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	Member/Location		
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Land Use	
(1) Lobby	
GFA for Office (m^2)	170
Area in m^2 per Employee **(Assumed)**	100
Total number of Employee	2
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**0.48**
(2) Office and Control Room	
GFA (m^2)	55
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	4
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**1.03**
(3) Gallery	
GFA (m^2)	635
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	42
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**11.85**
(4) Chinese Restaurant	
GFA (m^2)	1,240
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	83
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**130.61**
(5) Western Restaurant/ Coffee Shop	
GFA (m^2)	1,075
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	72
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**113.23**
(6) Spike Bar	
GFA (m^2)	230
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	15
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**24.23**

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(7) Grill Room	
GFA (m^2)	360
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	24
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**37.92**
(8) Mixed Lounge	
GFA (m^2)	490
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	33
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**9.15**
(9) Nursery & Play Area	
GFA (m^2)	720
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	48
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**13.44**
(10) Professional Shop	
GFA (m^2)	270
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	18
Commercial Activities type[1]	J4 - Wholesale & Retail
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**5.04**
(11) Library	
GFA for Office (m^2)	265
Area in m^2 per Employee **(Assumed)**	100
Total number of Employee	3
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**0.74**
(12) Golf Academy	
GFA for Office (m^2)	515
Area in m^2 per Employee **(Assumed)**	20
Total number of Employee	26
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**7.21**

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(13) Health Club/ Gymnasium	
GFA (m^2)	315
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	21
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**5.88**
(14) Locker and Changing Room	
GFA (m^2)	580
Area in m^2 per Employee **(Assumed)**	50
Total number of Employee	12
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**3.25**
(15) Juice Bar	
GFA (m^2)	110
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	7
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**11.59**
(16) Storage	
GFA for Office (m^2)	135
Area in m^2 per Employee **(Assumed)**	100
Total number of Employee	1
Commercial Activities type[1]	J3 - Transport, Storage & Communication
Flow per Employee (m^3/day) [1]	0.18
Total Estimated Dry Weather Flow (m^3/day)	**0.24**
(17) Staff Quarters x 54	
GFA (m^2)	380
Area in m^2 per Employee **(Assumed)**	65
Total number of Employee	6
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**9.24**
(18) Manager Quarters x 4	
GFA (m^2)	900
Area in m^2 per Employee **(Assumed)**	200
Total number of Employee	5
Commercial Activities type[1]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [1]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**7.11**

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(19) Caddy Master (70 staff)	
GFA (m^2)	235
Area in m^2 per Employee **(Assumed)**	3
Total number of Employee	78
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**21.93**
(20) Golf Club Storage	
GFA for Office (m^2)	270
Area in m^2 per Employee **(Assumed)**	100
Total number of Employee	3
Commercial Activities type[1]	J3 - Transport, Storage & Communication
Flow per Employee (m^3/day) [1]	0.18
Total Estimated Dry Weather Flow (m^3/day)	**0.49**
(21) Superintendent Office	
GFA (m^2)	140
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	9
Commercial Activities type[1]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [1]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**2.61**
(22) Golf Cart Cleaning Area	
GFA (m^2)	270
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	18
Commercial Activities type[1]	J2 - Electricity Gas & Water
Flow per Employee (m^3/day) [1]	0.33
Total Estimated Dry Weather Flow (m^3/day)	**5.94**
(23) Golf Club Machinery Room	
GFA (m^2)	325
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	22
Commercial Activities type[1]	J2 - Electricity Gas & Water
Flow per Employee (m^3/day) [1]	0.33
Total Estimated Dry Weather Flow (m^3/day)	**7.15**
(24) Golf Coaching Repair Workshop	
GFA for Office (m^2)	360
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	24
Commercial Activities type[1]	J2 - Electricity Gas & Water
Flow per Employee (m^3/day) [1]	0.33
Total Estimated Dry Weather Flow (m^3/day)	**7.92**

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(25) Starter Hut	
GFA for Office (m^2)	5
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	0
Commercial Activities type[(1)]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [(1)]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**0.09**
(26) Mid-way House	
GFA for Office (m^2)	20
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	1
Commercial Activities type[(1)]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [(1)]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**0.37**
(27) Security Booth	
GFA for Office (m^2)	10
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	1
Commercial Activities type[(1)]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [(1)]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**0.19**
(28) Golfer's overnight accomodation	
GFA for Office (m^2)	1,200
Area in m^2 per Employee **(Assumed)**	65
Total number of Employee	18
Commercial Activities type[(1)]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [(1)]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**29.17**
(29) Golfer's overnight receiption	
GFA for Office (m^2)	110
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	7
Commercial Activities type[(1)]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [(1)]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**2.05**
(30) VIP room	
GFA for Office (m^2)	400
Area in m^2 per Employee **(Assumed)**	200
Total number of Employee	2
Commercial Activities type[(1)]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [(1)]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**3.16**
(31) BOH office	
GFA for Office (m^2)	360
Area in m^2 per Employee **(Assumed)**	15
Total number of Employee	24
Commercial Activities type[(1)]	J11 - Community, Social & Personal Services
Flow per Employee (m^3/day) [(1)]	0.28
Total Estimated Dry Weather Flow (m^3/day)	**6.72**

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Calculation: Sewage Flow Estimation from Proposed Development	Made by: SY	Date: 10/2018	Chd.: YL

(32) Family Room x 10	
GFA for Office (m^2)	220
Area in m^2 per Employee **(Assumed)**	65
Total number of Employee	3
Commercial Activities type[(1)]	J10 - Restaurants & Hotels
Flow per Employee (m^3/day) [(1)]	1.58
Total Estimated Dry Weather Flow (m^3/day)	**5.35**
Overall Golf Development Summary	
Total Estimated Dry Weather Flow (m^3/day)	**485**
Contribution Population	**1,798**
Peaking Factor (with stormwater allowance)	**6**
Peak Flow (with stormwater allowance) (l/sec)	**33.71**

Notes:

[(1)] Flow per employee and the commercial flow type are based on Table T-2, EPD Technical Report No. EPD/TP 1/05.

ARUP	Job No.	Sheet No.	Rev.
	256383	2	A
	Member/Location		
Job Title: Shuen Wan Golf Course	Drg. Ref.	Drawing 2.2	
Calculation: Peak Sewage Flow of Proposed and Existing Sewerage Catchments	Made by: SY	Date: 10/2018	Chd.: YL

Table B1 Sewage Flow Estimation of the Proposed Development

Contributing Sewerage Catchment	ADWF (m^3/day)	Peaking Factor	Peak Flow (l/s)
The proposed development	485	6	33.71

Note:
(1) Refer to Sheet 1 for detail breakdown of the sewage flow estimation of the proposed development.

Table B2 Sewage Flow Estimation of the Existing Contributing Sewerage Catchment at upstream of Manhole FMH1027325 for the existing DN600 along Ting Kok Road

Contributing Sewerage Catchment ID (1)	No of Residents	Total Residents	UFF for (m^3/day)	ADWF of Domestic Flow (m^3/day)	ADWF of Commercial Flow(2) (m^3/day)	Total ADWF (m^3/day)	Total ADWF (m^3/day)	Total ContributingPopulation	Peaking Factor	Total Peak Flow (l/s)
1 (3)	2,509	13,286	0.27	3,587	538.08	4,125	4,611	17,077	4	213
2	3,643									
3	1,134									
4	1,639									
5	1,328									
6	1,845									
7	1,188									
Proposed Development	-					485				

Note:
(1) Refer to Drawing 2.2 for location and extent of the contributing sewerage catchment.
(2) Assume the commercial sewage flow to be 15% of the domestic sewage flow considering the nature of the relevant sewage catchment
(3) To be conservative, assume the population for the southwest corner of the Sewerage Catchment 1 will be 100% of the total population within the sewerage catchment 1

Table B3 Sewage Flow Estimation of the Existing Contributing Sewerage Catchment at upstream of Manhole FMH1027333 for the existing DN600 along Ting Kok Road

Contributing Sewerage Catchment ID (1)	No of Residents	Total Residents	UFF for (m^3/day)	ADWF of Domestic Flow (m^3/day)	ADWF of Commercial Flow(2) (m^3/day)	Total ADWF (m^3/day)	Total ADWF (m^3/day)	Total ContributingPopulation	Peaking Factor	Total Peak Flow (l/s)
1 (3)	2,509	17,713	0.27	4,783	717.38	5,500	5,985	22,168	4	277
2	3,643									
3	1,134									
4	1,639									
5	1,328									
6	1,845									
7	1,188									
8	4,427									
Proposed Development	-					485				

Note:
(1) Refer to Drawing 2.2 for location and extent of the contributing sewerage catchment.
(2) Assume the commercial sewage flow to be 15% of the domestic sewage flow considering the nature of the relevant sewage catchment
(3) To be conservative, assume the population for the southwest corner of the Sewerage Catchment 1 will be 100% of the total population within the sewerage catchment 1

ARUP	Job	Sheet No.	Rev.
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	Member/Location		
Job Title: Shuen Wan Golf Course	Drg. Ref.	Drawing 2.1	
Calculation: Hydraulic Performance of the Downstream Sewerage System	Made by: SY	Date: 10/2018	Chd.: SY

Table B4 - Hydraulic Performanceof Downstream DN600 Sewer

US MH No.	DS MH No.	Length (m)	Number of Pipe	Pipe Diameter (mm	US GL (m MSL)	DS GL (m MSL)	US IL (m MSL)	DS IL (m MSL)	Gradient	Gradient (1 in X)	Area (m2)	Perimeter (m)	R =A/P (m)	$(32gRS)^{0.5}$	Velocity at full bore (m/s)	Total Peak Flow (1) (L/s)	Design Capacity (L/s)	% Full Flow	Full Flow % Check
FMH1027325	FMH1027326	70.0	1	600	18.5	16.6	12.10	11.84	0.0037	269	0.2826	1.9	0.15	0.42	1.32	213	373	57%	OK
FMH1027326	FMH1027327	9.0	1	600	16.6	16.6	11.84	11.80	0.0044	225	0.2826	1.9	0.15	0.46	1.44	213	408	52%	OK
FMH1027327	FMH1027328	38.0	1	600	16.6	14.7	11.80	11.67	0.0034	292	0.2826	1.9	0.15	0.40	1.27	213	358	60%	OK
FMH1027328	FMH1027329	5.0	1	600	14.7	14.7	11.67	11.63	0.0080	125	0.2826	1.9	0.15	0.61	1.94	213	548	39%	OK
FMH1027329	FMH1027330	20.0	1	600	14.7	14.7	11.63	11.54	0.0045	222	0.2826	1.9	0.15	0.46	1.45	213	411	52%	OK
FMH1027330	FMH1027331	32.0	1	600	14.7	12.8	11.54	11.42	0.0037	267	0.2826	1.9	0.15	0.42	1.33	213	375	57%	OK
FMH1027331	FMH1027332	35.0	1	600	12.8	12.8	9.12	8.90	0.0063	159	0.2826	1.9	0.15	0.54	1.72	213	486	44%	OK
FMH1027332	FMH1027333	44.0	1	525	12.8	10.0	8.90	8.50	0.0091	110	0.2164	1.6	0.13	0.61	1.90	213	411	52%	OK
FMH1027333	FMH1030320	61.0	1	600	10.0	10.0	7.30	6.80	0.0082	122	0.2826	1.9	0.15	0.62	1.96	277	555	50%	OK
FMH1030320	FMH1005352	13.0	1	600	10.0	8.2	6.80	6.33	0.0362	28	0.2826	1.9	0.15	1.30	4.13	277	1167	24%	OK
FMH1005352	FMH1000080	26.0	1	600	8.2	5.2	1.24	1.16	0.0031	325	0.2826	1.9	0.15	0.38	1.20	277	340	82%	OK
FMH1000080	TKR No. 5 SPS	7.0	1	600	5.2	5.2	1.16	1.14	0.0029	350	0.2826	1.9	0.15	0.37	1.16	277	327	85%	OK

Note:
(1) Refer to Table B3 of the Sheet 2 for the Estimated Total Peak Flow

Table B5 - Hydraulic Performanceof Downstream DN350 Rising Main from TKR No. 5 SPS to TPSTW

Pipe Diameter (mm)	Area (m2)	Maximum Velocity at full bore (m/s)	Total Peak Flow (1) (L/s)	Design Capacity (L/s)	% Full Flow	Full Flow % Check
350	0.096	3	277	289	96%	OK

Table B6 - Hydraulic Performanceof Downstream TKR No. 5 SPS

Name of Major Facility	Total Peak Flow (1) (L/s)	Design Capacity (L/s)	% Full Flow	Full Flow % Check
TKR No. 5 SPS	277	289	96%	OK

Note:
(1) Assume the capacity of TKR No. 5 SPS is the same of its immiedate upstream sewage rising main