Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Traffic Impact Assessment Study
Final Report
December, 2024

Ozzo Technology (HK) Ltd
15/F, Heng Shan Centre
145 Queen's Road East, Wan Chai, Hong Kong
Tel: 3488 5449 Fax: 3020 0370
http:// www.ozzotec.com

Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Traffic Impact Assessment Study
Final Report
December, 2024

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Prepared / Date	Checked / Date	Approved / Date
0	Draft Report	01/08/2024 AH	08/11/2024 LL	08/11/2024 SC
0a	Draft Report	21/11/2024 AH	06/12/2024 LL	06/12/2024 SC

Table of Content

List of Tables

Page

List of Figures

Appendices

1 INTRODUCTION

1.1 Background

1.1.1 Sai Lam Temple (西林寺), hereafter refers as the "Subject Site", is a historical Buddhist / Taoism Temple in Hong Kong for over 70 years, and occupies an area of about 1,482 m^2 at Sheung Wo Che, Sha Tin. The location of the Site is shown in **Figure 1-1**.

1.1.2 Sai Lam (Salvation) Foundation Limited of Sai Lam Temple, hereafter refers to "the Applicant", intends to regularize the existing pre-cut-off columbarium (hereafter referred as the "Proposed Development") with 10,960 niches sold before 30 June 2017 at the site.

1.1.3 Ozzo Technology (HK) Limited (Ozzo) has been commissioned to undertake a Traffic Impact Assessment (TIA) study to assess the traffic and pedestrian impact to be generated by the Proposed Development onto the road network in the vicinity of the Subject Site. A feasible transport and traffic arrangement plan will be prepared for the Peak Grave Sweeping Days to minimize the traffic impact to the neighbors.

1.2 Objectives of the Study

1.2.1 The main objectives of this TIA Study are:

(i) To gain understanding on the existing traffic conditions during Peak Grave Sweeping Days in the vicinity of the Subject Site.

(ii) To estimate traffic generation / attractions to be induced by the Proposed Development during Peak Grave Sweeping Days;

(iii) To assess the future traffic impact arising from the proposed columbarium development on the surrounding transport network, junction capacities, pedestrian access, and public transport arrangement in the area.

(iv) To appraise the potential traffic impact of the Proposed Development on the surrounding road network within the study area for the assessment year.

(v) To propose solutions to the traffic impact and problems identified in the TIA study if necessary.

1.3 Structure of the Report

1.3.1 After this introduction chapter, this traffic impact assessment report contains the following chapters:

Chapter 2	The Proposed Development;
Chapter 3	Existing Traffic Situation;
Chapter 4	Crowd Management Plans
Chapter 5	Development Traffic Forecast;
Chapter 6	Traffic Impact Assessment;
Chapter 7	Summary and Conclusions.

2 THE PROPOSED DEVELOPMENT

2.1 The Proposed Development

2.1.1 Sai Lam Temple is located at Sheung Wo Che, Shatin as shown in **Figure 1-1**, with a site area of about 1,482 m^2. The Subject Site has 10,960 niches sold before 30 June 2017, of which 3,618 niches are occupied. The latest breakdown of the Temple's niche information is appended in the below table.

Table 2-1 Details of Occupied Niches

Classification	Single-Urn Niche	Double-Urn Niche	Total
No. of Sold & Occupied	2,500	1,118	3,618
No. of Sold but not Yet Occupied	6,405	937	7,342
Total	**8,905**	**2,055**	**10,960**

2.2 Access Arrangements

2.2.1 There is no vehicular access road leading to the site directly, vehicular traffic could pick-up/drop-off passengers for the site at Pai Tau Street. The proposed development does not have any parking nor loading/unloading provisions.

2.2.2 The Subject Site is easily accessible by Public Transport, such as MTR Shatin Station, or Bus/ GMB with about 10 minutes' walk.

2.2.3 Currently, during the Peak Grave Sweeping Days, special traffic arrangement and crowd management will be deployed by the Police at Pai Tau Street and its vicinity to facilitate the crowd control.

3 EXISTING TRAFFIC SITUATION

3.1 Site Location and Study Area

3.1.1 Sai Lam temple is located at Sheung Wo Che, Shatin, as shown in **Figure 1-1**, the Subject Site sits approximately 500m from the Sha Tin MTR Station. Another columbarium project, i.e., To Fuk Shan Tsz sits closely to the Subject Site.

3.1.2 Taking into account the potential impact to be induced by the proposed columbarium development Sha Tin Station and the major junctions near the subject site, the Study Area is identified as shown in **Figure 1-1**.

3.1.3 **Figure 1-1** also shows the road network in the Study Area. The Study Area covers the major road junctions around Sha Tin MTR Station. The junction of Tai Po Road – Sha Tin and Sha Tin Rural Committee Road is a major junction connecting Sha Tin Station and other area within Sha Tin.

3.2 Existing Public Transport Services

3.2.1 The area is well served by public transport services. MTR Sha Tin Station is about 500m walking distance from the Subject Site. In addition, there is a public transport interchange near Sha Tin MTR Station and there are numerous franchised bus routes and Green Minibus Bus (GMB) routes serving the area. The existing public transport services are summarized in **Table 3-1** and indicated in **Figure 3-1**.

Table 3-1 Existing Public Transport Services

Route No.	Terminating Points		Remarks
Franchised Bus Services			
38B	Riviera Gardens	Shek Mun	Weekday services at 07:45
47A	Shui Chuen O	Kwai Fong (South)	Weekday services from 06:45 to 17:05 every 20-30 mins and Saturday services from 07:05 to 08:35 and 09:05 to 22:05 every 30mins and Sunday and Public Holiday services from 07:05 to 22:05 every 30mins
47X	Chun Shek	Kwai Shing (East)	Daily services every 5-20 mins
48X	Wo Che	Bayview Garden	Daily services every 5-20 mins
48P	Fo Tan Chun Yeung Estate	Tsing Lung Tau	Weekday services at 07:35, 08:05, 18:05 and 18:35
49X	Kwong Yuen	Tsing Yi Ferry	Daily services every 6-20 mins
49X*	Shek Mun	Tsing Yi Ferry	Monday to Saturday services at 07:50
49X*	Kwong Yuen	Tsing Yi Ferry	Monday to Saturday services at 07:20 and 07:40
49P	Shatin Central	Tsing Yi Ferry	Monday to Saturday services at 18:40 and 19:00
72	Tai Wo	Cheung Sha Wan	Daily services every 15-30 mins
80K	Sun Chui	Yu Chui Court	Daily services every 12-30 mins
80M	Sui Wo Court	Kowloon Tong Station	Weekday services at 07:05 and 07:30
81	Wo Che	Jordan (West Kowloon Station)	Daily services every 12-30 mins
81K	Sun Tin Wai	Sui Wo Court	Daily services every 9-25 mins
83K	Wong Nai Tau	Shatin Central (Circular)	Daily services every 12-30 mins
83K*	Shek Mun	Shatin Central	Weekday services at 07:15 and 07:25
83S	Wong Nai Tau	Shatin Central	Monday to Saturday services every 12-30 mins at AM and PM peaks
85	Fo Tan (Shan Mei St)	Kowloon City Ferry	Daily services every 20-30 mins
85K	Heng On	Shatin Station	Daily services every 12-25 mins
86	Wong Nai Tau	Mei Foo	Daily services every 15-25 mins
86K	Kam Ying Court	Shatin Station	Daily services every 9-25 mins
86S	Kam Ying Court	Shatin Station	Weekday services at 06:40, 07:00, 07:10, 07:20, 07:30, 07:45 and Saturday services at 07:45
86S*	Ma On Shan Town Centre	Shatin Station	Weekday services at 07:12 and 07:22
88	Sau Mau Ping (Central)	Tai Wai Station	Daily services every 8-30 mins
88K	Hin Keng	Royal Ascot	Daily services every 15-30 mins
88X	Sui Wo Court	Ping Tin	Weekday services from 13:00 to 22:40 every 20-30 mins and Holiday services from 12:40 to 22:40 every 30mins
88X*	Sui Wo Court	Ping Tin	Weekday services from 05:40 to

Route No.	Terminating Points		Remarks
			12:30 every 25-30 mins and Holiday services from 05:40 to 12:10 every 30 mins
89	Lek Yuen	Kwun Tong (Tsui Ping North Estate)	Daily services every 12-30 mins
89X	Shatin Station	Kwun Tong (Tsui Ping Road)	Daily services every 10-25 mins
170	Shatin Station	Wah Fu (Central)	Daily services every 18-30 mins
170*	Shatin Station	Wah Fu (Central)	Sunday and Public Holiday services every 20-30 mins
170	Wah Fu (Central)	Shatin Station	Daily services every 15-30 mins
170*	Wah Fu (Central)	Shatin Station	Sunday services every 15-25 mins
249X	Pok Hong	Tsing Yi Station	Daily services every 15-30 mins
263	Tuen Mun Station	Shatin Station	Daily services every 5-25 mins
269D	Tin Fu	Lek Yuen	Daily services every 6-25 mins
269D*	Tin Fu	Lek Yuen	Weekday services at 07:30
269D*	Tin Shui Wai Station	Lek Yuen	Weekday services at 07:20
280X	Sui Wo Court	Tsim Sha Tsui East (Mody Road)	Daily services every 15-30 mins
280X*	Royal Ascot	Tsim Sha Tsui East (Mody Road)	Weekday services at 07:50
282	Shatin Central	San Tin Wai (Circular)	Daily services every 10-20 mins
283	Shatin Central	Mei Chung Court (Circular)	Daily services every 10-20 mins
284	Shatin Central	Ravana Garden (Circular)	Daily services every 10-20 mins
285	Fo Tan Chun Yeung Estate	Sha Tin Central (Circular)	Daily services every 15-30 mins
289R*	Wong Shek Pier	Shatin Central	Holiday services from 13:15 to 18:45 every 30 mins
299X	Shatin Central	Sai Kung	Daily services every 12-20 mins
798	Tiu Keng Leng Station	Fo Tan (Chun Yeung Estate)	Daily services every 10-20 mins
798A	Tseung Kwan O (Hong Sing Garden)	Sha Tin Station	Weekday services at 07:05
798B	LOHAS Park	Sha Tin Station	Weekday services at 07:05
798X	Tseung Kwan O Industrial Estate	Fo Tan (Chun Yeung Estate)	Weekday service at 7:55
798X	Fo Tan (Chun Yeung Estate)	Tseung Kwan O Industrial Estate	Weekday service at 7:00
798P	Tseung Kwan O Industrial Estate	Tai Wai Station	Weekday service at 8:15
798P	Tai Wai Station	Tseung Kwan O Industrial Estate	Weekday service at 6:40
A41	Shek Mun Estate	Airport (Ground Transportation Centre)	Daily services every 25-35 mins
A41*	Sha Tin (Shek Mun)	Airport (Trial Via CAD HQ)	Weekday services at 06:55
A46	Fo Tan (Royal Ascot)	Airport (Ground Transportation Centre)	Daily service every 30-60 min
E42	Pok Hong	Airport (Ground Transportation Centre)	Daily services every 8-20 mins
E42C	Pok Hong	Aircraft Maintenance Area	Weekday services at 06:05 and 06:25
E42C	Aircraft Maintenance Area	Pok Hong	Weekday services at 18:08 and 20:08

Route No.	Terminating Points		Remarks
E42P	Tung Chung (Yat Tung)	Sha Tin (Pok Hong)	Monday to Saturday services at 06:45, 07:30 and 07:50 and Weekday additional services at 07:05
W3	Sheung Shui	Jordan (West Kowloon Station)	Weekday services from 05:15 to 17 :00 every 30-45 mins and Saturday services from 06:45 to 17:00 every 30-45 mins
Green minibus Services			
27	Hong Kong Science Park	Sha Tin Station	Daily services every 3-15 mins
27	Sha Tin (Pai Tau Street)	Hong Kong Science Park	Daily services every 3-15 mins
27*	Hong Kong Science Park (Phase 3)	Sha Tin (Pai Tau Street)	Weekday services at 18:00 and 18:30
27*	Sha Tin (Pai Tau Street)	Hong Kong Science Park (Phase 3)	Weekday services from 8:00 to 9:00 every 30 mins
27A	Pak Shek Kok (Providence Bay)	Sha Tin Station (Pai Tau Street)	Weekday services from 9:00 to 20:00 every 20 mins and Holiday Services from 7:00 to 20:00 every 20 mins
27A	Pak Shek Kok (Providence Bay)	Sha Tin (Pai Tau Street)	Weekday services from 09:00 to 20:00 every 20 mins and Holiday Services from 7:00 to 20:00 every 20 mins
27A*	Pak Shek Kok (The Horizon)	Sha Tin (Pai Tau Street)	Weekday services from 07:00 to 09:00 every 20 mins
27A*	Sha Tin (Pai Tau Street)	Pak Shek Kok (Providence Bay)	Weekday services from 07:00 to 09:00 every 12-20 mins
27B	Pak Shek Kok (Providence Bay)	Sha Tin (Pai Tau Street)	Daily services from 06:45 to 19:05 every 15-30 mins
60K	Sha Tin Station	Fo Tan Cottage Area	Daily services every 4-6 mins
60K*	Sha Tin Station	Wong Chuk Yeung Village	Daily services at 10:30, 16:30 and 19:30
60K*	Wong Chuk Yeung Village	Sha Tin Station	Daily services at 7:05, 10:50, 16:50 and 19:50
60P	Fo Tan Chun Yeung Estate Public Transport Lay-Bys	Sha Tin Station	Weekday services from 07:45 to 18 :45 every 2-3 mins and Saturday services from 07:45 to 13:45 every 2-3 mins
60R	Sha Tin Station	Penfold Park	Sunday and Public Holiday services from 10:45 to 17:40 every 20 mins
62K	Sha Tin Station	Shatin Lodge	Daily services every 7-15 mins
65A	Wong Nai Tau	Sha Tin Station	Daily services every 5 mins
65A*	Kwong Lam Court	Sha Tin Central	Weekday services from 07:30 to 08:30 every 15 mins
65A*	Wong Nai Tau	Sha Tin Station	Weekday services from 07:00 to 09:00 every 15 mins
66K	Kau To (Circular)	Sha Tin Station	Daily services every 10-15 mins
66K*	Kau To (Circular)	Sha Tin Station	Daily services at 06:25
67A	Shek Mun Estate	Sha Tin Station	Daily services every 10-15 mins
67K	A Kung Kok	Sha Tin Station	Daily services every 10-20 mins

Route No.	Terminating Points		Remarks
68K	Sha Tin Station (Pai Tau Street)	Julimount Garden	Daily services every 7-9 mins
68K	Julimount Garden	Tai Wai Station Public Transport Interchange	Daily services every 7-9 mins
69K	Sha Tin Station (Pai Tau Street)	Ville De Jardin / Greenwood Terrace	Daily services every 4-10 mins
69K	Ville De Jardin / Greenwood Terrace	Sha Tin Station (Pai Tau Street)	Daily services every 4-10 mins
809K	Sha Tin Station (Pai Tau Street)	Shui Chuen Au Street (Circular)	Daily services every 30 mins

*Note: * Special services*
Information updated as of date 2nd August. 2024.

3.3 Existing Traffic Conditions

3.3.1 To reveal the critical traffic conditions in the area during the grave sweeping festival period, traffic count surveys were undertaken at the key locations within the study area. The most critical traffic conditions during the Peak Grave Sweeping Days are anticipated to occur on the Festival Day, i.e., Ching Ming / Chung Yeung Festival Day. Thus, to establish the worst-case scenario, a traffic survey was undertaken on Ching Ming Festival in 2024 (4th April 2024). The locations of vehicular survey are shown in **Figure 3-2**.

3.3.2 All vehicle flows in the subsequent analysis are converted to passenger car unit (PCU) based on the PCU factors indicated in **Table 3-2** in accordance with Table 2.3.1.1 of Volume 2 of "Transport Planning and Design Manual" (TPDM).

Table 3-2 Passenger Car Unit Conversion Factors

Vehicle Type	PCU Conversion Factor (Traffic Signal)
Car / Taxi	1.00
Public Light Bus / Minibus	1.50
Light Goods Vehicle	1.50
Heavy Goods Vehicle	1.75
Bus / Coach	2.00

Source: Table 2.3.1.1, Chapter 2.3, Volume 2, TPDM-2024

3.3.3 By applying the above PCU factors, the hourly vehicular traffic flows in PCUs are calculated and the peak hour is identified to occur at 14:45 – 15:45. **Figure 3-3** shows peak hour traffic flows at the key junctions on 2024 Ching Ming Festival.

3.3.4 Based on the peak hour traffic flows, the performance of the key junctions in the Study Area are assessed. The results are summarized in **Table 3-3** and detailed junction capacity calculation sheets are given in **Appendix A**.

3.3.5 For signal-controlled junctions, the reserve capacity index, R.C., is calculated based on the current cycle time in accordance with the methods stated in Chapter 2.4 of Volume 4 of TPDM.

Table 3-3 2024 Ching Ming Festival Peak Hour Junction Performance

Ref No.	Location	Junction Type	Capacity Index	2024 Ching Ming
				R.C.
J1	Tai Po Rd – Sha Tin Slip Road / Sha Tin Rural Committee Rd	Signalized	R.C(1)	55.7%
J2	Yuen Wo Rd / Sha Tin Rural Committee Rd	Signalized	R.C(1)	57.6%

Notes: (1) R.C. = Reserve Capacity under Current cycle time

3.3.6 The results of the assessment shown in **Table 3-3** indicate that the reserve capacities (RC) of all signal-controlled junctions are greater than 15% and the design flow to capacity.

3.4 Existing Pedestrian Conditions

3.4.1 **Figure 3-4** shows the major pedestrian route to/from the Subject Site. To reveal the existing pedestrian conditions on the area, pedestrian count surveys were undertaken at the major pedestrian desire lines in the study area on Ching Ming Festival in 2024 (4th April 2024) over the time period of 8:00-18:00. The peak hour pedestrian flow has been identified to occur at 10:55-11:55, while the most crowd 5-min occurred at 10:55 – 11:00.

3.4.2 In order to assess the performance of these critical pedestrian links, the levels of services (LOS) of the links are assessed. The descriptions of different Level of Services in accordance with the Highway Capacity Manual (HCM) 2000 are given in **Appendix B** for easy reference. In general, critical session of the pedestrian routes and the results are shown in **Table 3-4**.

Table 3-4 2024 Ching Ming Festival Level of Service (LOS) of Concerned Footpaths

Pedestrian Link(1)	Effective Width (m)(2)	Peak 5-Minute Pedestrian Flows	PMM(3)	LOS(4)
4 April 2024, (Ching Ming Festival, 10:55-11:00)				
P1	4.5	128	5.7	A
P2	4	7	0.4	A
P3	1.5	41	5.5	A
P4	2.6	7	0.5	A
P5	2	41	4.1	A
P6	3.9	28	1.4	A
P7	1.7	85	10.0	A

Notes: *(1) Refers to **Figure 3-4** for locations of surveyed pedestrian links*
(2) Effective Width = Footway Width – 0.5m of shy zone
(3) PMM = Pedestrian flow per minute per meter
*(4) Refer to **Appendix B** for descriptions of LOS*

3.4.3 As indicated in **Table 3-4**, the level of services for the concerned footways are operating satisfactorily with a LOS value of A during the peak period on Ching Ming Festival Day.

4 CROWD MANAGEMENT PLANS

4.1 Introduction

4.1.1 This Chapter details the crowd management measures to be implemented by the Applicant to ensure the efficiency and effectiveness of crowd control during Peak Grave Sweeping Days (i.e., Ching Ming / Chung Yeung Festivals and two weekends before the Festival Day and two weekends after).

4.2 Opening hours

4.2.1 The columbarium operates daily, including weekends and public holidays. On Peak Grave Sweeping Days (i.e., Ching Ming / Chung Yeung Festivals and two weekends before the Festival Day and two weekends after), the columbarium will be open between 08:00-18:00, but closed on Ching Ming / Chung Yeung Festival Days. The detailed opening days during the festival period are listed in the following **Table 4-1.**

Table 4-1 Operation Hours of the Columbarium

	Peak Grave Sweeping Days	Operation Status	Operation Hours
(i)	2nd Saturday before Ching Ming / Chung Yeung Festival Day,	Open	08:00-18:00
(ii)	2nd Sunday before Ching Ming / Chung Yeung Festival Day,	Open	08:00-18:00
(iii)	1st Saturday before Ching Ming / Chung Yeung Festival Day,	Open	08:00-18:00
(iv)	1st Sunday before Ching Ming / Chung Yeung Festival Day,	Open	08:00-18:00
(v)	Ching Ming / Chung Yeung Festival Day	**Close**	--
(vi)	1st Saturday after Ching Ming / Chung Yeung Festival,	Open	08:00-18:00
(vii)	1st Sunday after Ching Ming / Chung Yeung Festival,	Open	08:00-18:00
(viii)	2nd Saturday after Ching Ming / Chung Yeung Festival,	Open	08:00-18:00
(ix)	2nd Sunday after Ching Ming / Chung Yeung Festival, and / or	Open	08:00-18:00
(x)	Weekdays within (i) and (ix)	Open	09:00-18:00

4.3 Admission Control

4.3.1 The Columbarium is a private property in which only niche owners and their family members and relatives with proof or memberships are allowed to enter the Columbarium. Other visitors will only be allowed to access the Columbarium when led and permitted by the staff of the Columbarium.

4.3.2 All niches of Sai Lam Temple have been sold in this case, there is a clause in the original sales agreement that mentions house rules could be subject to changes according to the future development and management of the Temple.

4.3.3 The Sale Agreement for the purchase of niche will include a set of House Rules. The House Rules are to regulate the conduct of the visitors in the user of the niches including the information of traffic and crowd control arrangement on Peak Grave Sweeping Days (i.e., Ching Ming / Chung Yeung Festival Day and two weekends before the Festival Day and two weekends after).

4.3.4 Also, the operator shall specify in all the usage agreements for the columbarium niches that there will be of no parking facilities provided for visitors, and visitors are restricted to use the public transport services to visit the proposed columbarium on Peak Grave Sweeping Days. The operator has the right to reject the access of the proposed columbarium if the niche owners violate the set of House Rules.

4.3.5 Niche purchasers are required to accept a set of House Rules at time of purchase. These House Rules are legally binding on the purchasers in their use of the niches, and are effective in controlling their conduct. This requirement is identical to the provision contained in the columbarium licensing and regulating guidelines issued by the Private Columbarium Licensing Board.

4.3.6 Given the introduction of Private Columbaria Ordinance and the columbarium site requires applying license from Private Columbaria Licensing Board (PCLB). The said conditions to regulate the conduct of visitors would be implementable and enforceable. Any violation to the House Rules and the traffic situation not being controlled as planned, would resulting the revoke of license from PCLB.

4.4 Visit-by-Appointment System

4.4.1 Expecting that large volume of visitors during Peak Grave Sweeping Days, crowd control would be implemented in the vicinity of the columbarium facility.

4.4.2 The columbarium will be closed on the Grave Sweeping Festival Day (Ching Ming / Chung Yeung Festival). Over the two weekends before the Festival Day and two weekends after the Festival Day, in total about 8 days, “Visit-By-Appointment” system will be implemented to control the number of visitors entering the site. Booking by telephone and WhatsApp messages will be available for all visitors.

4.4.3 Two months before the festival periods, the staff will contact the niche purchasers via electronic means (i.e. by phone, email, SMS or WhatsApp) and to arrange appointments with them for individual visits to the Temple for worship during the festival periods regarding the Visit-By-Appointment system and special crowd arrangement. At the same time, in any case, all visitors are strongly advised / encouraged to use public transport to access to the Subject Site.

4.4.4 To further lower down the vehicular traffic visitors will be requested to select mode of transport when booking a reservation, less than 10% visitors are allowed to take private car / taxi that other than Public Transport, and 90% of the visitors are allowed to travel by Public Transport. In fact, all visitors will be highly recommended to access to the Subject Site by Public Transport.

4.4.5 Visitors and their accompanies must reserve a place via the Visit-By-Appointment system on a first come first-serve basis with at least 24 hours prior to their visits to the Columbarium. Via the Visit-By-Appointment system, members will be informed of the following information:

- Visit date;
- Admission time (30-minutes slot);
- Total nos. of visitors permitted during the visit;
- No vehicular access to the Site, No Parking Spaces onsite;
- Reminder to take Public Transportation

4.4.6 Admission control will be performed at the entrance. Visitors are required to register through the booking procedures, and only visitors with valid booking confirmation messages will be allowed to admit the columbarium. Admission cards will be issued when they register at the entrance. Only visitors with the admission cards will be allowed to admit the columbarium buildings. And, they are required to return the cards to the staff when leaving the site. Staffs reserve the right to reject visitors entering the site if visitors arrive late for 30 minutes or do not follow the procedure and make an appointment before their visits.

4.4.7 During the opening days of Peak Grave Sweeping Days, visitors will be allowed to enter the columbarium by sessions. As shown in **Table 4-2**, each hour will be divided into two 30-minutes sessions. The crowd will be controlled and limited to 150 visitors entering the columbarium in each session. Therefore, through entrance control, the number of visitors would be 300 persons per hour (i.e., two 30-minutes sessions with 150 persons per session).

Table 4-2 Visit Profile with Visit-by-Appointment System On Peak Grave Sweeping Days

Session	Time Period (30-Minutes Session)	Number of Visitors	
		In	Out
1	0800 - 0830	150	150
2	0830 - 0900	150	150
3	0900 – 0930	150	150
4	0930 – 1000	150	150
5	1000 – 1030	150	150
6	1030 – 1100	150	150
7	1100 – 1130	150	150
8	1130 – 1200	150	150
9	1200 – 1230	150	150
10	1230 – 1300	150	150
11	1300 – 1330	150	150
12	1330 – 1400	150	150
13	1400 – 1430	150	150

Session	Time Period (30-Minutes Session)	Number of Visitors	
		In	Out
14	1430 – 1500	150	150
15	1500 – 1530	150	150
16	1530 – 1600	150	150
17	1600 – 1630	150	150
18	1630 – 1700	150	150
19	1700 – 1730	150	150
20	1730 - 1800	150	150
	Daily Total	3,000	3,000

4.4.8 As is shown in **Table 4-2**, the daily visitors could be distributed evenly through the whole day, and the peak hour pedestrian flows onto the adjacent road network could be significantly reduced.

4.4.9 **Table 4-2** indicates that a daily total amount of 3000 visitors would be allowed to access the columbarium on Peak Grave Sweeping Days, i.e., two weekends before the Festival Day and two weekends after the Festival Day. With such 8 days' service, at most 24,000 visitors can be served.

4.4.10 Further to the limitations on the number of persons allowed in some of the halls imposed by Building Department, the other hall's holding capacity will be assessed based on the maximum indoor usable floor area in view of fire safety according to "Code of Practice for Fire Safety in Buildings". The detailed usable floor area is listed in **Table 4-3**. The Columbarium will be restricted to accommodate not more than 116 (= 70 visitors limitation by BD + 92.35 / 2) visitors staying in the building at any time.

Table 4-3 Maximum Holding Capacity of the Columbarium Building

Columbarium Hall	Usable Floor Area (UFA sqm)	Maximum Number of Visitors
崇仁堂 (H2)	-	7 (upon BD's requirement)
崇明堂 (H3)	20.54	10
崇光堂 (H3)	-	6 (upon BD's requirement)
崇孝堂 (H4)	12.92	6
崇禮堂 (H4)	13.35	7
崇義堂 (H4)	12.92	7
崇新堂 (H4)	-	29 (upon BD's requirement)
崇高堂 (H5)	13.86	7
崇敬堂 (H5)	18.76	9
崇德堂 (H5)	-	5 (upon BD's requirement)

Columbarium Hall	Usable Floor Area (UFA sqm)	Maximum Number of Visitors
崇福堂 (H5)	-	23 (upon BD's requirement)
Total	**92.35**	**116** = 92.35 / 2 + 70 (upon BD's requirement)

4.4.11 In case of number of visitors exceeding 116 inside the columbarium building, holding area will be provided. The total holding area is about 137 m^2 where can hold about 228 visitors with service level of C.

4.5 Pedestrian / Crowd Management by Applicant

4.5.1 Expecting that large volume of visitors during the peak grave sweeping days, visitors of Sai Lam Temple will be requested to approach it via the requested access footpath, where fewer pedestrians were observed. The proposed route is shown in **Figure 4-1**.

- After walking down the connecting ramp at MTR Shatin station and Pai Tau Street, visitors should turn right to the northeast direction;
- Visitors will then pass through the footpath outside the Leisure and Culture Services Headquarter and across the subway of Flyover of the Shatin Rural Committee Road
- Then turn left to the unnamed concrete footpath and turn right to the local access road for Sai Lam Temple.

4.5.2 A total of 10 management staff / security guards will be deployed and assigned to designated locations. The proposed Manpower deployment plan is shown in **Table 4-4**.

Table 4-4 Manpower Deployment Plan on Peak Grave Sweeping Days

Location	No. of Staff	No. of Security Guards	Major Duties
At Sai Lam Temple Entrance Gate	1		• Welcome and guide visitors to the registry for registration and take admission cards
At Holding Area of Sai Lam Temple near Entrance Gate	2		• Register and implement the admission control • Distribute admission cards to visitors with advanced booking on a first-come-first-serve basis • Direct and give guidance for visitors to designated holding area for waiting or enter the columbarium building batch by batch

Location	No. of Staff	No. of Security Guards	Major Duties
Within Sai Lam Temple area ➢ Patrolling Duties	4		• Monitor the arrival of visitors to walk up the staircase thereat to the columbarium buildings • Supervise the movement of visitors inside the Temple ensuring no conflict bet. • Arrange visitors to queue up at the holding area, and to release them for columbarium halls when available • Check the nearby columbarium halls frequently to ensure smooth and orderly worship activities inside the respective hall • Regulate and control the number of visitors within the maximum holding capacity
Outside Sai Lam Temple ➢ Along the pedestrian route at Pai Tau Street near connecting ramp of MTR station ➢ Along the pedestrian route at rear portion of Pai Tau Street near Leisure and Cultural Services Headquarters ➢ Along the pedestrian route at unnamed concrete footpath leading to the entrance of Sai Lam Temple		3	• Set up directional sign along the major pedestrian route • Stationed at the designated locations to provide guidance to visitors heading to the site during peak period • Conduct crowd control to maintain a smooth and orderly pedestrians' movement • Monitor the in-flow/out-flow of visitors to and from the Temple to maintain a smooth and orderly pedestrians' movement • Liaise closely with staff deployed at the entrance of the Temple for proper release of visitors onto the footpath
Total	7	3	

4.5.3 10 staff / security guards will be deployed to regulate and manage the site, ensuring the smooth operation of the crowd management plan. Visitors with advanced booking will be guide for registration. The management staff will then distribute specific admission cards for the specific hall. Only visitors with the admission cards will be allowed to admit the columbarium buildings. And, they are required to return the cards to the staff when leaving the site.

4.5.4 Each hall has limited card number, which is based on its indoor capacity. If no card left for distribution, it means the hall reaches to its capacity, the visitor will be guided to the holding area to wait in turn.

4.5.5 Staff / security guards will conduct patrol duties during the operation of columbarium to ensure a smooth and orderly visit movement and to regulate and control the number of visitors within the maximum holding capacity both in site and in columbarium buildings at any time. Clear signage to entrance/exit and each hall will be displayed in the site to assist visitors to follow, as shown in **Figure 4-2**.

4.5.6 Additional 3 security guards will also deploy at designated locations along the major pedestrian route which is from Shatin MTR Station and the other bus stations to guide the visitors to reach Sai Lam Temple, as shown in the **Figure 4-1**.

4.6 Other General Management Measures

4.6.1 The Applicant shall undertake to carry out general management measures to enhance the efficiency of the operation of the proposed columbarium.

Advanced Notices

4.6.2 Before the festival days, the Applicant will send SMSs to inform visitors with contact information obtained during the purchasing process regarding the special traffic arrangement prior to the festival days. The sample SMS content is shown below:

清明節期間 (202X 年 4 月 X 日)，您已預約 X 位於 XX:XX-XX:XX 時段訪問本寺，屆時請使用公共交通工具前來拜祭先人。查詢請電：XXXX XXXX

Data Collection and Review of Control Plan

4.6.3 The Applicant shall produce a traffic report for each festival period, summarizing all traffic-related information on the day, such as the number of visitors, number of niches occupied, etc. All the information can be used to evaluate the operation efficiency and effectiveness of the crowd management. At the same time, if necessary, the information can be provided to Hong Kong Police Force, Transport Department, and other relevant government departments such that they can provide comments/ suggestions on the special crowd management. As a result, necessary actions can be taken before the festival period to improve the overall crowd management with an objective to minimize the possible impact to the public.

5 DEVELOPMENT TRAFFIC FORECAST

5.1 Existing Person Trip Generations on Ching Ming Festival Day

5.1.1 Pedestrian count surveys were undertaken at Sai Lam Temple on the Ching Ming Festival Day in 2024. The observed hourly visitor number and hourly trip rates are shown in **Table 5-1**.

Table 5-1 Observed Peak Hour Visitor Trips on Ching Ming Festival Day

Date	Peak Hour Flow (person/hour)		Trip Generation Rates (person/hour/niche)	
	In	Out	In	Out
0800 - 0900	42	7	0.012	0.002
0900 - 1000	165	83	0.046	0.023
1000 – 1100	423	289	0.117	0.080
1100 – 1200	**502**	**489**	**0.139**	**0.135**
1200 – 1300	333	477	0.092	0.132
1300 – 1400	308	313	0.085	0.087
1400 – 1500	226	292	0.062	0.081
1500 – 1600	164	180	0.045	0.050
1600 – 1700	92	144	0.025	0.040
1700 – 1800	19	73	0.005	0.020
Daily Total	2274	2347		

Note: Trip rates calculated based on 3,618 niches occupied as of the survey day

5.2 Estimated Person Trip Generations during Peak Grave Sweeping Days

5.2.1 Given the implementation of Visit-by-Appointment System during Peak Grave Sweeping Days, the maximum hourly visitor number, as detailed in **Table 4-1**, will be limited to 300 persons. As such, not more than 3000 visitors would be allowed to visit the site daily. The estimated peak hour visitor trip rates of the proposed columbarium at the Subject Site is presented in **Table 5-2.**

Table 5-2 Peak Hour Visitor Trip Rates on Peak Grave Sweeping Days

Proposed Development Total 10,960 niches	Visitor Trips			
	Trip Rates (person/hour/niche)		Estimated Peak Hour Flows (person/hour)	
	In	Out	In	Out
Without Visit-by-Appointment System	0.139	0.135	1524	1480
With Visit-by-Appointment System(1)	0.027	0.027	300	300

Note: (1) refer to Table 4-2 for the number of visits under Visit-by-Appointment System during Grave Sweeping Days

5.2.2 By implementing the visit-by-appointment system, the daily visitors could be distributed through the whole day and the peak hour pedestrian flows onto the adjacent road network could be significantly reduced.

5.2.3 As discussed in Chapter 4, under the implementation of visit-by-appointment system, the maximum hourly visitor number would be limited to 300 visitors per hour (2 sessions per hour with 150 visitors per session), with not more than 10% are allowed for travel by private car / taxi. The traffic generation of the proposed columbarium is calculated as shown in **Table 5-3**.

Table 5-3 Estimated Peak Hour Vehicular Trips on Peak Grave Sweeping Days

Mode	Percentage	In			Out		
		Visitors/hr	Veh/hr	PCU/hr	Visitors/hr	Veh/hr	PCU/hr
With Visit-By-Appointment							
Car/Taxi(1)	**10%**	30	9	9	30	9	9
Public Transport /Walk	**90%**	270	-	-	270	-	-
Total	**100%**	**300**		**9**	**300**		**9**

Notes: (1) Based on average occupancy of 3.5 persons per vehicle.

5.2.4 As indicated in **Table 5-3**, the estimated peak hour traffic generation by the proposed columbarium will be regulated and only a total of 18 pcu's (9 in and 9 out) will be induced during peak hour on Peak Grave Sweeping Days.

5.2.5 Based on the above discussion, the vehicular trip rates is shown in **Table 5-4**.

Table 5-4 Estimated Peak Hour Vehicular Trip Rates on Peak Grave Sweeping Days

Proposed Development Total 10,960 niches	Visitor Trips			
	Estimated Vehicle Flows (Veh./hour)		Trip Rates (person/hour/niche)	
	In	Out	In	Out
With Visit-by-Appointment System (1)	9	9	0.001	0.001

*Note: (1) refer to **Table 4-2** for the number of peak hour visits under Visit-by-Appointment System during Grave Sweeping Days*

6 TRAFFIC IMPACT ASSESSMENT

6.1 Assessment Approach

6.1.1 As the anticipated licensing year is 2027, the assessment year set for the traffic impact assessment study is 2030, i.e., 3 years from 2027, which will be used as a basis to develop the "Reference scenario" (i.e., without the proposed columbarium development) for comparison against the "Design scenario" (i.e., with the proposed columbarium development) in order to identify the extent of the traffic impact to be induced by the Proposed Columbarium.

6.2 Methodology

6.2.1 In forecasting the future traffic flows on the road network in the Study Area, due considerations are given to the following information and factors:

- Historical traffic data from Annual Traffic Census (ATC) published by Transport Department;
- The forecast population and employment from the 2019-based Territorial Population and Employment Data Matrices (TPEDM) planning data published by Planning Department;
- Committed and planned developments in the Study Area.

6.2.2 The assessment approach is summarized below:

Step1: 2024 Observed Peak Hour Flows (**Figure 3-3**)

Step2: 2030 Background Peak Hour Flows = 2024 Peak Hour Observed Flows x Growth Factor (refer to Section 6.3)

Step3: 2030 Reference Peak Hour Flows = 2030 Background Flows + additional flows from the Existing committed / Planned Developments in the Study Area (refer to Section 6.4)

Step4: 2030 Design Peak Hour Flows = 2030 Reference Flows + additional development flows from the Proposed Development (refer to Section 6)

Step5: potential impact to be induced by the Proposed Development can be assessed by comparing Design Flows against the Reference Flows (refer to Chapter 6).

6.3 2030 Peak Hour Background Flows

6.3.1 The historical trend of traffic conditions in the Study Area was reviewed based on the Annual Average Daily Traffic (AADT) from the Annual Traffic Census (ATC) Report published by Transport Department. **Table 6-1** shows the AADT recorded at the relevant stations in the Study Area and the percent changes from 2017 to 2022. On average, there was an increase of +0.56% per annum in the area over the 5-year period.

Table 6-1 Traffic Data from Annual Traffic Census within Study Area

Statin	Road	Between		2017	2018	2019	2020	2021	2022	Average Annual Growth 2017-2022
5620	Tai Po Rd - Shatin	Shatin Rural Committee Rd	Fo Tan Rd	101,130	101,500	101390	89990	101100	94,750	-1.29%
				-	0.37%	-0.11%	-11.24%	12.35%	-6.28%	
5286	Shing Mun Tunnel	Slip rd C	Tai Po Rd - Shatin	55740	66,260	76640	72,280	76820	72,000	5.25%
				-	18.87%	15.67%	-5.69%	6.28%	-6.27%	
5818	Shatin Rural Committee Rd	Tai Po Rd – Shatin	Yuen Wo Rd	37,950	38,090	38050	35890	37880	34,400	-1.95%
				-	0.37%	-0.11%	-5.68%	5.54%	-9.19%	
5209	Yuen Wo Rd	Wo Che St	Shatin Rural Committee Rd	17,800	20,200	19610	18500	19660	18,420	0.69%
				-	13.48%	-2.92%	-5.66%	6.27%	-6.31%	
5418	Sha Tin Wai Rd	Sha Kok St	Tai Chung Kiu Rd	27,140	27,240	26320	27340	29060	27,230	0.07%
				-	0.37%	-3.38%	3.88%	6.29%	-6.30%	
5414	Yuen Wo Rd	Fo Tan Rd	Wo Che St	19150	19220	18720	19410	20630	19,330	0.19%
				-	0.37%	-2.6%	3.69%	6.29%	-6.30%	
5449	Tai Po Rd - Tai	Shing Ho Rd	Mei Tin Rd	9160	9310	7860	9470	9920	9,480	0.69%
				-	1.64%	-15.57%	20.48%	4.75%	-4.44%	
Total				**268,070**	**281,820**	**288,590**	**272,880**	**295,070**	**275,610**	**0.56%**
				--	**5.13%**	**2.40%**	**-5.44%**	**8.13%**	**-6.60%**	

Source: Annual Traffic Census published by Transport Department.

6.3.2 Reference is also made to the 2019-based Territorial Population and Employment Data Matrices (TPEDM) planning data published by Planning Department. **Table 6-2** presents the population and employment data in Sha Tin District for 2019, 2026 and 2031. As indicated in the table, the population and employment places in Sha Tin District are anticipated to increase by -0.80% and -0.84% p.a. respectively over the period of 2024 - 2030.

Table 6-2 2019-Based TPEDM for Sha Tin District

Category	2019	2024 (1)	2026	2030	2031	2024-2030 Average Growth (% p.a.)
Population	483,000	490,679	493,750	467,630	461,100	-0.80%
Employment Places	200,050	190,193	186,250	180,770	179,400	-0.84%
Total	683,050	680,871	680,000	648,400	640,500	-0.81%

Source: 2019, 2026 & 2031 population and employment places are extracted from 2019-based TPEDM published by Planning Department.

Note: (1) 2024 and 2030 population and employment places are calculated by interpolation between 2019 – 2026 and 2026-2031, respectively

6.3.3 Taking into account the above factors, it is proposed to adopt an average growth rate of **+0.56%** per annum with reference to the growth in Average Annual Traffic Growth rate as shown in **Table 6-1** to estimate the 2030 peak hour Background Traffic Flows in the Study Area.

6.4 2030 Peak Hour Reference Flows

6.4.1 There are several existing committed / known planned columbarium development in Pai Tau Cluster, the locations are shown in **Figure 6-1**.

6.4.2 Based on the published information from Town Planning Board (TPB) and Private Columbaria Licensing Board (PCLB), the status of the known planned columbarium developments in the vicinity are summarized in the following table.

Table 6-3 Adjacent Columbarium Developments

Ref. No.	Location	No. of Niches		Planning Application Status	Temporary Suspension of Liability (TSOL) Application
1	Po Fook Hill Columbarium	Existing 93,360 niches	88,895 sold, 59,474 occupied; 33,886 vacant [4]	Existing PCLB Licensed columbarium	Existing PCLB Licensed columbarium
			Unsold 4,465		
		Additional Proposed 18,000 niches[10]	-	Rejected [A/ST/952] [10]	-
2	Ten Thousand Buddhas Monastery	Proposed 9,115 niches [1]	2,769 sold, 1,445 occupied; 1,324 vacant [1]	Withdrawn [A/ST/980] [1]	TSOL approved (1,533 ashes) [10]
			Unsold 6,346 niches[1]		-
3	Do Wing Yuen	Existing 5,256 niches	5,256 sold, 1891 occupied; 3,365 vacant [3]	Withdrawn [Y/ST/51] [3]	TSOL approved (2,018 ashes) [10]
		Additional Proposed 8,582 niches[3]	-		-
4	Buddhist Wai Chuen Monastery	1,281 niches	1266 ashes in taken, ~15 vacant [5]	Withdrawn [Y/ST/37] [5]	TSOL approved (1,266 ashes) [10]
5	Sin Tin Toa Home for the Aged Columbarium A	3,516 ashes	0 vacant [7]	-	TSOL approved for Columbarium A (3,516 ashes) [10]
	Sin Tin Toa Home for the Aged Columbarium B	3,926 niches	338 sold; 131 occupied; 107 vacant [6]	Withdrawn [A/ST/947] [6]	TSOL approved for Columbarium B (153 ashes) [10]
			Unsold 3,795		
6	Ching Kwok Yuen	237 ashes	0 vacant [7]	-	TSOL approved (237 ashes) [10]
7	Dao Hop Yuen	550 niches	270 sold; 202 occupied; 68 vacant [8]	Withdrawn [Y/ST/59] [8]	TSOL approved (202 ashes) [10]
			280 Unsold		
8	Tsing Lin Tsing She	Existing 1018 niches	664 sold; 494 occupied; 524 vacant [9]	Rejected [Y/ST/39] [9]	TSOL approved (557 ashes) [10]
			354 Unsold		
9	To Fu Shan Tsz	Proposed 24,833 niches	5,927 sold; 1,875 occupied; 22,958 vacant [2]	Withdrawn ([Y/ST/57] [2]	TSOL approved (1,943 ashes) [10]
			18,906 Unsold		

Ref. No.	Location	No. of Niches		Planning Application Status	Temporary Suspension of Liability (TSOL) Application
10	Sai Lam Temple	Proposed 10,960 niches	10,960 sold, 3618 occupied; 7,342 vacant 0 Unsold	Under Planning Application	TSOL approved (3,720 ashes) (10)

Note: Information updated as of 23rd September 2024.
(1) Source from the TIA report of planning application [A/ST/980] updated by June, 2020.
(2) Source from the TIA report of planning application [Y/ST/57] To Fuk Shan Tsz updated by July, 2023.
(3) Source from the TIA report of planning application [Y/ST/51] Do Wing Yuen updated by November, 2022.
(4) Source from the FEHD published management plan of Po Fook Columbarium by August 2022.
(5) Niches number is extracted from the planning application [Y/ST/37] Buddhist Wai Chuen Monastery updated by January, 2018; while occupancy information is extracted from the TSOL application form from PCLB by January 2022.
(6) Source from the RNTPC Paper No. A/ST/947A of Sin Tin Toa Home for the Aged updated by August, 2018
(7) Source from the TSOL application form from PCLB by June 2022.
(8) Source from the S12A Application form of [Y/ST/59] Dao Hop Yuen updated by February, 2024.
(9) Source from the RNTPC Paper No. Y/ST/39 of Tsing Lin Tsing She updated by July, 2018.
(10) Source from the TIA report of planning application [A/ST/952] updated by November, 2018.

6.4.3 At Pai Tau columbaria cluster, despite the Po Fook Hill Columbarium is an existing PCLB licensed columbarium, all the other columbarium need to process with regulation. However, based on the latest published information from TPB, all the other columbaria's planning application have been withdrawn with no further updates yet, except the Applicant's.

Temporary Suspension of Liability (TSOL)

6.4.4 Furthermore, while the columbaria are under their process of regulation, an exemption called Temporary Suspension of Liability (TSOL) is essential to allow the pre-cut-off columbaria to continue general operation **at its current confined scale** while selling or newly letting out of niches is prohibited.

6.4.5 Given the above, the existing PCLB licensed Po Fook Hill columbarium as well as **the niches with the approved TSOL** of all known / committed columbaria at Pai Tau cluster will be considered in the reference scenario assessment.

6.4.6 Furthermore, the assessment to include all the **sold niches** of the known / committed columbaria will be carried out at the **sensitivity test** in Chapter 6.8.

Sunday Peak Adjustment Factor

6.4.7 As presented in Chapter 4, during peak grave sweeping days the Subject Site will be closed on Festival Day (Ching Ming / Chung Yeung Festival) to avoid the day with greatest number of visitors. Therefore, the traffic conditions over the Sunday right next to the Festival Day will be the most critical day for the Subject Site during the peak grave sweeping days. And the Sunday will be assessed in this study.

6.4.8 With reference to the in-house trip generation survey at Sai Lam Temple on Ching Ming Festival 2021 (4th April 2021). It is observed that the peak pedestrian volume occurred on Ching Ming Festival Day, and the peak visitor trips for the weekend next to the festival day will drop significantly. In particular, the peak hour visitor trips of the public holiday (3rd April 2021), i.e., one day before the festival day, is of only about 64% of the festival day volume, while of only about 49% for the one public holiday (5th April 2021) after the festival day. Thus, to be conservative, an adjustment factor of **70%** is to be applied on the observed pedestrian flows on Festival Day to derive the traffic flows of the Sunday.

Concurrent Development Trips

6.4.9 With reference to the proposed management plan / TIA report, after fully occupation of all the available uninterred niches, the estimated peak hour visitor numbers on Festival Day are shown in **Table 6-4**.

6.4.10 Furthermore, the concurrent columbarium development trips on the Sunday will be derived by adopting the adjustment factor of 70% (para. 6.4.8 refers). The estimated peak hour visitor numbers of Po Fook Hill columbarium on Sunday are also shown in **Table 6-4**.

Table 6-4 Estimated Peak Hour Trip Generations of Planned Niches on Peak Grave Sweeping Days – Reference Scenario

Item	Location	No. of Niches	Estimated Peak Hour Visitor Trips (visitors/hr)		Trip Rates (visitors / niche / hr)		Estimated Peak Hour Vehicle Trips (PCU)		Trip Rates (pcu / niche / hr)	
			In	Out	In	Out	In	Out	In	Out
Ching Ming Festival Day										
1	Po Fook Hill Columbarium (1)	93,360 niches (88,895 sold, 59,474 occupied; 33,886 vacant (1)	~6200 (1) Net +2,250	~6,900 (1) Net +2,500	0.066(2)	0.074(2)	228 (3) Net +82	253 (3) Net +92	0.002 (2)	0.003 (2)
Sunday next to Festival Day										
1	Po Fook Hill Columbarium (1)	93,360 niches (88,895 sold, 59,474 occupied; 33,886 vacant (1)	~4,340 (4) Net +1,576	~4,830 (4) Net +1,753	0.046(2)	0.052(2)	160 (3) Net +58	178 (3) Net +65	0.002 (2)	0.002 (2)

Note: (1) Source from the FEHD published management plan of Po Fook Columbarium by August 2022. Visitor Peak Hour 11:30-12:30.
(2) Trip rates = peak hour flows / total 93,360 niches
(3) Modal split is based on Interview survey at Po Fook Hill on 2016 Ching Ming Festival, 13% of the visitors would take private car and Taxi.
(4) Estimated Peak Hour Trips = Trip rate on Ching Ming Festival Day (Table 6-4 item 1 refers) x 33,886(Vacant niches) x 70%

6.4.11 For all niches with the approved TSOL of all known / committed columbaria at Pai Tau cluster – as the TSOL were issued to those ones which have been already sold and occupied, the visitor trips have all been already counted in the existing pedestrian flows. Therefore, **NIL additional trips** would be generated by those niches with **TSOL**. The detailed estimated peak hour visitor numbers on Sunday are shown in **Table 6-5**.

Table 6-5 Estimated Peak Hour Trip Generations of TSOL Approved Niches on Peak Grave Sweeping Days – Reference Scenario

Item	Location	No. of Niches Considered	TSOL Permitted Ashes Number	Peak Hour Visitor Trips of Sold Niches (visitors)		Peak Hour Vehicle Trips of Sold Niches (PCU)	
				In	Out	In	Out
Sunday next to Festival Day							
1	Po Fook Hill Columbarium	93,360 niches 59,474 occupied 33,886 vacant	-	Net +1,576(1)	Net +1,753(1)	Net +58(1)	Net +65(1)
2	Ten Thousand Buddhas Monastery	9,115 niches 1,445 occupied 1,324 vacant	1,533 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
3	Do Wing Yuen	5,256 niches 1891 occupied 3,365 vacant	2,018 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
4	Buddhist Wai Chuen Monastery	assume 1281 sold, 0 vacant	1,266 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
5	Sin Tin Toa Home for the Aged Columbarium	3,926 niches 131 occupied 3,795 vacant	153 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
6	Ching Kwok Yuen	237 ashes, 0 vacant	237 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
7	Dao Hop Yuen	550 niches 202 occupied 348 vacant	202 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
8	Tsing Lin Tsing She	1018 niches 494 occupied 524 vacant	557 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
9	To Fuk Shan Tsz (2)	24,833 niches 1,875 occupied 22,958 vacant	1,943 ashes	Net +0(2)	Net +0(2)	Net +0(2)	Net +0(2)
10	**The Applicant – Sai Lam Temple**	**10,960 niches 3618 occupied 7,342 vacant**	**3,720 ashes**	**300**	**300**	**9 (3)**	**9 (3)**
Total Net Increase (trips of the Subject Site Sai Lam Temple excluded)				**1576**	**1753**	**58**	**65**
Total Net Increase (trips of the Subject Site Sai Lam Temple included)				**1876**	**2053**	**67**	**74**

Note: (1) Estimated Peak Hour Trips = Trip rate on Ching Ming Festival Day (Table 6-5 item 1 refers) x 33,886(Vacant niches) x 70%

(2) The visitor trips have already been counted in as the existing pedestrian flows, thus NIL additional trips would generate nor attracted.

(3) Peak Grave Sweeping Days Trips Refer to Table 5-3

6.4.12 The additional development trips by the other planned developments on Sunday are then added to the 2030 peak hour Background Traffic Flows to derive the 2030 peak hour Reference Traffic Flows (i.e., without the Proposed Redevelopment) and the results are shown in **Figure 6-2**.

6.5 2030 Peak Hour Design Flows

6.5.1 By adding the peak hour development flows (**Figure 6-3**) to the forecast of 2030 Peak Hour Reference Flows (**Figure 6-2**), the 2030 Peak Hour Design Flows (i.e., with Proposed Development) are derived and shown in **Figure 6-4**.

6.6 Vehicular Traffic Impact Assessment

6.6.1 Based on the 2030 Peak Hour Design Flows, the performance of the key junctions in the vicinity of the Study Area on Peak Grave Sweeping Days is assessed. The results are summarized in **Table 6-6** and detailed calculation sheets are given in **Appendix C**.

Table 6-6 2030 Peak Grave Sweeping Days Peak Hour Junction Performance

Ref No.	Location	Junction Type	Capacity Index	2030 Grave Sweeping Festival Days	
				Reference	Design
J1	Tai Po Rd – Sha Tin Slip Road / Sha Tin Rural Committee Rd	Signalized	R.C(1)	42.4%	41.3%
J2	Yuen Wo Rd / Sha Tin Rural Committee Rd	Signalized	R.C	48.6%	48.1%

Notes: (1) R.C. = Reserve Capacity under Current cycle time

6.6.2 As shown in **Table 6-6**, all the key junctions in the Study Area would still perform satisfactorily for both the Reference Scenario (i.e., without proposed development) and Design Scenario (i.e., with proposed development).

6.7 Pedestrian Impact Assessment

6.7.1 An adjustment factor of 70% is applied on the observed pedestrian flows on Festival Day to derive the traffic flows of the Sunday. Similar to vehicular traffic, an average annual growth rate of **+0.56%** will be applied on 2024 observed to derive the 2030 Peak Hour Background Pedestrian Flows.

6.7.2 The additional visitor flows by the other developments in the vicinity (as indicated in **Table 6-5)** and the Proposed Development are then assigned onto the main pedestrian links. In fact, only To Fuk Shan Tsz and Sin Tin Toa Home for the Aged Columbarium will share the major pedestrian links of Sai Lam Temple, while NIL net increase of trips are from To Fuk Shan Tsz and Sin Tin Toa Home. The detailed results are shown in **Table 6-7**, and the LOS results are calculated and presented in **Table 6-8**.

Table 6-7 Peak 5-min Pedestrian Trips Assignment on the Links

Peak Hour Visitor Number (1)	Po Fook Hill Columbarium(2)		Sai Lam Temple		Total Additional Pedestrian Trips (peds / 5-min)	2030 Background Peak 5-min Flows(3)	2030 Design Peak 5-min Flows
	In	Out	In	Out			
	+1576	+1753	300	300			
Visitor Number / 5-min	+132	+146	+25	+25			
On major pedestrian Links(4)	0	0	+25	+25			
P1	0	0	25	25	50	93	143
P2	0	0	25	-	25	5	30
P3	0	0	-	25	25	30	55
P4	0	0	25	-	25	5	30
P5	0	0	-	25	25	30	55
P6	0	0	25	25	50	20	70
P7	0	0	25	25	50	62	112

Notes: *(1) Refers to **Figure 3-4** for locations of surveyed pedestrian links*
*(2) Refers to **Table 6-5** for adopted visitor numbers*
(3) 2030 Background Peak 5-min Flow = 2024 observed pedestrian flows on Festival Day x 70% Adjustment Factor x (1+0.56% Average Annual Growth Rate)$^{(2030-2024)}$.

Table 6-8 Level of Service of Concerned Footpaths on Peak Grave Sweeping Days - Design Scenario

Pedestrian Link(1)	Effective Width (m)(2)	Daily Peak 5-Minute Pedestrian Flows	PMM(3)	LOS(4)
P1	4.5	143	6.3	A
P2	4	30	1.5	A
P3	1.5	55	7.3	A
P4	2.6	30	2.3	A
P5	2	55	5.5	A
P6	3.9	70	3.6	A
P7	1.7	112	13.1	A

Notes: *(1) Refers to **Figure 3-4** for locations of surveyed pedestrian links*
(2) Effective Width = Footway Width – 1m of shy zone
(3) PMM = Pedestrian flow per minute per meter
(4) Refer to Appendix B for descriptions of LOS

6.7.3 The results indicate that the concerned footways affected by the proposed columbarium development would perform in a satisfactory LOS level during the peak time of the festival days in the design year of 2030 with the proposed development.

6.8 Sensitivity Test

6.8.1 Sensitivity test is carried out to include all the **sold niches** of the known / committed columbaria at Pai Tau cluster, under the assumptions that the sold niches of the adjacent committed / known planned columbarium developments will all be regularized, and to be fully occupied by the year of 2030.

6.8.2 With reference to the proposed management plan / TIA report, the estimated peak hour visitor number to be attracted and generated by **all the planned niches** after fully occupation are shown in **Table 6-9**.

Table 6-9 Estimated Peak Hour Trip Generations of Planned Niches on Peak Grave Sweeping Days – Sensitivity Test

Item	Location	No. of Niches	Ching Ming Festival Day							
			Estimated Peak Hour Visitor Trips (visitors/hr)		Trip Rates (visitors / niche / hr)		Estimated Peak Hour Vehicle Trips (PCU)		Trip Rates (pcu / niche / hr)	
			In	Out	In	Out	In	Out	In	Out
Ching Ming Festival Day										
1	Po Fook Hill Columbarium (1)	Existing 93,360 niches (88,895 sold, 59,474 occupied; 33,886 vacant (1)	~6200 (1) Net +2,250(1)	~6,900 (1) Net +2,500(1)	0.066(17)	0.074(17)	228 (23) Net +82(1)	253 (23) Net +92(1)	0.002(17)	0.003 (17)
2	Ten Thousand Buddhas Monastery(2)	Proposed 9,115 niches (2,769 sold, 1,445 occupied; 1,324 vacant) (2)	Net +119 (3)	Net +119 (3)	0.090 (18)	0.090(18)	Net +3 (3)	Net +3 (3)	0.002(18)	0.002(18)
		Unsold 6,346 (2)	0 (2)	0 (2)	0	0	0 (2)	0 (2)	0	0
3	Do Wing Yuen (4)	Existing 5,256 niches (5,256 sold, 1891 occupied; 3,365 vacant) (4)	90 (5)	90 (5)	0.017(19)	0.017(19)	7 (7)	10 (7)	0.002(6)	0.003 (6)
		Additional Proposed 8,582 niches (4)	0 (4)	0 (4)	0	0	0 (4)	0 (4)	0	0
4	Buddhist Wai Chuen Monastery (8)	1281 niches (assume 1281 sold, 0 vacant (8)	Net +0 (12)	Net +0 (12)	--	--	Net +0 (12)	Net +0 (12)	--	--
5	Sin Tin Toa Home for the Aged Columbarium (9)	3,926 niches (338 sold; 131 occupied; 3,795 vacant) (9)	279 Net+270 (10)	116 Net+114 (10)	0.071 (20)	0.030 (20)	19 Net+19 (10)	8 Net+8 (10)	0.005 (20)	0.002 (20)

Item	Location	No. of Niches	Ching Ming Festival Day							
			Estimated Peak Hour Visitor Trips (visitors/hr)		Trip Rates (visitors / niche / hr)		Estimated Peak Hour Vehicle Trips (PCU)		Trip Rates (pcu / niche / hr)	
			In	Out	In	Out	In	Out	In	Out
6	Ching Kwok Yuen (11)	237 ashes (237 sold, 0 vacant (11)	Net +0 (12)	Net +0 (12)	--	--	Net +0 (12)	Net +0 (12)	--	--
7	Dao Hop Yuen (13)	550 niches (270 sold; 202 occupied; 348 vacant) (13)	37 Net+23 (21)	41 Net+26(21)	0.066 (6)	0.074 (6)	2 Net+1 (21)	2 Net+1 (21)	0.002 (6)	0.003 (6)
8	Tsing Lin Tsing She (14)	1018 niches (664 sold; 494 occupied; 524 vacant) (14)	68 Net+35 (22)	76 Net+39 (22)	0.066 (6)	0.074 (6)	3 Net+2 (22)	4 Net+2 (22)	0.002 (6)	0.003 (6)
9	To Fuk Shan Tsz (15)	24,833 niches (5,927 sold; 1,875 occupied; 22,958 vacant) (15)	450 (16)	450 (16)	0.018 (23)	0.018(23)	13 (16)	13 (16)	0.001 (23)	0.001 (23)
10	**The Applicant – Sai Lam Temple**	**10,960 niches (10,960 sold, 3618 occupied; 7,342 vacant)**	**300**	**300**	**0.027**	**0.027**	**9 (24)**	**9 (24)**	**0.001**	**0.001**
Total Net Increase (trips of the Subject Site Sai Lam Temple excluded)			**3237**	**3336**	**-**	**-**	**127**	**129**	**-**	**-**
Total Net Increase (trips of the Subject Site Sai Lam Temple included)			**3537**	**3636**	**-**	**-**	**136**	**138**	**-**	**-**

Note: *(1) Data extracted from the FEHD published management plan of Po Fook Columbarium by August 2022.*
(2) Information extracted from the TIA report of planning application [A/ST/980] updated by June, 2020. Based on the planning application [A/ST/980], the proposed 6,346 available for sale niches cannot visit on festival day and the Sunday before.
(3) The peak hour visitor trips and vehicle trips of 1,324 uninterred niches are extracted from the TIA report of planning application [A/ST/980] updated by June, 2020, the visitors of 1,324 uninterred niches would come naturally without controlled.
(4) Information extracted from the TIA report of planning application [Y/ST/51] Do Wing Yuen updated by November, 2022.
*(5) The peak hour visitor trips of Do Wing Yuen are extracted from the TIA report of planning application [Y/ST/51] Do Wing Yuen updated by November, 2022. With implementation of **Visit-by-Appointment**, the maximum hourly visitor number (including existing, sold and unoccupied, and proposed additional niches) would be 90 persons*
(6) The peak hour trips are referred to Po Fook Hill trip rate (Table 6-9 item 1)
(7) Estimated Additional Peak Hour Vehicular Trips = Trip rates x uninterred 3365 niches
(8) Niches number is extracted from the planning application [Y/ST/37] Buddhist Wai Chuen Monastery updated by January, 2018, as the 1,281 niches have been already existed and regularised, assuming the 1,281 niches are sold for conservative.
(9) Information extracted from the RNTPC Paper No. A/ST/947A of Sin Tin Toa Home for the Aged updated by August, 2018.
(10) The peak hour visitor trips and vehicle trips are extracted from the TIA report of planning application [A/ST/947] of Sin Tin Toa Home for the Aged Columbarium updated by June, 2018.
Net Peak Hour Vehicular Trips = Trip rates x uninterred 3,795niches
(11) Information is extracted from the TSOL application form from PCLB by June 2022.
(12) 100% of the niches are already occupied, so all the visitor trips have been counted in the existing pedestrian flows, The net increase of this columbarium could be negligible.

(13) Information extracted from the S12A Application form of [Y/ST/59] Dao Hop Yuen updated by February, 2024.
(14) Information extracted from the RNTPC Paper No. Y/ST/39 of Tsing Lin Tsing She updated by July, 2018.
(15) Information extracted from the TIA report of planning application [Y/ST/57] To Fuk Shan Tsz updated by July, 2023.
*(16) The peak hour visitor trips and vehicle trips of To Fuk Shan Tsz are extracted from the TIA report of planning application Y/ST/57] updated by July, 2023. With implementation of **Visit-by-Appointment**, the maximum hourly visitor number would be 450 persons and a total of 26 pcus would be induced.*
(17) Trip rates = peak hour flows / total 93,360 niches
(18) Trip rates = estimated peak hour flows/ uninterred 1,324 occupied niches
(19) Trip rates = peak hour flow / total sold 5,256 niches
(20) Peak Hour trip rates = estimated peak hour flows of total 3,926 niches / total 3,926 niches
(21) Estimated Peak Hour trips = Trip rates x total 550 niches
Net increase = Trip rates x uninterred 348 niches
(22) Estimated Peak Hour trips = Trip rates x total 1,018 niches
Net increase = Trip rates x uninterred 524 niches
(23) Trip rates = peak hour flow / total 24,833 niches
(24) Peak Grave Sweeping Days Trips Refer to Table 5-3

6.8.3 Again, during peak grave sweeping days, the Subject Site will be closed on Festival Day (Ching Ming / Chung Yeung Festival), so the worse-case during the Applicant's operation will be the situations on Sunday right next to the Festival Day. The concurrent columbarium development trips on the Sunday will be derived by applying the adjustment factor of 70% (para. 6.4.8 refers). The detailed estimated peak hour trips all the **sold niches** of the known / committed columbaria at Pai Tau cluster on Sunday are shown in **Table 6-10**.

Table 6-10 Estimated Peak Hour Trip Generations of Sold Niches on Peak Grave Sweeping Days – Sensitivity Test

Item	Location	No. of Niches Considered	Uninterred Niches Number	Peak Hour Visitor Trips of Sold Niches (visitors)		Peak Hour Vehicle Trips of Sold Niches (PCU)	
				In	Out	In	Out
Sunday next to Festival Day							
1	Po Fook Hill Columbarium	93,360 niches (88,895 sold, 59,474 occupied; 33,886 vacant	33,886	Net +1,576	Net +1,753	Net +58	Net +65
2	Ten Thousand Buddhas Monastery	2,769 sold, 1,445 occupied; 1,324 vacant	1,324	Net +84 (1)	Net +84 (1)	Net +2 (2)	Net +2 (2)
3	Do Wing Yuen	5,256 sold, 1891 occupied; 3,365 vacant	3,365	90 (3)	90 (3)	Net+5 (4)	Net+8 (5)
4	Buddhist Wai Chuen Monastery	assume 1281 sold, 0 vacant	0	0 (6)	0 (6)	0 (6)	0 (6)
5	Sin Tin Toa Home for the Aged Columbarium	338 sold; 131 occupied; 207 vacant	207	Net +11 (7)	Net +5 (8)	Net +1 (9)	Net +1 (10)

Item	Location	No. of Niches Considered	Uninterred Niches Number	Peak Hour Visitor Trips of Sold Niches (visitors)		Peak Hour Vehicle Trips of Sold Niches (PCU)	
				In	Out	In	Out
6	Ching Kwok Yuen	237 sold, 0 vacant	0	0 (11)	0 (11)	0 (11)	0 (11)
7	Dao Hop Yuen	270 sold; 202 occupied; 68 vacant	68	Net +4 (12)	Net +4 (13)	Net +1 (14)	Net +1 (15)
8	Tsing Lin Tsing She	664 sold; 494 occupied; 170 vacant	170	Net +8 (16)	Net +9 (17)	Net +1 (18)	Net +1 (19)
9	To Fuk Shan Tsz (2)	5,927 sold; 1,875 occupied; 4,052 vacant	4,052	450 (20)	450 (20)	13 (20)	13 (20)
10	**The Applicant – Sai Lam Temple**	**10,960 niches (10,960 sold)**	**100%**	**300**	**300**	**9 (21)**	**9 (21)**
Total Net Increase (trips of the Subject Site Sai Lam Temple ex cluded)				**2223**	**2395**	**81**	**91**
Total Net Increase (trips of the Subject Site Sai Lam Temple inc luded)				**2523**	**2695**	**90**	**100**

Note: *(1) Peak Hour Trips = Tripe Rate x Uninterred sold niches Number, i.e, 0.090 (Table 6-9 item 2 refers) x 1,324 (Uninterred sold Niches) x 70%*
(2) Veh. Trips =0.002 (Table 6-9 item 2 refers) x 1324 (Uninterred sold Niches) x 70%
*(3) Information extracted from the TIA report of planning application [Y/ST/51] Do Wing Yuen updated by November, 2022. With implementation of **Visit-by-Appointment**, the maximum hourly visitor number (including existing, sold and unoccupied, and proposed additional niches) would be 90 persons.*
(4) Veh. Trips =0.002 (Table 6-9 item 3 refers) x 3365(Uninterred sold niches) x 70%
(5) Veh. Trips =0.003 (Table 6-9 item 3 refers) x 3365(Uninterred sold niches) x 70%
(6) Nearly 99% of the niches are already occupied, so the vast majority visitor trips have been counted in as the existing pedestrian flows, and the net increase of this columbarium could be negligible.
(7) Ped. Trips =0.071 (Table 6-9 item 5 refers) x 207 (Uninterred sold niches) x 70%
(8) Ped. Trips =0.030 (Table 6-9 item 5 refers) x 207 (Uninterred sold niches) x 70%
(9) Veh. Trips =0.005 (Table 6-9 item 5 refers) x 207(Uninterred sold niches) x 70%
(10) Veh. Trips =0.002 (Table 6-9 item 5 refers) x 207 (Uninterred sold niches) x 70%
(11) 100% of the niches are already occupied, so all the visitor trips have been counted in as the existing pedestrian flows, and the net increase of this columbarium could be negligible.
(12) Ped Trips =0.066 (Table 6-9 item 7 refers) x 68 (Uninterred sold niches) x 70%
(13) Ped Trips =0.074 (Table 6-9 item 7 refers) x 68 (Uninterred sold niche) x 70%
(14) Veh. Trips =0.002 (Table 6-9 item 7 refers) x 68 (Uninterred sold niches) x 70%
(15) Veh. Trips =0.003 (Table 6-9 item 7 refers) x 68 (Uninterred sold niches) x 70%
(16) Ped Trips =0.066 (Table 6-9 item 8 refers) x 170 (Uninterred sold niches) x 70%
(17) Ped Trips =0.074 (Table 6-9 item 8 refers) x 170 (Uninterred sold niches) x 70%
(18) Veh. Trips =0.002 (Table 6-9 item 8 refers) x 170 (Uninterred sold niches) x 70%
(19) Veh. Trips =0.003 (Table 6-9 item 8 refers) x 170 (Uninterred sold niches) x 70%
*(20) Information extracted from the TIA report of planning application [Y/ST/57] To Fuk Shan Tsz updated by July, 2023. With implementation of **Visit-by-Appointment**, the maximum hourly visitor number would be 450 persons and a total of 26 pcus would be induced.*
(21) Peak Grave Sweeping Days Trips Refer to Table 5-3

6.9 Sensitivity Test for 2030 Peak Hour Vehicular Flows

6.9.1 For sensitivity test, the additional development trips by the other planned developments (**Table 6-10**) are then added to the 2030 peak hour Background Traffic Flows to derive the 2030 peak hour Reference Traffic Flows (Sensitivity Test Scenario).

6.9.2 By adding the peak hour development flows (**Table 5-3**) to the forecast of 2030 Peak Hour Reference Flows (Sensitivity Test Scenario), the 2030 Peak Hour Design Flows (Sensitivity Test Scenario) are derived.

6.9.3 The assessment results are shown in the following **Table 6-11** and detailed calculation sheets are given in **Appendix D**.

Table 6-11 2030 Peak Grave Sweeping Days Peak Hour Junction Performance – Sensitivity Test Scenario

Ref No.	Location	Junction Type	Capacity Index	2030 Peak Grave Sweeping Days (Sensitivity Test)	
				Reference	Design
J1	Tai Po Rd – Sha Tin Slip Road / Sha Tin Rural Committee Rd	Signalized	R.C(1)	39.1%	38.0%
J2	Yuen Wo Rd / Sha Tin Rural Committee Rd	Signalized	R.C	47.2%	46.7%

Notes: *(1) Refers to **Figure 3-4** for locations of surveyed pedestrian links*
(2) Effective Width = Footway Width – 0.5m of shy zone
(3) PMM = Pedestrian flow per minute per meter

6.9.4 As indicated in **Table 6-11**, all the key junctions in the Study Area would still perform satisfactorily for Design Scenario under sensitivity test.

6.10 Sensitivity Test for 2030 Peak Hour Pedestrian Flows

6.10.1 By adding the additional pedestrian flows of uninterred niches of all the other planned / opened developments (as summarized in **Table 6-10**), In fact, only To Fuk Shan Tsz and Sin Tin Toa Home for the Aged Columbarium will share the major pedestrian links of Sai Lam Temple. The results are shown in **Table 6-12.** and the 2030 Design Scenario are derived and the LOS results are calculated and presented in **Table 6-13**.

Table 6-12 Peak 5-min Pedestrian Trips Assignment on the Links - Sensitivity Test Scenario

Peak Hour Visitor Number (1)	Po Fook Hill Columbarium (2)		[Y/ST/57] To Fuk Shan Tsz (2)		[A/ST/947] Sin Tin Toa Home for the Aged Columbarium (2)		Sai Lam Temple		Total Additional Pedestrian Trips (peds / 5-min)	2030 Background Peak 5-min Flows(3)	2030 Design Peak 5-min Flows
	In	Out	In	Out	In	Out	In	Out			
	+1576	+1753	+450	+450	+11	+5	300	300			
Visitor Number / 5-min	+132	+146	+38	+38	+1	+1	+25	+25			
On pedestrian Links(6)	0	0	+38	+38	+1	+1	+25	+25			
P1	0	0	38	38	1	1	25	25	128	93	221
P2	0	0	38	-	-	-	25	-	63	5	68
P3	0	0	-	38	1	1	-	25	65	30	95
P4	0	0	38	-	-	-	25	-	63	5	68
P5	0	0	38	-	1	1	-	25	65	30	95
P6	0	0	-	38	-	-	25	25	88	20	108
P7	0	0	38	38	-	-	25	25	126	62	188

Notes: *(1) Refers to **Figure 3-4** for locations of surveyed pedestrian links*
*(2) Refers to **Table 6-5** for adopted visitor numbers*
(3) 2030 Background Peak 5-min Flow = 2024 observed pedestrian flows on Festival Day x 70% Adjustment Factor x (1+0.56% Average Annual Growth Rate)$^{(2030-2024)}$.

Table 6-13 Level of Service of Concerned Footpaths on Peak Grave Sweeping Days – Sensitivity Test

Pedestrian Link(1)	Effective Width (m)(2)	Peak 5-Minute Pedestrian Flows	PMM(3)	LOS(4)
P1	4.5	221	9.8	A
P2	4	68	3.4	A
P3	1.5	95	12.6	A
P4	2.6	68	5.2	A
P5	2	95	9.5	A
P6	3.9	108	5.6	A
P7	1.7	188	22.1	B

Notes: *(1) Refers to **Figure 3-4** for locations of surveyed pedestrian links*
(2) Effective Width = Footway Width – 1m of shy zone
(3) PMM = Pedestrian flow per minute per meter
(4) Refer to Appendix B for descriptions of LOS

6.10.2 As shown in **Table 6-13**, the results indicate that all the concerned footways affected by the proposed columbarium development would perform satisfactorily with LOS level in A for Design Scenario under sensitivity test.

7 SUMMARY AND CONCLUSIONS

7.1 Summary of Findings

7.1.1 The Applicant, Sai Lam (Salvation) Foundation Limited, intends to regularize the existing pre-cut-off columbarium at Sai Lam Temple. Ozzo Technology (HK) Limited are commissioned to undertake a traffic impact assessment study for the proposed columbarium development.

7.1.2 The Proposed Development which will provide a total of 10,960 niches, of which 3,618 niches has been occupied. The assessment year is set as 2030, i.e., 3 years from the anticipated licensing year 2027.

7.1.3 Traffic count and Pedestrian count surveys were undertaken during the Ching Ming Festival in 2024. It is identified that the peak hour of traffic flow is 14:45-15:45 and peak hour of visitors of grave sweeping activity is 10:55 -11:55.

7.1.4 To dilute the visitor number as well as minimize the impact of vehicular traffic in the area during the peak grave sweeping days, the columbarium will be closed on Ching Ming / Chung Yeung Festival Day. Other than that, the Applicant will implement “Visit-By-Appointment” System to regulate the number of hourly visitors. Visitors are required to make reservation in advance of their visits, otherwise would be rejected to access the site. The specific circulate route for pedestrians accessing and leaving the Proposed Development has been proposed in the crowd management plan.

7.1.5 Not more than 300 visitors per hour to visit the Proposed Development at the peak hour, it is estimated that around 18 pcu’s (9 in and 9 out) are to be induced by the Subject Site during the peak hour of peak grave sweeping days.

7.1.6 The additional traffic to be induced by the Proposed Development is added to the 2030 Reference Flows to obtain the 2030 Design Flows.

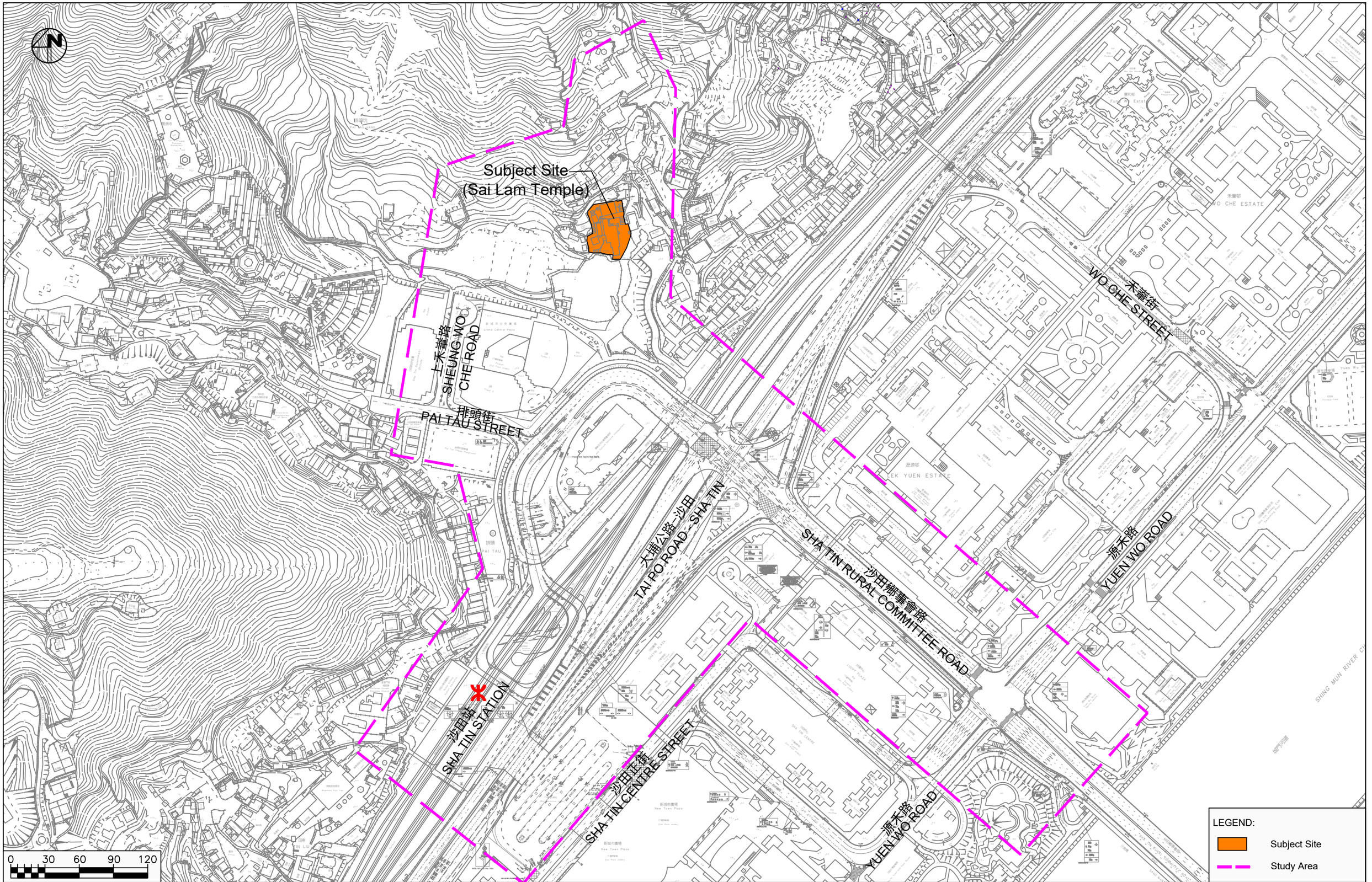
7.1.7 Junction capacity assessments are carried out for all the key junctions within the Study Area. The results indicated that the key junctions would perform satisfactorily in the design year of 2030. The traffic impact to be induced by the proposed columbarium would be acceptable without creating adverse impact to the nearby road network.

7.1.8 Level of Service assessments are also carried out for all the critical pedestrian links within the Study Area. The results indicated that with the implementation of the crowd management plan, all the key pedestrian links would perform satisfactorily in the design year of 2030.

7.2 Conclusion

7.2.1 The results of the traffic impact assessment indicate that, with the implementation of the proposed crowd management measures, the amount of traffic to be induced by the Proposed Development would be small and hence the potential traffic impact to be induced by the proposed columbarium would not pose adverse traffic impact to the road network in the vicinity of the Subject Site.

Figures



X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 1-1.dwg 2024/10/30 10:45:27

OZZO TECHNOLOGY

Date	Scale
30/10/2024	1:3000

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Site Location Plan and Study Area

Project No.	80944	Rev.
Dwg No.	Figure 1-1	-

Subject Site
(Sai Lam Temple)

27, 27A, 27B

68K, 69K,
809K

85K, 86K, 86S, 88X, 89X,
170, 263, 798, 798A,
798B, 798P,798X,W3

60P, 60R, 60K, 62K,
65A, 66K, 67A, 67K

38B, 47A, 47X, 48X, 48P, 49P, 49X,
72, 80K, 80M, 81, 81K, 83K, 83S, 85,
86, 88, 88K, 89, 249X, 269D, 280X,
282, 283, 284, 285, 289R, 299X, 798,
798A, 798B, 798P,798X,A41,A46,E42,
E42C, E42P

SHEUNG WO CHE ROAD 上禾輋路
PAI TAU STREET 排頭街
TAI PO ROAD - SHA TIN 大埔公路 - 沙田
SHA TIN STATION 沙田站
SHA TIN CENTRE STREET 沙田正街
SHA TIN RURAL COMMITTEE ROAD 沙田鄉事會路
YUEN WO ROAD 源禾路
WO CHE STREET 禾輋街
WO CHE ESTATE
EK YUEN ESTATE
Yuen Wo Playground
SHING MUN RIVER CHANNEL

0 30 60 90 120

LEGEND:
- Subject Site
- Bus Stop
- GMB Stop
- MTR
- Study Area

OZZO TECHNOLOGY

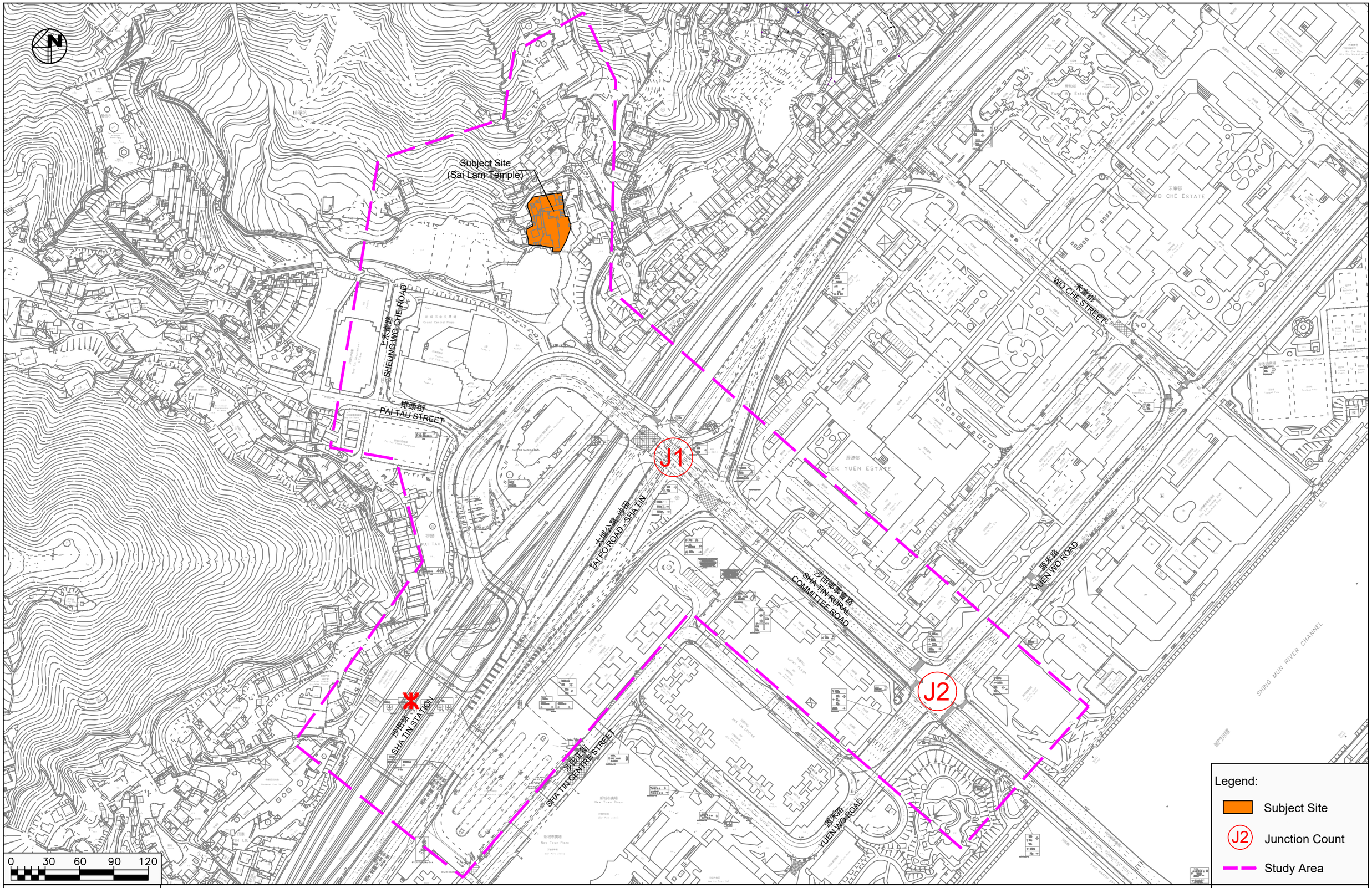
Date 30/10/2024 | Scale 1:3000

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Existing Public Transport Services

Project No. 80944 | Rev. -
Dwg No. Figure 3-1

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 3-1.dwg 2024/10/30 10:47:03



OZZO TECHNOLOGY

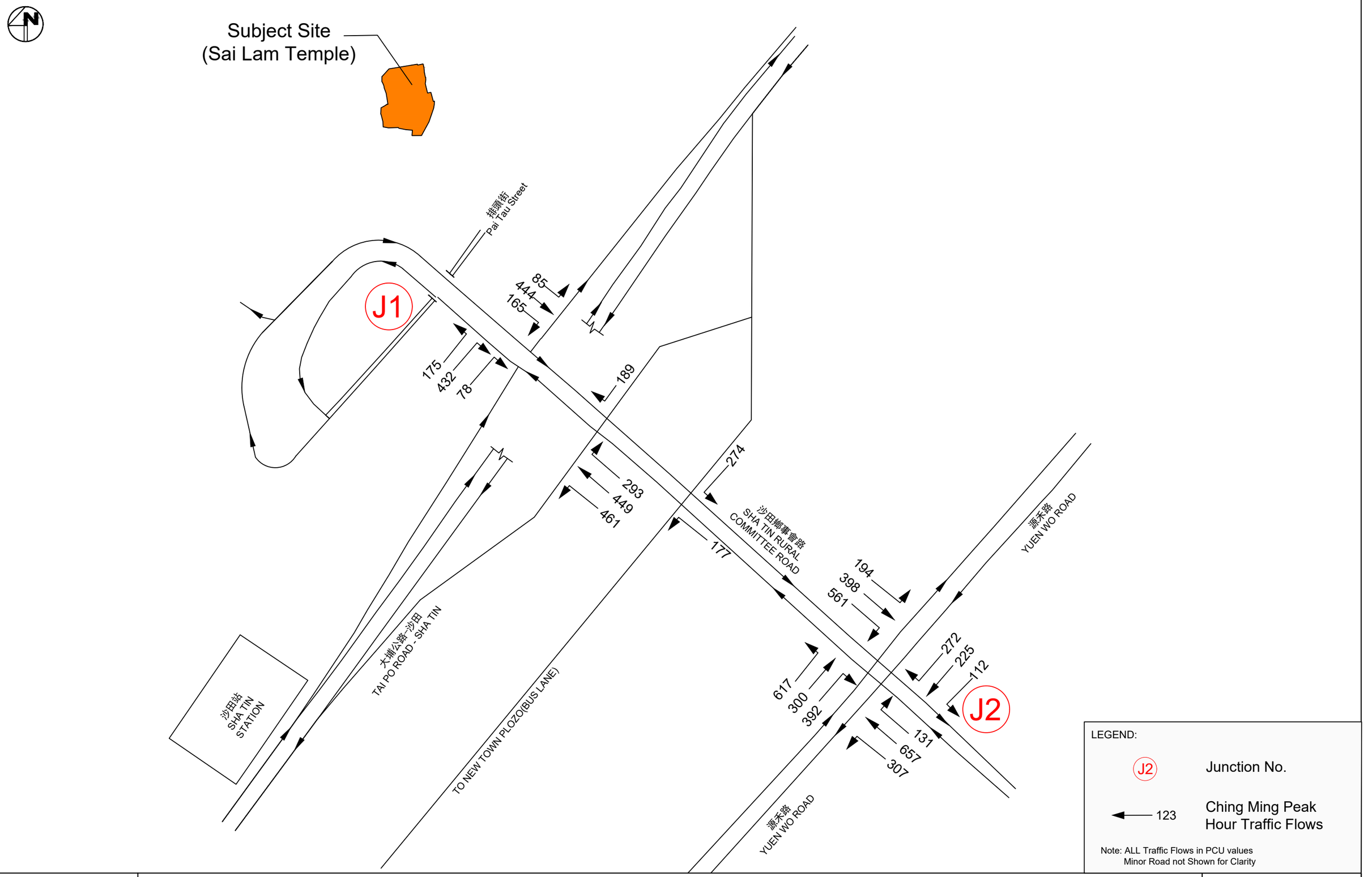
Date	Scale
30/10/2024	1:3000

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Locations of Vehicular Traffic Surveys

Project No.	80944	Rev.
Dwg No.	Figure 3-2	-

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 3-2.dwg 2024/10/30 10:50:45



OZZO TECHNOLOGY

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

2024 Observed Peak Hour Traffic Flows during Ching Ming Festival

Date	Scale
30/10/2024	NTS

Project No.	80944	Rev.
Dwg No.	Figure 3-3	-

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 3-3.dwg 2024/10/30 11:11:15

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 3-4.dwg 2024/10/30 14:54:08

Subject Site
(Sai Lam Temple)

SHEUNG WO CHE ROAD
上禾輋路

排頭街
PAI TAU STREET

PAI TAU VILLAGE
排頭村

大埔公路 - 沙田
TAI PO ROAD - SHA TIN

沙田鄉事會路
SHA TIN RURAL COMMITTEE ROAD

LEK YUEN ESTATE
瀝源邨

Shatin Station
Exit B
Exit A1

P1 5.0m
P2 4.5m
P3 2.0m
P4 3.1m
P5 2.5m
P6 4.4m
P7 2.2m

0 20 40 60 80

Legend:

9 2.5m — Link No.and Footpath Width

Pedestrian Route between Shatin Station and Subject Site

OZZO TECHNOLOGY

Date 30/10/2024 | Scale 1:2000

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Existing Major Pedestrian Route To / From the Subject Site

Project No. 80944 | Rev. -

Dwg No. Figure 3-4

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 4-1.dwg 2024/11/07 14:21:24

Subject Site
(Sai Lam Temple)

P1
5.0m

P2
4.5m

P3
2.0m

P4
3.1m

P5
2.5m

P6
4.4m

P7
2.2m

Shatin Station Exit B

0 20 40 60 80

Legend:

- 9 / 2.5m — Link No.and Footpath Width
- Pedestrian Route From Shatin Station to Subject Site
- Pedestrian Route From Subject Site to Shatin Station
- Site Staff / Security

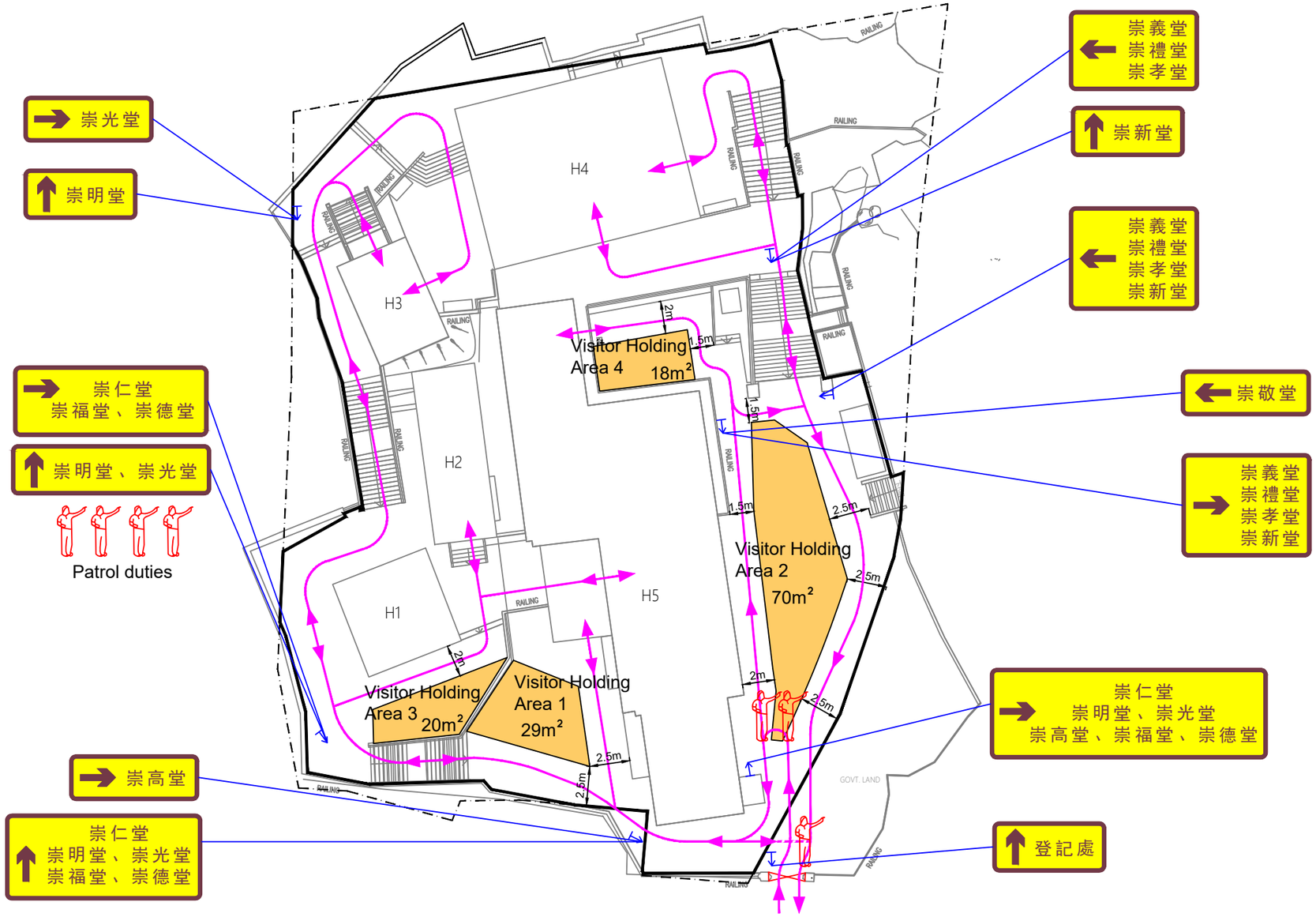
OZZO TECHNOLOGY

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Proposed Pedestrian Route Between the Subject Site and Public Transport Interchange

Date	Scale
30/10/2024	1:2000

Project No.	80944	Rev.
Dwg No.	Figure 4-1	-



Legend:

- Visitor Holding Area
- Lot Boundary
- Site Boundary
- Site Staff / Security
- Main Pedestrian Routing

0 3 6 9 12

OZZO TECHNOLOGY

Date 30/10/2024 | Scale 1:300

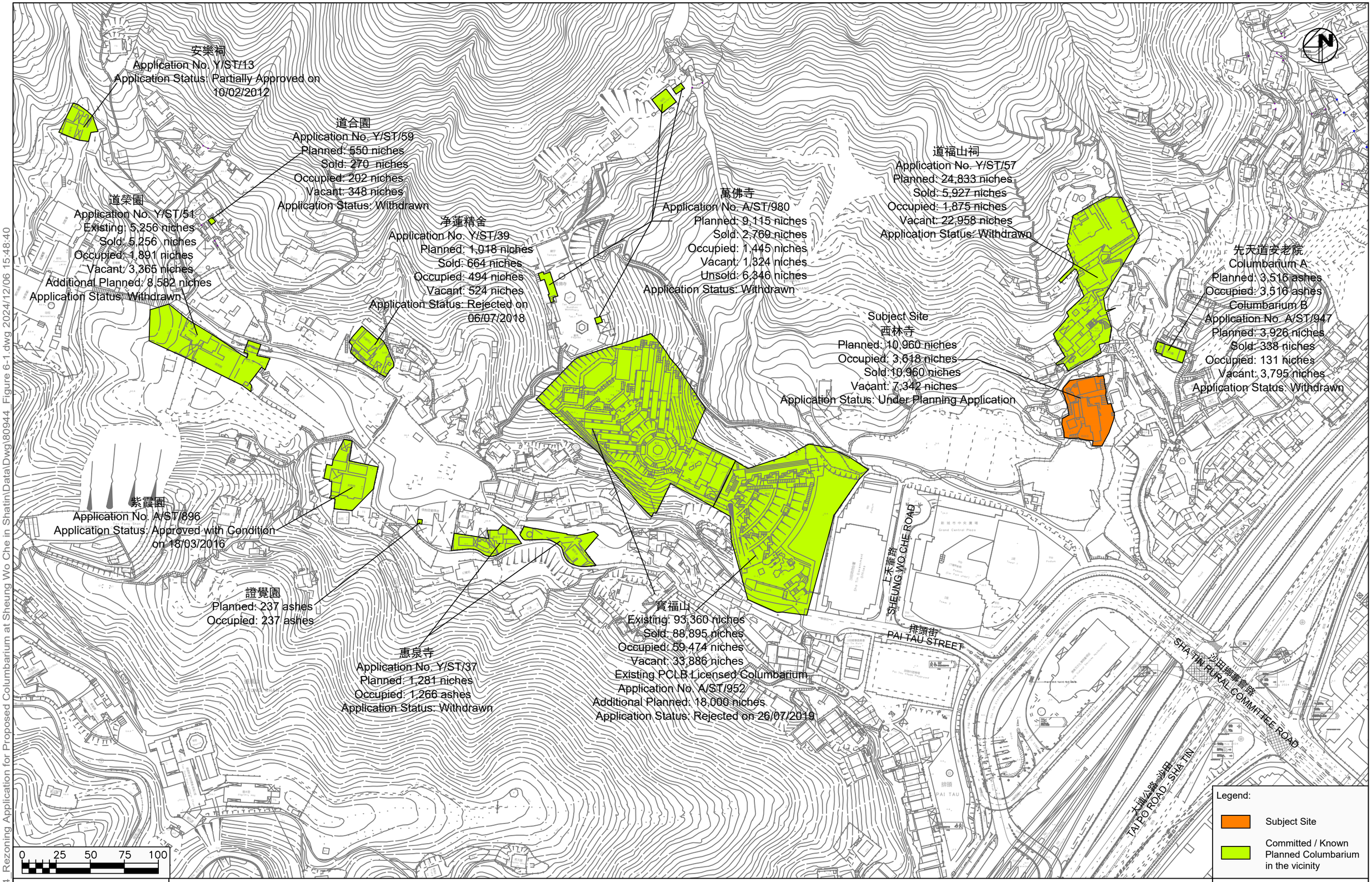
Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Proposed Visitor Holding Area for Sai Lam Temple

Project No. 80944 | Rev. -

Dwg No. Figure 4-2

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 4-2.dwg 2024/10/30 11:01:14



X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 6-1.dwg 2024/12/06 15:48:40

OZZO TECHNOLOGY

Date 30/10/2024

Scale 1:2500

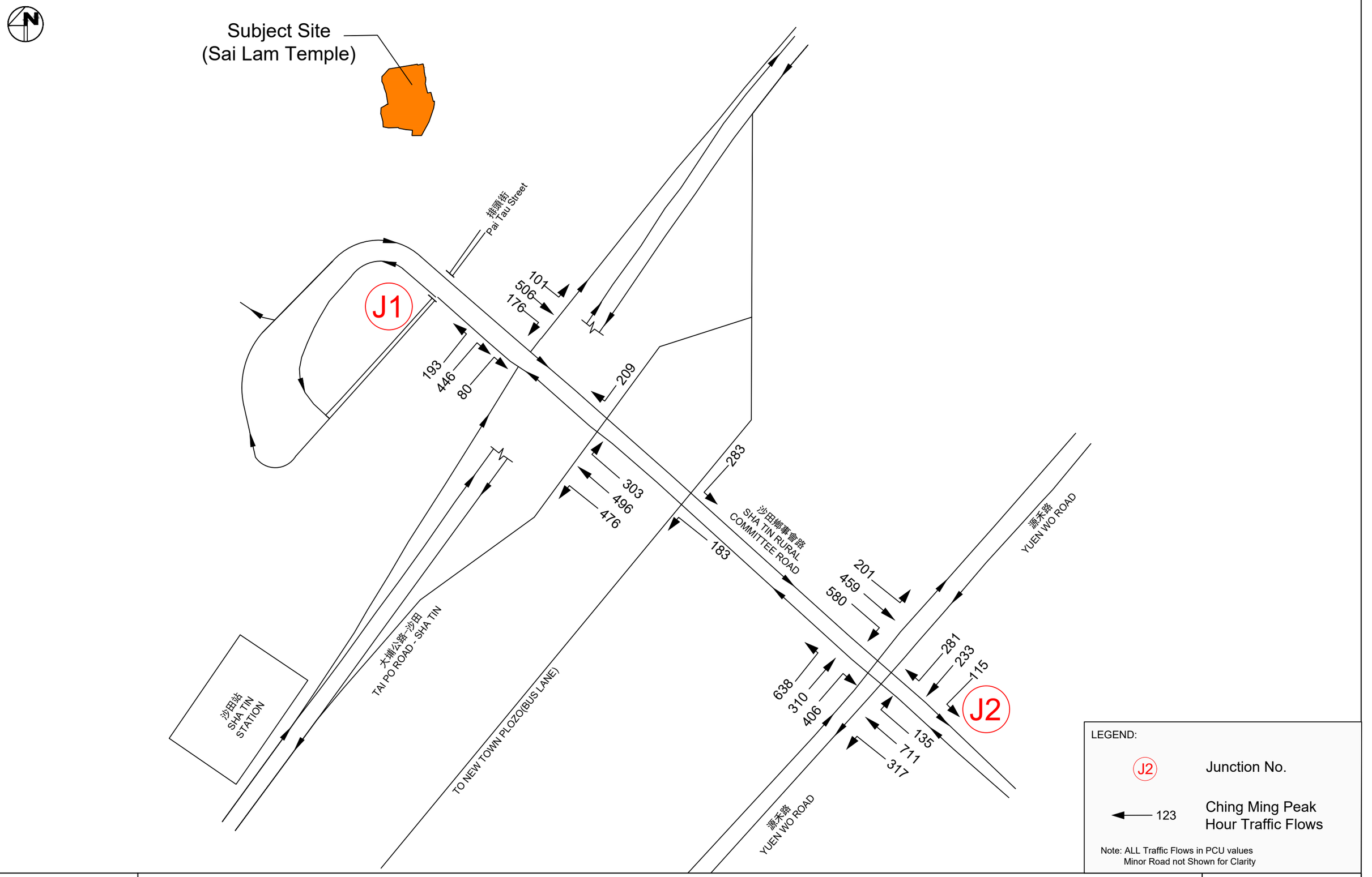
Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Existing and Committed / Planned Columbarium in the Vicinity

Project No. 80944

Dwg No. Figure 6-1

Rev. -



X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944-Figure 6-2_20241107.dwg 2024/11/07 10:34:35

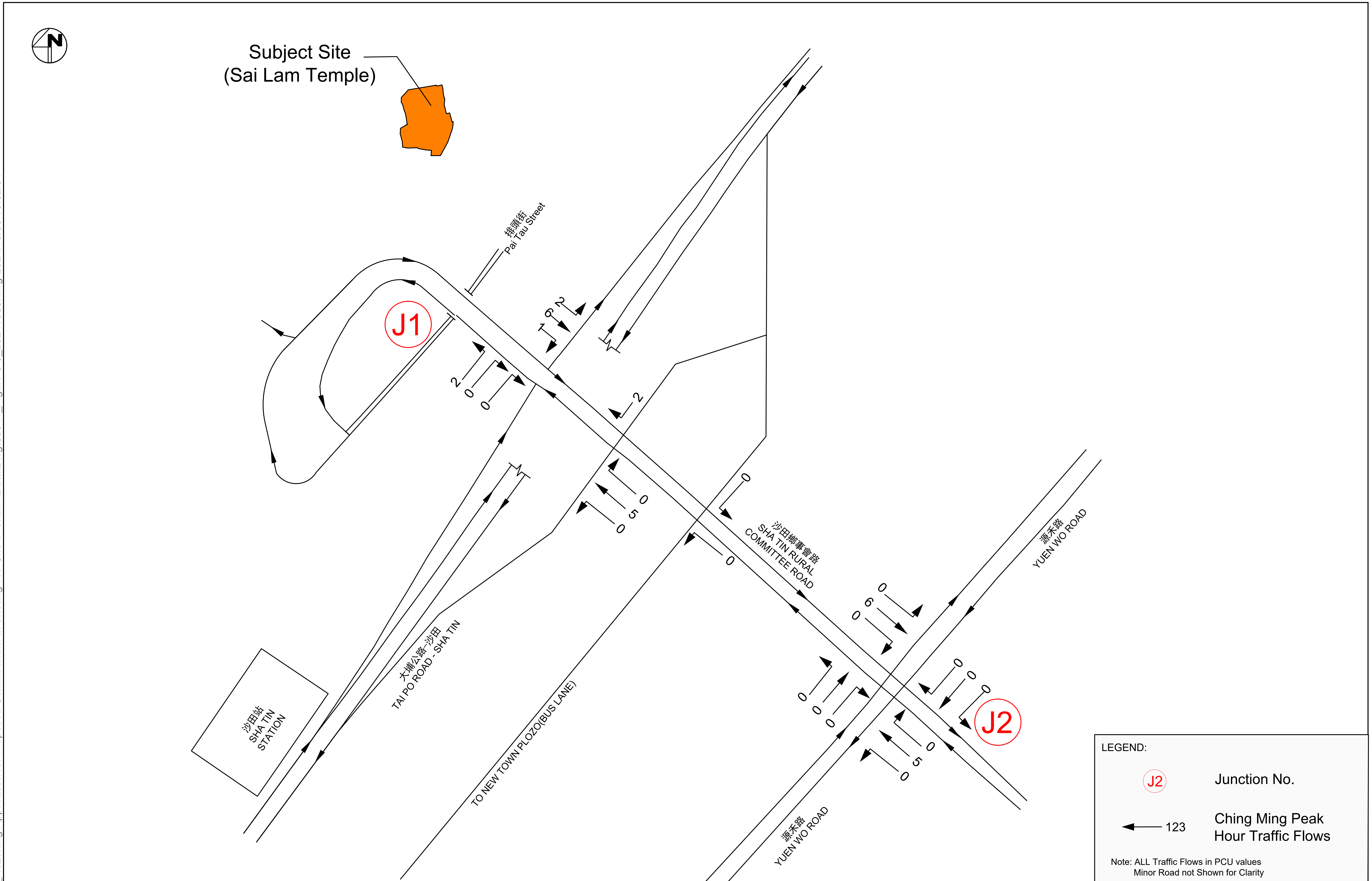
OZZO TECHNOLOGY

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

2030 Reference Peak Hour Flows During Peak Grave Sweeping Days

Date	Scale
07/11/2024	NTS

Project No.	80944	Rev.
Dwg No.	Figure 6-2	-



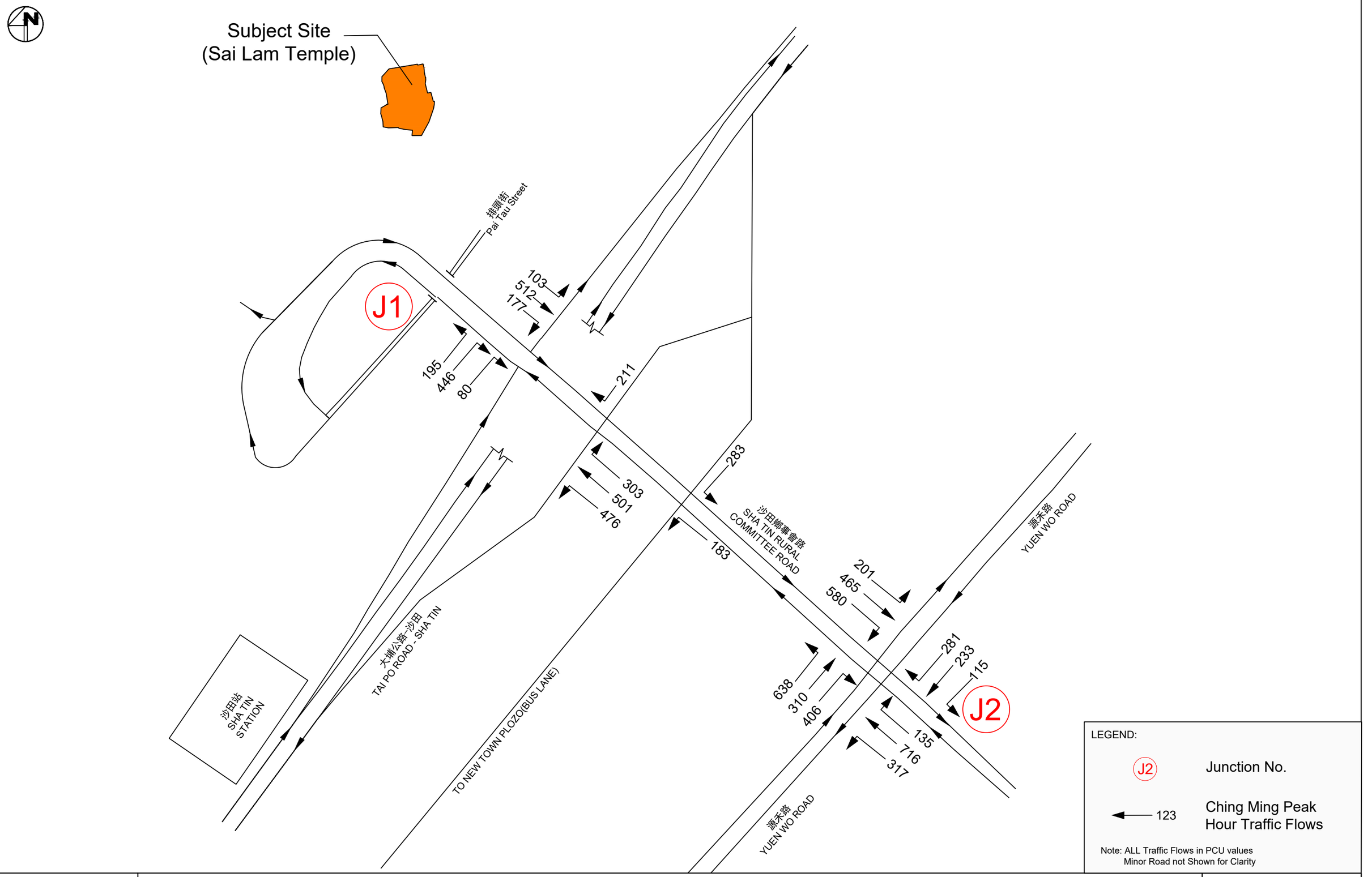
Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

Peak Hour Traffic Flows of the Proposed Development

OZZO TECHNOLOGY

Date 30/10/2024	Scale NTS	Project No. 80944	Rev. -
		Dwg No. Figure 6-3	

X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944_Figure 6-3_20241030.dwg 2024/10/30 15:32:04



X:\Ozzo\80944_Rezoning Application for Proposed Columbarium at Sheung Wo Che in Shatin\Data\Dwg\80944-Figure 6-4_20241107.dwg 2024/11/07 10:33:46

OZZO TECHNOLOGY

Proposed Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin

2030 Design Peak Hour Flows During Peak Grave Sweeping Days

Date	Scale
07/11/2024	NTS

Project No.	80944	Rev.
Dwg No.	Figure 6-4	-

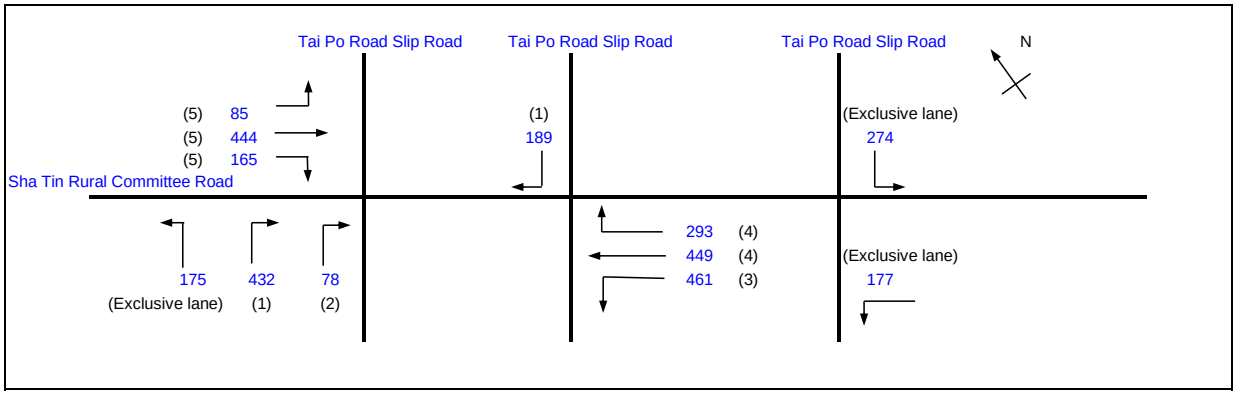
Appendix A

2024 Junction Capacity Calculation Sheets

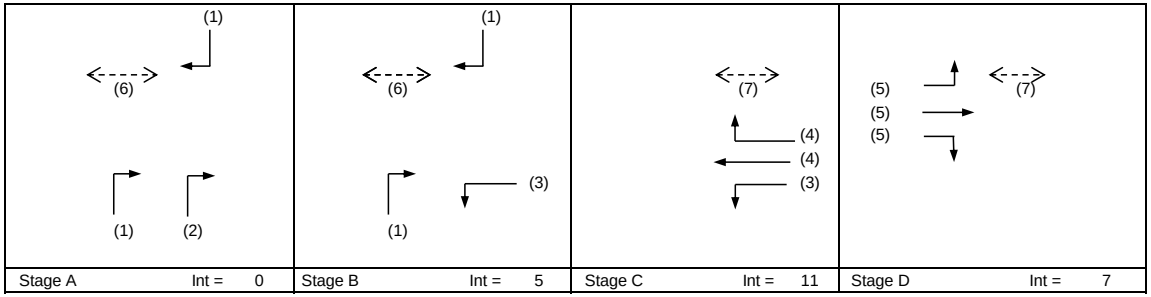
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin	PROJECT NO. 80944	Prepared By:	NL	Nov-24
J1: Sha Tin Rural Committee Road / Tai Po Road - Sha Tin Slip Road	**2024 CM**	Checked By:	LL	Nov-24
2024 Observed Ching Ming Peak Hour Traffic Flows	J1_STRuralCommitteeRd-TaiPoRdSlipRd_S.xlsx	Reviewed By:	SC	Nov-24



		Existing Cycle Time	
No. of stages per cycle	N =	3	
Cycle time	C =	110	sec
Sum(y)	Y =	0.473	
Loss time	L =	20	sec
Total Flow	=	2428	pcu
Co = (1.5*L+5)/(1-Y)	=	66.4	sec
Cm = L/(1-Y)	=	37.9	sec
Yult	=	0.750	
R.C.ult = (Yult-Y)/Y*100%	=	58.6	%
Cp = 0.9*L/(0.9-Y)	=	42.1	sec
Ymax = 1-L/C	=	0.818	
R.C.(P) = (0.9/Xmax-1)*100%	=		%
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	55.7	%



Pedestrian Phase	Stage	Length (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P6	A,D	11	5	9	4	20	14
P7	B,C	5	5	4	4	47	7

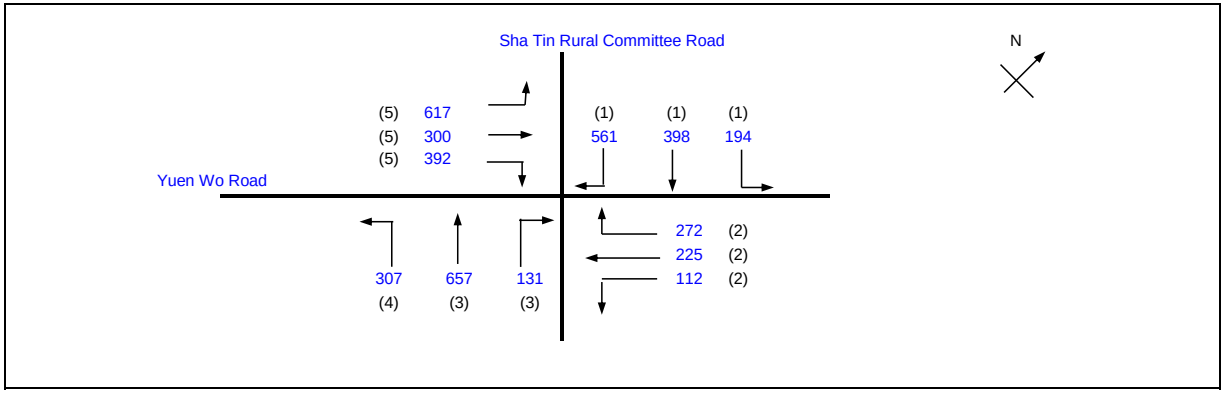
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				20					
RT	A,B	3.70	1	2	50			4250			432	432	1.00	4126			4126	0.105	0.105		20	32	0.359	27	29
RT	A	3.70	2	1	16			2125			78	78	1.00	1943			1943	0.040			8	8	0.548	12	58
RT	A,B	3.90	1	1	60		N	2005			189	189	1.00	1956			1956	0.097			18	32	0.332	24	29
LT	B,C	3.30	3	2	15			4170	293			293	1.00	3791			3791	0.077			15	54	0.158	12	14
SA	C	3.00	4	1				2055		449		449	0.00	2055			2055	0.218	0.218		42	35	0.687	54	35
RT	C	3.00	4	1	25			2055			293	293	1.00	1939			1939	0.151			29	35	0.475	36	29
LT	D	3.30	5	1	15		N	1945	85			85	1.00	1768			1768	0.048			9	23	0.231	12	34
SA	D	3.20	5	1				2075		311		311	0.00	2075			2075	0.150	0.150		29	23	0.716	42	46
SA/RT	D	3.20	5	1	20			2075		133	165	298	0.55	1992			1992	0.150			29	23	0.716	42	46

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

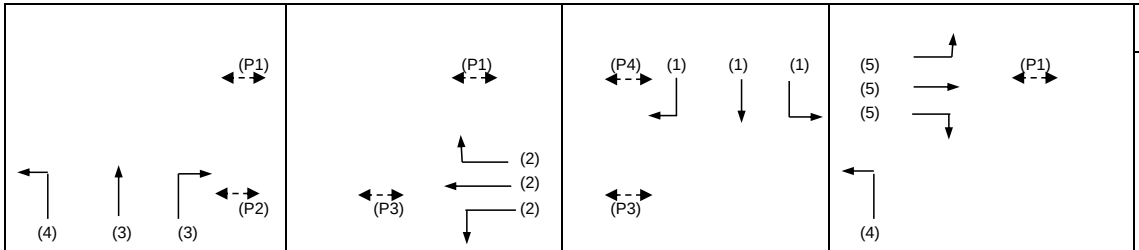
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Ch	**2024 CM**	PROJECT NO.: 80944	Prepared By:	SYC	Nov-24
J2: Yuen Wo Road / Sha Tin Rural Committee Road		FILENAME :	Checked By:	LL	Nov-24
2024 Observed Ching Ming Peak Hour Traffic Flows		J2_YuenWoRd-STRuralCommitteeRd_S	Reviewed By:	SC	Nov-24



			Existing Cycle Time
No. of stages per cycle	N =		4
Cycle time	C =		110 sec
Sum(y)	Y =		0.488
Loss time	L =		16 sec
Total Flow	=		4005 pcu
Co	= (1.5*L+5)/(1-Y)	=	56.7 sec
Cm	= L/(1-Y)	=	31.3 sec
Yult	=		0.780
R.C.ult	= (Yult-Y)/Y*100%	=	59.8 %
Cp	= 0.9*L/(0.9-Y)	=	35.0 sec
Ymax	= 1-L/C	=	0.855
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	57.6 %



Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B,D	13	5	11		111	11
P2	A	10	5	8		53	8
P3	B,C	20	5	17		49	17
P4	C	10	5	8		21	8

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				16					
LT	A,D	3.30	4	2	10		N	4030	307			307	1.00	3504			3504	0.087			17	53	0.026	12	15
SA	A	3.50	3	2				4210		438		438	0.00	4210			4210	0.104	0.104		20	25	0.067	30	34
SA/RT	A	3.50	3	1	50			2105		219	0	219	0.00	2105			2105	0.104			20	25	0.067	30	36
RT	A	3.50	3	1	45			2105			131	131	1.00	2037			2037	0.064			12	25	0.041	18	33
LT	B	3.50	2	1	15		N	1965	101			101	1.00	1786			1786	0.056	0.056		11	23	0.039	12	34
LT/SA	B	3.50	2	1	20			2105	11	107		118	0.09	2090			2090	0.056			11	23	0.039	12	34
SA	B	3.50	2	1				2105		119		119	0.00	2105			2105	0.056			11	23	0.039	12	34
RT	B	3.50	2	2	10			4210			112	112	1.00	3661			3661	0.030			6	21	0.023	6	34
LT	C	3.00	1	1	15		N	1915	194			194	1.00	1741			1741	0.112	0.163		21	21	0.085	24	43
LT/SA	C	3.00	1	1	18			2055	0	335		335	0.00	2055			2055	0.163			31	21	0.124	54	40
SA/RT	C	3.00	1	1	20			2055		63	253	316	0.80	1939			1939	0.163			31	21	0.124	54	39
RT	C	3.00	1	1	17			2055			308	308	1.00	1888			1888	0.163			31	21	0.124	54	39
LT	D	3.50	5	1	15		N	1965	294			294	1.00	1786			1786	0.165	0.165		32	25	0.105	42	46
LT/SA	D	3.50	5	1	20			2105	323	0		323	1.00	1958			1958	0.165			32	25	0.105	42	45
SA	D	3.50	5	2				4210		300		300	0.00	4210			4210	0.071			14	25	0.046	21	33
RT	D	3.50	5	2	10			4210			392	392	1.00	3661			3661	0.107			21	25	0.069	27	35

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

Appendix B

Guidelines of Level of Services for Pedestrians

Appendix C

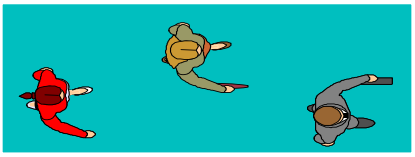
Description of Level-of-Service (LOS)

LOS	Flow Rate (ped/min/m)	Description
A	≤ 16	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
B	16 - 23	Sufficient space is provided for pedestrians to freely select their walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.
C	23 - 33	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in unidirectional stream. Where reverse direction or crossing movement exists, minor conflicts will occur, and speed and volume will be somewhat lower.
D	33 - 49	Freedom to select individual walking speeds and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflicts is high and its avoidance requires changes of speeds and position. The LOS provides reasonable fluid flow; however considerable friction and interactions between pedestrians are likely to occur.
E	49 - 75	Virtually, all pedestrians would have their normal walking speeds restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass over slower pedestrians. Cross- and reverse-movement are possible only with extreme difficulties. Design volumes approach the limit of walking capacity with resulting stoppages and interruptions to flow.
F	> 75	Walking speeds are severely restricted. Forward progress is made only by shuffling. There are frequent and unavoidable conflicts with other pedestrians. Cross- and reverse-movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristics of queued pedestrians than of moving pedestrian streams.

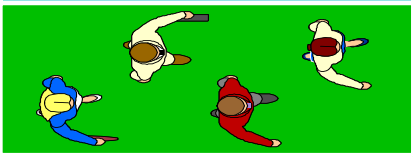
Graphical Presentation of LOS

Level A
>3.25

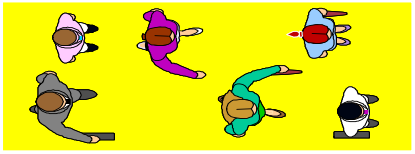
Level B
3.25-2.30



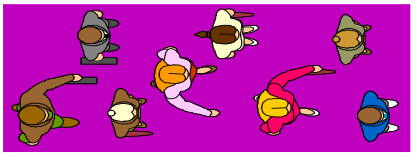
Level C
2.30-1.39



Level D
1.39-



Level E
0.93-



Level F
<0.46

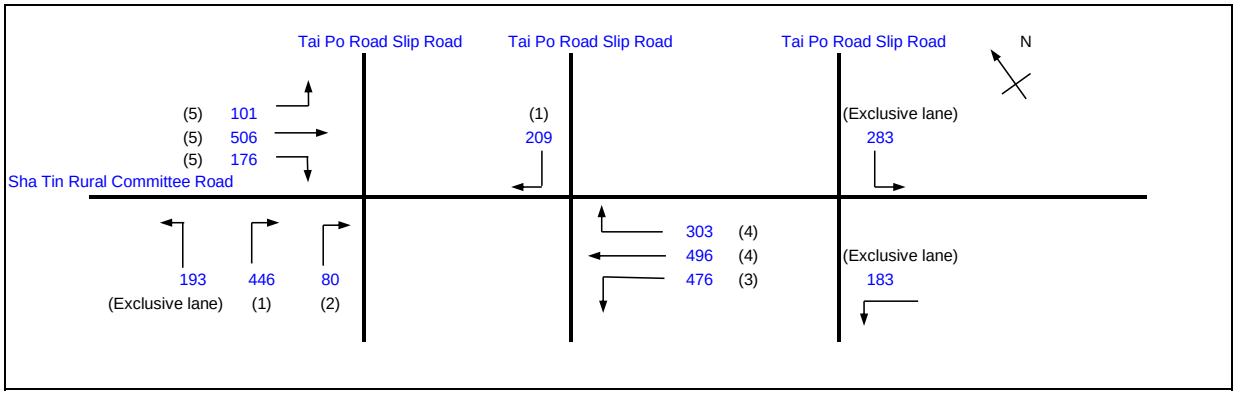
Appendix C

2030 Junction Capacity Calculation Sheets

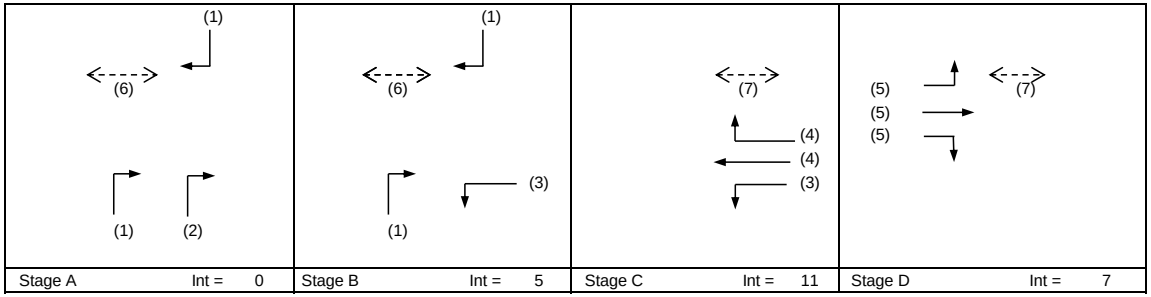
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin	PROJECT NO. 81262	Prepared By:	NL	Nov-24
J1: Sha Tin Rural Committee Road / Tai Po Road - Sha Tin Slip Road	**2030 Ref**	Checked By:	LL	Nov-24
2030 Ching Ming Reference Peak Hour Traffic Flows	FILENAME : J1_STRuralCommitteeRd-TaiPoRdSlipRd_S.xlsx	Reviewed By:	SC	Nov-24



		Existing Cycle Time	
No. of stages per cycle	N =	3	
Cycle time	C =	110	sec
Sum(y)	Y =	0.517	
Loss time	L =	20	sec
Total Flow	=	2621	pcu
Co = (1.5*L+5)/(1-Y)	=	72.5	sec
Cm = L/(1-Y)	=	41.4	sec
Yult	=	0.750	
R.C.ult = (Yult-Y)/Y*100%	=	45.0	%
Cp = 0.9*L/(0.9-Y)	=	47.0	sec
Ymax = 1-L/C	=	0.818	
R.C.(P) = (0.9/Xmax-1)*100%	=		%
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	42.4	%



Stage A	Int = 0	Stage B	Int = 5	Stage C	Int = 11	Stage D	Int = 7

Pedestrian Phase	Stage	Length (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P6	A,D	11	5	9	4	20	14
P7	B,C	5	5	4	4	47	7

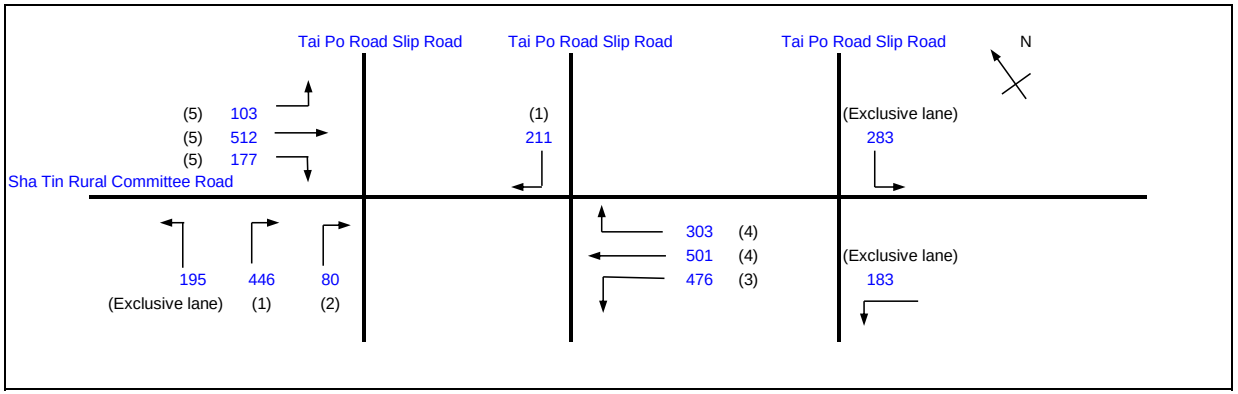
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				20					
RT	A,B	3.70	1	2	50			4250			446	446	1.00	4126			4126	0.108	0.108		19	32	0.372	27	29
RT	A	3.70	2	1	16			2125			80	80	1.00	1943			1943	0.041			7	8	0.567	12	59
RT	A,B	3.90	1	1	60		N	2005			209	209	1.00	1956			1956	0.107			19	32	0.368	24	30
LT	B,C	3.30	3	2	15			4170	303			303	1.00	3791			3791	0.080			14	54	0.163	12	14
SA	C	3.00	4	1				2055		496		496	0.00	2055			2055	0.242	0.242		42	35	0.759	60	38
RT	C	3.00	4	1	25			2055			303	303	1.00	1939			1939	0.156			27	35	0.492	36	30
LT	D	3.30	5	1	15		N	1945	101			101	1.00	1768			1768	0.057			10	23	0.274	12	34
SA	D	3.20	5	1				2075		347		347	0.00	2075			2075	0.167	0.167		29	23	0.801	54	52
SA/RT	D	3.20	5	1	20			2075		159	176	334	0.53	1996			1996	0.167			29	23	0.801	48	53

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

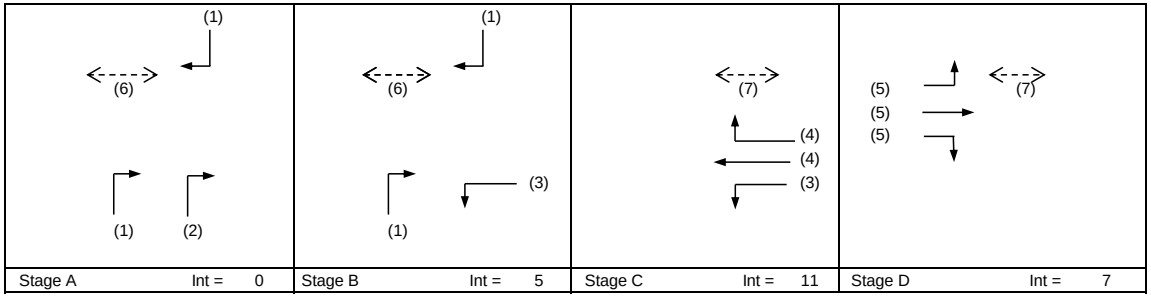
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin	PROJECT NO. 81262	Prepared By:	NL	Nov-24
J1: Sha Tin Rural Committee Road / Tai Po Road - Sha Tin Slip Road	**2030 Des**	Checked By:	LL	Nov-24
2030 Ching Ming Design Peak Hour Traffic Flows	FILENAME : J1_STRuralCommitteeRd-TaiPoRdSlipRd_S.xlsx	Reviewed By:	SC	Nov-24



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	110	sec
Sum(y)		Y =	0.521	
Loss time		L =	20	sec
Total Flow		=	2637	pcu
Co	= (1.5*L+5)/(1-Y)	=	73.1	sec
Cm	= L/(1-Y)	=	41.8	sec
Yult		=	0.750	
R.C.ult	= (Yult-Y)/Y*100%	=	43.9	%
Cp	= 0.9*L/(0.9-Y)	=	47.5	sec
Ymax	= 1-L/C	=	0.818	
R.C.(P)	= (0.9/Xmax-1)*100%	=		%
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	41.3	%



Pedestrian Phase	Stage	Length (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P6	A,D	11	5	9	4	20	14
P7	B,C	5	5	4	4	47	7

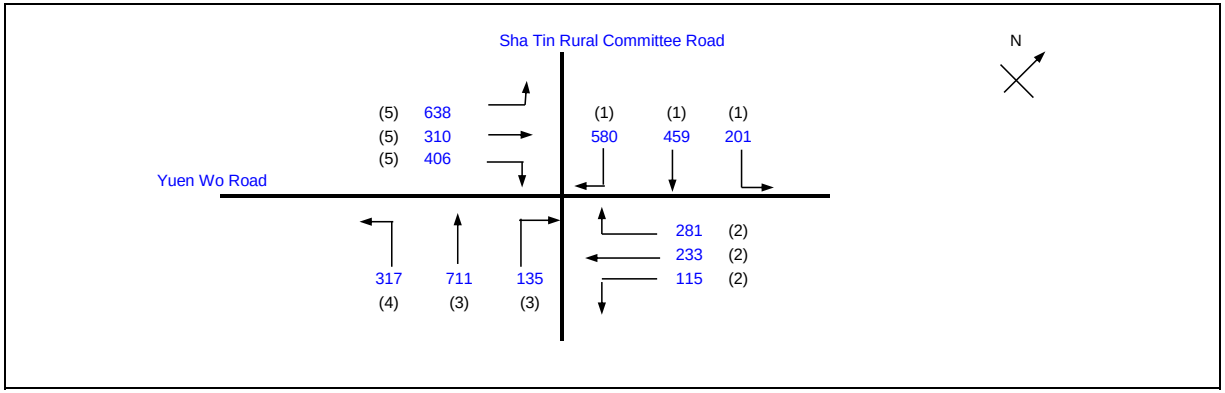
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				20					
RT	A,B	3.70	1	2	50			4250			446	446	1.00	4126			4126	0.108	0.108		19	32	0.372	27	29
RT	A	3.70	2	1	16			2125			80	80	1.00	1943			1943	0.041			7	8	0.567	12	59
RT	A,B	3.90	1	1	60		N	2005			211	211	1.00	1956			1956	0.108			19	32	0.372	24	30
LT	B,C	3.30	3	2	15			4170	303			303	1.00	3791			3791	0.080			14	54	0.163	12	14
SA	C	3.00	4	1				2055		501		501	0.00	2055			2055	0.244	0.244		42	35	0.767	60	39
RT	C	3.00	4	1	25			2055			303	303	1.00	1939			1939	0.156			27	35	0.492	36	30
LT	D	3.30	5	1	15		N	1945	103			103	1.00	1768			1768	0.058			10	23	0.279	12	35
SA	D	3.20	5	1				2075		351		351	0.00	2075			2075	0.169	0.169		29	23	0.809	54	53
SA/RT	D	3.20	5	1	20			2075		161	177	338	0.52	1997			1997	0.169			29	23	0.809	54	54

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

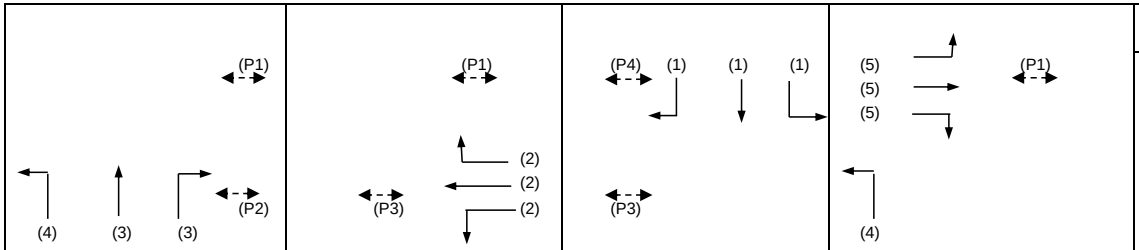
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Ch	**2030 Ref**	PROJECT NO.: 80944	Prepared By:	SYC	Nov-24
J2: Yuen Wo Road / Sha Tin Rural Committee Road		FILENAME :	Checked By:	LL	Nov-24
2030 Ching Ming Reference Peak Hour Traffic Flows		J2_YuenWoRd-STRuralCommitteeRd_S	Reviewed By:	SC	Nov-24



			Existing Cycle Time
No. of stages per cycle	N =		4
Cycle time	C =		110 sec
Sum(y)	Y =		0.517
Loss time	L =		16 sec
Total Flow	=		4220 pcu
Co	= (1.5*L+5)/(1-Y)	=	60.1 sec
Cm	= L/(1-Y)	=	33.2 sec
Yult	=		0.780
R.C.ult	= (Yult-Y)/Y*100%	=	50.7 %
Cp	= 0.9*L/(0.9-Y)	=	37.6 sec
Ymax	= 1-L/C	=	0.855
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	48.6 %



Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B,D	13	5	11		111	11
P2	A	10	5	8		53	8
P3	B,C	20	5	17		49	17
P4	C	10	5	8		21	8

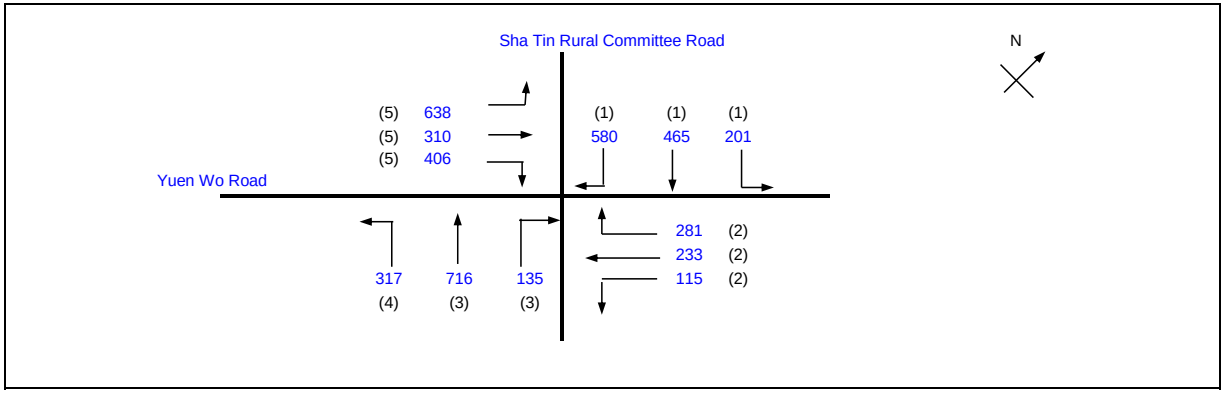
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				16					
LT	A,D	3.30	4	2	10		N	4030	317			317	1.00	3504			3504	0.090			16	53	0.027	24	44
SA	A	3.50	3	2				4210		474		474	0.00	4210			4210	0.113	0.113		20	25	0.072	33	40
SA/RT	A	3.50	3	1	50			2105		237	0	237	0.00	2105			2105	0.113			20	25	0.072	30	43
RT	A	3.50	3	1	45			2105			135	135	1.00	2037			2037	0.066			12	25	0.043	18	53
LT	B	3.50	2	1	15		N	1965	104			104	1.00	1786			1786	0.058	0.058		11	23	0.040	18	57
LT/SA	B	3.50	2	1	20			2105	11	110		122	0.09	2090			2090	0.058			11	23	0.040	18	55
SA	B	3.50	2	1				2105		123		123	0.00	2105			2105	0.058			11	23	0.040	18	55
RT	B	3.50	2	2	10			4210			115	115	1.00	3661			3661	0.031			6	21	0.024	9	59
LT	C	3.00	1	1	15		N	1915	201			201	1.00	1741			1741	0.115	0.176		21	21	0.088	24	44
LT/SA	C	3.00	1	1	18			2055	0	362		362	0.00	2055			2055	0.176			32	21	0.134	42	34
SA/RT	C	3.00	1	1	20			2055		97	247	344	0.72	1950			1950	0.176			32	21	0.134	42	35
RT	C	3.00	1	1	17			2055			333	333	1.00	1888			1888	0.176			32	21	0.134	42	35
LT	D	3.50	5	1	15		N	1965	305			305	1.00	1786			1786	0.170	0.170		31	25	0.109	36	36
LT/SA	D	3.50	5	1	20			2105	334	0		334	1.00	1958			1958	0.170			31	25	0.109	42	35
SA	D	3.50	5	2				4210		310		310	0.00	4210			4210	0.074			13	25	0.047	24	46
RT	D	3.50	5	2	10			4210			406	406	1.00	3661			3661	0.111			20	25	0.071	30	41

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

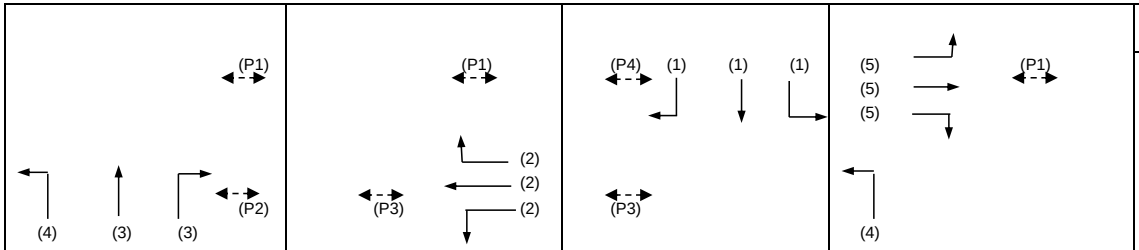
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Ch	**2030 Des**	PROJECT NO.: 80944	Prepared By:	SYC	Nov-24
J2: Yuen Wo Road / Sha Tin Rural Committee Road		FILENAME :	Checked By:	LL	Nov-24
2030 Ching Ming Design Peak Hour Traffic Flows		J2_YuenWoRd-STRuralCommitteeRd_S	Reviewed By:	SC	Nov-24



			Existing Cycle Time
No. of stages per cycle	N =		4
Cycle time	C =		110 sec
Sum(y)	Y =		0.519
Loss time	L =		16 sec
Total Flow	=		4231 pcu
Co	= (1.5*L+5)/(1-Y)	=	60.3 sec
Cm	= L/(1-Y)	=	33.3 sec
Yult		=	0.780
R.C.ult	= (Yult-Y)/Y*100%	=	50.2 %
Cp	= 0.9*L/(0.9-Y)	=	37.8 sec
Ymax	= 1-L/C	=	0.855
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	48.1 %



Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B,D	13	5	11		111	11
P2	A	10	5	8		53	8
P3	B,C	20	5	17		49	17
P4	C	10	5	8		21	8

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				16					
LT	A,D	3.30	4	2	10		N	4030	317			317	1.00	3504			3504	0.090			16	53	0.027	24	44
SA	A	3.50	3	2				4210		477		477	0.00	4210			4210	0.113	0.113		21	25	0.073	33	40
SA/RT	A	3.50	3	1	50			2105		239	0	239	0.00	2105			2105	0.113			21	25	0.073	30	43
RT	A	3.50	3	1	45			2105			135	135	1.00	2037			2037	0.066			12	25	0.043	18	53
LT	B	3.50	2	1	15		N	1965	104			104	1.00	1786			1786	0.058	0.058		11	23	0.040	18	58
LT/SA	B	3.50	2	1	20			2105	11	110		122	0.09	2090			2090	0.058			11	23	0.040	18	55
SA	B	3.50	2	1				2105		123		123	0.00	2105			2105	0.058			11	23	0.040	18	55
RT	B	3.50	2	2	10			4210			115	115	1.00	3661			3661	0.031			6	21	0.024	9	59
LT	C	3.00	1	1	15		N	1915	201			201	1.00	1741			1741	0.115	0.177		21	21	0.088	24	44
LT/SA	C	3.00	1	1	18			2055	0	364		364	0.00	2055			2055	0.177			32	21	0.135	42	34
SA/RT	C	3.00	1	1	20			2055		101	245	346	0.71	1951			1951	0.177			32	21	0.135	42	35
RT	C	3.00	1	1	17			2055			335	335	1.00	1888			1888	0.177			32	21	0.135	42	35
LT	D	3.50	5	1	15		N	1965	305			305	1.00	1786			1786	0.170	0.170		31	25	0.109	36	36
LT/SA	D	3.50	5	1	20			2105	334	0		334	1.00	1958			1958	0.170			31	25	0.109	42	35
SA	D	3.50	5	2				4210		310		310	0.00	4210			4210	0.074			13	25	0.047	24	46
RT	D	3.50	5	2	10			4210			406	406	1.00	3661			3661	0.111			20	25	0.071	30	41

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

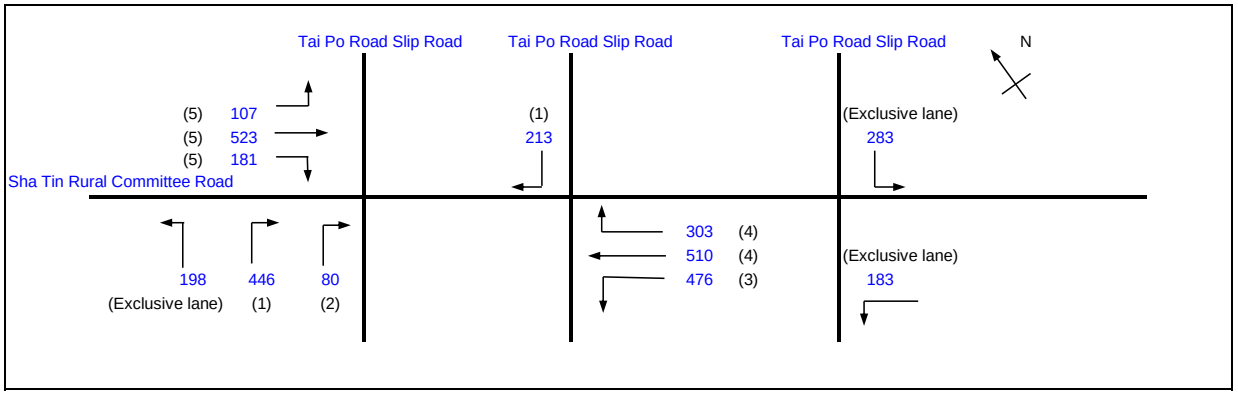
Appendix D

2030 Junction Capacity Calculation Sheets – Sensitivity Test

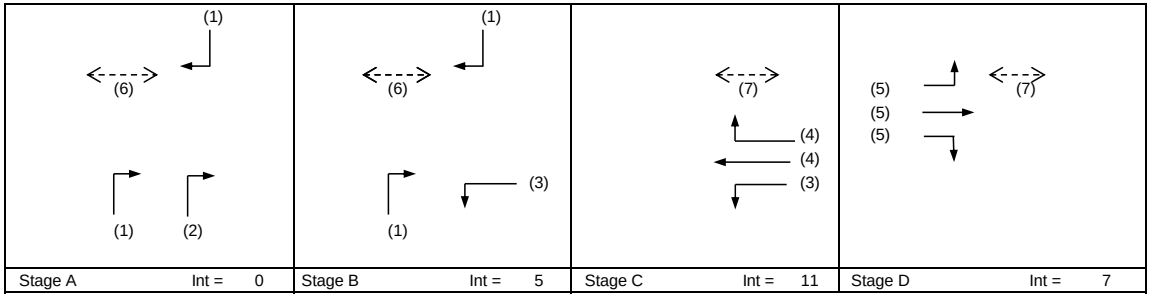
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin	PROJECT NO. 81262	Prepared By:	NL	Nov-24
J1: Sha Tin Rural Committee Road / Tai Po Road - Sha Tin Slip Road	**2030 Ref_Sen**	Checked By:	LL	Nov-24
2030 Ching Ming Reference Peak Hour Traffic Flows - Sensitivity Test	FILENAME : J1_STRuralCommitteeRd-TaiPoRdSlipRd_S.xlsx	Reviewed By:	SC	Nov-24



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	110	sec
Sum(y)		Y =	0.529	
Loss time		L =	20	sec
Total Flow		=	2667	pcu
Co	= (1.5*L+5)/(1-Y)	=	74.4	sec
Cm	= L/(1-Y)	=	42.5	sec
Yult		=	0.750	
R.C.ult	= (Yult-Y)/Y*100%	=	41.7	%
Cp	= 0.9*L/(0.9-Y)	=	48.6	sec
Ymax	= 1-L/C	=	0.818	
R.C.(P)	= (0.9/Xmax-1)*100%	=		%
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	39.1	%



Pedestrian Phase	Stage	Length (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P6	A,D	11	5	9	4	20	14
P7	B,C	5	5	4	4	47	7

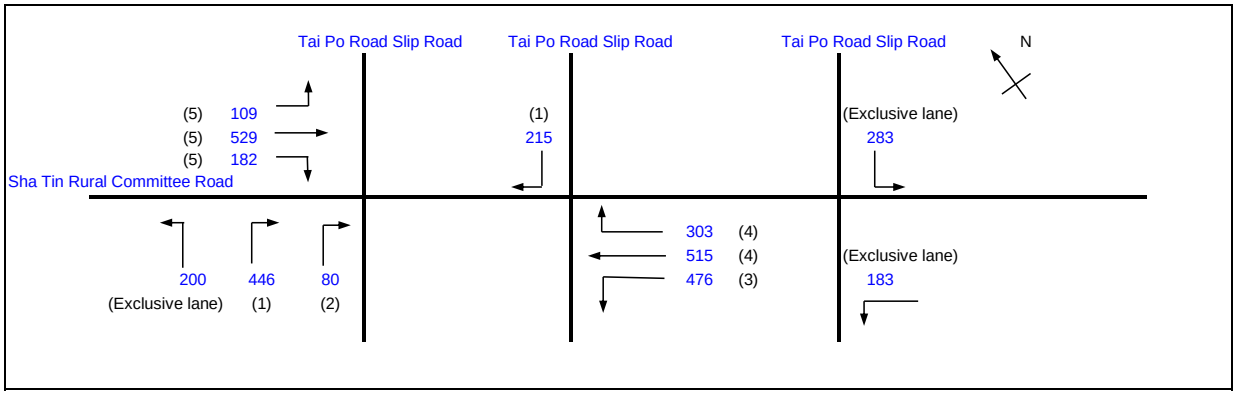
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				20					
RT	A,B	3.70	1	2	50			4250			446	446	1.00	4126			4126	0.108	0.108		18	32	0.372	27	29
RT	A	3.70	2	1	16			2125			80	80	1.00	1943			1943	0.041			7	8	0.567	12	59
RT	A,B	3.90	1	1	60		N	2005			213	213	1.00	1956			1956	0.109			19	32	0.375	24	30
LT	B,C	3.30	3	2	15			4170	303			303	1.00	3791			3791	0.080			14	54	0.163	12	14
SA	C	3.00	4	1				2055		510		510	0.00	2055			2055	0.248	0.248		42	35	0.780	60	39
RT	C	3.00	4	1	25			2055			303	303	1.00	1939			1939	0.156			27	35	0.492	36	30
LT	D	3.30	5	1	15		N	1945	107			107	1.00	1768			1768	0.061			10	23	0.290	12	35
SA	D	3.20	5	1				2075		359		359	0.00	2075			2075	0.173	0.173		29	23	0.827	54	55
SA/RT	D	3.20	5	1	20			2075		164	181	345	0.52	1997			1997	0.173			29	23	0.827	54	56

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

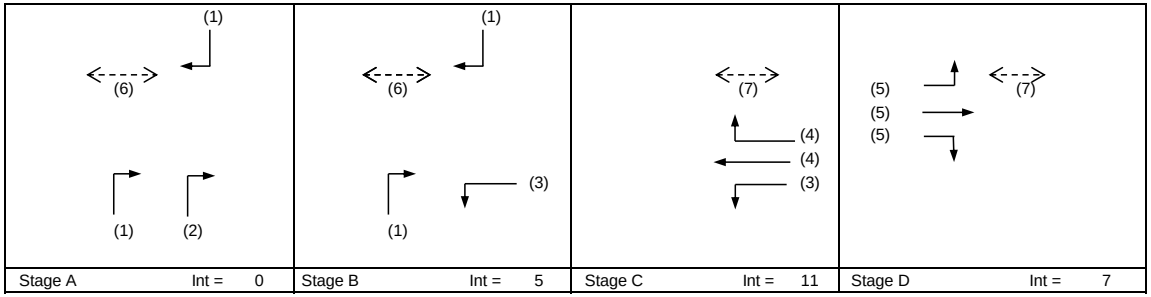
OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

			INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Che, Shatin	PROJECT NO. 81262	Prepared By:	NL	Nov-24
J1: Sha Tin Rural Committee Road / Tai Po Road - Sha Tin Slip Road	**2030 Des_Sen**	Checked By:	LL	Nov-24
2030 Ching Ming Design Peak Hour Traffic Flows - Sensitivity Test	FILENAME : J1_STRuralCommitteeRd-TaiPoRdSlipRd_S.xlsx	Reviewed By:	SC	Nov-24



			Existing Cycle Time
No. of stages per cycle	N =	3	
Cycle time	C =	110	sec
Sum(y)	Y =	0.533	
Loss time	L =	20	sec
Total Flow	=	2683	pcu
Co = (1.5*L+5)/(1-Y)	=	75.0	sec
Cm = L/(1-Y)	=	42.9	sec
Yult	=	0.750	
R.C.ult = (Yult-Y)/Y*100%	=	40.6	%
Cp = 0.9*L/(0.9-Y)	=	49.1	sec
Ymax = 1-L/C	=	0.818	
R.C.(P) = (0.9/Xmax-1)*100%	=		%
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	38.0	%



Pedestrian Phase	Stage	Length (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P6	A,D	11	5	9	4	20	14
P7	B,C	5	5	4	4	47	7

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				20					
RT	A,B	3.70	1	2	50			4250			446	446	1.00	4126			4126	0.108	0.108		18	32	0.372	27	29
RT	A	3.70	2	1	16			2125			80	80	1.00	1943			1943	0.041			7	8	0.567	12	59
RT	A,B	3.90	1	1	60		N	2005			215	215	1.00	1956			1956	0.110			19	32	0.379	24	30
LT	B,C	3.30	3	2	15			4170	303			303	1.00	3791			3791	0.080			13	54	0.163	12	14
SA	C	3.00	4	1				2055		515		515	0.00	2055			2055	0.251	0.251		42	35	0.788	66	40
RT	C	3.00	4	1	25			2055			303	303	1.00	1939			1939	0.156			26	35	0.492	36	30
LT	D	3.30	5	1	15		N	1945	109			109	1.00	1768			1768	0.062			10	23	0.295	12	35
SA	D	3.20	5	1				2075		362		362	0.00	2075			2075	0.175	0.175		29	23	0.835	60	56
SA/RT	D	3.20	5	1	20			2075		167	182	349	0.52	1997			1997	0.175			29	23	0.835	54	57

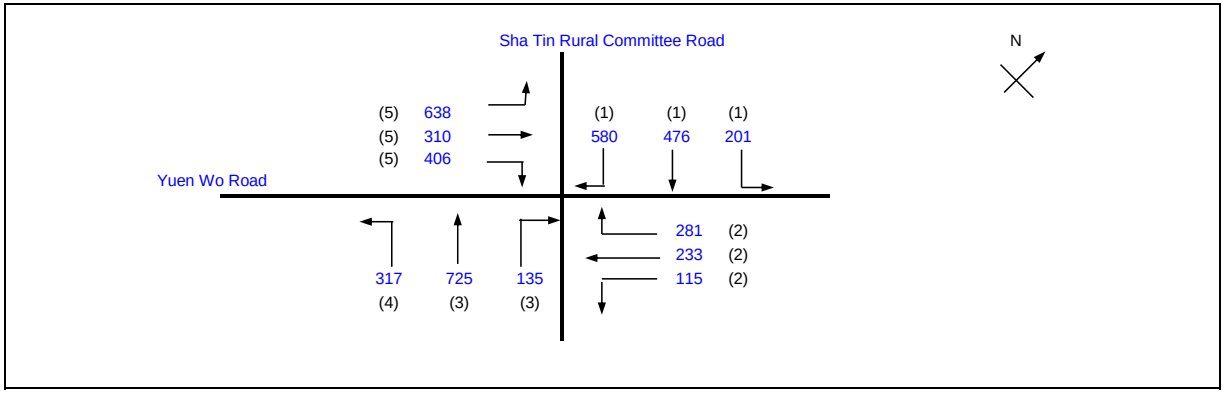
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OZZO TECHNOLOGY (HK) LIMITED

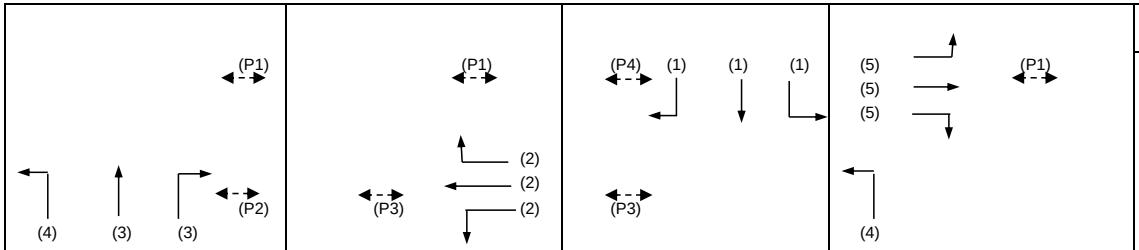
TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Ch		
J2: Yuen Wo Road / Sha Tin Rural Committee Road	**2030 Ref_Sen**	
2030 Ching Ming Reference Peak Hour Traffic Flows - Sensitivity Test		

PROJECT NO.: 80944	Prepared By:	SYC	Nov-24
FILENAME :	Checked By:	LL	Nov-24
J2_YuenWoRd-STRuralCommitteeRd_S	Reviewed By:	SC	Nov-24



		Existing Cycle Time
No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.522
Loss time	L =	16 sec
Total Flow	=	4251 pcu
Co = (1.5*L+5)/(1-Y)	=	60.7 sec
Cm = L/(1-Y)	=	33.5 sec
Yult	=	0.780
R.C.ult = (Yult-Y)/Y*100%	=	49.3 %
Cp = 0.9*L/(0.9-Y)	=	38.1 sec
Ymax = 1-L/C	=	0.855
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	47.2 %



Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B,D	13	5	11		111	11
P2	A	10	5	8		53	8
P3	B,C	20	5	17		49	17
P4	C	10	5	8		21	8

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				16					
LT	A,D	3.30	4	2	10		N	4030	317			317	1.00	3504			3504	0.090			16	53	0.027	24	44
SA	A	3.50	3	2				4210		483		483	0.00	4210			4210	0.115	0.115		21	25	0.073	33	40
SA/RT	A	3.50	3	1	50			2105		242	0	242	0.00	2105			2105	0.115			21	25	0.073	30	43
RT	A	3.50	3	1	45			2105			135	135	1.00	2037			2037	0.066			12	25	0.043	18	54
LT	B	3.50	2	1	15		N	1965	104			104	1.00	1786			1786	0.058	0.058		10	23	0.040	18	58
LT/SA	B	3.50	2	1	20			2105	11	110		122	0.09	2090			2090	0.058			10	23	0.040	18	56
SA	B	3.50	2	1				2105		123		123	0.00	2105			2105	0.058			10	23	0.040	18	56
RT	B	3.50	2	2	10			4210			115	115	1.00	3661			3661	0.031			6	21	0.024	9	59
LT	C	3.00	1	1	15		N	1915	201			201	1.00	1741			1741	0.115	0.179		21	21	0.088	24	45
LT/SA	C	3.00	1	1	18			2055	0	368		368	0.00	2055			2055	0.179			32	21	0.136	42	34
SA/RT	C	3.00	1	1	20			2055		108	242	350	0.69	1954			1954	0.179			32	21	0.136	42	35
RT	C	3.00	1	1	17			2055			338	338	1.00	1888			1888	0.179			32	21	0.136	42	35
LT	D	3.50	5	1	15		N	1965	305			305	1.00	1786			1786	0.170	0.170		31	25	0.109	36	36
LT/SA	D	3.50	5	1	20			2105	334	0		334	1.00	1958			1958	0.170			31	25	0.109	42	36
SA	D	3.50	5	2				4210		310		310	0.00	4210			4210	0.074			13	25	0.047	24	46
RT	D	3.50	5	2	10			4210			406	406	1.00	3661			3661	0.111			20	25	0.071	30	41

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OZZO TECHNOLOGY (HK) LIMITED

TRAFFIC SIGNAL CALCULATION

INITIALS	DATE

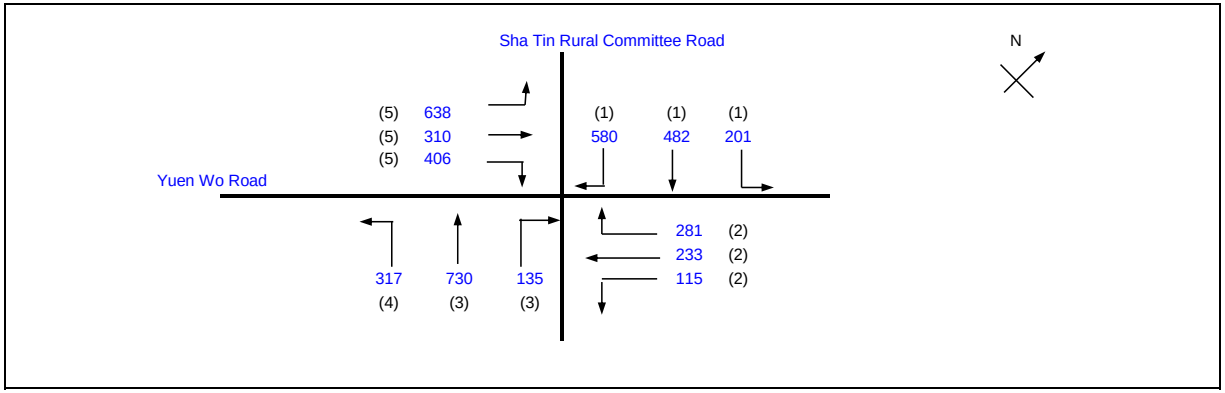
Religious Institution with Columbarium at Sai Lam Temple, No. 198, Sheung Wo Ch

J2: Yuen Wo Road / Sha Tin Rural Committee Road

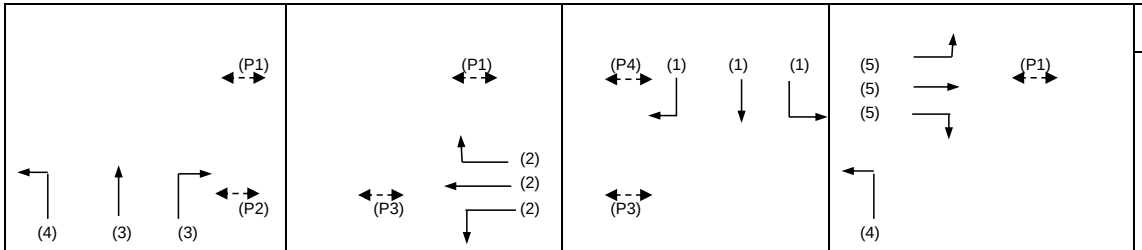
2030 Ching Ming Design Peak Hour Traffic Flows - Sensitivity Test

2030 Des_Sen

PROJECT NO.:	80944	Prepared By:	SYC Nov-24
FILENAME :		Checked By:	LL Nov-24
J2_YuenWoRd-STRuralCommitteeRd_S		Reviewed By:	SC Nov-24



		Existing Cycle Time
No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.524
Loss time	L =	16 sec
Total Flow	=	4262 pcu
Co = (1.5*L+5)/(1-Y)	=	61.0 sec
Cm = L/(1-Y)	=	33.6 sec
Yult	=	0.780
R.C.ult = (Yult-Y)/Y*100%	=	48.8 %
Cp = 0.9*L/(0.9-Y)	=	38.3 sec
Ymax = 1-L/C	=	0.855
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	46.7 %



Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B,D	13	5	11		111	11
P2	A	10	5	8		53	8
P3	B,C	20	5	17		49	17
P4	C	10	5	8		21	8

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				16					
LT	A,D	3.30	4	2	10		N	4030	317			317	1.00	3504			3504	0.090			16	53	0.027	24	45
SA	A	3.50	3	2				4210		487		487	0.00	4210			4210	0.116	0.116		21	25	0.074	36	40
SA/RT	A	3.50	3	1	50			2105		243	0	243	0.00	2105			2105	0.116			21	25	0.074	36	43
RT	A	3.50	3	1	45			2105			135	135	1.00	2037			2037	0.066			12	25	0.043	18	54
LT	B	3.50	2	1	15		N	1965	104			104	1.00	1786			1786	0.058	0.058		10	23	0.040	18	58
LT/SA	B	3.50	2	1	20			2105	11	110		122	0.09	2090			2090	0.058			10	23	0.040	18	56
SA	B	3.50	2	1				2105		123		123	0.00	2105			2105	0.058			10	23	0.040	18	56
RT	B	3.50	2	2	10			4210			115	115	1.00	3661			3661	0.031			6	21	0.024	9	60
LT	C	3.00	1	1	15		N	1915	201			201	1.00	1741			1741	0.115	0.180		21	21	0.088	24	45
LT/SA	C	3.00	1	1	18			2055	0	370		370	0.00	2055			2055	0.180			32	21	0.137	42	34
SA/RT	C	3.00	1	1	20			2055		112	240	352	0.68	1955			1955	0.180			32	21	0.137	42	35
RT	C	3.00	1	1	17			2055			340	340	1.00	1888			1888	0.180			32	21	0.137	42	35
LT	D	3.50	5	1	15		N	1965	305			305	1.00	1786			1786	0.170	0.170		31	25	0.109	36	36
LT/SA	D	3.50	5	1	20			2105	334	0		334	1.00	1958			1958	0.170			31	25	0.109	42	36
SA	D	3.50	5	2				4210		310		310	0.00	4210			4210	0.074			13	25	0.047	24	46
RT	D	3.50	5	2	10			4210			406	406	1.00	3661			3661	0.111			20	25	0.071	30	41

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m