The Hong Kong-Shenzhen Western Corridor (HK-SWC) is the first mega-scale highway project between Hong Kong and Shenzhen, symbolizes the close partnership between the two governments.

HK-SWC is a 5.5-km long dual 3-lane carriageway. The alignment of HK-SWC starts from the new reclamation in Dongjiaotou at Shekou where the Boundary Crossing Facilities are located, stretches across the ecologically highly valued Deep Bay waters, lands at the north-western part of the New Territories at Ngau Hom Shek. The HK-SWC connects to Yuen Long Highway via Deep Bay Link.

The project includes construction of a 3.5-km dual 3-lane carriageway spanning across Deep Bay from Ngau Hom Shek in the north west part of the New Territories of the HKSAR to the HKSAR’s boundary of the HKSWC; construction of a traffic control surveillance system; associated civil, structural, electrical and mechanical, marine, geotechnical, water works, fire services, environmental mitigation measures, street lighting, traffic aids and directional signs; and provision of lane change-over facilities to accommodate the different traffic configurations in Hong Kong and the Mainland.
深港西部通道

深港西部通道是粤港澳首项共同发展的大型跨界基建工程，标志两地紧密的伙伴关系。深港西部通道是一条全长约5.5公里的三线四程分隔车路（其中香港段长3.5公里）。西部通道的走线，始于已设于城市境内的蛇口褥角头新填海区，横跨具高生态价值的后海湾而落点于新界西北区的䃟石，然后经由后海湾干路衔接至元朗公路。

工程计划包括营建一条长3.5公里，横跨后海湾的三线分隔车路，深港西部通道香港段车路，由新界西北部的䃟石伸延至香港特别行政区边界；装设交通管理及监察系统；进行相关的土木、结构、机电、海事、土力和水务工程；安设消防设备；实施缓减环境影响措施；装设街道照明设备、辅助交通设备和路线指示标志；以及提供车辆转线设施，以配合香港和内地不同的行车间隔。

深港西部通道的桥体由高架引桥和斜拉桥组成，其中有3.5公里位于香港水域及由香港特别行政区政府在此项目下建起。香港侧的斜拉桥主跨长度为210米，单柱式后座塔高158米，高架引桥距路一般为75米。其余2公里的深港西部通道会由深圳市政府建造。

这条跨境通道两座斜拉桥的桥塔互对对方，其型态犹如两座桥塔互相牵引各自的高架引桥至中间的深港分界线，标志两地人民密切接触能够更加紧密地团结起来，迈向繁荣。

深港西部通道将会成为香港特别行政区（香港特别行政区）与深圳之间的第4条跨境行车通道，以缓和目前位于落马洲、文锦渡及沙头角之跨境行车通道的交通塞塞情况。

深圳湾公路大桥

深圳湾公路大桥采用了独特而简约的设计，其斜拉桥型态犹如两座桥塔互相牵引各自的引桥至中间的深港分界线。由于大桥是全国最宽的单索面斜拉桥，路政署在设计阶段已进行了两次的风洞测试，检查桥身的稳定性。在2005年9月，大桥1件重1,600吨、长80米的钢箱梁吊装，至今仍是全港最重的钢箱梁吊装。

路政署表示，在建造期间，由于需要在浅滩
The HK-SWC is designed in the form of elevated viaducts and cable-stayed bridges of which 3.5 km of the HK-SWC is in Hong Kong waters and was constructed by the HKSAR Government under this project. The cable-stayed bridge of the Hong Kong Section has a main span of 210 m with a single inclined tower 158 m in height. Viaducts carry the approach roads to the bridges with piers at a typical spacing of 75 m. The Shenzhen Municipal Government has built the other 2 km of the HK-SWC.

A feature of the crossing is that the Shenzhen Bay Bridge, the two cable-stayed bridges of the HKSAR and the Shenzhen sides are inclined towards each other, pulling their respective approach viaducts towards the boundary. They symbolize the desire of the people in the two regions to build a synergistic relationship for greater prosperity.

The HK-SWC becomes the fourth vehicular boundary crossing between the HKSAR and Shenzhen to relieve traffic congestion of the three existing crossings at Lok Ma Chau, Sha Tau Kok and Man Kam To.

Shenzhen Bay Bridge
The Shenzhen Bay Bridge has adopted a simple yet unique design, with the two cable-stayed bridge towers of Hong Kong and Shenzhen sides inclined towards each other, pulling their approach viaducts towards the boundary. As Shenzhen Bay Bridge is the Mainland’s widest cable-stayed bridge with a single-cable plane, wind tunnel tests were carried out during the design stage to offer an experimental verification of the bridge’s aerodynamic performance.

In September 2005, the bridge’s heaviest steel segment - weighing 1,600 tonnes - was erected over Deep Bay. The bridge deck is made of steel, which is much lighter than concrete.

Commitment to sustainability
The new cross-boundary link stretches over the ecologically important Deep Bay, which lies between Shenzhen and Hong Kong. The coastal area of Deep Bay comprises extensive low-lying inter-tidal mudflats, reed beds and large stands of mangrove forests,
工作，該署建造了重12,000噸、闊9米和長1.8公里的臨時鋼橋，以運送物料和施工。

香港段的斜拉橋共有28條鋼纜，即橋塔的每邊各有13條鋼纜猶如眉毛般排開，與橋身接連。長460米的斜拉橋橋身是用鋼材建造，主要是由鋼材建造的橋身重量較用混凝土的輕三分之一。對於主跨達210米的大橋來說，採用鋼材是適當的選擇。

由於深圳灣公路大橋位處海面，為了防止鋼材生鏽，該署首次在鋼箱樑內裝置抽濕設備，把濕度長期保持在60％以下；位處浪濤區的樑樑和橋柱，其最外層也採用了不鏽鋼材，並加入砂粉，防止海水滲入混凝土內層。

為了長遠改善后海灣的生態發展，路政署在連接米埔自然保護區基圍與后海灣的水道，進行了疏浚工程。這項措施旨在恢復基圍的水流交替能力，從而活化基圍，長遠改善雀鳥的覓食環境。

深圳灣公路大橋工程獲取了多個環保獎項，包括環境運輸工務局2004年度最佳廢物管理鋼獎、香港工程師學會2005年度最佳環保論文大獎，以及英國結構工程師學會2006年度結構（可持續發展類別）獎。

英國結構工程師學會結構（可持續發展類別）獎，表揚在實踐可持續發展和尊重環境方面有傑出表現的結構工程項目。評審認為，深
providing refuge for a variety of life, including the rare horseshoe crabs, mudskippers and fiddler crabs. Located near Mai Po, Deep Bay is also a rich feeding ground and re-fuelling stop for tens of thousands of resident and migratory birds, including the endangered black-faced spoonbill.

After careful and detailed environmental assessments, the Highways Department has chosen the alignment from Dongjiaotou in Shekou, Shenzhen to Ngau Hom Shek in the Northwest New Territories, which has the least impact on Deep Bay’s ecology. Comprehensive mitigation measures and good site practices were implemented during construction to safeguard Deep Bay’s ecosystem. It also kept a close watch on the monitoring results to ensure all environmental permit requirements were met.

An 1.8-km long, nine-metre wide temporary access bridge, weighing 12,000 tonnes, was built to avoid unnecessary disturbance to Deep Bay’s ecosystem while facilitating construction. To upgrade Deep Bay’s ecosystem and lessen the impact of the degradation of the sedimentation situation on the Mai Po Nature Reserve, dredging was carried out at a water channel connecting shrimp ponds in the Mai Po Ramsar Site to Deep Bay. This can restore Mai Po’s tidal flushing and exchange capacity, so that more fish and shrimps will be brought into the ponds through the channel and the ponds’ function as the core feeding ground for birds will be boosted.

The environmental monitoring and audit reports in the past three years show the project posed no threat to Deep Bay’s water quality and ecology. Its outstanding commitment to sustainability enabled Shenzhen Bay Bridge to win the UK Institution of Structural Engineers David Alsop Sustainability Award 2006; the Environmental Paper Award jointly organized by the Hong Kong Institution of Engineers and the Construction Association in 2005; and the Environment, Transport & Works Bureau’s Outstanding Waste Management Bronze Award in 2004.

The UK Institution of Structural Engineers David Alsop Sustainability Award hails achievement in structural design, where outstanding commitment to sustainability and respect for the environment has been demonstrated. The judges found Shenzhen Bay Bridge is “a sustainable and elegant landmark design that preserves the ecosystem of the local environment” and “a project that demonstrates how a mega-scale infrastructure development can successfully harmonize with an ecologically sensitive environment”.

Advance surveillance technology

On traffic control and surveillance, innovative technologies have been adopted for Shenzhen Bay Bridge and Deep Bay Link.

The system, costing about HK$80 million, covers 16 km of road network, including part of Yuen Long Highway. Apart from lane control signals, variable speed limit signs,
圳灣公路大橋保存了當地的生態系統，是可持
續和優雅的地標設計，工程也展示了大型基建
發展如何能成功地與具有生態價值的環境和諧
並存。

高科技監測系統
在交通控制和監測方面，深圳灣公路大橋和后
海灣幹線應用了不少新科技。連同元朗公路部
分路段，系統所涉及的路面範圍合共約 1.6 公
里，建造費用約 8,000 萬元，由灣仔的運輸署交
通控制中心遙距監控；每年的維修費用約 600 萬
元。

外場交通控制設備除包括車道指示標誌、可
變車速標誌和道路標誌外，深圳灣公路大橋還
首次採用了「全」可變道路標誌。全可變道路
標誌由發光二極管組成，除顯示不同組合的中
英文信息，也能以兩種顏色顯示圖案。

深圳灣公路大橋是香港首創採用自設環形光
纖數字傳輸網絡，供數碼閉路電視監察系統影
像和系統控制傳送之用。為了克服地理限制，
該署也採用了無線傳輸技術，把裝置在屯門、
粉嶺和3號幹線等自設數據傳輸網絡外的全可變
道路標誌與交通監控中心系統連繫起來。

環形光纖數據傳輸網絡是智能數據傳輸網
絡，能提供多路徑網絡數據傳輸，並能即時探
測網絡上的缺口，改變數據傳輸路徑，以提供
可靠而無間斷的數據傳遞，並令系統擴張或整
合變得更容易和有效率。

外場交通監測設備方面，深圳灣公路大橋設
有車輛偵測器系統，蒐集路面特定位置上的交
通信息，如車速、流量、頻次、停留車輛和誤
誤行駛方向的車輛等，傳送至監察中心的交通
監控中心系統，讓控制員評估交通情況和作出
適當的指示。

採用的視象式車輛偵測器，可提升準確度，
並方便調控、優化和維修系統。交通控制員的
「千里眼」- 閉路電視監察系統，也是與別不
同。安裝在後海灣幹線和深圳灣公路大橋的閉
路電視，首次裝有動態私隱區域，能隨著閉路
電視移動，對同一預設地方作出遮擋，以防止
侵犯他人私隱。

景觀設計
深圳灣公路大橋香港段的橋塔由路面計高
123 米，與垂直11.3 斜度。為方便維修人
員，橋塔內設升降機。由於橋塔內的空間有
vehicle detectors and closed-circuit television cameras, message signs have also been erected to offer drivers timely advice.

The communication network for transferring information between control centres and devices in the field is highly reliable and cost-effective. It is highly resilient and also incorporates wireless technology.

Turning to vehicle and incident detection, the video-based vehicle detectors are installed. The technology offers higher accuracy and is easier for future system calibration, refinement and maintenance.

A closed-circuit television system uses a ‘dynamic privacy zone’ - a feature to prevent traffic operators or other users from infringing on people’s privacy. The computer system will offer traffic operators traffic plans to deal with incidents in an efficient and effective way.

**Landscape lighting**

Shenzhen Bay Bridge is also a prominent landmark on Deep Bay. Landscape lighting has been provided to accentuate its striking line and form, making it visible from far away.

The S-curve alignment and the central plane of cables make the bridge aesthetically pleasing. To highlight the unique design, the landscape lighting covers the bridge towers, the cables and the bridge deck including the approach road.

Taken into account Deep Bay’s ecosystem, the white landscape lighting is switched on at 7 pm and off at 10 pm. The scope of landscape lighting is confined to the bridge towers on Sundays to Thursdays and extended to the bridge deck on Fridays and Saturdays. On festive occasions, the bridge towers, bridge deck and cables will be lit up.

**Fast Facts of HK-SWC**

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![Map of Shenzhen Bay Bridge and Deep Bay](image)
限，並作斜度運行，這升降機的供應在香港非常難尋，安裝的難度也很高。

深圳灣公路大橋將成為南區的地標，如
青馬大橋和汀九橋般，深圳灣公路大橋除設有
路燈作照明外，將輔以景觀照明，其流線型
走線更為圓細更具美感。

以香港段為例，便設有約700具的
白色景觀照明，於橋塔、斜拉索和橋身作裝
飾照明。與青馬大橋和汀九橋不同，深圳灣
公路大橋的引道側也包括在景觀照明範圍之
內。景觀照明設計的重點，在於凸出大橋的
優雅構造造型。

深港西部通道資料

總長度
5.5公里

工程合約
動工日期 - 2003年8月1日
完工日期 - 2005年12月

道路開工日期 - 2007年7月1日


工程總造價
港幣22.9億

設計與施工顧問公司
曼福工程顧問

承建商
金門-Skanska-中國大橋局聯營
Deep Bay Link

Deep Bay Link is a 5.4 km long dual three-lane strategic carriageway connecting the Hong Kong-Shenzhen Western Corridor (HK-SWC) at Ngau Hom Shek at the shoreline to the existing road networks in the Hong Kong Special Administration Region via Yuen Long Highway at Lam Tei.

Northern Section
Deep Bay Link was constructed under two separate contracts. The Northern Section (DBL(N)) covered under this contract primarily comprises the construction of viaduct with some at grade sections and cut slopes at the northern end where the road passes through the northern extremity of the Tsing Shan range. It connects the HK-SWC to the Southern Section near Castle Peak Road.

The main works in this contract are: Construction of 4.1 sq km long dual 3-lane carriageway mostly in the form of viaducts, including the section that spans over the Castle Peak Road, Light Rail Transit and KCRC West Rail; construction of an interchange at Ha Tsuen; construction of turnaround facilities with weighing station, vehicle recovery base and helipad at Ha Tsuen Interchange; erection of noise barriers and provision of associated civil, structural, electrical & mechanical, geotechnical, utility, landscape and drainage works, fire services, waterworks, street lighting, traffic aids and directional signs.
后海湾幹線

全長5.4公里的后海湾幹線為雙程三線的策略行車道，經藍地的元朗公路連接位於海岸線的龔磡石的深港西部通道及香港特別行政區現有的道路網。

北段

后海湾幹線以兩份合約進行。合約項目的北段（後海灣幹線北段）主要包括建造高架路，在北端設有地面路段和削坡，道路會在該處橫過青山巖北端的山邊，把深港西部通道與青山公路附近的南段連接起來。

合約的主要工程為建造4.1公里長的雙程三線行車道，其中大部分為高架路，包括橫跨青山公路、輕鐵和西鐵的路段；在窟村建造交匯處；建造設有樁車站、拖車站的擋頭設施，以及在窟村交匯處建造直升機升降坪； 聽設隔音屏障、進行相關的土木、結構、機電、土力、公用設施、環境美化和排水渠工程，安裝消防設備，並設置街道照明設施、輔助交通設備及方向指示標誌。

Deep Bay Link-Northern Section
Southern Section
Deep Bay Link was constructed under two separate contracts and its southern Section (DBL(S)) covered under this contract primarily comprises the construction of the Lam Tei Interchange and widening of the Yuen Long Highway between Fu Tei and Tan Kwai Tsuen. The interchange connects the northern section of Deep Bay Link to Route 3 in the east and Tuen Mun Road in the west, via the Yuen Long Highway.

The main works in this contract are:
- Construction of the Lam Tei Interchange in the form of viaducts;
- Construction of approximately 160 sq m long Deep Bay Link mainline in the form of viaducts;
- Reconstruction and widening of approximately 2 km of Yuen Long Highway;
- Erection of noise barriers and provision of associated civil, structural, electrical & mechanical, geotechnical, utility, landscape and drainage works, fire services, waterworks, street lighting, traffic aids and directional signs.

Fast Facts

**Deep Bay Link - Northern Section**
- design and construction consultant: Ove Arup and Partners Hong Kong Limited
- main contractor: Gammon Construction Limited
- contract period: commencement date - 25 June 2003, completion date - January 2006
- contract sum: HK$1,716.1 million

**Deep Bay Link - Southern Section**
- design and construction consultant: Ove Arup and Partners Hong Kong Limited
- main contractor: China State Joint Venture
- contract period: commencement date - 25 June 2003, completion date - January 2006
- contract sum: HK$1,213 million
南段

合約項目下的南段（後海灣幹線南段）主要包括建造藍地交匯處及擴闊虎地與丹桂村之間的元朗公路。此交匯處把後海灣幹線北段連接至東端的三號幹線，及經元朗公路連接至東端的屯門公路。

合約的主要工程為建造由高架路組成的藍地交匯處；建造160米長由高架路組成的後海灣幹線主線；重建及擴闊約2公里的元朗公路；設置隔音屏障、進行相關的土木、結構、機電、土力、公用設施、環境美化、渠務、消防設備等工程，並設置街道照明設施、輔助交通設備及方向指示標誌。

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Deep Bay Link-Southern Section
The Lok Ma Chau Spur Line is the second railway link between Hong Kong and the Mainland, relieving passenger congestion at Lo Wu Station. The 7.4 km alignment branches off the existing East Rail north of Sheung Shui Station and then stretch to the Lok Ma Chau Terminus where customs and immigration facilities are provided. The terminus is connected to new Huanggang Station of the Shenzhen Metro by a pedestrian bridge across the Shenzhen River.

The KCRC has adopted a combined tunnel and viaduct scheme for the Spur Line: from Sheung Shui to Chau Tau, the railway runs through tunnels, the railway then runs on viaducts until it reaches Lok Ma Chau Station.

The Spur Line project comprises four major sections, namely, the tunnels, the viaducts, Lok Ma Chau Station, and the modification works at the existing Sheung Shui Station.


Lok Ma Chau Spur Line

Lok Ma Chau Terminus and pedestrian bridge to Huanggang

A two-level pedestrian bridge built over the Shenzhen River connects Lok Ma Chau
落馬洲支線

落馬洲支線是連接香港及內地的第二條過境鐵路，有助緩解在羅湖站過境的擠迫情況。落馬洲支線全長7.4公里，由東鐵上水站直至落馬洲的新車站。

落馬洲支線將結合隧道及高架橋兩種形式建造：由上水至洲頭以隧道貫通，由洲頭至落馬洲則為高架橋。建造工程主要包括4大項目：隧道段、高架橋段、落馬洲站以及為現時上水站進行的改善工程。

香港特區政府於2002年6月14日正式通過興建落馬洲支線。支線工程於2003年1月正式展開，已於2007年完成，8月正式開通。
The Lok Ma Chau Station is a four-level building occupying an area of about nine hectares which is around 3.5 times the size of the existing Lo Wu Station. In addition to the railway station facilities, there are trading areas plus facilities for immigration and customs in the station.

The Lok Ma Chau Spur Line now forms part of the East Rail network. The Lok Ma Chau Station is another East Rail’s northbound terminus other than Lo Wu. Passengers are able to board trains heading for Lok Ma Chau at East Rail stations from East Tsim Sha Tsui to Sheung Shui.

<table>
<thead>
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<th>Fast Facts</th>
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<tr>
<td>alignment length</td>
<td>7.4 km</td>
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<tr>
<td>commencement date</td>
<td>June 2002</td>
</tr>
<tr>
<td>number of station levels</td>
<td>4</td>
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<tr>
<td>area of station</td>
<td>9 ha</td>
</tr>
<tr>
<td>opening date</td>
<td>15 August 2007</td>
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車站

落馬洲支線的總站建有行人橋跨深圳河，行人橋分為上下兩層，接連新建成的深圳地鐵皇崗車站，乘客於皇崗車站可以便捷地前往深圳其他地方。

落馬洲車站樓高4層，佔地約9公頃，總面積約為現時羅湖車站的3.5倍。車站大堂設有寬敞的購物區，方便乘客。除一般車站設施外，更有海關、出入境及其他重要的過境設施。

落馬洲支線是東鐵網絡的一部分，現已成為東鐵羅湖站以外的另一個北行總站，乘客可於尖崗至上水任何一個車站選乘前往落馬洲的列車。

項目資料

支線長度
7.4公里

車站層數
4

車站面積
9公頃

動工日期
2003年1月

完成日期
2007年7月

啟用日期
2007年8月15日
In order to construct the foundations, piers and portal frames for the viaduct, a 1.8 km-long temporary access bridge (TAB) supported by temporary steel pile and equipped with work platform in various locations, was erected to facilitate the carrying out of the required works. The photo shows the TAB near the shallow water region with steel casing for the forming of a bore-pile in position.

**HK-Shenzhen Western Corridor**

*Photo Essay by Raymond Wong Wai-man*

Viewing towards Ngau Hom Shek (奮發石) from one of the work station with the supporting temporary steel piles on the underside of the access roadway clearly seen. Since Deep Bay is environmentally sensitive, silt-screen was erected (photo centre) during the bore-pile forming process in order to avoid the pollution of the seawater by silt and mud.

Close-up view of a work station where a portal frame situated. All the equipments can be seen in working position for the forming of a bore-pile cluster.

Close-up view of a sheet-pile cofferdam at its formation level. The pile heads were exposed ready for the forming of the pile cap for the portal pier.
Viewing from the landside, the entire access roadway with most of the piers for the portal frames being completed. Part of the viaduct sections constructed with the help of launching gantries can be seen in various locations.

The first section of the portal pier ascending from the cap ready for the placing of the formwork for the onward pier section.

The erection of the first set of launching gantry as seen in October 2004. The first span of viaduct formed in advance by balanced-cantilever method, was used as the work station to support the installation of the gantry.

Launching gantry as viewed from sea-level under its operating condition. Note the team of servicing support formed by barges and other work boats stationed around the gantry to assist in the viaduct installation.
The use of simple gantry frame to construct the viaduct using balanced-cantilever method was adopted for section within the reach of the TAB. Precast segment weighting more than 50 tons each can be transported conveniently by lorry trailer using the temporary roadway. The arrangement has the benefit to save time for this can allow the carrying out of work at multi-locations, as well as to save cost using simpler and cheaper equipments.

The gantry frame as viewed from the side. A set of strand jack was equipped at top of the gantry frame for the lifting of precast segment. Rollers and sliding tracks are provided in the gantry system for the concise positioning of the segment during installation.

Another lifting frame simpler in design works was also used in the construction of the viaduct near the TAB reachable region.
Panoramic view on the deck level of the viaduct during the low tidal period near the landside at Ngau Hom Shek. The semi-marshland condition of the nearby environment can be seen on the right.

The prefabricated back span deck section mounted onto 4 sets of strand jack ready for lifting to the deck level.

The lower portion of main tower of the bridge with the first deck segment placed in position. The tower structure would continue upward working at the same time with the back span, which was prefabricated and lifted to the deck level in one section and field weld afterward.

The construction of the cable-stay bridge and the back span as seen in July 2005. The 158 m tower was still under construction at the same time meeting with the progress of the installation of the main span. The bridge has a main span of 210 m and a back span of 99 m. There are also two 74.5 m spans that are proceeding and structurally continuous with the back span. The photo shows only the back span and the two continuous spans already lifted onto the deck level and supported by piers at the early stage pending for the installation and stressing of the stay cables.
Side view of the back spans. The main span at the front of the bridge tower was still pending for the completion of the upper structure of the bridge tower where the anchor head for the stay-cable would be located.

View of the bridge tower with the stay-cable for supporting the deck of the main-span in place and temporary stressed. There are 13 pairs of stay cables arranged under a single-plane configuration. The cables are used to balance the large moments caused by the main span onto to the inclined bridge tower and the back span.

Lifting of a segment of the main span from barge.

Placing the first segment onto the deck level of bridge tower. The coupling bars anchored in the tower structure and the shear studs on the sides of the segment would embed the deck segment rigidly and in one-piece at a later stage.
View on the deck of main span with a heavy-lift gantry positioned and anchored for the onward lifting of the next prefabricated deck segment.

After serving for almost 15 months, the launching gantry was dismantled and removed upon the final completion of the viaduct as seen in September 2006.

Overview of the viaduct construction at its peak period in late 2005. At that moment, there were more than 6 sets of launching machines in various size and capacity under operation, including the 175 m long launching gantry working mainly outside the temporary access bridge.
The construction setting of the China counterpart as seen from the northern tip of bridge toward China side.
Close up on the segment installation detail under the practice on China side. Similar lifting frame was also employed at the same time with the in-situ installation with precast segment placed onto falsework (temporary platform) for final connecting onto pier heads (photo left).

Viaduct and bridge structure basically completed as seen in late 2006. The temporary access bridge on the underside of the viaduct would soon be dismantled.
Close up look at the cable-stay bridges constructed by Hong Kong and China with Shekou of Shenzhen forming the background in the photo. The north and south navigation channel are situated under the main span of both bridges.

The Hong Kong Shenzhen Western Corridor with all its associated works completed as viewed from an upper ground in Ngau Hom Shek in May 2007.
The entire 5.5 km long carriageway of Western Corridor as viewed from the marshy beach of Lau Fau Shan

The 3.4 km long carriageway of Western Corridor on Hong Kong marine boundary as viewed from an upper ground in Ngau Hom Shek
Deep Bay Link –
Northern Section

The separating land gap between Ngau Hom Shek and Ha Tsuen being cut to form a pass for the crossing of the Deep Bay Link before joining the approach viaduct of the Western Corridor as seen in early 2004.

The same land gap being formed with pier heads for the elevated carriageway basically in place. Note the temporary access roadway and the partly completed slope retaining structure on the left side of the photo.

The same land gap as viewed from Ngau Hom Shek toward Ha Tsuen direction. An abutment structure can be seen on the lower right corner to receive the carriageway onto at-grade position.
Close up of the slope cutting and the carriageway approaching the at-grade section. Backfilling to the abutment side and slope treatment with landscaping provision would be done at a later stage.

The alignment of the carriageway enters into the flatland of Ha Tsuen and runs on an elevated position for about 3.4 km (with about a section of 500 m at-grade) after this bend at the end of the slope-cut. The carriageway reaches Castle Peak Road until it joins the Southern Section of Deep Bay Link.

Preparing for the concreting work at the final connecting section of viaduct between the Western Corridor and Deep Bay Link (Northern Section) as seen in mid 2006.

There are a few sections of Deep Bay Link (Northern Section) constructed at-grade. Various forms of abutment structure would be provided to receive the carriageway from elevated to at-grade position. This photo shows a section of abutment structure at Ha Tsuen (豐村) with the head segment already in place.
In order to cross over the track alignment of West Rail, Light Rail Transit and Castle Peak Road, the deck of Deep Bay Link rises to about 35 m from ground level near Yick Yuen Tsuen until finally aligned to the Yuen Long Highway. The photo shows the gigantic portal frames which will be used to support the dual 3-lane carriageway. The pieheads on the side of portal beam are constructed in-situ for the connection of the precast segment. The components of the launching girder can be seen on ground (blue in color) ready for assembly to facilitate the erection of the viaduct.

Side view of a pier head with a set of lifting frame installed at the deck level for the lifting and erection of the precast segments that form the viaduct. The village houses at seen in the background are within Tsing Chuen Wai of Lam Tei.

Close up showing the construction set-up of a gigantic portal frame with the complicated falsework in view. The falsework will support the casting of the portal beam which weighs more than 800 tons.

A series of completed portal frames with a set of launching girder in position ready for the erection of the viaduct in a lane-by-lane sequence.
Rows of portal frames approaching the track of West Rail as view in early 2005

The size of the viaduct structure of Deep Bay Link can be better comprehended from this photo as it passed along the side of the village houses of Tsing Chuen Wai.

The final section of viaduct joining the Northern and Southern Sections of Deep Bay Link located above the Castle Peak Road at Lam Tei.
The final section of viaduct joining the Northern and Southern Sections of Deep Bay Link as view from the side. Just slightly outside the boundary of this photo, the elevated track of West Rail is on the left and Castle Peak Road is on the right, with a separating distance of about 250 m.

Close up of a section of the viaduct constructed in balanced-cantilever arrangement using sets of girder-mounted traveling formwork on both ends. The village houses around Yick Yuen Chuen forms an impacting background showing the fragile nature of the project environment.

From the viaduct viewing downward seeing a train rushing through the elevated track of West Rail. The gantry in blue on each side is the traveling formwork system used to cast the box-section deck of the viaduct in-situ.
Panoramic view seeing the viaduct approaching the elevated track of West Rail from Yick Yuen Chuen and Ching Tsuen Wai before the crossing over. The portal frame on the right side is the joining section between the Northern and Southern Sections of Deep Bay Link

The completed viaduct section running above the West Rail as seen in early 2007

Partially completed viaduct as viewed from an elevated position on the platform of a launching gantry before Tsing Chuen Wai with the track of West Rail running crossing in the middle of photo
The adjoining section between the Western Corridor and the Deep Bay Link Northern Section performing its final touch-up works on slope, landscaping provision and other associated treatment before the handing over.

Panoramic view of the elevated carriageway as seen in early 2007 running elegantly along the west-bound of Ha Tseun flatland. On the right side of the photo is the Ha Tseun Interchange which is provisioned for the future development of the nearby area. The mis-use condition of the country area with large amount of container handling stations, lorry parking field, temporary store for construction materials or recycling facilities can be found everywhere in the vicinity forming a latent problem to the country environment here.
The actual “country-side” environment as view from the deck of the carriageway at Ha Tsuen. The high-rise building clusters form a contradicting background in the photo.

Deck view near the adjoining link between the Northern and Southern Section with the noise screen erected before the handing over. The high-rise buildings forming the background are the residential development in Lam Tei area.

Final touch-up on the ground level near Tsing Chuen Wai. A slip road is provided in this location (photo centre) allowing access to the area in future.
Deep Bay Link – Southern Section

In some locations the widening of Yuen Long Highway requires the construction of new retaining structure and backfill afterward to form the new lane. The photo shows the construction of a section of the strip footing for a new retaining wall. The newly cut slope on the edge of the existing highway was temporarily stabilized with ground anchors.

The forming of Lam Tei Interchange is another major component of the Southern Section Contract. The interchange connects Deep Bay Link to Route 3 in the east and Tuen Mun Highway in the west, via the Yuen Long Highway. The photo shows the forming of the east and west-bound slipways which connects to the direction of Route 3 near Nai Wai (泥涌).

The widening of Yuen Long Highway to incorporate an interchange at Lam Tei is a major component of the Deep Bay Link Southern Section contract. The reconstruction and widening of the 2 km section of Yuen Long Highway stretches from Fu Tei (虎地) to Tan Kwai Tsuen (丹桂村). The photo shows the early stage of road widening with temporary traffic diversion arranged to facilitate the foundation works and the construction of pier supports for the crossing sliproad.
Erection of complicated falsework provision prepares for the construction of the slipways crossing-over Yuen long Highway. Note also the temporary traffic diversion arranged to facilitate the carrying out of the construction works in various phases.

A set of launching gantry used to lift and erect the precast segments for the construction of the viaduct. The section of 800 m-long viaduct as shown in this photo is the east-bound carriageway finally joins the Route 3 via Yuen Long Highway.
Close up of the launching gantry under operation as seen in early 2005 with the buildings of the private residential estate in Lam Tei forming a picturesque background.

View of the precast segment handling yard with the east and west bound carriageways of interchange heading to the main line of Deep Bay Link.

Another view of the segment handling yard with the main line of Deep Bay Link at the background. Besides the receiving of the carriageway coming from Lam Tei Interchange, the exceptionally wide portal beam of the main line (in centre of photo) also provisioned for an outlet for slipways entering into Castle Peak Road in future.

A set of gigantic-size portal with pier-head segment on top near the terminal section before joining into Lam Tei Interchange.
Rows of portal frames running across Castle Peak Road (outside photo on left) before joining into Lam Tei Interchange. The maximum width of the carriageway at this section is totally 8 lanes, with dual 3-lane entering into the interchange and dual single-lane provisioned for a future outlet leading into the existing Castle Peak Road.

Panoramic view of the adjoining sections between the Deep Bay Link Northern and Southern Sections. Complicated environment along the road alignment can be clearly observed within this rural background, in particular the crossing over of important transportation lines including tracks of the West Rail and the Light Rail Transit, the busy Castle Peak Road, and other associated ground traffic interchanging points.

Construction of a section of viaduct on the side of the Castle Peak Road in balanced-cantilever arrangement using cast-in-situ method. Two sets of traveling formwork were provided at each end for the casting of the box-section deck.

View on the deck level stationed with a launching gantry preparing for the repositioning to a new location for the construction of a new viaduct section.
An astonishing view as taken in March 2005 at the meeting point of the four major slipways from both directions crossing each other in the mid-way of Lam Tei Interchange.

The construction of the slip road entering from east-bound direction of Yuen Long Highway (left) into Deep Bay Link (right). The buildings on the background are located in the area of Fu Tei, Siu Hong and Lam Tei as positioned from the left to the centre of photo.

The overview of the east-bound section of Lam Tei Interchange from the falsework platform erected for the construction of the cross road along Yuen Long Highway.
The slip road inlet entering Yuen Long Highway from Lam Tei Interchange heading to Fu Tei direction. The extra lane and the road shoulder at the left side of highway are newly formed and re-aligned using land-filling supported by retaining structure during the widening process.

Panoramic view of the completed carriageway on various deck locations at Lam Tei Interchange before its handing over on 1 July 2007.

Overview of Lam Tei Interchanging merging into Yuen Long Highway as viewed from Fu Tei.