT MATERIAL







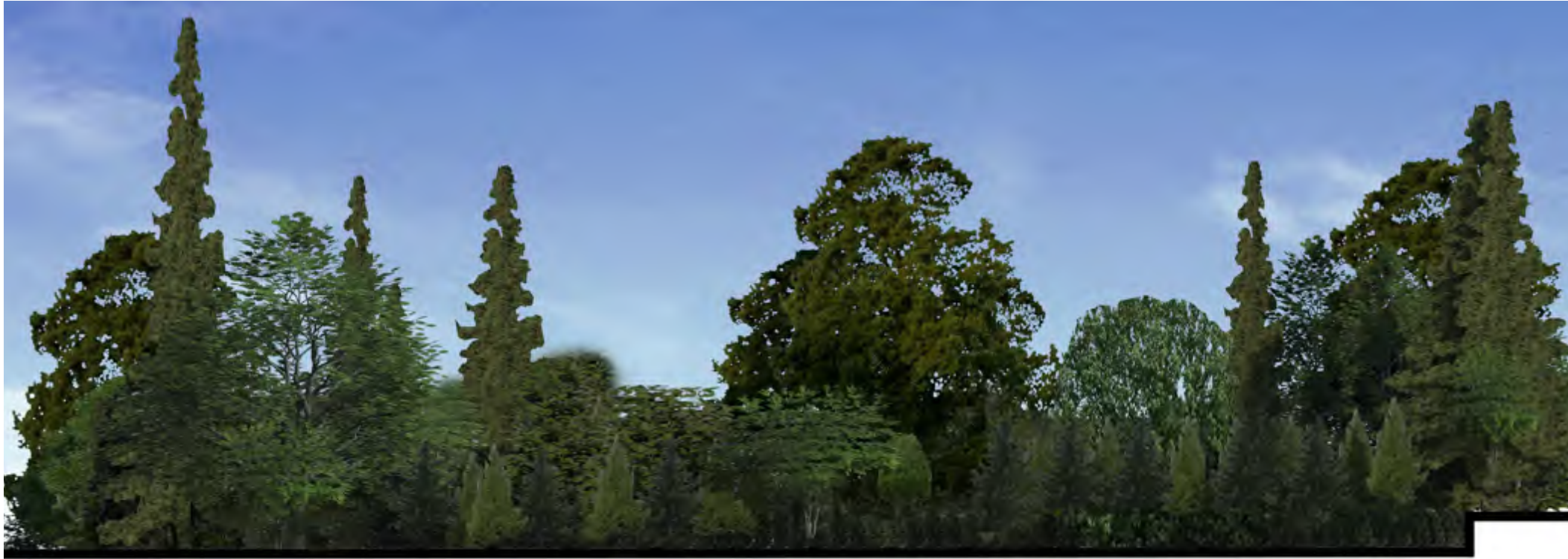


EAST ELEVATIONS WITHOUT LANDSCAPING



SOUTH ELEVATION

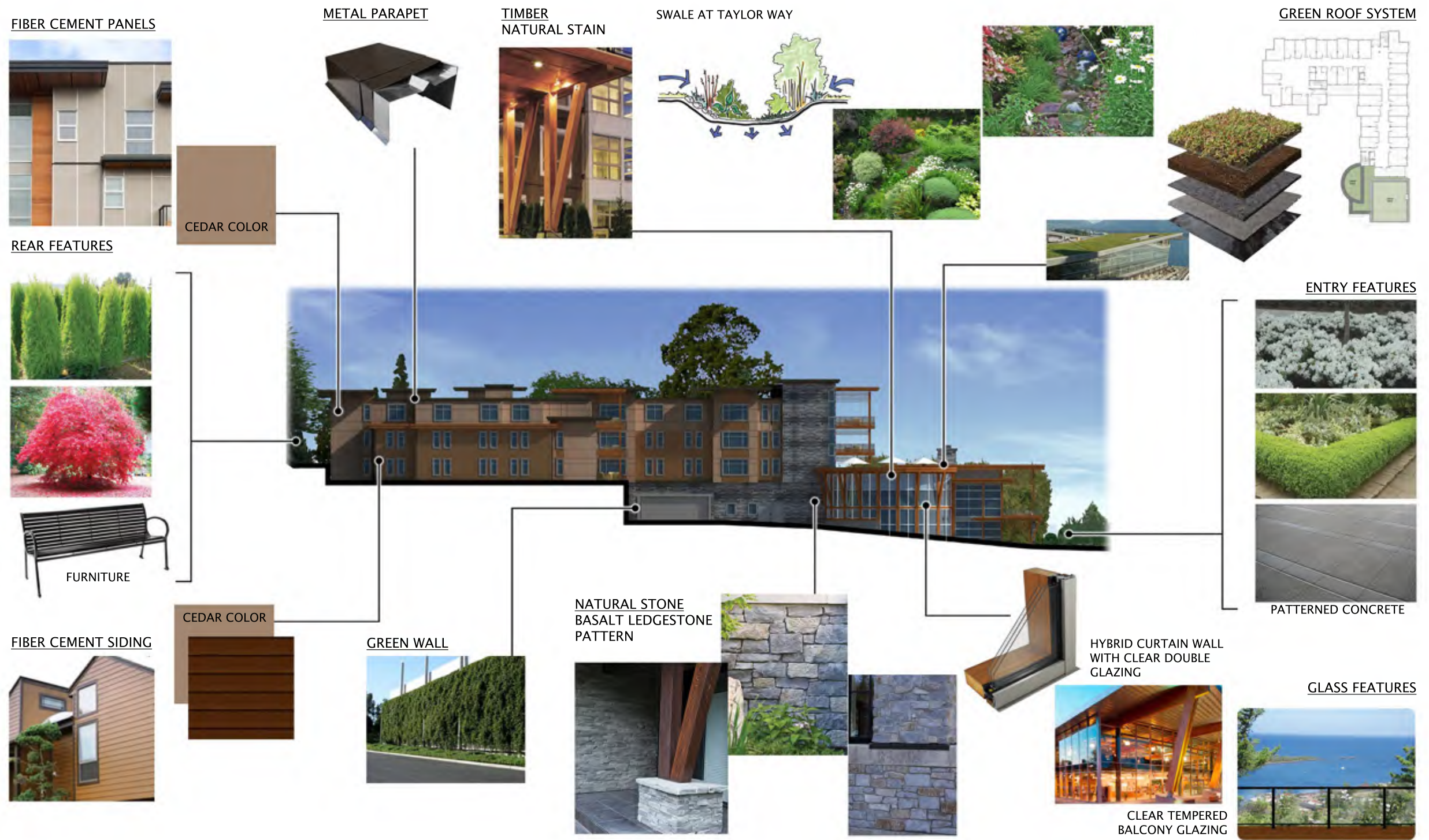


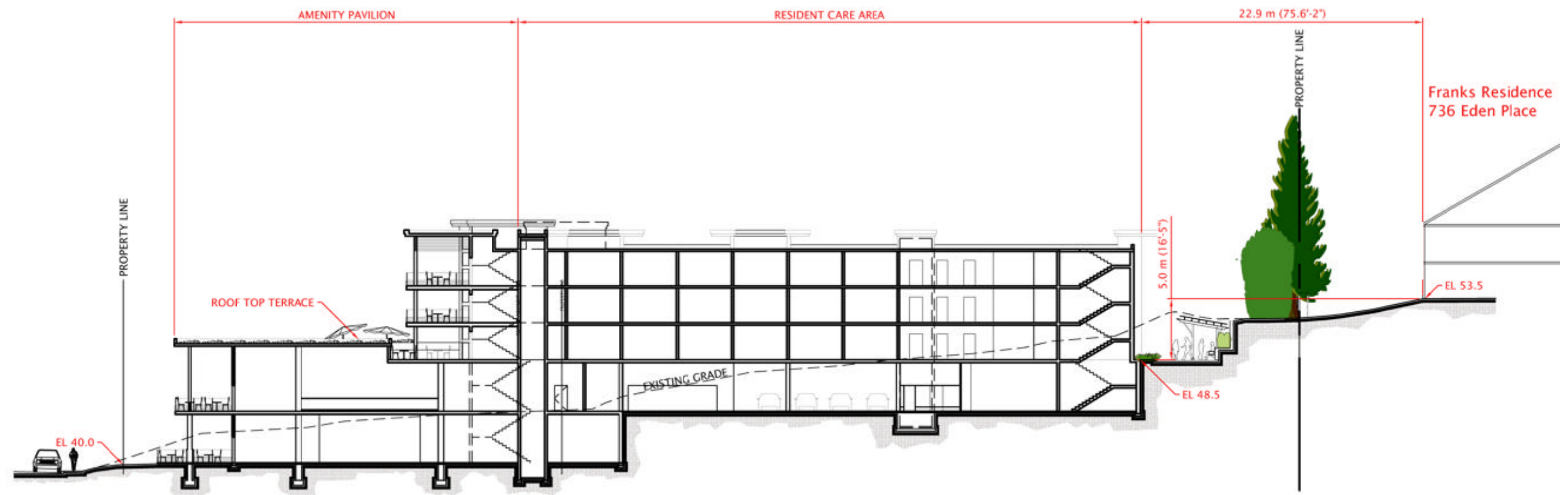
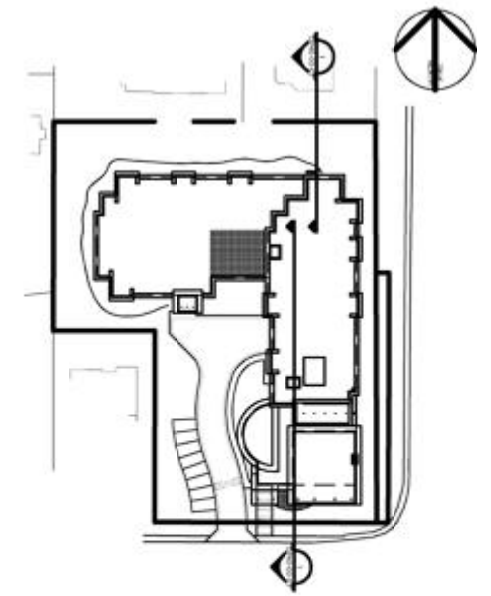


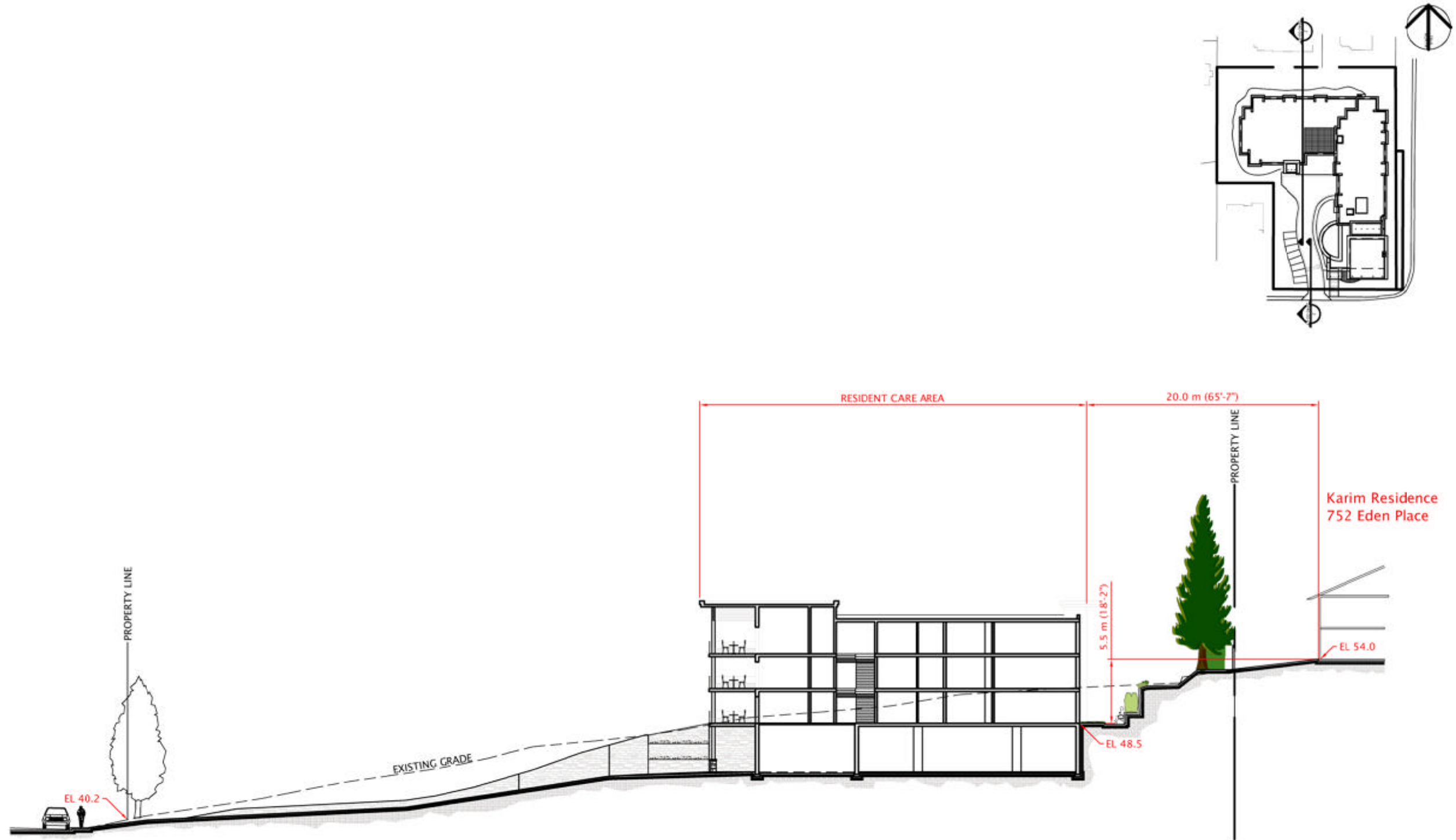
NORTH ELEVATIONS WITHOUT LANDSCAPING











SITE SECTION AT 752 AT EDEN PLACE









4



5



6



7








8



9



LEGEND	
	FRANKS RESIDENCE
	KARIM RESIDENCE
	BECK-KOBY RESIDENCE
	FALLS RESIDENCE
	LOAT RESIDENCE



736 EDEN PLACE



736 EDEN PLACE PHOTOS



BEFORE



AFTER

752 EDEN PLACE



BEFORE



AFTER

760 EDEN PLACE



BEFORE



AFTER

770 EDEN PLACE

BEFORE



AFTER



780 EDEN PLACE

SECTION 3: ARCHITECTURAL DESIGN DRAWINGS

MAISON SENIOR LIVING

825 TAYLOR WAY & 707 KEITH ROAD, WEST VANCOUVER, BRITISH COLUMBIA

MILLIKEN DEVELOPMENTS
334-901 WEST 3RD ST NORTH VANCOUVER, BC



DEVELOPMENT PERMIT: JANUARY 27, 2014
DEVELOPMENT PERMIT NO. 12-084
NORR FILE: OCVA-11-055

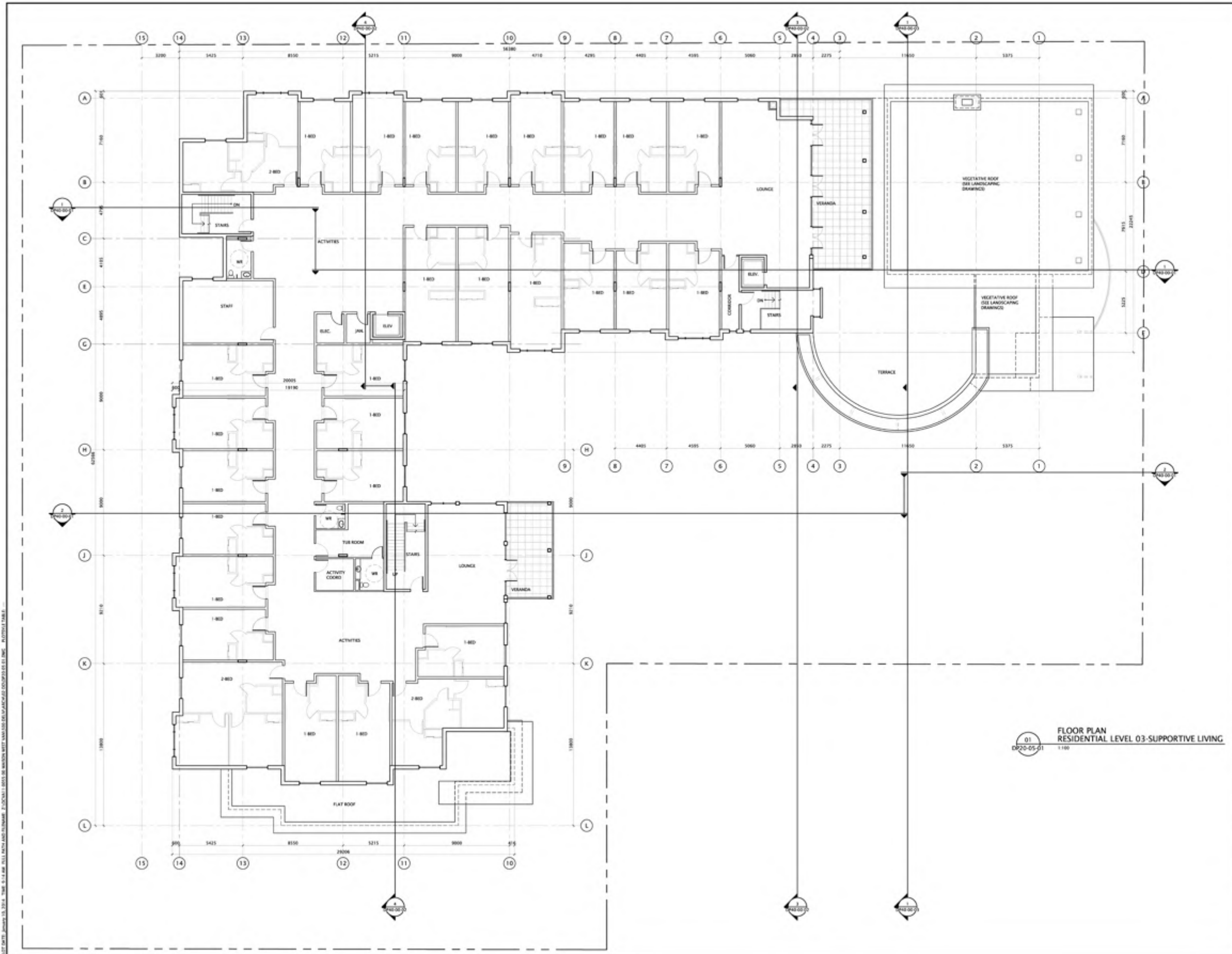
TREE CONSULTANT	TRANSPORTATION	STRUCTURAL	SURVEY	CIVIL	LANDSCAPE	ARCHITECTURAL
<p>RADIX Tree & Landscape Consulting Suite 264, 718-333 Brookbank Ave. North Vancouver, British Columbia V7J 3V8 T 778 3196164 F 778 2620140</p>	<p>MMM Group Ltd. 1045 Howe Street, Suite 700. Vancouver, British Columbia V6Z 2A9 T 604 685 9381 F 604 683 8655 www.mmm.ca</p>	<p>Glotman Simpson Consulting Engineers 1661 West 5th Ave. Vancouver, British Columbia V3S 5K7 T 604 734 8822 F 604 734 8842 www.glotmansimpson.com</p>	<p>Chapman Land Surveying Ltd. 107 - 100 Park Royal South West Vancouver, British Columbia V7T 1A2 T 604 926 7311 F 604 926 6923 www.http://www.chapmansurvey.com/</p>	<p>Creus Engineering Ltd. 200 - 901 West 16th St. North Vancouver, British Columbia V7P 1R2 T 604 987 9070 F 604 987 9071 www.creus.ca</p>	<p>Eckford Tyacke & Associates 1690 West 2nd Ave. Vancouver, British Columbia V6J 1H4 T 604 683 1456 F 604 683 1459 www.eckfordland.com</p>	<p>NORR Architects Planners 710 - 1201 West Pender St. Vancouver, British Columbia V6E 2V2 T 604 685 3237 F 604 685 3241 www.norr.com</p>
				<p>CP-1 DRIVEWAY & SERVICING PLAN</p> <p>SMP STORMWATER MANAGEMENT PLAN</p>	<p>L1.0 TREE MANAGEMENT PLAN</p> <p>L2.1 LANDSCAPE PLAN</p> <p>L2.2 LANDSCAPE PLAN NOTES & SCHEDULES</p> <p>L3.0 LANDSCAPE DETAILS</p> <p>L4.0 LANDSCAPE SECTIONS</p>	<p>DP00-00-00 COVER PAGE</p> <p>DP10-01-01 SITE PLAN, LOCATION PLAN & PROJECT STATISTICS</p> <p>DP20-01-01 LOWER AMENITY LEVEL</p> <p>DP20-02-01 UPPER AMENITY & PARKADE LEVEL</p> <p>DP20-03-01 RESIDENTIAL LEVEL 01- MEMORY CARE</p> <p>DP20-04-01 RESIDENTIAL LEVEL 02- SUPPORTIVE LIVING</p> <p>DP20-05-01 RESIDENTIAL LEVEL 03 SUPPORTIVE LIVING</p> <p>DP20-06-01 ROOF PLAN</p> <p>DP30-00-01 ELEVATIONS</p> <p>DP30-00-02 ELEVATIONS</p> <p>DP30-00-03 ELEVATIONS</p> <p>DP30-00-04 ELEVATIONS</p> <p>DP40-00-01 SECTIONS NORTH - SOUTH</p> <p>DP40-00-02 SECTIONS EAST - WEST</p> <p>DP40-00-03 SECTIONS EAST - WEST</p>



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www.norr.com

Walter D'Amico, Architect, S.A.A. License 10862
Michael G. Pomeroy, Architect, S.A.A. License 10862
David G. McFarlane, Architect, S.A.A. License 10862
Shawn Brundell, Architect, S.A.A. License 10862

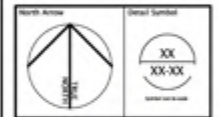




01
DP20-05-01 1:100
FLOOR PLAN
RESIDENTIAL LEVEL 03-SUPPORTIVE LIVING

DATE	ISSUED FOR	REV
12-12-11	DEVELOPMENT PERMIT	01
13-02-26	REVISIONS TO DP	02

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This drawing shall not be used for construction purposes until the seal appearing herein is signed and dated by the Architect or Engineer.



Maison
A Symphony Senior Living Community

- Consultants
- Civil: Creus Engineering Ltd.
 - Landscape: Eckford Tysack & Associates
 - Architectural: NORR Architects Planners
 - Structural: Clotman Simpson Consulting Engineers
 - Mechanical: [Redacted]
 - Electrical: [Redacted]



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Suite 710 - 1201 West Beaver Street
Richmond Hill, Ontario L4B 1P2
Tel: 905-882-3217 Fax: 905-882-3241
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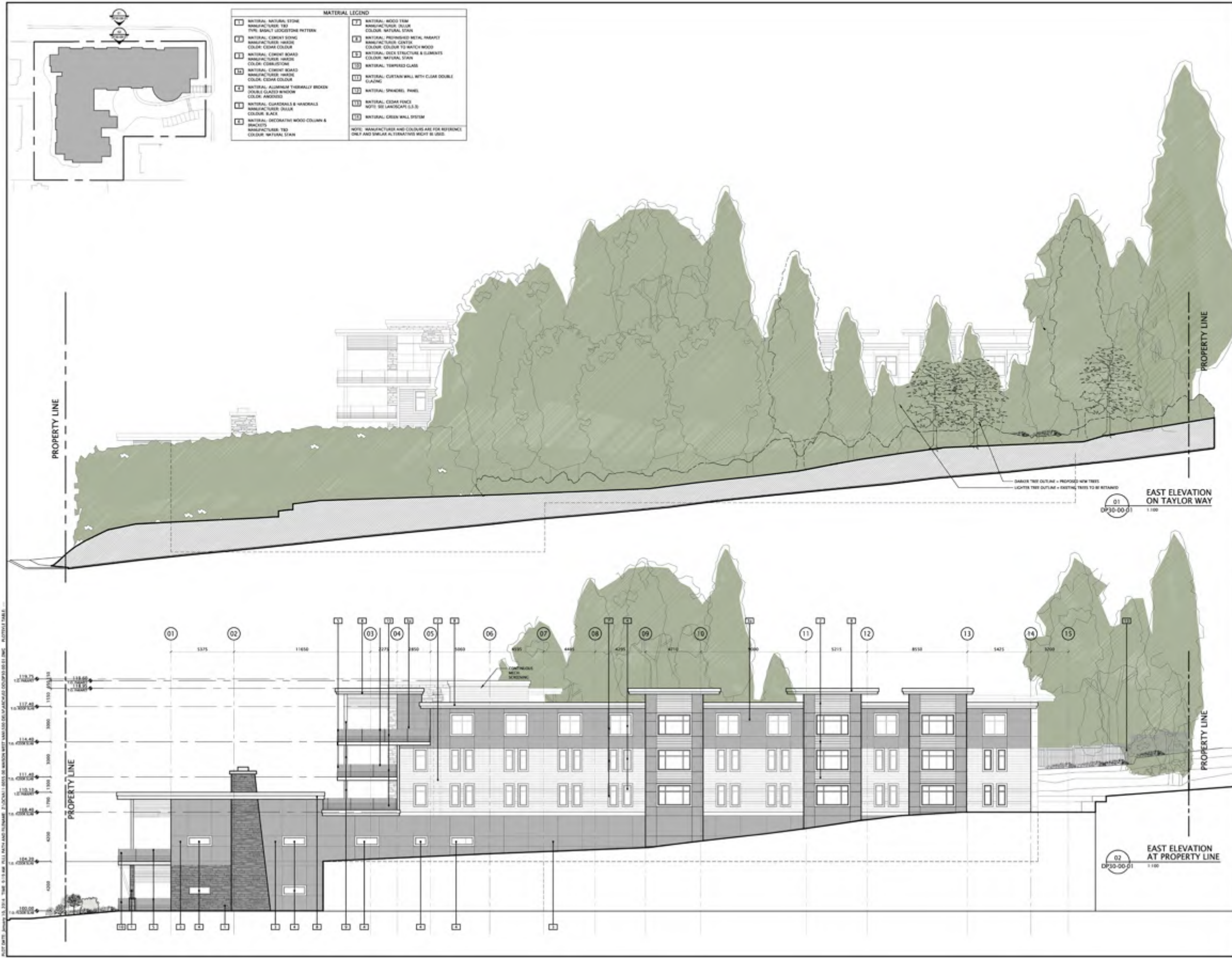
Project Manager E. POON	Client J. CARONDALE
Project Leader E. POON	Checked G. BURGILL

Client
MILLIKEN DEVELOPMENTS
124-901 WEST 3RD ST NORTH VANCOUVER, BC

Project
MAISON SENIOR LIVING
821 TAYLOR WAY & 757 82TH ROAD
WEST VANCOUVER, BC

Drawing Title
FLOOR PLAN
RESIDENTIAL LEVEL 03-
SUPPORTIVE LIVING

Check Scale (only for photos reduced):
Scale: [Redacted] @ [Redacted]
Project No. OCVA-11-0555
Drawing No. DP20-05-01



MATERIAL LEGEND

01 NATURAL NATURAL STONE MANUFACTURER TBD	06 NATURAL WOOD TRIM MANUFACTURER/COLOUR TO MATCH NATURAL STONE
02 NATURAL CEMENT STONE WITH RANDOM VEGETATION PATTERN	07 NATURAL FINISHED METAL PANEL MANUFACTURER/COLOUR TO MATCH WOOD
03 NATURAL CEMENT BOARD MANUFACTURER/COLOUR TO MATCH WOOD	08 NATURAL SLICK STRUCTURE & ELEMENTS COLOUR NATURAL STAIN
04 NATURAL CEMENT BOARD MANUFACTURER/COLOUR TO MATCH WOOD	09 NATURAL TINTED GLASS
05 NATURAL ALUMINUM THERMALLY BROKEN DOUBLE GLAZED WINDOW COLOUR ANODIZED	10 NATURAL CURTAIN WALL WITH CLEAR DOUBLE GLAZING
11 NATURAL GUARDRAILS & HANDRAILS MANUFACTURER/COLOUR BLACK	11 NATURAL SPANDEK PANEL
12 NATURAL DECORATIVE WOOD COLUMN & BRACKETS MANUFACTURER TBD COLOUR NATURAL STAIN	12 NATURAL CEDAR FENCE NOTE: SEE LANDSCAPE S.D.S.
	13 NATURAL GREEN WALL SYSTEM

NOTE: MANUFACTURER AND COLOURS ARE FOR REFERENCE ONLY AND SIMILAR ALTERNATIVES MIGHT BE USED.

DATE	ISSUED FOR	REV
12-12-13	DEVELOPMENT PERMIT	01
13-02-26	REVISIONS TO DP	02

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Maison
a Symphony Senior Living Community

Consultants:
Civil
Cetus Engineering Ltd.
Landscape
Eckford Tyacke & Associates
Architectural
Norr Architects Planners
Structural
Chapman Simpson Consulting Engineers
Mechanical
Electrical

NOOR Architects Planners Inc.
An Independent Member Company
Suite 710 - 1200 West Pender Street
Vancouver, BC, Canada V6E 2V3
T 604 681 3217 F 604 681 3241
www.norr.com

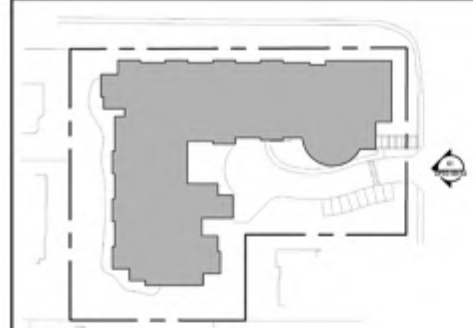
NORR
ARCHITECTS PLANNERS

Project Manager: B. POON
Project Leader: B. POON
Client: MILLIKEN DEVELOPMENTS
234 901 WEST 3RD ST NORTH VANCOUVER, BC

Project: MAISON SENIOR LIVING
821 TAYLOR WAY & 757 82TH ROAD
WEST VANCOUVER, BC

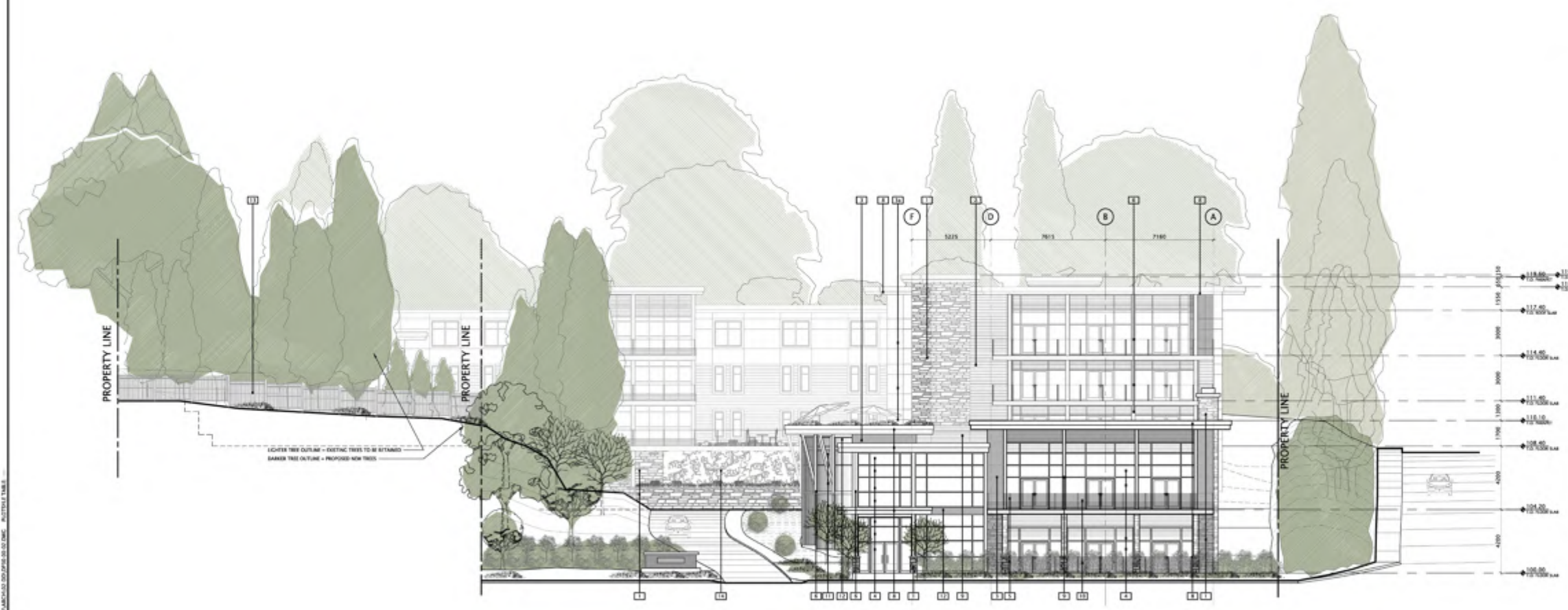
Project No: OCVA 11-0055
Drawing No: DP30-00-01

Project No: OCVA 11-0055
Drawing No: DP30-00-01



MATERIAL LEGEND			
11	NATURAL NATURAL STONE MANUFACTURED: 150 TYPE: SMALL LUNGS/STONE PATTERN	21	NATURAL MERO TIM MANUFACTURED: 150 COLOUR: NATURAL STAIN
12	NATURAL CONCRETE BOARD MANUFACTURED: 150 COLOUR: CONCRETE BOARD	22	NATURAL FINISHED WOOD: INSET MANUFACTURED: 150 COLOUR: COLOUR TO MATCH WOOD
13	NATURAL CONCRETE BOARD MANUFACTURED: 150 COLOUR: CONCRETE BOARD	23	NATURAL WOOD STRUCTURE & CLIMBERS COLOUR: NATURAL STAIN
14	NATURAL CONCRETE BOARD MANUFACTURED: 150 COLOUR: CONCRETE BOARD	24	NATURAL TINTED GLASS
15	NATURAL ALUMINUM THERMALLY BROKEN DOUBLE GLAZED WINDOW COLOUR: ANODIZED	25	NATURAL CURTAIN WALL WITH CLEAR DOUBLE GLAZING
16	NATURAL GUARDRAIL & HANDRAILS MANUFACTURED: 150 COLOUR: BLACK	26	NATURAL SHIMMER PANEL
17	NATURAL DECORATIVE WOOD COLUMN & BRACKETS MANUFACTURED: 150 COLOUR: NATURAL STAIN	27	NATURAL CEDAR FENCE NOTE: SEE LANDSCAPE 11.3
		28	NATURAL CROWN WALL SYSTEM

NOTE: MANUFACTURE AND COLOUR ARE FOR REFERENCE ONLY AND SIMILAR ALTERNATIVES MUST BE USED

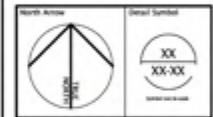


01 SOUTH ELEVATION FROM KEITH ROAD
DP30-00-02 1:100

DATE	ISSUED FOR	REV
2-12-13	DEVELOPMENT PERMIT	01
3-02-26	REVISIONS TO DP	02

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Maison
a Symphony Senior Living Community

Consultants:
Civil: Creas Engineering Ltd.
Landscape: Eckford Tysack & Associates
Architectural: Norr Architects Planners
Structure: Glotman Simpson Consulting Engineers
Mechanical:
Electrical:

DEVELOPER:
MILLIKEN DEVELOPMENTS
234-901 WEST 3RD ST NORTH VANCOUVER, BC

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Project Manager E. POON	Checker S. CAMPBELL
Project Leader E. POON	Checked C. BIRNELL
Client: MILLIKEN DEVELOPMENTS 234-901 WEST 3RD ST NORTH VANCOUVER, BC	

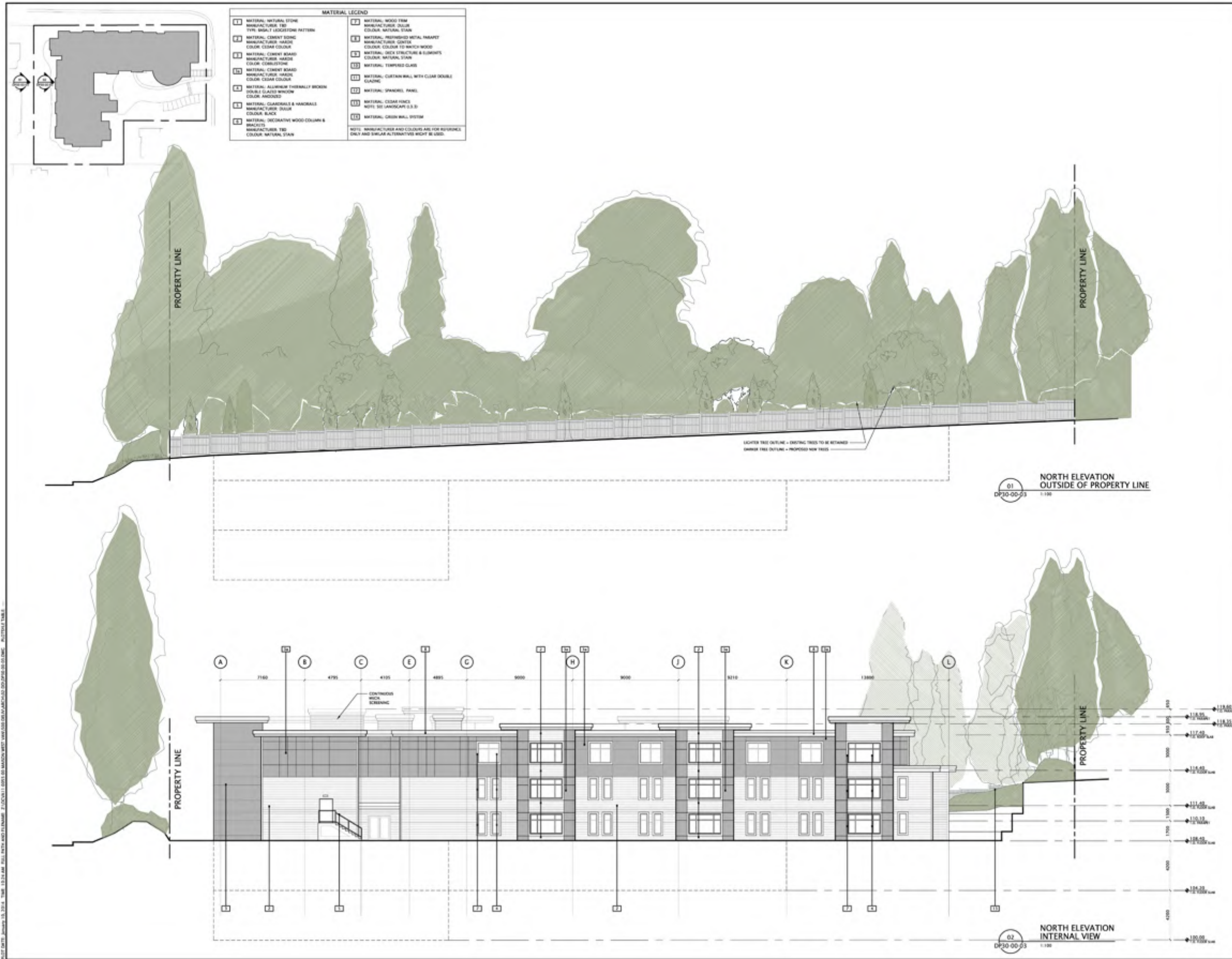
Project:
MAISON SENIOR LIVING
871 TAYLOR WAY & 757 80TH ROAD
WEST VANCOUVER, BC

Drawing Title:
ELEVATIONS

Check Scale (only by photo reduced):
1" = 1/8" & 1/4" & 1/2" & 1" & 2" & 4" & 8" & 16" & 32"

Project No.: OCVA-11-0555
Drawing No.: DP30-00-02

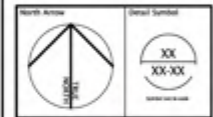
JUST DATE: 2026.03.20.14. TIME: 10:08 AM. FILE: 11074.PLT. NAME: 22022611.001.MAISON.WEST.VANCOUVER.BC.DP30-00-02.DWG. PLOTTABLE NAME:



DATE	ISSUED FOR	REV
2-12-13	DEVELOPMENT PERMIT	01
3-02-26	REVISIONS TO DP	02

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Maison
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Consultants:
Civil: Creus Engineering Ltd.
Landscape: Eckford Tysack & Associates
Architectural: Norr Architects Planners
Structure: Glotman Simpson Consulting Engineers
Mechanical: ---
Electrical: ---

0200

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NORR
ARCHITECTS PLANNERS

Project Manager	Elaine L. CARPENDALE
Project Leader	Christina C. BIRNELL

Client:
MILLIKEN DEVELOPMENTS
234 901 WEST 3RD ST NORTH VANCOUVER, BC

Project:
MAISON SENIOR LIVING
875 TAYLOR WAY & 757 60TH ROAD
WEST VANCOUVER, BC

Drawing Title:
ELEVATIONS

Check Scale (only by photo reduced):
1" = 1/8" & 1/4" & 1/2" & 1" & 2" & 4" & 8" & 16" & 32"

Project No.: OCVA-11-0055
Drawing No.: DP30-00-03



DATE	ISSUED FOR	REV
12-12-13	DEVELOPMENT PERMIT	01
13-02-26	REVISIONS TO DP	02

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North Arrow

Scale Symbol

Maison
a Symphony Senior Living Community

Consultants

- Civil: Cetus Engineering Ltd.
- Landscaping: Eckford Tysack & Associates
- Architectural: NORR Architects Planners
- Structural: Gloman Simpson Consulting Engineers
- Mechanical: ---
- Electrical: ---

PROJECT

NORR
 ARCHITECTS PLANNERS INC.

Project Manager: E. POON
 Project Leader: E. POON
 Designer: C. BURMILL

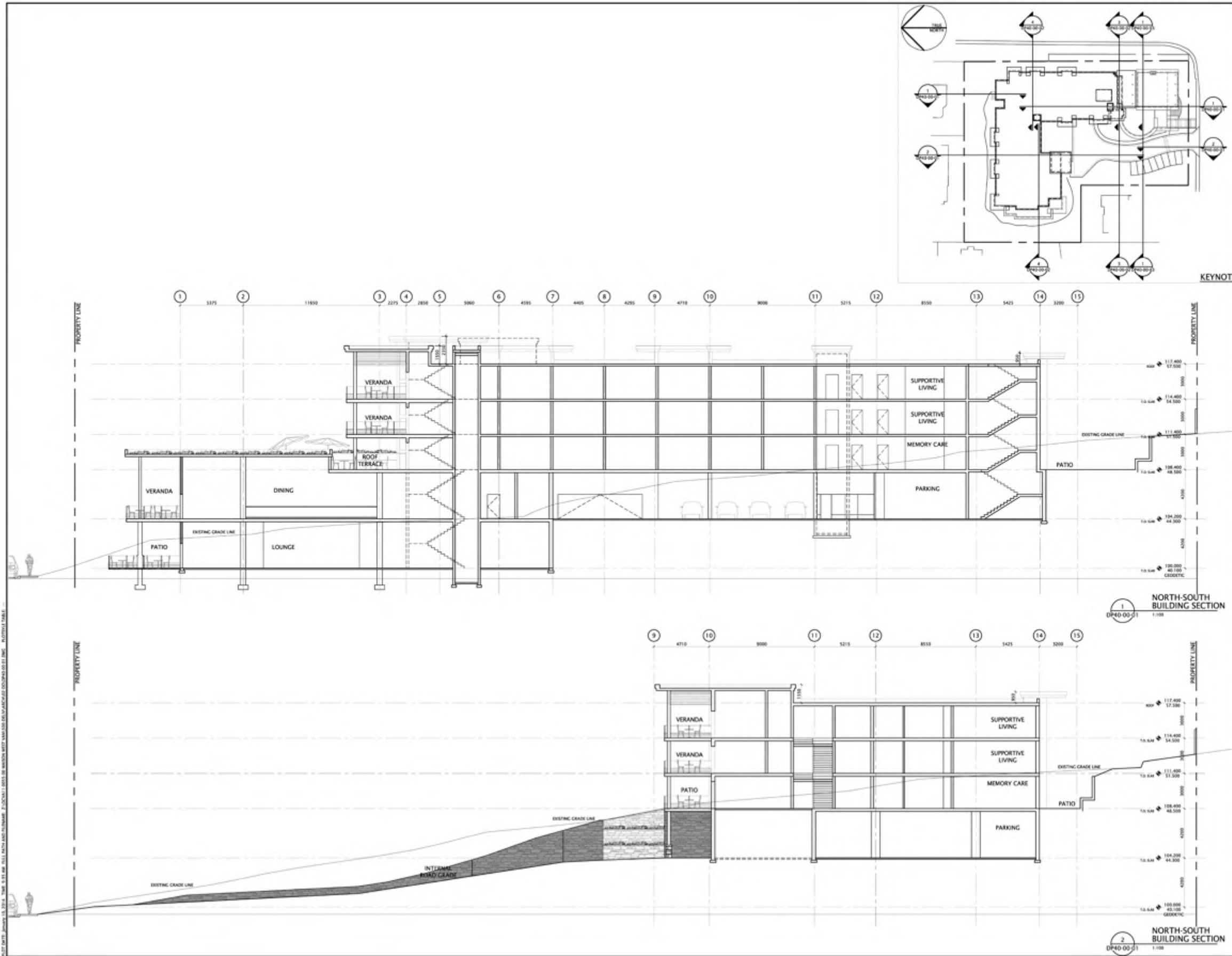
Client: MILLIKEN DEVELOPMENTS
 124-801 WEST 3RD ST NORTH VANCOUVER, BC

Project: MAISON SENIOR LIVING
 821 TAYLOR WAY & 707 60TH ROAD
 WEST VANCOUVER, BC

Drawing Title: ELEVATIONS

Check Scale (Only for photos indicated) 1:50mm 1:100mm 1:200mm

Project No: OCVA 11-0055
 Drawing No: DP30-00-04

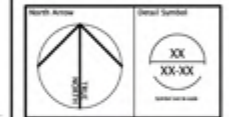


DATE	ISSUED FOR	REV
12-12-11	DEVELOPMENT PERMIT	01
13-02-26	REVISIONS TO DP	02

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Key Note



Maison
a Symphony Senior Living Community

Consultants
Civil
Creus Engineering Ltd.
Landscape
Eckford Tysack & Associates
Architectural
NORR Architects Planners
Structural
Gloman Simpson Consulting Engineers
Mechanical
Electrical

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Project Manager B. POON	Checker J. CARONDALE
Project Leader B. POON	Checker G. BURRILL

Client
MILLIKEN DEVELOPMENTS
124-901 WEST 2ND ST NORTH VANCOUVER, BC

Project
MAISON SENIOR LIVING
821 TAYLOR WAY & 757 KEITH ROAD
WEST VANCOUVER, BC

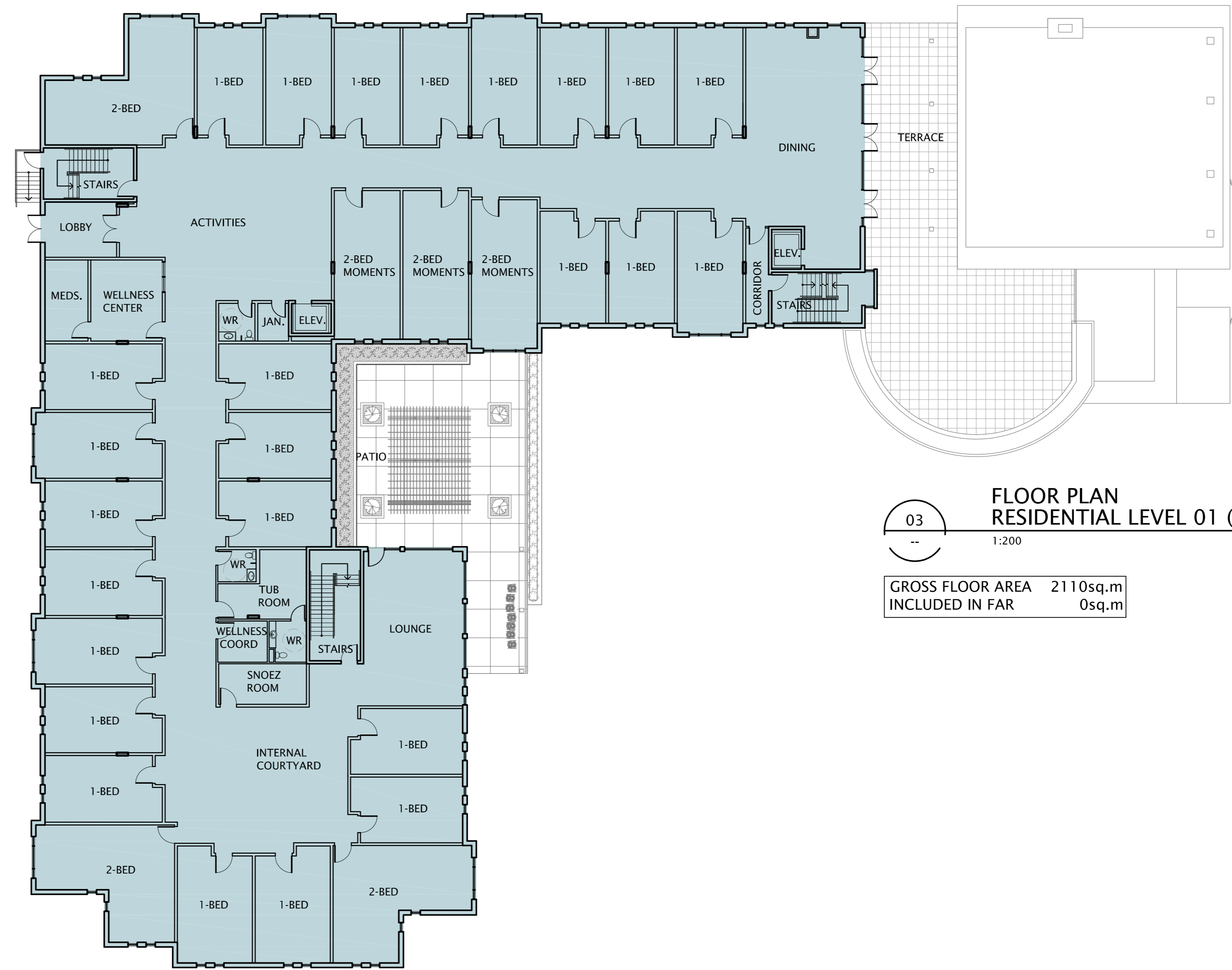
Drawing Title
BUILDING SECTIONS
NORTH - SOUTH

Check Scale (only by photo reduced):
Architect's Seal
Project No. OCVA-11-0555
Drawing No. DP40-00-01



**FLOOR PLAN
RESIDENTIAL LEVEL 03 (SUPPORTIVE LIVING)**
1:200

GROSS FLOOR AREA (EACH FLOOR) 1992sq.m
INCLUDED IN FAR (EACH FLOOR) 0sq.m



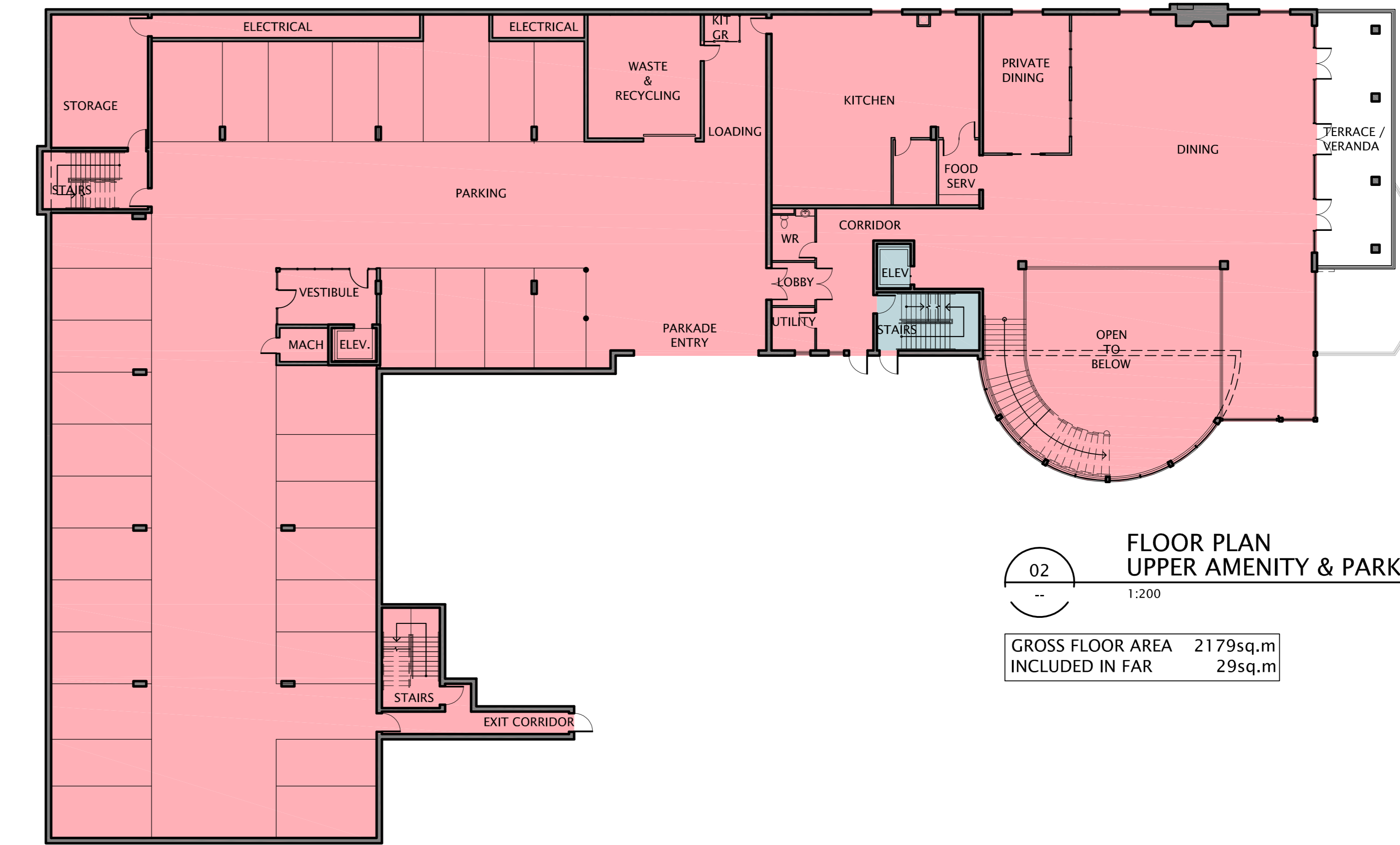
**FLOOR PLAN
RESIDENTIAL LEVEL 01 (MEMORY CARE)**
1:200

GROSS FLOOR AREA 2110sq.m
INCLUDED IN FAR 0sq.m



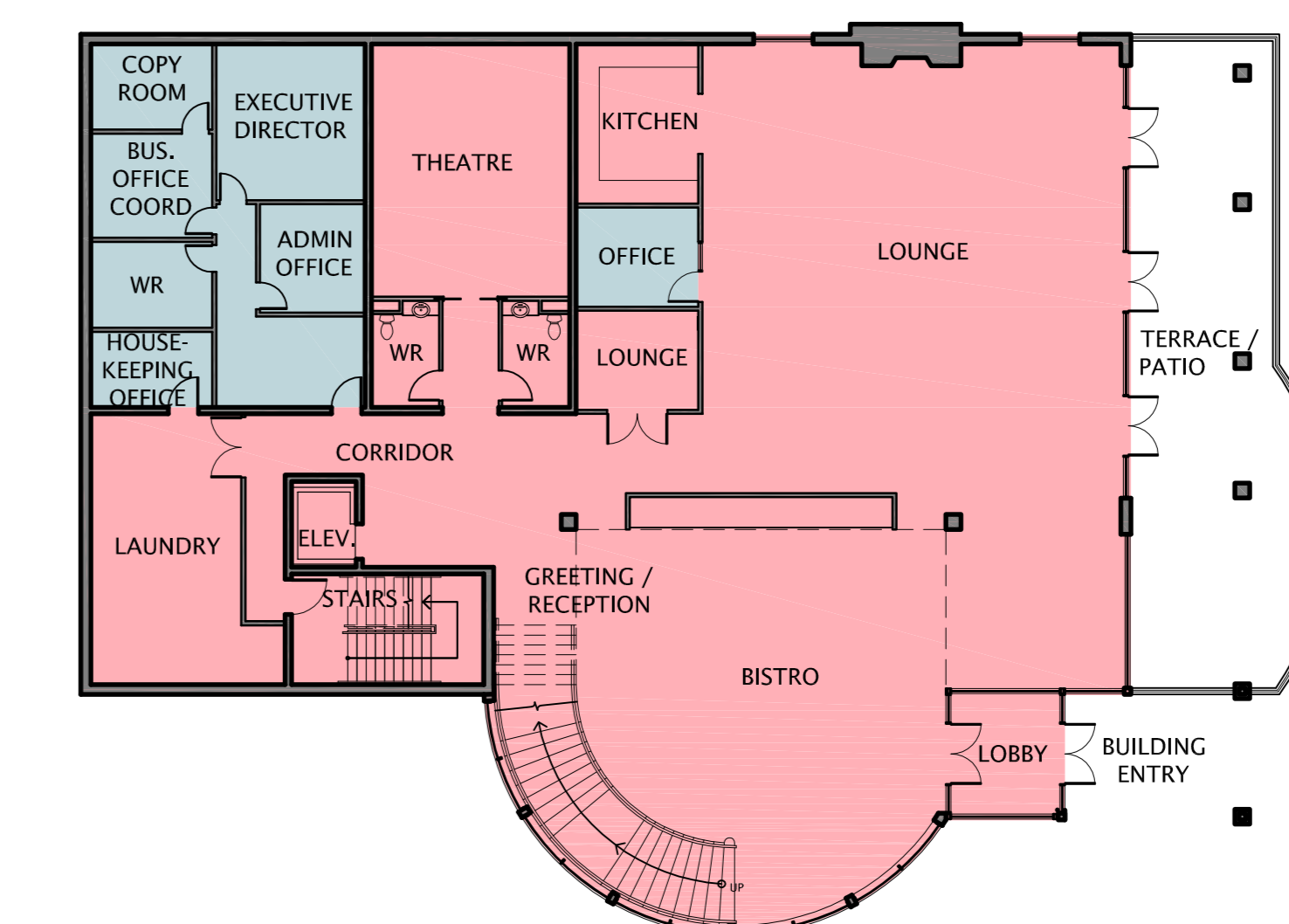
**FLOOR PLAN
RESIDENTIAL LEVEL 02 (SUPPORTIVE LIVING)**
1:200

GROSS FLOOR AREA (EACH FLOOR) 2097sq.m
INCLUDED IN FAR (EACH FLOOR) 0sq.m



**FLOOR PLAN
UPPER AMENITY & PARKADE LEVEL**
1:200

GROSS FLOOR AREA 2179sq.m
INCLUDED IN FAR 29sq.m



**FLOOR PLAN
LOWER AMENITY LEVEL**
1:200

GROSS FLOOR AREA 733sq.m
INCLUDED IN FAR 103sq.m

FAR AREA CALCULATION			
LEVEL	FLOOR AREA	INCLUDED IN FAR	NOT INCLUDED IN FAR
LOWER AMENITY	733sq.m	103sq.m	630sq.m
UPPER AMENITY / PARKADE	2179sq.m	29sq.m	2150sq.m
RESIDENTIAL 01-MEMORY CARE	2110sq.m	0sq.m	2110sq.m
RESIDENTIAL 02-SUPPORTIVE LIVING	2097sq.m	0sq.m	2097sq.m
RESIDENTIAL 03-SUPPORTIVE LIVING	1992sq.m	0sq.m	1992sq.m
TOTALS	9111sq.m	6331sq.m	2780sq.m

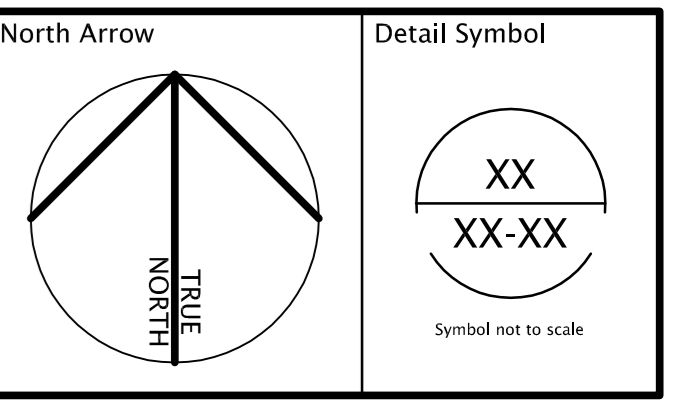
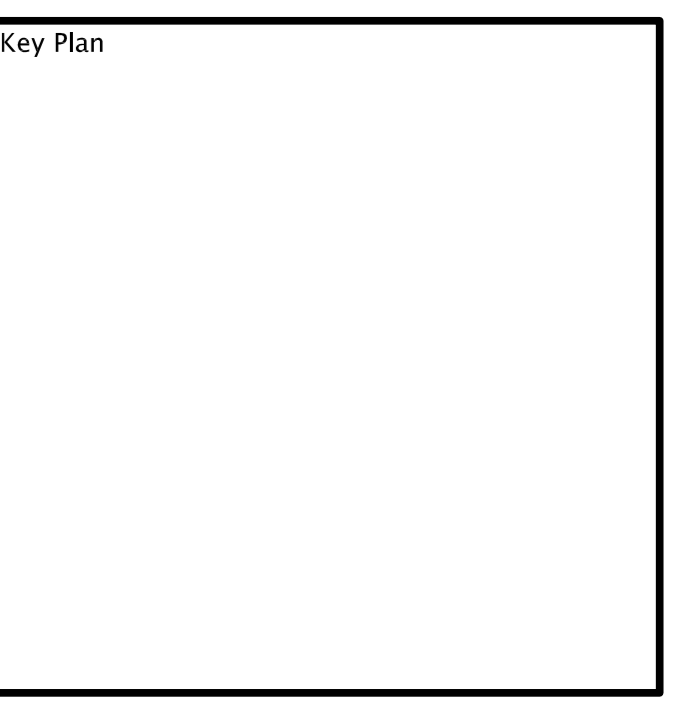
=> FAR = 6331 / 6434.55 = 0.98

LEGEND

- INCLUDED IN FAR
- NOT INCLUDED IN FAR

DATE	ISSUED FOR	REV
13-12-12	DEVELOPMENT PERMIT	01
13-02-26	REVISIONS TO DP	02
14-01-27	REISSUE FOR DP	03

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Maison
a Symphony Senior Living Community

Consultants
Civil
Creus Engineering Ltd.
Landscape
Eckford Tyacke & Associates
Architectural
Norr Architects Planners
Structural
Glottman Simpson Consulting Engineers
Mechanical
Electrical

NORR Architects Planners Inc.
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www.norr.com

NORR
ARCHITECTS - PLANNERS

Project Manager
R. POON
Project Leader
R. POON
Client
MILLIKEN DEVELOPMENTS
334-901 WEST 3RD ST NORTH VANCOUVER, BC

Project
MAISON SENIOR LIVING
825 TAYLOR WAY & 707 KEITH ROAD
WEST VANCOUVER, BC

Drawing Title
FAR AREA PLANS
& CALCULATIONS

Check Scale (may be photo reduced)
0 1 inch 0 10mm

Project No. OCVA-11-0055
Drawing No. DP20-00-01A

PLOT DATE: March 14, 2014 TIME: 4:58 PM FULL PATH AND FILENAME: Z:\OCVA11-0055-00 MAISON WEST VANSUB-DEVELOPMENT\OCVA11-0055-00-01.dwg PLOTTING TABLE: ---

SECTION 4: LANDSCAPE DESIGN DRAWINGS

825 TAYLOR WAY & 707 KEITH RD

for Milliken Developments

Legal Description:

Address: 825 TAYLOR WAY & 707 KEITH ROAD
WEST VANCOUVER, BC

eckford tyacke + associates

landscape architecture inc.

1690 West 2nd Avenue, Vancouver, BC, V6J 1H4
t | 604.683.1456 f | 604.683.1459 w | www.etala.ca

Owner: Milliken Developments
Architect: NORR Architects Planners Inc.

Consultants:

Electrical:

Civil: Creus Engineering Ltd.

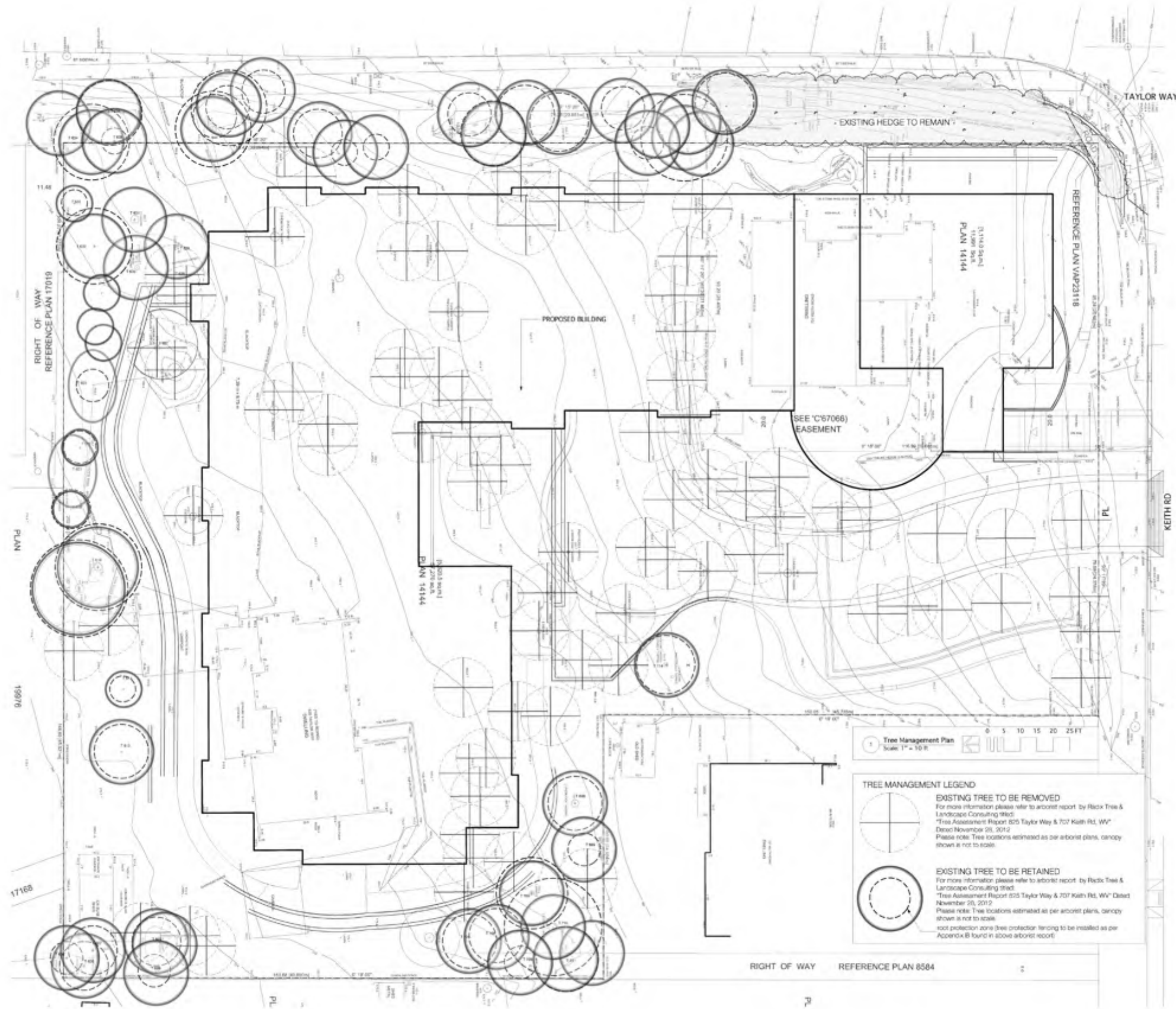
Structural: Glotman Simpson Consulting Engineers

Landscape: eckford tyacke + associates

RE-ISSUED FOR DEVELOPMENT PERMIT JANUARY 10, 2014

LANDSCAPE:

Sheet No.	Sheet Name
L1.0	Tree Management Plan
L2.1	Landscape Plan
L2.2	Landscape Detail Plans
L3.0	Schedules & Notes
L4.1	Landscape Details
L4.2	Landscape Details
L5.1	Landscape Sections
L5.2	Landscape Sections



Tree Management Plan
Scale: 1" = 10'

TREE MANAGEMENT LEGEND

EXISTING TREE TO BE REMOVED
For more information please refer to arborist report by Rick Tree & Landscape Consulting dated:
"Tree Assessment Report 825 Taylor Way & 707 Keith Rd, WV"
Dated November 20, 2012
Please note: Tree locations estimated as per arborist plans, canopy shown is not to scale.

EXISTING TREE TO BE RETAINED
For more information please refer to arborist report by Rick Tree & Landscape Consulting dated:
"Tree Assessment Report 825 Taylor Way & 707 Keith Rd, WV" Dated November 20, 2012
Please note: Tree locations estimated as per arborist plans, canopy shown is not to scale.
root protection zone (tree protector fencing to be installed as per Appendix B found in above arborist report)

Rev	Date	Revised By
1	05/01/14	DAK/Caroline
2	05/27/14	DAK
3	07/22/14	DAK/Caroline

Rev	Date	Revised By
1	05/01/14	DAK/Caroline
2	05/27/14	DAK
3	07/22/14	DAK/Caroline

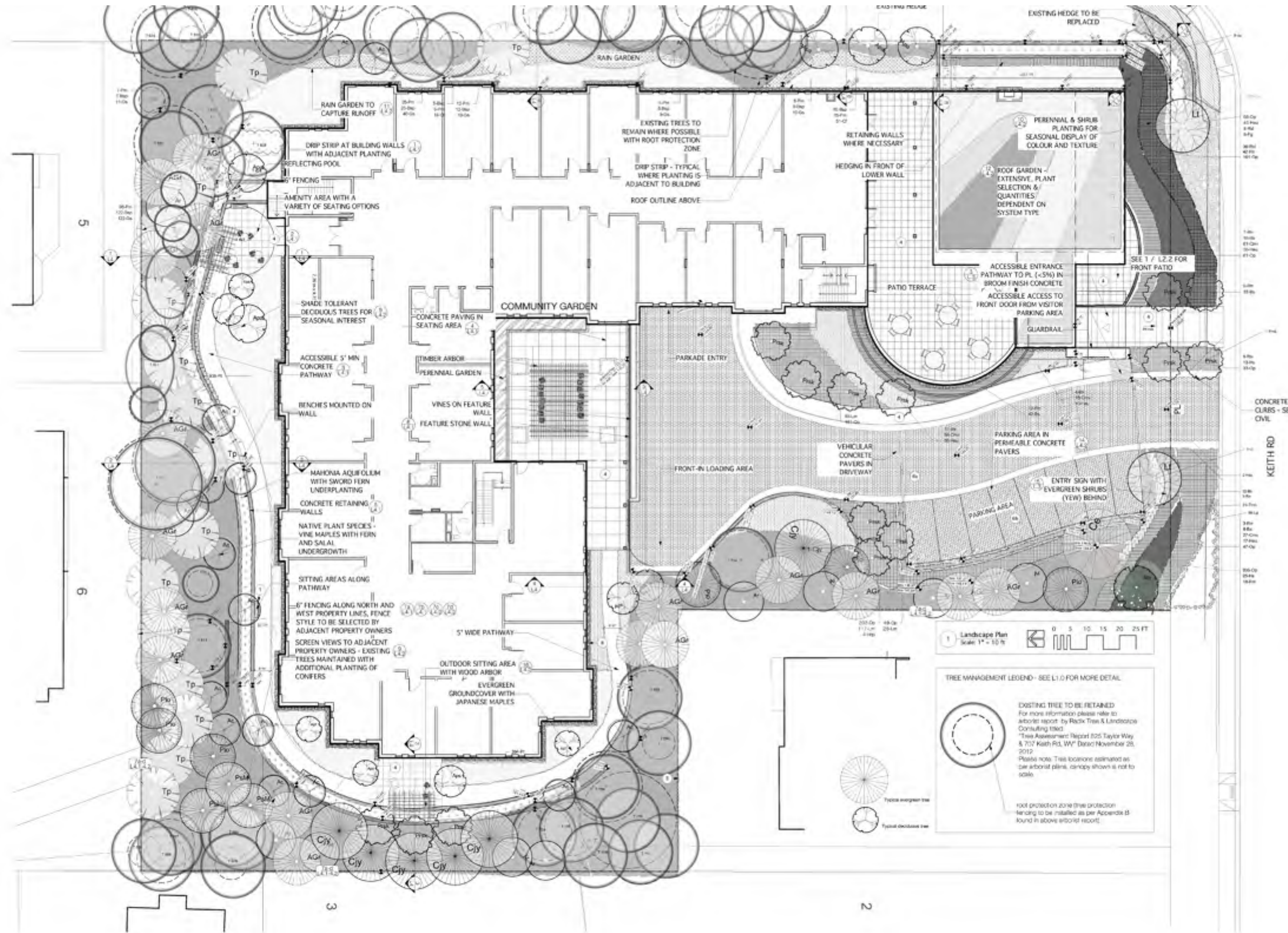


Project
**825 Taylor Way
& 707 Keith Road**
West Vancouver, BC

Issued for
Tree Management Plan

Rev	Date	Revised By
1	01/08/2014	DAK
2	01/08/2014	DAK
3	01/08/2014	DAK

Scale: **L10**



Rev	Date	Revised By
1	08/01/2014	W. Vanover
2	08/01/2014	W. Vanover
3	08/01/2014	W. Vanover

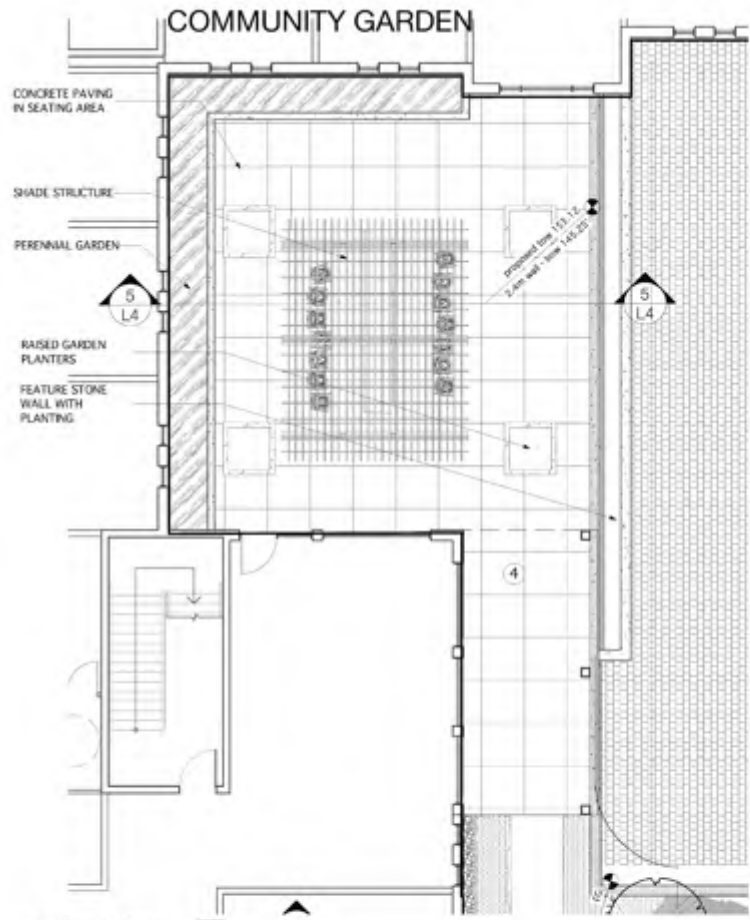
Rev	Date	Revised By
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2	08/01/2014	W. Vanover
3	08/01/2014	W. Vanover
4	08/01/2014	W. Vanover
5	08/01/2014	W. Vanover
6	08/01/2014	W. Vanover
7	08/01/2014	W. Vanover

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 ecoterra + associates
 1100 West Broadway
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 Fax: 604.681.1112
 www.etaconsultants.com

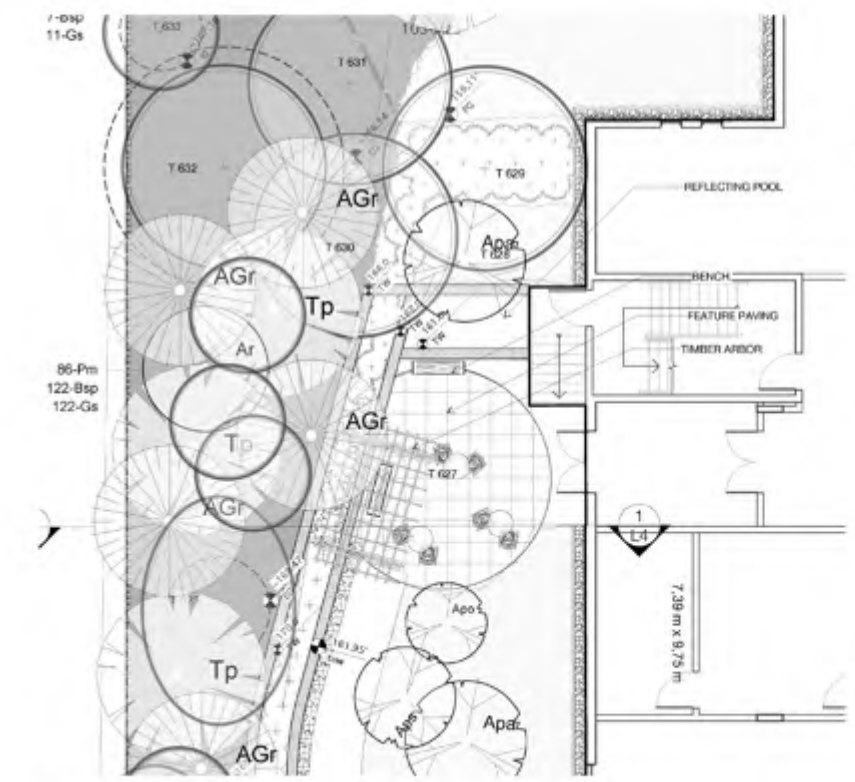
Project:
825 Taylor Way & 707 Keith Road
 West Vancouver, BC

Drawn by:
Landscape Plan

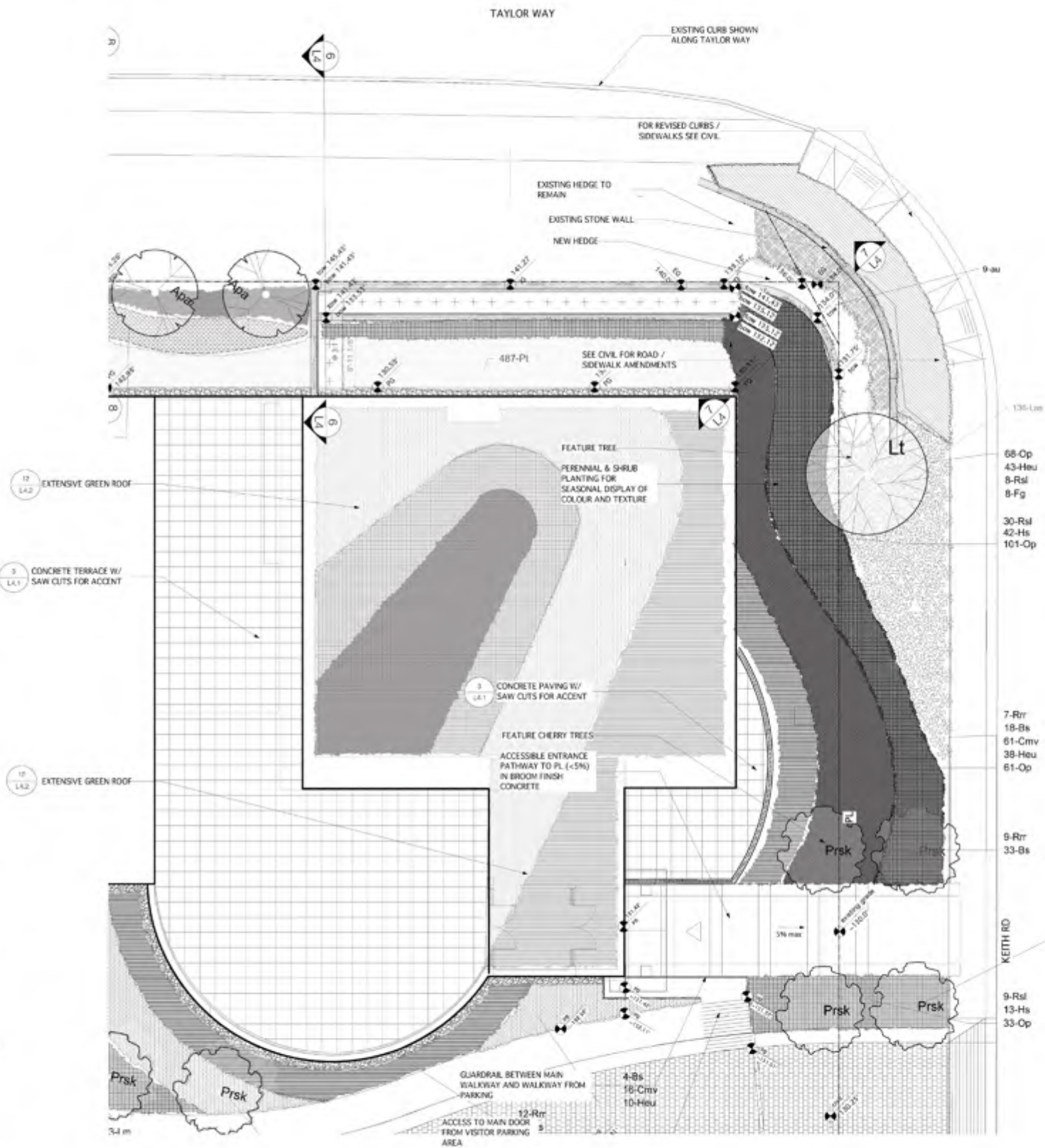
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98	08/01/2014	W. Vanover
99	08/01/2014	W. Vanover
100	08/01/2014	W. Vanover



1 Community Garden
Scale: 3/16" = 1'-0"



2 North Terrace
Scale: 3/16" = 1'-0"



1 Taylor Way and Keith
Scale: 3/16" = 1'-0"

Rev	Date	Author	Notes
1	08/11/14	JAC/LO/STW	ISSUED FOR PERMIT
2	08/11/14	JAC/LO/STW	ISSUED FOR PERMIT

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1	08/11/14	JAC/LO/STW	ISSUED FOR PERMIT
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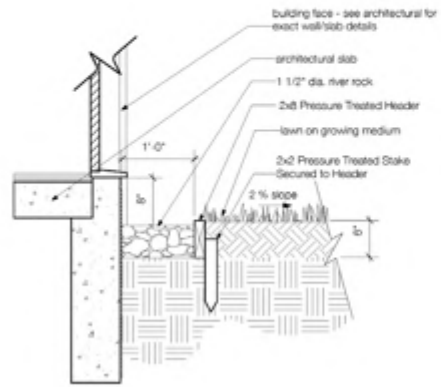
400 West 10th Avenue
Vancouver, BC, Canada V6J 1K4
Tel: 604.681.1111
Fax: 604.681.1112
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& 707 Keith Road
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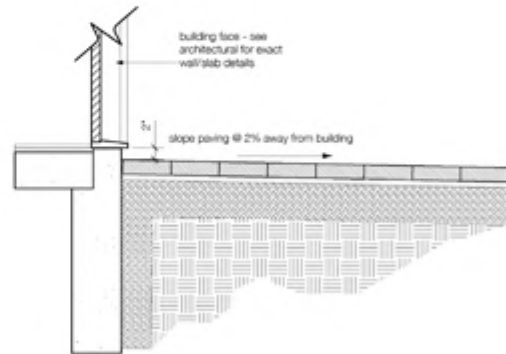
eta
Landscape
Detail Plans

Rev	Date	Author	Notes
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2	07/28/14	JAC/LO/STW	ISSUED FOR PERMIT

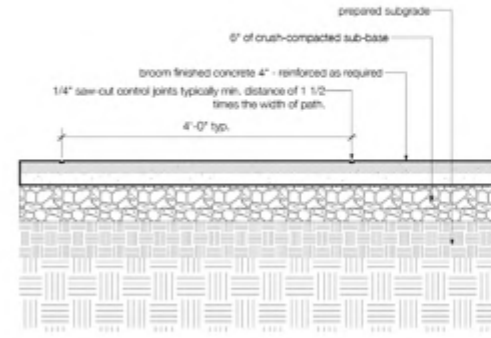
L2.2



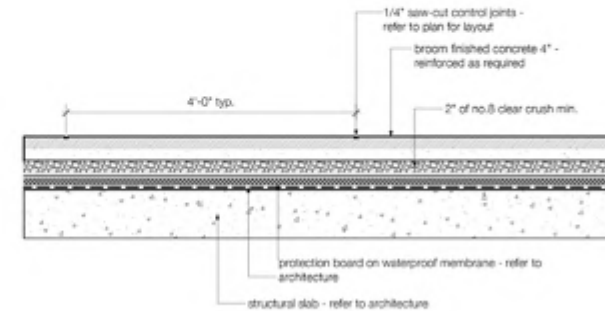
1 Detail: Typical Drip strip at building
Scale: 1" = 1'-0"



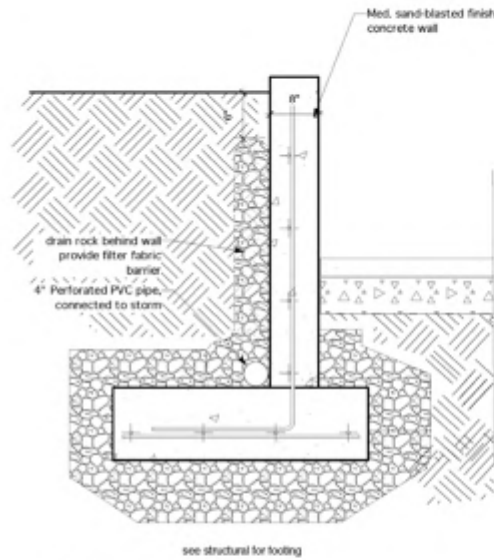
2 Detail: Typical threshold
Scale: 1" = 1'-0"



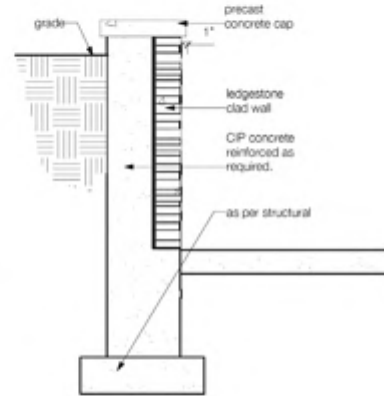
3 Detail: Typical Broom finish concrete on grade
Scale: 1" = 1'-0"



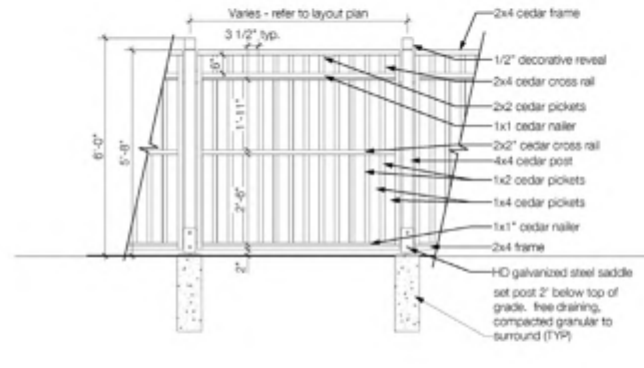
4 Detail: Concrete walkway on slab
Scale: 1" = 1'-0"



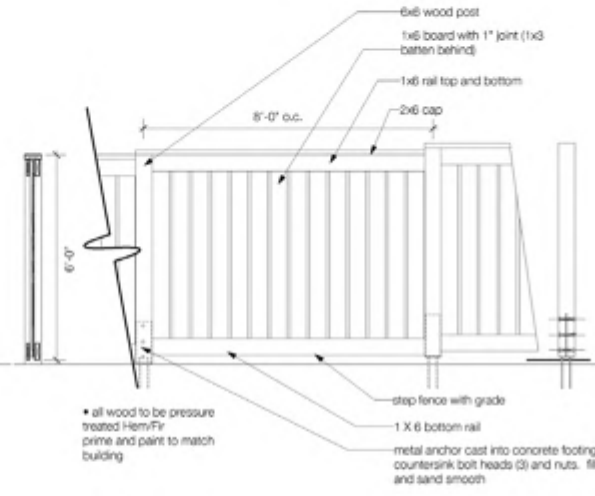
5 Detail: Typical Concrete Wall
Scale: 1" = 1'-0"



6 Detail: Typical Concrete Wall with stone facing
Scale: 1" = 1'-0"



7a Fence A
Scale: 1/2" = 1'-0"



7b Fence B
Scale: 1/2" = 1'-0"

Rev	Date	Revised By
1	03/10/14	Wendy H. Smith
2	03/10/14	Wendy H. Smith
3	03/10/14	Wendy H. Smith
4	03/10/14	Wendy H. Smith
5	03/10/14	Wendy H. Smith

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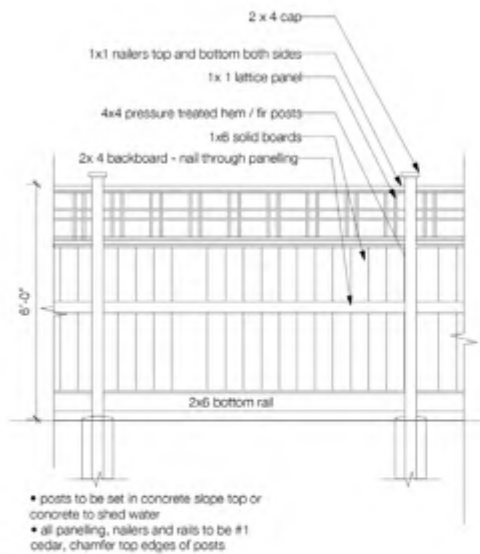
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www.eta-arch.com

Project
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825 Taylor Way & 707 Keith Road
West Vancouver, BC

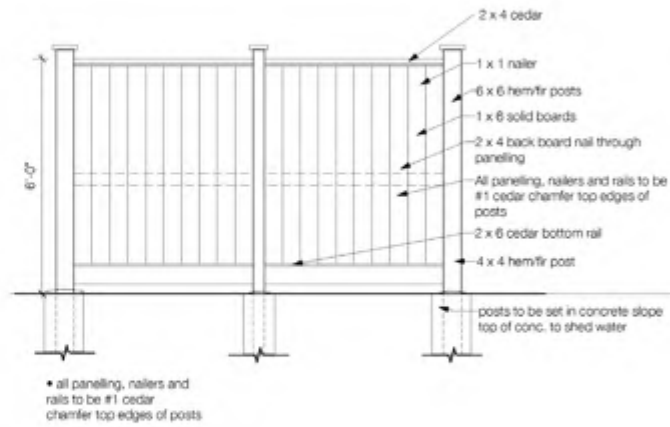
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Landscaping Details

Author	Checked
Wendy H. Smith	Wendy H. Smith
Date	03/10/14
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Sheet	5

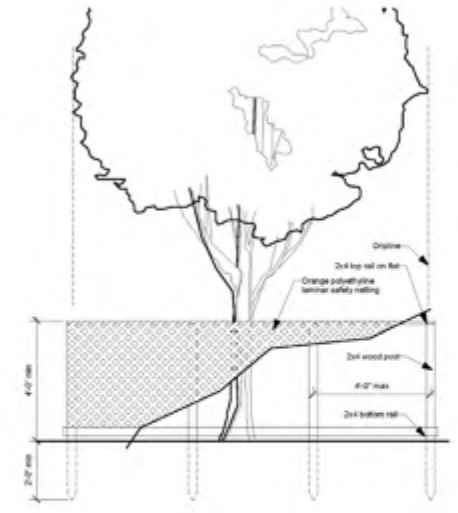
13/14
2140 West Senior Plan SET 10/06/14 04/22/14 use



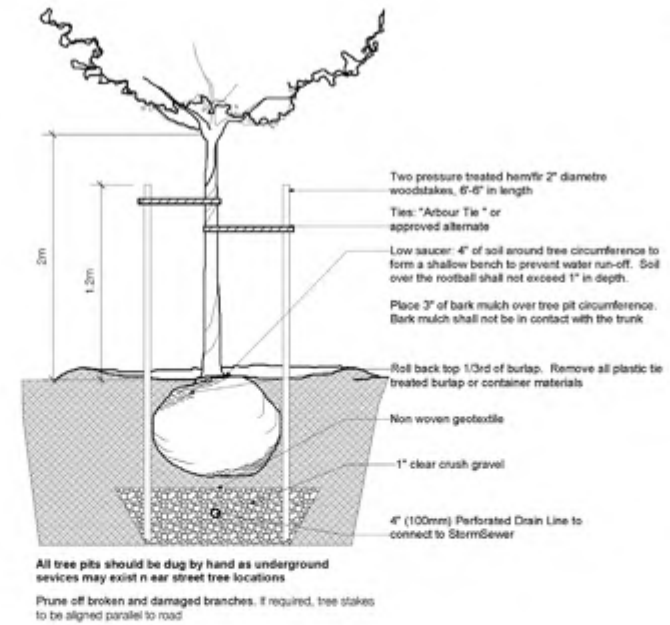
7c Fence C
Scale: 1/2" = 1'-0"



7d Fence D
Scale: 1/2" = 1'-0"



8 Detail: Tree protection fencing
Scale: 3/8" = 1'-0"



9 Detail: Tree Planting
Scale: 1/2" = 1'-0"

Rev	Date	Revised By
1	03/11/14	Michael J. ...
2	03/11/14	Michael J. ...
3	03/11/14	Michael J. ...
4	03/11/14	Michael J. ...
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6	03/11/14	Michael J. ...

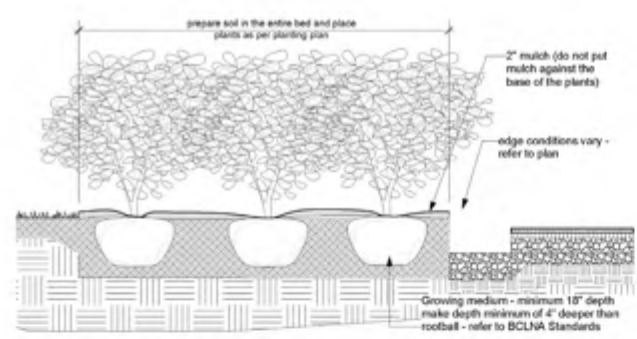
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architects + interior designers
1001 Third Street
Vancouver, BC, Canada V6C 1K4
Tel: 604.681.1111
www.eta-architect.com

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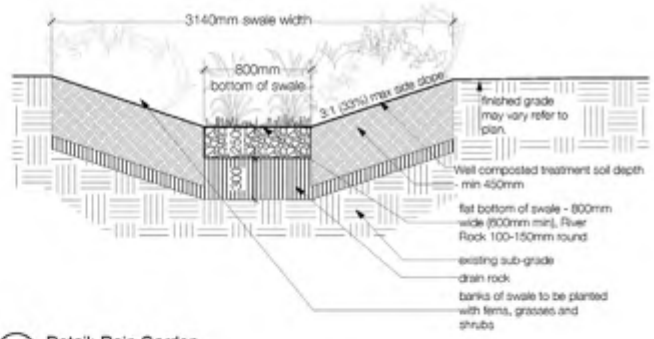
Discipline:
Landscape Details

Sheet No.	Scale
L4.2	1/2" = 1'-0"

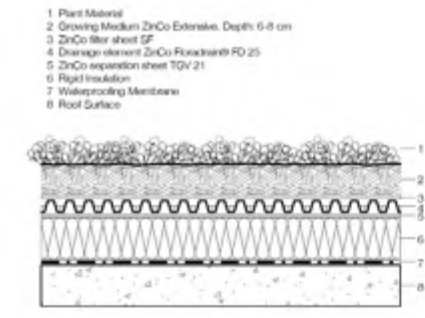
1/24/14
21240 West Taylor Way, West Vancouver, BC V8C 1K4



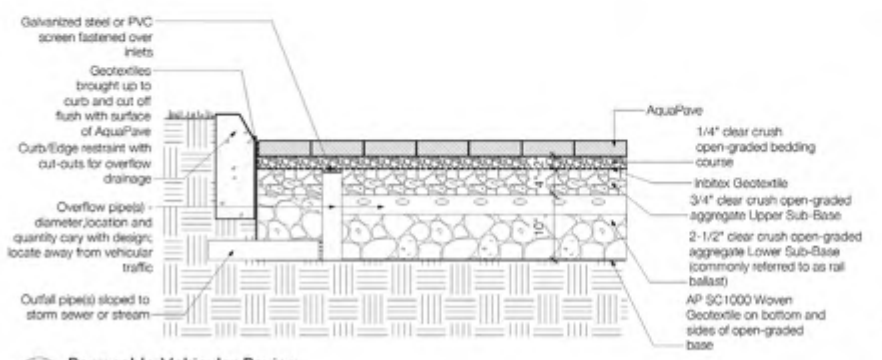
10 Detail: Shrub planting
Scale: 1/2" = 1'-0"



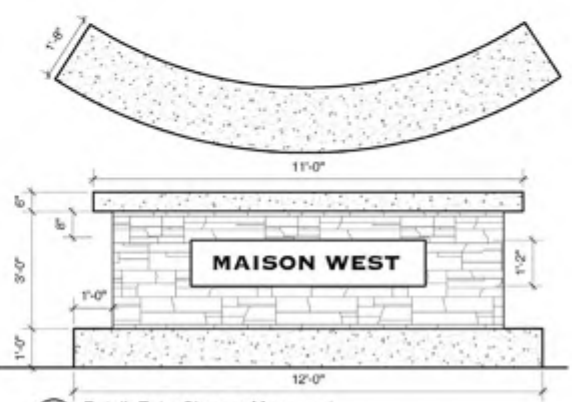
11 Detail: Rain Garden
Scale: 1/2" = 1'-0"



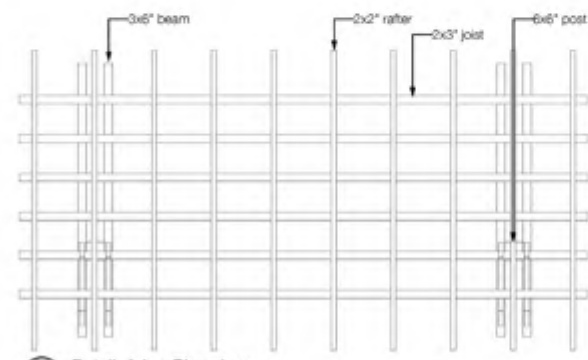
12 Detail: Extensive Greenroof System - ZnCo
Scale: 1" = 1'-0"



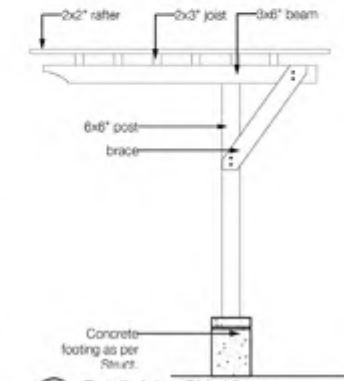
14 Permeable Vehicular Paving
Scale: 1" = 1'-0"



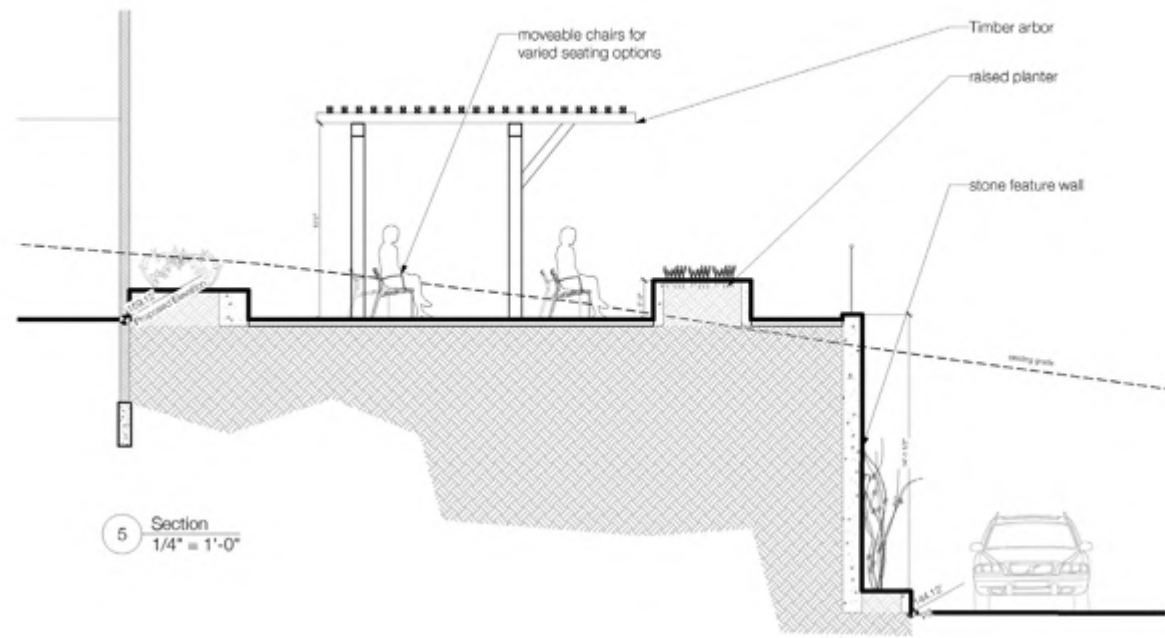
15 Detail: Entry Signage Monument
Scale: 1/2" = 1'-0"



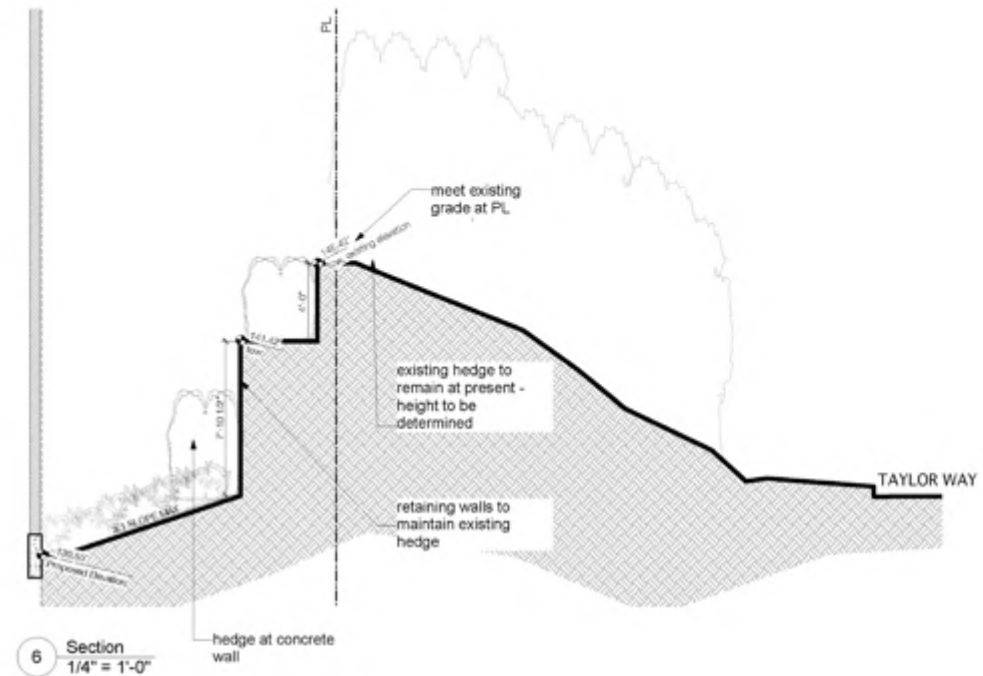
16 Detail: Arbor Plan view
Scale: 1/2" = 1'-0"



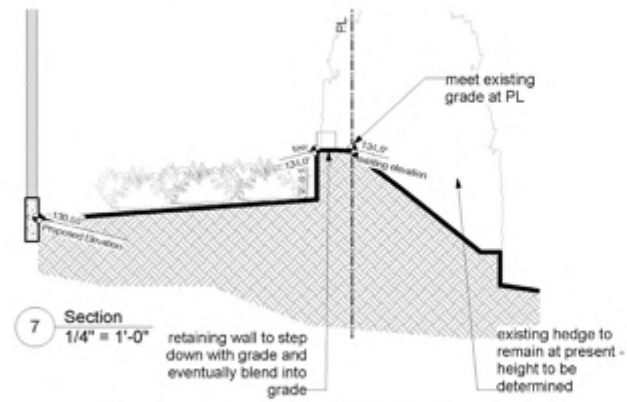
16.2 Detail: Arbor Side View
Scale: 1/2" = 1'-0"



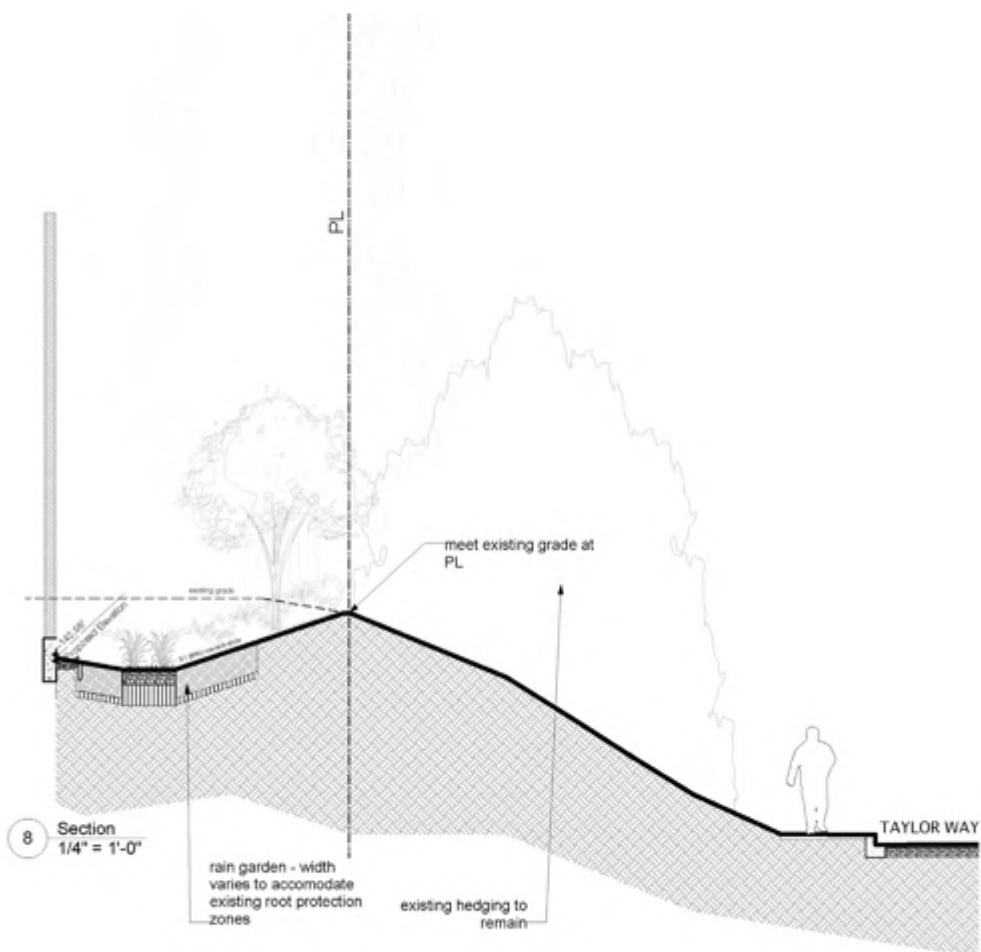
5 Section
1/4" = 1'-0"



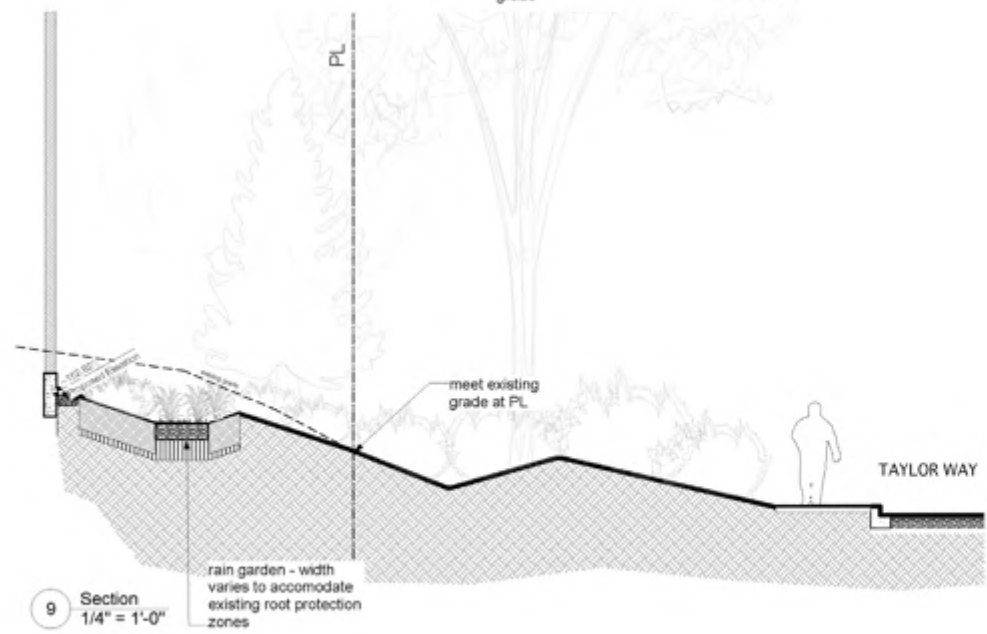
6 Section
1/4" = 1'-0"



7 Section
1/4" = 1'-0"



8 Section
1/4" = 1'-0"



9 Section
1/4" = 1'-0"

Rev	Date	Description
1	01/20/14	Issue for Review
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3	01/20/14	Issue for Review
4	01/20/14	Issue for Review
5	01/20/14	Issue for Review
6	01/20/14	Issue for Review

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architectural - associates
landscape architects

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Vancouver, BC V6C 1A5, Canada
Tel: 604.681.1111
www.eta-landscape.com

Project
Maison Senior Living
825 Taylor Way & 707 Keith Road
West Vancouver, BC

Drawing Title
Landscape Sections

Project Number	Sheet
08	21/28
Scale	1/4" = 1'-0"
Client	15.2
Date	01/20/14
Sheet	8

1/2" = 1'-0"
0:140 West Vancouver West Vancouver 01/20/14.kaw

SECTION 5: SUPPORTING STUDIES & REPORTS

PRELIMINARY SUSTAINABLE CHECKLIST

As owner and operator of the Maison Seniors Living Residence where health and wellness will be paramount, Milliken Developments has a vested interest in and is committed to reaching a meaningful environmental standards. As a result, and to better clarify the specific sustainability elements anticipated in the building, the following LEED and BuiltGreen Checklists were completed indicating the expected and possible points for the building. The ultimate expectation is that the Maison Seniors Living Residence will reach the Silver level under each rating system.

The general location of the project along with specific treatments to the site including the green roofs and water efficient landscaping provide for a good amount of points in each checklist. Furthermore, a strong sustainable focus is expected to exist with the Energy & Atmosphere and Indoor Air Quality elements of the building were strategic choices of mechanical systems will yield good benefits for each checklist category. Specifically, systems designed around each residential unit provide both good efficiencies and controllability of individual atmospheres, both which are very important as an operator.

LEED Canada-NC 2009 Preliminary Project Checklist

Maison Senior Living Residence, West Vancouver

Yes	?	No	Project Totals (pre-certification estimates)		110 Possible Points
40	19	51			
Certified 40-49 points Silver 50-59 points Gold 60-79 points Platinum 80 points and above					

Yes	?	No	Sustainable Sites		26 Points
12	7	7			

Yes	?	No	Prereq	Requirement	Points
✓			Prereq 1	Construction Activity Pollution Prevention	Required
1			Credit 1	Site Selection	1
		5	Credit 2	Development Density and Community Connectivity	3, 5
		1	Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation: Public Transportation Access	3, 6
	1		Credit 4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	1
1	2		Credit 4.3	Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles	3
1	1		Credit 4.4	Alternative Transportation: Parking Capacity	2
1			Credit 5.1	Site Development: Protect and Restore habitat	1
	1		Credit 5.2	Site Development: Maximize Open Space	1
		1	Credit 6.1	Stormwater Design: Quantity Control	1
	1		Credit 6.2	Stormwater Design: Quality Control	1
1			Credit 7.1	Heat Island Effect: Non-Roof	1
1			Credit 7.2	Heat Island Effect: Roof	1
	1		Credit 8	Light Pollution Reduction	1

Yes	?	No	Water Efficiency		10 Points
4	0	6			

Yes	?	No	Prereq	Requirement	Points
✓			Prereq 1	Water Use Reduction	Required
2		2	Credit 1	Water Efficient Landscaping	2, 4
		2	Credit 2	Innovative Wastewater Technologies	2
2		2	Credit 3	Water Use Reduction	2 - 4

Yes	?	No	Energy & Atmosphere		35 Points
6	6	23			

Yes	?	No	Prereq	Requirement	Points
✓			Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
✓			Prereq 2	Minimum Energy Performance	Required
✓			Prereq 3	Fundamental Refrigerant Management	Required
6		13	Credit 1	Optimize Energy Performance	1 - 19
		7	Credit 2	On-Site Renewable Energy	1 - 7
	2		Credit 3	Enhanced Commissioning	2
	2		Credit 4	Enhanced Refrigerant Management	2
	2	1	Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

Yes	?	No	Materials & Resources		14 Points
3	2	9			

Yes	?	No	Prereq	Requirement	Points
✓			Prereq 1	Storage and Collection of Recyclables	Required
		3	Credit 1.1	Building Reuse: Maintain Existing Walls, Floors, and Roof	1 - 3
		1	Credit 1.2	Building Reuse: Maintain Interior Non-Structural Elements	1
1		1	Credit 2	Construction Waste Management	1 - 2
		2	Credit 3	Materials Reuse	1 - 2
1	1		Credit 4	Recycled Content	1 - 2
1	1		Credit 5	Regional Materials	1 - 2
		1	Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

Yes	?	No	Indoor Environmental Quality		15 Points
11	1	3			

Yes	?	No	Prereq	Requirement	Points
✓			Prereq 1	Minimum Indoor Air Quality Performance	Required
✓			Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
1			Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan: During Construction	1
1			Credit 3.2	Construction IAQ Management Plan: Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials: Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials: Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials: Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials: Composite Wood and Agrifibre Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of System: Lighting	1
	1		Credit 6.2	Controllability of System: Thermal Comfort	1
		1	Credit 7.1	Thermal Comfort: Design	1
		1	Credit 7.2	Thermal Comfort: Verification	1
1			Credit 8.1	Daylight and Views: Daylight	1
1			Credit 8.2	Daylight and Views: Views	1

Yes	?	No	Innovation in Design		6 Points
4	0	2			

Yes	?	No	Credit	Requirement	Points
1			Credit 1.1	Innovation in Design	1
1			Credit 1.2	Innovation in Design	1
1			Credit 1.3	Innovation in Design	1
		1	Credit 1.4	Innovation in Design	1
		1	Credit 1.5	Innovation in Design	1
1			Credit 2	LEED® Accredited Professional	1

Yes	?	No	Regional Priority		4 Points
0	3	1			

Yes	?	No	Credit	Requirement	Points
		1	Credit 1	Durable Building	1
	1		Credit 2.1	Regional Priority Credit	1
	1		Credit 2.2	Regional Priority Credit	1
	1		Credit 2.3	Regional Priority Credit	1

PRELIMINARY SUSTAINABLE MATRICES



BUILT GREEN® High Density (HD) Project Checklist

Items selected must be applied to every unit, except where noted otherwise (i.e. central systems).

Section 1: 33 Section 2: 18 Section 3: 22 Section 4: 33 Section 5: 10 Section 6: 13 Section 7: 12 TOTAL POINTS: 141

Builder Name:		
House Address:		
I. OPERATIONAL SYSTEMS		
This section awards points for construction methods and types of products that contribute toward lower energy consumption and/or renewable heating and electrical systems.		
Minimum 32 (UNDER REVIEW)		
1-1	All ductwork joints and penetrations sealed with low toxic mastic or aerosolized sealant system. Duct mastic is a preferred flexible sealant that can move with the expansion, contraction, and vibration of the duct system components. A high quality duct system greatly minimizes energy loss from ductwork. The additions to the system should be sized and designed to deliver the correct airflow to each room.	3
1-2	Install individual unit programmable thermostats capable of starting and stopping the system for at least 2 different daily schedules per week (2 pts. total for all units). A set back thermostat regulates the heating/cooling system to provide optimum comfort when the unit is occupied and to conserve energy when it is not. Builders are encouraged to install a central override system to ensure adequate temperatures for building durability (reference minimum temperatures recommended by CMHC).	2
1-3	Install high efficiency heating systems for all units and/or systems serving common areas (min. 90% AFUE gas furnace, min. 85% AFUE oil furnace, or min. 85% AFUE oil/gas boiler). High efficiency condensing furnaces and boilers reduce energy consumption and consequently fossil fuel reliance.	3
1-4	Calculate design heat loss and properly size HVAC equipment using CSA F280-M90 or ASHRAE/ACCA Standard 183, and/or implement a boiler management system to match the system operation to building loads and optimize controls for maximum energy savings. A properly sized heating and cooling system can reduce costs as well as conserve energy. When properly sized, HVAC equipment will run for longer periods which increases the efficiency and durability of the equipment due to less cycling on and off.	2
1-5a (new)	Install high efficiency cooling systems for all units and/or systems serving common areas (min. 14 SEER central A/C, or min. ENERGY STAR® window A/C). High efficiency A/C units reduce electricity consumption and associated pollution.	1
1-5	Centrally locate HVAC systems inside the building's heated envelope and reduce duct length. Roof top units are poorly insulated and waste heat is lost to the environment rather than added to the building. High efficiency heating systems with shorter distribution distances require less energy.	1
1-6	Install HVAC systems with variable speed motors (ECM). A variable speed fan motor is designed to vary its speed based on the building's heating and air conditioning requirements. Working in conjunction with the thermostat, it keeps the appropriate air temperature circulating through the building, reducing temperature variances in the home. It also provides greater air circulation and filtration, better temperature distribution, humidity control, higher efficiency and quiet performance.	3
1-7	Units contain multiple heating/cooling zones, thermostatically controlled zones (2 zones = 2pts., 3 zones = 3pts., 4 zones = 4pts.). Efficiency can be significantly improved by only heating or cooling when occupants are present and by only heating/cooling to the exact desired temperature. Different desired temperatures can be set in each room or space and an individual zone can be turned off when not occupied. This type of system results in a dramatic reduction of energy consumption and operating costs.	2 to 4
1-8	Install ground/water/solar heat pumps (10) or air-source heat pumps (7), either radiant or forced air, to supply majority of space heating and cooling loads. Heat pumps can significantly reduce primary energy use for building heating and cooling. The renewable component displaces the need for primary fuels, which, when burned, produce greenhouse gases and contribute to global warming. Please Note: Effectiveness of heat pumps is related to climate zone and energy costs. Please consult with specialist or engineer to confirm effectiveness.	10
1-9	Provide electricity (1 pt.) and/or natural gas (1 pt.) direct metering for each unit. Direct metering in a Multi Context may require significant additional expenses above and beyond prorated condominium energy fees and holds individuals responsible for energy use.	1 to 2
1-10	Install and balance an individually controlled active Heat Recovery Ventilator (HRV) and/or solar/geo fresh air pre-heating for each unit (4 pts.) and/or common area (2 pts.) and/or buildings exhaust air (3 pts.) HRVs exhaust return air out of the home while bringing in fresh air for ventilation. The process used to do this takes advantage of the heat in the exhaust air to preheat the incoming air, saving energy.	2 to 9
1-13	Install a district high efficiency domestic hot water heating system, with min. 85% AFUE boiler, or min. 0.67 EF gas storage water heater (3 pts.). Alternatively install an instantaneous "tankless" domestic hot water system in each unit (3 pts.). Hot water heater is direct vented with a closed combustion system, i.e. all air for combustion is taken directly from the outside. A direct system utilizes a co-axial vent pipe (pipe inside a pipe), drawing combustion air in through the outer pipe and exhausting the products of combustion through the inner pipe. A power vented heater exhausts air out of the building via a positive exhaust during main burner operation. Both systems eliminate the need for conventional chimneys or flue systems. A tankless water heater does not have a storage tank to keep heated all day, or a pilot light; it burns gas only when you need hot water. This eliminates standby heat loss and its higher efficiency will save on utility costs.	3
1-13a (new)	Install high efficiency pump drive motors for service water distribution with variable speed/flow capabilities. Pumps with variable speed drive motors operate more efficiently and help reduce electricity consumption.	1

1-14	Hot water storage tanks insulated by manufacturer to a minimum R-15. An insulation blanket will reduce the standby heat loss of the hot water in the tank.	2
1-15	Install solar/air/water/geo (solar fraction >50%) DHW Heating System to supply a minimum of 25% of the peak DHW heating load and 70% of the total DHW energy load. A substantial amount of energy is wasted heating water in a traditional gas system. Using renewable sources will reduce the consumption of non-renewable energy and also reduce green house gas emissions.	2
1-16	Provide roof area (min. 10% area of total) designed for future solar collector (Make solar ready; with solar thermal or PV conduit installed). A roof area with an appropriate slope allows for the effective addition of future solar air, water heating or photovoltaics.	1
1-17	Install urban wind/photovoltaic electrical generation system which supplies (10%-2 pts., 20%-4 pts., 50%-8 pts., 100%-10 pts.) of design electrical load for the private area(s) of the building. This does not include electric heat. Urban wind and photovoltaics use renewable energy to generate electricity for the home, greatly reducing reliance on non-renewable energy sources and also reducing green house gas emissions.	2 to 10
1-18	Install photovoltaic electrical generation system which supplies 50% (1 pt.) or 100% (2 pts.) of electrical needs for the common areas. This does not include electric heat. Photovoltaics use the sun's energy to generate electricity for the home, greatly reducing reliance on non-renewable energy sources and also reducing green house gas emissions.	1 or 2
1-19	50% (2 pts.) or 100% (4 pts.) of electricity used during construction of the project is generated by wind power or equivalent green power certificate. This practice encourages and promotes the use of renewable, sustainable energy resources as well as reducing green house gas emissions.	2 or 4
1-20	50% (2 pts.) or 100% (4 pts.) of electricity used by building during first year of occupancy is generated by wind power or equivalent green power certificate (prepaid by builder). This practice encourages and promotes the use of renewable, sustainable energy resources as well as reducing green house gas emissions.	2 or 4
1-21	Install a central drain water heat recovery, with a minimum of 1 DWHR unit installed per 4 apartments (2 pt.) or per 2 apartments (3 pts.). Drain water heat recovery units enable an exchange of heat from greywater to the incoming water. This pre-heating reduces the amount of energy required for the hot water tank.	1 to 3
1-22	Fireplaces in all units are electric, or gas with sealed combustion and electronic ignition. Sealed combustion fireplaces involve a double-walled special vent supplied by the manufacturer that normally vents through a sidewall in a horizontal position. The inner surface removes the flue gases and the outer container provides for passage of combustion air.	2
1-23	Install fireplace fan kit to circulate warm air into room on all fireplaces. A fan kit allows the heat generated by a fireplace to be transferred into the home more effectively.	2
1-24	All windows in the project are ENERGY STAR® labeled. ENERGY STAR labeled windows save energy by insulating better than standard windows, making the home more comfortable all year round, reducing outside noise and can result in less condensation forming on the window in cold weather.	2
1-25	All Electric ranges use below 480 kWh/yr based on EnerGuide rating system. EnerGuide label often reduces fuel consumption by approximately 20%.	1
1-26	Refrigerators (1 pt.), dishwashers (1 pt.), clothes washers (1 pt.) and/or combo washer dryer (2 pts.) are all ENERGY STAR® labeled products. An ENERGY STAR label for refrigerator indicates the product has met strict requirements to reduce energy consumption.	4
1-27	All clothes dryers have an energy performance auto sense dry setting which utilizes a humidity sensor for energy efficiency. Sensor saves energy by shutting dryer off when clothes are dry rather than leaving it on for a specified time.	1
1-27a (new)	Install ENERGY STAR® labeled bathroom exhaust fans for each unit. An ENERGY STAR label for a bathroom exhaust fan indicates the product has met strict requirements to reduce energy consumption.	1
1-28	Other building appliances supplied at the time of sale (i.e., TV, LCDs, security systems) are energy efficient/ENERGY STAR® rated. An ENERGY STAR label indicates the product has met strict requirements to reduce energy consumption.	1
1-29	Exposed Exterior Accessibility Ramps heated with renewable energy or waste heat. This practice encourages and promotes the use of renewable, sustainable energy resources as well as reducing green house gas emissions.	2
1-30	Install properly supported ceiling fan wired rough-in for each unit. Intended to allow for future temperature equalization.	1
1-31	Install interior motion sensor light switches in over 25% (1 pt.), 50% (2 pts.) or 75% (3 pts.) of hallways/corridors and stairwells. Motion sensor switches prevent lights from staying on in rooms that are unoccupied. This helps reduce electricity consumption.	3
1-32	Install lighting with an automation control system capable of unified automation control of lighting loads for all common areas. Lighting and automation control systems prevent lights from staying on in rooms without occupants, thereby reducing electricity consumption.	2
1-33	Install automatic lighting system (2 pts.) and/or ventilation system (2 pts.), which are triggered by movement or CO levels, for garages/parkade. Automating will allow better control and energy efficiency.	4
1-34	Exterior lighting follows IESNA illuminance requirements for recommended practice manual: Lighting for Exterior Environments. This addresses light pollution issues. The Illuminating Engineering Society of North America can be found online at: iesna.org and the "Lighting for Exterior Environments" guide (IESNA RP-33-99) can be purchased there.	2
1-35	Common Area lit with high efficiency (non-incandescent) lamps.	1

1-36	Incandescent lights lose much of their energy as heat rather than light and therefore are not as energy efficient as many of the other options available. Minimum 25% (1 pt.), 50% (2 pts.) or 100% (4 pts.) of light fixtures are L.E.D., fluorescent or have compact fluorescent light bulbs installed in each unit.	1, 2 or 4
1-37	Fluorescent, compact fluorescent and L.E.D bulbs use 50% less energy than standard bulbs and last up to ten times longer. Minimum 50% of recessed lights in the entire building use halogen bulbs. Halogen bulbs are slightly more energy efficient, last longer and provide a more effective task light than conventional bulbs.	1
1-38	All EXIT signs are photo luminescent or LED. Photo luminescent exit signs use no power as the light is supplied by a phosphorous chemical that absorbs light until needed and then emits it.	2
1-39	Air tight, insulation contact-rated recessed lights are used in all insulated ceilings, or insulated ceilings have no recessed lights. Prevent heated air from exhausting through ceiling. Air tight light fixtures lead to a more airtight, energy efficient home.	1
TOTAL SECTION POINTS (min. 32 required):		33

II. BUILDING MATERIALS		
This section deals with building components that make up the structure of the home. Items involve alternatives to using large dimensional lumber, products with a recycled component, utilizing wood products that come from sustainable managed forests and reducing the overall amount of lumber used.		
Minimum 10 (UNDER REVIEW)		
2-1	Insulating Concrete Forming system (ICF's) used below grade (2 pts.) and/or above grade (2 pts.). Insulating Concrete Forms (ICFs) are hollow building elements made of plastic foam that are assembled, often like building blocks, into the shape of a building's exterior walls. The ICFs are filled with reinforced concrete to create structural walls. Unlike traditional forms, the ICFs are left in place to provide insulation and a surface for finishes.	2 to 4
2-2	Minimum of R-7.5 insulation installed under entire basement/foundation slab under conditioned space. Insulation installed under the basement slab will reduce the downward heat transfer into the ground below the slab, especially when hydronic in-slab heating is installed. Insulation under the slab can reduce temperature swings in the heated space and respond quicker to new changes in thermostat settings.	2
2-3	Attached garage, parking and/or loading dock overhead doors are insulated with R8 to R12 (1 pt.) or greater than R12 (2 pts.). An insulated overhead garage door will reduce heat loss.	1 or 2
2-4	Attached garage/parking walls and ceiling are insulated to NBC minimum (R12 for walls, R34 for ceilings). A fully insulated garage acts as a buffer zone, reducing heat loss.	1
2-5	Non-solvent based damp proofing (seasonal application). Water based damp proofing products use water as a thinner. Oil based damp proofing give off a number of volatile organic compounds (VOCs) as the solvent evaporates after application. These VOCs can be a strong irritant and can add to air pollution.	1
2-6	Point Parkade semi gloss white to reduce number of required lighting fixtures. Using high reflectance white paint allows for fewer lights to be used in the parkade area.	1
2-7	Steel studs made from a recycled steel (min. 75%) are used to replace wood studs (min.15%). Recycling steel reduces landfill waste and saves on wood consumption.	1
2-8	Use Optimum Value Engineering (OVE) to reduce wood use in framing: - Exterior and interior wall stud spacing at 24" on-center (2 points) or 19.2" on-center (1 pt.) - Elimination of headers at non-bearing interior and exterior walls. (1 pt.) - Use of header hangers instead of jack studs. (1 pt.) - Elimination of cripples on hung windows. (1 pt.) - Elimination of double plates, use single plates with connectors by lining up roof framing with wall & floor framing (1 pt.) - Use of two stud corner framing with drywall clips or scrap lumber for drywall backing instead of studs. (1 pt.) For more details on Optimum Value Engineering (OVE) framing principles see www.buildingcience.com.	5
2-9	Walls and roof designed as 24" module to reduce waste. A 24" module takes into account the size of sheets of OSB or plywood, stud spacing, carpet size etc.	2
2-10	Use of insulated headers (either manufactured or site built open insulated single headers) with minimum insulation value of R10. Headers can either be insulated on site or can be a pre-manufactured product (often insulated with a foamed plastic).	1
2-11	Install manufactured insulated rim/band joist or build on site by setting back joists to allow rigid insulation filler of a minimum R10. Rim and band joists can either be insulated on site or can be pre-manufactured (often insulated with a foamed plastic).	2
2-12	Structural insulated panel system (SIPS) used for walls (3 pts.) and/or for roofs (2 pts.). Reduces thermal migration and controls air leakage - Keeps heating and cooling costs to a minimum compared to a conventionally framed wall.	2 to 5
2-13	All insulation used in the project is third-party certified to contain a minimum recycled content: 40% (1 pt.) or 50% (2 pts.). Recycled content means less landfill waste and raw material use. Also, according to the North American Insulation Manufacturers' Association, insulation with recycled content takes less energy to produce than using all raw materials.	1 or 2
2-14	Insulation levels meet or exceed the MNECB (may include Roof-R28, Walls R14, Floor R14). Model New Energy Code minimums will help to keep heating and cooling costs to a minimum compared to a conventionally framed wall.	1
2-15	Replace exterior wood sheathing with installed insulating sheathing.	2

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2-16	Using rigid insulation instead of wood for exterior sheathing conserves forest resources, reduces thermal migration and controls air leakage; it also keeps heating and cooling costs to a minimum compared to a conventional wall. Deck (1 pt.), balcony surfaces (1 pt.), and/or veranda structure (1 pt.) made from a third-party certified sustainable harvested wood source or third-party certified sustainable concrete. The issue of sustainable forest management (SFM) is considered to be of such importance by the Canadian forest industry that, in 1993, a group of 22 organizations representing virtually all of the industry came together to form the Canadian Sustainable Forestry Certification Coalition. The coalition regrouped several different certification standards that each have their strengths and weaknesses. For more information, see www.sfrms.com. Concrete produced from aggregates derived from a pit or quarry with a valid reclamation plan approved by Materials and Resources Canada or the governing provincial body.	1 to 3
2-17	Dimensional lumber from a third-party certified sustainable harvested source used for floor framing (1 pt.), wall framing (2 pts.), and/or roof framing (1 pt.). Saves old growth forests by using trees from a second generation forest.	1 to 4
2-18	Environmentally engineered flooring system (i.e., Uses reclaimed/recycled/rapidly renewable wood waste, fly ash concrete (1 pt-30%), recycled steel (1 pt-90%)). Use of Engineered floor system saves old growth forest by using components from second generation forests and the use of recycled materials.	1
2-19	Environmentally engineered products for all load bearing beams (i.e., Uses reclaimed/recycled/rapidly renewable wood waste, fly ash concrete (30%), recycled steel (90%)). Engineered products include wood products, concrete and recycled steel.	2
2-20	Environmentally engineered products for all exterior window and door headers (i.e., Uses reclaimed/recycled/rapidly renewable wood waste, fly ash concrete (30%), recycled steel (90%)). Engineered products include wood products, concrete and recycled steel.	1
2-21	Engineered stud material for 10% of stud wall framing. Use of Engineered lumber products saves old growth forest by using components from second generation forests and recycled materials.	1
2-22	Engineered and/or finger-jointed plate material. Use of recycled materials saves old growth forest.	1
2-23	Finger-jointed studs for 90% of non-structural stud wall framing. Use of recycled materials saves old growth forest.	2
2-25	Recycled content exterior wall sheathing (min. 50% pre or post consumer). Recycled content reduces landfill waste and the use of new materials.	2
2-27	100% Recycled content rainscreen attachment system. Use of recycled content polypropylene, steel or aluminum rainscreen strapping may replace the traditional use of treated wood strapping on rainscreen systems.	2
2-28	Advanced sealing package, non-HCFC expanding foam around window, door openings and all exterior wall penetrations (2 pts.). All sill plates sealed with foam gaskets or a continuous bead of acoustical sealant (1 pt.). Controls air leakage and keeps heating and cooling costs to a minimum.	1 to 3
2-29	Builder has installed a green roof over 50% (3 pts.), 75% (5 pts.), or 100% of total roof area (7 pts.). Green roofs are defined as a system of plants, growing medium and roof/waterproof membrane that acts as a whole to maximize the available environmental benefits of improving air temperature (reduced heat island effect), air pollution, storm water management and green space. Extensive or 2-4" Thickness typically requires 30-40 lbs./ft ² structural support, while Intensive roofs (8"-4") require significant structural support.	3, 5 or 7
2-30	Builder has incorporated exterior horizontal and/or vertical shading devices for glazing (2 pts.), or exterior operational shading devices (4 pts.). Shading windows from solar heat gain is a key design strategy for passive cooling and to reduce cooling loads on active HVAC systems in multi buildings. Light shelves and/or louvers can be optimized to allow for winter solar gain, while reducing overheating during the summer.	2 or 4
2-31	All decks or balconies are thermally broken from the envelope by R10 (1 pt.), or fully separated (3 pts.).	1 or 3
TOTAL SECTION POINTS (min. 10 required):		18

III. EXTERIOR and INTERIOR FINISHES

This section focuses on the finish materials used both inside and outside of the project. The items listed include using longer lasting products, products with recycled content and products that are harvested from third party certified managed forests.
Minimum 10 (UNDER REVIEW)

3-1	Exterior doors with a minimum of 15% recycled, recovered, or third party sustainably harvested content. Recycled or recovered content ensures we keep our landfill use to a minimum.	1
3-2	All exterior doors manufactured from fiberglass. Fiberglass doors insulate better than steel skinned or wood doors, have a longer lifespan, do not warp, twist or crack, and therefore reduce landfill use.	1
3-3	Exterior window frames contain a minimum of 10% recycled, recovered, or third party sustainably harvested content. Reusing materials such as plastics reduces landfill usage, which may not be biodegradable.	1
3-4	Exterior window frames are made from third-party certified sustainable harvested wood. Uses trees from a forest managed system that prevents clear cutting trees, and replants trees to replace from which they've been harvested.	2
3-5	Concrete used in home has a minimum supplementary cementing material of 25% (1 pt.) and/or 40% (2 pts.) and is within the scope of proper engineering practices.	1 to 2

3-6	For every one tonne of Portland cement generated, eighth tenths of a ton of carbon dioxide is produced. Supplementary cementitious products include fly ash, blast furnace slag as well as metakaolin. Natural cementitious stone/stucco/brick or fiber cement siding – complete or combination thereof for 100% of exterior cladding. Battens are included in cladding. Strong, long lasting, fireproof material.	4
3-7	Exterior trim and finish is made of recycled content (50% min.) material, durable and fire rated; trim (1 pt.) and/or wall finish (4 pts.). Fiber cement fascia and soffit, made with recycled content from sawmill waste and Portland cement, is a strong, long lasting and fireproof material.	1 to 5
3-8	Exterior trim (3 pts.) and /or siding materials (4 pts.) have recycled and/or recovered-content (min. 50%). Recycled and/or recovered-content trim materials reduce the amount of new material used in production by gluing up miss scraps into large pieces, which conserves natural resources and reduces landfill usage.	3 to 4
3-9	Exterior trim materials are manufactured from OSB. Trim materials manufactured from OSB uses a laminating process to make larger pieces from smaller pieces or strands of wood. The process saves old growth forests by using trees from forest managed systems that prevents clear cutting trees, and replants trees in areas from which they have been harvested.	1
3-10	All exterior trim is clad with pre-finished metal (1 pt. over top wood backings, 2 pts. without wood backings). Trim clad with pre-finished metal is a durable long lasting product that requires no maintenance, reduces waste in landfills due to long life of product.	1 to 2
3-11	Deck or balcony surfaces made from recycled materials: 50% (1 pt.), 75% (2 pts.), 100% (3 pts.), and/or from low maintenance materials (2 pts.) (Deck surfaces should not need maintenance of any kind, including painting, for a minimum of 5 years). Substituting recycled material outdoors avoids the use of pressure treated and high mildew resistant wood that may otherwise be harvested from disappearing old growth or rain forests. Material which lasts longer and reduces landfill usage tends to require little to no maintenance, saving replacement costs and reducing energy spent.	1, 2, 3 or 5
3-12	Install 25-year (2 pts.), 30-year (3 pts.), 35-year (4 pts.), 40-year (5 pts.), or 50-year (6 pts.) roofing material – with manufacturer's warranty. A longer warranted roof system saves money in replacement costs, and reduces the use of landfills due to the longevity of the product.	2, 3, 4, 5 or 6
3-13	Minimum 25% recycled-content roofing material. Recycled content roof material reduces the use of new resources, and waste in landfills.	3
3-13a (new)	Use roofing material with a high solar reflectance index (SRI) of ≥78 (for roof slopes ≤ 2:12), or ≥29 (for roof slopes > 2:12). Roofs with a high solar reflectance help cool the building during the summer by reducing the heat island effect.	1
3-14	Interior doors made with recycled or recovered content (min.15%-1 pt.), or from third-party certified sustainably harvested sources (2 pts.). Recycled or recovered content ensures we keep our landfill use to a minimum.	1 to 2
3-16	Domestic wood from reused/recovered or re-milled sources – 500 square foot minimum for flooring or all cabinets or all millwork. Reused, recovered or re-milled sources eliminate the need for new resources, saves energy, transportation costs, and forestry from depletion.	6
3-17	All carpet padding made from natural or recycled textile, or fire waste. Natural or recycled-content carpet padding is a good use of reusable resources. Rebound still qualifies.	2
3-18	Install carpet that has a minimum of 50% recycled content. Recycled-content carpet is a good use of renewable resources, lessens off gases, and improves air quality.	2
3-19	100% recycled or recovered content underlayment or use of concrete finishes to enable the flooring to remain concrete. Concrete finishes such as stamped or stained concrete etc.	1
3-20	Install a minimum of 300 square feet per unit of laminate flooring. Laminate flooring is made up of sustainable raw materials.	2
3-21	Bamboo, cork or hardwood flooring used in the project (min. 300 square feet per unit installed). Products must be third-party certified to be from managed forests or from certified sustainable sources. Cork flooring comes from stripping the bark off cork oak, which regenerates itself. The cork tiles are moisture, rot and mold resistant, providing a floor that can last over 30 years. Bamboo flooring is a good use of natural resources because it is fast growing, durable and flexible.	3
3-22	All ceramic tile installed in the project has a minimum of 25% recycled-content. Reduces landfill usage.	2
3-23	MDF casing and baseboard used throughout the project. MDF casing is created from sawdust and glues, utilizing all wood waste to create usable product.	1
3-24	Finger-jointed casings, baseboards and jams used throughout the project. Finger-jointed casing and baseboards maximize wood usage, buy using small pieces of wood glued together to create longer pieces. The process saves old growth forests by using trees from forest managed systems that prevents clear cutting trees, and replants trees in areas from which they have been harvested.	1
3-25	Solid hardwood trim from third party certified sustainable harvested sources approved for millwork (2 pts.) and/or cabinets (2 pts.). This process saves old growth forests by using trees from forest managed systems that prevents clear cutting trees, and replants trees in areas from which they have been harvested.	2 to 4
3-26	Paints or finishes with minimum of 20% recycled content. Paints or finishes made from recycled content are environmentally friendly because recycling paint reduces the hazardous waste in landfills.	1
3-27	Natural granite, concrete, recycled glass or stone countertops in 100% of the kitchens (2 pts.) and all other countertop areas (1 pt.). Natural product is more durable, easy to clean and maintain and is resistant to heat and staining.	1 to 3
3-28	100% agricultural waste or 100% recycled wood particle board used for shelving.	2

3-29	Products such as wheat board are made from agricultural waste. PVD finish on all door hardware (1 pt.) PVD finish on all faucets (1 pt.). Physical Vapor Deposition (PVD) provides a more durable product; no toxic wastes are produced making it.	1 to 2
TOTAL SECTION POINTS (min. 10 required):		22

IV. INDOOR AIR QUALITY

This section focuses on the quality of the air within the finished project. Products listed here include materials that are low in VOC's, products made from all natural materials as well as various air cleaning and ventilation systems.
Minimum 15 (UNDER REVIEW)

4-1	Install pleated media filter (1 pt.) or an electrostatic air cleaner (2 pts.) or an electronic air cleaner (3 pts.) or a HEPA filtration system (6 pts.) or an ultraviolet air purifier (2 pts.) in conjunction with the HVAC system. Pleated air filters are made with materials that are chemically treated to provide their surface area. These pleated air filters are used the most efficient of all the media air filter types and are a whole house air filter. By increasing the surface area for collecting dust, airflow through the pleated air filter is less restricted. The electrostatic air cleaner is a permanent washable air filter that traps and removes airborne particles from the air before being circulated through the furnace and into the home. An Electronic Air Cleaner offers a superior level of filtration by using advanced, 3-stage filtration technology to trap and filter airborne particles like dust, cat dander and smoke. It works by placing an electric charge on airborne particles, and then collecting the charged pollutants like a magnet. The air cleaner cells can be washed in your dishwasher or sink. HEPA stands for High-Efficiency Particle Arresting. HEPA filtration offers the highest particulate removal available – 99.97% of particles that pass through the system including dust, cat dander, certain bacteria, pollens and more. The system is constructed to the strict standards of the Federal Standard for High-Efficiency Particulate Arresting (FEDSTD-150) and is certified by the National Air Filter Institute.	1
4-2	Install power drum humidifier (1 pt.) or a drip type humidifier (2 pts.) in conjunction with the HVAC system. Proper humidity provides a more comfortable living environment at a lower temperature, so you can turn down your thermostat for energy savings. Controlling humidity also means moisturizing dry air to prevent damage to hardwood floors and woodwork. Power drum humidifiers direct the heated air through a water-laden evaporator sleeve which absorbs moisture and then returns to the heating system for distribution throughout the home.	2
4-4	Install in-line ventilation fan with programmable timer (separate switch from lighting) in each unit. A programmable timer ensures necessary, regular, automatic mechanical ventilation of the housing units.	1
4-5	Install passive Heat Recovery Ventilator (HRV-2 pts.) or an active Heat Recovery Ventilator/ Energy Recovery Ventilator (HRV or ERV- 4pts.) in each unit . A Heat Recovery Ventilator (HRV) is an air exchanger that exhausts humid, stale, polluted air out of the housing unit and draws in fresh, clean outdoor air. Invisible pollutants produced by common household substances, plus dust and excess humidity that get trapped in today's houses, can increase your risk of chronic respiratory illness and your home's risk of serious structural damage. A passive HRV unit does not have its own internal fan and is 100% furnace assisted. It works by lying the exhaust side of the unit to the supply air plenum which forces air to exhaust from the housing unit and at the same time fresh air enters from outside through the unit and into the cold air return duct work. Much like the HRV the ERV recovers heat. It also recaptures the energy trapped in moisture; this greatly improves the overall recovery efficiency. In dry climates and humidified homes the ERV limits the amount of moisture expelled from the home. In humid climates and air conditioned homes, when it is more humid outside than inside, the ERV limits the amount of moisture coming into the housing unit.	2 to 4
4-6	Install thermostat that indicates the need for the air filter to be changed or cleaned. This feature displays filter maintenance reminders on the thermostat. Regular furnace maintenance is required to keep your mechanical equipment running efficiently and problem free as well as ensuring a healthy indoor air environment.	1
4-6 a (new)	Install bathroom exhaust fan controls in each unit using either an occupancy sensor, automatic humidistat controller, automatic timer, or continuously operating exhaust fan. Bathroom exhaust fan controls increase occupant comfort by further controlling indoor moisture and odour levels.	1
4-6 b (new)	Install timer switches or occupancy sensors on all local exhaust fans outside of individual units (i.e. laundry, recreation, storage areas, etc.). Operating of local exhaust fans only when necessary using controls helps reduce heat loss of interior air to outside, and also reduces electrical consumption by reducing duration of fan operation.	1
4-6 c (new)	For indoor pool areas, install a designated dehumidification system designed by a consulting engineer or qualified contractor to match the water and air temperatures maintained in the area. Dehumidification systems serving pool areas eliminate the need to exhaust large quantities of indoor air, therefore reducing heat loss.	1
4-6 d (new)	For all permanent entryways leading from outdoors, install an entryway system of at least 10 feet in length to captures dirt and particulates (i.e. grates/grills/slotted systems, or roll-out mats that are maintained weekly by a service organization). Entryway systems that capture dirt and particulates from outdoors help reduce occupants exposure to indoor airborne contaminants.	2
4-7	All combustion space and water heating equipment located within building are sealed with no possibility of backdraft. Sealed-combustion appliances draw all their combustion air from the outdoors, which eliminates any chance of back drafting. This feature is especially helpful in well sealed buildings. These types of appliances do not negatively affect indoor air quality.	3
4-8	Install hardwired carbon monoxide detector within each unit, if combustion spillage susceptible appliances are used in the building. Carbon monoxide detectors warn against high levels of toxic carbon monoxide.	1
4-9	Seal all permanent ductwork upon installation, removing seals once all phases of construction are complete (1 pt.), and/or power vacuum all HVAC ducting prior to occupancy (1 pt.). This process helps eliminate pollutants that drop into the HVAC ducting during the construction process from being circulated into the housing unit.	2
4-9 a	Flush out each unit with fresh air for at least 48 hours after all construction phases and prior to occupancy by opening all exterior windows and interior doors and running ventilation system.	2

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(new)	Flushing out units with fresh air after construction helps reduce occupants' exposure to indoor airborne contaminants from dust, VOCs and other particulates that have accumulated during construction.		
4-11	All insulation in the project is third-party certified as low or zero formaldehyde. Formaldehyde may cause eye, nose, and throat irritation, headaches, loss of coordination, nausea, damage to liver, kidney, and central nervous system.	2	2
4-12	Third-party certified low formaldehyde sub floor sheathing. Formaldehyde is colorless gaseous organic compound, water soluble, with a characteristic pungent and stifling smell. Building materials low in or free of formaldehyde glues are used in the floor underlayment, cabinetry and elsewhere to protect the indoor air quality.		3
4-13	Third-party certified low formaldehyde underlayment is used in the project. (ANSI A208.1 – 2009 concentration ≤0.21 ppm). Low formaldehyde (phenol) and formaldehyde-free binders (PMDI) are available and becoming more common. FSC certified OSB is becoming more common, reducing environmental impacts on air, water, social quality.		1
4-14	Low formaldehyde particle board/MDF used for cabinets (ANSI A208.2 – 2009 concentration ≤0.21 ppm). Urea formaldehyde-free fibreboard can be used in the same way as conventional fibreboard, but with the added caution of greater potential for water damage.	1	1
4-15	Low formaldehyde particle board/MDF used for shelving (ANSI A208.2 – 2009 concentration ≤0.21 ppm).	1	1
4-16	Zero formaldehyde particle board/MDF used for cabinets (2 pts.) and/or for shelving (2 pts.). Cabinets made from formaldehyde free particleboard or MDF eliminate the Volatile Organic Compounds (VOC) that off gas into the home, resulting in healthier indoor air quality.	4	2 to 4
4-17	All interior wire shelving is factory powder coated. Vinyl coating on conventional shelving units off gas VOC fumes.	2	2
4-18	Water-based urethane finishes used on all site-finished wood floors. Water-based Epoxy: Generally referred to as "epoxy-modified finish," water-based epoxy finish differs from its solvent-based counterpart in that the epoxy resin is itself the catalyst for an acrylic or urethane resin.		2
4-19	All wood or laminate flooring in the project is factory finished. Installing a pre-finished floor eliminates the time, the dust and the odors associated with the on-site sanding and finishing of an unfinished product.	2	2
4-20	Water-based Lacquer or paints are used on all site built and installed millwork, including doors, casing and baseboards. Water based interior finish products reduces VOC off-gassing which improves indoor air quality.	3	3
4-21	Interior paints are used that have low VOC content (2 pts.–Standards are < 150 grams/liter of VOCs) and/or interior paint is used that has no VOC's in base paint—prior to tint (3 pts.). Volatile Organic Compounds (VOC) are a class of chemical compounds that can cause short or long-term health problems. A high level of VOCs in paints/finishes off gas and can have detrimental effects to a building's indoor air quality and occupant health. Any paint with VOCs in the range of 5 grams/liter or less can be called "zero VOC," according to an EPA standard. Some manufacturers may claim "Zero-VOCs", but these paints may still use colorants, biocides and fungicides with some VOCs. Adding a color tint usually brings the VOC level up to 10 grams/liter, which is still quite low.	2	2 to 5
4-22	Carpet and Rug Institute (CRI) IAQ label on all carpet used in units (2 pts.) and/or on all underlay used in units (1 pt.). To identify carpet products that are truly low-VOC, CRI has established a labeling program. The green and white logo displayed on carpet samples, of the CRI Indoor Air Quality Carpet Testing Program, in showrooms informs the consumer that the product type has been tested by an independent laboratory and has met the criteria for very low emissions. The adhesives used to install carpets and the latex rubber by some manufacturers to adhere face fibers to backing materials generate volatile organic compounds (VOCs). Carpets also cover large surfaces within an interior environment and can provide "sinks" for the absorption of VOCs from other sources.	3	1 to 3
4-23	Natural wool carpet in all living areas. Natural wool carpets are durable and use less secondary backing materials and chemicals. Off gassing is typically caused by the secondary backings and chemical additives in synthetic carpets, for controlling mildew, fungus, fire and rot.		2
4-24	All vinyl sheet flooring is installed with low VOC adhesives (1 pt.–Low VOC = standard is < 60 grams per litre), and/or is replaced by hard surface flooring (2pts.), and/or is replaced by natural linoleum (1pt.). Low VOC adhesive or backing minimizes the amount of VOC off-gassing, therefore improving IAQ.	2	1 to 4
4-26	All ceramic tiles are installed with low VOC adhesives and plasticizer-free grout. (Low VOC = standard is less than 65 grams per litre). Most adhesives are still based on SB latex, which releases large quantities of volatile organic compounds (VOCs). The volatile solvents are used to emulsify (or liquefy) the resin that acts as the bonding agent. However, water-based adhesives emit far less VOCs than their conventional solvent based counterparts. There are three types of low-VOC formulas: water-based (latex and acrylics); reactive (silicone and polyurethane); and exempt solvent-based (VOC-compliant solvents). While all three technologies yield low- or zero-VOC caulk, sealant, and adhesives, their performance is slightly different.		1
4-28	All carpet in units are replaced by hard surface flooring. Hard surface flooring is generally more durable and improves the IAQ within a building. Carpets collect dust, dust mites and other allergens which when disturbed become airborne particulates, directly affecting the health of the occupants.	4	4
TOTAL SECTION POINTS (min. 15 required):		33	

V. WASTE MANAGEMENT

This section deals with the handling of waste materials on the construction site and encourages recycling. Minimum 7 (UNDER REVIEW)

5-1	Comprehensive recycling program for building site including education, site signage and bins. A comprehensive recycling program that is strictly followed significantly reduces the amount of waste ending up in landfills. Currently it is estimated that up to 50% of landfill waste is construction related.		2
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5-2	Collection of waste materials from site by a waste management company that is a current member of a provincial recycling council or equivalent association and verifies that a minimum of 10% of the materials collected from the construction site have been recycled. Not only does this reduce overall waste of product, it ensures that as much product as possible is being utilized for the production of future resources.	4	4
5-3	Suppliers and Trades recycle their own waste. (1 pt. per trade, max. 4 pts.). Trades being responsible for recycling and removal of waste not only reduces landfill waste, but also promotes a cleaner and safer working environment.		1 to 4
5-4	Minimum 25% (2 pts.) or 50% (4 pts.) by weight of waste materials collected from construction site is diverted from waste stream. Trades being responsible for recycling and removal of waste not only reduces landfill waste, but also promotes a cleaner and safer working environment.	2	2 or 4
5-5	Use of recycled materials derived from local construction sites (1 pt. for each different product used, max of 3 pts.). Products recycled from the construction site, such as mulched wood cut offs or mulched gypsum are often useable as either clay/ soil water retention additives or for organic burning.	1	1 to 3
5-6	Trees and natural features on site protected during construction. The protection of existing trees and other natural features such as streams, ponds and other vegetation reduces environmental impact, and ecosystem impact. Many of these features can be protected simply by following good waste management procedures.		1
5-7	Shared transportation benefits: provide one parking stall for a car-sharing vehicle (1 pt.), and/or a car sharing vehicle as one component of condominium association (3 pts.) and/or bicycle storage on site (1 pt.). Providing a vehicle to share allows occupants to live without their own vehicle and using the shared vehicle when needed. Provision of covered storage facilities for securing bicycles on site encourages the use of alternative transportation.	1	1 to 5
5-8	Metal or engineered durable form systems used for concrete foundation walls. The use of metal forming systems reduces the requirement of lumber, a limited resource.		1
5-9	Reusable bracing is used for framing. The use of reusable bracing for framing reduces the requirement of lumber, a limited resource.		1
5-10	Install built-in recycling center with two or more bins in each unit (2 pts.) and/or provide composter to each unit (1 additional pt.). By installing built in recycling centers, which can be as simple as labeled containers (paper, cardboard, cans, plastics, etc.). Occupants are more likely to utilize the pre-existing facilities and thus contribute to the reduction in landfill waste. Providing a composter promotes a reduction in wastes heading to the landfill by giving occupants an option for organic waste such as food leftovers.		2 to 3
5-11	Provide a central recycling center for the housing project (1 pt.–min. of paper, glass and tin recycling) and/or install trash compactor for unit or building (1 pt.). Providing a recycling center will promote recycling among the occupants. Installing a trash compactor, while not actually reducing the mass of waste, does help by reducing it's volume, which over time can make a significant difference to landfill levels.	2	1 to 2
TOTAL SECTION POINTS (min. 7 required):		10	

VI. WATER CONSERVATION

This section encourages a reduction in the amount of water used in the home or in individual units within multi story buildings. Minimum 7 (UNDER REVIEW)

6-1	CSA approved single flush toilet averaging 1.6 GPF or less installed in all bathrooms. Lower flow toilets can save a substantial amount of water over time.		2
6-2	Install a dual flush or 1.2 GPF toilet in one or more bathrooms in each unit (2 pts. for one bathroom, 3 pts. for all). These toilets offer a choice between two water levels for every flush: 1.6 GPF (6 LPF) or 0.8 GPF (3 LPF).	3	2 or 3
6-3	Install waterless urinals in men's public facilities. The Average public urinal uses approximately 400 litres of water/day or 3.8- 10 litres per flush. Waterless urinals are more sanitary, reduce maintenance, installation costs and are only marginally more expensive to purchase.		1
6-4	Insulate the first three feet of the water lines on the hot water tank with flexible pipe insulation where units contain independent DHW system (1 pt.) and/or insulate all hot water lines to all locations (2 pts.). Minimizing the heat loss in the water line will decrease the initial water wasted by delivering hot water faster. Minimizing the heat loss in the water line will decrease the initial water wasted by delivering hot water faster.	1	1
6-5	Install hot water recirculation line. Having the hot water re-circulated from the hot water source to the fixture points will decrease the initial water wasted by delivery the hot water faster.	3	3
6-6	Install low flow faucet aerators on all bathroom and kitchen sinks (1 pt.) and/or install hands free lavatory or kitchen faucets in each unit (4 pts.). Low flow faucets may be included if flow rate is a maximum of 3.8 L/minute on bathroom sinks and/or 6.8 L/minute on kitchen sinks. Battery powered electronic sensor minimizes the spread of germs and saves water.	1	1 to 5
6-7	Supply front loading clothes washer in each unit. Front loading clothes washers conserve water by design, as they are only required to fill up the washing compartment 1/3 full to effectively wash clothing. Additionally they use up to 75% less environmentally damaging laundry detergent, AND they also conserve electrical or gas energy by significantly reducing drying time for clothes with a more thorough spin cycle.	3	3
6-8	Install water saving dishwasher that uses less than 26.0 L/water per load in each unit. Water saving dishwasher uses technology to reduce both the amount of water required as well as electrical energy requirements. The EnerGuide appliance directory put out by Natural Resources Canada has a comprehensive listing of all manufacturers and models of dishwashers and other appliances with water usage and energy efficiency ratings.	1	1

6-9	Install permeable paving materials for driveways and walkways (min. 70% of hardscape area). Permeable paving materials allow rainwater to flow back into the ground instead of into storm sewers.		1
6-9 a	Design all impermeable hardscape surfaces to direct rainwater to an on-site infiltration feature (i.e. vegetated swale, rain-garden, cistern, etc.). Designing for on-site infiltration allows rainwater to flow back into the ground instead of into storm sewers.		1
(new)	Install a water meter in every unit. Installing a water meter in each unit makes the occupants more aware or and responsible for water use.		3
6-11	Install Efficient Irrigation Technology that has head-to-head coverage (1 pt.), a central shut-off valve (1 pt.), a sub meter (1 pt.), uses drip irrigation for at least 50% of planting bed area (1 pts.), has a pressure regulating device to reduce (1 pt.), high efficiency nozzles with a distribution uniformity of ≥ 0.7 (1pt.), and/or motion sensor/rain delay controller (1 pt.). Max. 3 points can be claimed. Water efficient irrigation systems that include sensors, regulators, micro drip feed systems etc. help reduce the demand on the municipal water system.	1	1 to 3
6-12	Provide a list of drought tolerant plants and a copy of the local municipality water usage guide to building owner with closing package. Most municipalities provide a guide that gives the water requirements of various plants and grasses. When properly designed, landscaping choices can significantly contribute to water conservation.		1
6-13	Reduce lawn/turf to 50% of landscaped area. Lawns require a large amount of water to maintain. By reducing the amount of lawn, water use can also be reduced.		1
6-14	Builder captures rainwater for use in atrium, patio garden feature, landscaping and/or indoor water use. Using rainwater helps with stormwater management, and also reduces demand on the municipal water system.		1
6-15	Greywater is collected, treated and reused throughout the project for landscaping and/or indoor water use. Reusing greywater helps reduce demand on the municipal water system.		5
TOTAL SECTION POINTS (min. 7 required):		13	

VII. BUSINESS PRACTICE

This section deals more with manufacturers and builders office and business practices. Minimum 9 (UNDER REVIEW)

7-1	Products used for the project are manufactured within 800 km. (1 pt. for each product to a max. of 5 products). Products made closer to the location of use will have less embodied energy. Basically this means that the shorter the transportation distance the less energy used in moving the product. Less energy used means fewer emissions.	2	1 to 5
7-2	Builder provides BUILT GREEN building owner manual and/or educational walkthrough and/or Green systems manual for building managers. Building owner education is an important component to any high performance building. If the technology is not used correctly, it will diminish the efficiency.	2	2
7-3	Builders office and show homes purchase a minimum of 50% (1 pt.) up to 100% (2 pts.) solar, wind or renewable energy. Wind Energy is a cleaner way to provide energy. Lower emissions benefit the environment.		1 to 2
7-4	Manufacturers and/or suppliers purchase 50% or more solar, wind or renewable electricity. Wind Energy is a cleaner way to provide energy. Lower emissions benefit the environment.		1
7-5	Builder supplies a minimum of 8" of topsoil as finish grading throughout site. Compared to subsoil materials, topsoils usually have higher aggregate stability, lower bulk density, and more favourable pore size distributions which leads to higher hydraulic conductivity, water-holding capacity, and aeration porosity.	2	2
7-6	Development site provides community amenity space for not for profit community services. Floor area made available to the City for not-for-profit community use. (i.e., Assemblies, offices, educational facilities etc.).		1
7-7	Development site provides for Publicly Accessible Private Space. (i.e., Atriums, open courtyards etc. which are part of the residential project but have links to/for public access.		1
7-8	Development includes a diversity of housing types including 20% live/work units (2pts.), 25% mixed use (2 pts.) facilities and/or 20% with separate basement suite units (2pts.) This type of development encourages neighborhoods where people can live, work, shop etc. without having to drive.		2 to 6
7-9	Builder has written environmental policy which defines their commitment (which must include an office recycling program and energy efficient lighting). A statement of commitment helps to emphasize priority and ultimately define a corporate culture.		1
7-10	Manufacturer and/or supplier has a written environmental policy which defines their commitment (this must include an office recycling program and energy efficient lighting). (1 pt. per supplier/manufacturer, max. of 2 pts.). Doing business with others committed to the environment helps to promote the ideals of being earth friendly.	2	1 to 2
7-11	Builder has written an environmental policy which prioritizes milestones for future net zero housing developments. The next step toward easing our reliance on non-renewable energy is net zero housing. Net zero houses produce as much energy as they consume using renewable sources such as solar, thermal, wind, geoechange etc.		1
7-12	Make provision Truck Management Plan, to avoid high congestion areas during construction. A truck management plan would minimize the impact of trucks in the construction neighborhood. Features include scheduled arrivals/departures, reuse of materials to reduce truck traffic, communication with community and specific hours of work designated.	1	1
7-13	Delivery Area wheel washed/ treated during construction. Wheel wash area will cut down on dust pollution in the neighborhoods where construction is taking place.		1
7-14	Builder's company vehicles are hybrid or bio-diesel vehicles (1 pt. per vehicle to max. of 3 pts.). A commitment to the environment shouldn't stop at construction. Using a hybrid vehicle produces lower harmful emissions. Diesel construction vehicles converted to bio-diesel reduce fuel consumption by up to 75%.		1
7-15	Builder uses radiantly supplied cold weather construction practice. Propane heaters under tarp are often inefficient; this results in a great deal of wasted energy while reducing the quality of workmanship. Alternatives may include manufacturing components indoors.		1
7-16	Environmental certification for builder's place of business (building, office etc.). Many commercial buildings have been rated with various energy efficiency standards. Does your company work within an ENERGY STAR or LEED certified office building?		3
7-17	Builder agrees to construct and label a min. of 50% of all projects to the BUILT GREEN standard per calendar year. (3 pts. for 50% or 5 pts. for 100%). A commitment to the environment from the builder can expand energy efficiency exposure to a large number of home owners and other home builders. Every BUILT GREEN project that is built is a reduction in material use, a reduction of green house gas emissions, less waste and better efficiency.		3 or 5
7-18	Contracted trades and/or suppliers have successfully taken BUILT GREEN Builder Training. (1 pt. per company, max 3 pts.). Using trades or suppliers who have successfully taken Built Green Builder Training means that there is common understanding about what needs to be done and how it will be accomplished, streamlining the process.	3	1 to 3
TOTAL SECTION POINTS (min. 9 required):		12	
TOTAL CHECKLIST POINTS		141	



File No. NYKV984020

Milliken Developments
 234 19th Street West
 North Vancouver, BC
 V7M 1X5

Attention: Ms. Kate Milliken Binns

**Re: Market Overview for a Proposed Assisted Living & Memory Care Retirement Residence
 825 Taylor Way, West Vancouver, BC**

Dear Ms. Milliken Binns:

We have completed investigations and analyses pursuant to your request for a market overview of the assisted living and memory care market in the West Vancouver area, specifically relating to your proposal for development of the above noted property. The purpose is to examine potential demand for a luxury retirement residence providing assisted living (AL) and memory care (MC) in West Vancouver. The intended use is for internal planning and decision making and no other use.

The following map captures the market area under analysis.



Based on our data, the West Vancouver market area had a total population of approximately 73,000 in 2011. The total seniors' population was about 14,700, or almost 20% of the total population. By 2021 it is forecasted to reach nearly 25%. The following table captures total and seniors' population statistics.

Population							
Year	Van CMA	PMA	65-74	75-84	85+	65+	75+
2006	2,111,581	69,734	6,424	5,243	2,098	13,765	7,341
2011	2,415,782	73,042	7,150	5,067	2,514	14,731	7,581
2014	2,538,522	73,714	8,541	4,893	2,623	16,057	7,516
2016	2,621,378	74,017	9,149	4,913	2,687	16,749	7,600
2021	2,839,988	74,498	10,063	5,430	2,664	18,157	8,094

Percentage of PMA Population						
Year	65-74	75-84	85+	65+	75+	
2006	9.2%	7.5%	3.0%	19.7%	10.5%	
2011	9.8%	6.9%	3.4%	20.2%	10.4%	
2014	11.6%	6.6%	3.6%	21.8%	10.2%	
2016	12.4%	6.6%	3.6%	22.6%	10.3%	
2021	13.5%	7.3%	3.6%	24.4%	10.9%	

Population Growth Forecast							
Period	Van CMA	PMA	65-74	75-84	85+	65+	75+
2006 - 2011	14.4%	4.7%	11.3%	-3.4%	19.8%	7.0%	3.3%
2011 - 2014	5.1%	0.9%	19.5%	-3.4%	4.3%	9.0%	-0.9%
2014 - 2016	3.3%	0.4%	7.1%	0.4%	2.4%	4.3%	1.1%
2016 - 2021	8.3%	0.6%	10.0%	10.5%	-0.9%	8.4%	6.5%

The West Vancouver area is one of the most affluent in the GVA. The following table illustrates the difference in average seniors' and household incomes.

Average Incomes					
65-74		75+		Household	
PMA	Van CMA	PMA	Van CMA	PMA	Van CMA
\$66,224	\$32,198	\$46,553	\$28,671	\$126,195	\$72,639
51.4%	Delta	38.4%	Delta	42.4%	Delta

West Vancouver also has the highest priced real estate in the GVA. According to Greater Vancouver Real Estate Board statistics, the House Price Index* (HPI) for West Vancouver was \$1,608,800 in January 2012, almost 2.5 times the corresponding Vancouver HPI at \$660,600. In fact, the next highest HPI is Vancouver West at \$933,600. This will have a major impact on affordability since it is well documented that seniors count on equity release from the sale of their home in moving to retirement housing.

As noted above, the population of seniors' 65 years of age and older in the market area is estimated at 14,730. Based on our research and analysis of dementia occurrence, we estimate that in total about 1,585, or 10.8% of the population, have a need for memory care assistance.

* The MLS® HPI is a more stable price indicator than average prices, because it tracks changes of "middle-of-the-range" or "typical" homes and excludes the extreme high-end and low-end properties



However, the subject proposal involves an upscale offering, commensurate with the affluent profile of the West Vancouver community. When we take into consideration affordability factors, including income levels and housing values, we estimate that the potential qualified demand is for over 300 memory care spaces. In addition, we estimate that the need for assisted daily living would add up to 150 spaces for a total of 450 spaces.

It is also well documented in surveys that wealthy neighbourhoods tend to draw significant demand from outside the primary market area due to “influencers”, or adult children living in the area. Seniors very often choose to relocate closer to their adult children (and grandchildren). This tendency is more common in assisted living and memory care than independent living. While our own research indicates that between 25% and 35% of demand comes from outside a ten kilometre radius of the site, it is our experience that the ratio is typically upwards of 50% for affluent areas.

Based on our research and demand modeling, we estimate that the total potential demand would be for as many as 900 AL/MC spaces in an upscale residence in West Vancouver.

Our research into existing supply indicated a total of 394 existing care beds in the market, including both funded and private long term care and private retirement residences.

Property Name	Operator	Units
Amica at West Vancouver	Amica	34
Hollyburn House	Revera	36
Kiwanis Manor	InSite Housing	30
West Vancouver Care Centre	VCHA	79
Capilano Care Centre	Revera	73
Inglewood Care Centre	VCHA	142
	Total	394



The only competitive high-end, private pay supply to the proposed subject development would be Amica West Vancouver and Hollyburn House. Opened in 2006, Amica is a 118 suite independent living residence with a secured floor containing 32 suites. It is primarily for assisted living but they do provide early dementia care. Hollyburn House opened in 1987 and has been renovated over the years. It has a designated wing containing 36 units for private pay care, including dementia.

Therefore, only 70 spaces are available for private pay care in upscale retirement residences in West Vancouver and neither specializes in memory care. The nearest true competitor is Sunrise Lynn Valley in North Vancouver which is reported to have a long waiting list.

The balance of existing supply (324 beds) noted in the chart involved publicly funded or subsidized care units. While they may have some impact on demand, they are there for seniors who are not income qualified in our analysis. Notwithstanding, based on our needs analysis, that this segment of the market is also significantly under-supplied in West Vancouver.

Conclusion

Based our research and analysis, we conclude that the West Vancouver market is significantly under-supplied with respect to upscale assisted living and memory care spaces, having a potential demand for 900 seniors relative to an existing supply of only 70 units. This is supported by the long waiting lists at other comparable upscale residences in the GVA such as Sunrise Senior Living.

We hereby certify that we have no present or contemplated interest in the herein described property of any kind whatsoever. If you require any further information on this matter, please do not hesitate to contact the undersigned.

Respectfully submitted,
Altus Group Limited

Stephen Hiscox, AACI, PApp.
 Senior Director

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December 7, 2012

File: 5012230-001

Milliken Developments
901 West 3rd Street, Suite 304
North Vancouver, BC V7P 3P9

Attention: Ms. Kate Milliken-Binns

Dear Ms. Milliken-Binns,

Reference: Traffic Impact Study
707 Keith Road – West Vancouver, BC

As part of its Rezoning and Development Permit application, Milliken Developments retained MMM Group to prepare a Traffic Impact Study of their proposed Supportive Living and Memory Care community on the surrounding road network. This letter report presents our findings, recommendations, and conclusions regarding the need for any improvements to the adjacent and nearby transportation system in order to maintain a satisfactory level of service, an acceptable level of safety, and the appropriate access provisions. Key items that have been considered include, in no particular order:

- ✓ Spacing between the proposed site driveway and the Taylor Way intersection
- ✓ Trip generation rates and parking generation ratios
- ✓ Impact on traffic on the surrounding road network

PROPOSED DEVELOPMENT

As shown in **Figure 1**, Milliken Developments is proposing to construct a 92-suite / 110-resident (bed) Supportive Living and Memory Care community on two single-family residential lots (707 Keith Road and 525 Taylor Way) which are located in the northwest corner of the intersection of Taylor Way and Keith Road in the District of West Vancouver (District). Access to the eight surface and 32 underground parking spaces would be provided from a right-in / right-out driveway located on Keith Road (see **Figure 2**.)

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 Ms. Kate Milliken-Binns



Figure 1 – Vicinity Map

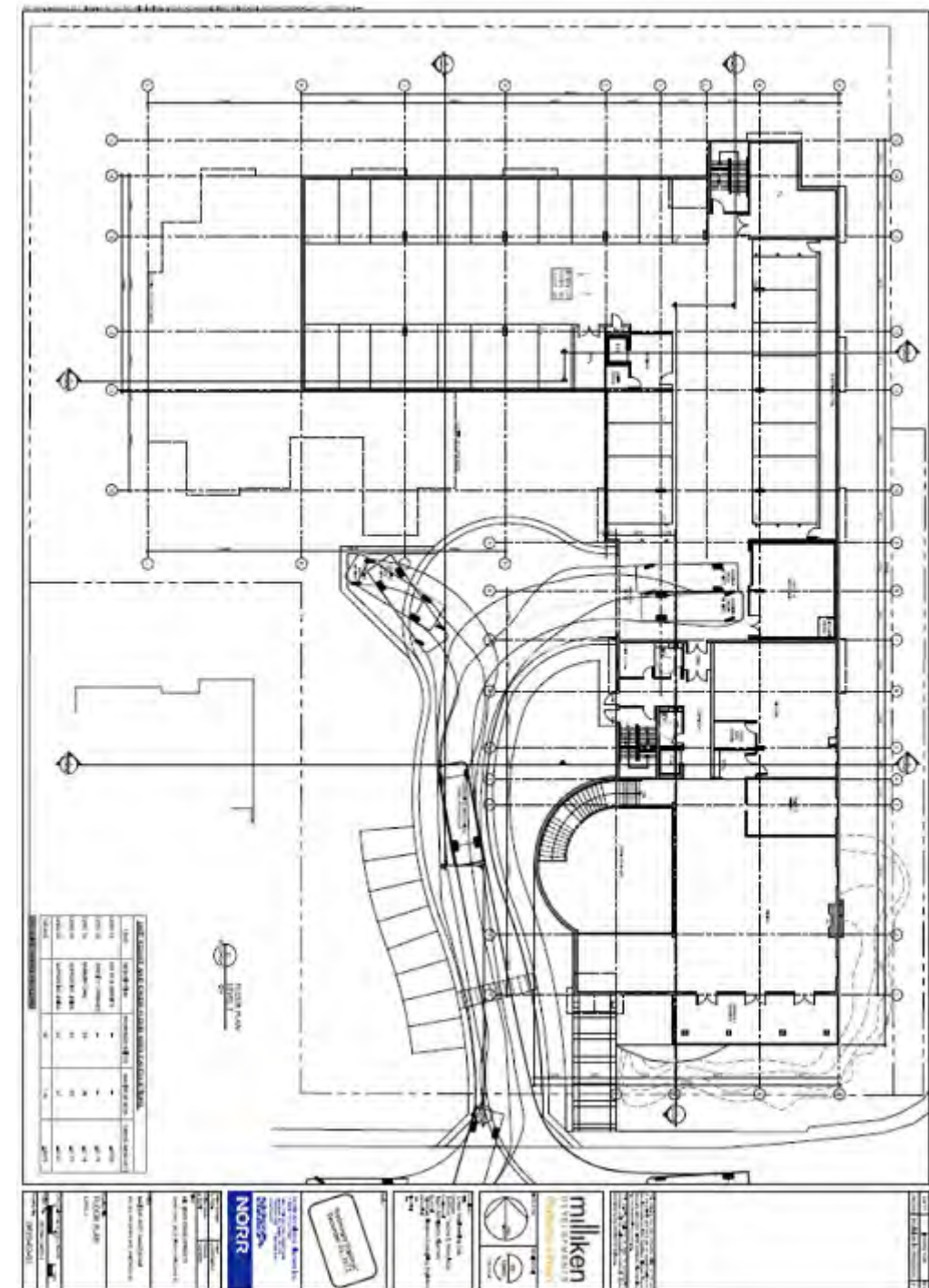


Figure 2 – Site Plan

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 Ms. Kate Milliken-Binns

METHODOLOGY

In order to address the District’s requirements, MMM Group completed the following work plan:

- ✓ Confirmed the scope of the Traffic Impact Study with District staff.
- ✓ Conducted peak period trip generation surveys at the 107-unit Sunrise of Lynn Valley assisted living facility located at 980 Lynn Valley Road, North Vancouver on Tuesday, November 20, 2012 between 7:00 and 9:00 a.m. and 4:00 and 6:00 p.m.
- ✓ Visited the site and surroundings on Monday, November 26, 2012 to clearly understand the study area in terms of current access, street laning, parking, pedestrian and cyclist facilities, transit, and traffic control measures.
- ✓ Estimated background traffic for the study horizon (2022) which incorporates traffic generated by the Evelyn by Onni project plus the annual growth rate of 1.0 percent per year provided by the Ministry.
- ✓ Estimated site-generated traffic for the development (at build-out) based on trip rate results of the trip generation survey, information in MMM Group files measured at similar developments in Metro Vancouver as well as data published in the Institute of Transportation’s *Trip Generation, 8th Edition*.
- ✓ Quantified the traffic generated by existing uses, i.e. single-family homes
- ✓ Quantified the amount of new site-generated vehicular traffic that will be added to the adjacent road at build-out (= proposed development – existing uses)
- ✓ Estimated directional distribution for the development (at build-out) using trip orientation established during the rezoning process for the Evelyn by Onni project and assigned site-generated traffic to the road network for the 2022 peak hour scenarios.
- ✓ Estimated total traffic for the 2022 horizon year by summing the site-generated and background traffic.
- ✓ Used Synchro 8 software to evaluate operational performance (i.e. delays, queues, etc.) at study intersections for the following scenarios:
 - Existing (2012) weekday AM and PM peak hours
 - Future (2022) weekday AM and PM peak hours without the development
 - Future (2022) weekday AM and PM peak hours with the development

During the weekday PM peak hour, southbound traffic queues on Taylor Way were observed to spill back from the Marine Drive intersection through the Keith Road intersection. As such, the capacity of the southbound through lanes (in Synchro) was reduced to 1000 vehicles per hour (weekday afternoon peak hour only) to better reflect observed capacity of the southbound movement through the intersection.
- ✓ Reviewed and commented on site circulation, pedestrian connections and parking supply.

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 Milliken Developments
 Ms. Kate Milliken-Binns

FINDINGS

Existing Traffic Volumes

Existing weekday morning and afternoon Saturday midday peak hour traffic volumes at the intersection of Keith Road and Taylor Way are illustrated in **Figure 3**. As suggested above, southbound traffic on Taylor Way experiences long queues (and corresponding long delays) during peak periods. Queues spillback from the Marine Drive intersection, resulting from capacity constraints on the Lions Gate Bridge. This condition was observed during the traffic counts for the weekday afternoon peak hour only (i.e. did not occur during the morning peak hour).

Trip Generation Counts

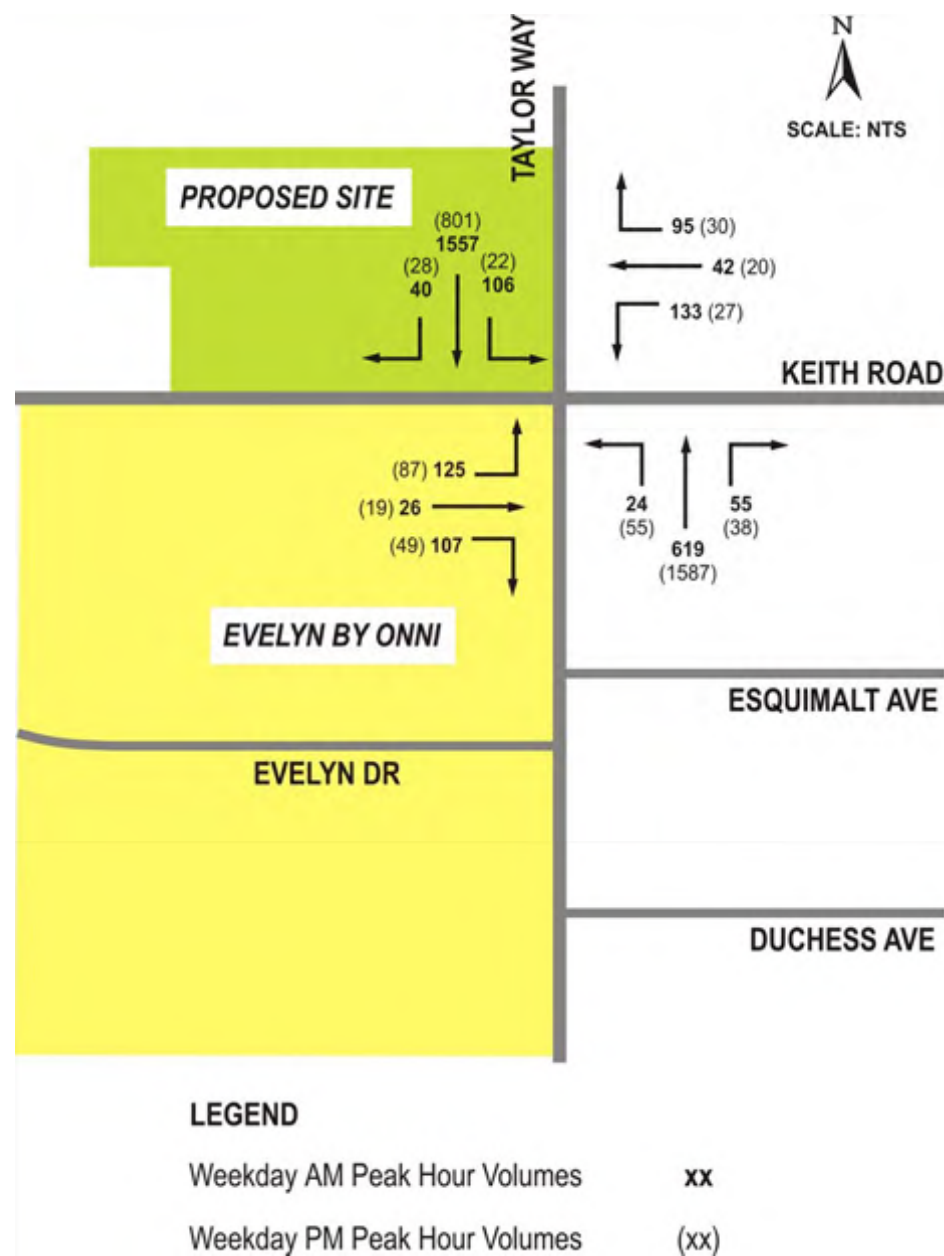
Trip generation counts were conducted by MMM Group to measure the trip generation at a similar Supportive Living and Memory Care community, namely Sunrise of Lynn Valley in North Vancouver. Statistics for the existing and proposed Supportive Living and Memory Care communities are compared in **Table 1**.

Table 1: Comparison of Building Statistics

Characteristic	Sunrise of Lynn Valley (Existing)	707 Keith Road (Proposed)
Building		
• Land Use	Supportive Living and Memory Care	Supportive Living and Memory Care
• Suites	96	92
• Residents (Beds)	107	110
Other Variables		
• Classification of adjacent street	Major Arterial	Major Road
• Availability of on-street parking	Prohibited	Limited
• No. of bus routes on adjacent street	3	1
• Distance to nearest bus stop	<200m	<200m
• Distance to nearest residences	<200m	<200m

As shown in Table 1, the existing and proposed Supportive Living and Memory Care communities share similar characteristics including availability of transit service, lack of nearby on-street parking, and classification of adjacent streets.

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Published data indicates that trip generation peaks at Supportive Living and Memory Care communities during the weekday AM and PM peak hours.¹ The trip generation at Sunrise of Lynn Valley is summarized in **Table 2** for typical weekday AM and PM peak hours with published trip generation rates provided for comparative purposes.

Table 2 – Supportive Living and Memory Care Trip Rates

Source	Independent Variable	AM Peak Hour			PM Peak Hour			Notes
		Entering	Exiting	Total*	Entering	Exiting	Total*	
Trip Generation Survey	Beds	73%	27%	0.24	41%	59%	0.30	1
ITE	Beds	65%	35%	0.14	44%	56%	0.22	2

Notes: * - vehicle trips per independent variable, e.g. bed
1 – Trip Generation Survey, Tuesday, November 20, 2012 - Sunrise of Lynn Valley, North Vancouver
2 – Land Use 254: Assisted Living, *Trip Generation, 8th Edition* (Washington, DC: Institute of Transportation Engineers, 2008)

A key finding is that the trip rates and directional distribution measured at Sunrise of Lynn Valley provide a conservative (or high) estimate of trip generation for the proposed form of development.

Site Generated Traffic

Trip rates used to estimate site-generated traffic for the existing and proposed forms of development during the weekday AM and PM peak hours are summarized in **Table 3**.

Table 3 – Weekday Peak Hour Trip Rates

Land Use	Independent Variable	AM Peak Hour			PM Peak Hour			Source
		Entering	Exiting	Total*	Entering	Exiting	Total*	
Supportive Living and Memory Care	Beds	73%	27%	0.24	41%	59%	0.30	1
Single-Family Residential	Dwelling Units	25%	75%	0.75	63%	37%	1.01	2

Notes: * - vehicle trips per independent variable, e.g. bed
1 – Trip Generation Survey, Tuesday, November 20, 2012 - Sunrise of Lynn Valley, North Vancouver
2 – Land Use 210: Single-Family Residential, *Trip Generation, 8th Edition* (Washington, DC: Institute of Transportation Engineers, 2008)

The site-generated traffic volumes for the proposed development are presented in **Table 4**.

¹ *Trip Generation, 8th Edition* (Washington, DC: ITE, 2008)

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Table 4 – Site-Generated Traffic Volumes*

Land Use	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
Supportive Living and Memory Care	20	7	27	13	20	33
Single-Family Residential (Existing)	-1	-1	-2	-1	-1	-2
TOTAL	19	6	25	12	19	31

Notes: * - vehicles per hour (vph)

When completed, the development is expected to add 25 new vehicle trips (= 19 entering + 6 exiting) to the road network during the weekday AM peak hour of adjacent street traffic and 31 vehicle trips (= 12 entering + 19 exiting) during the PM peak hour.

Trip Distribution and Traffic Assignment

Site-generated traffic was distributed using trip orientation established during the rezoning process for the Evelyn by Onni project across the street:

- ✓ 20% to/from west
- ✓ 30% to/from north
- ✓ 50% to/from south

The assignment of site-generated traffic to the study intersection is illustrated in **Figure 4** and accounts for the right-in / right-out movements at the site driveway plus the new roundabout just west of the site at Keith Road and Evelyn Drive. Consequently, site-generated traffic must approach from Taylor Way while departing traffic has an opportunity to U-turn at Evelyn Drive in order to turn north (left) or south (right) at Taylor Way.

Future (2022) Total Traffic

The background 2022 peak hour traffic volumes (i.e. without development) incorporates traffic generated by the Evelyn by Onni project plus the annual growth rate of 1.0 percent per year provided by the Ministry. Given that traffic volumes at the Keith Road / Taylor Way intersection currently operate at capacity during peak periods, increases in through traffic may result in longer queues rather than more traffic traveling through the intersection.

Future 2022 total traffic volumes were determined by adding the site-generated traffic volumes to the 2022 future traffic volumes without development. Total traffic volumes are illustrated in **Figure 5**.

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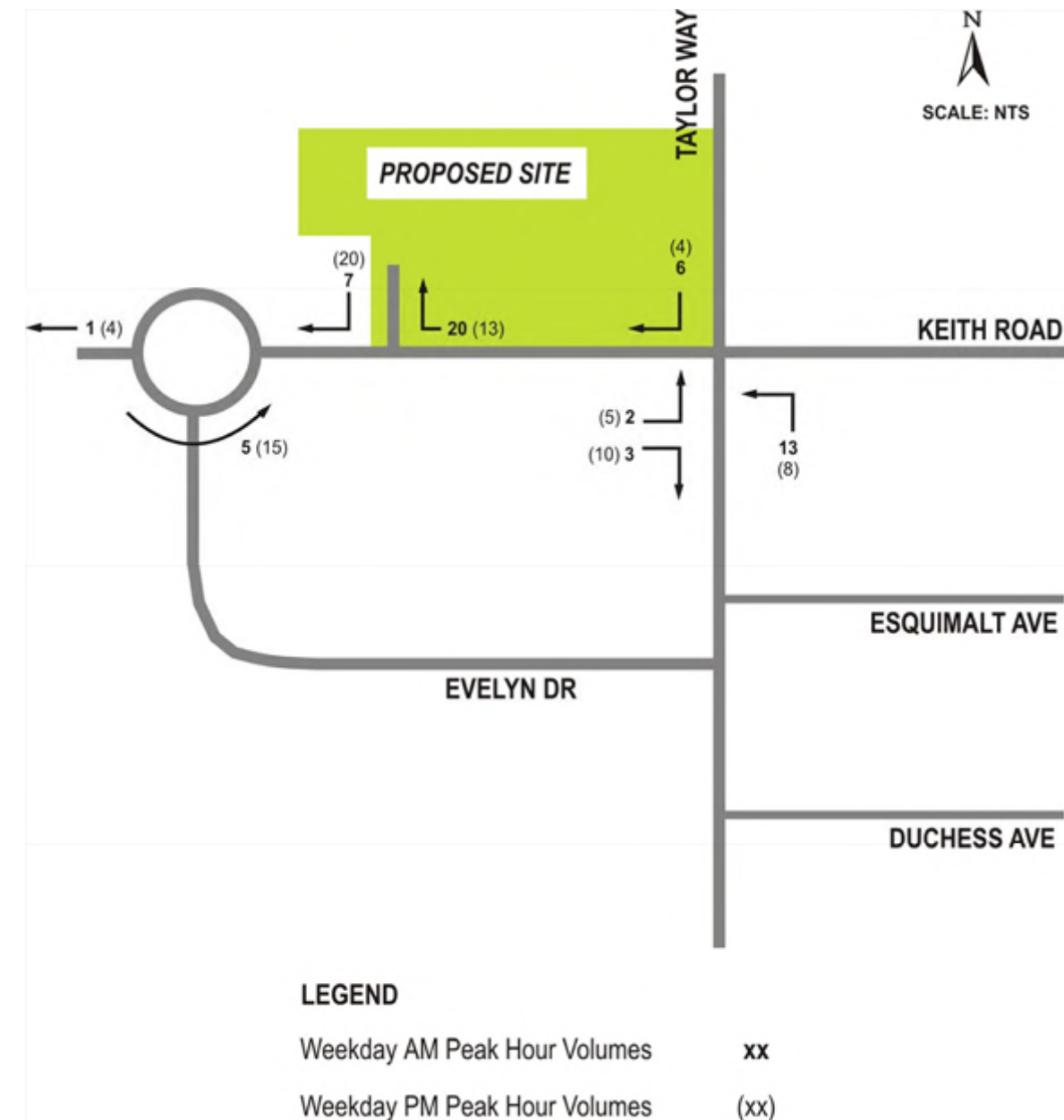
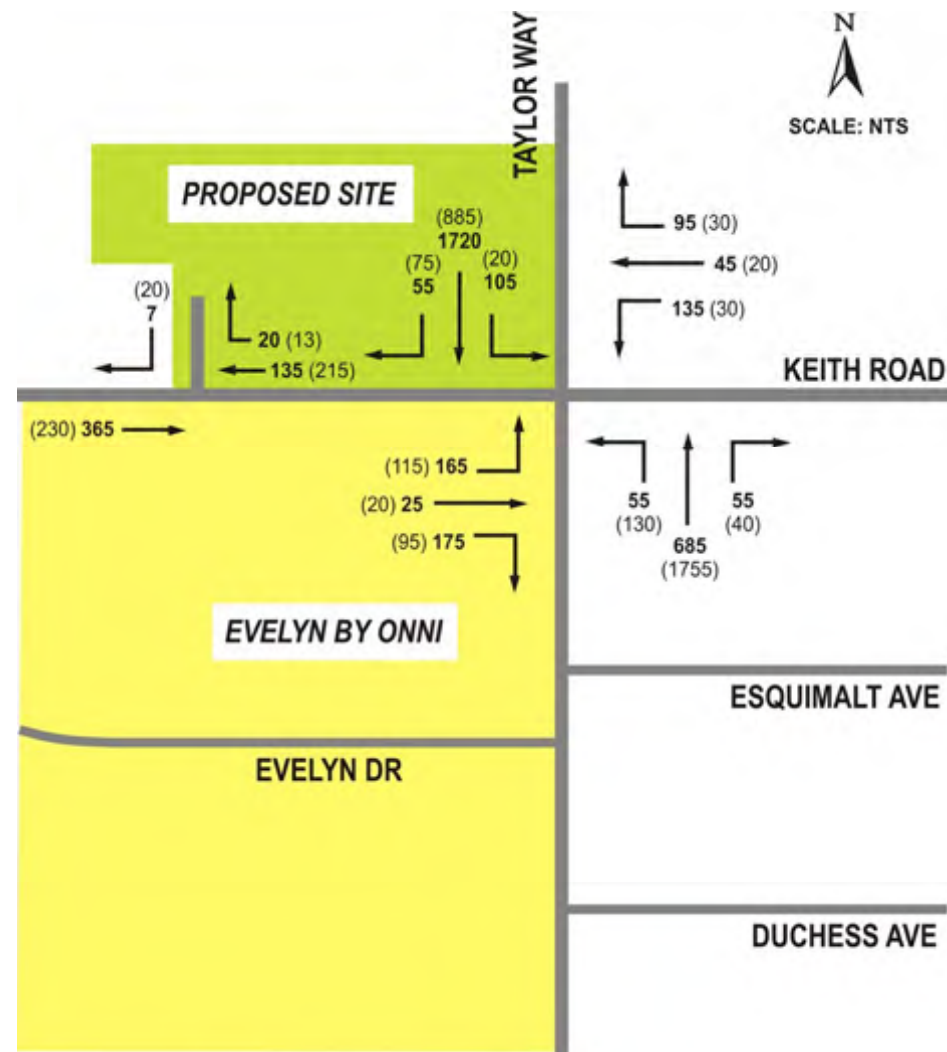


Figure 4 – Site-Generated Traffic Volumes (at build-out)

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LEGEND

Weekday AM Peak Hour Volumes **xx**
 Weekday PM Peak Hour Volumes (xx)
 Turning movements rounded to nearest 5

Figure 5 – Future (2022) Total Peak Hour Traffic Volumes

Operational Analysis

The future analysis accounts for the right-in / right-out movements at the site driveway and includes improved laning on Keith Road at Taylor Way (west leg of intersection) which provides eastbound left-turn and right-turn lanes (each with 35m storage length). The remaining intersection approaches are modeled per existing conditions.

Reported measures of traffic performance include volume to capacity (v/c) ratio and a delay-based traffic Level of Service (LOS) indicator ranging from LOS A (ideal) to LOS F (over-saturated) conditions. Typical peak hour urban conditions are in the LOS C to LOS D range with average delays ranging from 20 to 55 seconds per vehicle at signalized intersections and 15 to 35 seconds per vehicle at unsignalized intersections. As a target for design parameters, LOS D for individual approaches is considered appropriate for the study area. The results – based upon the *Highway Capacity Manual* (Washington DC: Transportation Research Board, 2010) intersection capacity generated by the Synchro software – are attached to this report and summarized in **Table 5** for the following scenarios:

- ✓ Existing (2012) weekday AM and PM peak hours
- ✓ Future (2022) weekday AM and PM peak hours without the development
- ✓ Future (2022) weekday AM and PM peak hours with the development

Key findings from Table 5 include:

- ✓ Keith Road / Taylor Way:
 - During the weekday AM peak hour, the east and westbound approaches to this signalized intersection currently operate at LOS E and LOS F. These approaches are expected to continue operating at LOS E and LOS F in the future, even with the planned improvements.
 - During the weekday PM peak hour, movements on all but one of the approaches operate at LOS D or better. Southbound traffic is expected to operate at LOS E, given that southbound traffic queues on Taylor Way spill back from the Marine Drive intersection through the Keith Road intersection.
- ✓ Keith Road / Driveway:
 - The site driveway is expected to operate at LOS B or better.

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Table 5 – Existing and Future Peak Hour Traffic Conditions

Location	Intersection Control	Movement	Existing (2012)		Future (2022) without Development		Future (2022) with Development	
			LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio
Weekday AM Peak Hour								
Keith Road / Taylor Way	Traffic Signal	EBL			F	1.74	F	1.87
		EBT	F	1.77	C	0.09	C	0.09
		EBR			F	1.34	F	1.36
		WBLT	F	1.12	E	0.89	E	0.92
		WBR	B	0.35	B	0.38	C	0.39
		NBL	A	0.13	A	0.23	B	0.29
		NBT	B	0.51	B	0.51	B	0.49
		SBL	A	0.28	A	0.29	A	0.28
		SBT	C	0.89	D	0.98	D	1.01
Keith Road / Driveway	Minor Street Stop Control	WBTR SBR	n/a		n/a		A	0.01
		SBLR	n/a		n/a		A	0.10
Weekday PM Peak Hour								
Keith Road / Taylor Way	Traffic Signal	EBL			D	0.66	D	0.67
		EBT	D	0.75	C	0.08	C	0.08
		EBR			A	0.33	A	0.34
		WBLT	C	0.28	D	0.29	D	0.28
		WBR	A	0.13	A	0.14	A	0.14
		NBL	A	0.16	A	0.40	A	0.43
		NBT	C	0.90	C	0.97	C	0.97
		SBL	A	0.13	A	0.13	A	0.13
		SBT	C	0.89	E	1.08	F	1.09
Keith Road / Driveway	Minor Street Stop Control	WBTR SBLR	n/a		n/a		A	0.03
		SBLR	n/a		n/a		A	0.15

Notes: NB = northbound, etc. L = left, etc. LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

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The results of the intersection queuing analysis are summarized in **Table 6**.

Table 6 – Comparison of Future (2022) Queues and Storage Length

Location	Movement	Storage Length (m)	95 th Percentile Queue Length (m)	
			Future (2022) without Development	Future (2022) with Development
Weekday AM Peak Hour				
Keith Road / Taylor Way	EBL	35	85	85
	EBT	n/a	10	10
	EBR	35	15	25
	WBT	n/a	55	50
	WBR	channelized	15	15
	NBL	45	10	10
	NBT	n/a	75	75
	SBL	40	15	15
	SBT	n/a	280	280
Weekday PM Peak Hour				
Keith Road / Taylor Way	EBL	35	40	40
	EBT	n/a	10	10
	EBR	35	15	10
	WBT	n/a	20	20
	WBR	channelized	5	0
	NBL	45	20	20
	NBT	n/a	300	305
	SBL	40	5	5
	SBT	n/a	180	185

Notes: NB = northbound, etc., queue length rounded to the nearest 5m

Key findings include:

- ✓ Northbound and southbound left-turn queue lengths on Taylor Way (from analysis) are within available storage limits.
- ✓ If forecasted site traffic volumes materialize, the eastbound left-turn queue may exceed available storage length during weekday peak hours and consequently block the site driveway.
- ✓ During peak hours, queues on Taylor Way are expected to range between 75 and 300m at the Keith Road intersection. Spillback from adjacent intersections, however, was observed during the weekday afternoon peak hour. Increases in traffic volume could, therefore, result in longer queues rather than increased intersection utilization.

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Site Circulation

As illustrated in Figure 2, key circulation elements of the site include:

- ✓ Hardscaped road with an adjacent sidewalk connecting the site driveway on Keith Road and the underground parkade.
- ✓ Eight perpendicular visitor parking spaces located on the hardscaped road near the building entrance.
- ✓ A hammerhead turnaround at the entrance to the underground parkade.
- ✓ Designated loading area under the building adjacent to the lobby, kitchen, and waste and recycling room.
- ✓ Thirty-two underground parking spaces for visitors and staff.

Benefits of the current site plan include:

- ✓ The throat length at the site driveway would accommodate at least one vehicle, which is equal to the maximum number of vehicles expected to queue at this location.
- ✓ Site servicing (i.e. deliveries, garbage and recycling pick-up, etc.) would occur under the building thereby reducing, if not eliminating visual and auditory impacts.

Concerns about the current site plan include:

- ✓ Combining the loading area and the entrance to the underground parkade may result in truck-passenger car conflicts as trucks back into the loading area while passenger cars attempt to enter or exit the parkade. This concern could be mitigated by adding engineering controls (preferred) such as traffic signals, parabolic mirrors, etc.; or providing administrative controls (least preferred) such as having staff stop traffic while trucks manoeuvre around the loading area.

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Pedestrian Connectivity

Sidewalk along Keith Road / Taylor Way – sidewalk would continue to be provided along the site frontage providing opportunities for residents, visitors and staff to walk to nearby destinations, e.g. bus stops on Taylor Way, shops and services at Park Royal.

Keith Road / Taylor Way Intersection – this signalized intersection is equipped with push-button-actuated pedestrian signals and marked with crosswalks facilitating the movement of pedestrians across the intersection.



Figure 6 – Pedestrian Signals and Sidewalk on Northwest Corner of Keith Road / Taylor Way

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Parking Supply

Forty off-street parking spaces (= 8 surface + 32 underground) would be provided on the site. As summarized in **Table 7**, the District's requirements yield a need for at least 34 vehicle parking spaces for the proposed development. The number of small car parking spaces on the site may not exceed 30% of the total parking spaces. Consequently, these requirements will be met.

Table 7 – Zoning Bylaw No. 4662, 2010 Parking Requirements

Land Use	Parking Ratio	Independent Variable	Parking Spaces
Assisted Living	1 parking space for every 3.3 beds, minimum	110 beds	34

Notes: Zoning Bylaw No. 4662, 2010, PH1 – Private Hospital 1, p 550-2

Table 8 compares the peak parking demand from the ITE *Parking Generation, 4th Edition* and a Lower Mainland assisted living facility.

Table 8 – Parking Demand at Supportive Living and Memory Care Communities

Source	Independent Variable	Parking Ratio	Peak Period Parking Demand	Notes
ITE	110 occupied beds	0.35 spaces per bed	39 spaces	1
Nikkei Place	110 occupied beds	0.36 spaces per bed	40 spaces	2

Notes: 1 – Land Use 254: Assisted Living, *Parking Generation, 4th Edition* (Washington, DC: Institute of Transportation Engineers, 2010)
 2 – Parking Utilization Survey of 72-bed Nikkei Home (Assisted Living), Burnaby, BC (Vancouver, BC: MMM Group (formerly ND LEA), May 2003)

Key findings include:

- ✓ At comparable Supportive Living and Memory Care Communities, the average peak parking demand varies from 0.35 to 0.36 parking spaces per bed
- ✓ At 0.36 parking spaces per bed, the proposed parking supply at 707 Keith Road equals the typical parking demand at comparable facilities (i.e. 0.35 to 0.36 parking spaces per bed)

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RECOMMENDATIONS

In light of the findings, the following recommendations are forwarded for consideration:

1. Limit movements at the site driveway to right-in / right-out through signage.
2. Revisit the design of the loading area with a view to adding engineering controls (preferred); such as traffic signals, parabolic mirrors, etc.; or providing administrative controls (least preferred) such as having staff stop traffic while trucks manoeuvre around the loading area.

SUMMARY AND CONCLUSIONS

A 92-suite / 110-resident Supportive Living and Memory Care community is proposed for the northwest corner of Keith Road and Taylor Way in West Vancouver. Access to the eight surface and 32 underground parking spaces would be provided from a right-in / right-out driveway located on Keith Road. The site is currently occupied by two single-family dwelling units.

- ✓ When completed, the development is expected to add 25 new vehicle trips (= 19 entering + 6 exiting) to the road network during the weekday AM peak hour of adjacent street traffic and 31 vehicle trips (= 12 entering + 19 exiting) during the PM peak hour.
- ✓ An operational analysis indicated that the site driveway on Keith Road is expected to operate at acceptable levels (i.e. LOS A or better) with the proposed development. Consequently, intersection improvements do not appear to be required.
- ✓ At 35m, the proposed spacing between the site driveway and Taylor Way appears to be sufficient.
- ✓ The operational analysis indicated that the signalized intersection of Keith Road and Taylor Way currently operated at unacceptable levels (i.e. LOS E or worse) with and without the proposed development given the planned improvements.
- ✓ The north and southbound left-turn lanes at the Keith Road / Taylor Way intersection are anticipated to accommodate future traffic volumes such that vehicle queues (generated by left-turning traffic) will not spill back into the through traffic lanes on Taylor Way.
- ✓ If forecasted traffic volumes generated by the adjacent Evelyn by Onni project materialize in 10 years, the eastbound left-turn queue may exceed available storage length during weekday peak hours. Consequently, northbound drivers leaving the site may choose to head west from the site, avoiding the Keith Road / Taylor Way intersection.
- ✓ The proposed parking supply (= 40 spaces) meets both District requirements (=34 spaces) and the peak demand observed at comparable facilities (=40 spaces).
- ✓ Improvements to the site plan and road network have been identified for consideration. These include turning restrictions at the site driveway and the design of the loading area.

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* * * * *

Should you have any questions about our methodology, findings, recommendations or conclusions; please contact me at (604) 685-9381 or vanweelderenf@mmm.ca.

Yours truly,

MMM Group Limited

<original signed by>

Floris van Weelderen, P.Eng., PTOE
Manager, Transportation Planning
Associate Partner

Attachments:

Appendix A – Trip Generation Survey at Sunrise of Lynn Valley, North Vancouver, BC
Appendix B – Intersection Capacity and Queuing (Synchro) Calculations

5012230-001-REP-01-Rev1 (TIS).doc

5012230-001
 707 Keith Road - West Vancouver, BC
 21-Nov-12
 FvW / SW

Trip Generation Survey - Sunrise at Lynn Valley

Land use: ITE 254 - Assisted Living
 Address: 980 Lynn Valley Road, North Vancouver, BC
 Date of Count: 20-Nov-12
 Day of Week: Tuesday
 Light: Dusk / Daylight
 Weather: Cloudy
 Road Surface: Damp
 Independent Variable: 96 rooms
 107 beds

Weekday AM Peak Period

Time of Day	Passenger Car			Heavy Vehicle			Total			Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
7:00 AM	0	1	1	0	0	0	0	1	1			14
7:15 AM	0	0	0	1	1	2	1	1	2			18
7:30 AM	0	1	1	0	0	0	0	1	1			23
7:45 AM	4	1	5	3	2	5	7	3	10	19	7	26
8:00 AM	4	1	5	0	0	0	4	1	5			22
8:15 AM	5	1	6	0	1	1	5	2	7			
8:30 AM	3	1	4	0	0	0	3	1	4	73%	27%	0.27
8:45 AM	3	3	6	0	0	0	3	3	6	73%	27%	0.24

7:45 - 8:45 a.m.

trips per room
trips per bed

Weekday AM Peak Period

Time of Day	Passenger Car			Heavy Vehicle			Total			Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
4:00 PM	2	3	5	0	1	1	2	4	6			26
4:15 PM	3	4	7	0	0	0	3	4	7			30
4:30 PM	2	6	8	0	0	0	2	6	8	13	19	32
4:45 PM	2	3	5	0	0	0	2	3	5			29
5:00 PM	6	4	10	0	0	0	6	4	10			30
5:15 PM	3	6	9	0	0	0	3	6	9			
5:30 PM	4	1	5	0	0	0	4	1	5	41%	59%	0.33
5:45 PM	2	4	6	0	0	0	2	4	6	41%	59%	0.30

4:30 - 5:30 p.m.

trips per room
trips per bed

File N^o: 5012230-001

From: Floris van Weelderen, P.Eng., PTOE

Date: August 30, 2013

Subject: Off-street Parking Supply
707 Keith Road - West Vancouver, BC

This technical memorandum presents the rationale for providing 40 off-street parking spaces at the 103-resident (bed) Supportive Living and Memory Care community proposed for the northwest corner of the intersection of Taylor Way and Keith Road in the District of West Vancouver (District).

Proposed Off-Street Parking Supply

Visitors 30 parking spaces
Staff 10 parking spaces
Total 40 parking spaces

Note: * - For key periods, such as Mother's Day, staff parking would be reduced to 2 stalls for that day only, allowing for 38 visitor stalls.

Parking Demand derived from First Principles

- Residents
 - Maximum number of residents – 103
 - Total residents when accounting for turnover – 100
 - Residents are no longer able to drive and do not have cars
- Visitors
 - Typical visiting hours are 8:00 a.m. - 8:00 p.m., seven days per week
 - Each resident typically receives 1 visitor every 2 days staying for up to 2 hours
 - Equates to an average of 50 visitors per day or 350 visitors per week
 - Disproportionate number of visitors on weekend days; consequently
 - Assume 40 visitors per day on typical weekday, i.e. Monday – Friday
 - Assume 75 visitors per day on Saturday and Sunday
 - Totals to 350 visitors per week
 - Visitor parking demand typically peaks at 7 vehicles on a typical weekday
= 40 visitors per day / 12 visiting hours per day * 2 hours per visitor * 1 visitor per vehicle
 - Visitor parking demand typically peaks at 13 vehicles on a typical Saturday and Sunday
= 75 visitors per day / 12 visiting hours per day * 2 hours per visitor * 1 visitor per vehicle
- Staff
 - 10 stalls reserved for staff parking, leaving 30 stalls for visitors
 - Balance of staff will use other modes of transport, e.g. transit, bicycle, carpool, etc.

Residents 0 parking spaces
Visitors 7-13 parking spaces
Staff 10 parking spaces
Total 17-23 parking spaces

Conclusion

The proposed parking supply (40 spaces) exceeds the peak parking demand (23 spaces) when estimated using first principles.

Traffic and Transportation



Site Generated Traffic:

Time of Day / Scenario	Existing Homes	Proposed Development	Net Change
Weekday AM Peak Hour	2 vph	27 vph	+25 vph
Weekday PM Peak Hour	2 vph	33 vph	+31 vph

Note: vph = vehicles per hour

- Amount of traffic generated is comparable to other Supportive Living and Memory Care communities in North Vancouver.
- Total peak vehicle trip generation would be in the order of **one car every two minutes**.
- **Site driveway on Keith Road**
 - Expected to operate at acceptable levels (LOS A) given low volumes.
 - Movements should be limited to right-in / right-out through signage.
- **Signalized intersection of Taylor Way / Keith Road**
 - Expected to continue operating at unacceptable levels (LOS E or worse) with development.
 - Site-generated traffic (27 vph) **< 1 percent** of total intersection traffic (3,215 vph).



Parking



Off-street parking supply (= 40 spaces):

- Exceeds District requirements (= 34 spaces)
- Exceeds peak demand based on anticipated travel behavior (= 23 spaces)
- Meets peak demand observed at comparable facilities (= 40 spaces)

