

## INTISARI

Pembangunan gedung-gedung baru di Universitas Gadjah Mada berpotensi mengurangi luasan ruang terbuka hijau sehingga saat musim hujan kemampuan tanah meresapkan air hujan berkurang dan saluran drainase menerima peningkatan limpasan air hujan. Diperlukan perencanaan infrastruktur berupa sistem drainase berwawasan lingkungan sebagai upaya konservasi air dengan cara memperlambat aliran limpasan air hujan dan meresapkan sebanyak-banyaknya air ke dalam tanah secara alami.

Berdasarkan permasalahan diatas maka akan dilakukan analisis tata guna lahan untuk mengetahui persentase area bangunan, jalan, serta ruang terbuka hijau dan analisis data hujan untuk menentukan debit air hujan rancangan di kawasan kampus UGM. Setelah itu akan dilakukan evaluasi penanganan banjir berdasarkan jumlah sumur resapan terpasang pada kondisi eksisting dan hasilnya akan digunakan sebagai dasar pertimbangan memberikan alternatif penanganan manajemen air limpasan hujan.

Hasil dari penelitian menunjukkan komposisi tata guna lahan di UGM terdiri dari lahan hijau sebesar 58%, bangunan sebesar 22%, dan jalan sebesar 20% dan diperoleh debit air hujan rancangan kawasan sebesar 11,389 m<sup>3</sup>/s. Persentase penanganan di 21 pembagian klaster kondisi eksisting berkisar antara 0 sampai dengan 1,463%. Dengan menambahkan sumur-sumur resapan baru di tiga kawasan yang berpotensi mengalami genangan tertinggi, mampu mengurangi potensi banjir secara layak dan efektif dengan pertambahan tampungan air sebesar 5,316% di sekeliling GSP, 1,764% di bundaran UGM, dan 0,567% di Jalan Notonagoro.

**Kata kunci:** drainase berwawasan lingkungan, tata guna lahan, debit, penanganan dan sumur resapan.

## ABSTRACT

The construction of new buildings at Gadjah Mada University has the potential to reduce the area of green open space so that during the rainy season the ability of the soil to absorb rainwater decreases and the drainage channels receive an increase in rainwater runoff. Infrastructure planning is needed in the form of an environmentally sound drainage system as an effort to conserve water by slowing down the flow of rainwater runoff and absorbing as much water as possible into the ground naturally.

Based on the problems above, a land use analysis will be carried out to find out the percentage of building areas, roads, and green open spaces and analysis of rain data to determine the design rainwater discharge in the UGM campus area. After that an evaluation of flood management will be carried out based on the number of infiltration wells installed in the existing conditions and the results will be used as a basis for consideration in providing alternative management of rain runoff water.

The results of the study show that the composition of land use at UGM consists of green land by 58%, buildings by 22%, and roads by 20% and obtained an area design rainwater discharge of 11,389 m<sup>3</sup>/s. The percentage of handling in the 21 existing condition cluster divisions ranged from 0 to 1.463%. By adding new infiltration wells in the three areas that have the highest potential for inundation, able to reduce the potential for flooding properly and effectively with an increase in water storage by 5.316% around the GSP, 1.764% at the UGM roundabout, and 0.567% at Notonagoro Street.

**Keywords:** ecodrain, land use, discharge, handling and infiltration wells.