





零二四年七月 July 2024

The world's first use of ultra-high street n footbridge construction

粉嶺北新發展區第一階段-粉嶺繞道東段(石湖新村北至龍躍 頭) 工程正進行得如火如荼,土木工程拓展署(土拓署) 在推展 工程時以北區為本,致力提升工程效率和可持續性,使北區成 為可持續發展社區。為此,土拓署與香港理工大學(理大)合作, 共同研發了全新的橋樑設計和建造技術,採用可持續建築物料 S960超高強度鋼材(S960超高強鋼)建造兩段行人天橋,亦是 該物料在全球首次應用於民用橋樑建設的方案。

粉嶺繞道(東段) The Fanling Bypass Eastern Section

是次合作亦激請清華大學的鋼結構專家協助,為S960超高強 鋼的橋樑設計及焊接工藝中的關鍵技術提供專業意見。

The Fanling North New Development Area, Phase 1 — Fanling Bypass Eastern Section (Shek Wu San Tsuen North to Lung Yeuk Tau) project is now in full swing. The Civil Engineering and Development Department (CEDD) is committed to enhancing the efficiency and sustainability of the works in the North District and making the district a sustainable community. Thus, the CEDD has collaborated with the Hong Kong Polytechnic University (PolyU), to jointly develop a brand new bridge design and construction technique using sustainable construction material, ultra-high strength S960 steel for the construction of two footbridges, which is the world's first application of S960 steel in bridge construction.

Steel structure experts from Tsinghua University were also invited to provide professional advice on key technologies in the bridge design and welding process of ultra-high strength S960 steel.

項目里程碑 Project Milestone



上拓署與理大簽署深化S960超高強 鋼科研及應用合作備忘錄,促進雙方 在橋樑建設項目中落實應用S960超

The CEDD and PolyU signed a Memorandum of Understanding to deepen collaboration in the research and adoption of high strength steel for facilitating the use of ultra-high strength S960 steel in bridge construction projects



理大實驗室內舉行S960超高強鋼 焊接考試,以及為焊接組件進行壓

Ultra-high strength S960 steel welding examination and compression test of welded section at PolyU

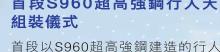


工地現場模擬實際S960超高強鋼 焊接操作,以及進行焊接測試。 Ultra-high strength S960 steel welding trial mimicking actual operating condition and welding test at construction site



儀式 First section of ultra-high strength S960

steel footbridge assembly ceremony



心將建造水平推至世界前列。

首段S960超高強鋼行人天橋 First section of ultra-high strength S960 steel footbridge assembly ceremony

古洞北|粉嶺北新發展區

首段以S960超高強鋼建造的行人天 The first prefabricated section of the footbridge made of ultra-high strength 橋預製組件已經運抵香港,並在 S960 steel has been delivered to Hong Kong. A ceremony on the tightening of 2024年7月18日由土拓署署長方學誠 the connection bolts was held on 18 July 2024, attended by the Director of 太平紳士、發展局北部都會區統籌辦 CEDD, Michael Fong, JP, Ms Pecvin Yong, Deputy Director of Northern 事處副主任翁佩雲女士、發展局項目 Metropolis Co-ordination Office of Development Bureau, Mr Joseph Lo, JP, 策略及管控處處長羅國權太平紳士、 Head of Project Strategy and Governance Office of Development Bureau, 理大國家鋼結構工程技術研究中心香 Professor Chung Kwok-fai, Director of the Chinese National Engineering 港分中心主任鍾國輝教授、建造業議 Research Centre for Steel Construction (Hong Kong Branch) of PolyU and 會主席何安誠教授,連同其他政府部 Professor Ho On-sing, Chairman of Construction Industry Council, together with 門、學界與業界代表參與組裝儀式, other representatives from the Government, academia and the industry, signifying the milestone achievement of the project.

土拓署署長方學誠太平紳士致辭時表 During the ceremony, the Director of CEDD, Mr Michael Fong, JP, said that this 示是次項目是全世界首次採用S960 was the first-ever use of ultra-high strength S960 steel in the construction of a 超高強鋼建造行人天橋,足見政府決 pedestrian footbridge, and that the Government was determined to bring the construction standard to the forefront of the world.



06/2023

08/2023 - 06/2024

工地現場進行橋段架設

Lifting bridge segment at construction site

08/2024

詳情請參閱短片:

使用S960超高強鋼的優點

- 和抗疲勞強度,以降低建造成本。
- 流線型外觀
- 可使用較小型的起重設備,減低安全 Streamlined appearance
- 減少碳排放
- 提升建造效率,縮短施工期

Benefits in using ultra-high strength \$960 steel

- 比一般強度的鋼材具更高抗拉強度◆ Higher tensile strength than normal strength steel, which 有效減少鋼材消耗·提高抗變形能力 effectively reduces steel consumption, improves resistance to deformation and fatigue strength to reduce construction cost.
- 能減低橋身重量,令橋樑結構更輕巧,
 ◆ Can reduce the weight of the bridge deck and make the bridge. structure slimmer, which can effectively reduce the number of

 - Enable the use of smaller lifting equipment to reduce safety risks
 - Reduce carbon emission
 - Enhance construction efficiency and shorten construction period

應用S960超高強鋼建行人天橋是政府·學界與業界攜手合作的成果·除了為 未來橋樑建造項目奠定了技術基礎·亦可減少工程的碳排放·促進可持續性發 展。不久的將來,工程完成後將為粉嶺區帶來更完善的交通網絡,以及綠色宜 居的生活環境。

ne application of ultra-high strength S960 steel in the cons dge is the result of the co-operation between the Government, the lia and the industry. Apart from laying a technological foundation for e project will bring a better transport network, as well as a green and liv

粉北創作 - 社區共融壁畫創作活動

菁然社企(wePaint),舉辦了一系列的社區共融壁畫創 Enterprise Society and wePaint, organised a 作活動 —「粉北創作」。是次活動邀請到一班長者和有 community-inclusive mural painting programme at the 特殊學習需要的人士,為粉嶺北社區聯絡中心外牆共同創 Fanling North Community Liaison Centre from April to May 作一幅富有粉嶺特色的壁畫,讓每位參與者能夠展現藝術 2024. A group of elders and people with special educational 才華,同時促進長幼共融,凝聚社區。



Community inclusive mural painting programme

工程團隊於2024年4月至5月期間,聯同豐盛社企學會和 The project team, in collaboration with Fullness Social needs were invited to jointly create a mural with Fanling features on an exterior wall at the Centre, allowing all participants to showcase their artistic talents while promoting harmony across generations and the community.



工程團隊獲頒「新工程合約」獎項

英國土木工程師學會轄下的新工程合約組織(NEC)於 Initiatives towards Net-zero" category in 2024年6月27日舉行「Martin Barnes」獎項頒獎典禮。 recognition of the team's proactive efforts in 工程團隊獲頒發「實踐減少二氧化碳排放量措施以邁向 adopting a number of carbon reduction 淨零排放」組別冠軍,以表揚其於工程項目中積極採用 initiatives in the project with an aim to 一系列減碳措施,達致減少二氧化碳排放量,以及致力 reducing carbon dioxide emissions and 建造可持續發展的將來。

Project team receives UK New Engineering Contract Award

古洞北|粉嶺北新發展區

The Martin Barnes Awards presentation ceremony organised by the New Engineering Contract (NEC) Users' Group under the Institution of Civil Engineers of the United Kingdom was held on 27 June 2024. The project team received the Winner Award under the

"Demonstrating Carbon Dioxide Reduction commitment to a sustainable future.



實踐可持續發展目標獲業界肯定

「粉嶺北新發展區第一階段-粉嶺繞道東段(石湖新村北至龍躍頭)工程團隊榮 獲由環保促進會舉辦的「聯合國可持續發展目標香港成就獎2024」其中兩個獎 項,表彰其在推行工程項目時能致力實踐可持續發展目標,惠及社區。

ecognition received for achieving the sustainable development goals

The project team of "Fanling North New Development Area, Phase 1 - Fanling Bypass Eastern Section (Shek Wu San Tsuen North to Lung Yeuk Tau) was honoured to receive 2 awards in the United Nations Sustainable Development Goals Acheivement Awards Hong Kong 2024 organised by the Green Council in recognition of its commitment to achieving the sustainable development goals in implementing the project for the benefit of the community.



工料測量師

工料測量師是建築界的 「財務策劃師」及「合約 專家」。建築工程須嚴格 控制開支,故市場對工料 測量師的需求亦日益上升。

工料測量師的主要工作包括 標文件、處理合約糾紛等。一般而言, for checking the progress of works, and 月需要到地盤巡視平均一至兩次,除 evaluation. 了檢視工程進度外,亦知悉承建商動

夠順利推進。

he quantity surveyors

Quantity surveyors (QS) are the "financial planners" and "contract experts" of the construction industry. The need for strict cost control in construction projects has led to an increasing demand for QS. Their major duties include cost consultation and control, cost planning, formulation of tender documents, handling of contract

disputes, etc. QS mainly work in office buildings, but they need to go to the 成本諮詢及控制、成本計劃、制訂招 construction site occasionally once or twice a month,

工料測量師主要在寫字樓工作,但每 contractor's resources deployed for cost 溝通能力

In the Kwu Tung North and Fanling North New Development Areas project, the QS 在古洞北及粉嶺北新發展區項目中, team has taken up the important role of being 工料測量師團隊肩負重任,為龐大的 the gatekeeper for the huge amount of project \ s 工程款項及開支把關,令工程項目能 payments and expenditure to ensure the smooth progress of the projects.





查詢詳情,請與古洞北及粉嶺北新發展區辦事處聯絡。 For further information, please contact the Kwu Tung North and Fanling North New Development Area Office. 古洞北 tel: 3547 1645 email: ktnrp@cedd.gov.hk 粉嶺北 tel: 3547 1648 email: flnrp@cedd.gov.hk

劉覽古洞北及粉嶺北 新發展區(第一階段)

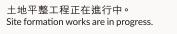


合約編號 Contract No.: ND/2019/01

古洞北新發展區第一階段 - 地盤平整和基礎設施工程 Kwu Tung North New Development Area, Phase 1: Site Formation and Infrastructure Works







Fung Kong

Kwu Tung Market

Shopping Centre

古洞北新發展區第一階段 - 古洞北新發展區至石湖墟的道路和渠務工程

Kwu Tung North New Development Area, Phase 1: Roads and Drains between

Kwu Tung North New Development Area and Shek Wu Hui

古洞北污水泵房已完成主體結構 沿雙魚河一帶的渠務工程正在進

The main structure of Kwu Tung North Sewerage works along Sheung Yuo

工程熱線 Enquiry Hotline 🕓 6848 0156

Sewage Pumping Station is completed. River are in progress.

₩ 擬建古洞港鐵站

粉嶺公路 Fanling Highway

件安裝工程。

Him Tong is in progress.

古洞北及粉嶺北新發展區第一階段 - 發展塱原自然生態公園 Kwu Tung North and Fanling North New Development Areas, Phase 1: Development of the Long Valley Nature Park

塱原自然生態公園已大致完工,正逐步轉交予漁農自然護理署。 The construction works of Long Valley Nature Park are substantially completed, and the Park is being handed over to the Agriculture, Fisheries and Conservation Department (AFCD) progressively

汚水處理廠(上水)

reatment Plant

heung Shui Sewage

合約編號 Contract No.: ND/2019/05

粉嶺繞道東段 — 崇謙堂至九龍坑

工程熱線 Enquiry Hotline © 5506 5268 -

Tin Ping Shan

北區運動場 North District

※ 上水港鐵站

MTR Sheung Shui

Sports Ground 石湖新村

Shek Wu San

北區公園

North District Park

馬犀埔

Ma Shi Po

※ 粉嶺港鐵站

MTR Fanling

合約編號 Contract No.: ND/2019/03



粉嶺繞道東段 — 石湖新村北至龍躍頭



興建中。 Bridge deck structure across Ng Tung River 工程。

roads and underpass adjacent to Sha Tau Kok Road - Lung Yeuk Tau are in progress.

横跨梧桐河的行車橋橋面工程,現正 沙頭角公路龍躍頭一帶工地,正進行 現正進行連接馬適路與粉嶺繞道的 地面道路和地下行車道的挖掘及結構 新道路建造工程。 New road connecting Fanling Bypass to

Excavation and construction of depressed Ma Sik Road is in progress.

合約編號 Contract No.: ND/2019/07

粉嶺北新發展區第一階段 - 地盤平整及基礎設施工程 Fanling North New Development Area, Phase 1 Site Formation and Infrastructure Works



位於馬適路及和泰街交界的道路改 土地平整大致完成,新建道路、渠務 善工程現正進行中。

工程及隔音屏障正在進行中。 Road improvement works at the junction Site formation works have been of Ma Sik Road and Wo Tai Street are in substantially completed. Construction of new roads, drainage works and noise barriers are in progress.

程熱線 Enquiry Hotline 🕲 5925 7173

粉嶺北新發展區第一階段 - 北區臨時農產品批發市場重置工程

Fanling North New Development Area, Phase 1: Reprovisioning of





All works in the reprovisioned North District Temporary Wholesale Market for Agricultural Products have been completed and handed over to AFCD for operation.

塘坑東村

Fanling Bypass Eastern Section between Shung Him Tong and Kau Lung Hang 塘坑村 Tong Hang 和合石新村

近崇謙堂一帶工地,正進行橋面預製 沿粉嶺公路的隔音屏障正在進行地 Erection of bridge segments near Shung Construction of noise barrier foundations

North District

Hospital

along Fanling Highway is in progress. 程熱線 Enquiry Hotline **9737 1021**



麻笏圍

崇謙堂

Ma Wat Wai

Shung Him Tong



Tong Hang



e the future On Lok Mun Street Playground.

standard skateboard park - On Lok Mun Street Playground. Visitors can

he excitement and fun of skateboarding through this simulation game and