



REINFORCEMENT Mothutlung Biofilters

CASE STUDY

PROJECT: Mothutlung Biofilters
CLIENT: North West Province
CONSULTANT: Golder Associates Africa
CONTRACTOR: SAFCrete Constuction

DATE: August 2003
QUANTITY: 1100m²
PRODUCT: Rockgrid KX

In the North West Province low cost housing projects are being constructed in very remote areas. At the village of Mothutlung, home to more than 15 000 people, a sewer reticulation network has recently been constructed.

This network feeds the raw sewage into the newly constructed sewage treatment works, incorporating two flexible Biofilter structures.

Each Biofilter measures 13.5m in diameter and stands 3.2m high.



Loffelst in concrete retaining blocks (crb) were used to construct the facing of the Biofilters at an angle of 70°. To effectively stabilize the Bio filter structure **Rockgrid KX** geogrid with a biaxial ultimate tensile strength of 35kN x 35kN was tied back between 2 and 3 m beyond the critical failure plane into the single size stone aggregate backfill level with the 8th, 14th and 16th block height layers.



It was crucial during construction that the layers of **Rockgrid KX** were placed all the way to the front of the blocks at these heights to maximize the clamping effect or pullout resistance between the layers of blocks to prevent unsightly bulging of the face.

Close supervision and good installation practice are critical design criteria to ensure optimum performance of these structures.