MED GRILL

4512 WEST SAANICH ROAD, SAANICH, BC V8Z 3G4

BUILDING ASSESMENT

STRUCTURAL ENGINEERING SERVICES

Cameron Marshall

Skyline Engineering Ltd.

Project: 12585.01

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Skyline Contact: Cameron Marshall, P.Eng., Principal

250-590-4133 ext. 116

cmarshall@seng.ca

Skyline Engineering Ltd.

380-4243 Glanford Avenue

Victoria, BC

V8Z 4B9

skylineengineering.ca

INTRODUCTION

At the request of Deane Strongitharm with Strongitharm Consulting Group, on behalf of John Papaloukas and George Papaloukas with Villages VP Restaurant, Skyline Engineering Ltd. was engaged to provide a condition and seismic assessment of the Med Grill Building located at 4512 West Saanich Road, Saanich, BC. Our purpose was to assess the building's existing capacity to resist earthquake and gravity induced loads and overall condition. Based on the information available, the structure's capacity was then compared to current building code force levels to approximate its existing resistance.

Due to the vintage of this building, existing structural and architectural drawings were not available for review. A visual review was performed on June 13, 2025, to investigate the existing structural systems including the existing walls, framing members, connections, load paths, diaphragm connections, and construction materials. However, existing finishes were not removed during this review, so access to these structural systems was very limited. This review and subsequent assessment are based primarily on the observations from the site review, prior experience with buildings of this vintage, and knowledge of codes and design standards at the time of construction.

Figure 1: Med Grill

STRUCTURE DESCRIPTION

This original two-storey structure was built in 1911 and was purposed as the original Saanich Municipal Hall. Renovations and additions performed in the 1920's and 1960's consisted of expanding this two-storey space to the rear and side of the original structure. A restaurant currently occupies the main level with a commercial kitchen in the rear. A martial arts gym and hair studio occupy the lower level, along with storage for the restaurant. Lastly, a walkway / deck extends off the back of the main level of the structure. No drawings were available; however, based on the vintage of this building, it is most likely that the original structure and additions were constructed solely from Architectural drawings and standard construction methods. Considerations for wind and seismic loadings were therefore not accounted for in the original construction.

From our observations on site, this building appears to be a conventional light wood frame structure with the roof and floor structure consisting of conventional wood joists supported on wood beams and posts on the interior and wood framed stud walls on the exterior. These posts and walls appear to be founded on rubble or stone foundations for the original building and 1920's addition and on cast in place concrete strip and pad foundations for the 1960's addition. The lowest level most likely consists of a conventional cast-in-place slab on grade. The main level deck or walkway extending off the back of the structure appears to be constructed of conventional wood joists, beams, and posts all founded on conventional cast in place concrete pad foundations.

STRUCTURAL CAPACITY OF GRAVITY SUPPORTING MEMBERS

The structural elements supporting occupants (live loading) and roof snow loading, such as the roof and floor joists, have shown satisfactory performance over the life of the building. In accordance with *Structural Commentary L: Application of NBC Part 4 of Division B for the Structural Evaluation and Upgrading of Existing Buildings* from the *National Building Code 2020 Commentary*, and given that this structure is over 30 years old, these gravity resisting elements can be evaluated based on satisfactory past performance. At the time of review, and as discussed with the occupants of the building, there did not appear to be any excessive deflection of the floor or roof structure, nor significant settling of walls or foundations, which indicates these structural elements are performing as intended. If this structure is being renovated such that the occupancy load is changing (change of use), or heavier finishes are being added, the floor joists, supporting walls, and foundations should be reviewed to ensure these elements have sufficient capacity and upgraded if necessary.

Site Observations and Discussion

During the site visit, numerous items were identified and are described in more detail herein.

Numerous ceiling patches were observed on the main level which appeared to be a result of roof leakage. This is an indication that the roof system is beginning to fail and / or has reached the end of its useful life. Access to the roof cavity was not provided, but there is a possibility the roof joists and beams could be exposed to excessive moisture and could begin to rot.

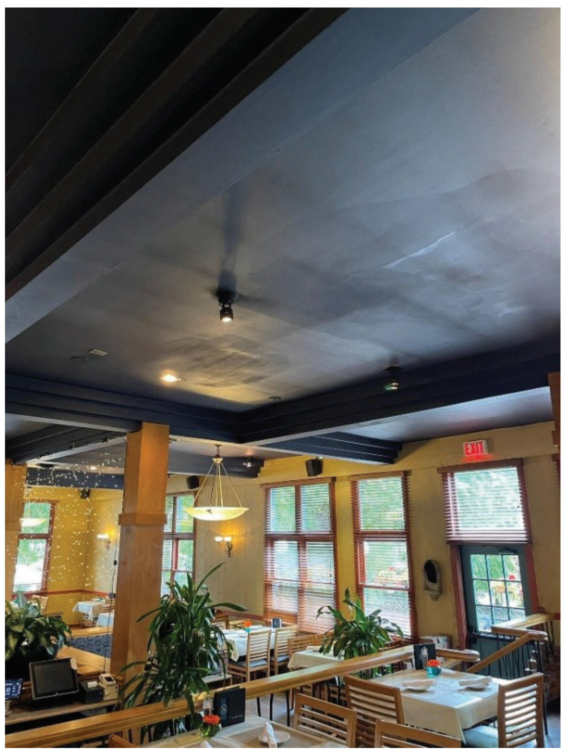

Figure 2: Ceiling Patch

The roof drainage does not appear to be working properly at the gutter and down spout locations, resulting in water compromising the exterior building finishes, as shown in Figure 3. Additionally, it appears that water has compromised the building envelope and entered the wood stud wall cavity on the main level, as shown by the wall patching in Figure 4 below. Although not observed while on site, the lower-level tenant also noted multiple issues with water ingress into the stud wall cavity which required extensive repairs.

Figure 3: Gutter and Down Spout

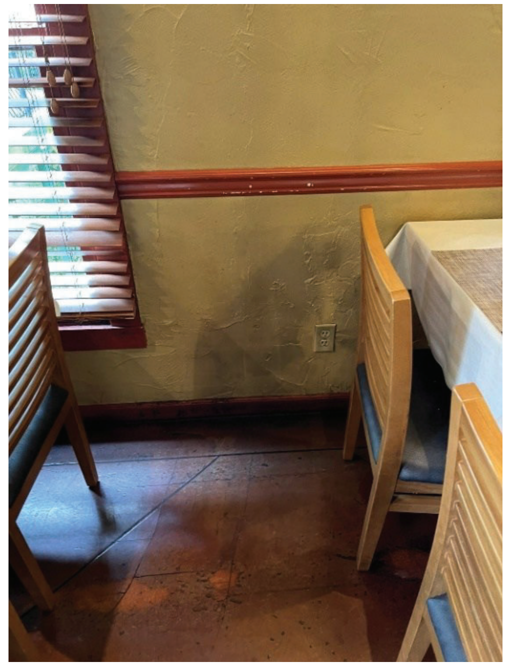

Figure 4: Main Level Interior Wall Patch

Deterioration and rot of the walkway joists and post base connection were observed in many locations. Refer to Figure 5 and Figure 6 below.

Figure 5: Deck Joist Rot

Figure 6: Deck Post Base Connection

Seismic Review

This structure and subsequent renovations and additions were built before the *National Building Code of Canada* prescribed seismic design provisions. Seismic design requirements were first introduced in the *National Building Code of Canada* in 1965. Since then, Code requirements have evolved considerably as scientific understanding of the potential earthquake forces and the structural performance during and after seismic events have been researched and studied. The seismic capacity of the existing structure was assessed based on the *2020 National Building Code of Canada* (NBC 2020) and *Structural Commentary L: Application of NBC Part 4 of Division B for the Structural Evaluation and Upgrading of Existing Buildings* from the *NBC 2020 Commentary*.

Due to the vintage of the structure and lack of available drawings, it is most likely that no dedicated lateral structural provisions were allowed for during the construction of this building and as such does not have a clear lateral load resisting system. Potential existing resistance to lateral forces, such as those imposed by earthquakes or wind, is provided by the existing 2x6 exterior walls sheathed with plywood or shiplap sheathing and the unreinforced masonry and rubble walls. The diaphragms are horizontal structural elements which transfer seismic forces to these lateral resisting elements. They consist of plywood sheathing on roof and floor levels. The connection of these diaphragms to the exterior walls could not be verified due to access but are likely not well detailed nor adequate to transfer the necessary lateral loads.

The goal of seismic upgrading is to improve the building seismic resistance to a minimum level recommended in the National Building Code. However, it is usually very disruptive, costly, and difficult to do a full code compliant upgrade, and often impossible to satisfy all the current Code requirements. Due to these factors, the upgrading often does not proceed, leaving the building unchanged to avoid the disruption and costs associated. The Commentary to the Code provides guidance on appropriate levels of seismic upgrading to best benefit the safety of the occupants and provides incentive to improve the building's overall seismic performance.

There is currently no guidance within the National Building Code regarding upgrading existing buildings to meet current seismic requirements. The Authority Having Jurisdiction (AHJ) – in this case, the District of Saanich – ultimately decides whether or not buildings are required to be upgraded, and if so, to what level. In our experience, the AHJ typically relies on the recommendations outlined in *Structural Commentary L* (refer to Appendix A for an excerpt from this commentary). At this time, no major renovations are being proposed and as such seismically upgrading the structure is not required. However, if the owner were to voluntarily upgrade the structure (without changing the use of the building or doing a major renovation) it would need to be upgraded to “Level 1” which roughly equates to 33% of NBC 2020 seismic force levels. If a major renovation – which extends the useful lifespan of the building – is being proposed, the structure would have to be upgraded to “Level 3” which roughly equates to 67% of NBC 2020 seismic force levels.

Due to the lack of available information such as architectural or structural drawings, our analysis of the existing lateral system is based on the limited information gathered while on site and our experience with buildings of a similar size and vintage. The critical elements are most likely the wood frame exterior walls, unreinforced masonry wall along with the floor, and roof diaphragm connections to these elements. In addition, the foundations would not have been sized to resist the compression or uplift requirements of these existing lateral resisting elements. Table 1 below summarizes our estimation of the building’s seismic capacity as a percentage of NBC 2020 current code as well as “Level 1” and “Level 3” seismic force levels.

	Estimated Seismic Capacity Percentage
NBC 2020 – Current Code	5% to 10%
Level 3 – Major Renovation	7% to 15%
Level 1 – Voluntary Upgrade	15% to 30%

Table 1: Seismic Capacity

CONCEPTUAL SEISMIC UPGRADE SCHEME

A seismic upgrade to this structure, regardless of the force level to which it is being upgraded to (NBC 2020, Level 1, or Level 3), would be disruptive and costly. A seismic upgrade would include, but not be limited to, the following:

- Diaphragm strengthening of the Roof and Main floor diaphragms, which would consist of blocking and nailing the existing plywood panel edges. Flooring, ceiling finishes, and roofing would need to be removed to perform this upgrade.
- The addition of sheathed wood frame interior shearwalls on both levels with hold-down anchor systems. This would be disruptive to the open spaces in the restaurant area.
- The strengthening of exterior walls with additional plywood and new hold-down anchor systems. This would require the exterior finishes and building envelope to be removed.
- The addition of diaphragm connections to the new and strengthened shearwalls.
- The addition of new foundations under the new interior shearwalls.
- The removal of the existing rubble foundations and installation of new foundations to support the newly upgraded exterior walls. Underpinning of the existing structure would be required to achieve this.
- Removal of the existing unreinforced masonry walls and replacement with new wood frame shearwalls to ensure seismic compatibility.

SUMMARY

The Med Grill building is performing well for its age but is nearing the end of its useful life span. The roofing system, exterior finishes, and building envelope appear to be compromised in many locations which can lead to moisture ingress into the structure, resulting in rot and deterioration of the buildings structural systems. Ongoing and more frequent maintenance and eventual replacement of these systems will be required as the structure ages to ensure the structural integrity is not compromised. The structure is severely deficient in seismic resistance, and a renovation and subsequent seismic upgrade would be very intrusive and expensive. Given the potential cost of this renovation, we strongly suggest the client review and consider all potential options, such as constructing a new building entirely conforming to the most recent building code.

We trust the above information is satisfactory. If you have any questions or would like to discuss our findings in more detail, please contact the undersigned.

Yours truly,

Skyline Engineering Ltd.

Cameron Marshall, P.Eng.

Principal

Reviewed by:

Cord MacLean, P.Eng., LEED AP

Principal

Commentary L

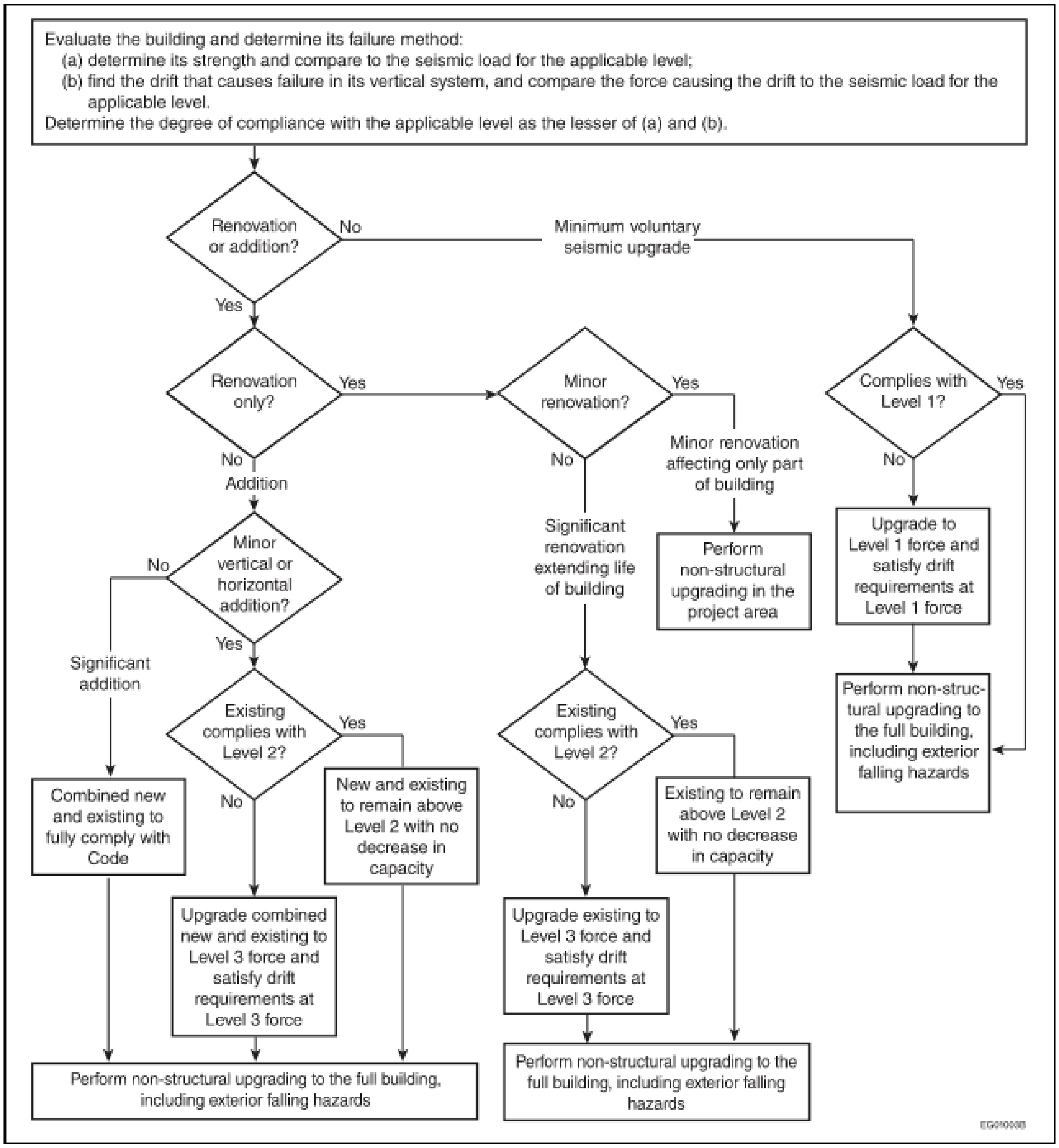

Figure L-1
Flow chart for the seismic assessment and upgrading of existing buildings

Notes to Figure L-1:

(1) The following assessment/upgrading levels are used in the seismic assessment and upgrading of existing buildings:

Level 1: This assessment/upgrading level is for minimum voluntary seismic upgrades. An evaluation of the SFRS must be performed and deficiencies such as weak storeys, discontinuities in the SFRS, inadequate capacity, excessive irregularity including torsional eccentricity, and incomplete lateral load paths must be identified. The upgrade must address these deficiencies as a priority and must also address the restraint of falling hazards, such as parapets. The use of design spectral acceleration, S(T), values corresponding to 0.5 times those with a probability of exceedance of 5% in 50 years (about 1/1 000 per year) is suggested.

Level 2: For this assessment/upgrading level, the use of S(T) values corresponding to a probability of exceedance of 10% in 50 years (about 1/475 per year) is suggested.

Level 3: For this assessment/upgrading level, the use of S(T) values corresponding to a probability of exceedance of 5% in 50 years (about 1/1 000 per year) is suggested.