Project Summary

Garrison Woods

The City of Calgary's bylaws mandate noise attenuation as part of it's structured planning process. Sound walls are the most common solution and were chosen for the new residential housing development in S.W. Calgary called Garrison Woods. The developer, Canada Lands Development Company, donated a portion of the development to the City of Calgary to construct an affordable low-income housing project. Since this was now city property, the city was responsible for the noise wall construction. While Canada Lands, through an RFP process ensured that the walls were aesthetically pleasing and complementary to their project, the city had to ensure both performance and budgets were met.

PROJECT NAME & LOCATION
Garrison Woods
Calgary, Alberta, Canada

PRODUCT: AB Fence

PROJECT SIZE: 16,000 square feet

LOCAL ENGINEER: CWA Structural

GENERAL CONTRACTOR & WALL BUILDER
Year Round Landscaping

ALLAN BLOCK MANUFACTURER
Expocrete Concrete Products, Canada

PLAN

Expocrete Concrete Products proposed Allan Block Fence as an option for the project. This was the first time Allan Block Fence had ever been presented for a city project and although they liked the look of AB Fence, Expocrete Concrete Products had to prove that it could meet the City's technical requirements. Not only did the Allan Block Fence solution exceed performance requirements, it cost less than the post & plank system and was preferred by the developer for its attractiveness. Phase One of the project called for a 1230-foot (375 m) long wall separating Crowchild Trail and the subdivision. The multi-phase sub-division, Garrison Woods, is adjacent to a six lane arterial roadway with a posted speed of 50 mph (80 kph). Patching and Associates Acoustical Engineers were retained to provide a sound report. Out of this report it

was determined that a noise barrier was required. Wall heights were defined using bylaw design guidelines resulting in a 13-foot (4m) high wall to achieve the minimum five-decibel noise reduction.

DESIGN

CWA Structural Engineering designed the Fence with assistance from Allan Block 's Engineering department. The 13 foot (4m) high wall was designed for exposure B wind loads of 80 mph and included even spacing of 4 bond beams. The 20-foot (6m) piles were deeper than normal due to 13 feet (4m) of poor fill soil on the site. Post spacing, based on wind loads and wall heights, were determined to be 10 feet (3.3m).

BUILD

Year Round Landscaping had few construction challenges on this flat and very accessible site. There was lots of room for equipment movement and material storage, making this a safe and high-speed production project. No interruptions to traffic or lane closures were incurred, minimizing the construction impact on commuters.

Joe Caputo of Year Round Landscaping commented on how critical the layout was. He used the layout tips described in the AB Fence Installation Guide as well as a few trade secrets of his own. Typical AB Fence construction practices were followed through the pile hole drilling to post setting stages. The design specified the base course of panel block on a void form, which was placed on compacted gravel base, rather than placing pre-fabricated bond beam sections. Overall, Year Round made money and are happy with the way the project went and are looking forward to bidding their next AB Fence.

The Allan Block Fence system was a clear winner on this project, satisfying performance, financial and aesthetic needs. The success of this project has lead to the city of Calgary accepting Allan Block fence as a preferred noise wall solution for several subsequent projects totaling over 500,000 square feet. Phase two of the AB Fence for Garrison Woods has been completed and there are plans for the AB Fence to be continued as the development continues its 5-year build out.

After the project was completed, Allan Block Corporation hired Patching and Associates Acoustical Engineers to determine what the actual noise reduction value was for the Garrison Woods fence. The AB Fence achieved a 13-dba-noise reduction. Far exceeding the required 5-dba reduction.