

<i>Project Title</i> <b>SPR-3(072) Strength and Deformation of Mechanically Stabilized Earth (MSE) Walls at Working Loads and Failure</b>		<i>Agmt./Task No.</i> <b>SPR-3(072)</b>	<i>Item No.</i>	<i>Agency Bgt. No.</i>
<i>Research Agency</i> <b>Royal Military College of Canada</b>		<i>Start Date</i> <b>12/1/99</b>	<i>Estimated Completion</i> <b>04/30/04</b>	<i>Revised Completion</i> <b>12/31/08</b>
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<i>Funding Source</i> <b>WA, NY, ID, CA, WY, ND, MN, OR, AZ, AK</b>		<i>Schedule Status</i> <input type="checkbox"/> On schedule <input type="checkbox"/> Ahead of schedule <input type="checkbox"/> On revised schedule <input checked="" type="checkbox"/> Behind schedule		
<i>Research Area</i>				
<i>Original Estimated Cost</i> <b>\$360,104</b>	<i>Revised Cost</i> <b>\$630,000</b>	<i>% Funds Expended</i> <b>60%</b>	<i>% Work Completed</i> <b>75%</b>	
<i>Objective</i> <b><i>Develop a design procedure for the internal stability of MSE walls, especially those reinforced with fabrics.</i></b>				

**Project Progress:**

Phase 5 has begun and Dr. Bathurst is searching for proper fill material, which has proven more difficult than anticipated. Therefore, we have not started building the first test wall with marginal backfill as yet.

However, Richard has nearly completed the evaluation of a number of case histories from Japan, with the help of a visiting professor from Japan, to help translate and obtain unpublished information on those case histories necessary to interpret them. The Japanese case histories significantly expand our data base, especially for walls built with marginal backfill soils. This research has enabled us to develop a design model modification to account for soil cohesion and other affects of using marginal quality backfill materials. The results have been excellent, and they have already developed journal papers to publish the results. These journal papers will form the basis of a report that will be made available to our funding organizations, hopefully by late this summer, that will explain the research results, providing a major leap ahead in addressing the use of marginal backfill soils in MSE walls. We still need the test walls, however, to fill in the gaps in the case history data to finalize our recommendations to address the use of marginal soils.

The other thing this recent research will do for us is that it will enable Japan to adopt out K-Stiffness method for use in routine design in Japan. The research using these Japanese case histories demonstrates the strength of the K-Stiffness design model, as the K-Stiffness method could accurately predict the performance of the Japanese walls for granular soils, as well as for wall case histories where marginal backfill soils were used, provided the cohesion factor developed through this research is used in such cases. This will help lend international support for our research results and the design method that has resulted from that, helping us to implement the research results.

We hope to have a report out on this recent research out to the TAC by late summer.

**New Period Proposed Activity:**

Locate and purchase proper non-select fill material and begin construction. Continue work on Japanese case histories and finalize report.