Table S1 Parameters for LID facilities

Layer	Parameter	Bioretention Cell	Permeable pavement	Green roof
Surface layer	Storage depth (mm)	200	0	35
	Vegetation volume fraction	0.15	0	0.15
	Surface roughness	0.24	0	0.24
	Surface slope (%)	0.33	0	0.33
Soil layer	Thickness (mm)	550	-	250
	Porosity	0.5	-	0.5
	Field capacity	0.2	-	0.2
	Wilting point	0.1	-	0.1
	Conductivity	0.5	-	0.5
	Conductivity slope	10	-	10
	Suction head (mm)	180	-	180
Pavement layer	Thickness (mm)	-	100	-
	Void ratio (Voids/Solids)	-	0.2	-
	Impervious surface fraction	-	0	-
	Permeability (mm/hr)	-	700	-
	Clogging factor	-	0	-
Storage layer	Height (mm)	200	260	-
	Void ratio	0.75	0.4	-
	Conductivity	0	3.8	-
	Clogging factor	0	0	-
Under drain	Drain coefficient (mm/hr)	-	0	-
	Drain exponent	-	0	-
	Drain offset height	-	0	-
	Drain delay (hours)	-	0	-
Drainage Mat	Thickness	-	-	40
	Void Fraction	-	-	0.3
	Roughness	-	-	0.02

Table S2 The values of water quality model parameters

Parameter	C_1	C_2	C_3	γ_{1COD}	γ_{2COD}
Value	6535105	2.022	-6.82	1.02	0
Parameter	γ_{3COD}	γ_{4COD}	$\gamma_{1NH_4^+-N}$	$\gamma_{2NH_4^+-N}$	$\gamma_{3NH_4^+-N}$
Value	0.251	0	0.004	0	0.468
Parameter	$\gamma_{4NH_4^+-N}$	γ_{1TP}	γ_{2TP}	γ_{3TP}	γ_{4TP}
Value	0	0.0034	1.34	0.447	0

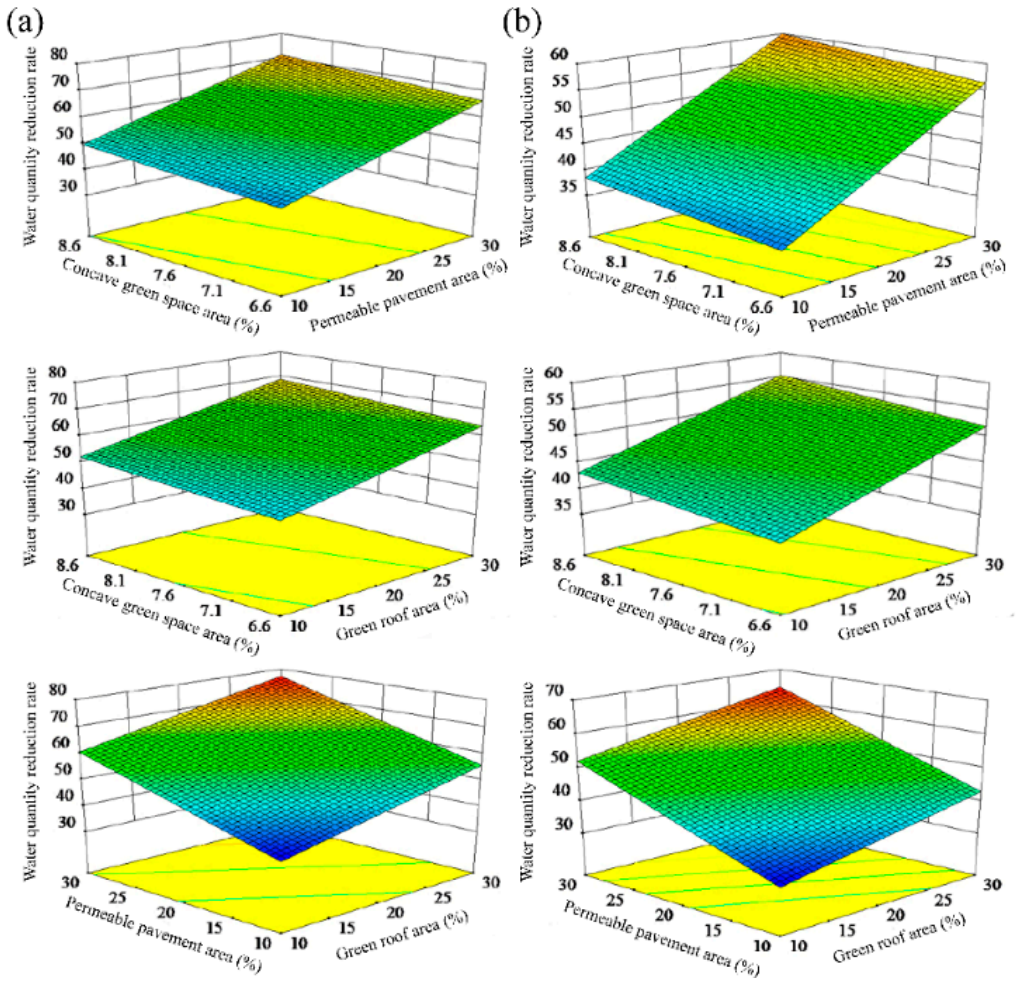

Figure S1. Response surfaces for water quantity reduction rate. (a) rainfall intensity once every three years. (b) rainfall intensity once every ten years.

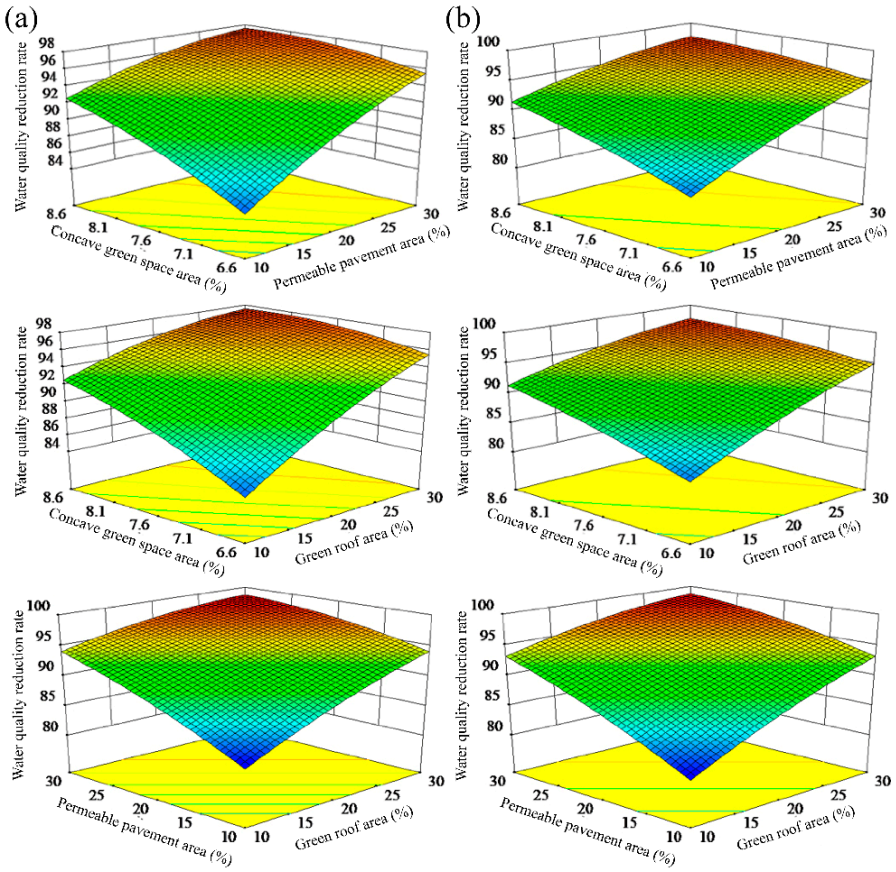

Figure S2. Response surface diagram for water quality reduction rate. (a) rainfall intensity once every three years. (b) rainfall intensity once every ten years.