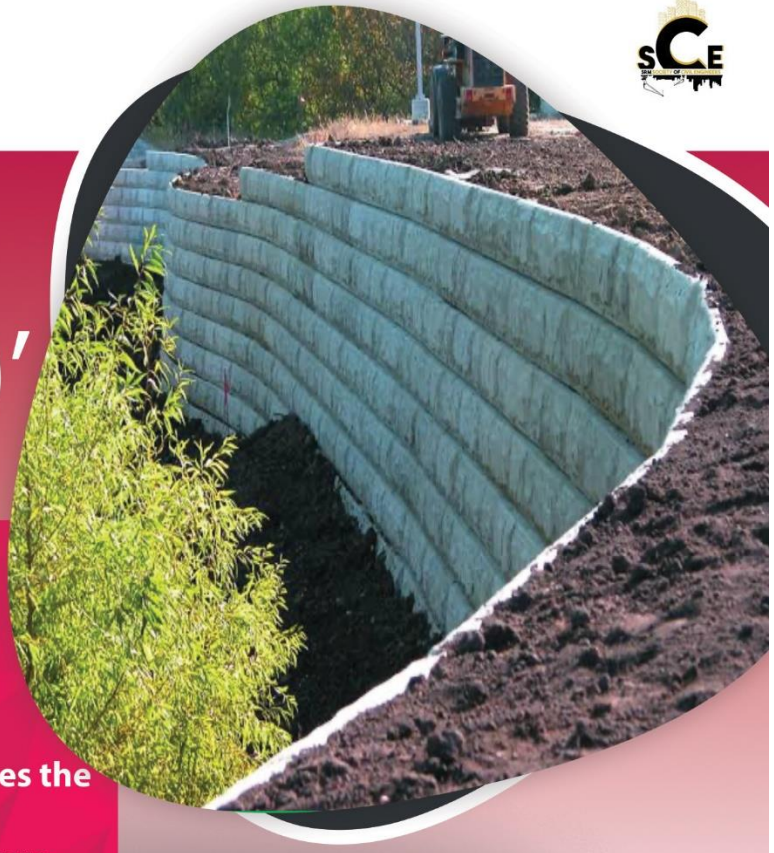
SRM SOCIETY OF CIVIL ENGINEERS
IN ASSOCIATION WITH
INDIAN CONCRETE INSTITUTE PRESENTS

CONCRETUS 20'

NATIONAL LEVEL TECHNICAL FEST



GEOWALL

Competition Domain: **Geotechnical Engineering**

Abstract: **The Geowall construction involves the reinforced soil concepts. The significant objective is to determine the lateral pressure that could be resisted by the facing members due to the backfill soil and superimposed vertical loads. The retaining wall basically has to resist the lateral earth pressure due to the backfill soil and vertical loads. However, inclusion of reinforcing members or fibres into the backfill increases the lateral load resisting capacity of the wall. The facing panel acts as the wall resisting the lateral forces. The key objective is to bring in innovation in the reinforcing patterns using fibres/paper strips in the backfill soil, so that the wall can carry higher lateral earth pressure. The objective of the Geowall competition is to design and build a model of mechanically stabilized earth (MSE) retaining wall using paper reinforcement taped to a poster board wall facing.**

THE OUTPUT

- Brings opportunities for innovation in the reinforcing patterns using fibres/paper strips in the backfill soil to resist lateral earth pressure.

DATES TO NOTE:

- Last date for Team Description Paper submission: 14th February 2020
- Shortlisting of Selected Teams: 16th February 2020

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GEOWALL

ABSTRACT

The Geowall construction involves the reinforced soil concepts. The significant objective is to determine the lateral pressure that could be resisted by the facing members due to the backfill soil and superimposed vertical loads. The retaining wall basically has to resist the lateral earth pressure due to the backfill soil and vertical loads. However, inclusion of reinforcing members or fibres into the backfill increases the lateral load resisting capacity of the wall. The facing panel acts as the wall resisting the lateral forces. The key objective is to bring in innovation in the reinforcing patterns using fibres/paper strips in the backfill soil, so that the wall can carry higher lateral earth pressure

OBJECTIVE

The objective of the Geowall competition is to design and build a model of mechanically stabilized earth (MSE) retaining wall using paper reinforcement taped to a poster board wall facing.

The competition objectives are for students to:

a) Design a MSE wall using the effective amount of reinforcement needed to support the retained soil and design loads.

b) Effectively communicate their analysis and design processes.

c) Enjoy a friendly but spirited competition among Teams.

CONSTRUCTION MATERIALS – will be provided by competition organizers.

1. Wooden Boards 50x30x1cm-3 nos
2. Wooden Board 30x30x1cm-1 no.
3. Paper sheets
4. Fibre strips/paper strips
5. Sand (Coarser)-25 kg

CONSTRUCTION TOOLS

The following construction tools may be used and must be provided by the competing team (quantities of these items shall not be restricted):

a) Pencils, pens, and markers

b) Rulers and straight edges

c) Levels

d) Manually operated cutting instruments (e.g., scissors, utility knifes, razor blades, hole punch)

e) Cutting boards or mats

f) Design notes, calculations and drawings

g) Material handling and compaction tools consisting of any hand operated devices

h) Screwdrivers (battery operated drills or screwdrivers may be used, but only to remove fasteners when removing the facing panels)

i) Templates for use in any stage of competition. These templates may be made of any material, must not have any moving parts, must be removed at the end of any stage in which they are used.

Buckets and shovels will be provided by the competition organizers. It may be necessary for teams to haul backfill a distance up to 10 m.

RULES

1. Each team consists of a maximum of 5 members in which at least one should be a girl student and maximum 2 students may be allowed from postgraduate.

2. Cross college teams are allowed.

3. All decisions made by the coordinators are final.

4. Time allotted to each team is around – two hours and is subject to change according to the conditions.

5. Disobeying the instructions that will be given during the event may lead to disqualification.

6. Members of team are expected to put on shoes otherwise they are not permitted to enter the laboratory.

JUDGING CRITERIA

1. Load taken by the structure
2. Cost efficiency
3. The best combination of materials used
4. Reasoning behind choosing the combination
5. Number of materials chosen
6. Aesthetics

INITIAL SELECTION OF TEAMS

1. Team should provide us the TDP [Team Description Paper] (explaining briefly how you will approach to solve the problem and Design approach of Proposed MSE retaining wall, and also any other calculations required in TDP, pages of TDP should not be more than 4. Typed in 1.5 line spacing, font size:12, font style: Times new roman).
2. Team should send an email writing the TDP.
3. Shortlist of teams will be based on their TDPs containing design approach.

DEADLINES

- Last date for TDP submission: 14th February 2020
- Shortlisting of Selected Teams: 16th February 2020