



CONSULTING ENGINEERS LTD
CIVIL | STRUCTURAL | DESIGN

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Project

Kingsley House, High Street, Kingsley

Job Ref.

200869

Section

Infiltration Calculations

Sheet no./rev.

1

Calc. by

Date

Chk'd by

Date

App'd by

Date

AW

07/10/2020

SC

22/02/2021

Infiltration Calculation

At

Kingsley House, High Street, Kingsley, ST10 2AF

For

Creative Interiors

Project				Job Ref.	
Kingsley House, High Street, Kingsley				200869	
Section				Sheet no./rev.	
Infiltration Calculations				2	
Calc. by	Date	Chk'd by	Date	App'd by	Date
AW	07/10/2020	SC	22/02/2021		

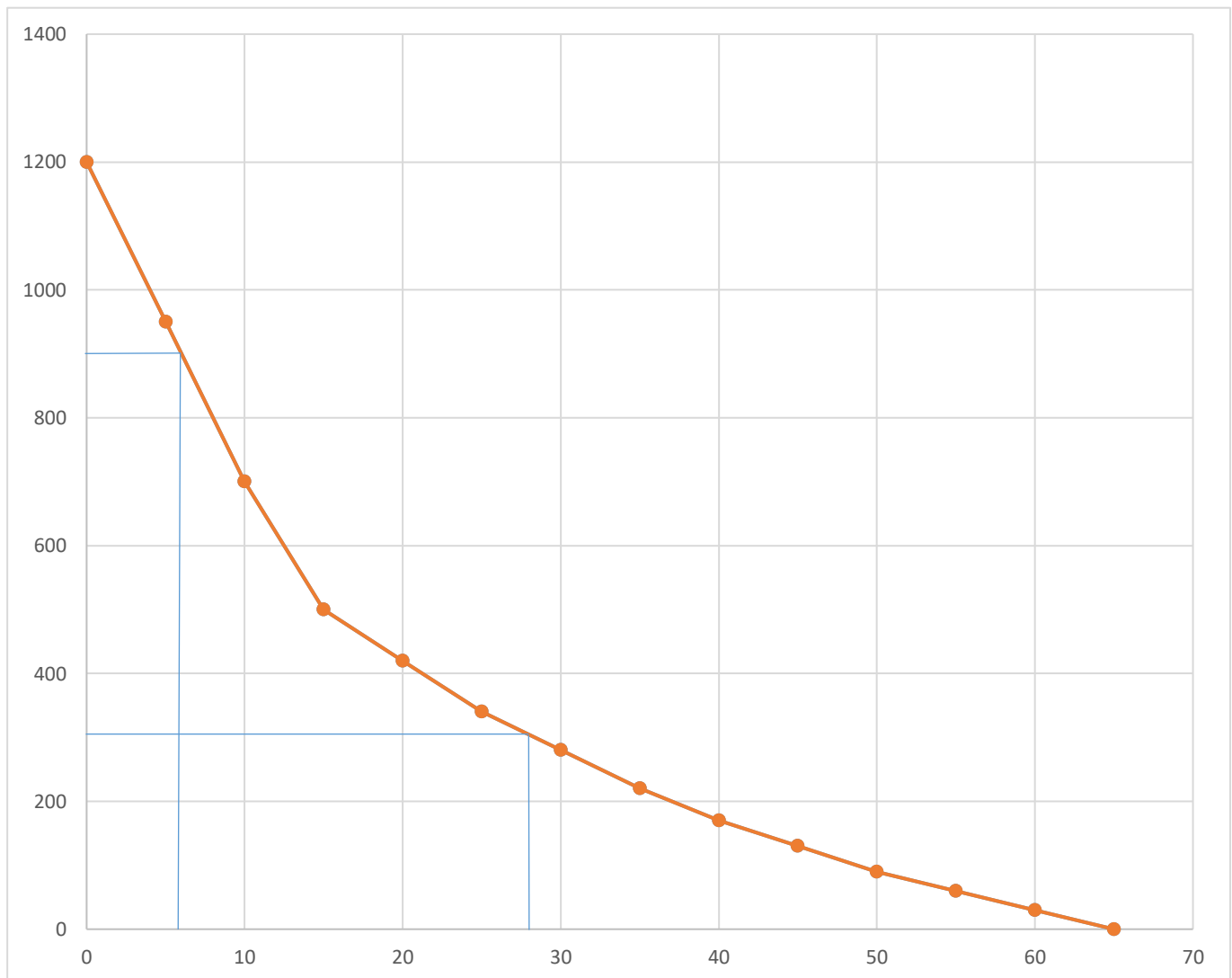
DESIGN PHILOSOPHY STATEMENT

C2C Consulting Engineers were instructed to calculate the infiltration rates from a percolation test to validate the suitability for infiltration of surface water on a gravelled area of driveway for planning approval at the proposed development. Using data from three percolation tests as shown below the following design is in accordance with BRE365.

Test

Test pit dimensions were 1000x500x1300mm deep.

Test – 14/02/21 – Cloudy



Depth at 75% full = 0.9m; time to fall to 75% full = 6s

Depth at 25% full = 0.3m; time to fall to 75% full = 28.33s

Project				Job Ref.	
Kingsley House, High Street, Kingsley				200869	
Section				Sheet no./rev.	
Infiltration Calculations				3	
Calc. by	Date	Chk'd by	Date	App'd by	Date
AW	07/10/2020	SC	22/02/2021		

Infiltration rate

Volume outflowing between 75% and 25% storage depth:

$$V_{p75-25} = 1.0 \times 0.5 \times (0.9 - 0.3) = 0.3\text{m}^3$$

Mean surface area through which outflow occurs at 50% of the storage depth and including the base of the pit:

$$a_{s50} = 2 \times (0.6 \times 1.0) + 2 \times (0.6 \times 0.5) + (1.0 \times 0.5) = 2.3\text{m}^2$$

The time for the outflow between 75% and 25% of the storage depth:

$$t_{p25-75} = 28.33 - 6 = 22.33\text{s}$$

Soil infiltration rate:

$$f = \frac{V_{p75-25}}{a_{s50} \times t_{p25-75}} = 0.005841\text{m/s}$$