Risk Assessment Plan for RC Flat Roof Drainage

"The aim of Qualified Person (Architects/Engineers) should normally be to achieve a balance between the cost of drainage system and the frequency and consequences of flooding." - SS525:2006, Clause 5.1

Determine Project Rainfall Intensity (RFI)	
Determine building profile & type of roof and select appropiate RFI from SS525 (Pg 14 & 15)	_____ mm/hr
Calculate rate of run off (Q)	
Determine catchment area, Ae If there is a wall abutting, 50% elevation area must be considered up to maximum of 10m (clause 6.1.4, Pg 16)	_____ m^2
Calculate rate of runoff using area and RFI $\quad Q = \dfrac{A_e I}{3600}$	_____ l/s
RC Flat Roof - Rainwater Outlet (RO) sizing	
Internal to external threshold height	_____ mm
Waterproofing detail and upturn height	_____ mm
Max acceptable water depth for roof loading	_____ mm
Determine acceptable water depth around rainwater outlet (RO) (Water depth should be base on above depth with safety factor)	_____ mm
Determine percentange of clear opening of RO (Usually taken at 70% unless otherwise)	_____ %
With percentage of clear opening, check RO drainage capacity (Based on SS525 table 7a to 7e, Pg 63 to 65)	_____ l/s
Determine the number of RO required for the roof (rate of run-off / RO drainage capacity)	_____ nos
Is the numer and size acceptable? If Yes, proceed to determine pipe size If No, increase RO size or increase number	Yes / No
Determine vertical pipe size of Rainwater downpipe (RWDP)*	
Minimum vertical RWDP should be the same size of RO	Ø_____ mm
Determine RWDP capacity using table 8 of SS525 (Pg 66) (if RWDP capacity is insufficient enlarge pipe size)	_____ l/s
Determine Horizontal pipe size of Rainwater downpipe (RWDP)*	
Minimum horizontal RWDP should be the same size of RO	Ø_____ mm
Determine acceptable slope / gradient of horizontal RWDP (minimium gradient 1:200) (check against ceiling depth / structure / M&E services)	_____(slope)
Determine RWDP capacity using table 9 of SS525 (Pg 67) (if RWDP capacity is insufficient enlarge pipe size)	_____ l/s

*Pipe work shall not reduce in diameter in the direction of flow