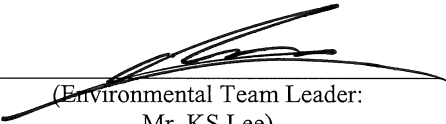



Drainage Services Department

**Contract No. DC/2022/03
Yuen Long Barrage and Nullah
Improvement Schemes**

**Pre-construction Survey Report of
Ardeid Night Roost
(Yuen Long Nullah)
v.1. 3**

Certified By	 (Environmental Team Leader: Mr. KS Lee)
Prepared By	 (Qualified Ecologist: Ms. Betty Choi)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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Our Ref: MA23101/Corres/Out/2024/ah24503

Environmental Impact Assessment Ordinance Register Office
Environmental Protection Department
27th floor, Southorn Centre,
130 Hennessy Road, Wan Chai, Hong Kong.

By Courier

3 May 2024

Dear Sir / Madam,

Contract No. DC/2022/03
Yuen Long Barrage and Nullah Improvement Schemes
(Environmental Permit (EP) No. EP-604/2022)

Submission of Pre-Construction Survey Report of Ardeid Night Roost (Yuen Long Nullah) v.1.3

We refer to our Submission of revised Pre-Construction Survey Report of Ardeid Night Roost (Yuen Long Nullah) v.1.3 on 3 May 2024.

This certification is to supplement the captioned submission in accordance with Condition 2.15 under Environmental Permit No.: EP-604/2022. This revised Pre-Construction Survey Report of Ardeid Night Roost (Yuen Long Nullah) v.1.3 has been certified by Environmental Team Leader as referred to EP No.: EP-604/2022 Condition 2.15.

Should you require further information, please do not hesitate to contact our Ms. Betty Choi at 2151 2072 or the undersigned at 2151 2091.

Yours faithfully,
Cinotech Consultants Limited



Mr. KS Lee
Environmental Team Leader

Encl.

c.c.

DSD

Binnies

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Mr. LEE Chak Cho, Joe (1 hard copy)

Mr. Alvin Yu (1 hard copy)

Mr. Adi Lee (1 soft copy)

By Mail

By Mail

By E-Mail

Our Ref: MA23101/Corres/Out/2024/ah24503

Environmental Impact Assessment Ordinance Register Office
Environmental Protection Department
27th floor, Southorn Centre,
130 Hennessy Road, Wan Chai, Hong Kong.

By Courier

3 May 2024

Dear Sir / Madam,

Contract No. DC/2022/03
Yuen Long Barrage and Nullah Improvement Schemes
(Environmental Permit (EP) No. EP-604/2022)

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This certification is to supplement the captioned submission in accordance with Condition 2.15 under Environmental Permit No.: EP-604/2022. This revised Pre-Construction Survey Report of Ardeid Night Roost (Yuen Long Nullah) v.1.3 has been certified by Qualified Ecologist as referred to EP No.: EP-604/2022 Condition 2.15.

Should you require further information, please do not hesitate to contact our Ms. Angela Heung at 3841 4381 or the undersigned at 2151 2072.

Yours faithfully,
Cinotech Consultants Limited



Ms. Betty Choi
Qualified Ecologist

Encl.

c.c.

DSD

Binnies

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Mr. Adi Lee (1 soft copy)

By Mail

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By E-Mail

Our Ref.: YML/ST/61928/91955/mw
Date: 3 May 2024

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Attn.: Mr. Lee Chak-cho, Joe

Dear Sir

Re: Contract No. DC/2022/03
Yuen Long Barrage and Nullah Improvement Schemes
Submission of Pre-construction Survey Report of Ardeid Night Roost

I refer to Condition 2.15 under Environmental Permit No. EP-604/2022, regarding the submission of Pre-construction Survey Report of Ardeid Night Roost. I hereby verify the captioned "Pre-construction Survey Report of Ardeid Night Roost (v1.3)" dated 3 May 2024.

Should you have any queries, please do not hesitate to contact the undersigned at 2859 5443.

Yours faithfully
MEINHARDT INFRASTRUCTURE AND ENVIRONMENT LTD



Ad Lee
Independent Environmental Checker

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	BACKGROUND.....	1
1.2	PURPOSE OF THE PRE-CONSTRUCTION SURVEY REPORT	2
2	METHODOLOGY	3
2.1	SURVEY REQUIREMENTS.....	3
2.2	SURVEY METHODOLOGY	3
3	SURVEY RESULTS.....	4
3.1	IDENTIFICATION OF NIGHT ROOST	4
3.2	OTHER OBSERVATIONS	4
4	CONCLUSION	5

LIST OF FIGURES

Figure 1	Site Location Plan
Figure 2	Survey area, vantage points for observation of active night roosts
Figure 3	Location of night roost and noise monitoring station

LIST OF APPENDIX

Appendix A	Photographic Record
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1 INTRODUCTION

1.1 Background

- 1.1.1 The Drainage Services Department (DSD) proposes Yuen Long Barrage Scheme at the mouth of Yuen Long Nullah (YLN) near Shan Pui River. This aims to enhance the flood protection level of the existing Yuen Long Nullah and Kam Tin River to the required standard. It also provides the opportunity to revitalize the existing Yuen Long Nullah.
- 1.1.2 The barrage scheme in Yuen Long would conduct a construction of an automatic flood barrier of about 60 meters (m), a stormwater pumping station, a master control center and the associated electrical and mechanical facilities in the Yuen Long Nullah. Besides, flood walls along the Kam Tin River and the Yuen Long Nullah would also be improved in this scheme. The construction work along Kam Tin River will be carried out after a year. Therefore, this report mainly focuses on the night roost of project boundary along the Yuen Long Nullah.
- 1.1.3 The proposed works for Barrage Scheme is a designated project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499), for which Environmental Impact Assessment (EIA) Report and Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) (Register No.: AEIAR-228/2021) on 24 May 2021. The Environmental Permit (EP) (EP No. EP-604/2022) was issued by EPD on 21 January 2022 and this night roost plan aims to fulfil the condition 2.15.
- 1.1.4 This Environmental Permit contains two conditions on Ardeid Night Roost:

Condition 2.15 The Permit Holder shall, in consultation with the AFCD, conduct a pre-construction survey for areas within 100m from the Project boundary to confirm the location(s) and status of ardeid night roost(s); and, no later than one month before the commencement of construction of the Project, submit a Pre-construction Survey Report (PCSR) for approval by the Director. Construction noise monitoring location(s) close to the night roost(s) shall also be suggested in the PCSR. The PCSR shall be certified by the Environmental Team (ET) Leader and the Qualified Ecologist(s) respectively and verified by the Independent Environmental Checker (IEC). All measure(s) as recommended in the approved PCSR shall be fully implemented.

Condition 3.1 To minimize the potential impact on the night roosting ardeids, the Permit Holder or any person constructing the Project shall not undertake any construction works within 100m from the ardeid night roost site confirmed by the pre-construction survey conducted under Condition 2.15 between 17:00 and 07:00 of the following day from February to September and between 16:30 and 07:30 of the following day from October to January of the next year to avoid disturbance. Noise barriers with absorptive materials of about 2-3m high shall be erected along the side close to the night roost sites within 100m of the construction works

to screen human and noise disturbance to the night roost sites.

1.1.5 Cinotech Consultants Limited has been appointed by the Contractor China State - Alchmex JV as the Environmental Team (ET), who engages a qualified ecologist to carry out Ardeid Night Roost Survey.

1.2 Purpose of the Pre-construction Survey Report

1.2.1 This Pre-construction Survey Report for Ardeid Night Roost is prepared to record and verify the status and locations of any active ardeid night roost within 100m of the Project Site boundary of Yuen Long Nullah. The data obtained from the pre-construction survey will be served as reference for the monthly Ardeid Night Roost Monitoring during the construction phase (if any) in order to evaluate the effectiveness of the proposed mitigation measures, as well as the usage of ardeid night roost identified.

2 METHODOLOGY

2.1 Survey Requirements

2.1.1 In order to fulfil Condition 2.15 of the EP, the pre-construction survey would be conducted in areas within 100m from the Project boundary to confirm the location(s) and status of ardeid night roost. As shown in **Figure 1**, this project contains construction work along Yuen Long Nullah and Kam Tin River. This report mainly focuses on the project boundary of Yuen Long Nullah.

2.2 Survey Methodology

2.2.1 To confirm the presence and locations of any active ardeid night roost within 100m of the Project Site boundary, two-day pre-construction survey of ardeid night roost was conducted at 5 vantage points which provided unobstructed views over the nullah/river (**Figure 2**). The survey began one hour prior to sunset. Therefore, the two surveys started at 16:52 and 16:50 on October 24 and 26, 2023 respectively.

2.2.2 A pair of binoculars (8x magnification) was used to aid observation at a distance. The location of night roost was traced by following the flight paths of birds based on direct observation. An ardeid night roost was identified if egrets and herons aggregate on trees and stay for the night to sleep. The roost location was then be marked on a map.

2.2.3 The species, abundance, and time of ardeid returning to the roost were recorded. If possible, the tree species used for roosting was also be recorded. The survey ended when no birds was seen returning to the roost one hour after sunset (as per the Hong Kong Observatory website), or when light condition was insufficient for clear observation.

2.2.4 If high quantity of bird droppings was observed on the ground under trees outside the identified night roost, a potentially alternative night roost, or even a breeding roost, may be present. This will be confirmed during the pre-construction survey.

3 SURVEY RESULTS

3.1 Identification of Night Roost

- 3.1.1 A total of five ardeid species Chinese Pond Heron *Ardeola bacchus*, Great Egret *Ardea alba*, Little Egret *Egretta garzetta*, Night Heron *Nycticorax nycticorax* and Grey Heron *Ardea cinerea* were observed in the pre-construction surveys. They were mainly found in Shan Pui River. Very few birds were observed along Yuen Long Nullah.
- 3.1.2 During the surveys, an active night roost area was observed beyond 100m northeast of the Project boundary (**Figure 3**). Only three ardeid species (Great Egret, Chinese Pond Heron and Little Egret) were noted roosting at the mangrove strip near Shan Pui River. Night Heron did not stay within the survey area while Grey Heron remained foraging in Shan Pui River even after dark.
- 3.1.3 The mangrove species of the night roost is composed of only *Sonneratia caseolaris*. The trees were of an approximate height of 9-10m.
- 3.1.4 On 24 October 2023, a total of 8 individuals of Chinese Pond Heron and 3 individuals of Little Egret were seen entering the understory layer the mangrove during the survey. However, 5 individuals of Chinese Pond Heron left the mangrove after sunset. They either flew towards Nam San Wai or the north (downstream of Shan Pui River). A net count of 3 individuals of Chinese Pond Heron and 3 individuals of Little Egret remained at the roost after dark.
- 3.1.5 On 26 October 2023, a total of 8 individuals of Great Egret *Ardea alba* were observed utilizing the emergent to canopy layers of the mangrove. No bird was seen leaving the roost throughout the survey. However, waterbirds foraging in the mudflat was scared off when a fishing boat travelled along Shan Pui River.
- 3.1.6 Photographic record of the ardeids and night roost is shown in **Appendix A**.

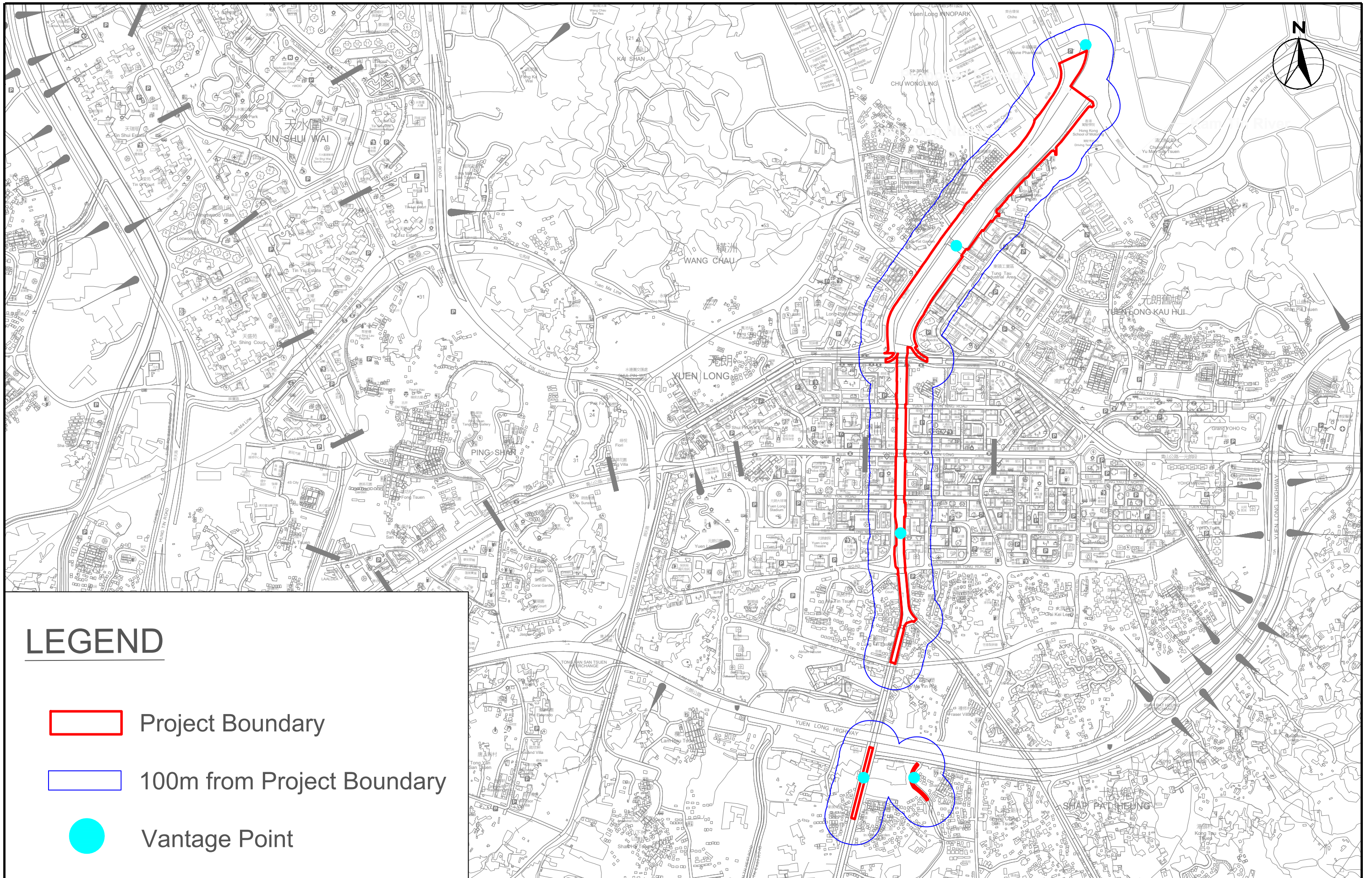
3.2 Other Observations

- 3.2.1 Flight behaviour of ardeids not utilizing the above identified roost was studied. Two major flight lines were observed during the surveys. The first route refers to flight towards Shan Pui River, then turn east towards the direction of Nam Sang Wai/Kam Tin River. The second route refers to flight towards downstream of Shan Pui River continuously, likely towards the active night roosts near Yuen Long Effluent Polishing Plant >1km away from the Project Site. It is noted that usage of both routes were bi-directional. No night roost was noted along the Yuen Long Nullah.

4 CONCLUSION

- 4.1.1 An active night roost area was observed within the Survey Area, over 100m away from the north-eastern end of the Project boundary. Three ardeid species, including the Chinese Pond Heron, Great Egret and Little Egret were observed utilizing mangrove species *Sonneratia caseolaris* as roosting substrates.
- 4.1.2 As the roost is located over 100m away from the project boundary, no construction phase night roost and noise monitoring is proposed under Condition 2.15 of the EP. Similarly, no restriction on construction work or erection of noise barrier is proposed under Condition 2.16 of the EP.

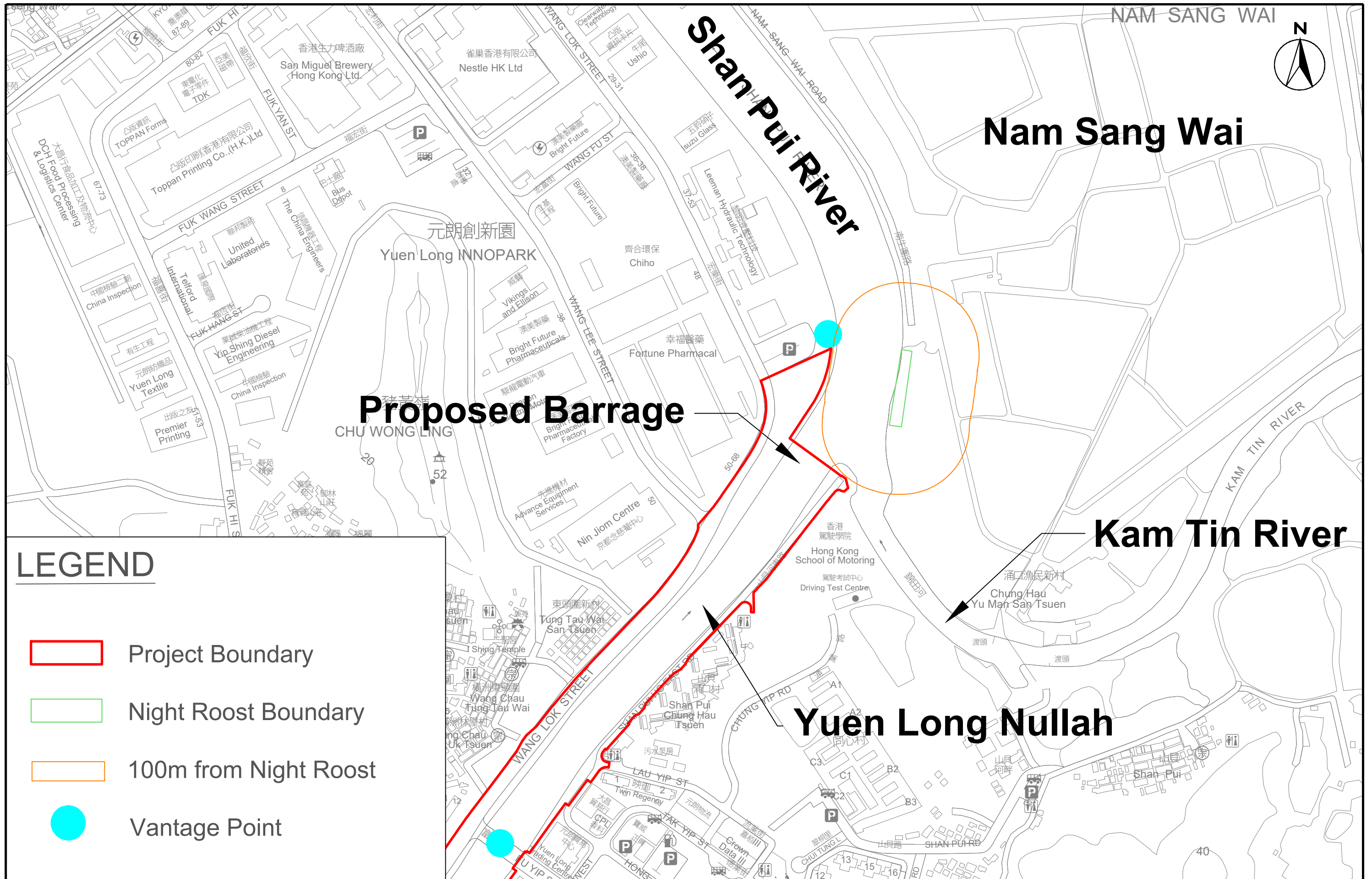
FIGURES



LEGEND

- Project Boundary
- 100m from Project Boundary
- Vantage Point

SCALE	1:13000 @ A3	DATE	OCT 2023
CHECK	BC	DRAWN	RL
JOB No.	MA23101	FIGURE No.	2
		REV	-



LEGEND

- Project Boundary
- Night Roost Boundary
- 100m from Night Roost
- Vantage Point



Contract No. DC/2022/03
 Yuen Long Barrage and Nullah Improvement Schemes
Ardeid Night Roost Survey at Yuen Long Nullah/Shan Pui River

SCALE	1:8000 @ A3	DATE	SEP 2023	
CHECK	BC	DRAWN	RL	
JOB No.	MA23101	FIGURE No.	3	REV
				-

APPENDIX A
PHOTOGRAPHIC RECORD

Appendix A Photographic Record

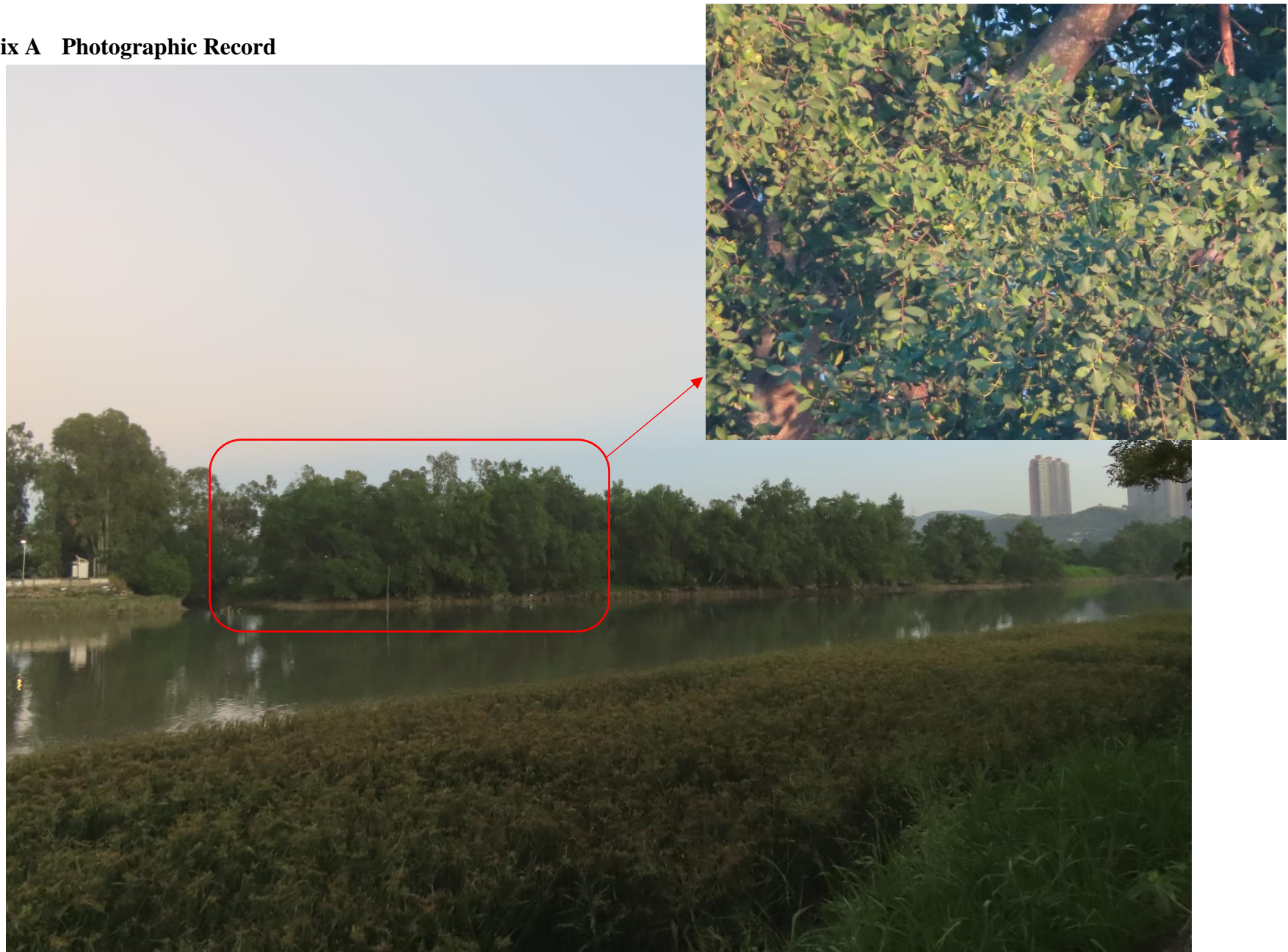


Photo A 1: Active night roost composed of mangrove species *Sonneratia caseolaris* observed on 24 October 2023

Appendix A Photographic Record



Photo A 2: Chinese Pond Heron observed in Night Roost on 24 October 2023

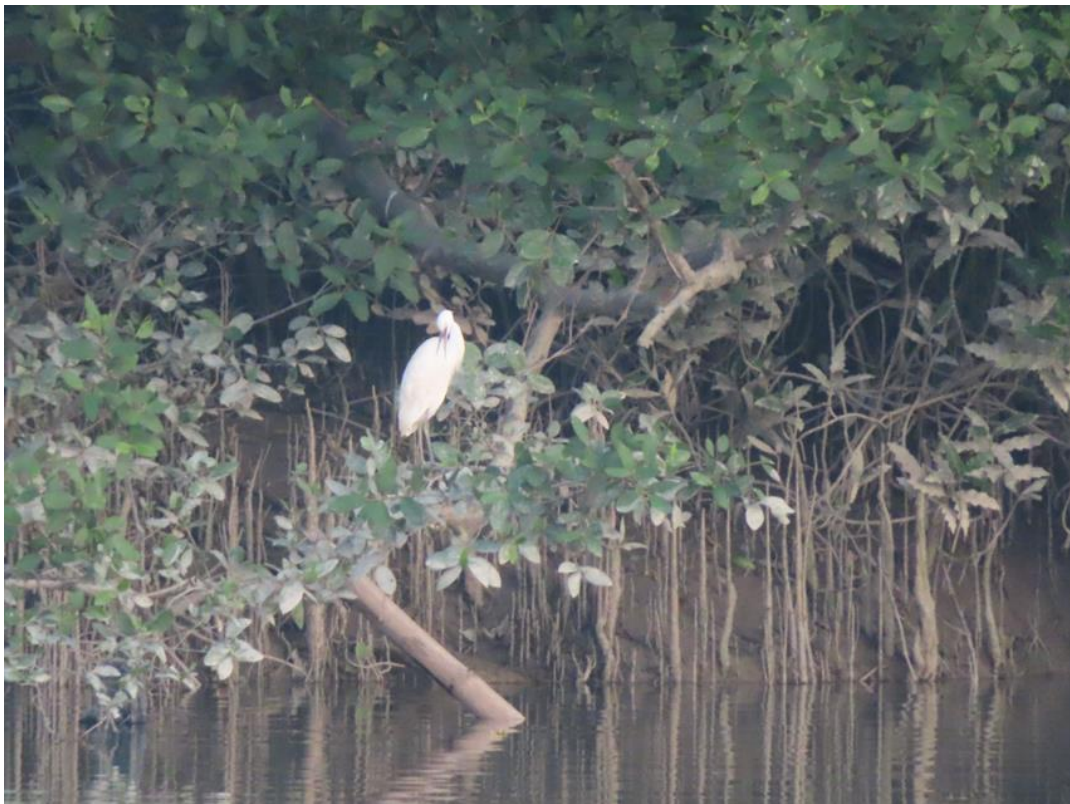


Photo A 3: Little Egret observed in Night Roost on 24 October 2023

Appendix A Photographic Record



Photo A 4: Active night roost for Great Egret observed on 26 October 2023



Photo A 5: Human disturbance observed on 26 October 2023