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**Ir Lau Chun-kit, Ricky**  
Permanent Secretary  
for Development (Works)

Chair, NEC Asia Pacific Users' Group

### 劉俊傑 工程師

發展局常任秘書長 (工務)

新工程合約亞太區用戶組主席

## NEC 15TH ANNIVERSARY IN HONG KONG

This year marks the 15th Anniversary of Hong Kong's sail on the NEC journey. It is indeed my honour to be the Chair of the Asia Pacific Users' Group since 2021. I am delighted to see the fruits of cultural change through the successful implementation of NEC across a broad range of construction projects in Hong Kong.

This commemorative booklet showcases the many projects which have demonstrated how collaborative contracting advocated by NEC has brought a great success to their completion. I am sure that all members of the project teams are proud of their participation in these projects to strive for better performance with win-win outcomes. The amicable relationships built amongst the parties have enabled them to be proactive and forthcoming with new ideas and innovation. Not only has such collaborative partnering helped accomplish the prime goals of project management, but it has also brought enhancements in mutual trust and cooperation among different industry stakeholders. It is no coincidence that our project teams' outstanding performance is recognized through the various NEC awards over the years.

These achievements have encouraged us to upkeep our efforts to excel in our NEC expertise. Last year, we made a remarkable breakthrough by publishing the Hong Kong Edition of NEC Engineering and Construction Contract, which is the first of its kind with the incorporation of local legislative requirements and procurement practices to suit the need of the Hong Kong context. In particular, we have devised a new Option Clause X30 on "Innovation and Technology", aimed at unleashing innovation opportunities to enhance project performance on various fronts, including site safety, site supervision efficiency and decarbonisation.

While we are pleased to note that our success stories have modestly inspired Singapore to embark on its NEC journey earlier on, we see a great potential to promote the collaborative form of contract to a wider user base, in partnership with our industry stakeholders. Hong Kong has been attracting talents from various construction disciplines to pursue their careers, fostering strong project teams that deliver high-quality design and construction services. We also strive to adopt new innovations and technologies in construction. With a suite of world-class systems and standards in place, we are well-equipped to drive for collaborative contracting and achieve project excellence.

Last but not least, my sincere thanks go to all who have contributed to this rich and inspiring journey of collaboration. I look forward to seeing more project names in the next commemorative booklet. Let us move ahead with full commitment to sharpening Hong Kong's skill set in NEC and building a future-ready world with our talents.

## 新工程合約 香港十五載

今年是香港新工程合約旅程的第十五周年。我深感榮幸，自2021年起出任新工程合約亞太區用戶組主席，欣喜之餘，我見證了香港眾多工程項目成功施行新工程合約，業界文化亦隨之起了顯著變化，成果實為豐盛。

本紀念冊展示了多個項目案例，充分體現了新工程合約倡導的協作式合約如何助力這些項目成功完成。我相信，所有曾參與這些項目的團隊成員都為此而感到自豪；他們在力求項目能達致更佳表現的同時，亦實現了雙贏的局面。各方共建的融洽關係，令團隊能夠積極主動地採納新想法和應用創新科技。這種協作關係不僅有助實現項目的主要目標，還可增強業界不同持份者之間的互信與合作。多年來，項目團隊獲得了多項新工程合約獎項，其卓越表現並非偶然。

這些成就激勵我們不斷提升在新工程合約方面的專業能力。去年，我們更取得突破，成功發佈了香港版本的「新工程合約—工程及建設合約」，這首創的版本融入了本地法例要求和常用的採購方法，從而滿足香港實際需求。特別是，我們引入了新條款X30—創新與技術，旨在釋放創新潛力，以提升項目在工地安全、監督效率和節能減碳等多個方面的表現。

我們欣聞香港的成功故事，在早前激勵了新加坡開啟其新工程合約之旅。與此同時，我們見到向更廣泛用戶推廣協作式的合約模式極具潛力，期望能夠與業界持份者在這方面攜手合作。一直以來，香港成功吸引來自各個建築領域的人才到來發展事業，並培養出強大的項目團隊，提供高質量的設計和施工服務。我們亦致力於建造項目中採用創新科技。憑藉一系列世界級的系統和標準，我們已為進一步推動協作式合約及實現卓越的項目表現做好準備。

最後，我對所有曾為這豐碩而令人鼓舞的協作旅程作出貢獻的人士，致以衷心感謝。我期待在下一本紀念冊中看到更多項目的名字。讓我們攜手向前，全心投入，並以我們的才能，致力提升香港在新工程合約方面的專業能力，共建一個面向未來的世界。





# NEC CELEBRATES 15 YEARS IN HONG KONG

By **Rekha Thawrani, OBE**  
Director, NEC Contracts Global

As NEC celebrates 15 years of working to progress procurement practices in Hong Kong, we reflect on the successful journey towards collaborative contracting.

It began in 2009 with a series of pilot projects from the HK Development Bureau. These required adapting to the new contracting system, with a need for training, adjustments in project management practices and a move to a collaborative mindset across the project teams.

With the success in delivery of the pilot projects, momentum grew for NEC's adoption. Since then there has been significant growth, with more than 600 public works contracts awarded over the past 15 years, worth over HK\$400 billion.

Key projects in Hong Kong, such as the highlighted ones in this booklet, set new benchmarks for collaboration and innovation in the region. Since 2015, the permanent secretary for development at the Development Bureau has been appointed as chair of the NEC Asia-

Pacific Users' Group. This demonstrates the joint commitment to growing the use of NEC and collaborative contracting in the region.

NEC and the Development Bureau launched a Hong Kong Edition of the NEC Engineering and Construction Contract (ECC HK Edition) at the NEC annual conference in London in July 2023. The second contract in the suite, the Hong Kong Edition of the Term Service Contract (TSC HK Edition) will be available in 2025.

These new contracts are geared towards meeting local legislative needs and procurement practices, encouraging site safety and decarbonisation.

NEC continues to equip local industry professionals with the tools and skills to facilitate best practice in procurement and project management. The journey over the past 15 years is a testament to the power of innovation and collaboration in the industry.

# 慶祝來港15周年

作者：NEC Contracts Global  
Rekha Thawrani 總監及大英帝國騎士勳章獲得者

藉此 NEC 慶祝其在香港推進採購實務 15 周年之際，我們回顧了邁向協作承包的成功旅程。

這段旅程始於 2009 年香港發展局的一系列試點項目。這些項目需要各方適應新的承包體系，包括參與培訓、調整項目管理實務，並在項目團隊中建立協作思維模式。

隨著試點項目的成功交付，NEC 在香港的應用勢頭強勁。15 年來，NEC 取得了顯著的增長，公共工程合約授予數量超過 600 份，總價值超過 4,000 億港元。

本手冊重點介紹的香港主要項目，為該地區的協作和創新樹立了新的標竿。自 2015 年以來，發展局常任秘書長一直擔任 NEC 亞太用戶組主席，這充分表明了各方致力於在該地區推廣 NEC 和協作承

包模式的決心。

NEC 與發展局於 2023 年 7 月在倫敦舉行的 NEC 年度會議上發布了《NEC 工程和建造合約香港版》(ECC 香港版)。該系列的第二份合約，《定期服務合約香港版》(TSC 香港版)將於 2025 年推出。

這些新合約旨在滿足香港當地立法需求和採購實務，並鼓勵工地安全和脫碳。

NEC 將繼續為當地業界專業人士提供必要的工具和技能，以促進採購和項目管理的最佳實務。過去 15 年的歷程證明了創新和協作在建築行業中的巨大力量。

# DEVELOPMENT BUREAU 15 YEARS AND BEYOND

發展局  
承傳十五載



## Overview

As a pioneer of the NEC contract, the Development Bureau (DEVB) has been in close collaboration with its Works Departments and other departments such as the Environmental Protection Department to leverage its standards across various construction projects since 2009. Over 620 nos. works contracts and 230 nos. consultancy agreements with a total value of over HK\$400 billion have adopted NEC form in public works projects in Hong Kong. A key deliverable has been the **NEC ECC HK Edition**, which was launched in July 2023. Its main purpose is to broaden the scope of collaborative contracting in local construction projects by blending the Hong Kong's practices with the original NEC clauses.

In NEC ECC HK Edition, DEVB has also introduced a new clause: **"X30: Innovation and Technology"**. This clause introduces a contractual mechanism for both the Contractor and Project Manager for enhancing site safety, supervision efficiency, and decarbonisation by utilizing Innovation and Technology (I&T) solutions. The mechanism involves facilitating I&T meetings and the establishment of an I&T Register system.

Modelling on the success of NEC ECC HK Edition, DEVB is currently developing the **NEC TSC HK Edition** and the **NEC PSC HK Edition**. Together, they form the **"Hong Kong Edition of the NEC Suite" (NEC HK Suite)**.

Underscoring the importance of perpetuating collaboration in the frontline, DEVB has been rolling out training workshops to equip junior professionals and supervisory staff with a comprehensive understanding of NEC principles. This closes the knowledge gap between junior and senior professionals. Furthermore, DEVB keeps on enhancing the use of NEC by actively exchanging expertise with key stakeholders locally, the mainland and other regions such as Singapore.

The DEVB strives to promote NEC's spirit of mutual trust and collaboration through its embodiment in Hong Kong public works projects. In discharging Hong Kong's unique roles in integrating into national development, we are also helping to promote collaborative contracting in construction in the Greater Bay Area and other Mainland cities.

## Key benefits of using NEC

1. Building a mutual trust and cooperation partnering relationship between the contracting parties through contractual mechanisms
2. Enhancing project management performance and cost-effectiveness
3. Promoting the adoption of innovative solutions in project delivery

## 概覽

作為使用新工程合約的先驅，自2009年以來，發展局一直與其工務部門和環境保護署等其他部門密切合作，在多個工程項目中推廣採用新工程合約。到目前為止，香港的工務工程項目已有超過620份工程合約和超過230份顧問合約採用了新工程合約模式，合約總價超過4000億港元。其中一個重要的成果就是2023年7月推出的新工程合約香港版-工程及建造合約，該合約範本將香港的項目管理實踐融入到原有的新工程合約條款，以此擴大大地建設項目中協作式合約的範圍。

在新工程合約香港版-工程及建造合約中，發展局引入了一條新條款—X30:創新與技術。這一條款透過引入合約機制，鼓勵承建商和項目經理使用創新技術方案，提升工地安全、監督效率和減碳表現。相關的合約機制包括創新技術會議和創新技術登記系統。

在新工程合約香港版-工程及建造合約成功的基礎上，發展局目前正在編寫新工程合約香港版-定期服務合約和新工程合約香港版-專業服務合約，這三份合約範本將共同構成新工程合約香港版合約系列。

發展局重視培育前線工作人員的協作精神，並開展了一系列培訓工作坊，旨在使初級專業人員和工地督導人員全面瞭解新工程合約的理念，補充他們相對於資深專業人員而言，在新工程合約培訓方面的不足。此外，發展局積極與本地、內地和新加坡等其他地區交流分享使用新工程合約的經驗和成果，不斷推動新工程合約的使用。

發展局致力於推動在香港的工務工程項目中踐行新工程合約的互信與協作精神。另外，我們也協助推廣協作式合約在大灣區及其他內地城市的使用，扮演好香港在融入國家發展大局中的獨特角色。

## 使用NEC的主要好處

1. 透過合約機制，建立合約雙方的互信與夥伴合作關係
2. 提升項目管理表現和成本效益
3. 促進創新解決方案在項目中的採用



## CONGRATULATION MESSAGES 祝賀信息



**Ir Lau Chun-kit, Ricky**  
Permanent Secretary  
for Development  
(Works)  
Chair, NEC Asia  
Pacific Users' Group



**Andrea Naylor**  
Managing Director  
Thomas Telford Ltd

This year marks the 15th Anniversary of Hong Kong's sail on the NEC journey. It is indeed my honour to be the Chair of the Asia Pacific Users' Group since 2021. I am delighted to see the fruits of cultural change through the successful implementation of NEC across a broad range of construction projects in Hong Kong.

今年是香港新工程合約旅程的第十五周年。我深感榮幸，自2021年起出任新工程合約亞太區用戶組主席。欣喜之餘，我見證了香港眾多工程項目成功施行新工程合約，業界文化亦隨之起了顯著變化，成果實為豐盛。

劉俊傑 工程師發展局常任秘書長 (工務)  
新工程合約亞太區用戶組主席

I am incredibly proud of our 15-year journey with NEC Contracts in Hong Kong. This achievement is a testament to the dedication, collaboration and expertise that have gone into delivering successful projects. Together, we have made a significant impact on Hong Kong's infrastructure and development.

我為我們在香港與 NEC Contracts 的 15 年合作感到無比自豪。這項成就證明了我們為成功交付項目所付出的貢獻、協作和專業知識。我們共同對香港的基礎建設和發展產生了重大的影響。

works | services | supply



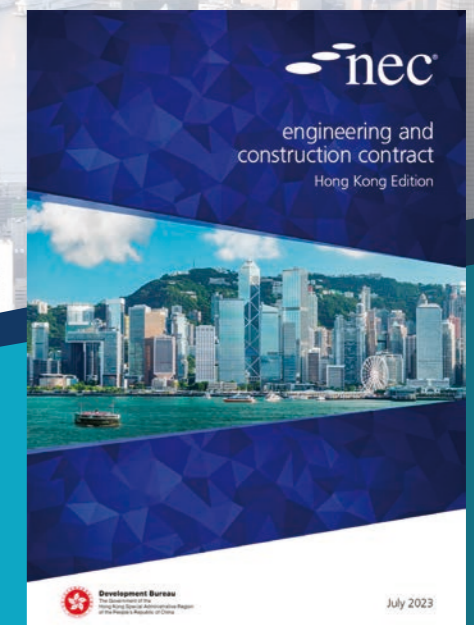
## nec | Hong Kong Editions

The NEC Hong Kong Editions have been drafted by NEC and Development Bureau, based on the NEC4 Contract Suite.

- These Contracts are tailored to meet specific local requirements in legislation and procedures
- They provide consistency in documentation across public and private works contracts
- Maintain the NEC4 project management ethos and principles, including collaborative sharing of risk and reward



FIND OUT MORE



# ARCHITECTURAL SERVICES DEPARTMENT DRAINAGE SERVICES DEPARTMENT BUILDING

## 建築署 渠務署辦公大樓



### PROJECT TEAM MEMBERS 項目團隊成員

#### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

#### Project Manager / 項目經理:

Architectural Services Department, HKSARG  
香港特別行政區政府 建築署

#### Supervisor / 監督人員:

Architectural Services Department, HKSARG  
香港特別行政區政府 建築署

#### Contractor / 承建商:

Shui On Joint Venture  
瑞安聯營

#### Contract Value / 合約價值:

HK\$1,769 million  
17.69億港元

#### Contract(s) used on the project / 項目中使用的合約:

NEC3 Engineering and Construction Contract Option C  
NEC3工程及建造合約 選項C

### Project overview

The project comprises the construction of a new office development for the Drainage Services Department (DSD) and Social Welfare Department (SWD), which is part of the relocation of DSD Headquarters from Wan Chai Government Offices Compound and Central Case File Depository of SWD from leased premises respectively.

To optimize land utilization, the building is constructed within the existing Cheung Sha Wan Sewage Pumping Station (CSWSPS). The 21-storey building will have a net operational floor area of about 19,220 m<sup>2</sup> and an external carpark. The building is anticipated to be completed in 2025 and is aimed to be a smart office building with modern workplace settings, sustainable and renewable energy features, to foster staff interaction and well-being.

### Challenges of the Site

The site is within the existing CSWSPS, which is under operation 24 hours and is only slightly larger than the building footprint. The remaining works area for the construction is limited and crowded. To ensure uninterrupted operation of the CSWSPS, the Contractor proactively coordinated with DSD's project and operation teams on the site planning and logistics in the early stage. The arrangement for site accesses, material delivery, storage, installation yards, construction sequences etc. was discussed for different stages and reviewed from time to time.

### Target Cost Contract under New Engineering Contract

This is a pilot project adopting the NEC3 ECC Option C contract under the Architectural Services Department (ArchSD) in 2019. The building project has over 100 numbers of subcontracts and different types of construction trades. At the time of contract commencement, both the main contractor as well as the potential sub-contractors in the market were largely unfamiliar with the sub-contracting procedures under target cost contracts, additional time and effort on sub-contract tender briefings and clarifications were spent to ensure timely procurement with the tight schedule.

With the collaboration, spirit of mutual trust and common goals shared among the main contractor, sub-contractors, project team and other stakeholders, we are confident that the project will be delivered successfully. The experience of this project will be shared and extended to the forthcoming NEC Target Cost building works projects in ArchSD to promote partnering relationships, thereby minimizing the risk of cost overrun and delay.

### Key benefits of using NEC

1. Early communication on potential problems and effective risk management
2. Emphasis on collaborative working and be open-minded
3. Mutual trust of all parties allowing joint project management

### 項目概覽

渠務大樓工程項目是重置灣仔海旁3座政府大樓計劃的項目之一。大樓主要用作重置渠務署現時位於灣仔稅務大樓的辦事處，以及社會福利署租用私人物業的中央個案記錄貯存室。

為貫徹政府推展「一地多用」的政策，工程計劃的用地位於現有的長沙灣污水泵房範圍內。這座21層的辦公大樓將提供約19,220平方米的淨作業樓面面積及一個室外停車場，大樓預計於2025年完工。此項目旨在打造一座智能辦公大樓，除採用了現代化工作空間的設計，亦加入了環保和可持續發展的建築特色，促進員工之間的互動及其健康。

### 工程挑戰

工程選址於現時需要二十四小時運作的長沙灣污水泵房內。由於工地和大樓面積相若，工地範圍內剩餘可用作施工的空間非常有限和擁擠。在工程進行期間，為確保污水泵房的運作不受工程影響，承建商需要在工程初期便開始與渠務署的工程和泵房運作團隊積極協調，預先就工地的交通安排、物流、材料儲存、施工方法和流程等各方面達成協議，並不時進行審核。

### 「新工程合約」模式下的「目標價合約形式」

本項目是建築署在2019年首批採用「新工程合約」模式下的「目標價合約形式」(NEC3 ECC Option C Contract)的試點項目之一。工程涉及多於100個分判合約和不同的工種。由於在合約早期階段，承建商以至分判商均對「目標價合約形式」不太熟悉，建築署及承建商需預留額外的時間及人手協助分判商理解分判的程序，包括安排招標簡介會、澄清投標書等，以確保所有分判工作可以在設定的程序框架及時限內完成。

憑藉建築署、承建商及分判商團隊一直以來的合作及互信並贏的夥伴關係，我們相信渠務大樓工程項目將能夠順利完成。團隊亦會將過程中的經驗分享給建築署其他「目標價合約形式」的項目，藉此提倡協作文化，共同解決困難，以減低超支或延誤風險。

### 使用NEC的主要好處

1. 早期溝通潛在問題和有效風險管理
2. 強調協作工作和保持開放的心態
3. 各方互相信任，推進聯合項目管理



# WATER SUPPLIES DEPARTMENT IMPROVEMENT TO DONGJIANG WATER MAINS P4

水務署  
東江水水管 P4改善工程



## PROJECT TEAM MEMBERS 項目團隊成員

### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

### Project Manager / 項目經理:

Water Supplies Department, HKSARG  
香港特別行政區政府 水務署

### Supervisor / 監督人員:

Water Supplies Department, HKSARG  
香港特別行政區政府 水務署

### Contractor / 承建商:

Ming Hing Vasteam Joint Venture (MHVJV)  
明興 - 浩隆聯營

### Contract Value / 合約價值:

Approx. HK\$815 million  
約8.15億港元

### Contract(s) used on the project / 項目中使用的合約:

NEC4 Engineering and Construction Contract Option C  
NEC4工程及建造合約 選項C

## Project overview

The Dongjiang (DJ) water mains P4 is one of the raw water mains for transferring DJ raw water from the Guangdong Province via Muk Wu Raw Water Pumping Station to Tai Po Tau Raw Water Pumping Station, where the DJ raw water will be further distributed to various water treatment works and the Plover Cove Reservoir. The existing glass reinforced plastic (GRP) pipes of the section of DJ water mains P4 at Sheung Shui and Fanling were laid more than 40 years and had deteriorated. Therefore, we need to replace this section of the GRP pipes timely to ensure the reliability of water supply to Hong Kong.

The existing DJ water mains P4 had to be shut down for its replacement works. Extra energy would be required for operation of pumps to rearrange delivery via other

DJ water mains in a less optimal operation mode. To reinforce reliability of DJ water supply and save energy, the replacement works of DJ water mains P4 should be completed as soon as possible. A very tight schedule, i.e., laying about 5 km<sup>2</sup> of large diameter (2.2 m) water mains within 2.5 years, has been set for the project to minimize the additional electricity cost. The project team has to exercise extreme care to ensure the safe operation of the East Rail Line and Fanling Highway during the replacement of the proposed DJ water mains P4 adjacent to them. In particular, the project team has to deal with high pedestrian flow, high traffic flow, congested underground structures and utilities for the proposed trenchless works, which were located in the vicinity. Various construction methods and technology, including trenchless method, slip-lining method, point cloud technology and visual reality safety trainings have then been deployed to overcome the difficulties.

The project was completed and commissioned in 2023 with zero accident record. WSD and the Contractor have fully exercised a collaborative relationship to achieve the completion notwithstanding the impact of logistic delay and resource shortage due to COVID-19 during the construction period, and won the 2023 NEC Water Contract of the Year award.

## Key benefits of using NEC

1. NEC requirement to act in a 'spirit of mutual trust and co-operation' ensured full collaboration between the client and contractor to overcome many project challenges. The contractor has strived for the common goal of timely completion and collaborated with the project manager in identifying viable alternative alignments and construction methods.
2. NEC early warning process helped to identify and mitigate risks to timely completion at the earliest stage, such as unexpectedly high traffic volumes and unexpected ground conditions.
3. NEC-inspired collaboration led to several innovative solutions, such as the largest slip-lining works in Hong Kong and the use of ground penetrating radar to create an underground building information model to facilitate design.

## 項目概覽

東江水水管中的P4喉管，把原水從廣東省經木湖原水抽水站輸送至大埔頭原水抽水站，然後進一步輸送至各濾水廠及船灣淡水湖。部分位於上水及粉嶺的現有東江水水管P4為玻璃強化膠管，並已敷設超過40年及出現老化現象。因此，我們需要適時更換這段玻璃強化膠管，以確保香港供水的可靠性。

現有的東江水水管P4須關閉以便進行更換工程。工程期間，我們需要重新調配使用其他東江水水管輸送東江水，因而需要額外的電力。為加強東江水供水的可靠性及節省能源，東江水水管P4更換工程應盡快完成。因此，維修工期非常緊湊，需要在2年半內敷設約5公里的大直徑（2.2米）水管，以盡量減少額外的電費。在更換鄰近東鐵線及粉嶺公路的P4水管時，工程團隊須格外小心，確保鐵路和公路運作安全。此外，工程團隊為了應對位於擬議水管工程附近繁忙的人流和交通、密集的地下結構和公用設施，採用了多種施工方法和技術，包括：無坑敷管法、內套喉管法、點雲技術和虛擬實境安全培訓等，以克服困難，順利完成工程。

該工程能達到零意外的目標於2023年完工，並正式運作。儘管施工期間受到2019冠狀病毒疫情的影響，造成物流延誤和物資短缺，水務署與承建商充分發揮互信及合作共贏精神，順利完成工程，並在2023年獲得新工程合約年度水務工程項目大獎。

## 使用NEC的主要好處

1. NEC 要求各方本著「互相信任與合作的精神」行事，確保客戶與承建商充分合作，共同克服項目挑戰。承建商致力於實現及時完工的共同目標，並與項目經理合作，探討可行的替代方案和施工方法。
2. NEC 預警流程幫助項目團隊盡早識別並減輕可能導致項目延誤的風險，例如交通流量意外增加或遭遇不可預見的地面狀況。
3. 在 NEC 啟發下，各方共同合作，創造出許多創新解決方案，例如香港最大的滑襯工程，以及利用探地雷達建立地下建築資訊模型，有效協助設計工作。



# CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT TUNG CHUNG NEW TOWN EXTENSION

土木工程拓展署  
東涌新市鎮擴展



## PROJECT TEAM MEMBERS 項目團隊成員

### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

### Project Manager / 項目經理:

AECOM Asia Company Limited  
艾奕康有限公司

### Supervisor / 監督人員:

AECOM Asia Company Limited  
艾奕康有限公司

### Contractor / 承建商:

Build King - SCT Joint Venture  
利基 - 三星聯營

### Contract Value / 合約價值:

HK\$12 billion / 120億港元

### Contract(s) used on the project / 項目中使用的合約:

NEC3 Engineering and Construction Contract Option B  
NEC3工程及建造合約 選項B

## Project overview

Tung Chung New Town Extension (TCNTE) is one of the major initiatives under the Hong Kong Government's multi-pronged approach to increase land supply. It covers the eastern and western parts of existing Tung Chung New Town and whole extension will provide about 62,100 residential flats for a population of about 184,000. It provides about 500,000 m<sup>2</sup> gross floor area (GFA) for office use, 327,000 m<sup>2</sup> GFA for retail use and 50,000 GFA for hotel use. Land is also reserved in Tung Chung East (TCE) for recreational, educational and community uses.

The Tung Chung New Town Extension – Reclamation and Advance Works is a reclamation project in TCE using non-dredging method with Deep Cement Mixing technology to form a total of about 130 hectares of land. It also comprises the construction of 4.9 km seawalls including the first 3.8 km eco-shoreline in Hong Kong, 470 m extension of multi-cell drainage box culvert and associated environmental mitigation works. The works contract commenced in December 2017 and completed in January 2023.

## Key benefits of using NEC

### 1. Active Top Management Involvement

With full support and participation of the top management of the Employer, Project Manager and Contractor, the project team formed a robust partnership. The aim was to explore measures that can enhance partnership, foster collaboration, build mutual trust, and optimize collaboration mechanisms.

### 2. Strong Collaboration of Team Members to achieve common goal

“One Project - One Team - One Goal” was not only a slogan, but also the core value of the project team and the built-in contractual partnering under NEC4 Clause 10.1, which kept in every project team member's mind. With the common goal, all team members were devoted to render full support to each other. Potential risks were reviewed and resolved promptly with the concerted efforts of the project team at the bi-weekly risk reduction meetings.

### 3. Early Project Delivery

With the team's strong spirit of collaboration and remarkable work, the TCE Reclamation Project was successfully delivered in January 2023 ahead of the programme by over 6 months. It adopted a sustainable and environmental friendly approach to reclamation and is the first public works project to introduce eco-shorelines that mimics the local natural intertidal zone as far as practical so as to provide a suitable habitat for the growth of marine organisms to form a tide ecosystem.

## 項目概覽

東涌新市鎮擴展是香港政府多管齊下增加土地供應的主要措施之一。它涵蓋現有東涌新市鎮東西兩面的範圍。整個擴展計劃將會提供約 62 100 個住宅單位，容納約 184 000 人口。亦會提供約 500 000 平方米總樓面面積作辦公室用途、327 000 平方米總樓面面積作零售用途，以及 50 000 平方米總樓面面積作酒店用途。此外，位於東涌新市鎮東面的新擴展區亦預留土地作康樂、教育及社區用途。

東涌新市鎮擴展 - 填海及前期工程包括在東涌東以非浚掘方式及使用深層水泥伴合法進行填海工程，開拓約130公頃的土地、建造4.9公里的海堤，包括香港首條3.8公里的生態海岸線、建造470米多管道箱形排水暗渠及相關環境緩解工程。工程於2017年12月展開，並於2023年1月完成。

## 使用NEC的主要好處

### 1. 團隊高層的積極參與

在僱主、項目經理和承建商的高層全力支持和積極參與下，項目團隊建立了建立一個強大的夥伴關係，以探討進一步加強合作夥伴關係、促進協作、建立相互信任和優化協作機制的措施。

### 2. 團隊成員緊密合作以實現共同目標

“One Project - One Team - One Goal” 一項工程 – 一個團隊 – 一個目標不僅是一個口號，也是項目團隊的核心價值觀及 NEC 條款 10.1 下內建立的合作夥伴關係，這個價值深入到每個項目團隊成員的心中。在有共同目標的情況下，所有團隊成員互相全力支持。項目團隊在每兩週的風險減少會議上檢視和迅速解決潛在風險。

### 3. 提早完成項目

在項目團隊的強大合作精神和堅毅工作下，東涌東填海工程已提前6個月於2023年1月成功交付。項目採用可持續和環保的填海技術，以及是首個引入生態海岸線的工務工程，在可行情況下加入模仿自然潮間帶的設計，以提供一個合適的生境給海洋生物生長，形成潮汐生態系統。

## CONGRATULATION MESSAGES 祝賀信息



**Ir. Prof. Thomas HO On-sing, JP**  
Chairman  
Construction Industry Council



**Dr. Janet Young**  
Director General  
Institution of Civil Engineers

15th Anniversary of NEC in Hong Kong  
Professional management drives success  
for the industry.

業界津梁

創優管理

新工程合約組織在港設立十五周年誌慶

Congratulations on 15 years of NEC contracts in Hong Kong! This milestone reflects a great commitment to project excellence and collaboration. Wishing everyone continued success in making a lasting impact on Hong Kong's infrastructure!

祝賀 NEC 合約在香港 15 周年！這個里程碑體現了對項目卓越和協作的巨大承諾。祝願大家繼續取得成功，為香港的基礎建設做出持久的貢獻！

## CONGRATULATION MESSAGES 祝賀信息



**Renee Paik**  
Head of Asia Pacific  
NEC Contracts



**Tommy Leung**  
Executive Director  
Third Runway,  
Airport Authority  
Hong Kong

Congratulations to NEC on 15 years in Hong Kong. The adoption of NEC Contracts has fostered collaboration, innovation, and more efficient project delivery. Wishing everyone continued success as we shape the future of construction together across Asia Pacific!

祝賀 NEC 在香港成立 15 周年。NEC 合約的採用促進了協作、創新和更高效的項目交付。祝願大家在共同塑造亞太地區建築業的未來方面繼續取得成功！

Mutual trust and cooperative approach that encourages timely resolution of critical issues and prevents costly disputes/claims is definitely an advantage which allows both contracting parties fully focus on project delivery.

互相信任和合作的模式鼓勵及時解決關鍵問題，並能有效防止產生代價高昂的爭議或索賠，這絕對是一大優勢，讓雙方都能專注於項目交付。



# AIRPORT AUTHORITY HONG KONG

## APM AND BHS TUNNELS ON EXISTING AIRPORT ISLAND

### 香港機場管理局

現有機場島的旅客捷運系統 (APM)  
及行李處理系統 (BHS) 隧道



#### PROJECT TEAM MEMBERS 項目團隊成員

**Employer / 僱主:**  
Airport Authority Hong Kong  
香港機場管理局

**Project Manager / 項目經理:**  
Airport Authority Hong Kong  
香港機場管理局

**Supervisor / 監督人員:**  
Airport Authority Hong Kong  
香港機場管理局

**Contractor / 承建商:**  
China State Construction Engineering  
(Hong Kong) Limited  
中國建築工程(香港)有限公司

**Contract Value / 合約價值:**  
Over HK\$2 billion / 超過20億港元

**Contract(s) used on the project / 項目中使用的合約:**  
NEC3 Engineering and Construction Contract Option D  
NEC3工程及建造合約 選項D

#### Project overview

Airport Authority Hong Kong (AAHK) awarded the 3801 civil works contract to China State Construction Engineering (Hong Kong) Limited under an NEC3 Engineering and Construction Contract (ECC) Option D (target cost contract with bill of quantities) in June 2017. It was the first NEC contract adopted in the Three-runway System project. Contract 3801 involved constructing 400 m sections of 2.6 km long Automated People Mover (APM) tunnel and Baggage Handling System (BHS) tunnel at the existing airport island. The tunnels will link the expanded Terminal 2 to the T2 Concourse which sits on 650 ha of reclaimed land north of the airport. The new APM system will operate at a top speed of 80 km/h and transport up to 10,800 passengers per hour, while the new BHS will be capable of handling up to 9,600 bags per hour.

The APM tunnel is a four-cell reinforced concrete box structure while the parallel BHS tunnel is a two-cell design. The first sections delivered under this contract were mostly built in a heavily braced open-cut excavation that crossed beneath the live dual-carriageway Airport Road and four single-carriageway roads where involves heavy temporary traffic arrangement from time to time during the course of construction. Other than the tunnels, the contract also involves constructing the tunnel associated ventilation building (VB1), a 400 m long box culvert (BC7) and multiple sets of underground utilities.

The NEC approach was also implemented in sub-contract level. The sub-contract of box-jacking for tunnel section cross under the MTR Airport Express railway line, NEC3 Engineering and Construction Subcontract (ECS) was adopted.

#### Key benefits of using NEC

1. Both parties work in a 'spirit of mutual trust and co-operation' fostered a collaborative working relationship between the parties.
2. Early warning and contract management processes ensured the parties took a proactive approach to managing risk from the outset.
3. Collaboration engendered innovation and opportunities in logistics, engineering and design for the benefit of the project.
4. Pain/gain share mechanism encouraged both parties to control costs through sharing the risk of over- or under-spend.

#### 項目概覽

香港機場管理局於 2017 年 6 月將土木工程合約編號3801- 現有機場島的旅客捷運系統及行李處理系統隧道工程授予中國建築工程(香港)有限公司。該合約採用NEC3 工程及施工合約 (ECC) 選項 D ( 工程量清單目標價合約 ) · 這是三跑道系統項目的第一份 NEC 合約。該合約主要工程項目包括在現有的機場島上建造一條約 400 米長的旅客捷客系統隧道及行李處理系統隧道。該隧道將連接二號客運大樓和建在機場北部 650 公頃的新填海區上的T2客運廊。新旅客捷客系統最高運行速度可達 80 公里/小時 · 每小時可運送多達 10,800 名乘客 · 而新行李處理系統每小時將能夠處理多達 9,600 件行李。

旅客捷客系統隧道及行李處理系統隧道分別由四孔鋼筋混凝土箱涵及雙孔箱涵組成。本合約主要以挖掘及側向承托方式於雙行車道機場路和四條單行車道下方興建該隧道。整個工程大部份時間在運作中的交通環境下施工 · 所以該工程涉及大量的臨時交通改道措施。箱涵頂進(box jacking)方式則使用於部分穿越現行港鐵機場快綫軌道下的隧道。而這分判合約亦都採用NEC3 (ECS) 合約管理系統。合約還包括興建一幢隧道通風大樓、一條約400米長的排水箱涵和多組地下管線設施。

#### 使用NEC的主要好處

1. 雙方本著「互信互助的合作精神」 · 營造積極的協作氛圍 · 讓雙方在互相信任的基礎上開展工作。
2. 透過預警和合約管理流程 · 確保各方從項目初期便積極主動地管理風險。
3. 協作促進了物流、工程和設計方面的創新 · 為項目帶來更多機遇和效益。
4. 「利益共享、風險共擔」的機制鼓勵雙方共同承擔超支或節支的風險 · 進而有效控制成本。

# CHINA ROAD AND BRIDGE CORPORATION CROSS BAY LINK TSEUNG KWAN O

中國路橋工程有限責任公司  
將軍澳跨灣連接路



## PROJECT TEAM MEMBERS 項目團隊成員

**Employer / 僱主:**  
The Government of the Hong Kong  
Special Administrative Region (HKSARG)  
香港特別行政區政府

**Project Manager / 項目經理:**  
Civil Engineering and Development Department, HKSARG  
香港特別行政區政府 土木工程拓展署

**Supervisor / 監督人員:**  
AECOM Asia Company Limited  
艾奕康有限公司

**Contractor / 承建商:**  
China Road and Bridge Corporation  
中國路橋工程有限責任公司

**Contract Value / 合約價值:**  
HK\$2.585 billion / 25.85億港元

**Contract(s) used on the project / 項目中使用的合約:**  
NEC3 Engineering and Construction Contract Option C  
NEC3工程及建造合約 選項C

## Project overview

The Cross Bay Link (CBL) in Tseung Kwan O (TKO) is a 1.8 km dual two-lane carriageway with a cycle track and a footpath. It comprises a 1.0 km long marine viaduct across Junk Bay and the 0.8 km long Road D9, connecting to the Tseung Kwan O-Lam Tin Tunnel (TKO-LTT) of Route 6 on the west, and Wan Po Road on the east. The marine viaduct of the CBL consists of 12 spans, nine of which are concrete box girders and three steel decks, including the thematic double-arch in the central span. The lengths of the concrete spans range from 46 m to 75 m, and the steel ones range from 100 m to 200 m. The central steel span straddles across the main navigation channel of Junk Bay, with a minimum clearance requirement of 160 m in width by 17 m in height. The design was based on the theme of an "Eternity Arch" signifying vitality. The project also exemplified

engineering ingenuity by employing S690QL high-strength steel enabled slender, aesthetically pleasing arched ribs. Cutting-edge technologies like "Design for Manufacture and Assembly", "Float-over" for steel bridge installation, extensive prefabrication and "Whole-span Lifting" for concrete decks were adopted to overcome marine traffic and hydraulic challenges, enhance quality control and reduce environmental impacts. This achievement showcased the fusion of technical prowess and sustainable practices in modern infrastructure development.

## Key benefits of using NEC

- 1. Collaboration and Communication:** The NEC encourages collaborative working and open communication between all parties involved in the project, including the client, contractor, and project manager. This helps to identify and resolve issues quickly, leading to more efficient project delivery.
- 2. Flexibility and Adaptability:** The NEC contract is designed to be flexible, allowing for changes and adjustments to be made throughout the project lifecycle. This helps to accommodate evolving requirements and unforeseen circumstances, such as the COVID-19 pandemic impacts mentioned in the text.
- 3. Risk Management:** The NEC contract promotes a proactive approach to risk management, with mechanisms in place to identify, assess, and mitigate risks collaboratively. This helps to reduce the impact of potential issues and ensure the project stays on track.
- 4. Transparency and Accountability:** The NEC contract emphasizes transparency and clear roles and responsibilities for all parties involved. This promotes accountability and helps to ensure the project is delivered within the agreed time, cost, and quality parameters.

## 項目概覽

建造400米長的鋼板裝配的海上高架路，由兩座斜拉式鋼拱橋(200米主跨)和兩端各100米的鋼橋將軍澳跨灣連接路全長約1.8公里，橫跨將軍澳海灣，向西與6號幹線公路的將軍澳-藍田隧道相接，向東與環保大道相接。其中海上高架橋部分全長1.0km，設有雙向四條行車道，單車道和行人道。大橋由12跨組成，其中主橋為3跨鋼結構橋樑，包含1個跨徑為200米的主跨及兩個100米的邊跨；引橋為9跨預應力混凝土箱梁，跨徑介於46至75米之間。主橋採用外傾式蝴蝶拱橋跨越將軍澳灣，跨徑200米，提供寬160米、高17米的主通航通道。大橋設計基於“活力無限”的概念，寓意將軍澳新市鎮蓬勃生機與美好未來。大橋拱肋創新性的採用了S690QL高強鋼製作，顯著減小了拱肋構件的截面尺寸，從而使結構整體外觀效果更加輕盈簡潔。施工方面，項目團隊從綠色、低碳、可持續發展的角度出發，成功應用了多項創新技術以最大限度的減少施工作业對海上交通、海水環境、空氣品質、周圍居民生活等影響。鋼結構橋樑採用了場外製作拼裝完成、現場整體浮托法安裝的施工工藝，將總重量超過一萬噸的橋樑結構在極短的時間內平穩安裝到位；混凝土橋樑及橋墩在工廠預製完成后，送到項目現場採用大型起重船吊裝。組裝成式施工方法大大減少了現場的工作量，提升了安全性、提高了施工品質。項目2018年7月開工，於2022年12月建成通車，大橋開通後極大的緩解了將軍澳市區的交通壓力，同時憑藉獨特的造型和獨有的海上自行車道和行人道、觀景平臺等設施，迅速成為市民及遊客的打卡熱點。

## 使用NEC的主要好處

- 1. 協作與溝通:** 鼓勵各方保持密切協作和坦誠交流，有助於快速發現和解決問題。
- 2. 靈活性和適應性:** 容許項目過程中的變更和調整，應對不可預見的情況。
- 3. 風險管理:** 共同識別、評估和降低風險，減少潛在問題的影響。
- 4. 透明度和問責制:** 明確分工和責任，確保項目如期、在預算內、達到質量標準。



# CHINA STATE CONSTRUCTION ENGINEERING (HK) LTD SHA TIN SEWAGE TREATMENT WORKS

中國建築工程(香港)有限公司

沙田污水處理廠



## PROJECT TEAM MEMBERS 項目團隊成員

### Employer / 僱主:

The Government of the Hong Kong  
Special Administrative Region (HKSARG)  
香港特別行政區政府

### Project Manager / 項目經理:

AECOM Asia Company Limited  
艾奕康有限公司

### Supervisor / 監督人員:

AECOM Asia Company Limited  
艾奕康有限公司

### Contractor / 承建商:

China State – Alchmex Joint Venture  
中建 – 愛銘聯營

### Contract Value / 合約價值:

HK\$2,331 million / 23.31億港元

### Contract(s) used on the project / 項目中使用的合約:

NEC4 Engineering and Construction Contract Option C  
NEC4工程及建造合約 選項C

## Project overview

To support the sustainable development of Hong Kong, it is the established policy of the Government to adopt a multi-pronged approach to enhance land supply. The Drainage Services Department (DSD) commenced the “Relocation of Sha Tin Sewage Treatment Works to Caverns” project in 2019. The project is expected to be completed by 2031. Upon completion, not only will 28 hectares of land be released for other beneficial uses, the current issues relating to landscape, odour and aging facilities arising from the existing sewage treatment works will also be resolved.

## Teamworking

The project is comprising of several works contracts implemented in stages. One of the most significant project

challenges is the tight schedule in the design of the cavern ventilation system under Contract No. DC/2023/12. Such completion was stipulated as the first key date in the contract which would lapse in approximately 150 days after the starting date. In other words, the project team had to provide the construction and design requirements within 5 months only.

To meet this target, an E&M workshop was initiated for the cavern ventilation system design bi-weekly which involving the Client, the Project Manager and the Contractor and his employed design specialist. The purpose was to establish a programme for achieving the first key date. The subsequent progress could then be closely monitored by the programme.

The workshop also acted as a channel for the Client and the Project Manager to voice out their concerns in advance such that the design specialist could deal with them immediately. For instance, as the power supply system for the cavern ventilation system was designed to be fed by two different sources, the Project Manager was concerned that the cables of two different sources running in the same routing would pose potential effects on the reliability of the power supply and this issue was well communicated to the design specialist. In the next workshop, the design specialist had developed an alternative power supply topology which resolved the Project Manager’s concern efficiently.

## Achievement

NEC emphasizes the spirit of co-operation, encouraging the project team to solve various challenges together. With the above effective communication, there was no slippage throughout the whole process. The Contractor finally submitted the complete design which was subsequently endorsed by the Project Manager 4 days before the target date.

## Key benefits of using NEC

1. Partnering relation between the Project Team
2. Identify the potential risks earlier and resolve difficulties together
3. Minimising the risk of cost overrun and delay.

## 項目概覽

為滿足香港持續發展的需要，政府的既定政策是以多管齊下的方式開拓土地資源。渠務署於2019年推展搬遷沙田污水處理廠往岩洞工程。搬遷工程預計於2031年完工。工程完成後，不但可騰出28公頃土地作其他有利民生的用途，亦可解決現時污水處理廠所產生的景觀、氣味及設施老化等問題。

## 團隊合作

本項目分階段由多個工程合約進行。其中一個重要的挑戰，是工程合約編號DC/2023/12下，有關岩洞通風系統設計在時間上的緊迫性。根據相關合約要求，第一個關鍵時間節點是項目須於開工日期後約150天完成整個岩洞通風系統的設計。換句話說，項目團隊必須在5個月內提供完整的施工與設計要求。

為達成此項目目標，我們每兩週舉辦一次岩洞通風系統設計的機電工作小組會議，參與者包括業主、項目經理及承建商以及承建商聘用的設計專家。其目的在於建立一個幫助達成第一個關鍵日期的工作時間表，並據此對接下來的進度進行密切關注。

工作小組會議也是業主和項目經理提出疑慮和問題的渠道，以便設計專家立即處理。舉例來說，由於岩洞通風系統的供電系統是由兩個不同的電源進行供電，項目經理十分關注兩個不同電源的電纜在同一條路線上傳導有可能會影響供電的穩定性。透過工作小組會議，這個問題可以準確及迅速地傳達給設計專家，並在下一個會議中提出了替代的電源構建方案，有效地解決有關問題。

## 成就

NEC強調協作精神，共同應對困難，有了上述有效的溝通，整個設計過程沒有任何延誤，承建商最終在目標日期前4天提早提交了完整的設計，並通過了項目經理的審核。

## 使用NEC的主要好處

1. 項目團隊之間的合作關係
2. 及早發現潛在風險，共同解決困難
3. 最大程度降低超支與延遲風險

# DRAINAGE SERVICES DEPARTMENT SHEK WU HUI EFFLUENT POLISHING PLANT

## 渠務署 石湖墟淨水設施



### PROJECT TEAM MEMBERS 項目團隊成員

#### Employer / 僱主:

The Government of the Hong Kong  
Special Administrative Region (HKSARG)  
香港特別行政區政府

#### Project Manager / 項目經理:

AECOM Asia Company Limited  
艾奕康有限公司

#### Supervisor / 監督人員:

AECOM Asia Company Limited  
艾奕康有限公司

#### Contractor / 承建商:

Kwan Lee – Chun Wo Joint Venture;  
Jardine Engineering Corporation Limited  
Bestwise Envirotech Limited  
群利- 俊和聯營體  
怡和機器有限公司  
百威環保科技有限公司

#### Contract Value / 合約價值:

HK\$3,625 million / 36.25億港元

#### Contract(s) used on the project / 項目中使用的合約:

NEC3 Engineering and Construction Contract Option C  
NEC3工程及建造合約 選項C

### Project overview

The existing Shek Wu Hui Sewage Treatment Works (SWHSTW), commissioned in 1984, is the first large-scale secondary sewage treatment plant in Hong Kong. SWHSTW is located at the North District with design capacity of 105,000 m<sup>3</sup>/day. It has been operating for over 30 years. Owing to rapid population growth in the catchment, the existing SWHSTW is being transformed into Shek Wu Hui Effluent Polishing Plant (SWHEPP) to increase its treatment capacity by almost two-fold within the existing footprint and at the same time upgrade the sewage treatment level from

secondary to tertiary in order to meet the very stringent discharge standards.

The scope of the Project (Stage 1 upgrading of SWHSTW) includes construction of:

- Civil works and Electrical and Mechanical (E&M) installation works for Sewage Treatment Facilities including Inlet Works no. 1, Primary Sedimentation Tanks, Bioreactors, Pre-Treatment screen chamber and Membrane Filtration Buildings, etc.; and testing and commissioning for the associated systems
- Civil works and Electrical and Mechanical (E&M) installation works for sludge treatment facilities including Sludge Dewatering Building, Sludge Digesters, Thermal Hydrolysis Pretreatment system, etc.; Ultraviolet System No.1 and associated pumping station, 132 kV Primary Substation and other ancillary facilities

### Key benefits of using NEC

1. It promotes and nurtures multiparty collaboration amongst team members from the top management to the working level to identify opportunities that are beneficial to successful contract delivery, for example: early procurement of construction materials to mitigate delay in their deliveries due to COVID-19, adoption of pre-tender and post-tender interviews to ensure the subcontractors fully understand their scope of works;
2. The open-book cost based procurement approach facilitates the adoption of latest technologies and innovations that are conducive to the contract delivery, for example: adoption of BIM as a Common Data Environment as coupled with the application of Blockchain technology to facilitate data sharing and exchange amongst the team members;
3. The collaboration of expertise from the Employer, Project Manager, Contractor and Supply Chain enables the adoption of Digital Twin platform with associated applications to carry out plant optimization, intelligent fault detection, diagnosis and predictive maintenance.

### 項目概覽

現有的石湖墟污水處理廠於1984年啟用，是香港第一座大型二級污水處理廠。石湖墟污水處理廠位於香港北區，其設計處理量為每日105,000立方米，至今已運作超過30年。由於污水集水區內人口迅速增長，我們將現有的污水處理廠改建為石湖墟淨水設施，以現有的佔地面積將其處理能力增加接近一倍，同時將其污水處理等級由二級提升到三級，以達到非常嚴格的排放標準。

此工程項目（石湖墟淨水設施 - 主體工程第一階段工程）範圍包括：

- 建設污水處理設施的土木工程及機電安裝工程，包括一號進水口、初沉池、生物反應器、處理前隔篩池、薄膜槽及二號薄膜大樓；以及相關系統的測試和調試；
- 建設污泥處理設施土木工程及機電安裝工程，包括污泥脫水大樓、污泥消化器、熱解預處理系統等；一號紫外線消毒系統及相關泵房、132kV主變電站及其他附屬設施

### 使用NEC的主要好處

1. 可在最高管理階層到工作層的團隊成員之間促進並建立多方協作，從而識別有利於合約成功交付的機遇，例如：透過提前採購建築材料來減少因新冠肺炎疫情而造成的延誤，通過進行招標前與招標後訪談來確保分包商充分了解其工作範圍。
2. 公開賬目式成本採購法可實現有利於合約交付的最新技術開發與創新實踐，例如：將 BIM 作為通用資料環境使用，並應用區塊鏈技術，從而促進團隊成員之間的資料共享與交換。
3. 透過結合僱主、項目經理、承建商和供應鏈領域的專業知識，用戶可使用數位孿生平台與相關應用，進而實施工廠優化、智能故障檢測、診斷與預測性維護。



## CONGRATULATION MESSAGES 祝賀信息



**Ir. Stephen Lai**  
Chairman

The Association  
of Consulting  
Engineers of  
Hong Kong



**William Fong**  
Chairman

The Association of  
Consultant Quantity  
Surveyors

I extend my heartiest congratulations on the 15th anniversary of NEC in Hong Kong. The adoption of the NEC Contract has been pivotal in enhancing collaborative approaches and achieving excellence in Hong Kong's infrastructure projects, reflecting the city's commitment to advancing innovation and quality in the industry.

我向NEC在香港15周年紀念致以最熱烈的祝賀。NEC合約的採用對於增強協作方式和實現香港基礎設施項目的卓越成就至關重要，彰顯了香港對行業創新和質量的承諾。

The increased utilization of NEC in Hong Kong has been instrumental in driving innovative procurement practices and overcoming project delivery challenges.

The growing adoption of NEC in landmark projects throughout Hong Kong is a true testament to its effectiveness.

NEC 在香港的日益普及有助於推動創新的採購實務和克服項目交付的挑戰。

NEC 在香港地標性項目中的廣泛應用，證明了其有效性。

## CONGRATULATION MESSAGES 祝賀信息



**Eddie Lam**  
President

Hong Kong  
Construction  
Association



**Ar. Benny Chan**  
President

The Hong Kong  
Institute of Architects

Please accept our heartiest congratulations to NEC Hong Kong for its 15th anniversary. May we wish NEC Hong Kong continues making a remarkable impact on Hong Kong construction sector, making collaboration a maxim for all players to cherish.

我們謹代表香港建造商會，衷心祝賀NEC香港成立十五周年。希望NEC香港能繼續對香港建造業鼓動風潮，讓相互協作成爲所有參與者珍惜的準則。

Congratulations on the 15th anniversary of using New Engineering Contracts in Hong Kong! This milestone highlights your dedication to innovation and excellence in project management. Best wishes for continued success in advancing the construction industry.

熱烈恭賀貴公司在香港推行新工程合約15周年！這一里程碑彰顯了貴公司在項目管理中對創新和卓越的追求。祝願貴公司在推動建築業發展方面繼續取得成功。

香港建築師學會會長  
陳澤斌 謹啟

# HIGHWAYS DEPARTMENT CENTRAL KOWLOON ROUTE

路政署  
中九龍幹線



## PROJECT TEAM MEMBERS 項目團隊成員

### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

### Project Manager / 項目經理:

Highways Department, HKSARG  
香港特別行政區政府 路政署

### Supervisor / 監督人員:

Arup - Mott MacDonald Joint Venture  
奧雅納 - 莫特麥克唐納顧問聯營

### Contractor / 承建商:

Alchmex – Paul Y Joint Venture, Bouygues Travaux Publics, Build King – SK ecoplant Joint Venture, Build King – Tung Lee Joint Venture, Gammon Construction Limited, Nishimatsu Construction Co.  
愛銘-保華聯營、布依格 (土木工程)、利基 - SK ecoplant 聯營、利基-同利聯營、金門建築有限公司、西松建設株式會社

### Contract Value / 合約價值:

HK\$29.74 billion / 297.4億港元

### Contract(s) used on the project / 項目中使用的合約

8 contracts in total:

4 with adoption of traditional General Conditions of Contract;

3 with adoption of NEC3 Engineering and Construction Contract Option C; and

1 with adoption of NEC4 Engineering and Construction Contract Option C

總共八張工程合約：

四張採用傳統工程合約一般條款；

三張採用NEC3 工程及建造合約 選項C；及

一張採用NEC4 工程及建造合約 選項C

## Project overview

Central Kowloon Route (CKR) is a 4.7 km long dual three-lane trunk road in central Kowloon linking Yau Ma Tei Interchange in west Kowloon with the road network on Kai Tak Development and Kowloon Bay in east Kowloon.

### Relief of Congestion along Major East-West Corridors

The traffic along the existing major east-west corridors in Kowloon is approaching or has exceeded their design capacities, resulting in frequent traffic congestion. CKR will provide an alternative route for the traffic to bypass the congested network thus significantly reducing journey times. It is estimated that the journey time between west Kowloon and Kowloon Bay via CKR would take around 5 minutes at peak hours, thus resulting in a saving of about 25 minutes. CKR will substantially reduce the traffic volumes along major east-west corridors thus relieving traffic congestion and the environmental nuisances. The improved traffic conditions will also benefit areas adjacent to CKR.

### Enhancing Linkages between Districts and Underpinning Developments

CKR will form a key component of the strategic road network making it convenient to travel between east and west Kowloon. CKR together with Tseung Kwan O – Lam Tin Tunnel and the Trunk Road T2 and Cha Kwo Ling Tunnel will form the Route 6. It will provide an express link between west Kowloon and Tseung Kwan O.

## Key benefits of using NEC

**1. Enhanced Collaboration:** NEC framework facilitated increased trust and cooperation among project stakeholders, resulting in improved problem-solving and decision-making processes, particularly during challenging periods such as the COVID-19 pandemic.

**2. Flexible Adaptation:** NEC provided the necessary flexibility to implement innovative solutions for unforeseen challenges, thereby mitigating delays, reducing costs, and maintaining quality standards suitable for this multi-disciplinary and complicated project including buildings, bridges, tunneling, marine, drainage, environmental, fire services, electrical and mechanical works.

**3. Integrated Risk Management:** The NEC approach enabled comprehensive risk and interface management across all contract types.

**4. Systematic Improvement:** The project incorporated ongoing learning and development mechanisms, promoting best practices and extending collaborative principles across the entire project scope.

## 項目概覽

中九龍幹線 (CKR) 是一條長4.7公里的雙向三線主幹道，橫貫中九龍，連接位於西九龍的油麻地交匯處與啟德發展區及九龍灣的道路網絡。

**緩解主要東西走廊的交通擠塞** 九龍現有的主要東西走廊的交通流量已接近或超過其設計容量，導致頻繁的交通擠塞。中九龍幹線將為交通提供一條替代路線，繞過擠塞的網絡，從而顯著減少車程時間。估計通過中九龍幹線從西九龍到九龍灣的行程時間在高峰時段約為5分鐘，節省約25分鐘。中九龍幹線亦將大幅減少主要東西走廊的交通流量，從而緩解交通擠塞和環境污染。改善的交通狀況也將使中九龍幹線附近地區受惠。

**加強區域間聯繫並支持發展** 中九龍幹線將成為策略道路網絡的關鍵組成部分，使東九龍與西九龍之間的往來更加便利。中九龍幹線與將軍澳-藍田隧道、T2主幹道以及茶果嶺隧道將會是一條連接將軍澳與西九龍的快速通道並形成六號幹線。

## 使用NEC的主要好處

**1. 加強協作：**新工程合約框架促進了項目持份者之間的互信和合作，特別是在新冠疫情等具挑戰性的時期，改善解決難題和決策的過程。

**2. 靈活應變：**新工程合約提供了必要的靈活性，以實施創新方案應對未能預見的挑戰，從而減少延誤、降低成本，並維持質量標準，適用於建築物、橋樑、隧道、海事、排水、環境、消防、機電工程等這項跨學科和複雜的工程項目。

**3. 綜合風險管理：**新工程合約實現了跨項目合約類型的全面風險和協調管理。

**4. 系統化改進：**項目納入了持續學習和發展機制，推廣最佳實踐方針，並將協作原則推廣至整個項目範圍。



# MTR CORPORATION LTD KWU TUNG STATION

香港鐵路有限公司  
東鐵線古洞站工程



## PROJECT TEAM MEMBERS 項目團隊成員

**Employer / 僱主:**  
MTR Corporation Limited  
香港鐵路有限公司

**Project Manager / 項目經理:**  
General Manager - E&M Construction  
總經理-機電工程建造

**Supervisor / 監督人員:**  
General Manager – Capital Works Technical  
總經理-項目及工程技術

**Contractor / 承建商:**  
Dragages Hong Kong Limited  
香港寶嘉建築有限公司

**Contract Value / 合約價值:**  
HK\$2.05 billion / 20.5億港元

**Contract(s) used on the project / 項目中使用的合約**  
NEC4 Engineering and Construction Contract Option C  
NEC4工程及建造合約 選項C

## Project overview

MTR's vision is to be an internationally recognised company that connects and grows communities with caring, innovative and sustainable services.

Pursuant to this vision, MTR is constructing the Kwu Tung Station on East Rail Line, which is our 100th railway station in Hong Kong and comprises a new station that will serve the local community at the planned Kwu Tung North New Town located on the existing East Rail Line between the existing Lok Ma Chau and Sheung Shui stations.

The works will be constructed within and in close proximity to the existing operating railway which will require careful planning, monitoring and control, to allow the safe execution without any disruption to railway operations. Specialist works include ground treatment, underpinning of existing buildings and structures, deep foundations and excavation works.

There will also be separate contracts for signalling, rolling stock, railway systems and operations interface works which will require careful coordination and integration with the main station works. The target date for completion of Kwu Tung Station on East Rail Line is in 2027.

## Key benefits of using NEC

The adoption of NEC and in particular NEC4 ECC Option C has enabled:

1. Innovation and collaborative working with all parties including the operator, which is extremely important when working within and in close proximity to the existing railway.
2. A flexible approach to the management of risk and opportunities.
3. Cost transparency with appropriate mechanisms to incentivise cost reduction and value for money.



## 項目概覽

香港鐵路有限公司 (港鐵) 的願景是用關懷備至、創新及可持續的服務·連繫及建設社區·以成為廣受國際認可的企業。

根據這願景·港鐵正在東鐵線上增建第100個車站 – 古洞站·該新車站將為位於現有落馬洲站與上水站之間·並會為規劃中的古洞北新市鎮提供服務。

此工程將增建在營運中的鐵路隧道內及其靠近位置。工程需要仔細規劃·嚴密監控和控制·以確保安全施工而不干擾現有的鐵路運作。還有許多專業工程·包括地層改善·現有建築物和結構的基礎加固·深層地基和挖掘工程。

為趕及東鐵線古洞站於2027年之目標完工日期·除了主要的車站工程以外·信號·機車車輛·鐵路系統和操作介面工程·也需要與主車站工程項目進行仔細協調和整合。

## 使用NEC的主要好處

1. 與各方(包括港鐵列車服務) 進行創新和協作工作模式·這在現有鐵路內部或附近工作時極為重要。
2. 靈活和彈性的風險與機會管理方法。
3. 提升承建商成本的透明度以及使用適當的機制來激勵承建商將成本降低。



# DRAINAGE SERVICES DEPARTMENT

## YUEN LONG EFFLUENT POLISHING PLANT

渠務署  
元朗淨水設施



### PROJECT TEAM MEMBERS 項目團隊成員

#### Employer / 僱主:

The Government of the Hong Kong  
Special Administrative Region (HKSARG)  
香港特別行政區政府

#### Project Manager / 項目經理:

AECOM Asia Company Limited  
艾奕康有限公司

#### Supervisor / 監督人員:

AECOM Asia Company Limited  
艾奕康有限公司

#### Contractor / 承建商:

Paul Y. – CREC Joint Venture  
The Jardine Engineering Corporation Limited  
保華 – 中國中鐵聯營體  
怡和機器有限公司

#### Contract Value / 合約價值:

HK\$6.9 billion / 69億港元

#### Contract(s) used on the project / 項目中使用的合約

NEC3 Professional Service Contract Option C  
NEC4 Engineering and Construction Contract Option C  
NEC3專業服務合約 選項C  
NEC4工程及建造合約 選項C

### Project overview

Yuen Long Effluent Polishing Plant (YLEPP) is one of the iconic projects of Drainage Services Department, transforming the existing Yuen Long Sewage Treatment Works into the more sustainable YLEPP at tertiary treatment level with increased treatment capacity, while minimizing the energy consumption and maximizing the use of renewable energy, striving towards energy and carbon neutrality.

YLEPP is designed to be an environmentally friendly, energy neutral and sustainable facility, with various design features, including adoption of low-energy treatment process,

maximization of renewable energy, optimizing Electrical & Mechanical design, hydraulic design and building design.

YLEPP is the *first* wastewater treatment plant in Hong Kong, adopting the advanced treatment technology of aerobic granular sludge (AGS) for biological treatment. The AGS process utilizes the unique characteristics of granular biomass working in aerobic conditions to treat the sewage and allow anoxic conditions inside the granules, enabling simultaneous nitrification/denitrification during aeration. AGS is comparatively energy efficient due to the reduced use of mechanical equipment, like mixers, recycle pumps, etc., which helps YLEPP moving towards energy neutrality. YLEPP is designed to maximize its potential to utilize solar energy by installing more than 5,000 nos. photovoltaic panels on the rooftop of most of the buildings, with installed capacity of about 3.0 Mega Watt. YLEPP on completion will become the *first* sewage treatment plant in Hong Kong able to attain energy neutrality at its commissioning.

The project team also fully exhibited partnering spirit, and successfully completed extensive and complicated temporary diversion of process pipework and temporary facilities, optimizing the construction sequence to ensure smooth project delivery while ensuring uninterrupted operation of the sewage treatment plant.

### Key benefits of using NEC

- 1. Flexibility in NEC contract clauses:** the project effectively implemented its innovation in utilizing technologies and advanced sewage treatment system to enhance energy efficiency
- 2. Collaborative approach:** all the stakeholders including Client, Project Manager, Contractors and Operator of existing sewerage treatment plant are working collaboratively with mutual trust to deliver transformative solutions for the project
- 3. Efficiency-driven and joint problem-solving approach:** the project team has strong belief in the partnering spirit of NEC contract and willingly to discuss the problems and agree on the way forward in the best interest of the project

### 項目概覽

元朗淨水設施是渠務署的標誌性項目之一，將現有的元朗污水處理廠改造為可持續發展的元朗淨水設施，污水處理級別提升至三級處理，同時提高污水處理能力，並積極降低廠房的能源消耗，增加可再生能源的使用，努力實現能源中和及碳中和。

元朗淨水設施具有多種設計特點，使項目成為一個環保、能源中和及可持續的設施，包括採用低耗電量的污水處理技術、積極開拓可再生能源、優化機電設計、水力設計和建築設計。

元朗淨水設施是香港首間應用好氧顆粒污泥技術(AGS)進行生物處理的污水處理廠。好氧顆粒污泥這種先進污水處理技術，利用其結構獨特的顆粒污泥在好氧條件下進行生物處理，並在顆粒內部實現硝化/反硝化同步進行。由於減少了機械設備的使用，如攪拌器、循環泵等，好氧顆粒污泥污水處理技術相對更加節能，有助於元朗淨水設施實現能源中和。元朗淨水設施在大部分建築物的屋頂安裝超過五千塊太陽能板，裝機容量超過三兆瓦，最大限度地利用太陽能。元朗淨水設施在建成後將成為香港首個在投入運作時能實現能源中和的污水處理廠。

項目團隊還充分展現了合作精神，成功完成了大規模而複雜的臨時管道改道和臨時設施，優化施工程序使工程順利進行之餘，亦確保了污水處理廠的運作不受影響。

### 使用NEC的主要好處

- 1. 新工程合約合同條款的靈活性:** 項目有效地利用創新科技和先進污水處理系統，以提高能源效益。
- 2. 協作方法的優勢:** 所有持份者包括僱主、項目經理、承建商和現有污水處理廠的運營部門都在相互信任的基礎上合作，共同為專案提供變革性解決方案。
- 3. 以效率為先和共同解決問題的方法:** 項目團隊對新工程合約的合作精神深信不疑，並願意討論問題，達成對專案最有利的前進方案。



# HIGHWAYS DEPARTMENT UNIVERSAL ACCESSIBILITY PROGRAMME

## 路政署 「人人暢道通行」計劃



### PROJECT TEAM MEMBERS 項目團隊成員

#### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

#### Project Manager / 項目經理:

Highways Department, HKSARG  
香港特別行政區政府 路政署

#### Supervisor / 監督人員:

Three consultants  
3間顧問公司

#### Contractor / 承建商:

15 Contractors under Roads & Drainage Category  
15間道路及渠務工程類別的承建商

#### Contract Value / 合約價值:

HK\$4.88 billion / 48.8億港元

#### Contract(s) used on the project / 項目中使用的合約

15 contracts with adoption of NEC Engineering and Construction Contracts Option A, Option B or Option C

15份NEC工程及建造合約 選項A、B或C

### Project overview

The Government has been installing barrier-free access facilities at public walkways and launched the Universal Accessibility (UA) Programme in August 2012 to proactively provide more barrier-free access facilities (i.e. lifts and ramps) to enhance the convenience of the public in using public walkways. The Highways Department (HyD) took up the challenges and in collaboration with three consultants and 15 contractors has taken forward 383 projects (comprising 593 lifts) at an estimated cost exceeding HK\$ 4.88 billion. The key challenges under UA Programme are to i) overcome obstruction of underground utilities for foundation construction; ii) minimize impact to neighboring facilities such as railway lines, footpaths and cycle tracks during construction; and iii) promote early opening of lifts to meet strong public demand. The adoption of NEC ECC allows us to handle the design and construction issues more effectively such that the UA projects can be delivered in a more efficient, safe and sustainable manner.

### Key benefits of using NEC

1. High level of collaboration amongst the Parties to the NEC contracts promotes more effective and efficient problem solving; and also continuous enhancement of productivity and safety in project delivery.
2. Early Contractor Involvement (Option X22) allows more timely project delivery.
3. Help to build a high spirited and collaborated project team.

### 項目概覽

政府一直致力為公共行人通道加建無障礙通道設施，於2012年8月推出「人人暢道通行」計劃，積極增設更多無障礙通道設施（即升降機及斜道），方便市民上落公共行人通道。路政署迎難而上，並與3間顧問公司和15間承建商攜手合作，推展383個項目（包括593部升降機），估計成本超過48.8億港元。「人人暢道通行」計劃下遇到的主要挑戰包括：(1)克服地下管線對地基工程的阻礙；(2)在施工期間盡量減少對鄰近設施（如鐵路、行人路和單車徑）的影響；(3)致力推動升降機盡早開放，以滿足公眾的強烈需求。採用「新工程合約」（NEC）- 工程及建造合約（ECC）使我們能夠更有效地處理設計和施工的問題，從而以更高效、安全和可持續的方式推展「人人暢道通行」計劃項目。

### 使用NEC的主要好處

1. 新工程合約團隊以強效的夥伴合作精神，促進了高效的解決問題方式，以及持續提升推展中項目的生產力和安全水平。
2. 「承建商前期參與」（新工程合約選項X22）令項目更能適時推展。
3. 幫助建立一個有活力和齊心的項目團隊。

## CONGRATULATION MESSAGES 祝賀信息



**Ir. Eric Ma**  
President  
The Hong Kong  
Institution of Engineers



**Sr. Francis Lam**  
President  
The Hong Kong  
Institute of Surveyors

Congratulations on the remarkable progress in implementing NEC in Hong Kong. The enhanced clarity and adaptability have empowered teams to deliver outstanding projects collaboratively. Wishing you continued success and lasting accomplishments.

祝賀新工程合約(NEC)在香港的實施取得重大進展。NEC提升了合約管理的清晰度和靈活性，促使團隊以協作精神交付出色的項目。期待NEC在更廣泛的應用中，持續帶來卓越成果。

On behalf of the Hong Kong Institute of Surveyors, congratulations to NEC Hong Kong on its 15th anniversary! We look forward to continued collaboration and contributing to the success and innovation in Hong Kong's projects.

我謹代表香港測量師學會祝賀 NEC Hong Kong 成立 15 周年！我們期待繼續攜手合作，為香港各項目的成功和創新作出貢獻。

## CONGRATULATION MESSAGES 祝賀信息



**Emil Yu**  
President  
The Hong Kong  
Federation of Electrical  
& Mechanical  
Contractors

My heartiest congratulations to an exciting and successful NEC Asia Pacific Conference 2024. NEC has come a long way in Hong Kong and its positive and barrier-breaking effects on the construction industry are for all to see. It certainly has great potential going forward to benefit all stake holders of the industry.

本人衷心祝賀2024新工程合約亞太會議圓滿成功。

新工程合約已經開始在香港應用，其對建造業突破性和正面的影響皆有目共睹，放眼前瞻，新工程合約一定能夠令建造業各持份者受益。



**Carl Devlin**  
Capital Works Director  
MTR Corporation  
Limited

Congratulations on the 15th anniversary for introducing NEC contracts to the Hong Kong construction industry! Your excellent work in fostering collaboration, transparency and flexibility is unparalleled. I look forward to taking our new railway extension projects to the next level together.

恭賀 NEC 將「新工程合約」引進香港建築業界15周年！貴機構在促進協作、透明度和靈活性的出色工作是無與倫比。期待我們同心協力將新鐵路延綫項目提升到一個更高的水平。



# CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT ROAD WIDENING AND RETROFITTING NOISE BARRIERS

土木工程拓展署  
道路擴闊及加建隔音屏障工程



## PROJECT TEAM MEMBERS 項目團隊成員

### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

### Project Manager / 項目經理:

Civil Engineering and Development Department, HKSARG  
香港特別行政區政府 土木工程拓展署

### Supervisor / 監督人員:

AECOM Asia Company Limited  
艾奕康有限公司

### Contractor / 承建商:

China Railway - China Railway First Group - Zhen Hua Engineering Joint Venture  
中國中鐵 - 中鐵一局 - 振華工程聯營

### Contract Value / 合約價值:

HK\$1,566 million / 約16億元

### Contract(s) used on the project / 項目中使用的合約

NEC3 Engineering and Construction Contract Option C  
NEC3工程及建造合約 選項C

## Project overview

The existing Tai Po Road - Sha Tin Section (TPR-ST) is one of the heavily trafficked carriageways in Hong Kong. Coupled with its geographical importance in connecting the Northeast New Territories to the urban areas, TPR-ST is an essential primary distributor of Hong Kong's road infrastructures.

Widening of TPR-ST from the existing dual two-lane to a dual three-lane carriageway is necessary to cope with the continuously increasing traffic demand. Furthermore, since TPR-ST runs through numerous high-rise residential areas of over 2,200 dwellings in Sha Tin city centre, TPR-ST is identified as one of the existing roads to be retrofitted with noise barriers/enclosures to minimise nuisance due to traffic noise.

The scope of the project mainly includes the widening of a 1.1 km section of TPR-ST, reconstruction of a major interchange with Sha Tin Rural Committee Road and retrofitting of noise barriers/enclosures along the widened section of TPR-ST. The contract commenced on 27 July 2018.

The widened 3-lane carriageway of TPR-ST have been successfully opened to public in June 2024 and the traffic congestion problem have been alleviated significantly.

## Key benefits of using NEC

### 1. Effective Risk Management - Early identification, allocation, and management of risks

Since the commencement of the project, the project team has successfully identified more than 120 project risks and such risks were mitigated through effective risk management.

### 2. Team Collaboration - Encourage a collaborative working relationship and joint problem-solving

The project team think outside the box and unreservedly utilise their expertise to tackle all the problems one by one. "Always Find A Way, Not An Excuse", an encouraging Chinese motto in the conference room advocated with active involvement of the senior managements, has strongly motivated the Project Team to focus on the goals, through best practice and collaboration. The strong spirit of mutual trust and cooperation amongst the team members have helped to overcome all the hurdles and achieve successful result.

### 3. Time Management: Timely decision-making and provides mechanisms for prompt resolution of issues

While the project team can closely follow with the works progress, NEC offers an excellent basis for the team to swiftly tackle the risks encountered and provides a clear and precise process for evaluating the cost and time implications of the risks unforeseeable by the Contractor as compensation events. The NEC system has helped mitigating delays due to various site constraints.

## 項目概覽

現時的大埔公路（沙田段）是香港交通繁忙的行車道之一，並且連接新界東北部和市區，因此是香港其中一條十分重要的主要幹路。為應付持續增長的交通需求，大埔公路（沙田段）會由現時的雙線雙程分隔行車道擴闊為三線雙程分隔行車道。此外，由於此路段貫穿超過2,200個位於沙田市中心的住宅，大埔公路（沙田段）亦需要加裝隔音屏障，以盡量減少交通噪音造成的滋擾。這項工程主要包括擴闊一段1.1公里長的路段、重建沙田鄉事會路的交匯處，以及在大埔公路（沙田段）擴闊路段加裝隔音屏障。合約已於2018年7月27日展開。在2024年6月，大埔公路（沙田段）已成功由現時的双線雙程分隔行車道擴闊為三線雙程分隔行車道，並開放給市民使用，交通擠塞問題亦即時得到明顯紓解。

## 使用NEC的主要好處

### 1. 有效的風險管理 - 早期識別、分配和管理風險

在項目展開至今，工程團隊已成功找出超過120個潛在風險並作出有效的風險管理。

### 2. 團隊協作 - 鼓勵協作工作關係和共同解決問題

在管理層的積極參與下，激勵了團隊的合作精神和士氣，並鼓勵工程團隊跳出框架地思考創新的施工方法，毫無保留地利用他們的專業知識逐一解決所有問題，務求在工地如期完成共同定立的目標。“只為成功找方法，不為困難找藉口”正是工程團隊中的口號。最終，工程團隊成員之間的互相信任和合作精神克服了所遇到的障礙，並達到多個重要的里程碑。

### 3. 時間管理 - 及時決策並提供迅速解決問題的機制

項目團隊不但可以緊密監督工程進度，NEC亦為團隊提供了一個完善的準則，使他們能夠迅速應對所遇到的風險，並提供了一個清晰精確的評估程序，就承建商無法預視的風險而產生的額外成本和時間，作適當補償，從而避免進一步的影響。整合來說，NEC合約模式有助項目團隊迅速解決問題並以減少工程上的延誤。



# CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

## KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREAS

土木工程拓展署  
古洞北及粉嶺北新發展區



### PROJECT TEAM MEMBERS 項目團隊成員

#### Employer / 僱主:

The Government of the Hong Kong Special Administrative Region (HKSARG)  
香港特別行政區政府

#### Project Manager / 項目經理:

AECOM Asia Company Limited  
艾奕康有限公司

#### Supervisor / 監督人員:

AECOM Asia Company Limited  
艾奕康有限公司

#### Contractor / 承建商:

New Concepts Engineering Development Limited  
Build King - Richwell Engineering Joint Venture  
Chun Wo - Kwan Lee Joint Venture  
Sang Hing - Kuly Joint Venture  
China Railway Construction Corporation - Paul Y. Joint Venture  
Daewoo - Chun Wo - Kwan Lee Joint Venture  
China Road and Bridge Corporation

#### Contract Value / 合約價值:

HK\$18.2 billion / 182億港元

#### Contract(s) used on the project / 項目中使用的合約

NEC3 Engineering and Construction Contract  
Options A, B, C & D  
NEC3工程及建造合約 選項A, B, C及D

### Project overview

The NDAs project forms a core part of the Hong Kong Government's multi-pronged land supply strategy for the Northern Metropolis. Strategically located near the railway link, the NDAs will connect to the existing Fanling Highway via the Fanling Bypass Eastern Section (FLBP). Leveraging the area's rich natural and ecological resources, the NDAs will be developed as a "Mixed Development Node" for housing and community facilities incorporating land for natural

and ecological conservation, such as the development of the 37-hectare Long Valley Nature Park (LVNP) to balance urban development with conservation, enhancing wetland ecological value and biodiversity. As the Employer, the CEDD leads the project under the NEC3 ECC framework, utilizing Options A, B, C, and D across seven contracts tailored to suit different natures of works.

Throughout the project lifecycle, the team embraces mutual trust and collaboration to develop sustainable designs and innovative initiatives. NEC management software and digital payment systems streamline workflows related to compensation event notifications and assessments, as well as systematic risk management and payment certification. To foster cooperation and team spirits, Partnering Workshops are held to establish common goals, and regular Champion Meetings involve top management and working level members to address challenges.

The project team employs innovative approaches to tackle engineering challenges. A novel bridge rotation method is introduced for constructing a bridge over the existing railway line. Additionally, S960 ultra-high strength steel is utilized in the footbridge system above Lung Yeuk Tau Interchange. These innovative solutions are first of its kind in Hong Kong, successfully reducing project risks related to time, cost, and safety, while encouraging stakeholders in the construction industry to advance new technologies.

The project also implements numerous initiatives to reduce carbon dioxide emissions, including the development of LVNP to compensate for the wetland loss for development, the use of S960 ultra-high strength steel to reduce the weight of bridge decks and foundations, the reuse of excavated soil, the use of ground granulated blast-furnace slag in concrete, and the reuse of treated arsenic soil and wood waste. These efforts have been recognized by the NEC Martin Barnes Awards 2024, winning the award for "Demonstrating Carbon Dioxide Reduction Initiatives towards Net-zero."

### Key benefits of using NEC

**1. Risk Reduction Meeting:** Under this mechanism, a number of high-level risks have been resolved at early stage (e.g. the horizontal bridge rotation method above existing railway line could be timely agreed between the project team and MTRCL via senior management early involvement).

**2. Time Management:** As interim outcome, the site formation works of several areas in NDAs were completed 3-9 months ahead of the programme for early handover to the Housing Department for construction of public housing blocks.

**3. NEC Options for Innovation and Technology:** Under the promulgation of NEC ECC Hong Kong Edition, the newly specific clause – X30 that encourage the adoption of innovative practices and technologies within construction projects.

### 項目概覽

古洞北 / 粉嶺北新發展區項目是香港政府北部都會區，多管齊下土地供應策略的重要一環。新發展區策略性地定位於港鐵線附近，同時通過粉嶺繞道東段連接到現有的粉嶺公路。新發展區將發展為集住房和社區設施於一體的「混合發展樞紐」。項目利用該地區豐富的自然和生態資源，特別注重自然和生態保育，如開發佔地37公頃的塱原自然生態公園，以平衡城市發展與保育，提升濕地生態價值和生物多樣性。作為項目主導機構，土木工程拓展署在「新工程合約 - 工程及建造合約3」的框架下於此項目的七個工程合約中靈活運用選項A、B、C和D，以切合不同性質的工程需要。

在整個項目建造期中，團隊秉持相互信任和協作的精神，開創不少可持續的設計和創新措施。其中包括「新工程合約管理軟件」和數碼化工程款項支付系統使補償事項的通知和評估、系統性風險的管理和付款認證等工作流程得以簡化。為了促進伙伴合作的關係，團隊舉行「伙伴合作研討會」以建立共同目標，而由高層管理人員和前線成員參與的定期「卓越工作會議」持續解決工程上所遇到的挑戰，以上種種措施令工程更加順利地進行。

項目團隊採用多項創新施工方案來應對工程挑戰。例如於東鐵綫上方引入「軸心平衡橋樑轉體法」建橋。還在龍躍頭交匯處的行人天橋系統中使用了S960超高強鋼。這些創新施工方案在香港尚屬首次，成功減少了與工期、成本和建築安全性相關的項目風險，令業界鼓舞。

該項目還實施了許多減少二氧化碳排放的舉措，包括開發塱原自然生態公園以抵償項目發展所造成的濕地損失、使用S960超高強鋼減輕橋樑墩柱和地基的重量、重複利用挖掘出的土壤回填、在混凝土中使用粒化高爐礦渣，以及重新利用經過處理的去污染土壤和木質廢料。這些努力獲得由英國土木工程師學會舉辦的2024年度「新工程合約」國際獎項認同，榮獲「實踐減少二氧化碳排放量措施以邁向淨零排放」的組別大獎。

### 使用NEC的主要好處

- 減輕風險會議：**例如，通過高層管理層的早期介入，項目團隊和港鐵公司之間能夠在施工早期達成使用「軸心平衡橋樑轉體法」的共識。
- 時間管理：**其成效可顯見於新發展區多個地區的工地平整工程已提前3至9個月完成，已提早移交房屋署以興建公營房屋。
- NEC創新科技應用選項：**透過香港版的新工程合約（NEC）- 工程及建造合約（ECC）文件的推動，新增的特殊條款X30鼓勵在建項目採用創新科技。



# DRAINAGE SERVICES DEPARTMENT EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS

渠務署

沙頭角污水處理廠擴建工程



## PROJECT TEAM MEMBERS 項目團隊成員

### Employer / 僱主:

The Government of the Hong Kong  
Special Administrative Region (HKSARG)  
香港特別行政區政府

### Project Manager / 項目經理:

Drainage Services Department, HKSARG  
香港特別行政區政府 渠務署

### Supervisor / 監督人員:

Binnies Hong Kong Limited  
賓尼斯工程顧問有限公司

### Contractor / 承建商:

Build King – Kum Shing Joint Venture  
利基 – 金城聯營

### Contract Value / 合約價值:

HK\$1,250 million / 12.5億港元

### Contract(s) used on the project / 項目中使用的合約:

NEC3 Engineering and Construction Contract Option C  
NEC3工程及建造合約 選項C

## Project overview

To cope with the anticipated increase in sewage volume of Sha Tau Kok area, we redeveloped the Sha Tau Kok Sewage Treatment Works (STKSTW) in situ to increase its treatment capacity from 1,660 cubic metres per day to 5,000 cubic metres per day. The Project of “Expansion of STKSTW” includes the construction of a temporary sewage treatment plant (TSTP), new STKSTW, a submarine outfall and sewers. As the first pilot project of Construction 2.0 in Drainage Services Department, the Project Team has established the concept of “Smart and Green Project Management” in the direction of “innovation, intelligence and interaction”.

## Key benefits of using NEC

1. Pain/gain share mechanism encouraged the project team to explore innovative methods to solve site problems. For example, this is the first project to adopt 2-Way Horizontal Directional Drilling method in the construction of submarine outfall. This resulted in a 3-months advance sectional completion.
2. Early warnings and risk reduction meetings allowed the project team to resolve potential risks at early stage and minimize the impact to the project. For example, during COVID in 2022, alternative transportation method of construction materials and arrangement of workers to work in shift helped to minimize the impact to the project.
3. Compensation event mechanism resulted in more certain on time and cost implications. This helped both the Employer and Contractor to ascertain the latest financial situation of the project and minimized potential disputes.

## 項目概覽

為應付沙頭角預計增加的污水量，渠務署於現址重建沙頭角污水處理廠，令該廠的污水處理量由每日1,660立方米，增加至5,000立方米。「沙頭角污水處理廠擴建工程」項目包括興建臨時污水處理廠、永久污水處理廠、海底排放管和區內渠道鋪設。作為渠務署首個推行「建造業2.0」的先導項目，項目團隊按「創新、智慧、互動」的方向，訂立「智慧及綠色工程管理」，並予以實踐。

## 使用NEC的主要好處

1. 在攤分節省工程費或分擔超支機制的鼓勵下，工程團隊採用創新方法解決施工問題。例如，首次使用雙向水平導向鑽掘技術建造海底排放管，從而節省3個月施工時間。
2. 透過風險預警及減低風險會議，項目團隊能夠在早期階段解決潛在風險。例如，在2022年新冠肺炎疫情期間，採用替代運輸方式運輸建築材料並安排工人輪班工作的方案將疫情對項目的影響降到了最低。
3. 處理補償事項的機制能盡早確定事件對時間和成本的影響。此舉有助於僱主與承建商瞭解工程的最新財務狀況，並減少潛在爭議。



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