RainCatcher Calculator examples to assist customers to determine appropriate tank sizes and payback periods – brought to you by Raincatcher Products and Services Ltd and John Moores University

Below are two examples with same input data but different locations (different rainfall depths)

Method 2 – Non Domestic Building

Example 1

Data:

Building type non-domestic   Occupants =100

Roof area= 550 m2   Rainfall (England S) = 780.3mm

 Roof type (pitched roof with tiles) =0.75

Total Daily water consumption other than WC (include washing M., Garden use, industrial process) = 200 litre/day
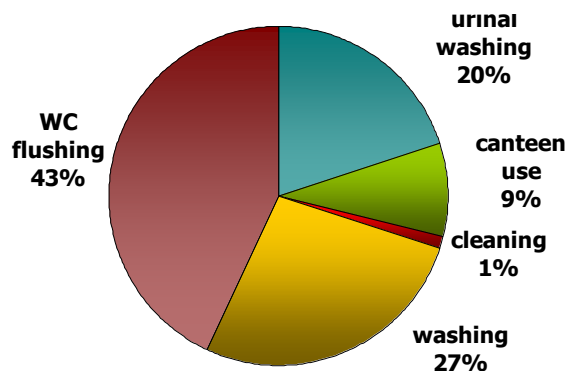
Filter efficiency= 0.90

An Total system cost=£10000   Installation cost=£1000   Unit water cost =£2.9/m3

1.   Annual yield=550*780.3*0.9*0.75 =**289,686.375 litre**

2.   Annual demand:

Commercial

For non domestic:

Daily WC &Urinal=63%*50*100

Daily washing machine +garden use+ industrial process = 200l/day

Total annual demand= (63%*50*100+ 200)*255=**854,250 litre**

3. Saving %=289,686.375 /854,250 =**33.9%**

    Saving £= 854,250 *£2.9/m^3 =**£840.09**

4. Tank size:

6 %(annual yield) =0.06*289,686.375 =17381.18 litre

6 %(annual demand) =0.06*854,250 =51255 litre

Tank size the lower value =17381.18 litre

6. Payback =total cost/saving =10000+1000/ (840.09) =13.09 years