

- The Engineering Design -



Bio-Filtration Drain

Malaysia receives abundant rainfall with an average rainfall of 3000mm per year. Thus, inappropriate and improper design of sports fields' drainage system can cause surface ponding and flooding. Bio-filtration drainage system is an effective subsurface drainage system to cater the excessive rainfall. It consists of layer of filter media and primary and secondary drains which are formed by drainage cells. The drainage system is based on the principles of capillary action, gravity and filtration process. The effectiveness of bio-filtration subsurface drainage will avoid ponding on sports field surface. Thus allow the facilities to be used at the earliest opportunity after a rainfall event. Besides quantity, this new bio-filtration drainage concept can also control the quality of storm water and therefore achieving a more economical, eco-friendly and safer design.

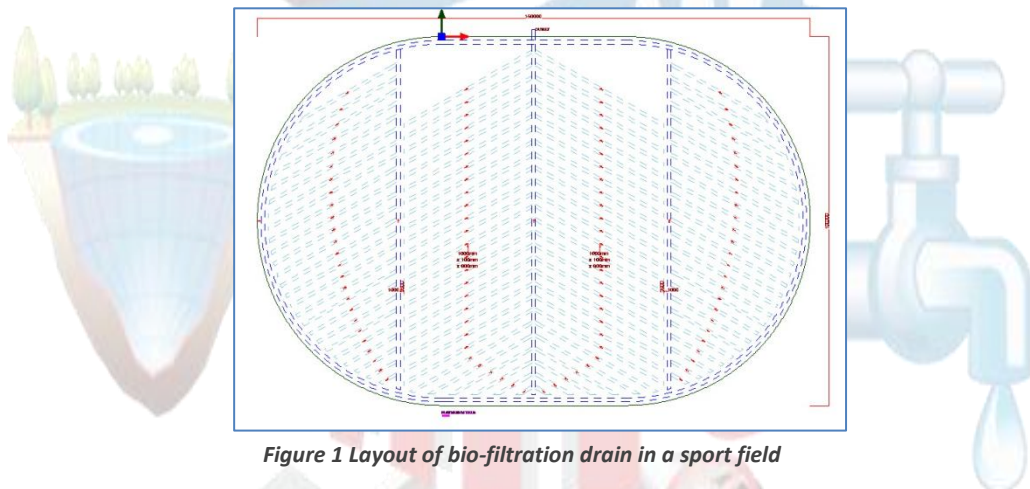


Figure 1 Layout of bio-filtration drain in a sport field

MES-BioFD is a bio-filtration drainage system design software specially designed to obtain the optimum design of the new drainage system. It's developed by MES in collaboration with River Engineering and Urban Drainage Research Centre, REDAC (USM) based on the university's latest research. The software can calculate the drainage cell sizing, spacing, and arrangement based on requirements. Besides, it can also generate required drainage system layout and detailing for authority submission.

