

**5<sup>th</sup> Annual  
Applied Geotechnical  
Engineering Design Contest  
Reinforced Soil Wall**

**Using Only 5 sheets of Newsprint (From the Gateway) , 1 sheet of 30 X 30 cm  
geotextile, a box of 100 paper clips and 40 popsicle sticks**

**Walls must be constructed within the 1 hour time limit**

**April 12 2006 4:30 PM**

**Wall Constructions Starts at 4:30 PM sharp**

**Wall testing will commence at 6PM**

**L2-020 Markin/CNRL Natural Resources Engineering Facility**

**Snack and Prizes Sponsored by Jacques Whitford**

**First Prize**

**\$75 for Strongest Wall and Bragging Rights for 1 Year**

**Trophy Sponsored By Reinforced Earth Company Ltd.**

**Second Prize**

**\$50 for best prediction of wall strength**

**Closest to predicted load at failure.**

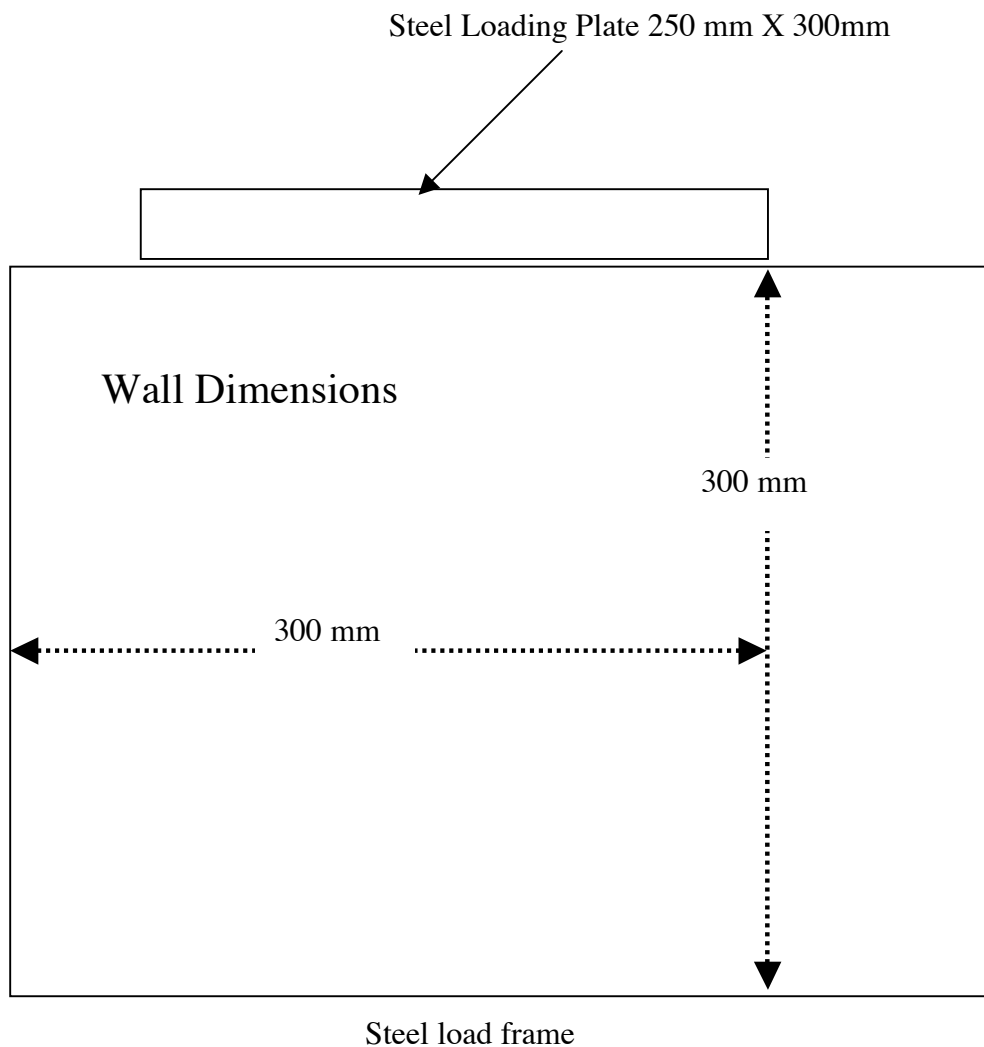
**Third Prize**

**\$50 for Most Innovative Design**

**Judged by Guest consultants**

## Rules

1. Each group will have to give a 10 min presentation on why their wall is the best design and how they predicted their wall strength.
2. Only materials allowed are sand, newsprint (5 sheets of the Gateway Newspaper), 1 sheet of 30 X 30 cm geotextile, a box of 100 paper clips and 40 Popsicle sticks. All construction materials will be supplied. You can use any tools you want hammers, trowels, wood blocks, manual proctor hammers. No power tools, hydraulic rams or mechanical equipment allowed.  
(Contestants will need to supply their your own tools)
3. No load testing of walls prior to contest day allowed.
4. Predicted strength values and wall design due the morning of the contest and will be posted prior to the start of the contest.
5. Walls will be loaded initially to 200 kPa then in 50 kPa increments. Each load increment must be sustained for 10 seconds
6. Failure of the wall occurs when sand exits from the face of the wall. Dr. Donahue's Call.
7. The strongest wall is the maximum load sustained on the wall for 10s in kPa.
8. The winner of the closest prediction of wall strength is actual measured wall strength in kPa minus the predicted value. If your wall fails before your predicted load you are out of contention.
9. Most innovative wall design is for the wall design that shows the most creativity but not necessarily the highest strength. It will be judged by guest consultants and based on the presentation by the design group.
10. Dr. Donahue has final say in all matters of adjudication.



Wall must be 300 mm long by 300 mm wide and 300 mm in height  
The Loading plate will be placed at the front of the wall 300 mm from the back wall of the loading frame. The judges will measure the wall before the start of the contest to ensure the outside face of the earth wall is 300 mm (  $\pm 10$  mm) from the back wall of the frame. The wall must not be less than 300 mm in height. You will be supplied with a plywood faceplate and shims to help you construct your wall.