ENGINEERING LTD.
2248 Columbia Avenue Castlegar, BC V1N 2X1 e-mail: mail@wsaeng.ca
Tel (250) 365-3696
Fax (250) 365-3607

July 27, 2011

C10147-011

Village of Silverton
PO Box 14
421 Lake Ave
Silverton, BC
V0G 2B0

# SILVERTON VILLAGE GALLERY BUILDING ASSESSMENT

An inspection of the Silverton Village Gallery Building was carried out on May 12, 2011 by Steven Thomson, EIT of WSA Engineering Ltd. The interior and exterior of the building was inspected to identify any building envelope or structural deficiencies.

There were no structural deficiencies noted through the inspection. There were multiple areas around the exterior which showed signs of water damage. Recommendations to mitigate this damage are discussed.

## OBSERVATIONS

### Building Rear Entrance Roofs

Multiple locations on the roof and wall systems over the entrances at the rear of the building (Figure 1) show signs of water damage (Figures 2-4). The stucco is stained and is supporting growth of mold and moss due to the high moisture content.

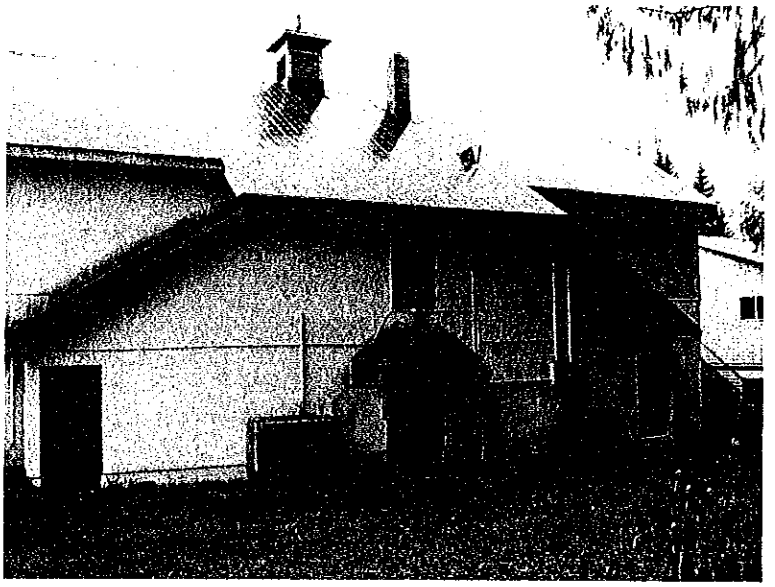

**Figure 1: Rear of building.**

**Figure 2: Rear centre entrance left side.**

**Figure 3: Eaves over rear left entrance.**

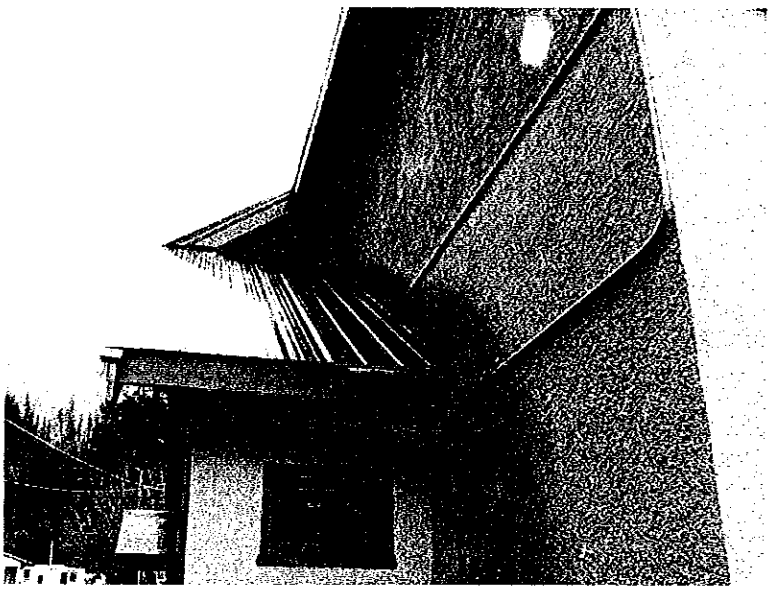

**Figure 4: Eaves over rear right entrance.**

Leonard Casley, Village of Silverton representative, opened up the interior walls, which back the areas of concern noted in Figures 1-4. He reported to WSA that the original wall planking has severe dry rot, from moisture penetration at the locations observed. He also reported that the wood stud framing did not show signs of rot at these locations.

It is recommended to install flashing at the noted locations of moisture penetration at the rear of the building back wall to prevent moisture from contacting the stucco and penetrating into the wood framing.

## Building Rear Finished Grade

The wood wall framing on the rear wall extends to within 6" of the finished grade at the rear of the building. This is a situation that will tend to encourage moisture damage in the wall framing.

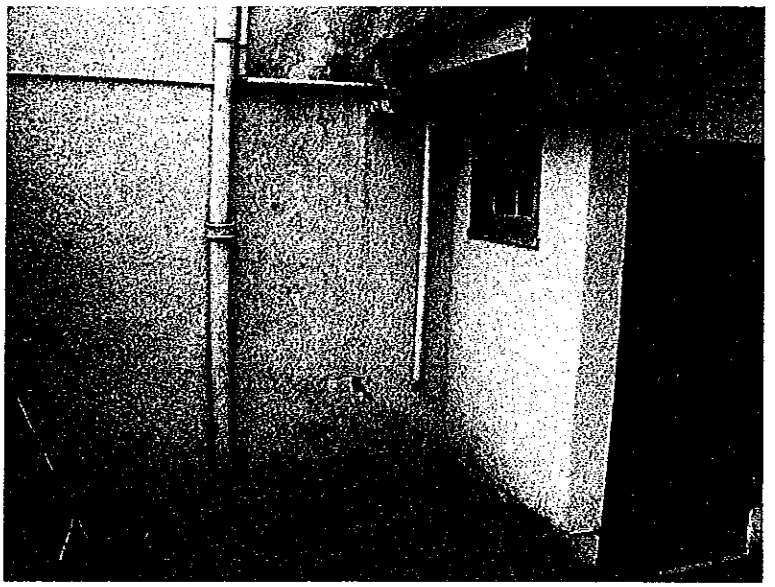

**Figure 5: Grade beside rear left entrance.**

It is recommended to regrade this and other locations as required to ensure that there is a minimum 6" of exposed foundation between the finished grade and the wood framing.

## Building Wood Siding

The wood siding of the building is stained and discolored at several locations near the finished grade (Figures 6&7), due to rain and snow build up.

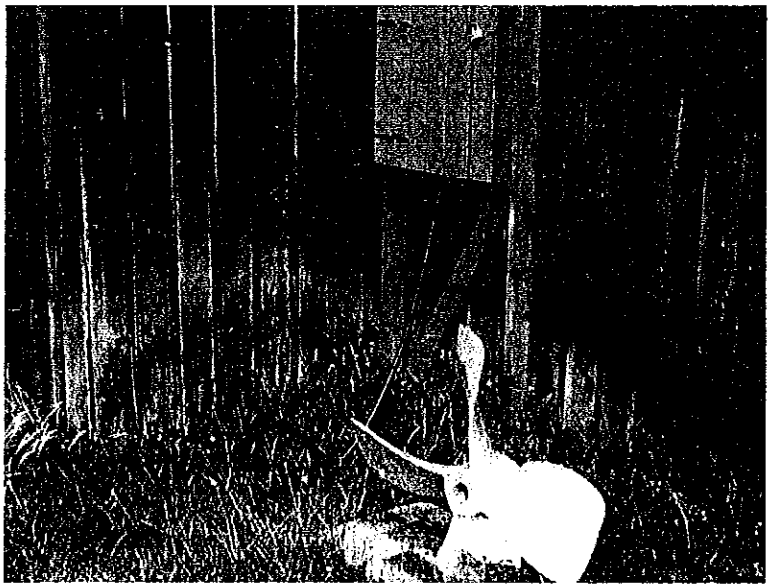

**Figure 6: Wood siding weathering.**

**Figure 7: Wood siding weathering.**

It appears that the foundation concrete at these locations extends up behind the siding to approximately 16" from grade. Though the siding is damaged, this is unlikely to damage the wood wall framing.

## Building Front Entrance

There is a small roof which extends over the front entrance of the building (Figure 8).

**Figure 8: Building front entrance.**

A further concern is that the front entrance roof is flat, so that snow is not shed from the structure. This snow buildup allows moisture to penetrate into the window framing above this roof, which then runs down the inside of the wall system (Figure 9). The affected window sills are completely rotted and have been patched with a temporary flashing. The original wall planking is severely rotted and the wall studs also show signs of water damage.

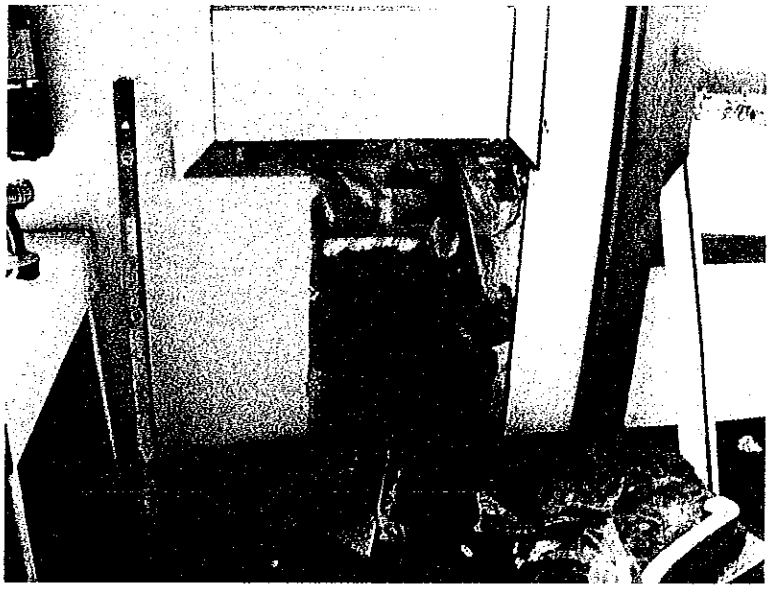

**Figure 9: Water damage from moisture penetration above front entrance.**

The posts supporting this entrance roof show signs of weathering and moisture damage (Figure 10).

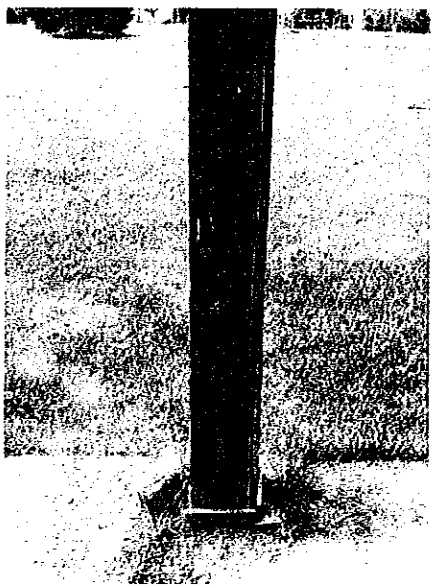

**Figure 10: Front entrance post.**

It is recommended that this system be modified (e.g. with a small concrete column) such that the bottom of the post rests a minimum 6" above the finished grade.

## RECOMMENDATIONS

The building structure is acceptable for the age of the building. There were no major structural deficiencies noted during the inspection.

The water penetration issues around the building envelope need to be mitigated.

It is recommended to install flashing at the noted locations of moisture penetration at the rear of the building back wall to prevent snow, ice, and rain moisture from contacting the stucco and penetrating to the wood framing.

It is recommended to adjust the finished grade around the building envelope to ensure that there is 6" of exposed foundation / concrete between the finished grade and the wood framing and posts.

It is recommended that the front entrance be removed and reconstructed to match the original entrance (Figure 11). Restoring the original entrance feature would shed snow away from the upper story windows and deposit it on the ground. With additional new flashing, the water penetration at this location is likely to cease. It is recommended that an investigation into the main floor wall system below this location be completed to ensure that the lower studs and wall planking are not rotting due to the water intrusion from above.

**Figure 11: Historical image showing original front entrance covered roof.**

It is not recommended to add stopping devices on the roof to hold the snow in place, as the bearing capacity of the roof system is unknown. The foundation extends approximately 16" above the existing grade which provides protection to the wood framing.

## CONCLUSION

This report has been prepared for the exclusive use of the Village of Silverton, and is in accordance with generally accepted construction principles and practice. No other warranty, either expressed or implied, is made. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. WSA accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Sincerely,
**WSA ENGINEERING LTD.**

Steven Thomson, EIT
Structural Engineer and Project Manager

Reviewed by: Ralf Waters, P.Eng
Senior Civil Engineer

ST:er