STRUCTURAL SYSTEMS
consulting engineers

Date Issued	Friday, 16 May 2025
Job No	DT 241201
Site	8 HOCKING PLACE, ADELAIDE
Client	SUE CRAFTER
Proposed	14-STOREY RESIDENTIAL DEVELOPMENT

Hydrological Analysis

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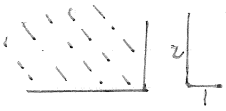
DT 241201 8 Hocking place, Adelaide,

Sote locate : -34.9338 , 138.5952

Design a single or multi rainwater tank
locate at higher floor to provide reuseable water
and overflow to underground tank; underground tank catch
balconies water and pump to street water table.

Therefore, separate balconies rainwater and roof's rainwater
to provide clean water for reuse purpose.

As required by PlanSA PO1.1, the highest point of natural ground
level at the primary street boundary where there is no kerb, and
Council of city Adelaide required south side as lower's point.

Considered balconies catchment :  2:1

Catchment Areas Level 1 ~ level 10 = $13.7m^2 \times 10 = 137m^2$
Level 11 ~ level 13 = $10.4m^2 \times 3 = 31.2m^2$
total : $168.2m^2$

Internal floor area :

Level 1 ~ 10 : type 1 : $52m^2$
type 2 : $54m^2$
type 3 : $54m^2$
Sum : $160m^2 \times 10 = 1600m^2$

Level 11 ~ 13 : type 1 : $82m^2$
type 2 : $82m^2$
Sum : $164m^2 \times 3 = 492m^2$

total $2092m^2$

Roof : $250m^2 + 1/2 \times (250m^2 \times \tan(5)) = 260m^2$

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A total rainwater storage capacity of 3000L is proposed for this development, with a preferred location at level 13 to take advantage of gravity-fed distribution where possible. The system may comprise a single 3000 L tank or, if space and structural consideration require, 1000 L x 3 tank installed in parallel to achieve the same capacity.

The rainwater tanks will collect water from roof catchments via a dedicated rainwater pipe system. First flush diverters and appropiate filtration measure will be installed upstream to ensure the water quality is suitable for non-potable use, such as toilet flushing, irrigation, and general cleaning.

To manage overflow during periods of high rainfall, any excess water from the tanks on level 13 will gravity-drained via dedicated overflow pipe to the underground tank located at ground floor. This underground tank may be used for second storage or stormwater detention.

Existing Pre-outlet = $I_{20}^{5} = 7.82 L/s$

Post-outlet = $I_{20}^{5} = 13.38 L/s$

Adopt detention $4.31 m^3$ as calculation.

Our underground tank 13.64KL which more than $4.31 m^3$

Outlet control as pump rate 2L/s

Council require less than 15 L/s ok!

Rain water tanks

Installation

In order to fully extend the life of your concrete rain water tank, site preparation is essential:

- Excavate to the required depth plus 75mm (or more if required to achieve a fall from gutter height) and then back-fill with a layer of 10mm-12mm gravel or screenings. The tank will then be placed directly onto this level base.
- Ensure the gutter outlet is above the tank inlet.
- Check delivery access with Ri-Industries.
- A minimum height clearance of 8 metres is required when unloading.
- 4.7 metres is needed for the truck to pass under trees and overhead power lines.
- 4 metres clearance is required between gate posts.
- Please highlight the position of any underground drains or cables. Trucks will not drive over any concrete or sealed areas without indemnity being signed (including all foundations).
- Please ensure the unloading site is level.
- Ri-Industries strongly recommends your tank not be left empty for extended periods.
- If any tank is partially buried more than 900mm in the ground there is a possibility that it may float unless precautions are taken. We suggest that the tank is filled with water immediately after placement to at least ground level, until the back-fill soil has compacted.
- If you have any doubts regarding your installation a site inspection can be arranged.

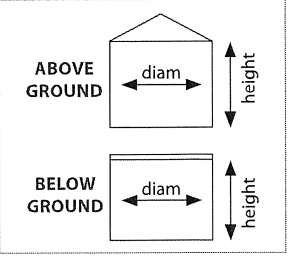
Please also note that:

- Each above ground tank is painted and includes a 75mm diameter drain outlet made of brass. The overflow is ready to take a 90mm PVC stormwater pipe. Male brass fittings can be fitted in the tank depending on customer requirements eg. for fire fighting purposes.
- Underground rain water tanks can be installed down to a maximum of 2 metres below the ground but this requires riser pipes to allow access at ground level and a heavy duty concrete cover.

Specifications

- Specifications can be forwarded through to Council/engineers upon request.
- Four sizes of tank are available in both above ground and underground options.

Tank capacity	Diameter	Height	Weight
5,000 litres	1930mm	2240mm	2.97 tonne
9,090 litres	2440mm	2460mm	3.9 tonne
13,640 litres	2870mm	2440mm	4.9 tonne
22,730 litres	3450mm	2740mm	7.3 tonnes
**Heights and weights shown are for tank only.*			



IFD Design Rainfall Intensity (mm/h)
Issued: 16-May-25
Location Label:
Requested Latitude -34.9338 Longitude 138.5953
Nearest gri Latitude 34.9375 (S Longitude 138.5875 (E)

		Annual Exceedance Probability (AEP)						
Duration	Duration in n	63.20%	50%	20%	10%	5%	2%	1%
1 min	1	77.7	88.4	125	154	184	229	268
2 min	2	68.3	77.5	109	134	161	202	236
3 min	3	60.9	69.1	97.6	120	144	179	210
4 min	4	55.1	62.5	88.5	108	130	162	190
5 min	5	50.4	57.3	81.2	99.6	119	149	174
10 min	10	36.6	41.6	59.1	72.5	86.9	108	126
15 min	15	29.4	33.5	47.6	58.4	70	87	101
20 min	20	25	28.4	40.4	49.6	59.4	73.9	86.2
25 min	25	21.9	24.9	35.4	43.4	52	64.7	75.6
30 min	30	19.6	22.3	31.6	38.8	46.5	57.9	67.6
45 min	45	15.2	17.3	24.5	30	36	44.8	52.4
1 hour	60	12.7	14.4	20.3	24.9	29.8	37.2	43.4
1.5 hour	90	9.76	11.1	15.6	19	22.8	28.3	33.1
2 hour	120	8.08	9.15	12.8	15.7	18.7	23.2	27.1
3 hour	180	6.19	6.99	9.76	11.9	14.1	17.5	20.3
4.5 hour	270	4.72	5.32	7.39	8.97	10.6	13.1	15.2
6 hour	360	3.89	4.38	6.06	7.33	8.67	10.6	12.3
9 hour	540	2.95	3.31	4.56	5.49	6.47	7.86	9.02
12 hour	720	2.41	2.71	3.71	4.46	5.23	6.33	7.22
18 hour	1080	1.81	2.03	2.76	3.3	3.86	4.62	5.24
24 hour	1440	1.47	1.64	2.23	2.65	3.09	3.68	4.16
30 hour	1800	1.24	1.39	1.88	2.23	2.59	3.08	3.46
36 hour	2160	1.09	1.21	1.63	1.93	2.24	2.65	2.97
48 hour	2880	0.872	0.973	1.3	1.53	1.77	2.09	2.33
72 hour	4320	0.638	0.709	0.939	1.1	1.26	1.48	1.64
96 hour	5760	0.51	0.566	0.743	0.865	0.987	1.15	1.27
120 hour	7200	0.43	0.475	0.619	0.718	0.814	0.94	1.04
144 hour	8640	0.374	0.413	0.534	0.616	0.694	0.798	0.877
168 hour	10080	0.334	0.368	0.472	0.541	0.607	0.694	0.76

Estimate the discharge flow to outlet point - FULL SITE

Catchment analysis

Total Catchment Area =	250	m^2				C_{10}
Roof	250	m^2	equivalent	100.0	%	0.9
Paving	0	m^2	equivalent	0.0	%	0.75
Pervious area	0	m^2	equivalent	0.0	%	0.1

Cy = C10*Fy

Design ARI	1	2	5	10	20	40	50	60	80	100
Fy	0.8	0.85	0.95	1	1.05	1.13	1.15	1.17	1.19	1.2

Equivalent CA at ARI (years)

	1	2	5	10	20	40	50	60	80	100
(m^2) CA =	180	191	214	225	236	250	250	250	250	250
(ha) CA =	0.018	0.019	0.021	0.023	0.024	0.025	0.025	0.025	0.025	0.025
Cequiv =	0.72	0.77	0.86	0.90	0.95	1.00	1.00	1.00	1.00	1.00

Estimate discharge rate for design area for 1, 5,10,20 and 100 years ARI storm event (L/s)

Q = 0.000278*CAI (L/s) Rational Method

Storm Duration (min)	I_1 (63.2%AEP) (mm/hr)	Outflow (L/s) 1y ARI	I_5 (20%AEP) (mm/hr)	Outflow (L/s) 5y ARI	I_{10} (10%AEP) (mm/hr)	Outflow (L/s) 10y ARI	I_{20} (5%AEP) (mm/hr)	Outflow (L/s) 20y ARI	I_{100} (1%AEP) (mm/hr)	Outflow (L/s) 100y AR
5	50.40	**2.52**	81.20	**4.83**	99.60	**6.23**	119.00	**7.82**	174.00	**12.09**
10	36.60	**1.83**	59.10	**3.51**	72.50	**4.53**	86.90	**5.71**	126.00	**8.76**
15	29.40	**1.47**	47.60	**2.83**	58.40	**3.65**	70.00	**4.60**	101.00	**7.02**
20	25.00	**1.25**	40.40	**2.40**	49.60	**3.10**	59.40	**3.90**	86.20	**5.99**
25	21.90	**1.10**	35.40	**2.10**	43.40	**2.71**	52.00	**3.42**	75.60	**5.25**
30	19.60	**0.98**	31.60	**1.88**	38.80	**2.43**	46.50	**3.05**	67.60	**4.70**
45	15.20	**0.76**	24.50	**1.46**	30.00	**1.88**	36.00	**2.36**	52.40	**3.64**
60	12.70	**0.64**	20.30	**1.21**	24.90	**1.56**	29.80	**1.96**	43.40	**3.02**
90	9.76	**0.49**	15.60	**0.93**	19.00	**1.19**	22.80	**1.50**	33.10	**2.30**
120	8.08	**0.40**	12.80	**0.76**	15.70	**0.98**	18.70	**1.23**	27.10	**1.88**
180	6.19	**0.31**	9.76	**0.58**	11.90	**0.74**	14.10	**0.93**	20.30	**1.41**
270	4.72	**0.24**	7.39	**0.44**	8.97	**0.56**	10.60	**0.70**	15.20	**1.06**
360	3.89	**0.19**	6.06	**0.36**	7.33	**0.46**	8.67	**0.57**	12.30	**0.85**
540	2.95	**0.15**	4.56	**0.27**	5.49	**0.34**	6.47	**0.42**	9.02	**0.63**
720	2.41	**0.12**	3.71	**0.22**	4.46	**0.28**	5.23	**0.34**	7.22	**0.50**
1080	1.81	**0.09**	2.76	**0.16**	3.30	**0.21**	3.86	**0.25**	5.24	**0.36**
1440	1.47	**0.07**	2.23	**0.13**	2.65	**0.17**	3.09	**0.20**	4.16	**0.29**
1800	1.24	**0.06**	1.88	**0.11**	2.23	**0.14**	2.59	**0.17**	3.46	**0.24**
2160	1.09	**0.05**	1.63	**0.10**	1.93	**0.12**	2.24	**0.15**	2.97	**0.21**
2880	0.87	**0.04**	1.30	**0.08**	1.53	**0.10**	1.77	**0.12**	2.33	**0.16**
4320	0.64	**0.03**	0.94	**0.06**	1.10	**0.07**	1.26	**0.08**	1.64	**0.11**

Estimate the discharge flow to outlet points POST development (Roof, Balconies)
southern section - proposed up stream direct to Piccadilly Road - Area1

Catchment analysis

Total Catchment Area =	428.1	m^2			C_{10}
1st grade paving	428.1	m^2	equivalent	100.0 %	0.9
2nd grade paving	0	m^2	equivalent	0.0 %	0.75
Pervious area	0	m^2	equivalent	0.0 %	0.1

Cy = C10*Fy

Design ARI	1	2	5	10	20	40	50	60	80	100	(years)
Fy	0.8	0.85	0.95	1	1.05	1.13	1.15	1.17	1.19	1.2	

Equivalent CA at ARI (years)

	1	2	5	10	20	40	50	60	80	100
(m²) CA =	308	327	366	385	405	428	428	428	428	428
(ha) CA =	0.031	0.033	0.037	0.039	0.040	0.043	0.043	0.043	0.043	0.043
Cequiv =	0.72	0.77	0.86	0.90	0.95	1.00	1.00	1.00	1.00	1.00

Estimate discharge rate for design area for 1, 5,10,20 and 100 years ARI storm event (L/s)

Q = 0.000278*CAI (L/s) Rational Method

Storm Duration (min)	I_1 (63.2%AEP) (mm/hr)	Outflow 1y ARI	I_5 (20%AEP) (mm/hr)	Outflow (L/s) 5y ARI	I_{10} (10%AEP) (mm/hr)	Outflow (L/s) 10y ARI	I_{20} (5%AEP) (mm/hr)	Outflow (L/s) 20y ARI	I_{100} (1%AEP) (mm/hr)	Outflow (L/s) 100y ARI	Runoff Vol (m3)	Est Ponding /detention Vol (m3)
5	50.40	**4.32**	81.20	**8.26**	99.60	**10.67**	119.00	**13.38**	174.00	**20.71**	6.21	3.87
10	36.60	**3.14**	59.10	**6.01**	72.50	**7.77**	86.90	**9.77**	126.00	**15.00**	9.00	4.31
15	29.40	**2.52**	47.60	**4.84**	58.40	**6.26**	70.00	**7.87**	101.00	**12.02**	10.82	3.78
20	25.00	**2.14**	40.40	**4.11**	49.60	**5.31**	59.40	**6.68**	86.20	**10.26**	12.31	2.93
25	21.90	**1.88**	35.40	**3.60**	43.40	**4.65**	52.00	**5.85**	75.60	**9.00**	13.50	1.77
30	19.60	**1.68**	31.60	**3.22**	38.80	**4.16**	46.50	**5.23**	67.60	**8.05**	14.48	0.41
45	15.20	**1.30**	24.50	**2.49**	30.00	**3.21**	36.00	**4.05**	52.40	**6.24**	16.84	0.00
60	12.70	**1.09**	20.30	**2.07**	24.90	**2.67**	29.80	**3.35**	43.40	**5.17**	18.59	0.00
90	9.76	**0.84**	15.60	**1.59**	19.00	**2.04**	22.80	**2.56**	33.10	**3.94**	21.27	0.00
120	8.08	**0.69**	12.80	**1.30**	15.70	**1.68**	18.70	**2.10**	27.10	**3.23**	23.22	0.00
180	6.19	**0.53**	9.76	**0.99**	11.90	**1.27**	14.10	**1.59**	20.30	**2.42**	26.09	0.00
270	4.72	**0.40**	7.39	**0.75**	8.97	**0.96**	10.60	**1.19**	15.20	**1.81**	29.31	0.00
360	3.89	**0.33**	6.06	**0.62**	7.33	**0.79**	8.67	**0.98**	12.30	**1.46**	31.62	0.00
540	2.95	**0.25**	4.56	**0.46**	5.49	**0.59**	6.47	**0.73**	9.02	**1.07**	34.78	0.00
720	2.41	**0.21**	3.71	**0.38**	4.46	**0.48**	5.23	**0.59**	7.22	**0.86**	37.12	0.00
1080	1.81	**0.16**	2.76	**0.28**	3.30	**0.35**	3.86	**0.43**	5.24	**0.62**	40.41	0.00
1440	1.47	**0.13**	2.23	**0.23**	2.65	**0.28**	3.09	**0.35**	4.16	**0.50**	42.78	0.00
1800	1.24	**0.11**	1.88	**0.19**	2.23	**0.24**	2.59	**0.29**	3.46	**0.41**	44.47	0.00
2160	1.09	**0.09**	1.63	**0.17**	1.93	**0.21**	2.24	**0.25**	2.97	**0.35**	45.81	0.00
2880	0.87	**0.07**	1.30	**0.13**	1.53	**0.16**	1.77	**0.20**	2.33	**0.28**	47.92	0.00
4320	0.64	**0.05**	0.94	**0.10**	1.10	**0.12**	1.26	**0.14**	1.64	**0.20**	50.59	0.00

Q20pre - 5mins = 7.82 (L/s)

Stormwater Calculations

Report for

Project Details

Project Name	DT 241201		
User Email			
Web files link			
Site Area (m2)	250	Project ID	544
Planning number			
Development type	Multi unit development (apartment building)		
Existing site details	Commercial (including car parks)		
Street address	8 Hocking Pl, Adelaide SA 5000, Australia		

Results

VOLUME	FLOW	QUALITY	EFFICIENCY
Objective: Harvest or infiltrate stormwater	Objective: Control peak discharge flows	Objective: Improve stormwater runoff water quality	Objective: Increase drought resilience
Target: No more than a 10% increase in runoff volume	Target less than or equal to zero. If greater than zero this is the additional Site Storage Requirement (SSR) volume required	Target: Achieve a score of 100 or more	Target: Achieve greater than 25% potable water use reduction
VOLUME RESULT	FLOW RESULT	QUALITY RESULT	EFFICIENCY RESULT
-84.7 % change in annual average volume	**-8.0** m^3 of additional site storage required	**206** Pollution reduction score (out of 100)	**29.8** % water saving
VOLUME PASSES	FLOW PASSES	QUALITY PASSES	EFFICIENCY PASSES

This project meets all of the policy objectives

Design Criteria

The development must be designed and constructed in accordance with the following:

Stormwater management measures selected are

This includes all impervious areas in the site connected to Council or Stormwater Authority drains. This excludes pervious areas like pervious paving, garden, gravel and lawn areas)

- Raintank Volume = 13640 litres connected to 168m2 of roof, additional detention tank volume included = 5000 litres
- Raintank Volume = 3000 litres connected to 260m2 of roof, additional detention tank volume included = 1000 litres

Conditions of approval

Rainwater Tanks

Total rainwater retention tank volume (L)	16640
Area of roof connected to rainwater tank (plumbed to household) (m^2)	428.0
Total rainwater detention tank volume (L)	6000.00
Rainwater tanks connected to	Toilet Laundry
Other rainwater tank end uses (L/day)	Irrigated Garden Area (m^2)
Additional* Site Storage (m^3)	0 *Site storage added adjacent to the legal point of discharge for peak flow detention or volume infiltration
Recycled water source	
Water tank reliability %	50.6
Rainwater tank overflow %	7.2

Water Efficiency Specifications

Basin WELS star rating	Default or unrated
Toilet WELS rating	> 4 Star WELS rating
Bath WELS star rating	Not Applicable
Washing Machine WELS star rating	> 6 Star WELS rating
Kitchen Taps WELS rating	> 4 Star WELS rating
Urinal WELS rating	> 4 Star WELS rating
Shower WELS star rating	3 Star WELS (> 7.5 but <= 9.0) (minimum requirement)
Dishwasher WELS star rating	> 3 Star WELS rating

Project Design Specifications

Building Spaces

•Apartments - BCA Class 2 of 2092m2 with an average occupancy of 49.7 people
•Shop, restaurant or retail - BCA Class 6 of 52m2 with an average occupancy of 1.6 people
•Office - BCA Class 5 of 12m2 with an average occupancy of 0.4 people

Estimated Total Building Occupancy	51.7

Stormwater Quality Calculations

Rainwater Tank Runoff reduction (%)	92.8
Rainwater Tank(s) Total Nitrogen (TN) reduction	882.6
Total Impervious Area (m^2)	168.2, 260.0
Total Nitrogen (TN) % reduction (g/yr)	92.8
Water Quality Score (%)	206
Rainwater Used (kL)	190.8
Total demand (L/day)	1033.20
Roof Runoff (kL)	205.8
Rainwater Tank Overflow (kL)	14.8

Peak Flow Storage Requirement Calculations

FLOW reduction strategy	Volume retention and/or Infiltration
Catchment strategy used	On Site Retention (OSR) of volume to pre-development levels - Regime-in-balanc

Site Storage Calculations

Base case (pre-development) fraction impervious (ratio)	0.90
Base case runoff coefficient	0.840
Post development detention requirement (Site Storage Requirement)	5% AEP (~1 in 20 ARI) - default industrial
Post development fraction impervious (ratio)	1.71
Post development runoff coefficient	1.688
Pre-development FLOW volume (m^3)	3.5
Post-development FLOW volume (m^3)	7.0

FLOW Volume storage required for 'yield minimum' (m^3)	
FLOW volume storage required for 'regime in balance' (m^3)	3.5
On Site Retention (m^3)	3.5
Permissible Site Discharge (PSD) (L/sec)	
Critical Storm Duration - the Catchment time of concentration - Tc(catchment) in minutes	30
Rainfall Depth (mm) for Critical Storm Duration - Tc (Catchment)	16.57
Rainfall intensity - i at Tc(catchment) (mm/h)	33.1
Site time of Concentration (min) - Tc(site)	10.0
Rainfall Depth (mm) for tc(site) - (IFD at Site Time of Concentration)	10.3
Rainfall intensity - i at tc(site) (mm/h)	61.80

Detention Calculator - Site Storage Requirement (SSR) - Uses rational method (Boyd's Equation)

Please note that this section is not applicable if Volume retention and/or Infiltration strategy is used

Storm Duration (mins)	Rainfall Depth (mm)	Peak Post Development flow (L/s)	Runoff Volume (m^3)	Stored Volume (m^3)
5				
10				
15				
30				
60				
120				

About In-Site Water

This report is generated by user inputs from the toolkit at In-Site Water. In-Site water is an online Integrated Water Management tool designed for use on smaller sites (less than 2 hectares) in Australia that need quick and accurate stormwater engineering answers. In-Site water is simple to use but provides robust stormwater design and engineering answers.

For enquiries, contact Water Sensitive SA www.watersensitivesa.com

Disclaimer

This guide is of a general nature only. Advice from a suitably qualified professional should be sought for your particular circumstances. Depending on each unique situation, there may be occasions where compliance is not achieved. The following dot points are outside the scope of this report, however it is critical that all designers consider the following:

- *Manage expectations and risks around occasional surface water and ponding.*
- *Ensure that uncontrolled stormwater does not flow over property boundaries or otherwise cause a nuisance.*
- *Plan for major flood pathways – locate away from, adapt (raise floors above predicted flood levels) and defend buildings against potential major flooding.*
- *Plan to reduce annual average damages and safety risks.*
- *Take into account local conditions such as slope, topography and soils (type, reactivity, permeability, water table level, salinity, dispersiveness, acid sulphate soils, etc.).*
- *Ensure that soil moisture and building clearance is considered in areas of reactive clays or where varying soil moisture levels could damage buildings, infrastructure or other constructions.*
- *For steeper sites, ensure the design includes geotechnical considerations such as slope stability with varying soil saturation levels.*
- *Compliance with other Australian Standards, laws, guidelines, regulations and Council requirements.*

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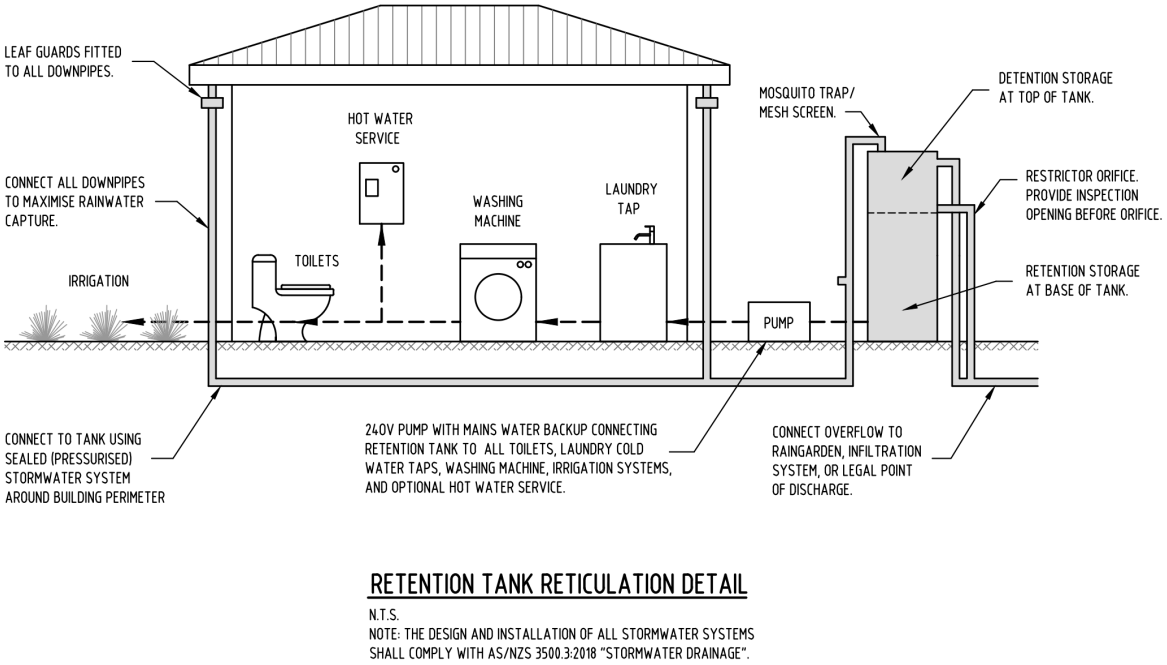
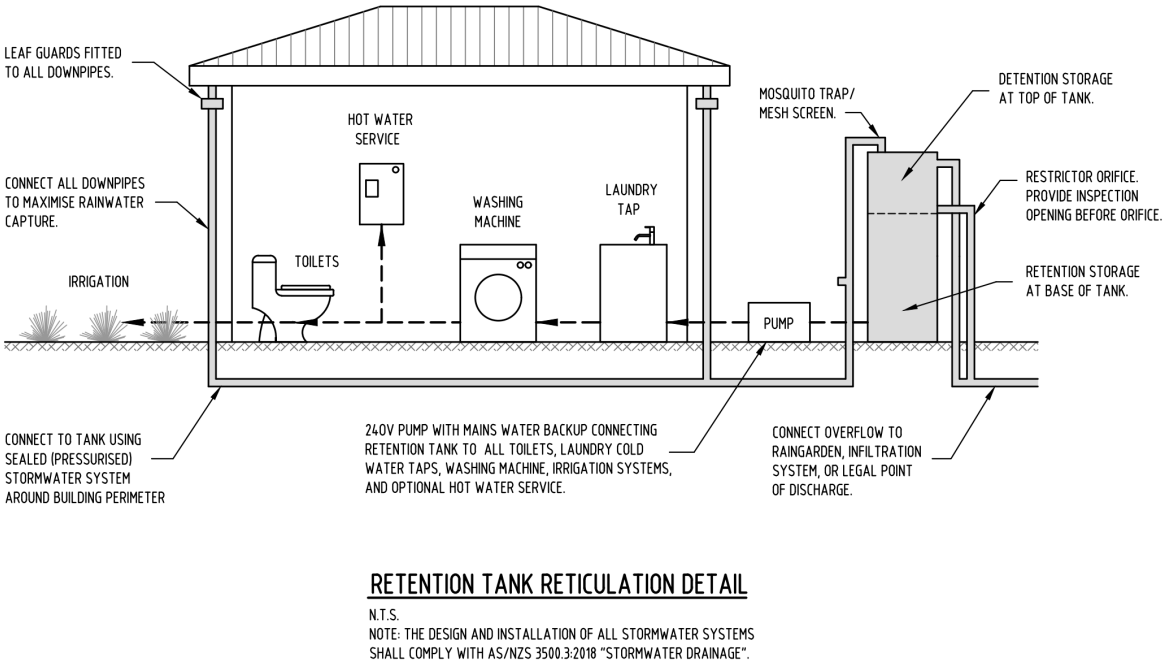
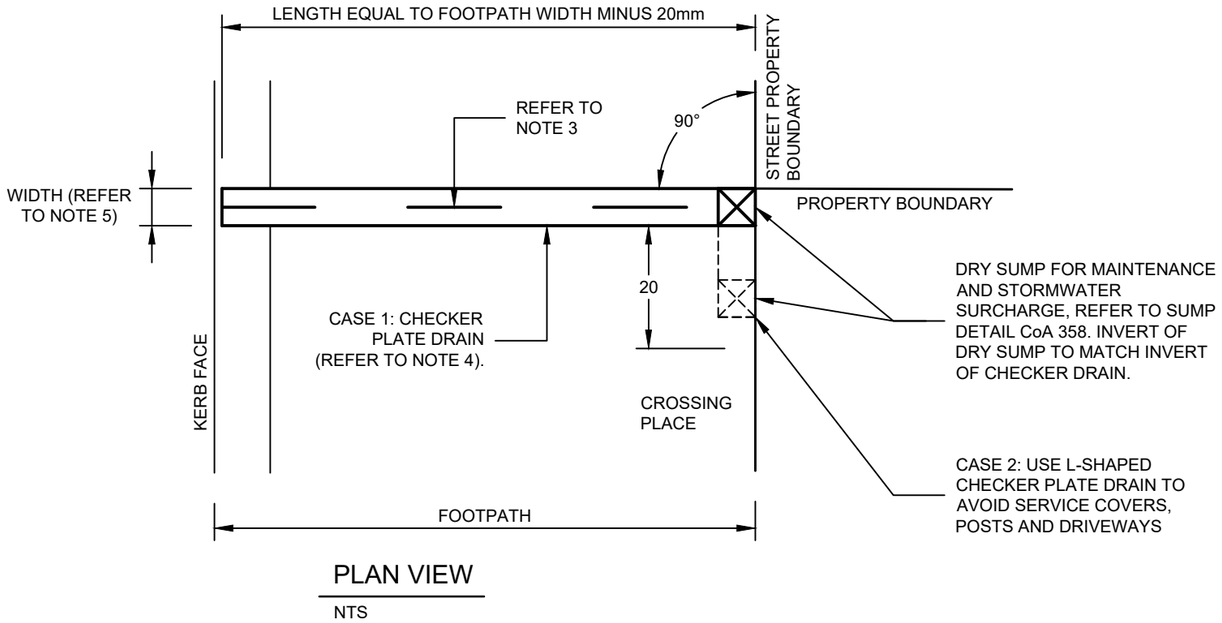
Example details for this project (if applicable). Please see the *InSite Guide* for more details:



Above: Balconies treatment

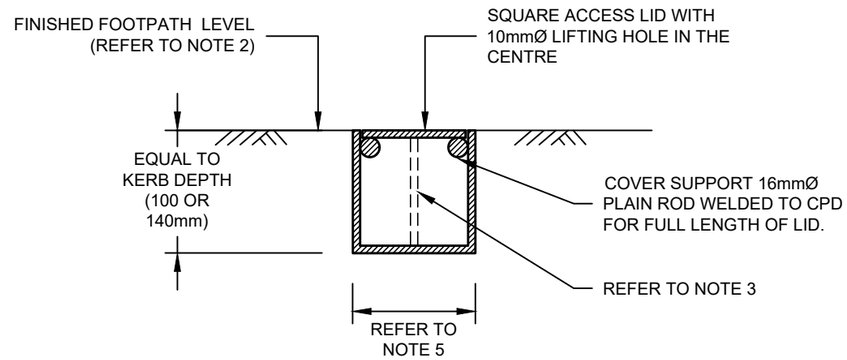


Above: Propose roof treatment



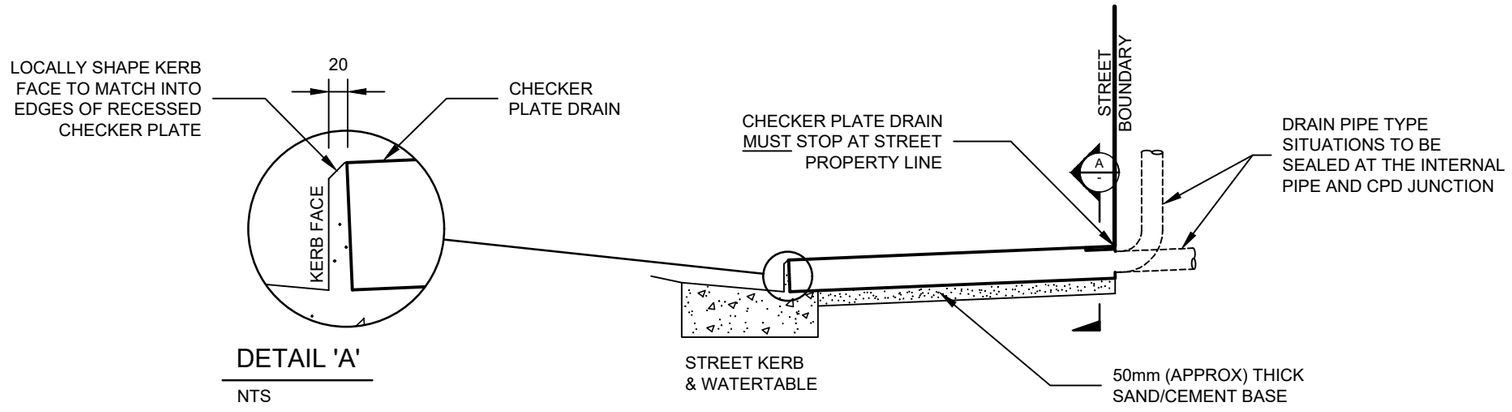
PLAN VIEW

NTS



A - SECTION A

SECTION NTS



DETAIL 'A'

NTS

TYPICAL CROSS SECTION

NTS

NOTES:

1. CHECKER PLATE DRAIN (CPD) TO BE CONSTRUCTED OF 6mm THICK STEEL PLATE WITH STEEL CHECKER PLATE TOP ALL FULLY WELDED AND HOT DIPPED GALVANISED.
2. TOP OF CPD AND CHECKER PLATE ACCESS LID TO BE FLUSH WITH FOOTPATH SURFACE.
3. ANY CPD WIDER THAN 300mm TO BE PROVIDED WITH A 500mm LONG INTERNAL STIFFENER, FULLY WELDED PLACED CENTRALLY AT KERB AND AT 500mm INTERVALS.
4. ALL CPD's TO BE INSTALLED PERPENDICULAR TO THE STREET PROPERTY BOUNDARY AND A MINIMUM OF 1.0 METRE CLEAR OF ANY CROSSING PLACE.
5. WIDTH DIMENSION TO BE EQUAL TO EXISTING CPD OR SIMILAR X-SECTIONAL AREA OF EXISTING PIPE, BUT NOT LESS THAN MINIMUM WIDTH.
6. CPD MINIMUM WIDTH 150mm.
7. L-SHAPED CPD MUST BE IN THE FOOTPATH WITHIN THE PROPERTY BOUNDARY ALIGNMENT DRAINING THAT PROPERTY
8. THIS DETAIL SHALL BE USED FOR MAINTENANCE PURPOSES ONLY, OR AS DIRECTED BY CoA REPRESENTATIVE.

NOTE: ALL COSTS ASSOCIATED WITH DISCHARGE OF PRIVATE PROPERTY STORMWATER TO COUNCIL INFRASTRUCTURE (UNDERGROUND STORMWATER MAIN OR KERB & WATERTABLE) SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.

CoA 350 **CHECKER PLATE DRAIN - TYPE 1**

REV	DESCRIPTION	DATE
A	ORIGINAL ISSUE	03/23

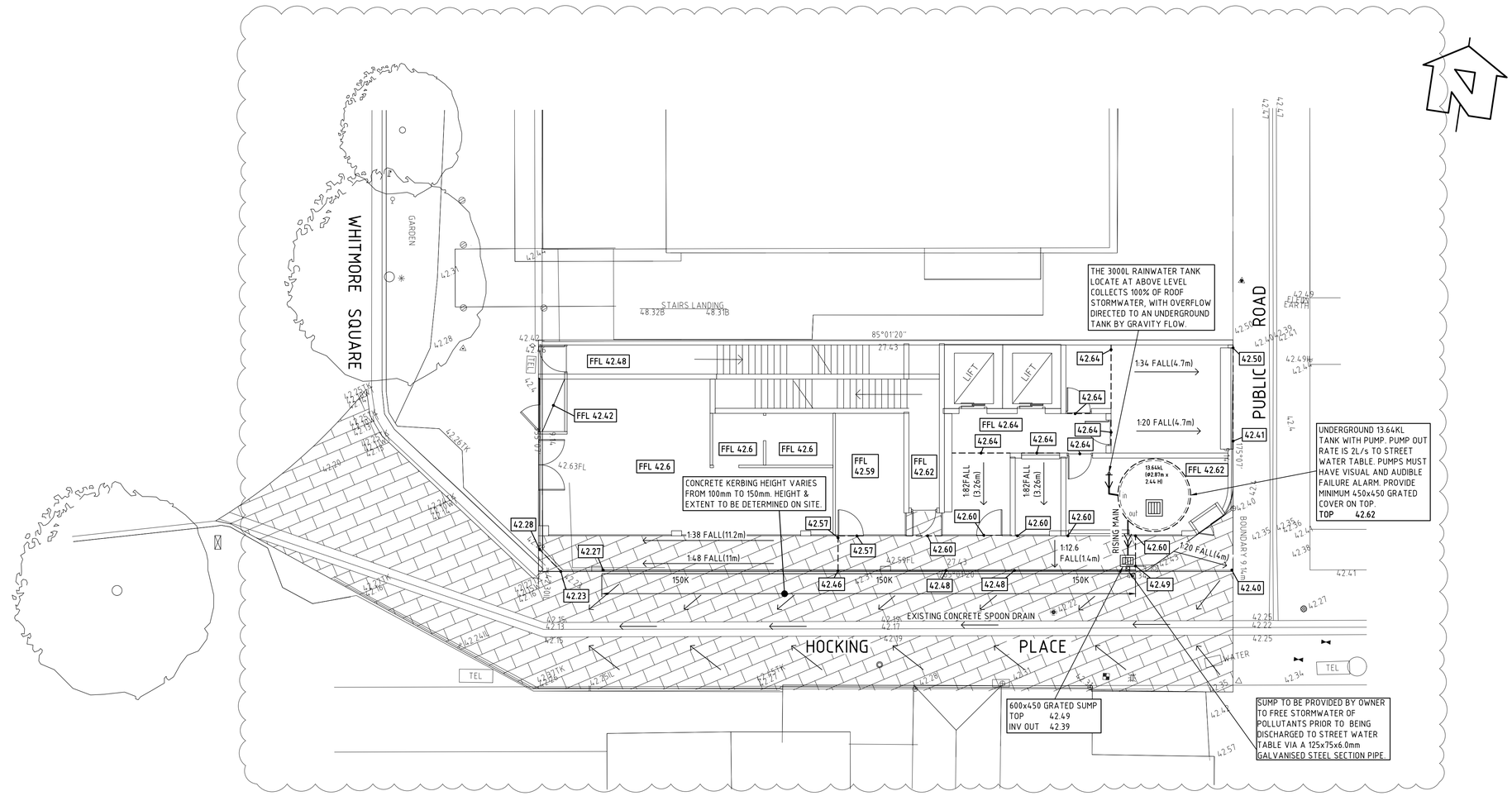
CONSTRUCTION STANDARD

DRAINAGE

CHECKER PLATE DRAIN - TYPE 1

CITY OF ADELAIDE

SHEET NUMBER	REVISION
DR050	**A**



PROVIDE PERIMETER CONCRETE KERBING AS REQUIRED.

SCALE 1:100 0m 1m 2m 3m 4m 5m 10m

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL ASSOCIATED DRAWINGS/SPECIFICATIONS AND ANY DISCREPANCIES TO BE DIRECTED TO THE DESIGNER FOR CLARIFICATION.
2. ALL WORK EXTERNAL TO SITE BOUNDARY TO BE CARRIED OUT TO COUNCIL REQUIREMENTS.
3. USE FLEXIBLE CONNECTION FOR STORMWATER PIPES.
4. THIS IS NOT A CADASTRAL PLAN AND SHOULD NOT BE USED IN DETERMINING PRECISE DIMENSIONS WITH RESPECT TO BOUNDARIES.
5. ALL U.P.V.C. PIPES LESS THAN 200mm BELOW THE SURFACE ON THE DRIVEWAY TO BE ENCASED IN 100mm CONCRETE.
6. PIPES LESS THAN 300mm IN DEPTH (FROM TOP OF PIPE) MUST HAVE CONCRETE COVER.
7. BUILDERS/ CONTRACTORS TO CHECK FOR ANY UNDERGROUND SERVICES PRIOR TO CONSTRUCTION.
8. STORMWATER TANK TO BE PLUMBED TO LAUNDRY \ WC - REFER TO ARCHITECTURAL DRAWINGS, OWNER, BUILDER, DEVELOPER FOR DETAILS.
9. IT IS THE RESPONSIBILITY OF THE OWNER/BUILDER TO ENSURE THAT FINISHED LEVELS AS PROPOSED BY ENGINEER BE ADEQUATE AS TO GET DESIRED FALL TO SEWERAGE INVERT. OWNER/BUILDER/PLUMBING CONSULTANT/PLUMBER MUST CHECK EXISTING SEWERAGE CONNECTION POINT INVERT TO ENSURE THAT PROPOSED FINISHED LEVELS ARE ADEQUATE PRIOR TO COMMENCEMENT OF ANY WORK.

LEGEND:

- Ø100 UPVC — STORMWATER ALIGNMENT Ø100 UPVC PIPE, MIN. SLOPE 1:100 TYPICAL UNO.
- RISING MAIN — RISING MAIN - PE PIPE. SIZE & GRADE TO SUIT PUMP RATE BY OTHERS
- 100.35 — DESIGN GROUND LEVEL / PAVING LEVEL
- 100.35 — DESIGN CONTOUR/HIGH POINT/GRADE CHANGE
- SUMP
- + 99.00 — EXISTING LEVEL
- 150K — CONCRETE FLAT KERB
- 13.64kL (Ø2.87m x 2.44 H) — UNDERGROUND 13.64KL TANK WITH PUMP. PUMP OUT RATE IS 2L/s TO STREET WATER TABLE. PUMPS MUST HAVE VISUAL AND AUDIBLE FAILURE ALARM. PROVIDE MINIMUM 450x450 GRATED COVER ON TOP.

NOTE:
PROVIDED 3000L RAINWATER TANK TO CAPTURE 100% OF ROOF STORMWATER AT TOP FLOOR LOCATIONS AND TYPE OF THE TANK NOMINATE BY SERVICE ENGINEER.
2000L USABLE STORAGE CELL PLUMBED TO A TOILET AND LAUNDRY COLD WATER OUTLETS OR HOT WATER SERVICE.
1000L ACTING AS A DETENTION TANK WITH GRAVITY-DRAINED SLOW RELEASE AT THE BOTTOM OF THE DETENTION COMPONENT OF THE TANK. ALLOW OVERFLOW TO UNDERGROUND TANK.

NOTES

1. ENGINEER'S DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND GENERAL CONDITIONS OF THE CONTRACT, THE ASSOCIATED ARCHITECTURAL DRAWINGS, THE ENGINEER'S SOIL AND FOOTING CONSTRUCTION REPORT AND ANY OTHER DRAWINGS RELATING TO THIS PROJECT.
2. ALL DIMENSIONS, LEVELS AND SETTING OUT SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS AND CHECKED ON SITE PRIOR TO COMMENCING FABRICATION AND/ OR CONSTRUCTION.
3. THE ENGINEER'S DRAWINGS MUST NOT BE SCALED.
4. ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED.
5. ADDITIONS AND SUBSTITUTIONS SHALL ONLY BE MADE WITH THE ENGINEER'S PRIOR KNOWLEDGE AND APPROVAL.
6. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL TO ENSURE THAT THEY ARE USING THE CURRENT VERSION OF THIS DRAWING. STRUCTURAL SYSTEMS PTY LTD ACCEPTS NO LIABILITY FOR ISSUES ARISING FROM THE USE OF SUPERSEDED DRAWINGS.

PLANNING APPROVAL

ISSUE NO.	DESCRIPTIONS	DATE	BY
P.A.1	ISSUED FOR PLANNING APPROVAL u_ARCH DRAWING RECEIVED: 15/05/25	16/05/25	CH
P.A.0	ISSUED FOR PLANNING APPROVAL ARCH DRAWING RECEIVED: 04/12/24 LEVEL RECEIVED: 10/12/24	20/01/25	CH

PROJECT
14-STOREY RESIDENTIAL DEVELOPMENT

ADDRESS
8 HOCKING PLACE, ADELAIDE

DRAWING TITLE
SITE PLAN

CLIENT
SUE CRAFTER

STRUCTURAL SYSTEMS consulting engineers

108 Wright Street, Adelaide SA 5000 Tel: (08) 8231 6000
Fax: (08) 8231 3444 Email: civil@structuralsystemssa.com.au ABN 21 366 115 939

DRAWN	MPS	DESIGNED	CH
CHECKED		DATE REVISED	16/05/25
SCALE	1:100 UNO	PAPER SIZE	A1
	ALL DIMENSIONS IN mm - DO NOT SCALE	DATE ISSUED	20/01/25
		PLOT SCALE	1:100

JOB No.	DRAWING No.	STAGE	ISSUE
DT 241201	01	PA	1

STAGE ABBREVIATION: P-PRELIMINARY; DS-ENGINEERING DESIGN STAGE; PA-FOR PLANNING APPROVAL; T-TENDER; BA-BUILDING APPROVAL; C-FOR CONSTRUCTION

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