

Our Ref: WMA20001/AECOM/it200309

**AECOM**

8/F Grand Central Plaza Tower 2  
138 Shatin Rural Committee Road  
Shatin, Hong Kong

**By E Mail**  
9<sup>th</sup> March 2020

**Attn.: Ms. Gloria Tang**

Dear Ms. Tang,

**Service Contract No. NDO 07/2019**  
**Environmental Team for Site Formation and Infrastructure Works for Police Facilities in**  
**Kong Nga Po**  
**- Revised Draft Baseline Survey Report for Golden-Headed Cisticola**  
**(March – September 2018)**

I refer to the Revised Draft Baseline Survey Report for Golden-Headed Cisticola dated 14 November 2018 for Site Formation and Infrastructure Works for Police Facilities in Kong Nga Po.

I hereby agree to certify the above document in accordance with the Environmental Permit (No. EP-510/2016), Condition 1.9, 2.4 and 2.15.

If you need any further information, please call the undersigned at 2151 2090.

Yours faithfully,  
WELLAB Limited



Ms. Ivy Tam  
Environmental Team Leader

c.c. CEDD (Attn: Mr. Andrew Cheung)  
IEC - Acuity Sustainability Consulting Limited  
(Attn.: Mr. Kevin Li)

By e-mail: [andrewkwcheung@cedd.gov.hk](mailto:andrewkwcheung@cedd.gov.hk)  
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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
NORTH DEVELOPMENT OFFICE  
UNIT 2320, LEVEL 23, TOWER 1, METROPLAZA,  
223 HING FONG ROAD,  
KWAI FONG, NEW TERRITORIES,  
HONG KONG

Attention: Mr. William WONG

27 February 2020

Dear William,

**Contract No. NDO/02/2018**

**Site Formation and Infrastructure Works for Police Facilities in Kong Nga Po  
Baseline Survey Report for Golden-Headed Cisticola**

I refer to the email concerning the captioned. We have no further comment on the Baseline Survey Report for Golden-Headed Cisticola and verify it according to condition 2.15 of the EP-510/2016.

Yours faithfully,

Kevin W.M. Li  
Independent Environmental Checker

cc. CEDD - Andrew CHEUNG  
AECOM - Gloria TANG  
ET Leader - Priscilla CHOY

**Contract No. NDO/02/2018**

**Baseline Survey for Golden-Headed Cisticola for Site  
Formation and Infrastructure Works for Police Facilities  
In Kong Nga Po**

**Revised Draft Baseline Survey Report**

**March - September 2018**



**Prepared by: Jacky Tam/Tammy Hui**

**14 November, 2018**

**Validated by: Mark Shea**

**14 November, 2018**

**Ecology Team: China Hong Kong Ecology Consultants**

**Contract No. NDO/02/2018**  
**Baseline Survey Report for Golden-headed Cisticola**

**March - September 2018**

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# 1. Introduction

- 1.1 Kong Nga Po in the North District is a rural area with very limited existing developments. The Site for proposed police facilities (i.e. hereinafter called as “Development Area”) has part of the area fell within the then Frontier Closed Area, which was released in 2016. The Project generally consists of site formation & infrastructure works for the co-location of various police facilities at Kong Nga Po as well as upgrading works to a section of the existing Kong Nga Po Road between the police facilities and Man Kam To Road.
- 1.2 The Environmental Impact Assessment (EIA) Report for "Police Facilities in Kong Nga Po" was approved under the EIA Ordinance in Oct 2016. An EP (No. EP-510/2016) was issued to CEDD in Nov 2016. Under Conditions 2.4 and 2.15 of the EP, it is necessary to conduct a baseline survey for Golden-headed Cisticola by Qualified Ecologist covering the remote grasslands in the ecological assessment area, i.e. within a distance of 500m from the boundary of the Development Area, for the Project before the commencement of site clearance.
- 1.3 The baseline surveys were undertaken during the breeding season, between March and September 2018. The survey was conducted on a monthly basis.
- 1.4 The objective of the baseline survey for Golden-headed Cisticola are as follow:
  - To provide an updated distribution/presence of Golden-headed Cisticola within the Development Area and its 500m boundary;
  - To identify whether or not there are any breeding grounds of Golden-headed Cisticola at and in proximity to the Development Area.
  - To find out whether there are any presence of Golden-headed Cisticola at seemingly suitable breeding grounds such as those at uphill areas at Chow Tin Tsuen and Cheung Po Tau.
  - To recommend appropriate measures to be implemented to reduce any impacts to Golden-headed Cisticola as necessary

## 2. Methodology

- 2.1 The baseline survey was conducted by qualified ecologist Dr. Mark Shea who has over 20 years of conducting ecological survey experience and handled over 60 avifauna monitoring and investigation projects. The Curriculum Vitae of Dr. Mark Shea was given in **Annex 2**. The baseline survey area for Golden-headed Cisticola included the Development Area and area within the 500 distance from the boundary of the Development Area (refer to **Figure 1**). Transect routes covering representative habitats and accessible areas within 500m distance from the boundary of the Development Area for the baseline survey were shown in **Figure 1**. Survey dates were given in **Table 2.1**.

Table 2.1 Survey dates of Golden-headed Cisticola

Date	Season	Survey Period
		Day time
4 March 2018	Dry	Y
12 March 2018	Dry	Y
22 March 2018	Dry	Y
18 April 2018	Wet	Y
25 May 2018	Wet	Y
26 June 2018	Wet	Y
25 July 2018	Wet	Y
20 August 2018	Wet	Y
7 September 2018	Wet	Y

- 2.2 The presence/distribution of Golden-headed Cisticola within the Development Area and its 500m boundary would be recorded visually and aurally during the surveys. Binoculars and digital camera were the main instruments used. The locations of Golden-headed Cisticola encountered would be recorded and marked on the map, along with notable behaviour (e.g. breeding behaviour such as nesting and presence of recently fledged juveniles, roosting, and feeding activities). Locations of breeding grounds of Golden-headed Cisticola would be identified and marked on the map. When breeding grounds were found adjacent to the project site and susceptible to the impacts raised from the project, a suitable exclusion for the breeding grounds would be set up to prevent unauthorized access or accidental disturbance. Other information including but not limited to details of habitat where Golden-headed Cisticola recorded would also be recorded during the survey.
- 2.3 Baseline surveys were conducted three times a month in March and once a month from April to September. In general, baseline surveys were conducted at early mornings when the birds were most active of the day. All field surveys were carried in such ways that would not cause any unnecessary stress or damage to the existing habitats and wildlife.

### **3. Results**

- 3.1 Nine avifauna surveys were undertaken along survey transects. Some common species were recorded included *Pycnonotus jocosus*, *Copsychus saularis* and *Garrulax perspicillatus*. No target species Golden-headed Cisticola was recorded. All wild birds in Hong Kong are protected under the Wild Animals Protection Ordinance (Cap. 170).
- 3.2 During the survey in April 2018, an area of destroyed grassland was noticed near the locations 2 and 3 (refer to Figure1). It is assumed that was caused by a hill fire incident between March and April 2018. The extent of the affected area is shown on the map.
- 3.3 During the survey, human disturbance including playing remote control aircraft at Kong Nga Po was observed. This human activity was considered to create disturbances to the birds. The activities of remote control aircraft was recorded in March, April, May and July.

### **4. Summary**

- 4.1 Nine ecological monitoring surveys were undertaken during the dry and wet season, between March and September 2018. None of Golden-headed Cisticola was recorded during the surveys within the assessment area, where are the Development Area, Woodland, Shrubland and grassland within the 500m distance from the boundary of the proposed work area. Also, there was no any breeding ground of Golden-headed Cisticola found at or in proximity to the Development Area and there was no any presence of Golden-headed Cisticola at seemingly suitable breeding grounds such as those at uphill areas at Chow Tin Tsuen and Cheung Po Tau.

- 4.2 Unavoidable impacts shall be minimised by taking appropriate and practicable measures. Avifauna was very sensitive to noise and light. Noise and light generated from construction work, especially at evening, would interfere birds nearby. To minimize noise impacts induced by construction works, silencers or mufflers on well-maintained construction equipment should be utilized and properly maintained during the construction program. Noise enclosure or acoustic shed should be effectively utilized, wherever practicable. Furthermore, machines or equipment known to emit noise or light strongly in one direction should, wherever possible, be orientated the noise or light away from the adjacent habitat. In order to minimize the lighting disturbance, adjusting the outdoor lighting to lower intensity is recommended. Besides, a balance between lighting for safety, and avoiding excessive lighting can be achieved through various practice, such as: the type of lamp (light source) used; use of directional lighting to avoid light spill into sensitive areas and control/timing of lighting periods of some facilities, particularly those close to the ecological sensitive receivers.
- 4.3 Drainage system: proper drainage system should be installed to collect and dispose rainwater. Installation of sediment/rubbish trapping facilities (e.g. catch pits or sand/silt traps to contain the increase in suspended solids and materials in the storm water drainage system so as to avoid pollutants being washed out during heavy rainstorms.
- 4.4 Standard good site practice measures should be implemented throughout the construction phase:
- Placement of stockpiling into designated area should be selected at disturbed area in order to minimize the disturbance to wildlife.
  - Open fire should be strictly prohibited.
  - The boundary of project boundary should be clearly demarcated.
  - General drainage system arrangement should include sediment and oil trapper to collect the site run-off.
  - Waste bin should be provided to collect the general refuse and construction waste.

## 5. References

- Agriculture, Fisheries and Conservation Department (AFCD). (2017). Hong Kong Biodiversity Database.
- Carey, G.J., Chalmers, M.L., Diskin, D.A., Kennerley, P.R., Leader, P.J., Leven, M.R., Lewthwaite, R.W., Melville, D.S., Turnbull, M. and Yung, L.(2001). *The Avifauna of Hong Kong*. Hong Kong Bird Watching Society.
- Fellowes, J.R, Lau, M.W.N., Dudgeon, D., Reels, G.T., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S., Leven, M.R., Wilson, K.D.P. and Yu, Y.T. (2002). Wild animals to watch: terrestrial and freshwater fauna of conservation concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25: 123 – 160.
- Viney, C., Ying, L. C., and Phillips, K. (2005). *The birds of Hong Kong and South China*. Hong Kong: Publ.Sales Unit.

# Figure



# Annex

## Annex 1: Photo Records from Survey Result



Photo 1. General view



Photo 2. General view



Photo 3. General view



Photo 4. General view



Photo 5. General view



Photo 6. General view

## Annex 2: Curriculum Vitae of Ecologist

### CURRICULUM VITAE

#### 1 Personal Details



Surname : SHEA  
First Name : She-sang, Mark 佘書生  
Sex : Male  
National : Chinese  
Language : Chinese (Native speaker), English (fluent in writing and speaking)  
Current Position: Principal Ecology Consultant - China Hong Kong Ecology Consultants Ltd.

#### 2 Education, Professional Qualifications and Memberships

B.Sc. Biology, Hunan Normal College, PRC, 1981  
M.Sc. Zoology, Nanjing Normal University, PRC, 1987  
Ph.D. Ecology/Environmental Science, The University of Hong Kong, 1995

Certified Arborist of International Society of Arboriculture (2011-2014)  
Member of China Flower Association (2008-)  
Council member of Southern China Palm Plants Association (2001-)  
Member of The Institution of Hong Kong Environmental Impact Assessment (1995-)  
Member of The Marine Biological Association of Hong Kong 1989 - 2006  
Member of International Association for Landscaping Ecology (1996-2004)  
Member of International Association of Impact Assessment (2002-2005, 2013-2018)  
Member of Zoological Society of China (1994-)  
Member of Ecological Society of China (1995-)

#### 3 Key Qualifications

Dr. Mark Shea is an ecology consultant with over 25 years of experience in the field of biology, ecology and environmental impact assessment in Hong Kong, China and the region. He has undertaken over 250 projects with ecological component dealing with terrestrial ecology, wetland ecology, insect taxonomy, pollution biology, mangrove, heperto-fauna, avi-fauna, terrestrial vertebrates, fishery, benthic community ecology in Hong Kong's stream, river, coast, marine and terrestrial environments. During last fifteen years, he conducted and led over 200 tree survey projects and a number of tree risk assessment projects. Dr. Shea is a Certified Arborist of International Society of Arboriculture. In addition, he has experience for ecology related projects in Mainland China, Taiwan and Macau.

## **Employment History**

**1997.4-present: Senior Ecology Consultant, China Hong Kong Ecology Consultants.**  
**1995.5 – 1997.3 Senior Ecology Consultant, Hyder (former Axis and Acer) Consulting Ltd.**  
**1993.7 – 1995.4 Ecology Consultant, Binnie Consulting Ltd.**  
**1988. 9- 1993.6 Ph.D Research Student and Demonstrator, The University of Hong Kong**

## **4 Project Experience Records (*Selected projects*):**

Agreement No. CE 51/2016 (HY): Route 11 (between North Lantau and Yuen Long – Feasibility Study. Responsible for ecological survey and reporting. Client: Meinhardt. 2018 – 2020.

Agreement No. CE 36/2011 (HY): Further Study and Preliminary Design for Improvement of Hiram's Highway from Marina Cove to Sai Kung Town – Investigation Addition Service No.4 – Ecology Survey and Ecology Impact Assessment. Responsible for ecological survey and reporting. Client: Meinhardt. 2018 – 2020.

Project title.: ([RFQ-EMD14033VW]) Consultancy Services on Provision of Ecological Baseline Survey and Monitoring at Ma On Kong river. Responsible for ecological survey, monitoring and reporting. Client: Hong Kong Productivity Council. 2018 – 2020.

Contract No. CV/2017/04: Environmental Monitoring of Sediment Disposal to the South of Brothers, East of Sha Chau and East of Tung Lung Chau: diving monitoring of coral and sea bottom; demersal trawling samples of fishes and invertebrates. In supporting of EGS/Lam, responsible for on-board sampling supervision, sorting, taxonomic identification, tissue preparation for chemical testing, data analysis and reporting. Sub-consultant of EGS. 2018-2022.

Contract No. CM 14/2016: Environmental Team for Operational Environment Monitoring and Audit for Siu Ho Wan Sewage Treatment Plant. Responsible for undertaking bi-monthly marine benthic sampling, sorting, identification and reporting. Client: Fugro / DSD, 2018-2023.

Mountain Bike Training Gound & Expansion of Mountain Bike Trail Net Works in Mui Wo and Chi Ma Wan, S.L. Employed as independent ecologist responsible for ecological survey, eco report updating, supporting mountain bike specialist in ecology aspects. Client: Sheung Moon Construction Ltd., / CEDD, HKSAR, 2016-2019.

Contract No.: CV/2012/05. Bathing Beach at Lung Mei, Tai Po, Rule of qualified ecologist responsible for ecological baseline surveys, rat snake capture survey, marine benthic, fish and intertidal fauna monitoring, mangrove plantation, fauna relocation. Client: Welcome Construction / CEDD, HKSAR, 2016-2019.

Landscape Consultancy Service Campus Landscape Master Plan : Ecological Enhancement Proposal; Clent: Earth Asia / The Chinese University of Hong Kong, 2014-2018.

Application for Small House Re-Development of Lot 966 RP in D.D. 22 Pan Chung San Tsuen, Tai Po. Site Investigation and Landscape Proposal. Client: Ms. Peggy Wong, 2016-2017.

Rezoning proposal for Various lots at Ha Wo Hang, Sha Tau Kok: Ecological impact assesement and mitigation. Client: Eton Properties Agency Co Ltd, 2016-2018.

Contract No. DP 01/2016 Drainage Improvement Works at North District –Package B – Investigation: Ecology, Client: DSD, HKSAR, 2016-2018.

Section 12A Application for Proposed Amendments to the Ma On Shan Outline Zoning Plan in Support of Private Residential Development and Primary School at Various Lots and Adjoining Government Land in DD 167, Nai Chung, Ma On Shan: Ecological Impact Assessment, Client/leading consultant: Ramboll Environ Hong Kong Limited, 2016-2017.

BEAM Plus V1.2 SA5 Ecological Assessment for Shum Shui Po building site, Client/leading consultant: Fugro, 2016.

Contract WQ/053/15: Consultancy Study on Strategic Street Ecology for Hong Kong. Client, LCSD/ HKSAR, Leading consultant: Earth Asia Ltd. 2016-2017.

BEAM Plus V1.2 SA5 Ecological Assessment for Proposed Factory Development at 95-99 Fuk Hi Street, Yuen Long Industrial Estate, Yuen Long, Client/leading consultant: Hip Hing, 2016.

BEAM Plus V1.2 SA5 Ecological Assessment for Proposed building at Wai Yip Street, Knowloon Bay, Client/leading consultant: Hip Hing, 2016.

AGREEMENT NO. CE 13/2009 (WS) IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS – SOUTH WORKS, Ecology: site investigation and woodland compensation plan. Client, DSD/ HKSAR, Leading consultant: Acumen Environment Ltd. 2015-2016,

BEAM Plus V1.2 SA5 Ecological Assessment for proposed property development at Tsuen Wan Town, Client/leading consultant: Acumen Environment Ltd., 2016.

Tree survey at a proposed property development at Tai Po. Client/leading consultant: SCENIC Landscape Studio Ltd. 2016.

Programme No.: 085MM: Consulting engineer services in connection with Preliminary Environmental Review, Traffic Impact Assessment and Drainage & Sewerage Impact Assessment for Hospital Authority Supporting Services Centre in Tin Shui Wai. Ecological Impact Assessment, Client/leading consultant: ASD/HKSAR / Parsons Brinckerhoff (Asia) Limited, 2016.

Improvement to sharp bend of Keung Shan Road near shek pik reservoir service access road (slope works): Preliminary Ecological Assessment. Client/leading consultant: HyD/HKSAR / Maurice Lee Limited, 2015.

BEAM Plus V1.2 SA5 Ecological Assessment for proposed property development at Kwun Tong, Client/leading consultant: Meinhardt Environment Ltd., 2015.

Application for Proposed Low Density Residential Development at Various Lots in D.D. 433, Chuen Lung, New Territories. Conducting full scale of ecological surveys including habitat, flora and fauna and ecological impact assessment. Client: Environ, 2015.

Ecological Impact Assessment for the Proposed Development at STTL 601 Yiu Sha Road Whitehead Ma On Shan. Conducting ecological surveys including habitat, flora and fauna and ecological impact assessment. Client: AEC, 2015.

Agreement No. CE9/2006 (DS) Tolo Harbour Sewerage of Unsewered Areas, Stage II- Investigation, Design and Construction: Conducting full scale of ecological surveys including habitat, flora, diving monitoring of coral and sea bottom; and fauna and ecological impact assessment. Client: DSD/AECOM, 2015.

Ecological consultation for a site at Ka Wai Man Road and Ex-Mount Davis Cottage Area, Kennedy Town: Conducting ecological surveys including habitat, flora and fauna and ecological impact assessment. Client: Environ, 2015.

Contract No. 12-06337: Provision of Services for the Post Project Monitoring of HATS 2A (also named as Performance Verification of Discharge of HATS 2A). Undertaken marine benthic sampling, sorting, identification, data analysis and reporting. Sub-consultant of EGS. 2014-2016.

Site Formation and Infrastructural Works for Eight Housing Sites in Ma On Shan Feasibility Study, Conducting ecological surveys including habitat, flora and fauna and ecological impact assessment. Client: Environ, 2015-2016.

Environmental Consultancy Services For Planning, Supervision And Management Of The Proposed Fish Fry Release Scheme By Ecologist/Biologist For Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities. Sub-consultant of AEC. 2014.

Agreement No. CE65/2013(EP) Post-Construction Ecological Monitoring of River Improvement Work in Upper Lam Tsuen River, She Shan River and Upper Tai Po River – Investigation. Client: AEC/DSD, 2014-2017.

Contract No. 2013/11: Environmental Monitoring of Sediment Disposal to the South of Brothers, East of Sha Chau and East of Tung Lung Chau: diving monitoring of coral and sea bottom; demersal trawling samples of fishes and invertebrates. In supporting of EGS/Lam, responsible for on-board sampling supervision, sorting, taxonomic identification, tissue preparation for chemical testing, data analysis and reporting. Sub-consultant of EGS. 2014-2017.

Theme Park and Resort Hotel Development in Macau - Ecological Impact Assessment: Responsible for ecological consultancy services including eco impact assessment and mitigation. Client: BMT, 2014.

Agreement No. CE16/2012 (CE) Engineering Feasibility Study for Kong Nga Po - Feasibility Study: Ecological field survey and reporting. Conducting full scale of ecological surveys including habitat, flora and fauna. Client: CEDD/Mott MacDonald, 2013.

Agreement No. LD01/2012 Eco-hydraulics Study on Green Channels – Stage 1 Provision of Services of Ecological Field Survey. Conducting full scale of ecological surveys including habitat, flora and fauna for 12 drainage channels. Client: DSD/Mott MacDonald, 2012-2013.

Contract No. SPW 03/2012 Ecological Survey for Relocation of Sha Tin Sewage Treatment Works to Caverns – Feasibility Study. Conducting full scale of ecological surveys including habitat, flora and fauna of terrestrial and marine environment (benthic survey, scuba diving coral survey and intertidal survey). Client: DSD, 2012-2013.

Proposed Student Hostel of The City University of Hong Kong within “CDA(1)” Zone, South of Yiu Sha Road Whitehead, Ma On Shan, The New Territories: Environmental Assessment - Responsible for ecological consultancy services including eco impact assessment and mitigation. Client: Environ, 2013 -2014.

Residential cum Recreational Development at Kam Tsin Road, Kwu Tung: Environmental Assessment: Responsible for ecological consultancy services including eco impact assessment and mitigation. Client: Environ, 2013-2014.

Construction of Public Rental Housing at Ex-Au Tau Departmental Quarters at Yuen Long (Contract No : 20120746) Trade : Independent Tree Specialist, responsible for tree survey, tree risk assessment and tree protections, and other arborist consultancy. Client: Housing Authority / Hsin Chong Construction Co. Ltd. 2014-2016.

Architectural Services Department – Consultancy Agreement No. 9AA 115 for Provision of Columbarium at Wo Hop Shek Cemetery –Phase I. Responsible for ecological consultancy services including eco-assessment and mitigation. Client: DLN, 2013-2014.

Contract 823B – Shek Kong Stabling Sidings & Emergency Rescue Siding: Sub-Contract for Provision of Consultancy Services for Stream Habitat Restoration Works (M50/153), provision of wetland construction specialist and wetland plant botanist for the project. Client: MTR / Maeda – China State Construction JV, 2011-2016.

Agreement No. DP/01/2010 Services as Independent Environmental Checker for Drainage Improvement Works in Shatin and Tai Po: Responsible for ecology aspects for transplanted projected plants, ecological mitigation wetland, ecological monitoring in areas under Contract 1 & 2. 2011 – 2014. Client: DSD / Environ Hong Kong Ltd.

Contract No. CV 2005/06, Contract No. CV 2008/07 & Contract No. 2009/16: Field Sampling and Laboratory Testing for Contaminated Mud Pit IV and V East of Sha Chau -- Demersal trawling samples of fishes and invertebrates. In supporting of Lam Lab Ltd. And EGS, responsible for on-board sampling supervision, sorting, taxonomic identification, tissue preparation for chemical testing, data analysis and reporting. Sub-consultant of Lam Lab and EGS. March 2006-February 2009; and 2010-2014.

Contract No. CV 2008/07 & Contract No. 2009/16: Testing and Sampling for Contaminated Mud Pits IV and V at East of Sha Chau, - Benthic Survey, sorting, taxonomy and reporting. Sub-consultant of EGS (Asia) Ltd. 2009 - 2014.

Contract No. DC/2007/06 River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River. Employed by Contractor (Chiu Hing Construction & Transportation Co. Ltd.) as ecology specialist responsible for conducting ecological baseline survey (flora and fauna), impact monitoring, mitigation, part of post-construction monitoring and as well as capture surveys. The project also required to capture and relocate some rare fish and amphibian species with conservation value to unaffected river sections to reduce adverse impact by the river works construction period. 2007 - 2014.

澳門“小潭山旅遊休憩計劃”項目，生態及景觀初步評估研究。顧主：澳門瑞峰工程顧問有限公司 / SMEC；2013。

Construction of public house at Tuen Mun Area 18: Independent tree specialist responsible for tree monitoring, tree risk assessment, mitigation and protection. Client: Housing Authority / Shui On Construction. 2010-2013.

Contract No. DC/2006/09: Drainage Improvement Works in Kau Lung Hang, Yuen Leng, Nam Wa Po and Tai Hang Areas and Construction of Ping Kong Drainage Channels. Employed by Contractor (Chiu Hing Construction & Transportation Co. Ltd.) as ecology specialist responsible for conducting ecological baseline survey, impact monitoring, fish relocation operation and mitigation/post monitoring. The project also required to capture and relocate some rare fish species with conservation value to temporal constructed fish aquarium and to unaffected river sections to reduce adverse impact by the river works during construction period. The fish will be released back to new river channel after completion of river works. Committed in April 2007 and estimated completion in 2013.

Residential cum Recreational Development at Various Lots and Adjoining Government Land in Pine Hill, Tai Po: Environmental Assessment. Conducting full scale of ecological surveys including habitat, flora and fauna of terrestrial and coastal environment. Client: sub-consultant with Environ HK Ltd. 2013.

Proposed Residential Development at Nai Chung, Ma On Shan: Ecological Impact Assessment. Conducting full scale of ecological surveys including habitat, flora and fauna of terrestrial and coastal environment. Client: sub-consultant with Environ HK Ltd. 2013.

CE58/2011(HY) Widening of Castle Peak Road – Castle Peak Bay – Investigation: Conducting full scale of ecological surveys including habitat, flora and fauna of terrestrial and coastal environment. Client: Highway Department/Scott Wilson. 2012-13.

Application for Amendment to the Draft Tai Tong Outline Zoning Plan No. S/YL-TT/15 from “Agriculture” and “Open Storage” to “Village Type Development”, Various Lots in D.D. 177 and Adjoining Government Land, Tai Tong, Yuen Long. Responsible for ecological survey and impact assessment. Client: City Development Ltd, 2012.

Agreement No. CE 38/2010 (CE) Liantang / Heung Yuen Wai Boundary control Point and associated Works (Site formation and Infrastructures) - Design and Construction – conducted brush and detailed tree surveys. Client: AECOM, 2012-2013.

Contract No. DC/2007/08 Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang. Responsible for ecological impact monitoring during late stage of construction. Client: DSD/Chiu Hing, 2012.

Construction of public house at Shatin Area 4C: Independent tree specialist responsible for tree risk assessment, mitigation and protection. Client: Housing Authority / Hsin Chong Construction. 2013.

Proposed Nam Sang Wai development: tree survey and visual assessment field survey. Client: Belt Collins. 2012.

NENT Landfill EM & A – Vegetation/ tree Monitoring: yearly contracted with Sita, 2010-2014.

Section 16 application for P1258 DD129 Mong Tseng Tsuen, Yuen Long: Further ecological survey and impact assessment. Client: Axon Consultancy Ltd., 2012.

Proposed residential development at Fung Lok Wai, Yuen Long: Firefly survey and impact assessment. Client: supporting leading consultant Environs, 2011.

Proposed Hung Shui Kui Town Concept Ecomasterplan New Territories, Hong Kong: conducted preliminary ecological review, rapid field survey and comments on eco-masterplan. Client: Biodiversity by Design. 2012.

Ecological surveys for some slope features along Shing Mun Catchwater, Tai Lam Catchwater and Golden Hill Catchwater. Client: AECOM, 2012.

Agreement No. CE19/2010 (TP) Greening Master Plans for New Territories North East – Investigation, Design and Construction in Shatin District: Responsible for ecological review and background study, Client: Hyder-ACLA Joint Venture, 2011-2012.

Agreement No. CE20/2010 (TP) Greening Master Plans for New Territories North West – Investigation, Design and Construction in Tuen Mun District: Responsible for ecological review and background study, Client: Hyder-ACLA Joint Venture, 2011-2012.

Proposed development at Sha Po North: conducting ecological survey and reporting. Client: supporting leading consultant Environs, 2011.

WENT Landfill, New Territories: Conducting vegetation survey, Client: SITA, 2011.

Agreement No. CE 65/2006 (DS) Port Shelter Sewerage Stage 2 and Stage 3 Design and Construction Land Features, Manhole & Trees Survey & Baseline Noise Monitoring (Package 3): conducting tree surveys, Client: DSD / EGS, 2011-2012.

Agreement NO. DP 06/2011 Environmental Impact Assessment for Drainage Improvem Works at Ngong Ping: Conducting ecological baseline surveys in wet season 2011 and ecological impact assessment. Scope of ecological survey including flora and fauna. Major terrestrial faunal groups were surveyed including mammals, birds, herpetofauna, butterfly, dragonfly and stream organisms. The consultancy lasted from September 2011 to March 2012. Dr. Mark Shea led a team performed comprehensive field surveys and prepared section of ecological impact assessment report with recommended mitigations. Sub-consultant to Meinhardt.

Project Contract No. HK1100393 Application Of Lease Modification / Land Exchange Various Sections of Lot 723 in DD 137Lung Kwu Tan, Tuen Mun: Ecological Survey and Impact Assessment. Client: Environs, 2011- 2012.

Contract No. GE/22011/19. Landslip Prevention and Mitigation Programme, 2008, Package N, Natural Terrain Hazard Mitigation Works, West Lantau – Topographic and Tree survey for Tai O West, Nam Chung, Shum Wat, Keung Shan Road, and Wang Hang. Conducting tree surveys, Client, Sam Mak & Associates Surveyors (HK) Ltd. 2011-2012.

Revitalization of Old Tai Po Police Station: Ecological consultancy service for Preliminary Ecological Review of the project including ecological surveys and assessment. Client: Hyder Consulting, 2011.

Construction of public house at Shek Kei Mei phase 5: Independent tree specialist responsible for routine tree monitoring and tree risk assessment. Client: Housing Authority / Shui On Construction. 2011-2012.

Ecological Baseline Monitoring for DSD Drainage Improvement Works at Ping Che, Fanning. Conducting ecological surveys on habitat, flora, fauna including aquatic fauna, amphibians, butterfly, odonates, mammals, 2011. Client: DSD / Meinhardt; 2011-2012.

Construction of Secondary Boundary Fence (SBF) and New Sections of Primary Boundary Fence and Boundary Patrol Road: EM & A, responsible for preparing landscape plan for Lok Ma Chau Section. Client: Architect Department / AEC; 2010-2012.

Kai Tak Nullah and Sha Tin Waste Water Treatment Plant: Plant trial. Responsible as independent ecologist for plant monitoring and arborist consulting in supporting of contractor, 2010-2011. Client: DSD / Lam Construction 2011-2012.

Section 16 application for proposed village house development at Nam Sang Wai, Yuen Long: Ecological impact assessment. Client: Troika Engineering, 2011.

Section 16 application for proposed housing development at Au Tau, Yuen Long: Ecological impact assessment. Client: Environ Hong Kong Ltd., 2010.

Macau C&D Waste transfer facilities. Ecological impact assessment, 2011. Client: Macau Government / Scoott Wilson. 2011.

Section 16 application for proposed housing development at Tung Shing Lei, Yuen Long: Ecological impact assessment. Client: Environ Hong Kong Ltd., 2010.

Macau Phase 1 LRT System Tunnel Alignment Option - Ecological Impact Assessment for the Barra Station at Macau. Ecological impact assessment. 2010. Clients: Macau Government / Scott Wilson.

Section 16 application for proposed housing development at Pak Lap, Sai Kung: Ecological impact assessment. Client: Hyder Consulting Ltd., 2010-2011.

Proposed residential development at Dalajia Island, Dapeng Bay, Shenzhen. Ecological survey and reporting, 2010. Client: Vanke Property / Buro Happold.

Contract No. DC/2006/01 Drainage Improvement Works in Sai Kung – Design and Construction: Undertaken ecological monitoring during EIA stage, construction and post-construction. 2003-2012. Client: DSD / Maunsell; Sunkee Construction.

Macau Phase 1 LRT System Tunnel Alignment Option - Ecological Impact Assessment for the Nan Van Lake and Sai Van Lake. Responsible for undertaken flora, fauna including fish, benthic and general ecological surveys in two seasons, and reporting. March to July 2010. Clients: Macau Government / Scott Wilson.

Agreement No. CE3/2006 (DS) Kai Tak Nullah (Ecology) : Preparation of Specification for ecological survey and bio-contamination testing by fish. Client: ScottWilson. 2008-2009.

**Strategic cooperative study on contaminated sediments of Shenzhen River – Benthic organism investigation.** 深圳河污染底泥治理策略合作研究底泥特徵調查專題工作-底棲生物調查 (BENTHIC SURVEY) ; Client: 深圳治河辦 Shenzhen River Administration Office / EGS (HK) Ltd., 2010.

Verification of animal species purchased from USA laboratory supplier for eco-toxic testing of contaminated sediments. Employed by ALS Laboratory as benthic specialist consultant, committed in March 2010.

Wo Hop Shek Creamatorium Construction – Monitoring of transplanted plants. One year contract with AEC Ltd. August 2009 to August 2010.

Additional Tree Survey for Agreement No.NEX2212 of MTR's Shatin to Central Railway Line. Client: MTR/China ARSC, 2009.

Shatin Union Hospital Development project: Tree Survey, Client: Ted and Chen Associates, 2009.

Fire Services Training School cum Driving Training School At Pak Shing Kok, Area 78, Tseung Kwan O. Ecological impact assessment. Client: FSD/Hyder Consulting. 2009.

Lantau – Tuen Mun Link Project: ecological baseline surveys. Client, Meinhardt Infrastructure and Environment Ltd. Scope of works including terrestrial, inter-tidal, mangrove, stream flora and fauna surveys. 2008-2009.

Agreement No. CE 65/2006 (DS) Port Shelter Sewerage Stage 2 and Stage 3 – Design and Construction– Ecological Survey. Client, DSD/Black and Veatch Consultants. Scope of works: conducting terrestrial, intertidal and marine ecological surveys including coral diving surveys. 2008-2009.

Contract No. DC/2008/07, Lam Tsuen Valley Sewerage – Investigation, Design & Construction. Conducting ecological wet season baseline survey. Client: DSD/Ove Arup. October to December 2008

Contract No. DC/2008/07, Lam Tsuen Valley Sewerage – Investigation, Design & Construction. Conducting tree survey. Client: China ARSC. 2008.

Mangrove Survey in North West New Territories. Conducted field survey of mangrove community structure, diversity, growth formation. The collected data was used in modeling of drainage flood risk assessment and mitigation. Client: DSD/MottConell. October to December 2008.

Ma On Shan Development, Engineering Works At Whitehead and Lok Wo Sha phase 1: Design and Construction. Scope of works: Vegetation Surveys and Transplantation Scheme. Client: Maunsell. January to August 2009.

Agreement No. CE 7/2008 (EP) Organic Waste Treatment Facilities, Phase I, Lantau – Feasibility Study. Client: ENSR Asia (HK) Ltd. Conduct tree survey. February 2009.

Construction and Development Office of Macau SAR: Macau Nature Reserve Ecological Monitoring. Conduct monthly ecological monitoring activities including fish, benthic fauna (Mangrove habitat), insect, amphibians, reptiles, mammals, micro-algae sampling at wetland habitat, inter-tidal, mangrove habitats. Also responsible for produce monthly and annual monitoring reports. Client: Macau Government/Macau ecology consultant. Completed two contracts with extensions from 2004 to 2010.

Repositioning and Long Term Operation Plan of Ocean Park. EM & A practice. Conduct vegetation survey to identify and locate some protected plants for transplantation. Plant transplantation and monitoring. Supporting Contractor / Dragages-Bouygues JV, Committed in February 2007 and completed in September 2008.

Express Rail Link project (Client: MTR/China ARSC): Tree Survey Services – Conduct tree surveys and reporting for areas of West Kowloon, Sheng Monk Road, Lok On Pak, Siu Lam and Shek Kong Nursery site. September to December 2008.

10-year Extended LPM Project Landslip Preventive Works on Government Slopes and Related Studies: Ecological survey and impact assessment for slope No. 7NW-D/C-126 and 3SE-D/C135 at Tai Po. Conduct field flora and fauna surveys and reporting. Supporting C M Wong & Associates Ltd. November 2007 to March 2008.

10-year Extended LPM Project Landslip Preventive Works on Government Slopes and Related Studies: Ecological Assessment for Feature No. 11SW-C/F50, The Peak, Hong Kong West. Conduct field flora and fauna surveys and reporting. Supporting C M Wong & Associates Ltd. October 2007 to March 2008.

Civil Engineering and Development Department: Contract No. CV / 2002 / 04 Penny's Bay Reclamation Stage 2 Environmental Monitoring and Audit: White-bellied Sea Eagle monitoring at Penny's Bay for the Disneyland Theme Park project on Lantau. 2005 – 2008.

Bat Survey and Impact Assessment at The Chik Kwai Study Hall, Sheung Tsuen, Pat Heung, Yuen Long. The scope of work include bat field surveys in daytime and night time, impact assessment and propose of mitigation measures; bat box design, installation and monitoring. Client: AMO; in supporting AEC Ltd., 2007-2009.

## *Completed Projects (before 2008)*

Proposed development at Pak Kung, Sai Kung: tree surveys. Client: Belt Collins Hong Kong Ltd., committed and completed in 2007.

Proposed development at So Kwun Wat, Tuen Mun: tree survey. Client: Sun Hung Kai Architects & Engineering Ltd., committed and completed in 2007.

Proposed residential re-development at Severn Road, Hong Kong island: tree survey. Client: Sun Hung Kai Architects & Engineering Ltd., committed and completed in 2007.

Agreement No. CE69/2001 (HY) Tsuen Wan Road Upgrading – Investigation: EIA – vegetation and habitat surveys. In supporting Scott Wilson Limited, committed and completed in November 2007.

Proposed development at Fairview Park, Yuen Long: bird surveys at various habitats including fish ponds, cultivation and urban land. Supporting Environ Hong Kong Limited, committed and completed in 2007.

Feature No. 11SW-C/F50, Peak Road and Harlech Road, The Peak, Hong Kong: conduct ecological Surveys, impact assessment and report in September 2007. Client: CED / CM Wong & Associate Ltd.

Ecological Survey for North District Sewerage Stage 2 Phase 1: ecological baseline survey and reporting, including fish and stream benthic surveys at Kowloon Hang stream. Committed in October 2006 and completed in 2007.

Monthly bird monitoring at a site of wind turbine station at Lamma. In supporting of Enviro Natural Ltd./Hong Kong Electric Ltd. 2006 -2007.

Agreement No. CE 28/2004 (GE), Landslide Preventive Works at Po Shan, Mid-levels - Design and Construction. Ecological survey and impact assesemnt. In supporting of Maunsell Environmental Management Consultants Ltd. Committed in 2006 and competed in December 2006.

Ecological Impact Assessment for TWGHs Proposed Youth Holiday Camp at Tai O, Lantau. Ecological surveys (covered terrestrial, inter-tidal channel, mangrove, marsh habitats) and impact assessment in supporting AEC Ltd. 2006.

Residential Development in DD99, DD105, San Tin Yuen long: Conducting tree surveys, Committed in September 2006 and completed in December 2006.

Proposed village house development at Tai Mong Tsai, Sai Kung. Conducted ecological surveys, impact assessment in supporting AEC Ltd. Completed in August 2006.

Tsang Kun O Central Park Development and Sha Ha, Sai Kung Development: Tree surveys. Completed in August 2006.

Planning study for costal region of Xun Liao, Hui Yang County, Guang Dong Province. Conducted ecological (flora nad fauna) surveys and impact assesement including varous habitats

such as sea shore, river estuarine, mangrove, agricultural land, woodlands, and etc. Completed in September 2006.

Assessment of the conservation study at Tai Po Kau Headland, conducted ecological rapid surveys in supporting Hyder Consultants in September 2006.

Ecological impact assessment at Wo Sang Wai development site. Involving ecological surveys including, birds, bats, amphibians, reptiles, insects, aquatic animals and flora. In supporting MottConnell Consulting Ltd. Committed in 2004 and completed in June 2006.

Lantau Cable Car Project (Ngong Ping 360): Tree surveys, EM & A – responsible for tree surveys, ecological baseline surveys, impact monitoring and ecological mitigation during stage of construction period, and as well as fauna and flora relocation and transplantation. Client: MTR Corporation, sub-contractor of MottConnell, 2002 - 2007.

Lantau Cable Car Project (Ngong Ping 360): Stream diversion – responsible for ecological restoration of newly constructed stream channel with ecologically friendly design; involved stream bank vegetation restoration by transplanting natural vegetation from old stream bank (to be demolished) and monitoring of plant and fauna establishment and pest control (red ants). Client: MTR Corporation, sub-contractor of MottConnell, 2004 - 2006.

Lantau Cable Car Project (Ngong Ping 360): Feasibility study – responsible for ecological surveys, Client: MTR Corporation, sub-contractor of BMT, 1999-2000.

Repositioning and Long Term Operation Plan of Ocean Park. Conduct vegetation survey to identify and locate some protected plants for transplantation. Proposal of plant transplantation plan. 2006-2007.

Ocean Park Corporation – Master Redevelopment Project: Contract No. CI 03 – Parkwide Tree Identification and Condition Survey; vegetation surveys to identify protected plant species. 2006.

Highways Department: Reconstruction and Improvement of Tuen Mun Road, Design and Construction. Tree survey. In supporting EDAW Ltd. Committed in March 2006 and completed in May 2006.

EIA Study for Provision of Crematorium at Wo Hop Shek Crematorium: Ecological survey and impact assessment; Tree survey, compensation planting proposal and reporting. In supporting Hyder Consultants Ltd. Client: Architect Services Department. 2006 - 2008.

Consultancy Agreement No. 9SN005 Construction of a Secondary Boundary Fence - Ecological Impact Assessment for the Project Profile; Tree Surveys, In supporting Mott Connel Ltd., 2005-2006.

Agreement No. CE 11/2004. Tree Survey on masonry wall at Hong Kong Island. In supporting ADI Limited. Committed in 2004 and completed in 2005.

Term Consultancy for Minor Works to Government Properties – Region I Contract No. P1000179 (PM1.31) Slope Upgrading Works at Kennedy Town Bus Terminals, Victoria Road. Involved advise on preservation of significant tree for slope engineering works and monitoring tree health. Client: ASD / ADI / L&O, committed in October 2003 and completed in 2005 .

Territory Development Department, HKSAR, Agreement No. CE 59/94 Main Drainage Channels for Fanling, Sheung Shui and Hinterland: EM & A: ecological monitoring for River Beas and Indus River, N.T.. Scope of monitoring: vegetation, fish, dragonfly, benthic invertebrates, amphibians and birds. Monthly monitoring committed in April 2002 and completed in 2005.

Civil Engineering Department: Contract No. CV/2000/09 Infrastructure for Penny's Bay Development - Contract 1 Impact Environmental Monitoring and Audit (EM&A): White-bellied Sea Eagle monitoring at Penny's Bay for Contract of the Disneyland Theme Park project on Lantau.

Agreement No. CE 25/2002 (DS) Drainage Improvement in Northern Hong Kong Island – Hong Kong West Drainage Tunnel Environmental Impact Assessment: Ecologica Baseline Survey. The job also involved stream faun surveys for several streams. Client: DSD / Black & Veatch Hong Kong Limited; committed in August 2003 and completed in 2005.

Contract No. HY/2000/18 Construction of Kam Tin Bypass - Constructed wetland. Being appointed as wetland specialist involving wetland surveys, monitoring, advise on construction of wetland habitats and design, sourcing, verification and supervision of wetland plant plantation. (Client: Highway Department; Employer: ZHUHAI International Economic & Technical Cooperation Corporation, committed in June 2001 and completed in 2006).

Ecological Monitoring at NENT landfill - Vegetation monitoring on selected tree species and natural vegetation adjacent to operational landfill. (Client: Far East Landfill Technology Ltd.; sub-contracted to BMT Asia Ltd., commissioned in March 1999 and completed in 2005.).

Feasibility Study for Proposed Resort and Residential Development at Hai Tung Bay, Sanya, Hainan, China: Involving field ecological surveys and reporting in 2005. Client: Henderson Land / Belt Collins.

Proposed Residential Development at Various Lots in DD 129, Deep Bay Road, Lau Fau Shan, Yuen Long. Ecological Review and impact assessment for proposed Access Road and Stream Wiedning Works. 2004.

S16 Application for site at Tin Fook Wai, Yuen Long: Ecological supporting works including pond benthic plagic sampling, sorting, identification in 2001-2002. Ecological baseline updating involving birds, amphibians, mammals and Odonata surveys in 2005. Client: Henderson Land / EcoSchemes / BMT.

Section 16 application: Proposed Residential Development at Ha Wo Hang, Sha Tau Kok – Ecological Impact Assessment. Scope of ecological surveys and assessment: Flora and fauna in Fung Shui woodland, woodland, shrubland, stream course, agricultural land, pond. Client: Eton Property; Committed in July 2003 and completed in 2004.

Tree survey and assessment for residential development site at Tao Fung Shan, Sha Tin, N.T., completed in December 2004. Client: Hong Chui Landscaping Ltd.

Tree survey and assessment for residential development site at Beacon Hill No. 1., Kowloon, completed in December 2004. Client: Wing Hong Construction Ltd.

Residential Re-development at No. 12 Headland Road, Hong Kong Island: Tree Survey/Updating (Client: Belt Collins Hong Kong Ltd., completed in February 2005 ).

Marine Surveys and Performance Verification of Cyberport Sewage Outfall - Investigation-Benthic Sampling, Sorting and Identification, committed in March 2004 and completed in October 2004 (sub-contractor of LamGeotechnical).

Agreement No. PW 02/2003. Engineering Feasibility and Environmental Assessment Study for Restoration of the East Lamma Channel Marine Borrow Area – Investigation: Fish Fry Survey, conducted in 2004.

Quotation Contract No. UB 038-04 Routine Maintenance Inspection to 114 Nos. of Slope Features in Tai Po New Territories. Manage and partially conduct tree surveys for all 114 slopes completed in November 2004. In support of Hyder / ADI.

Agreement No. PW 02/2003. Engineering Feasibility and Environmental Assessment Study for Restoration of the East Lamma Channel Marine Borrow Area – Investigation: Fish Fry Survey, conducted in 2004 (sub-contractor of Scott Wilson).

Ecological Study and Impact Assessment of Kau To Hang within a Village Small House Development, in supporting Section 16 application. Client: Ove Arup. 2002 – 2003.

Section 16 application: ecological assessment for a open car storage for sale at Kam Tin, Yuen Long. Client: Sharp Gain Limited. Committed in October 2003 and completed in 2004.

Section 16 application for proposed residential development at Nam Sang Wai, Yuen Long - Tree Survey, appointed by Belt Collins Ltd. 2004 .

Section 16 application for proposed Comprehensive Hotel (Mega Hotel)/Residential Redevelopment on Land Zoned OU-CRA, O and R(A), Site on Kennedy Road and Ship Street, Wan Chai - Tree Survey, appointed by Townland Consultants Ltd. 2002-2004.

Drainage Diversion Works for Comprehensive Residential Development at Various Lots in DD 227 & DD 229, Tai Po Tsai, Sai Kung. Conduct ecology study for the site in response to AFCD's comments on ecology issues. 2002 – 2003. Client: New World Development.

Proposed hotel development at the Old Marine Police Head Quarters at Tsim Sha Tsui, Kowloon: Tree Survey. July 2003.

Proposed Development at Sai Sha, Ma An Shan: tree survey. Client: Belt Collins Asia Limited. 2003.

Tree survey for slope works at Llyon Path, Hong Kong Island. Client: ASD / L & O Architect. 2003

Planning study of Bo An, Shenzhen, China: Ecological surveys for identify ecological degradation areas and proposal of mitigations. A joint project with Beijing University. Completed in October 2003.

Proposed HKYWCA Guesthouse and Conference Centre at San Shek Wan, Lantau - Tree Survey, Tree Felling Application and Tree Compensation. Client: HKYWCA, Committed in August 2003.

Proposed Cable Car project at Lantau: tree surveys (Client: MTRC; Sub-contracted with Mott Connell Ltd. Committed in 2002.)

Residential Development on NKIL 6277 at Beacon Hill Road, Kowloon Tong: tree checking. Client: ADI Ltd., in August 2003.

Agreement No. CE 50/2001 (DS) Drainage Improvement in Sha Tin and Tai Po – Design and Construction - Ecology Survey. Being appointed by Maunsell Consultants to carry out ecological surveys of habitats, flora and fauna for the project. Scope of surveys include terrestrial, freshwater and marine environment. Committed in August 2002 and completed in July 2003.

Agreement No. CE 11/2002 (DS) Drainage Improvement in Sai Kung – Design and Construction: Ecology Survey. Being appointed by Maunsell Consultants to carry out ecological surveys of habitats, flora and fauna for the project. Scope of surveys include terrestrial, freshwater and marine environment. Committed in October 2002 and completed in July 2003.

Agreement No. CE 11/2002 (DS) Drainage Improvement in Sai Kung – Design and Construction: Tree Survey. Being appointed by Ted & Chan Associates to carry out all surveys for the project. Completed in June 2003.

Development at Ting Kok: Rezoning Application and Section 16 Application – Tree Survey. Appointed by ADI Limited. Completed in 2003.

Proposed development at Lo Lau Uk, Tai Po: Stream ecological survey. Sub-consultant of Ecosystem Asia Limited. Completed in 2002.

Ecological Monitoring at WENT landfill - Vegetation monitoring on selected tree species and natural vegetation adjacent to operational landfill; Marine benthic in-fauna identification; bio-monitoring by oyster population, growth, health, survive rate and as well as metal/organic contamination. (Client: SWIRE SITA Waste Services Ltd.; 2001-2002).

Proposed extension of Discovery Golf Course, Lantau: stream ecological survey (contract with Atkins China, 2002)

Tree survey for a development site at Greg Road, Tai Koo Shin, Hong Kong. (sub-contract to Belt Collins Hong Kong Ltd. 2003)

Re-zoning application for proposed development at Kau To Shan, Shatin – ecological survey, assessment and reporting. Appointed by Ove Arup in 2002.

Agreement No. CE 109/98, Deep Bay Link Investigation and Preliminary Design - EIA - Specialist Ecological Survey and Impact Assessment. Involved in two season ecological surveys on mangrove, inter-tidal in-fauna/epi-fauna surveys, stream fauna, mammal, reptile, amphibian surveys and fishery impact assessment. Completed in August 2002. (sub-contracted to EcoSchemes Asia Ltd.; Leading consultants: Ove Arup/EML)

Agreement No. CE 109/98, Deep Bay Link Investigation and Preliminary Design. Tree survey, completed part of the tree surveys. Appointed by EcoSchemes Asia Limited in 2002.

Proposed Development at Fung Lok Wai, Yuen Long at Lot 1457 R.P. in D.D. 123. - Tree Survey, Appointed by ADI Limited.

Ecological assessment of the proposed Theme Park project at Ma Wan – report revising and re-submission. Appointed by CH2M Hill (China) Limited in 2002.

Agreement No. CE 31/98, Lantau North-South Road Link between Tai Ho Wan and Mui Wo - Specialist Ecological Survey and Impact Assessment. Responsible for four season ecological surveys and ecological impact assessment and was commissioned in August 1998. The scope of work include terrestrial flora, fauna including avi-fauna, stream fauna, marine flora/fauna and estuarine fishes. (sub-contracted to Mouchel Asia Ltd., completed in March 2001)

Ecological impact assessment and damage quantification for AMORGOS Oil Spill in Kenting, Taiwan. (Client: confidential, commissioned in 2001 and completed in 2002).

Plant Inventory/Surveys for CLP 11k voltage power lines – (Client: Belt Collins Ltd., 2001-2002).

Vegetation Inventory/Surveys for proposed CLP 11k voltage power line renovation between Tung Chung and Cheung Sha Wan, Lantau – (Client: CLP/BMT Asia Ltd., 2002).

Ecological review and preliminary impact assessment for a project of low density residential/recreational development of various lots in DD104 Yeun Long. The project involved design of mitigation wetland habitats. Apointed by Ove Arup in 2001.

Route Ten Project: Tree Survey, commissioned in November 2000 and completed in 2002.

Review of ecology issues in Tuen Mun Area 54 Government Farm. (Client: TDD; sub-contracted to Scott Wilson Ltd., Completed in November 2000).

Tree Survey at R.B.L.1138 Stanley, Hong Kong, July 2001.

Tree survey at RBL. No.801 No.3 South Bay Close, Hong Kong, July 2001.

Agreement No. CE 17/2000 10 Year Extended LPM Project Phase 2, Package F – Shatin Works – Tree Survey at 11 slope sites, August, 2001.

Tree survey at Shatin section for Route nine project. May to July 2001.

Tree surveys at 11 slope sites on Hong Kong Island for Slope project. July 2001.

Tree survey at a proposed slope work site at Yau Tong, Knowloon. October 2000.

Tree survey at a proposed slope work site at San Shek Village, Tuen Mun. October 2000.

Tree survey at a proposed build restore site at No 30 Peak Road, Hong Kong Island. September 2000.

Tree survey at a electronic sub-station site at Cyberport, Telegraphy Bay, Hong Kong Island. September 2000.

Tree identification at construction site at Tai Po Kau, New Territories, Hong Kong. September 2000.

Agreement No CE 2/98 Performance Verification of Stanley and Shek O Outfalls. Responsible for benthic sieving, sorting, identification and preliminary data analysis. In total 168 grab samples were taken from seabed for each season (dry and wet season). Over 180 taxa were recorded from each sampling season (Client: EPD; sub-contracted to ERM Ltd., Completed in August 2000).

Tree survey at a proposed development site at Tin Kau, Hong Kong. July 2000.

Ecological impact assessment for a re-zoning project of residential development at Au Tau, Yeun Long. Completed in June 2000 (Appointed by Hyder Consulting Limited).

Proposed Theme Park Project at Ma Wan: Tree survey, involved over 3000 trees survey work. Completed in March 2000.

Proposed development at Lau Fau Shan, Yuen Long: Tree survey. February 2000 and May 2000.

Tree survey at a proposed development site at Leighton Hill, Hong Kong. June and July 2000.

Agreement No. CE 73/98. Investigation Assignment for Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling- Ecological survey and impact assessment. Ecological surveys covered vegetation, mammals, birds, reptiles, amphibians, large invertebrates and stream fauna. (sub-contracted to Environs Hong Kong Ltd., Completed in March 2000).

Agreement No. CE 17/98 Development of an Ecological Monitoring Programme for the Mai Po and Inner Deep Bay Ramsar Site. (Client: AFD; sub-consultant of Hyder Environmental Ltd.) Involving the Study as benthic specialist. (2000).

Proposed development at Tong Fu, Lantau Island: Ecological survey and impact assessment. Ecological survey covered vegetation, birds, reptiles and large invertebrates. sub-contracted to ERM Hong Kong Ltd., 2000.

Sludge Treatment and Disposal Strategy Study – Site Specific Feasibility Study: Ecology Study at Nim Wan Site. Ecological surveys covered vegetation, mammals, birds, reptiles, amphibians, large invertebrates and stream fauna. (Client: EPD; sub-contracted to ERM Hong Kong Ltd., Completed in 2000).

Wetland off-site compensation study at out Deep Bay for site selection study of Waste to Energy Incinerator Facilities (Ha Pak Nai site). Ecological surveys covered vegetation, mammals, birds, reptiles, amphibians, large invertebrates and stream fauna. Client: EPD, Sub-consultant of CDM International, Completed in 2000.

Strategic Master Plan for Expansion of the Main Campus of The University of Hong Kong. Preliminary ecology survey and impact assessment for PPFS. . Ecological surveys covered vegetation, mammals, birds, reptiles, amphibians, large invertebrates and stream fauna. (Client: The University of Hong Kong; sub-contracted to Over Arup & Partners Hong Kong Ltd., completed in 1999).

Agreement No. CE 5/96: Sludge Treatment and Disposal Strategy Study – Site Specific Feasibility Study: Terrestrial Ecology Surveys and impact assessment at Siu Ho Wan and Nim Wan site. (Client: EPD; sub-contracted to ERM Ltd., completed in 1999).

Preliminary Project Feasibility Study of the Proposed Lantau Cable Car between Tung Chung and Ngong Ping. Botanical and mammal surveys. (Client: MTR Corporation; sub-contracted to an environmental consultant firm, 1999).

Agreement No. CE 64/98 Study on Wetland Compensation. (Client: AFD; sub-consultant to Binnie Black & Veatch Hong Kong Ltd.) Involving the Study as a team leader in conducting wetland field surveys. (completed in 1999).

Waste-to-Energy Incineration Feasibility Study: Ecological habitat survey, stream fauna and riparian flora surveys at Ha Pak Nai. Habitat surveys at Tim Chim Chau and Black Point. (sub-contracted to CDM International Inc., completed in 1999)

Preliminary ecological survey at East and West Lake (constructed brackish water lake/or wetland) in Nanwan, **Macau**. (Client: Nanwan Development Ltd., completed in 1999).

Long Term Ecological Monitoring at SENT landfill - Mammal live-trapping: monitoring population of small mammals in the natural habitats adjacent to operational landfill. (sub-contracted to EcoSchemes Ltd., January to December 1998)

Nam Sang Wai Development - Ecological Monitoring: Benthic sample sorting, identification and biomass estimation. (sub-contracted to EcoSchemes Ltd., January to December 1998)

Proposed private development at Pak Kong, Sai Kung, conducting onsite tree surveys, responsible for tree identification and measuring over 1500 trees on site. (Completed in October 1998)

Agreement No. CE 24/97 Desilting and Renovation of Impounding Reservoirs on Hong Kong Island and Lantau Island Investigation Study, undertaking ecological surveys on flora and fauna. (sub-contracted to Enviros Hong Kong Ltd.; Completed in Jan. 1999)

Agreement No. CE 92/97 - Engineering Feasibility Study for Infrastructure Works for Housing Development at Telegraph Bay (cyber port site). Responsible for ecological surveys including flora and fauna. (sub-contracted to Enviros Hong Kong Ltd.; Completed in Jan. 1999)

Ecological recourse review of Shenzhen coastal line. Client: Shenzhen Land Bureau. (sub-consultant of Atkins China Ltd., Completed in November 1998)

Agreement CE 6/97 Feasibility Study for Housing Sites in Sha Tin District - Shing Mun Valley-undertaken the Additional Ecological Survey and Impact Assessment (main consultant: Binnie Black & Veatch Hong Kong Ltd.). (Completed in September 1998)

Agricultural expert's opinion on ten agricultural products of Hong Kong - a report for Henderson Land Development Co. Ltd. (completed in August 1998)

Agreement No. CE 66/96, Planning and Development Study on North West New Territory - conduct specialist ecological survey at a variety of areas in the New Territories in Hong Kong. (completed in June 1998)

Tree survey at Tai Lam Chung, involving species identification, photographing and recording (completed in July 1998).

Tree survey at Ngong Ping, Lantau, involving species identification, photographing, mapping and recording. (completed in August 1998)

Proposed private development at Pak Kong, Sai Kung, conducting on-site tree surveys, responsible for tree identification and measuring over 1500 trees on site, 1998.

Tree Survey at Ping Shan, Yuen Long, involving species identification, photographing and recording, 1998.

Tree Survey for a proposed governmental building renovation site at Aberdeen, Hong Kong Island, involving species identification, photographing, recording, evaluation and reporting, 1999.

Tree Survey for a proposed bus station site at Stanely, Hong Kong Island, involving species identification, photographing, recording and reporting, 1999.

Renewal of Hong Kong Federation of Youth Clubs, Tai Mong Tsai Outdoor Training Camp, Sai Kung: EIA - Botanical survey and impact assessment; tree survey; mangrove and intertidal zone survey; and butterfly survey. 1998.

Agreement CE 52/97. Planning & Engineering Feasibility Study for Redevelopment of Mount Davis Cottage Area & Kennedy Town Police Married Quarters.- Ecological Survey and Impact Assessment.

Proposed Residential Development at Shek Wu Wai Village, north N.T.: Stream survey, impact assessment and reporting.

Proposed Residential Development at DD 92; Development at DD 92; Lot Nos.D 92; Lot Nos. 2558, 915sC and 947;8, 915sC and 9Kam Tsin Tsuen, Sheung Shui, N. T.: Ecological survey and impact assessment.

Planning and Development Study on Hong Kong Island South and Lamma Island. Responsible for fauna surveys (birds, reptile, amphibians, stream benthos and large terrestrial insects) at a number sites including Fok Fu Lam area. Sub-contract to Atkins China Ltd, completed in 2001.

Proposed Section 16 Planning Application, Planning Application for Residential Development at Lot 101 & DD111, Yuen Long N. T.: Ecological survey and impact assessment.

Engineering Feasibility Study for Proposed Housing Development at North of Pamela Youde Hospital, Chai Wan: Ecological survey, impact assessment and reporting.

Route 9, Detailed Feasibility Study: Ecological Surveys (fauna) and Reporting.

Discovery Bay Development: shoreline/habitats survey and marine resources review.

EIA for Tin Kau Development: benthic ecologist responsible for identifying invertebrates collected from the stream and the estuarine.

Ecological Impact Assessment for a proposed resort development at Ngong Ping, Lantau Island: responsible for site surveying, stream benthic sampling, sorting, identifying, evaluating, assessing impacts and propose of ecological mitigation 1998.

**1995.7-1997.3 Senior Environmental Consultant - Hyder Environmental Ltd. (formerly AXIS Environmental Consultants Ltd. Projects involved:**

Deep Bay Water Quality Regional Control Strategy: Project Co-ordinator for a large study developing a management strategy for Deep Bay which borders Hong Kong and the PRC.

Shenzhen River Regulation Project Phase I: Environmental Monitoring and Audit Programme: Project Manager and specialist for the benthic and sediment sampling and sample processing at the Mai Po mudflats.

Shenzhen River Regulation Project Phase II Stage II Works: Project manager and specialist supporting Atkins Haswell Ltd. with environmental aspects especially ecological mitigation.

Community Impact Assessment for West Railway Project: Responsible for identification of ecological sensitive receivers along the proposed railway and stations; recommendation on mitigation measures on relevant ecological component.

Upgrading of Water Quality and Hydraulic Mathematical Models: Responsible for assisting the leading consultant - Delft Hydraulics - in data collection for modelling purpose.

ECCI Calcium Carbonate Grinding Facility, Nanling, Wuhu, PRC: Site investigation, scoping of environmental impact assessment, costing and liaison with local environmental protection/regulation authorities for a British invested factory.

Revised Sha Lo Tung Development EIA: Responsible for the ecological survey of three stream courses in the Sha Lo Tung valley.

Discovery Bay Development - Environmental Consultancy Services for Mangrove Restoration: Specialist to organise and carry out habitat, mangrove and rock shore surveys; supervise and undertake stream channel, mudflat design and nursery construction.

Literature Review on Chinese White Dolphin (*Sousa chinensis*): Supporting study for Hyder Consultants to provide information on spatial distribution and population of white dolphins; and to provide information on status and views of biological conservation of the species.

Part-time Tutor for Environmental Impact Assessment Course: Employed by Hong Kong Open Learning Institute as a Part-time tutor during April 1995 to April 1996 and October 1996 to April 1997.

**1993 - 1995 Binnie Consultants - Environmental Scientist and Benthic Ecologist, Projects involved:**

Tai Po and Butterfly Valley Additional Water Treatment Works EIA: Responsible for ecological surveys of terrestrial and freshwater flora and fauna, 1994.

Proposed Explosive Storage Development, Kau Shek Wan, Lantau: Responsible for the ecological survey of the site of the proposed explosive storage depot, 1994.

Ting Kau Bridge EIA: Ecological survey and impact assessment (terrestrial and freshwater flora and fauna) of proposed Ting Kau Bridge project.

North Lantau Port Development EIA: Ecological survey and EIA of the proposed port development site at Tsing Chau, Lantau.

Kwu Tung Residential Development EIA: Ecological survey and impact assessment (terrestrial and freshwater flora and fauna) of a proposed residential development at North and South of Kwu Tung, North New Territories.

Hoi Ha Wan Ecological Study: Studied benthic communities in streams and the estuary at Hoi Ha Wan, Hong Kong.

Along Bay Resort Development: undertaken a preliminary ecological assessment at Along Bay, a proposed national resort development in Hainan, PRC.

WENT Landfill EIA: Involved in the ecological studies for the supplementary EIA and ecological monitoring at the WENT landfill site on the edge of Deep Bay.

NENT Landfill Environmental Review: Performed an ecological survey of the NENT landfill site as part of the Environmental Review of the project.

East Sha Chau Contaminated Mud Pit Environmental Monitoring: Benthic ecologist and team leader responsible for long-term benthic monitoring for the East Sha Chau contaminated mud pits during 1993-1995. Work included sampling, sample sorting, identification, data analysis and reporting.

South Cheung Chau Spoil Disposal Site Monitoring: Benthic ecologist and team leader responsible for benthic faunal sampling, sorting, identification and reporting.

Seabed Ecology Study: Conducted part of the Remote Seabed Survey (REMOTS) and also a benthic ecologist and team leader (of Binnie Consulting Ltd) undertook the 'Remote Ground Truthing' of benthic communities in west, south and east waters of Hong Kong. Work included project co-ordination, grab sampling, sorting, identification, data analysis and reporting 1993-1995.

Fill Management EIA of Ninepin Islands: Benthic ecologist and team leader undertook a baseline benthic study and impact assessment of the proposed dredging site near the Ninepin Islands. 1994.

Environmental Audit of Dredging in the Lamma Channel: Benthic ecologist and team leader carried out the baseline ecological study and impact assessment of dredging on benthic fauna in the Lamma Channel. 1994.

**1991 - 1993 - Freelance ecological consultant, Project involved:**

Team 73, Townland consultants and New World Development. Independent undertaken or involved the following projects:

Sha Lo Tung Development EIA: Ecological survey of proposed golf course development at Sha Lo Tung.

Mai Po Tsuen, Yuen Long and Tai Po Kau Development EIAs

**1988 - 1993 The University of Hong Kong - Ph.D. candidate and part-time demonstrator for a variety of biological and ecological courses.**

River/Stream Benthic Community and Water Chemistry Studies: Ph.D project studying macroinvertebrate communities in both polluted and unpolluted streams in Hong Kong. The project focused on the various environmental factors influencing animal communities and community structure. Both biotic (e.g. algae and riparian vegetation) and abiotic factors (e.g. water chemistry, substrate, hydraulics and organic pollution) were studied. A relatively new multivariate statistical analysis technique (CANOCO) was used to analyse large community data sets with multivariate environmental parameters. The data on the benthic community and some identified sensitive species could be applied to aquatic environmental stress assessment in Hong Kong.

1984 - 1987 Study for Master of Science degree at the Biology Department of Nanjing Normal University: Research on animal taxonomy.

1987 - 1988 Biology teacher at Nanjing Normal School: Teaching biology and Human Physiology.

1978 - 1981 Undergraduate at the Biology Department of Hunan Normal University: Project research on animal taxonomy. Undertaken plant phenology record of a variety of trees and shrubs.

## **5 Publications and Thesis (not including technical reports)**

Shea She Sang (junior editor), 1986. Proceedings of Nature Calendar of China. Sinica Science press. 421 pp.

Shea She Sang and You, D., 1988. A new species of Isonychia from China (Ephemeroptera: Oligoneuriidae). Pan-Pacific Entomologist. 64(1): 29-31.

Shea She Sang, 1992. Benthic community transitions from freshwater to sea water at Hoi Ha Wan, Hong Kong. In The marine flora and fauna of Hong Kong and Southern China III (ed. B. Morton). Proceedings of the Fourth International Marine Biological Workshop, Hong Kong, 11-29 April 1989. Hong Kong University Press. pp. 801-814.

Shea She Sang, 1993. Determinants of macroinvertebrate community structure in stone surfaces in Hong Kong streams. Ph.D thesis. The University of Hong Kong.

Shea She Sang, 1994. The effects of water quality, epilithic algae and organic matter on the communities of stone-dwelling macroinvertebrates in a Hong Kong river. Mitt. Internat. Verein. Limnol. 24: 327-336.

Shea She Sang and Gui Hong, 1995. Studies on Ephemeroptera (Insecta) of Hainan Province. Acta Nanjing Normal University.

Shea She Sang, Lynn Smith and Pamela Sanders, 1995. Ecological Impact Assessment and Ecological Monitoring of a Strategic Landfill: A Case Study in Hong Kong. Proceedings of The First Symposium of Chinese Zoologist in Southeast Asian, Guangzhou, 14-17 December 1994. In Supplement to The Journal of Sun Yatsen University. 1995 (3): 30 - 39.

Cai Lizhe, Lin Peng, She Shusheng (Mark Shea) and Lawman Law, 1998. Studies on polychaete ecology on the mudflat of the intertidal zone in Shenzhen Estuary. Marine Environmental Science. Vol. 17 (1): 41-47.

Zhou Weichuan, She Shu-Sheng (Mark Shea) etc. 2006. STUDY ON GEOGRAPHY DISTRIBUTION MODEL OF *HEMIBERLESIA PITYSOPHILA*. (周卫川, 余书生 等: 松突圆蚧地理分布模型的研究). To be published.

Zhou Weichuan, She Shu-Sheng (Mark Shea) etc. 2007. A study on the land and freshwater mollusks as hosts of *Angiostrongylus cantonensis* Chen. (周卫川, 余书生 等: 广州管圆线虫中间宿主- 软体动物概述). Chinese Journal of Zoonoses Vol. 23. No. 4; P. 401-408.

WEI ji-ling, ZHOU Wei-chuan, SHAO Bi-ying, SHE Shu-sheng (Mark Shea), WANG Shou-kun, CHEN Wen-bing, CHEN Shou-ling. 2008. Establishment of a PCR assay for detection of snail infected with *Angiostrongylus cantonensis*. PCR 检测螺类感染广州管圆线虫方法的建立与应用. Chinese Journal of Zoonoses Vol. 24. No. 12; P. 1136-1140.

Mark Shea and Sun Jie. 2013. Hong Kong Incense Tree *Aquilaria sinensis*, Incense Product and Incense Culture (in Chinese) 香港土沉香, 香文化及保育。 . Published by China Hong Kong Ecology Consultants Limited, July, 2013. ISBN:978-988-12644-0-4.

SHE Shu-sheng (Mark Shea), SUN Jie. 2017. Bottom trawl survey on molluscs resources of the Pearl River Estuary near Hong Kong waters (in Chinese) 珠江口香港海域底拖网贝类资源研究. Science Press of China. Marine Science Vol. 41, No. 11 / 2017. page 119-124.