

MARCH 2010 MEETING

Wednesday, March 10, 2010

TECHNICAL PROGRAM

Large Block Gravity Retaining Walls

Speaker: [Jack Bergman](#), P.E. with [Redi-Rock International](#). Tel. 866-222-8500 x 3010

Mr. Bergmann is a licensed professional engineer in Michigan with a BSCE from Michigan Technological University and an MBA from DePaul University. He was worked for Redi-Rock International in Charlevoix Michigan since 2003. Prior to this Mr. Bergmann worked for Abbott Laboratories, Sargent and Lundy Engineers, and Ohio Edison.

PRESENTATION SUMMARY

To a room of about 65 at the HESS Club, Mr. Bergmann gave a presentation titled, "Large Block Gravity Retaining Walls." His presentation was about the large block retaining wall system that his company, Redi-Rock sells. His associate Browne Baker started with an overview by briefly presenting the [linked slides](#). For the rest of the presentation, Mr. Bergmann demonstrated the software Redi-Rock uses to design the wall systems.



Redi-Rock blocks are wet-cast using 5000 psi non-recycled / non-reinforced concrete. The blocks are configured to be a gravity retaining wall system. The blocks, which weigh up to 2500 lbs., are battered anywhere from 4 deg. to 45 deg., with 4 and 9 deg. being the more common batters used. Each block has two hemispherical shear knobs at its top surface that mates with a keyway slot on the bottom of the next course. The interconnecting geometry allows aesthetic curves along the wall. T

he standard block size measures 18" high by 46" along the face of the wall by 41" deep.

The blocks are dry stacked and consequently free draining. The base below the first course is preferably crushed stone, though piling may be needed in some soils. Stone is used behind the wall for free drainage and to vertically support upper battered courses as they are constructed. Although much taller walls can be designed using geogrids behind, the walls can be as high 13.5 ft. tall without reinforced soil. This means the property line can be as little as 6 ft. behind the outside of the bottom course when using a 4 deg. battered system. Details are offered to allow planters on some courses and to mechanically connect to geogrids if used.

The software used for designing Redi-Rock walls was written by a company in Czechoslovakia. The software is licensed as freeware to Redi-Rock so that only its customers can use it. The Windows-based software has been tailored for Redi-Rock components and graphically provides 2D feedback of the wall being designed and the soil strata being retained. There is a learning curve to the software but it can handle many different situations including water tables, many strata types, bearing capacity of the base, shear along the wall blocks, and global stability of the entire wall system. To download the software, click [here](#).

To get more information from Redi-Rock's software vendor (and to also download the free Redi-Rock module), click [here](#).

To download the slide presentation, click [here](#).