

ABSTRACT

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The increase in the number of residents in Depok City has resulted in an increase in the number of residences. The construction of the Permata Arcadia Housing Complex has resulted in the conversion of land use from green land with a very large capacity to absorb rainwater to very small due to an increase in population. This resulted in an increase in the discharge of rainwater runoff. One way to reduce surface runoff is to absorb runoff water into the ground by using infiltration wells. This plan aims to obtain the design discharge of the infiltration wells, obtain the dimensions and number of infiltration wells, obtain the capacity of the infiltration wells and the planned budget for the construction of infiltration wells for each house located in Permata Arcadia Housing. In the calculation phase using 3 rain stations, namely the UI rain station, Cawang rain station and Cibinong rain station with the Normal distribution method, Log Normal distribution, Pearson Log Type III distribution, and Gumbel distribution. Infiltration well planning refers to SNI 8456-2017 with the dimensions of infiltration wells with a circular cross-section with a diameter of 1 m and a depth of 2 meters. A total of 48 wells were obtained using construction made of buis concrete and in the form of closed water absorption wells. The discharge that can be absorbed by infiltration wells is $0.002 \text{ m}^3/\text{second}$ and the discharge that can be accommodated is $0.009 \text{ m}^3/\text{second}$ which results in a storage capacity of 1.57 m^3 with a filling time of 2 hours 51 minutes for each well. The budget plan required to make 48 infiltration wells is IDR 230,000,000.00 (two hundred and thirty million rupiah).

Keywords: Flood Control, Infiltration Well, Hydrology.