Nell'ambito dei programmi di internazionalizzazione dell'Università degli Studi di Brescia, il

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terrà due seminari dal titolo:

Development of Analytical Probabilistic Stormwater Models

ABSTRACT

Stormwater models are essential tools used for the better management of stormwater from urban areas. Stormwater management aims at mitigating the adverse environmental impacts of stormwater from urban areas. Flooding, stream bank erosion, reduced infiltration, and water quality degradation are examples of the adverse environmental impacts of urban development. Urban stormwater management facilities need to be designed and constructed to mitigate these adverse impacts. To properly size these facilities, stormwater models are used to estimate the flood peak and volume from a developing or developed urban area. Conventional stormwater models are numerical hydrologic models used to predict the volumes and peak discharge rates of runoff from urban catchments associated with different return periods, and to estimate the performance of stormwater quantity and quality control facilities. Following a review of the design storm approach, this presentation summarizes the mathematical expressions derived for the determination of the runoff event volume and peak discharge rate from urban catchments associated with different return periods, as well as the runoff quantity and quality control performance provided by a detention pond servicing an urban catchment. These expressions, referred to as probabilistic models or analytical probabilistic models, relate statistical urban drainage system performance measures directly to meteorological parameters, system properties and design variables. Compared with numerical hydrologic models, these analytical expressions are computationally efficient and can be used as an alternative to numerical hydrologic models in the planning and design of stormwater management facilities.

Martedì 18/11/2014 Ore 10.30-12.30 Aula B2.4

Canadian Stormwater Management and Low Impact Development Practices

ABSTRACT

Stormwater management is the planning for and control of drainage from urban areas and agricultural fields in order to maximize the benefits and minimize the adverse environmental impacts of stormwater runoff. Techniques for stormwater management include structural measures and non-structural practices. Starting with a quick review of the stormwater management history of Canada, this presentation provides an overview of these techniques with a focus on structural measures. The treatment train approach and various types of lot level, conveyance, and end-of-pipe treatment facilities will be reviewed. This presentation will also provide an overview of the low impact development (LID) practices. The definition and functions of LID will be discussed first. Following that, the operation and design of rainwater harvesting systems, bio-retention areas, infiltration/soakaway systems, green roofs, grassed swales, vegetated filter strips, permeable pavements, and perforated storm sewer pipes will be reviewed.

Giovedì 20/11/2014 Ore 14.30-16.30 Aula B0.5