

中九龍幹線通訊
Central Kowloon Route (CKR)
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豁免*

編者的話 Editor's Words

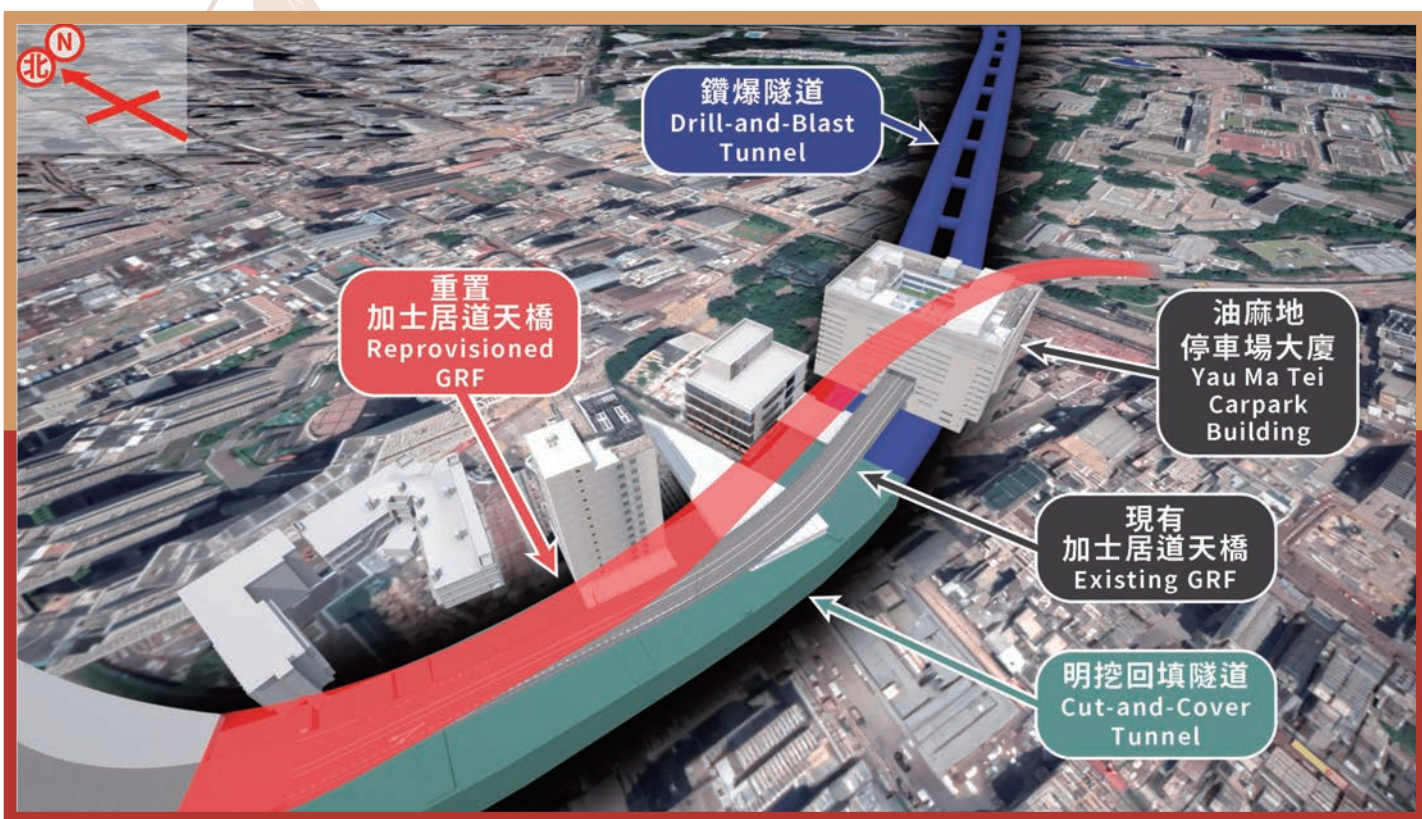
中九龍幹線在市中心進行建造工程時，面對不少重大挑戰。儘管如此，我們的工程團隊仍會繼續迎难而上。本期通訊除了分享最新工程進度及社區關懷活動外，還會特別介紹加士居道天橋的重置工程，分享魯班先師的故事，以及介紹「建造業安全週2021-安全智慧工地」的活動。

焦點 Focus 油麻地東 Yau Ma Tei East (YMTE)

重置加士居道天橋 Reprovisioning of Gascoigne Road Flyover

現有加士居道天橋長約 1.2 公里，連接加士居道和渡船街，貫穿油麻地停車場大廈。加士居道天橋的交通絡繹不絕，平均每日汽車流量達五萬架次。然而，因應中九龍幹線的一段西行線隧道與現有加士居道天橋走線重疊，現有一段長約300米的加士居道天橋需重置及拆卸。由於工程鄰近住宅樓宇、公共設施和現有道路網絡，令此工程項目極具挑戰。本期我們將介紹重置加士居道天橋施工的方法，以及相關的安全和環境保護措施。

The existing Gascoigne Road Flyover (GRF) is a 1.2 km-long flyover linking Gascoigne Road and Ferry Street, passing through Yau Ma Tei Carpark Building. The GRF supports heavy traffic, with a daily average flow of 50,000 vehicles. Since the alignment of a section of the existing GRF is overlapping with the CKR tunnel, an approximate 300 m-long existing flyover section needs to be reprovioned and demolished. The site is located in the vicinity of residential buildings, public facilities and road network, which makes the task highly challenging. This issue will present the construction method for the reprovioned Gascoigne Road Flyover (RGRF) and the associated safety and environmental protection measures.



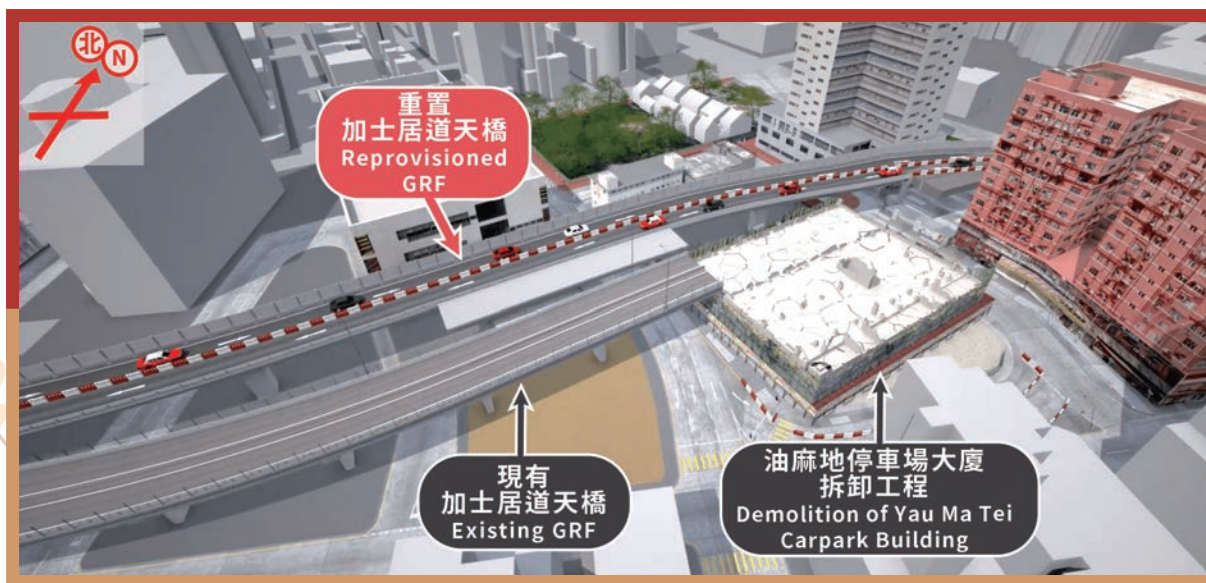
現有及重置加士居道天橋與中九龍幹線隧道走線
Alignment of existing GRF, reprovioned GRF and CKR tunnel

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分階段建造以維持交通暢通 Phased Construction to Maintain the Traffic

由於加士居道天橋是一條主要的交通幹道，因此我們須慎重地考慮其重置步驟，確保在整個施工期間加士居道天橋行車維持暢順。為配合油麻地停車場大廈的拆卸工程，重置加士居道天橋會分階段進行，包括：建造行車道、交通改道及拆卸現有加士居道天橋。

GRF is a major traffic route. To ensure that the smooth traffic flow along GRF is maintained, sequencing of the reprovioning works is carefully considered. To facilitate demolition of the Yau Ma Tei Carpark Building, reprovioning works will be carried out in phases, including construction of carriageway, diversion of traffic and demolition of the existing GRF.



於工程期間維持加士居道天橋的交通
Maintain live traffic on GRF during construction

使用移動模板建造橋樑 Bridge Construction with Form Traveller

重置加士居道天橋採用移動模板及就地澆築平衡懸臂法，是橋樑建造，特別是在人口稠密的地區的一種創新方法，能有效減低對地面交通的影響。與傳統的工作架方法相比，這種方法有許多優點。例如，此方法不需要在地面搭建工作架來支撐橋樑建造，因此毋須於日間封閉道路，而只需偶爾於夜間封路以進行移動模板組裝、曳進和拆卸工作，大大減低對公眾的影響。此外，這種施工方法與地面工程完全分開，亦不涉及組件運輸或吊運工序，因此不會為附近工程和公共設施帶來直接影響。總體來說，使用移動模板可以更有效及安全地進行整個施工過程。

Construction of RGRF adopts Cast in-situ balanced cantilever method with Form Traveller system. It is an innovative method, particularly in densely populated area, for bridge construction. It effectively minimizes the impact on traffic. Form Traveller system offers numerous advantages over traditional construction method. For instance, falsework erection for supporting the bridge construction on ground is not required, thus no road closure is required in daytime. Only occasional nighttime road closures are required for assembly, launching and disassembly operations. Impacts to the public can therefore be greatly reduced. Furthermore, this construction method involves neither segment delivery nor lifting, and the construction can be completely separated from at-grade works. Hence the nearby interfacing construction activities and public facilities will not be directly affected. All in all, construction of RGRF is carried out in a more effective and safe manner by adopting the Form Traveller system.



安裝移動模板前的重置加士居道天橋
RGRF before installation of Form Traveller



安裝移動模板後的重置加士居道天橋
RGRF after installation of Form Traveller

夜間封路 Nighttime Road Closure

為了減少對道路使用者帶來不便，移動模板的組裝、曳進和拆卸工作會分階段於夜間封路時進行，以維持上海街日間的行車。我們會預先通知駕駛者以便他們預早計劃行程。

To minimize the inconvenience caused to the road users, assembly, launching and disassembly operations of the Form Traveller are carried out in phases during nighttime road closures, so as to maintain the traffic at Shanghai Street in daytime. Drivers will be notified in advance for planning their journey.



夜間臨時交通安排
Nighttime temporary traffic arrangement

安全及環境保護措施 Safety and Environmental Protection Measures

為妥善重置加士居道天橋移動模板的設計及安裝結構，在進行橋面施工之前會交由獨立結構工程師審核、檢測和認證。我們亦還制定了颱風前後的檢查和緊急應變程序，以應對惡劣天氣，並確保移動模板結構的穩定性。

To ensure the integrity of the design and installation of Form Traveller of RGRF, tests and certification would be conducted by an independent checking engineer, prior to the commencement of works. Moreover, a set of comprehensive pre-typhoon and post-typhoon checking procedures and contingency plans are formulated for coping with adverse weather condition to ensure the structural stability of the Form Traveller.

為減低重置加士居道天橋期間的交通嘈音，我們會於交通改道階段在橋面安裝臨時隔音屏障，並會於2024年重置加士居道天橋工程完成後，拆除臨時隔音屏障並建造永久隔音屏障。

To reduce traffic noise impact of the GRF during reprovioning, temporary noise barrier will be constructed on the deck during traffic diversion stages. The temporary noise barrier will be demolished and a permanent noise enclosure will be constructed upon completion of the reprovioning of RGRF in 2024.



重置加士居道天橋的臨時隔音屏障
Proposed temporary noise barrier on RGRF

社區聯繫 Community Linkage

「糧友行動」食物捐贈 Food Donation to Food Friend Action

油麻地東及油麻地西工程團隊於2021年7月2日至16日在工地辦事處組織了一次食物捐贈活動。同事們踴躍捐贈了各種食物和飲料，所收集的食物會捐贈給「糧友行動」，以進一步分發給油尖旺區的基層家庭。



「糧友行動」食物捐贈
Food donation to Food Friend Action

「小小木匠工程師」工作坊 “Young Carpenter Workshop”

「小小木匠工程師」工作坊於魯班服務月，於2021年7月24日在中九龍幹線—馬頭角社區聯絡中心順利舉行。活動當日，工程團隊邀請胡善短女木匠親自向學生及義工們傳授木工技術，並示範精湛的木工手藝，由鋸木、入榫、裝嵌、髹上光油等，循序漸進教導學生親手製作入榫木樑，讓他們一嘗當木匠的樂趣。



「小小木匠工程師」工作坊
Young Carpenter Workshop

學術演講及中心參觀 Infrastructure Lecture and Centre Visit

中九龍幹線工程團隊一向致力推動本地工程教育，為培育工程界生力軍出一分力。路政署主要工程管理局中九龍幹線工程管理局徐偉先生早前應香港城市大學邀請，於2021年7月19日在「香港基建項目」課程中擔任客席講師。為了讓學生在上課前好好認識中九龍幹線的基礎知識，工程團隊於2021年7月15日安排城大學生參觀中九龍幹線馬頭角社區聯絡中心。CKR Project Team is always keen to support the construction education and nurture future talent for the trade in Hong Kong. On 19 July 2021, Mr. TSUI Wai, Principal Project Coordinator / CKR, Major Works Project Management Office, Highways Department was honored to be invited by City University of Hong Kong (CityU) as guest lecturer for the course entitled “An Introduction to Infrastructure in Hong Kong”. To provide basic project information prior to the lecture, CityU students were invited to visit CKR Community Liaison Centre (Ma Tau Kok) on 15 July 2021.



城市大學學生參觀中九龍幹線馬頭角社區聯絡中心
CityU students visited CKR Community Liaison Centre (Ma Tau Kok)

魯班先師誕慶祝活動 Lo Pan Patron's Day Celebration

每年農曆六月十三日「魯班先師誕」是建造業的重要節日。古時中國各行各業均流行供奉祖師，希望神明可庇佑工作。魯班是中國建築界的祖師，他是春秋時期魯國的一位著名工匠，發明的許多工具和建造法則沿用至今，對業界發展舉足輕重。因此他又被尊稱為「百匠之師」，而建造業於「魯班先師誕」進行祭拜的傳統亦代代相傳至今。



魯班先師廟外觀
Exterior of Lo Pan Temple

“Lo Pan Patron's Day”, on the 13th day of the 6th month of every Lunar year, is an important festival to the construction industry. It was popular for every trade to worship their own Master in ancient China, hoping that the deity could bless their work. Lo Pan is the most widely revered Master in the construction industry. He was a craftsman extraordinaire in the State of Lu during the Spring and Autumn Period. Many tools he invented and various construction rules he established have remained essentially the same ever since, which played a decisive role in the development of the industry. Therefore, he was honoured as the “Master of Crafts”, and the tradition of paying homage on “Lo Pan Patron's Day” has been passed on for generations.

1884年，由當時香港三行同業集資興建了位於上環青蓮菴的魯班先師廟。魯班廟兩進式設計，每進的正脊均有陶塑裝飾。廟內有多幅精美的浮雕和壁畫，盡顯工匠的技藝。在「魯班先師誕」正日，除了魯班先師廟會有賀誕活動外，建造業更會向市民派發「師傅飯」，將愛與關懷傳遞至社區。

In 1884, Contractor's Guild raised fund and built Lo Pan Temple at Ching Lin Terrace in Sheung Wan. The temple is a two-hall structure with every ridge adorned with ceramic sculptures. Inside the temple, there are plenty of exquisite plastered reliefs and murals, demonstrating highly skilled craftsmanship. On “Lo Pan Patron's Day”, apart from festivities at the Lo Pan Temple, “Master Rice” will be distributed to the public by the construction industry to spread love and care to the community.

魯班作為工匠界的象徵，其發明廣泛應用於日常生活。「魯班尺」或「魯班矩」是魯班最具代表性的發明，是中國人的量度指標。工匠及設計師一直沿用至今。「魯班尺」劃分為八格，每格代表不同的意思，包括財、病、離、義、官、劫、害、本。工匠於設計物件及建築物的尺寸時，會根據魯班尺指引，達至趨吉避凶。魯班將風水應用於度量衡學，迎合人民的精神需要，令物件的結構和尺寸和諧和平衡。

Lo Pan, as the symbol of craftsmanship, many of his inventions are still widely used in our daily life. The Lo Pan's Ruler is one of the most remarkable inventions, serving as a measurement guide in the Chinese society. The craftsmen and designers have been using this measuring rule ever since. The basic unit of the ruler is divided into eight segments, each segment refers to a symbol, which is “Wealth”(財), “Disease”(病), “Separation”(離), “Righteousness”(義), “Career”(官), “Calamity”(劫), “Evil”(害), and “Origin”(本). In designing the dimensions of an object or a building structure, guidelines based on the Lo Pan's Ruler should be followed, in order to pursue fortune and avoid disaster. Lo Pan applied Feng Shui into metrology and this catered to the spiritual needs of people and built the structure and dimension of an object in harmony and balance.

墨斗是魯班的其中一個發明，用作繪畫直線，是古代工匠行業中為不可或缺之工具。隨著時代和技術的進步，現時墨斗均使用便攜式的墨斗，只需拉線即可使用。

Another significant invention is the Carpenter's ink marker, an instrument used in creating and determining spatial culture in ancient China. Nowadays, the ink marker has been developed into a handy and convenient form.



啟德東工程團隊於「魯班先師誕」當日向工友派發「師傅飯」
KTE project team distributed “Master Rice” to workers on “Lo Pan Patron's Day”

