

## CALCULATION SHEET

FLOOD MITIGATION USING SOAKAWAY /  
HYDRAULIC BRAKE.

RAINFALL DATA. 1-100YEAR RETURN  
6 HOUR STORMWATER RUN-OFF.

ALLOW 30% OVER DESIGN FOR CLIMATE CHANGE.

LOCAL RAINFALL DATA = 10.8mm/HOUR.

$$6 \text{ Hours} = 6 \times 10.8 = 64.8 \text{mm.}$$

$$= 0.0648 \text{m}^3/\text{m}^2.$$

$$\text{BUILDING ROOF AREA} = (13 \times 11) + (6 \times 6) = 179 \text{m}^2$$

$$\text{LIGHT WELLS} = (2 \times 6) + (3 \times 2 \times 4) = 36 \text{m}^2$$

MISC. PAVED AREAS

SAY 50 m<sup>2</sup>

265 m<sup>2</sup>

ALLOW FOR INFILTRATION FROM

$$\text{SOAKAWAY GROUND AREA @ 50\%} = 10 \text{m}^2.$$

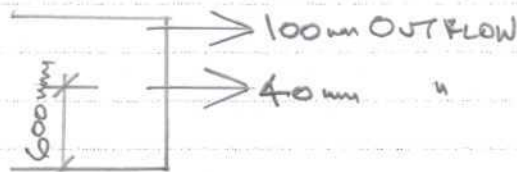
$$\text{DESIGN TOTAL} = \underline{\underline{275 \text{m}^2}}$$

$$\text{RUN-OFF VOLUME} = 275 \times 0.0648 = 17.8 \times 1.3 = 23.1 \text{m}^3$$

PRELIMINARY SIZE AQUACELL UNIT.

5m x 4m x 1.2m DREF.

CONTROLLERS OUT FLOWS.  
TO SEWER.



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SOAKAWAY VOLUME PRIOR TO DISCHARGE POINT.

$$= 5 \times 4 \times .6 = 12 \text{ m}^3$$

$$\therefore \text{ATTENUATION} = \frac{12 \times 100}{23.1} = 52\% > 50\%$$

$$\text{REMAINING VOLUME} = 23.1 - 12 = 11.1 \text{ m}^3$$

$$\text{FLOW RATE 40mm PIPE} = 3.2 \text{ LITRES/SEC.}$$

$\therefore$  DISCHARGE TO SEWER.

$$= \frac{11.1 \times 10^3}{3.2 \times 60} = 58 \text{ MINUTES, SAY } 12 \text{ m}^3/\text{HOUR.}$$

SOIL LOW PERMIABILITY CLAY WITH  
SOAKAGE COLUMNS. OUTFLOW TO SOIL TO  
BE CHECKED & MODIFIED AS REQUIRED.