

D·NEWS

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DRAGAGES HONG KONG 香港實嘉

2016 Sept · 九月

Shaping a **Better Life**



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2016 Sept · 九月

Shaping a **Better Life****GOING BEYOND THE LIMIT****跨過界限 再創高峰**

Our commitment to innovation and safety is the foundation on which all our successes are built. I'm proud to report that Dragages Hong Kong has achieved record-breaking success on numerous projects in the last 12 months. On the Tuen Mun-Chek Lap Kok Link project, the world's largest Tunnel Boring Machine (TBM) successfully broke through underwater in November 2015. The successful changeover of the TBM, from 17.6m to 14m, was also completed in March 2016 in what is believed to be a world's first in terms of size.

In our other projects too, we continue to set the standard for all other industry players to follow. On the Shatin to Central Link project, the city's first Variable Density TBM was launched in August, while another TBM completed its first tunnel drive ahead of schedule. In Macao, the Fifth Hotel Tower at City of Dreams constantly adhered to the highest safety standards through innovation, as recognised by four top-ranking Gold Prizes in a recent safety award scheme. Dragages Macau has also injected innovative new solutions into its QSE practices and implemented the custom-made SnagR system in its safety inspections, thus enabling real-time notification of safety findings via mobile devices.

Our work on the Liantang/Heung Yuen Wai Boundary Control Point project is proceeding well. After excavating Hong Kong's largest span tunnel by mechanical means, we launched the city's largest dual-mode Earth Pressure Balanced (EPB) TBM in August 2015. Since that time, our project team has continued to achieve a number of industry firsts.

The Hong Kong-Zhuhai-Macao Bridge is one of the world's most important new bridge projects. By the end of July 2016, we had completed all land viaduct structures. Out at sea, our launching girder travelled 550m in just five days, including the highest point of the bridge. This record-setting progress is believed to be a world's first in bridge construction.

Rigorous training is one of the key ways in which we achieve all of these successes. The global safety campaign of our parent company, Bouygues Construction, is entitled "Health and Safety, A Shared Commitment". In keeping with that belief, Dragages Hong Kong continues to launch incentive schemes and inspirational new interactive training courses to further enhance safety awareness among all team members. Through close collaboration and shared responsibility, we are dedicated to setting the industry benchmark for site safety, while also creating ground-breaking new infrastructures that confirm Hong Kong's status as one of the world's most visionary cities.

積極創新，安全第一是香港寶嘉賴以成功的基石。公司在過去十二個月刷新了多項紀錄。起用全球最大型隧道鑽挖機施工的屯門至赤鱗角連接路項目，已於去年十一月成功於水內貫通，團隊並於今年三月完成拆除原來直徑17.6米的隧道鑽挖機，成功換上14米的隧道鑽挖機，更換工程所涉及的體積之巨，堪稱環球工程之最。

寶嘉其他項目亦相繼突破業界紀錄。沙中綫項目率先採用香港首台可變密度的混合隧道鑽挖機已於八月投入服務。與此同時，另一台隧道鑽挖機亦已完成首條隧道的鑽挖工程，進度勝於預期。在彼岸的濠江，新濠天地第五棟酒店大樓的工程小組憑藉創意及持守最高安全標準的態度，在近期的建築業安全施工獎勵計劃上囊括4項至尊金獎，卓越表現備受認同。同事們在品質、安全及環境保護方面，先後引進多項嶄新的職安點子，於項目應用自家研發的 SnagR 安全檢測系統，工程人員可透過流動裝置即時通知相關單位安全監測資料。

蓮塘／香園圍口岸工程進度良好，團隊以機械方法完成開鑿全港最大跨度隧道後，已於去年八月開始以本地最大型的雙模式土壓平衡隧道鑽挖機施工，再度開創業界先河。

港珠澳大橋是世界級橋樑建造項目之一，而項目所有的陸上高架橋結構工程於2016年7月竣工。同一個月內，團隊更刷新紀錄，於5天內以曳進吊樑機推進達550米，當中更跨過了大橋最高點，所突破的工程規限相信是橋樑建造項目之先，標誌著項目已經跨進嶄新里程。

要在各方面取得突破，為團隊提供嚴格的培訓是致勝之關鍵。香港寶嘉的母公司 Bouygues Construction 推出的全球安全運動以『職安健——人人有責』為主題。我們亦承此主軸，推出各項獎勵計劃和嶄新的互動教學課程，務求啟發全體同事提高安全意識。我希望透過大家的緊密合作，並肩努力，香港寶嘉可以為香港的工地安全寫下新標準，並承辦更多劃時代的大型基建項目，鞏固香港作為環球其中一個最具遠見城市的願景。



Nicolas Borit
博希爾

Managing Director
董事總經理

MTR SHATIN TO CENTRAL LINK

CAUSEWAY BAY TYPHOON SHELTER
TO ADMIRALTY TUNNELS – CONTRACT NO.1128

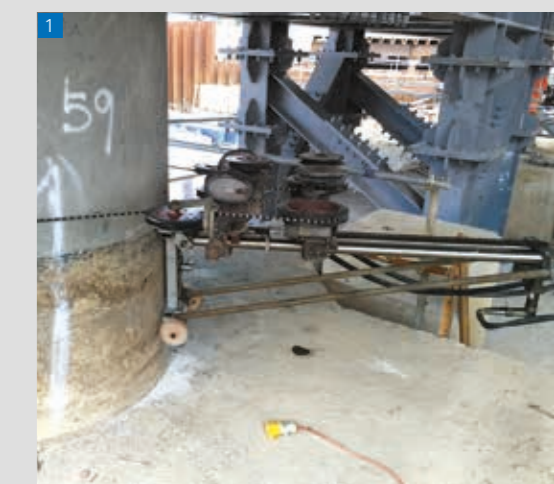
港鐵沙田至中環綫—銅鑼灣避風塘至金鐘站
鐵路隧道建造工程—合約編號 1128

5 mins



Upon completion of the Shatin to Central Link, it will only take 5 minutes to travel from Hung Hom Station to the Admiralty transit hub.

沙中綫竣工後，乘客往來紅磡站至金鐘轉乘站，只需5分鐘車程。



One of Hong Kong's most technically challenging tunnel projects, this is part of the 6km extension of the ongoing Shatin to Central Link (SCL) from Kowloon to the city hub on Hong Kong Island.

The Shatin to Central Link Island Section's first Tunnel Boring Machine (TBM), Athena, was launched in March 2016, which marked the first major milestone for the SCL Causeway Bay Typhoon Shelter to Admiralty Tunnels – Contract No.1128 (SCL 1128) project. Through close collaboration between the Highways Department, MTRC, Dragages-Bouygues Joint Venture project team and Herrenknecht, the team was able to achieve remarkable results in terms of design, manufacturing, delivery and assembly of this Slurry TBM. Athena was assembled within two months, which is one of the fastest assembly records in Hong Kong.

Athena commenced her journey in March, running beneath the city's busiest districts. Underground obstructions had been removed by the project team before Athena's arrival in certain locations. After some three months, Athena completed the first tunnel drive (675m) ahead of schedule. The TBM will be transferred to the west launch shaft in the 4th quarter of 2016 to continue her third and fourth tunnel drives.

A Variable Density TBM, which can cater for thin-to high-density slurry under shallow ground conditions, was also launched in August. The adoption of two-component annulus grout instead of traditional cement mortar is a showcase of our in-house innovation, which minimises the space required for silos on site.

The adoption of an underpinning scheme and 3D Plaxis modelling are further examples of our value engineering. The underpinning of two major flyovers in the heart of the city allowed a number of pile foundations to be removed ahead of the TBM's arrival.

1: The existing columns were disconnected by the wire cut method and the flyovers were supported by a temporary jacking frame from which the existing crosshead is underpinned with a jacking system

工程人員以線切割方法切斷天橋與現有樑柱的連繫，再置入臨時千斤頂支架，以千斤頂系統承托天橋橫樑



承建香港建造史上其中一項最具技術挑戰性的隧道項目——全長6公里，從沙田貫通九龍直達港島心臟地帶交匯樞紐的沙田至中環綫(沙中綫)的其中一段延綫。

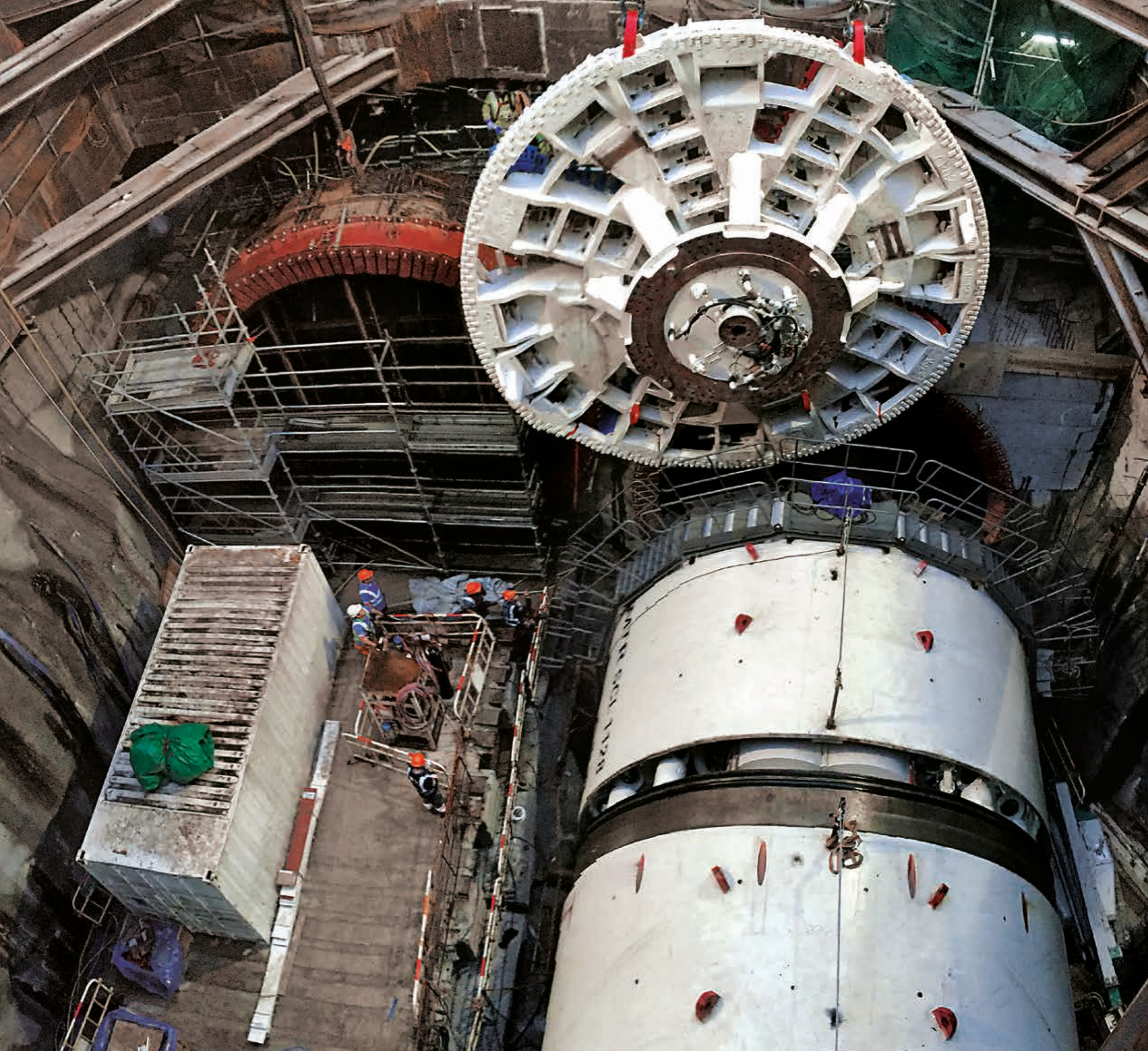
沙中綫港島段首部隧道鑽挖機雅典娜已於2016年3月投入服務，標誌著沙中綫銅鑼灣避風塘至金鐘站鐵路隧道建造工程——合約編號1128 (SCL 1128)正式邁進新里程。在路政署、港鐵公司、寶嘉——布依格聯營團隊及海瑞克的通力合作下，這台泥漿盾式隧道鑽挖機無論在設計、建造、交付及組裝上均取得驕人成果。工程人員並在短短兩個月內迅速完成鑽挖機的組裝，成為本地其中一台最快完成組裝的隧道鑽挖機。

完成組裝後的雅典娜隨即投入服務，在鬧市地底展開鑽挖工作。為方便雅典娜施工，工程人員在隧道鑽挖機交付前，已經開始在所需要的地方展開障礙物移除工程。經過三個月的運作，雅典娜已完成首段675米的隧道鑽挖工作，進度勝於預期。小組會在今年第四季把雅典娜移送到西面進口豎井，展開第三及四段隧道鑽挖工作。

另一台可變密度的混合隧道鑽挖機亦已於8月投入服務。這台隧道鑽挖機可在淺理環境應付鬆軟度不一的泥漿及土質。工程小組今次同時起用雙物料環形灌漿法，取代傳統的水泥砂漿，可減少於工地存放大量水泥，是寶嘉內部敢於開創先河的另一證明。

本項目特別引入托底穩固及3D Plaxis模擬技術，展示價值工程的優點。工程人員在接收隧道鑽挖機前，已完成兩條主要天橋的托底穩固工程，並移除天橋底部的多支樁柱地基，騰出空間容納隧道鑽挖機。

2: In these box culvert works, two temporary channels were constructed to divert the flow during dry season to facilitate pile removal works
箱形暗渠工程——置入兩組臨時管道，在旱季作臨時分流，方便樁柱移除工程



TUEN MUN – CHEK LAP KOK LINK

NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

屯門至赤鱸角連接路—北面連接路海底隧道段

**economic
integration**

By enhancing the regional transport network between Hong Kong, Macao, Shenzhen and Zhuhai, this project will contribute to the economic integration of Hong Kong and the Pearl River Delta Region.

藉著提升來往香港、澳門、深圳和珠海的交通網絡，本項目將有助促進香港和珠江三角洲的經濟融合。





This is Hong Kong’s deepest, longest, and largest sub-sea road tunnel forming part of the Tuen Mun-Chek Lap Kok Link (TMCLKL). Upon its completion, the TMCLKL will strengthen both the local and regional transportation network by serving as an alternative route to the airport, and will further enhance the cross-boundary network between Hong Kong, Macao, Shenzhen and Zhuhai.

After a fascinating journey of some seven months, Qin Liangyu, the world’s largest Tunnel Boring Machine (TBM) with a diameter of 17.6m, broke through underwater and entered into a 45m-deep shaft in November 2015. In December, the TBM cutter head and the shield were detached from the gantry, which marked a critical milestone in the project, namely the change of the TBM from 17.6m to 14m. Changeover of the TBM progressed smoothly and was completed in March 2016.

The project team enjoyed another good start in 2016. On 8th January, the team changed the first disc cutter in full automatic mode by using the robotic arm TELEMAT without human intervention. This was the first full cycle completed under hyperbaric conditions at 3.7 bar. Seamless coordination between both the TBM and Plant teams enabled this technical breakthrough. This new technology allows part of the cutter head maintenance works to be carried out by a robot under hyperbaric environment. We therefore managed to maximise the health and safety of our workers, while also enhancing project efficiency through minimisation of human intervention.

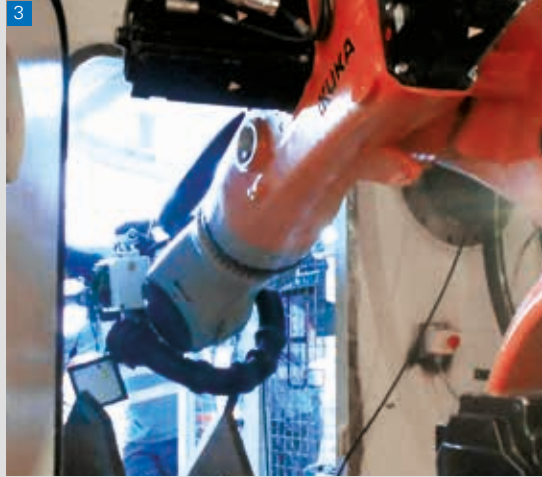
- In parallel, the second TBM, which is 14m in diameter, started her challenging journey in December 2015. This TBM is now in the sub-sea section of some 4.2km. During the journey, she will cross the shaft inside the steel bell, setting another exemplar of tunnel construction. It is anticipated that she will complete the excavation of the city’s deepest sub-sea tunnel at the end of 2016.

1: Joining hands with the Highways Department and AECOM, we held a Health, Safety & Environmental Protection Promotion Ceremony in May – another testament of our commitment to the highest safety standards

香港實業於5月份與路政署及艾奕康合辦職業健康、安全及環境保護推廣頒獎禮，再次體現團隊決心實踐最高安全水平的承諾

2: The 17.6m-diameter cutter head was lifted at 4am on 14th December 2015, symbolising the first critical success of the changeover to the 14m TBM

2015年12月14日清晨四時，施工人員移除直徑17.6米的隧道鑽挖機鑽頭，標誌著隧道鑽挖機更換工程達成首個關鍵任務



作為本地最大、最長、最深的海底行車隧道，項目竣工後將為市民提供前往機場的另一道路選擇，並改善香港、澳門、深圳及珠海的跨界交通，有效強化本地及區內運輸網絡。

經過七個月的奇妙旅程，世界最大、直徑達17.6米的大型隧道鑽挖機秦良玉已經在去年11月成功在水內貫通，進入45米深的豎井。12月，工程人員利用龍門起重機拆除直徑17.6米的隧道鑽挖機，換上14米的隧道鑽挖機，標誌著本項目進入新里程。隧道鑽挖機的更換工程進度理想，已於今年3月順利完成。

踏入2016年，工程團隊迎來另一喜訊。1月8日，施工小組透過TELEMAC機械臂技術，首次以全自動方式更換滾輪鑽頭，毋需人手介入。這是團隊在3.7 bar高壓環境下完成的第一節全期工程。本項目能夠取得此技術突破，實有賴隧道鑽挖團隊及工地支援小組的緊密合作。透過這項新技術，部分的滾輪鑽頭可由機械手更換，從而減少派出工程人員進入高壓環境，提昇項目效率的同時，也保障工作人員的健康和安全。

與此同時，直徑14米的第二台隧道鑽挖機亦於2015年12月在海底展開4.2公里長的探索之旅。期間，隧道鑽挖機會在鋼殼內穿越豎井，締造隧道建造技術的另一典範。施工小組預計，鑽挖機將於本年底完成這項在香港最深海床進行的隧道鑽挖工作。

3: TELEMAC is one of our many recently developed in-house innovations. Robotic arms are used for the maintenance of cutter discs without the need for human intervention, thus reducing manual works under a hyperbaric environment
TELEMAC是香港寶嘉近期內部開發眾多創新技術之一，透過機械臂維修滾輪鑽頭，毋需人手介入，減少工程人員在高壓環境下工作

4: Cross passages (CPs) are constructed by traditional excavation and pipe jacking methods. Of the total 56 CPs, 47 are to be constructed by the pipe jacking method, with the adoption of slurry pipe jacking TBMs of 3.65m in diameter

以傳統鑽挖及頂管方法建造的連接通道。項目56個連接通道中，47個採用直徑3.65米的小型隧道鑽挖機及以頂管方式建造

5: 6 doctors, 3 nurses, 45 professional hyperbaric workers and 12 live support technicians provided round-the-clock support for cutter disc maintenance on the two TBMs. To date, more than 500 cutters have been changed under saturation mode
團隊包括6位醫生、3位護士、45名專門在高壓環境施工的專業人員，以及12名後勤支援的工作人員，全天候看守兩台隧道鑽挖機，至今已在飽和高壓環境下更換超過500套滾輪鑽頭



CITY OF DREAMS – FIFTH HOTEL TOWER

新濠天地—第五棟酒店大樓

iconic landmark

Better Life

The Fifth Hotel Tower is poised to be an iconic addition to Cotai's skyline and the culturally rich city of Macao.

第五棟酒店大樓勢必成為路氹城及充滿文化色彩的澳門之城市地標。



Construction of this unique hotel represents the realisation of a “dream” building. Featuring a series of three voids carved through the centre of the tower, this 40-storey building is set to become an iconic landmark in Cotai and Macao.

- Several major milestones marked the end of the first half of 2016, starting with the completion of the 157m-high twin concrete cores, followed by the erection of the last piece of steel required to form the third and final void of the exoskeleton structure.
- Completion of the third void was followed by the erection of the first part of the 34m-long span and 34m-high mega trusses which was completed in August 2016. The mega trusses not only support the upper floors but also floors suspended beneath them. By the third quarter of 2016, the erection of exoskeleton will be completed and the dismantling of some 4,500 tons of temporary steel will be commenced.
- The building's final aspect is starting to emerge on the lower part of the building, with the partial dismantling of the scaffolding on two sides, exposing a modern glass façade with iconic steel exoskeleton cladding wrapped in aluminium panels. The installation of traditional flat curtain wall and exoskeleton cladding will continue at full steam ahead for the rest of 2016.
- Erection of the macro windows has commenced in the super complex freeform area with 44 out of 242 macro windows installed. The installation of the macro windows in the second and third void will start after the final de-propping* of the structure.
- * De-propping refers to the removal of temporary supports in a planned and controlled sequence, which allows the structure to settle in its permanent geometry.
- 1: For the macro windows, the steel frame module is fixed onto the freeform exoskeleton to provide support for the triangular glass panels
固定在自由曲面外框結構的鋼架能承托大型三角形玻璃窗幕
- 2: The project team won six awards in the 5th Macao Construction Safety Award Scheme, including four of the highest-ranking Gold Prizes. The judges expressed their admiration for the team's innovations and strong team spirit, which has set a high standard for all industry players
項目團隊在澳門第五屆建築業安全施工獎勵計劃上囊括6個獎項，當中4個更是最高榮譽金獎，評判團對工程小組所展現的非凡創意及團隊精神表示讚賞，認為是為業界樹立良好標準



樓高四十層的新濠天地酒店大樓建造獨特，包括由三個中央空隙形成的多維點陣式彎曲鋼結構。項目落成後勢必成為路氹城及澳門的重要地標，堪稱建造界的夢之大樓。

本項目於2016年上半年終結之時成功達至多項重要里程碑：157米高的兩棟混凝土核心主樓已經落成，而中間自由曲面組成的第三及最後一幅空隙也以外露式鋼架接上。

此外，長34米及高34米的大形樑架底部首輪豎立工序已經在2016年8月份完成。這個大型樑架將為中間自由曲面跨度以上及以下的樓層提供承托。而整個外框鋼架工程將於2016年第3季完成，接着便會展開移除約重4,500噸的臨時鋼根結構。

工程人員現正逐步拆卸這棟已進入最後施工階段建築物的底部棚架，呈現出現代化的玻璃幕牆，和以外露式承重鋼材包裹、外面鋪上精製鋁板的標誌性結構，其餘的幕牆裝置及外框鋼架包裹工程亦正全速進行。

本項目中間部份自由曲面弧形玻璃外牆共有242幅巨型窗幕，當中44幅已經成功裝嵌，第二及三幅空隙的大型窗幕裝嵌工作預計於拆卸其他臨時架構*(de-propping)後展開。

* 拆卸其他臨時架構指按照計劃，按部就班移除大樓內的臨時支撐物，讓建築物的幾何結構固定下來。



LIANTANG / HEUNG YUEN WAI BOUNDARY CONTROL POINT

SITE FORMATION & INFRASTRUCTURE WORKS
CONTRACT 2

蓮塘 / 香園圍口岸土地平整及基礎建設工程—
工程合約2

efficient
cross-border link

The Liantang / Heung Yuen Wai Boundary Control Point (BCP), connecting to the Eastern Corridor in Shenzhen, will provide a more efficient cross-border link to eastern Shenzhen, eastern Guangdong and neighbouring provinces.

連接深港東部通道的蓮塘 / 香園圍口岸將會提供一個更便捷的路境通道連接深圳東部、廣東省東部及鄰近省份。

COURTESY OF CYRIL ABAD



The design and construction of the complex soft ground tunnels require Hong Kong’s largest dual-mode Earth Pressure Balanced (EPB) Tunnel Boring Machine (TBM). This project is an exemplar of concurrent TBM and drill and blast operations.

Since the commencement of works at the end of 2013, our project team has overcome many critical challenges and achieved a number of technical firsts.

To pave the way for the break-in of the TBM, a 200m-long, 23m-wide tunnel was excavated. This is the largest span tunnel ever excavated by mechanical means in Hong Kong.

The launch of Hong Kong’s largest dual-mode EPB TBM – 14m in diameter – was held on 31st August 2015 in the North Portal. This marked the first major milestone of the project, which will become a vital cross-border link that will contribute to the sustainable long-term development of the city.

This city’s largest dual-mode EPB TBM is also unique in terms of its “3-step” operation. First, the TBM slides into the 200m-long, 23m-wide South Bound Tunnel. Second, the TBM continues to drive while tunnel enlargement works is carried out by a separate team behind it. By June this year, an enlarged gallery some 300m long had been completed in just three months, symbolising an excellent start to tunnel enlargement works. Third, the TBM will turn from one tunnel to the other inside a mid-vent cavern. To receive the break-out of the TBM at the end of 2016, we have excavated one of the city’s largest caverns: 23m high, 27m wide

and 40m long. This “3-step” operation is an exemplary technical first, minimising disruption to the community while also optimising programme efficiency. To-date, the TBM has achieved more than one-third of her first drive.

1: Mid-vent cavern
中段出風口



項目為了設計及建造複雜的軟土隧道，需起用本地最大型雙模式土壓平衡隧道鑽挖機。本項目更被視為同步以隧道鑽挖機、鑽挖及爆破方法施工的典範。

自2013年底動工以來，工程團隊面臨多項重大挑戰，在技術發展方面創下多個第一。

為準備大型隧道鑽挖機進場，工程人員預先開鑿了一段200米長，23米寬的隧道，成為全港以機械方法開鑿的最大跨度隧道。

隨著香港最大型，直徑14米的雙模式土壓平衡隧道鑽挖機於2015年8月31日從北隧道入口開始施工，這個涉及主要跨境交流接駁的項目到達首個重要里程碑，為本地長遠可持續發展揭開新一頁。

這台全港最龐大的雙模式土壓平衡隧道鑽挖機將開創業界先河，以「三步式」模式施工。首先，隧道鑽挖機會進入200米長、23米寬，已預先鑽挖的南行隧道。之後，鑽挖機一邊向前推進，另一施工團隊則拓闊鑽挖機身後開挖出來的隧道。截止今年六月，經過三個月施工，已拓闊的隧道達300米長，為項目帶來好開始。最後，當完成首條管道的鑽挖工作後，隧道鑽挖機會在中段出風口的地下洞穴，從原來的一條管道轉向另一條。工程團隊已經建造了一個高23米、闊27米，長40米的大型洞穴，準備在2016年底迎接鑽挖機。這個「三步式」施工模式開創了業界的技術先河，優化作業效率的同時，亦將工程對社區的影響減至最低。隧道鑽挖機至今已完成超過三分之一的首航任務。



2: The 1.2 km tunnel excavated by drill and blast at the South Portal
南隧道入口的1.2公里隧道以鑽挖及爆破方式施工



HONG KONG- ZHUHAI-MACAO BRIDGE

HONG KONG LINK ROAD

港珠澳大橋香港接線

3-hour 

Upon completion of the project, the entire Pearl River West region will be within a 3-hour commuting radius of Hong Kong.

港珠澳大橋通車之時，從香港至西部珠三角任何地區，車程只需3小時。



The design and construction of this 9.4km-long viaduct section will support dual three-lane carriageways over deep waters. When completed, it will be part of the world’s longest bridge over the sea, serving as a vital link to enhance connectivity between Hong Kong, Macao and the Mainland.

Deck erection has been in full swing since 2015 with the adoption of two launching girders (LGs) operating simultaneously on land (LG1) and at sea (LG2). In July 2016, the Hong Kong Link Road Project reached two significant milestones – mission completed for LG1, and a successful breakthrough for LG2.

To celebrate the completion of LG1’s mission on the Land Viaduct, some 250 guests joined a Land Viaduct Structures Completion Ceremony on 4th August. Our client (Highways Department), supervising officer (ARUP), working partners and project team members all gathered together to witness the completion of the precast segmental bridge deck on the Airport Island.

Due to the close proximity of aviation facilities, the erection of the precast segments for the Land Viaduct by LG1 required close liaison with the Airport Authority. The Land Viaduct spans 1.7 km and is a key contributor towards the overall progress of works. The completion of the Land Viaduct marks a major achievement in the 12 million man-hours that we have already spent on this project. Moving forward, the installation of precast segments on the Marine Viaduct will continue at

full swing. Works will be completed with the adoption of LG2, six sets of lifting frames and three sets of hanger beams.

From 25th to 29th July, LG2 passed a critical moment, marking what is probably a world’s first in bridge construction. The 150m-long launching girder walked through 550m in just five days to reach Pier 16, which means that we entered the final phase of erection works at the westernmost part of the construction site.

A purpose-made segment lifter will soon be premiered on site to install precast segments over the 180m-span-length viaduct structures. The largest of its type ever used in Hong Kong, the lifter measures approximately 18m high, 25m wide and 40m long, has a self-weight of some 390 tonnes and a lifting capacity of 200 tonnes.



項目涵蓋設計及建造一條9.4公里長的雙程三線高架橋。這不但會成為全世界最長的跨海橋樑的重要部份，更會是香港、澳門和大陸的重要接駁點。

本項目的橋面建造工程自2015年起全速展開，工程人員起用兩台大型曳進吊樑機 (LG)，同時在陸地 (LG1)及海面 (LG2)施工。至2016年7月，香港接線取得兩項重大進展：LG1段工程圓滿竣工；而LG2工程亦成功取得突破。

為慶祝LG1完成了陸上高架橋結構的安裝工序，團隊於8月4日舉辦了一場陸上高架橋結構建造完成儀式，約250位嘉賓蒞臨慶祝。項目的客戶路政署、項目監督奧雅納、業務夥伴及項目團隊聚首一堂，見證這座座落在機場島上，以預製組件建成橋面的大型高架橋的重要時刻。

事實上，要在機場毗鄰的工地上以LG1裝嵌大型預製組件需要與機場管理局保持密切聯繫。工程至今使用了1,200萬工作小時，而全長1.7公里的陸上高架橋屬香港接線工程的重要部份。海上高架橋的預製組件裝嵌工程正全速進行，同時運用LG2、6組吊架及3組懸空式橫樑進行裝嵌工程。

7月25至29日，LG2經歷了重要的5天，寫下了可能是全球大橋建築史上的世界第一。長150米的曳進吊樑機期間移進了550米，接駁至16號橋墩，標誌著項目已成功突破工程規限，於西面海域邁向最後的工程階段。

工程人員稍後將引進特別為本項目開發的組件起重機，為全長超過180米的高架橋結構裝嵌預製組件。這台組件起重機高約18米、闊25米、長40米，淨重390公噸，能吊升200公噸的物件，是至今香港採用最大型的組件起重機。

1: Albert Lee (HZMB Project Manager of Highways Department), Chan Man (Project Director), Dominique Droniou (Deputy Project Director) together with representatives of our Supervising Officer and JV partners conducted the last pour of concrete on the land viaduct
路政署港珠澳大橋香港工程管理處處長李偉彬、項目董事陳文、項目副董事Dominique Droniou與項目監督及聯營公司夥伴一同把最後一把混凝土灌入陸上高架橋內



The 150m-long launching girder is a visually stunning engineering feature in the western waters of Hong Kong
長150米的曳進吊樑機座落在香港西面水域，構成矚目畫面





1 Giving Back to the Society
回饋社會

Dragages Hong Kong's corporate social responsibility (CSR) activities reflect our ongoing commitment to building a sustainable and caring city. We actively support our charity partners throughout the year, both by fundraising and by participating in volunteer activities. In the year from mid-2015 to mid-2016, some 256 volunteers spent 2,070 hours in charitable work, participating in 15 events and raising approximately HK\$780,000. In the year ahead, we look forward to continuing our CSR efforts and to weaving a closer tie with the community.

香港寶嘉積極履行企業社會責任，致力推動香港成可持續發展及關愛的城市。公司積極支持各合作慈善團體，協助籌款及參與義工服務。由2015年中至2016年中，寶嘉共派出256位義工投入各項慈善活動，總服務時數達2,070個小時，籌得港幣約780,000元。寶嘉為有機會帶動本地建築業回饋社會引以自豪，展望未來，我們會繼續支援本地社群。

2 Raising Funds for NGOs
為本地慈善機構籌款

Designed to promote a spirit of partnership, our Annual Fun Day is the grand finale of our year-round CSR activities. At the most recent event held at the end of 2015, we donated a total of HK\$150,000 to our three charity partners, namely Families of Spinal Muscular Atrophy Charitable Trust (FSMA), Hong Chi Association, and Hong Kong Federation of Handicapped Youth (HKFHY).

FSMA, which strives to relieve the hardship of spinal muscular atrophy (SMA) patients, is one of our regular charity partners. In March 2016, we donated HK\$24,000 in sponsorship of a four-member staff team that participated in the FSMA's Charity Golf Day. May 2016 also marked the FSMA's 18th Anniversary, for which we contributed a further HK\$50,000 to support the annual gathering of SMA patients held in the Hong Kong Disneyland Hotel.

旨在促進夥伴間合作關係的週年同樂日是香港寶嘉每年企業社會責任活動的重頭戲。在剛過去的2015年底，活動為本地三個慈善團體：脊髓肌肉萎縮症慈善基金會(FSMA)、匡智會及香港傷殘青年協會共籌得港幣150,000元。

FSMA致力紓緩脊髓性肌肉萎縮症患者的困境，是寶嘉定期捐獻的慈善團體之一。2016年3月，公司贊助4位同事共24,000元，支持他們參與FSMA慈善高爾夫球日。5月，FSMA創會十八周年誌慶，我們再捐出港幣50,000元，支援病友出席於香港迪士尼樂園酒店的周年聚會。

3 Love Sharing during
Festive Seasons
於佳節分享愛心

In preparation for the Chinese New Year celebrations earlier this year, our Liantang / Heung Yuen Wai Boundary Control Point – Site Formation and Infrastructure Works – Contract 2 Project team members joined hands with the Chinese YMCA of Hong Kong Tin Ping Neighbourhood Elderly Centre and AECOM (the project's supervising officer) to help nearby elderly households with their spring cleaning. The team not only performed a thorough spring clean, they also hung up Chinese New Year decorations and distributed turnip puddings to show their heartfelt care.

As a company, Dragages Hong Kong also donated HK\$11,000 for a fun-filled Chinese New Year charity outing to Repulse Bay. A total of 15 volunteers supported the event, which benefited 30 Hong Chi elderly trainees with moderate to severe intellectual disabilities.

本年初，蓮塘/香園圍口岸土地平整及基礎建設工程一工程合約2項目人員聯同香港中華基督教青年會天平長者鄰舍中心及工程監督艾奕康團隊一同為區內長者大掃除。聯合義工隊不單把長者家居裡裡外外打掃得煥然一新，並為他們貼上賀年裝飾及送上年糕，為長者在佳節加添暖意。

香港寶嘉又以公司名義贊助港幣11,000元，資助匡智會的淺水灣新春行大運活動，同時派出15位義工與該會30位中度至嚴重智障長者學員歡度愉快一天。



4 Caring by Sharing
同享關懷

As part of its commitment to constantly find new ways to support the community, our CSR Committee has started the rescue of spare food and gifts. This important new initiative both reduces waste while also helping to alleviate poverty. In January, a range of food donations and gifts were delivered to the Hong Chi Tung Tau Hostel, which offers residential services to people with moderate to severe intellectual disabilities. Our Committee will continue to promote this sustainable programme by donating surplus food and gifts to those in need.

香港寶嘉企業社會責任委員會致力以不同方式支援社區，今年委員會推出食物及禮品轉贈行動，減少浪費之餘，也有助緩解貧窮問題。1月，委員會把募集得來的禮物轉贈匡智東頭宿舍，把愛心和關懷送贈居住在中心內中度至嚴重智障宿友。委員會將繼續推廣可持續項目，捐贈食物及禮品予有需要人士。

用者參與是這個非一般項目的成功關鍵，寶嘉團隊於項目初階，即邀請同學以『太空與星球』為題繪畫，再由寶嘉建築師兼項目導師與年輕設計師合力將同學的作品加入花園的設計之中。項目小組在建構這個多感官花園時，時刻不忘把建築師和用者的概念一併融合到花園之中，為用者帶來更新刺激和體驗。

2016年，這個非一般項目的建造工程正式展開，首項進行的工程是在4月23日為花園的籬笆掃漆，84位義工花了3個周末，為花園的籬笆掃上八色彩虹。隨後，團隊於6月安裝雕塑裝飾。7及8月期間，義工隊再次出動，合力以小磚牆建造約30平方米的花槽，並在槽內注入土壤及鋪上青草，搭建出花園內首個青蔥角落。

團隊下一步會在花園內添置傢俱及有機玻璃裝置，為感官花園增添生氣及色彩。

5 Sensory Garden Update
感官花園通訊

Since 2015, Dragages Hong Kong has been leveraging its construction expertise to design and build a Sensory Garden for Hong Chi Winifred Mary Cheung Morninghope School, which serves children with mild to moderate intellectual disabilities. By stimulating all five senses in four zones, the Sensory Garden will be a valuable new learning therapy facility.

Engagement is key to the success of this very special project. From the outset, we invited the school's students to produce paintings based on the theme 'space and planets'. Our architect mentored a recent graduate designer to incorporate these paintings into the garden's design. At every stage of the project, the end goal has always been the creation of an inspirational multi-sensory garden jointly designed by both its builder and its users.

In 2016, we commenced the realisation of this landmark project. The first site activity took place on 23rd April with the painting of the external fence. We are proud to report that 84 volunteers spent three Saturdays creating an eight-colour rainbow fence. Works continued in June with the installation of the sculptural element. In July and August, our volunteers joined hands to build a 30 square metres planter box with bricks, creating the Sensory Garden's first green corner.

The next major step forward will be the installation of garden furniture and plexiglass elements to create a vivid Sensory Garden.

自2015年起，香港寶嘉一直以其建造專業支援匡智張玉瓊晨輝學校內感官花園的設計及建造工作，希望透過這項結合教學及治療的嶄新設施，刺激校內輕度至中度智障兒童的五感。

Sponsors of Sensory Garden
感官花園贊助人

AP Rentals
Drillcut
East Gain Metal Works Engineering
Global Architecture
Hoi Hing Building Material
Houtai Construction
Kanson Crane & Heavy Transport
Konwo Modular House
MTRC
RMD Kwikform
Vincent Scaffolding & Trading
Welltune Transportation
Yongnam Engineering

Dragages Hong Kong Project Teams
香港寶嘉工程團隊

Liantang / HYW BCP Site Formation & Infrastructure Works Contract 2
MTR Shatin to Central Link Contract No.1128



S

SUSTAINABILITY
可持續發展

1 New Location, New Courses 安全訓練中心喬遷 推出全新課程

In January 2016, our Safety Training Centre moved to Fo Tan, in close proximity to the MTR Station. Covering some 2,300 square metres, the new centre provides the same level of multi-functionality as our previous training centre, comprising a showroom, workshop practice area and classrooms. This major facility is designed to:

- Provide interactive training
- Ensure trainees understand Health, Safety and Environment (HSE) requirements in relation to both our projects and Hong Kong legislation
- Enable trainees to acquire specific knowledge in safety practices, and the policies and procedures applied within the Company
- Enhance sustainable HSE performance within both the Company and the construction industry

In August, the centre launched a new “Work at Heights” course, tailored for supervisory and management staff. This new training emphasises the planning of works and the key aspects that must be considered when visiting and inspecting worksites. The course aims to guide trainees in a wider approach to enhance their management of contractors. The concepts of risk management, risk assessment and the hierarchy of safety controls are all taught in an engaging and interactive manner.

The centre also features a training corner referred to as a “Black Museum” where trainees can go Hazard Hunting and Hazard Spotting. In the workshop and practical areas, trainees can learn more about a range of tasks and functional equipment such as Lifting, Rigging and Slings, Working at Heights, Moving Plant, and Machinery & Electrical Power Tools.

今年一月，香港寶嘉訓練中心喬遷到火炭。新址毗鄰港鐵站，佔地2,300平方尺，與舊中心一樣，新中心設有工具展示室、實習工場、課室等一系列多功能設施，用作：

- 支援互動教學
- 確保學員明白相關項目及香港法例在職業安全、健康及環境保護方面的要求
- 協助學員掌握公司對安全作業、政策及手續上的具體執行規條
- 提昇公司及建造業在可持續職業安全、健康及環境保護上的水平

中心在八月份為主任及管理級員工推出全新的「高空作業」課程，涉及範圍更加廣泛，讓學員進一步提昇管理承辦商的水平。新課程強調工作規劃，及在造訪和檢查工地時需注意的主要範疇，並透過課堂參與及互動方式，傳授關於風險管理、評估及安全管控架構的概念。

此外，設於訓練中心內的全新培訓角於近日正式投入服務。在這個名為「黑色博物館」的培訓角落裡，學員可參與危機大搜索、危機識別遊戲。透過實習工場，學員可更深入了解不同工地器材的安全操作，如起重機、索具及吊架、高空工作儀器、流動器材、機電工具等。

2 3D and Virtual Reality Training 3D及虛擬實境訓練

To enhance trainee engagement and maximise their understanding of safety, we are now exploring the feasibility of incorporating Virtual Reality (VR) technology and 3D elements in the development of our customised training programmes. By adopting these state-of-the-art technologies, trainees will be able to experience a virtual workplace surrounded by realistic virtual hazards, thus greatly enriching the educational experience. We believe that the adoption of 3D and VR technologies will elevate the value of our training to new heights, while also offering a more conversational and engaging environment that reflects the Company’s key training objectives.

為提高學員的參與程度，幫助他們更深入認識安全問題，我們正探討在自行設計的課程內加入虛擬實境及3D立體技術的可能，希望透過引入先進技術，讓學員在虛擬工作環境內切身體驗實際工作時四周潛藏的危機，以提升學習效果。我們相信，引入3D及虛擬實境技術可望將中心的培訓帶到更高水平，及鼓勵學員積極參與，有助實現公司的培訓目標。

3 SnagR – an Innovative Breakthrough in QSE SnagR 安全檢查系統 — 技術新突破

In addition to compulsory training courses and the promotion of safe practices through seminars and incentive schemes, Dragages Hong Kong constantly strives to inject innovative new solutions into its QSE practices.

The SnagR system is a software platform originally developed to improve the identification and closure process of project defects. Dragages Hong Kong, in conjunction with the SnagR team, have expanded its use for the recording and reporting of safety/environmental issues. The SnagR program is used to record/notify safety or environmental findings in a simple and easy way via a web based application. Project drawings, layout plans, inspection reports etc. can be accessed through mobile devices. In parallel, findings - including photos, can be transmitted to responsible parties for remedial action and follow-up emails will be sent in case actions are not taken within the allotted time frame. To facilitate management inspections, both site and corporate management team will be kept in the loop of notifications.

All recorded findings are analysed, translated into graphic format and shared with related parties for both record-keeping and as the basis for future enhancements, as shown in the diagram on the opposite page.

Following the successful trial in the City of Dreams – Fifth Hotel Tower project, we are now in the final stage of implementation on other ongoing projects.

為推廣品質、安全和環境保護，香港寶嘉除舉辦必修課程、研討會及推出獎勵計劃外，亦積極探求新點子。

SnagR原為用作有關檢查及跟進工程缺損的軟件平台。香港寶嘉聯同SnagR團隊擴大系統的用途，透過簡單及易用的網絡應用程式，記錄及匯報有關安全及環保事項的資料及數據。用家可透過流動裝置檢視項目繪圖、

圖則和檢驗報告等。另一方面，工程人員亦可透過系統將檢查資料一如相片等，傳送給相關單位以作修正，並以電郵提示有關單位修正期限。同時，工地項目和企業管理人員亦會收到系統通報，方便管理層覆核和跟進修正個案。

如右頁圖顯示，SnagR系統可分析已搜集的資料，並把資料轉化成圖像報告，傳送給相關單位。這不但可把資料儲存記錄，更可用作未來改善計劃的依據。

澳門寶嘉在建造新濠天地第五棟酒店大樓時已率先成功試用SnagR系統，現時更積極將應用範圍擴展至其他工程項目。

4 Taking QSE Performance to the Next Level 提昇品質、安全及環境保護表現

In October 2015, we received the Certificate of Energy Management System (ISO 50001:2011), a first in Hong Kong’s civil works industry. This high-profile recognition reflects our outstanding QSE performance in civil and building infrastructures. In the current and upcoming two years, we forecast energy savings of some 20%, which represents a cut of roughly 40 million KWh from a predicted consumption of more than 200 million KWh.

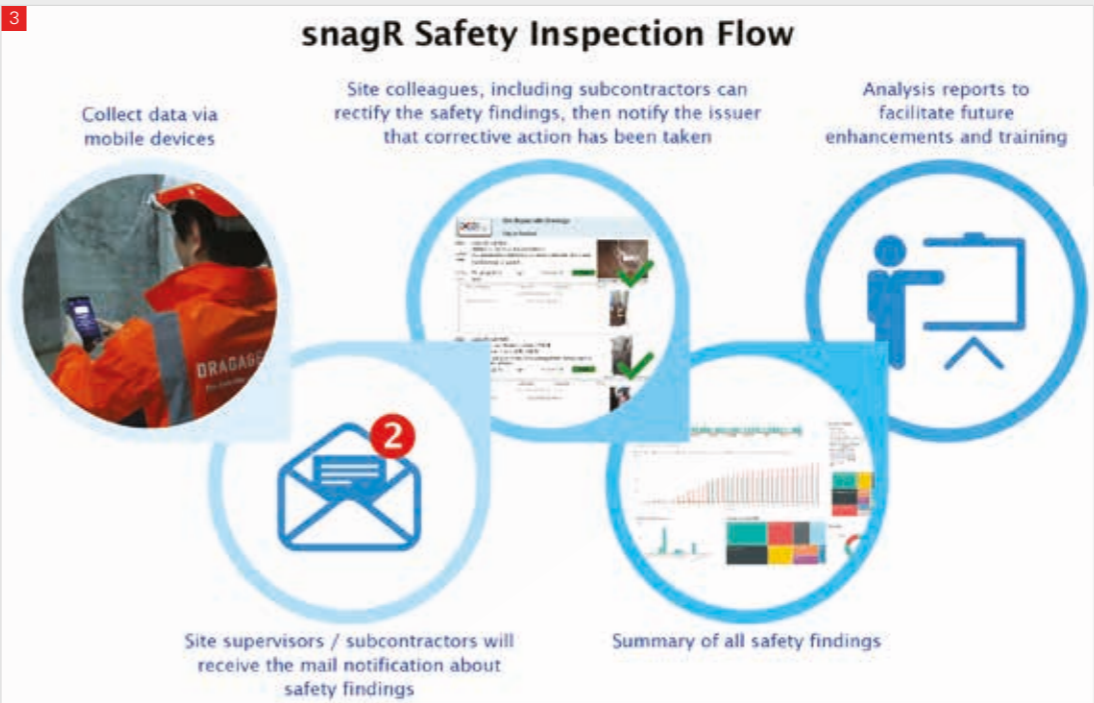
Our QSE team, in collaboration with project teams, has also shown great efficiency in the renewal of its existing certificates, namely OHSAS 18001 (Occupational Health and Safety Management System), ISO 9001 (Quality Management System), and ISO 14001 (Environmental Management System). It took the team less than six months to upgrade both ISO 9001 and 14001 upon release of the latest 2015 versions last September. Once again, our QSE team has set an exemplary standard in terms of both efficiency and quality!

To further enhance our productivity, we have been working closely with our parent company to implement both PERFORM TP and LEAN construction management in all of our civil projects over the last four years. Currently, more than 25 activities in our four civil projects receive support from the local team.

寶嘉於2015年10月獲授 ISO 50001:2011 能源管理體系認證，成為本地土木工程建造業首家獲頒此証書的企業。是次成功取得認證，標誌著我們旗下土木及樓宇工程在品質、安全及環保方面表現卓越。寶嘉預期，未來兩年可望節省4,000萬千瓦電力，佔整體逾2億千瓦電力的20%。

除為業界之先取得新認證外，寶嘉品質、安全及環境保護小組在更新現有證書上亦展示出高超效率。這包括職業安全及健康管理體系認證 (OHSAS 18001)、質量管理體系認證 (ISO 9001) 和環境管理體系認證 (ISO 14001)。於上年9月，小組在 ISO 9001 和 ISO 14001 最新2015版本證書公佈後不足半年內，便辦妥證書的更新工作，再次表現出效率、品質兼備的優秀工作水平。

為進一步提昇生產力，我們與母公司緊密合作，在過去4年，在所有承辦的土木工程推出 PERFORM TP 及 LEAN 建造管理兩個系統，至今4項土木工程項目中逾25項建築活動獲本地團隊提供支援。



5 Recognitions and Accolades
榮譽及讚賞

The solid safety track record at Dragages Hong Kong is built upon a strong commitment and dedication to excellence. This passion for safety also reflects our group-wide campaign, “Health and Safety, A Shared Commitment”, which aims to achieve the highest safety standards through collaborative efforts.

Working hand in hand with our clients and working partners, we have signed Safety Charters with the Government to reinforce our commitment to safety on both our bridge and tunnelling projects. As part of this initiative, the Company has publicly committed itself to:

1. Make concerted efforts to create a “Zero Accident” working environment
2. Optimise safety management
3. Enhance safety training and promotion
4. Strengthen safety supervision

Our excellence in construction safety was also widely acknowledged by the industry and government authorities. Awards received in the first half of 2016 include:

Liantang / Heung Yuen Wai Boundary Control Point – Site Formation and Infrastructure Works – Contract 2:

1. Construction Industry Safety Award Scheme 2015/2016
 - Civil Engineering Sites Category – Silver Award
 - Safety Teams Category – Merit Award
2. Innovative Safety Initiative Award 2016 Safety Operational Device Category – Silver Award
3. 22nd Considerate Contractors Site Award Scheme
 - Considerate Contractors Site Award – Public Works – New Works – Silver Award
 - Outstanding Environmental Management & Performance Award – Public Works – New Works – Merit Award
 - Model Frontline Supervisor Award – Mr. YUEN Chor Fung
 - Model Worker Award – Mr. SIN Kwok Cheung

MTR Shatin to Central Link – Causeway Bay Typhoon Shelter to Admiralty Tunnels – Contract No.1128:

1. Construction Industry Safety Award Scheme 2015/2016
 - Civil Engineering Sites Category – Bronze Award
 - Safety Teams Category – Merit Award
2. One Million Hours Worked Without A Reportable Accident Award
3. 22nd Considerate Contractors Site Award Scheme
 - Considerate Contractors Site Award – Non-Public Works – New Works – Group A – Silver Award
 - Outstanding Environmental Management & Performance Award – Non-Public Works – New Works – Group A – Bronze Award
 - Best Model Worker Award – Mr. SARWAR Shan
 - Model Frontline Supervisor Award – Mr. CHENG Ching Chi

City of Dreams – Fifth Hotel Tower:

1. 5th Macao Construction Safety Award Scheme
 - Best Occupational Safety and Health Construction Site in the Hotel and Casino Industry – Gold Prize
 - Best Safety Management System – Gold Prize
 - Best Safety Improvement Project – Gold Prize
 - Best Non-Local Safety Management Personnel (QSE Manager – Mr. Stephen CHAN) – Gold Prize
 - Best Non-Local Safety Management Personnel (Senior Safety Officer – Mr. Jeff LAI) – Silver Prize
 - Best Local Safety Management Personnel (Senior Site Coordinator/Safety Supervisor – Mr. Antonio WU) – Excellence Award

香港寶嘉安全表現出眾，成績優良，全賴團隊上下重視承諾，致力追求卓越。我們這份對安全的熱誠可見於集團推行名為「職安健 人人有責」(Health & Safety, A Shared Commitment)推廣運動中。活動的目標是透過團隊同心協力，達至最高的安全水平。

寶嘉特別與客戶、工作夥伴攜手合作，簽署政府的安全約章，突顯旗下橋樑及隧道項目對職業安全的重視。

在有關計劃下，香港寶嘉公開承諾 ——

1. 同心同德共建零意外工作環境
2. 優化安全管理
3. 加強培訓及推廣安全意識
4. 強化安全監督

寶嘉在建造業安全的表現一直備受業界及政府部門肯定，2016年公司獲授殊榮包括 ——

蓮塘／香園圍口岸土地平整及基礎建設工程—工程合約 2:

1. 建造業安全獎勵計劃 2015/2016
 - 土木工程建造地盤組別—銀獎
 - 安全隊伍—優異獎
2. 2016創意工程安全獎—安全操作設施類別—銀獎
3. 第二十二屆公德地盤嘉許計劃
 - 公德地盤獎—公務工程—新建工程—銀獎
 - 傑出環境管理獎—公務工程—新建工程—優異獎
 - 模範前線工地監工獎—袁楚峰
 - 模範工友獎—冼國章

港鐵公司沙中綫—銅鑼灣避風塘至金鐘站鐵路隧道建造工程—合約編號1128:

1. 建造業安全獎勵計劃 2015/2016
 - 土木工程建造地盤組別—銅獎
 - 安全隊伍—優異獎

2. 一百萬工時零意外獎

3. 第二十二屆公德地盤嘉許計劃

- 公德地盤獎—非工務工程—新建工程—A組—銀獎
- 傑出環境管理獎—非工務工程—新建工程—A組—銅獎
- 最佳模範工友獎—SARWAR Shan
- 模範前線工地監工獎—鄭禎智

新濠天地—第5棟酒店大樓:

1. 澳門第五屆建築業安全施工獎勵計劃
 - 最佳職安健地盤—酒店娛樂場渡假村—金獎
 - 最佳安全管理制度—金獎
 - 最佳安全改善項目—金獎
 - 最佳安全管理人員(外地僱員組別)金獎—陳曾典
 - 最佳安全管理人員(外地僱員組別)銀獎—賴以誠
 - 最佳安全管理人員(澳門組別)優異獎—胡鈞荃





1 Success in Diversity
多元文化 成就共享

The team at Dragages Hong Kong comes from all corners of the world. Among the 34 different nationalities working together, the top five are Chinese (54%), Nepalese (26%), French (6%), Filipino (4%) and British (3%), collectively accounting for 93% of the 3,000 staff members at the Company.

In this dynamic, multi-cultural environment, one of our key objectives is to promote integration and celebrate the diversity that makes us so strong. In 2015, we stepped up our efforts with a new campaign entitled ‘Diversity in Action’. The vibrant campaign programme included diversity awareness workshops and inter-site teambuilding activities, as well as traditional cultural festivals and a family Fun Day.

Our third on-site Dashain Party was also held at the end of October 2015 to celebrate the Nepalese New Year. More than 400 Nepalese colleagues together with our management team joined this festive celebration.

In November, we held our 8th annual Fun Day with the theme “We United”. Bringing together more than 3,000 participants, including our staff and their families, as well as clients and working partners, this fun-filled event featured game booths, sports activities, and team competitions. In keeping with our vision of diversity and CSR, we also raised HK\$150,000 for our three major charity partners. The event was co-organised by Dragages Hong Kong, AsiaWorld-Expo, BYME and VSL-Intrafor, with the support of 93 working partners.

Mutual respect and inclusion are vital ingredients in the renowned quality of our work. By embracing the spirit of ‘Success in Diversity’, we will continue to maintain a harmonious, multi-cultural workplace that respects diversity in all its forms!

香港寶嘉團隊大約有3,000人，來自世界各地，涵蓋34個不同國籍，當中人數最多的是華籍(54%)，其次是尼泊爾籍(26%)、法籍(6%)、菲律賓籍(4%)和英籍(3%)，五個主要種族佔整體員工百分之九十三。

尊重多元，鼓勵共融是香港寶嘉在多元文化下茁壯成長之道。2015年，我們舉辦「多元共享 (Diversity in Action)」運動，推出一系列促進多元文化的工作坊、跨部門及項目團隊活動、傳統文化節和家庭同樂日。

第三屆德賽節慶祝派對於2015年10月份在工地舉行，慶祝尼泊爾新年。活動吸引超過400名尼泊爾籍同事及管理層參與，一同歡渡佳節。

由香港寶嘉、亞洲國際博覽館、嘉福機電工程及威勝利-盈發地基聯合主辦，93個工作夥伴單位全力支持的第八屆周年同樂日於2015年11月舉行。當日的主題是“ We United”，精彩活動包括攤位遊戲、運動競技及隊際比賽，逾3,000位同事、家屬、客戶及業務夥伴同享歡樂的一天。大會也邊玩樂，邊行善，為本地三個主要合作慈善團體籌得港幣150,000元。

互相尊重，和衷共濟一直是寶嘉賴以成功的要素，我們將繼續本著「多元文化 成就共享」的精神，繼續致力創造更和諧、互相尊重的多元工作環境。

2 Making Time to Relax
忙裡偷閒

With our busy schedule of projects, it’s important to take time to come together as a team and have some fun. This year kicked off in high style, with staff gathering for the Dragages Hong Kong Annual Dinner Musical Night held in January. Teams from project sites and the Head Office took to the stage with songs and dances from much-loved musicals, creating a fun-filled night of entertainment and feasting!

In May, we also held our annual BBQ Family Party, which featured a wide range of barbecue delicacies, beer, wine and game booths. This heart-warming event was a wonderful opportunity for staff members and their families to enjoy carnival games, exciting competitions, and lots of food and drink!

忙裡偷閒，和同事聯繫、輕鬆一下是舒緩工作壓力的有效方法。年初，我們舉辦了以音樂劇為主題的寶嘉周年晚宴，讓同事聚首一堂。當晚，來自不同工地及總辦公室的同事粉墨登場，載歌載舞，帶來一個輕歌曼妙的晚上。

一年一度的家庭燒烤同樂日在5月舉行，參加的同事和家屬全情投入於精彩刺激的競技比賽及攤位遊戲中，在香噴噴的美食、醇酒佳餚和笑聲中渡過了歡樂的一天。

3 New Training Programmes
全新培訓計劃

Dragages Hong Kong launched two group-supported programmes this year for our HR and engineering experts.

The first international HR Links (Learnings, Induction and Knowledge Sharing) programme was held in May 2016. Partnering with Bouygues Construction University, this five-day training programme brought together 15 HR professionals from around the world to discuss HR Strategy and Policy, Mobility, Career and Talent Management, Training and Development, Compensation and Benefits, and Diversity. As part of our mindset training, the programme also featured an inspirational “Dialogue in Silence” session. Designed to help participants discover a repertoire of non-verbal communication, this innovative session was led by hearing-impaired trainers in an environment of total silence.

To meet the training needs of our engineers, our Confucius Training Centre presented Hong Kong’s first-ever Heracles Starter Programme. This important new programme allows site engineers to fully understand the professional careers available within Bouygues Construction, including substantiation of both the mission and duties of a site engineer. The programme also serves as a networking platform among colleagues working in different countries, and provides a valuable opportunity to meet with the Group’s senior management.

香港寶嘉今年與總公司合力為人力資源部同事及工程專業人員開辦兩個培訓計劃。

寶嘉首個國際人力資源學習、啟導及知識分享計劃——HR Links 於2016年5月在香港舉行。計劃由香港寶嘉與Bouygues Construction University聯合舉辦。15位來自世界各地的人力資源專才在5天的活動中，一同就人力資源策略及政策、人員流動性、職業及才能管理、培訓及發展、薪酬福利，及多元文化的議題進行交流。大會特別在課程中加入「無聲對話工作坊」環節，請來聽障培訓員引導學員在無聲的環境下溝通對話，從嶄新的角度審視自我，啟發創新思維。

為滿足工程師團隊的培訓需要，孔子建藝學院特別推出全港首個Heracles啟航者計劃 (Heracles Starter Programme)，讓工地工程師全面掌握在Bouygues Construction內的專業發展梯階，體驗工地工程師的使命和職責。課程同時發揮平台作用，讓學員與來自世界各地的同胞和集團高層聯繫，促進交流。



4 CONNECTing to Share Best Practices
善思廣益 共享經驗成果

To further enhance our development of innovative new solutions and achieve synergy in our team efforts, we have organised 11 knowledge-sharing “CONNECT” seminars since 2014. These seminars provide a platform for the exchange of critical knowledge in technically-demanding projects, while also providing fresh inspiration for innovative new work methods.

This year, our Confucius Training Centre has expanded to promote international best practices. The Project Director of Dragages Singapore’s Crowne Plaza Changi Airport Hotel Extension, Thierry Brezac, came to Hong Kong to share with colleagues more details of the project’s Prefabricated Prefinished Volumetric Construction (PPVC) method. This exemplar of sustainable construction enables improvements in productivity of some 45%, and is a technical first in Singapore’s private sector.

In 2015 and 2016, we held six seminars, namely Saturation Techniques Used in Deep Tunnel Boring Machine (TBM) Tunnelling; Robot/ Innovation Construction; Cross Passage Construction; Bridge Construction with Various Methods; Macau City of Dreams (COD) Exoskeleton Construction; and Modular Construction – PPVC.

自2014年起，香港寶嘉先後舉辦了11場“CONNECT”知識共享研討會，希望透過集思廣益的方式，進一步完善我們的創意解決方案。

孔子建藝學院今年進一步推廣國際成功案列，邀請新加坡寶嘉樟宜機場皇冠廣場酒店項目董事Thierry Brezac蒞臨香港，介紹預製大型組件建造法(Prefabricated Prefinished Volumetric Construction - PPVC)的詳情。這個可持續建造方法的典範把生產力大幅提升約45%，開創新加坡私營項目的先河，經驗值得我們借鑒。

2015及2016年，寶嘉舉辦了6場研討會，題目涵蓋大型隧道鑽挖機深水飽和鑽挖法、機械/建造新技術、連接通道建造法、橋樑的各式建造方法、澳門新濠天地外框鋼架建造方法和PPVC組件建造法。

5 Helping International Young Talent Flourish
協助國際年青人追夢

As a member of a transnational group, Dragages Hong Kong proudly participates in the Volontariat International en Entreprise (VIE) programme – a French international internship scheme that aims to support and nurture young talents. We are pleased to report that one of our VIE interns, Gregoire Xerri, working on the Liantang/ Heung Yuen Wai Boundary Control Point – Site Formation and Infrastructure Works – Contract 2 (LTHYW) Project, was awarded the Prix Grand Groupe (Large Corporates Award) at the 4th VIE French International Internship Programme Awards (Grand Prix V.I.E.) for his outstanding performance in Hong Kong.

In addition to Gregoire, two other interns, namely Hugo Bonnet from the Hong Kong-Zhuhai-Macao Bridge – Hong Kong Link Road Project, and Antoine Guittet from the LTHYW Project, also participated in the Programme Awards.

作為跨國企業的一員，香港寶嘉一直支持 Volontariat International en Entreprise (VIE) 法國國際實習生計劃，支援及協助培訓有潛力的年青人。今年寶嘉其中一位實習生Gregoire Xerri在參與蓮塘/香園圍口岸土地平整及基礎建设工程—工程合約2項目時表現卓越，在第四屆VIE法國國際實習生計劃獎勵計劃(Grand Prix V.I.E.)獲頒Prix Grand Groupe(大企業)大獎。

除Gregoire外，另外兩位分別參與港珠澳大橋香港接線工程的Hugo Bonnet及蓮塘/香園圍口岸工程的Antoine Guittet同樣獲得表揚。

6 Inspiring the Next Generation
啟發新一代

Nurturing the next generation has always been an integral part of our sustainable development strategy, which involves showcasing and educating young engineers our mega-sized infrastructure projects. At the end of 2015, Dragages Hong Kong hosted three educational site visits for university students. Hong Kong University’s (HKU) Civil Engineering Society members were treated to a boat tour of the Hong Kong-Zhuhai-Macao Bridge – Hong Kong Link Road (HZMB) Project, and a tunnel site visit to the Tuen Mun-Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section (TMCLKL) Project. Aspiring engineers from Hong Kong University of Science and Technology’s (HKUST) Civil and Environmental Engineering Students’ Society also enjoyed a tour of the HZMB project, giving them an opportunity to get up close and learn more about one of the world’s most important new bridge links.

In addition to engineering students, members from the Hong Kong Construction Association (HKCA) Young Members Society (YMS) were invited to our Head Office for a company tour and sharing session from our senior management. The tour allowed YMS members to better understand life in the construction industry, and specifically visualise a career with Dragages Hong Kong.

栽培下一代一直是香港寶嘉持續發展策略的重要部份，因此公司一直積極向新一代年青工程師介紹及分享各項大型基建項目的詳情。2015年底，寶嘉為大學生舉辦3場探訪活動。香港大學土木工程學會的成員先後參觀了港珠澳大橋香港接線段、屯門至赤鱓角連接路北面連接路海底隧道段。此外，香港科技大學學生會土木及環境工程系學生會的同學亦參觀了港珠澳大橋香港接線段的建築工地，近距離欣賞這個全世界其中一項最重要的橋樑建造工程。

此外，香港建造商會青年會也應我們邀請，組織年輕會員到訪寶嘉總辦公室，與管理層會面交流，認識建造業生涯及香港寶嘉提供的事業梯階。



ASIAWORLD-EXPO
亞洲國際博覽館

Reaping the
Rewards
of Innovation
and Collaboration

匯聚創意與協作
屢創豐碩佳績

AsiaWorld-Expo (AWE) started 2016 by setting a new record, achieving double-digit percentage growth, in terms of metreage sold per annum, for the sixth consecutive year. In 2015/16, AWE welcomed more than 300 major events, among which 40 were mega-events for over 8,000 visitors. The number of days with full capacity also reached a new high of more than 60 days, and the venue welcomed a total of more than 4 million visitors throughout the year. This excellent progress is a further testament to the strategic emphasis of AWE's team on innovation and collaboration with all business partners and stakeholders.

Supported by the latest Economic Contribution Assessment Report, which was conducted by professional services firm KPMG Transaction Advisory Services Limited, AWE is expected to contribute up to HK\$27.2 billion to the local economy in 2015/16, which is more than double the amount achieved in 2010. In the same period, AWE also supported some 44,700 jobs. This significant economic contribution not only benefits Hong Kong's meetings, incentives, conferences and exhibitions (MICE) industry, but also a wide range of other service industries, including the tourism and retail sectors.

To celebrate the milestone of its 10th anniversary, AWE launched a series of promotional campaigns. These multi-dimensional celebratory campaigns served as a strong reminder of the venue's acclaimed status as winner of the "Hong Kong Top Service Brand" Award.

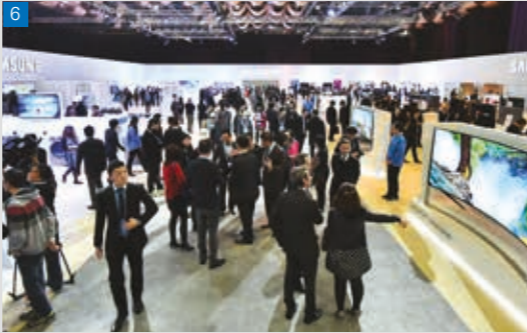
As a leader in the trend of integrating exhibition and entertainment elements, AWE continues to welcome a spectacular line-up of EXPOtainment events, including Longines Hong Kong Masters, MADONNA REBEL HEART TOUR – HONG KONG, and Lai Yuen Super Summer 2016, to name just a few. It also continues to be the venue of choice for a number of debut events, including Arnold Classic Asia 2016 Multi-Sport Festival, The 55th Orient & Southeast Asian Lions Forum 2016, and Cosmoprof Asia Hong Kong 2016, further affirming its key role in establishing Hong Kong as one of the world's top MICE destinations. In recognition of the team's innovation excellence, AWE was once again voted a Top 3 "Best Convention and Exhibition Centre" and "Best Venue Team" in the Readers' Choice Award conducted by the authoritative industry magazine CEI Asia. Capitalising on the future development of Lantau, AWE is poised to become Hong Kong's illustrious gateway to the world.

亞博館業務持續增長，場地使用率不斷上升，自2010年起連續六年錄得雙位數百分比的業務增長。2015/16年度，亞博館舉辦超過三百個大型博覽活動，當中逾八千人參與的大型博覽活動超過四十個，全年參觀及到訪人次估計超過四百萬，全館爆滿日子全年超過六十日，反映亞博館的「敢創新，創共贏」策略備受合作夥伴及業務持分者推崇。

較早前由畢馬威會計師事務所(KPMG)進行的經濟貢獻研究報告指出，估計2015/16年度亞博館為本港帶來272億港元經濟貢獻，較2010年經濟貢獻增加一倍以上，另提供44,700個工作職位，不單為本港會議、獎勵旅遊及展覽業帶來可觀的經濟效益，同時亦惠及旅遊及零售等不同行業。

為慶祝成立十週年，亞博館特別推出多個推廣活動，回顧亞博館過去十年的重要時刻和矚目盛事。各式活動亦進一步肯定亞博館被投選為「香港服務名牌」的傑出成就。

亞博館引領的「新一代博覽」活動融合博覽及娛樂元素，多元化活動包括浪琴表香港大師賽－國際馬術障礙賽、麥當娜《REBEL HEART TOUR》香港站及「荔園 Super Summer 2016」夏日大晒等。2016年亞博館更迎來多個全新活動，其中有阿諾國際體育節(亞洲站)、第五十五屆東南亞獅子大會及2016亞太區美容展。亞博館成功吸引多個大型國際博覽盛事，鞏固本港作為亞洲會議展覽中心的地位，亦為訪客帶來全新體驗。團隊對創意與品質的不懈追求亦獲得業界嘉許，亞博館在《亞洲會議展覽及獎勵旅遊》雜誌讀者選舉再度榮膺「亞太區最佳會展中心」及「亞太區最佳場地團隊」三甲。隨著大嶼山多項大型基建陸續落成，亞博館勢將成為世界各地斬新意念的凝聚點，締造一個又一個令人讚嘆不絕的精采時刻。



- 1: TEDx Conference
- 2: EXPOtainment fans engagement event
- 3: Longines Masters of Hong Kong
- 4: Nu Skin Greater China Regional Convention
- 5: Hong Kong Jewellery & Gem Fair
- 6: Samsung Forum
- 7: HUAWEI Global Mobile Broadband Forum 2015
- 8: MADONNA REBEL HEART TOUR – HONG KONG
- 9: Lai Yuen Super Summer 2016

- 1: TEDx會議
- 2: 博覽動立方推廣活動
- 3: 浪琴表香港大師賽 - 國際馬術障礙賽
- 4: Nu Skin大中華區域大會
- 5: 香港珠寶首飾展覽會
- 6: 三星論壇
- 7: 華為2015年全球移動寬帶論壇
- 8: 麥當娜《REBEL HEART TOUR》香港站
- 9: 「荔園 Super Summer 2016」夏日大晒

BYME
嘉福機電工程

A Year of Growth
and Exciting
New Challenges
穩步成長 迎新挑戰

BYME's turnover has doubled in the last few years, driven by a number of record-breaking successes, and 2016 has proven to be a year of exciting new challenges. To achieve even better results in the year ahead, the Company has strategically planned three key areas, namely tendering, value-added engineering solutions development, and the potential expansion of regional developments.

Since January this year, the Company has worked on more than 50 tenders, 90% of which are for external clients. Major target areas include Data Centres, Residential, and Additions & Alterations (A&A) Works, including Fit-out and Chiller Replacement Works. To date, successful tenders have included the Hong Kong Resort development at Discovery Bay, Schneider Offices, Hong Kong Jockey Club (HKJC) Shatin Communications and Technology Centre 8/F Renovation and Fit-out, French International School, and HSBC Head Quarters Chiller Replacement at Mongkok and Tai Kok Tsui, to name a few.

BYME's business in Macao has also been flourishing. Electrical works for the 200,000 sqf mega-sized podium at The Parisian (formerly known as Venetian Macao Parcel 3) is one of the Company's key projects for 2015-2016. The Fire Safety Inspection was recently carried out with zero defects concerning BYME's installations. Once again, BYME delivered the project on time and with a high degree of precision.

Other key projects in 2016 include Liantang / Heung Yuen Wai Tunnel and auxiliary buildings, where MEP is now commencing installation works with almost all major procurement completed. Term contract summer works for the HKJC in both Shatin and Happy Valley were completed by the end of August 2016.

Regionally, the Company's tendering and engineering teams now extend their support to Myanmar, Thailand, Singapore, Australia and the Philippines. To meet growing needs in both Hong Kong and Macao, and in anticipation of potential opportunities across Asia Pacific, the Company is now expanding its team, both locally and in its Zhuhai Drafting Facility. The expanded engineering team is now well equipped with the capacity to carry out CAD and BIM modelling, as well as measurement and taking-off exercises. This has been well demonstrated in its Macao project, in which the team managed to deal with in excess of 500 client-instructed variations in a precise and timely manner.

嘉福機電在過去數年營業額倍升，隨著公司取得更多突破性發展，2016年對嘉福機電來說是挑戰更多、更精彩一年。為取得更豐碩的成果，嘉福機電在競投工程上作出了策略性部署，並開發多項增值工程方案，逐步把業務拓展至區域市場。

自今年一月以來，嘉福機電先後參與超過50份標書競投，當中九成為集團以外的客戶，涉及公司多個目標範疇，包括數據中心、住宅、以及涵蓋安裝及更換冷凍系統等的加建及改建工程。在各項競投工程中，至今獲批出的主要項目包括愉景灣香港渡假酒店發展項目、施耐德 (Schneider) 辦公室、香港賽馬會沙田通訊及科技中心 8樓裝修翻新工程、法國國際學校及匯豐銀行旺角及大角嘴總部空調系統更換工程等。

澳門方面的業務表現同樣欣欣向榮。當中巴黎人 (前稱澳門威尼斯人第三期) 酒店項目涉及200,000平方尺大型平台的機電工程，是2015-2016年度的焦點項目。按早前進行的消防檢查，嘉福機電參與的平台部份電機裝置工程獲評為零瑕疵，再次證明嘉福機電以最精準的工藝，準時完成承辦項目的實力。

年內的其他焦點工程包括蓮塘 / 香園圍隧道及附屬建築，機電工程組已完成所有主要採購工作，正展開各項安裝工程。此外，公司承辦的香港賽馬會沙田及跑馬地暑期工程亦已於2016年8月完成。

嘉福機電不但駐足香港及澳門，近年業務更拓展至亞太區。競投及工程團隊均有參與位於緬甸、泰國、新加坡、澳洲及菲律賓多個工程項目。為滿足香港及澳門持續增長的需求，並預期亞太區內的市場發展可觀，公司的本地辦公室及珠海繪圖辦公室正積極擴充人手。壯大後的團隊不單可支援電腦輔助設計繪圖 (CAD) 及建築資訊模型技術 (BIM)，並提供測量服務。擴充後的團隊表現出眾，面對早前澳門項目接獲超過500項客戶修訂指示的挑戰也能應付自如，按時完成修訂工程。



1: HKJC Shatin Racecourse
2: Concealed conduit installation works at LTHYW Project
3: The Parisian
4: HKJC Happy Valley Racecourse

1: 香港賽馬會沙田馬場
2: 於蓮塘 / 香園圍工程項目進行暗線導管裝置
3: 巴黎人酒店
4: 香港賽馬會跑馬地馬場



Bouygues Construction

parent company of Dragages Hong Kong

香港寶嘉建築母公司

Order book 合約金額

19.339

billion euros
十億歐元

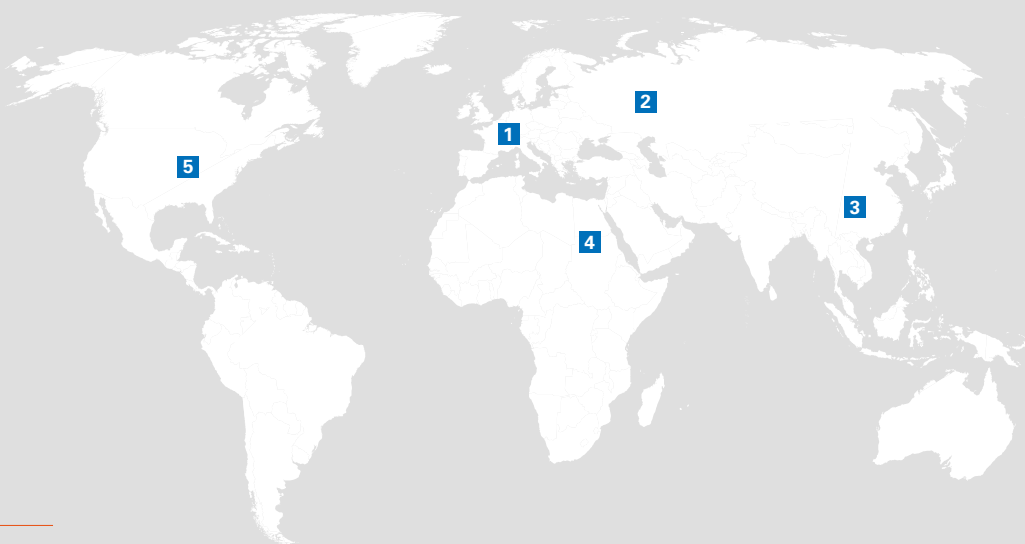
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|------------------------------------|-----|
| 1. France 法國 | 48% |
| 2. Europe (excl. France) 歐洲 (法國除外) | 23% |
| 3. Asia-Pacific 亞太區 | 15% |
| 4. Africa and Middle East 非洲和中東 | 7% |
| 5. Americas 美洲 | 7% |

11,975

million euros sales
百萬歐元營業額

50,077

employees
員工



www.bouygues-construction.com

Bouygues

parent company of Bouygues Construction

Bouygues Construction 母公司

2015 sales by business area 營業額分佈

(million euros 百萬歐元)



32,428

million euros sales*
百萬歐元營業額*

120,254

employees
員工

* Intra-Group Elimination 集團內部對銷 : 455

www.bouygues.com

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