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### The Influence of Surface Types Towards Run-Off Water in Urban Park

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## ABSTRACT

Pavements in Alun Kapuas Park contribute 63% of run-off water over the capacity of the soil to infiltrate. This water will potentially causes the flooding and puddling issues.

## INTRODUCTION

- According to Geddes & Watson (2016), greenery in urban park is not there just to please the eye and create livable public areas, but it also helps mitigate the risk of flooding
- An increase of the impermeable surface causes an increase in the volume of runoff water because of the reduction in rainfall infiltration into the soil (Wong dkk. 2000).
- **Thesis statement:**  
The varieties of surface affect the amount of run-off water in urban park.

## WHAT IS RUN-OFF WATER?

Run-off occurs when the amount of rainfall surpasses the capacity of soil to infiltrate (Dunne dan Leopold, 1978).

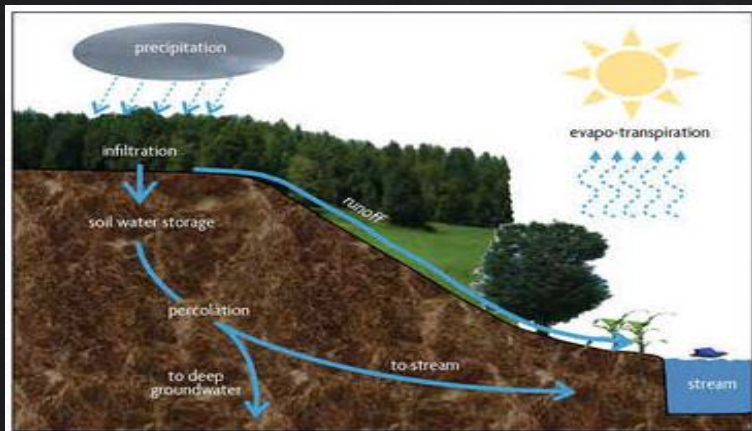
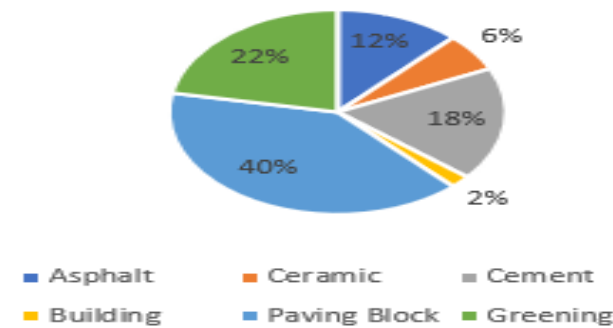


Fig. 1 Water Cycle (Adapted from Magdoff, 2010, p. 81)

## FINDING

THE COMPOSITION OF SURFACE TYPES IN ALUN KAPUAS PARK (17.210 m<sup>2</sup>)



Source: Data Analysis, 2015

Fig. 2 Competition of Surface Type

Table. 1: Runoff and Infiltration

Type	Area (m <sup>2</sup> )	Coefficient of Run-off (C)*	Coefficient of Infiltration (R=1-C)	Annual Rainfall (mm)	Runoff (m <sup>3</sup> )	Infiltration (m <sup>3</sup> )
Asphalt	2.073	0,95	0,05	3.184,25	6.272	330
Ceramic	1.070	0,95	0,05	3.184,25	3.238	170
Cement	3.076	0,95	0,05	3.184,25	9.306	490
Building	302	0,50	0,50	3.184,25	481	481
Paving Block	6.888	0,70	0,30	3.184,25	15.353	6.580
Greening	3.800	0,00	1,00	3.184,25	0,00	12.100
<b>Total</b>	<b>17.210</b>				<b>34.650</b>	<b>20.151</b>

Source: Data Analysis, 2015

Note: \* C is coefficient runoff referring to Suripin (2003) on various land uses. Formula used (Asdak, 2002):  $I = \frac{P}{1000} \times A \times (1 - C)$

## CONCLUSION

This research shows that there is correlation between the surface types and the run-off water. Therefore, the proportional design of surface types is needed as alternative solution to address flooding issue.

## WHAT IS NEXT?

1. Density of vegetation
2. Drainages
3. Physical Characteristic of Soil

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