

環狀線CF640區段標CF643A子施工標工程 榮獲第17屆公共工程金質獎土木第一級優等

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環狀線CF643A標工程主要路線範圍東起新店區中興路與民權路口之大坪林(Y6)車站，以地下結構型式沿民權路向西行，於穿越中正路口後，止於中正路西側之出土段，全長約1.65公里，工程施工範圍位於地狹人稠之新店區，於各階段施工過程中，皆因路幅狹窄、鄰房緊鄰等許多不利施工條件，使本標工程處處充滿挑戰性。

本標工程以潛盾隧道穿越新店線大坪林站，依據契約規定新店線大坪林車站(G4)，施工過程沉陷量需控制在1公分以內，施工過程中引進新的施工技術，包括水平鑽孔定位儀確認施工精度、配合人員出艙以高壓水刀、鑽石鏈鋸切割及油壓劈裂G4站及新設Y6車站連續壁，搭配嚴密之全時自動監測管理系統與良好施工管理，因潛盾隧道通過所造成G4站底版最大沉陷量為8.71mm，為國內工程界相當成功之潛盾隧道首次穿越營運中之捷運車站。

另外一般潛盾隧道施工，二條潛盾隧道間距必須大於潛盾隧道鑽掘之直徑1倍以上即6公尺，而本工程潛盾隧道最窄處僅2.5公尺，且覆土深度亦不足6公尺，具有近接及淺覆土之雙重風險，為施工難度高且具有相當挑戰性之工程，施工過程除以地質改良提高土壤強度外、同時於先行隧道內架設內支撐系統，經各單位人員通力合作下，施工結果地表沉陷量亦都控制在契約規定40mm之管理值內，相關作業均如期如質完成，並獲得各單位的肯定。



環狀線CF643A標獲頒第17屆公共工程金質獎土木類第一級優等

Works on Circular Line Contract CF640 and Subcontract CF643A Won Awards at the 17th Public Works Golden Quality Award for First Class Civil Engineering

Works on Circular line contract CF640 and subcontract CF643A have already won 2017 Taipei City Government (6th Annual) Public Works Excellence Awards and first prizes in Public Works Civil Engineering at the 19th annual Golden Award for Architecture. However, at the end of 2017, they were also granted awards at the Public Construction Commission, Executive Yuan 17th Public Works Golden Quality Award for first class civil engineering.

The primary route for Circular line subcontract CF643A runs eastwards from Y6 station located at the intersection of Zhongxing Rd. and Minquan Rd. of the Xindian District. It is an underground type structure which follows westbound along Minquan Rd., and after crossing Zhongzheng Rd., it stops at the daylighting section of the west side of Zhongzheng Rd. stretching a length of 1.65km, the scope of construction work is located in dense and narrow road in Xindian District, and during each stage of construction there were many challenges from adverse construction conditions resulting from narrow roads and neighboring buildings.

This was especially the case with the shield tunnel of this contract, which passes through Dapinglin Station on the Xindian line, and in accordance with contract regulations for Danpinglin Station (G04), during the construction process the subsidence was required to be controlled within 1cm. Therefore, during the construction procedures, new construction technology was introduced to match the rigorous automatic monitoring and management system for the duration of the construction and the outstanding construction management. Because the maximum amount of subsidence caused by the passing of the shield tunnel in the base of station G4 was 8.71mm, it was a considerably success in the domestic engineering world that for the first time a shield tunnel crossed an MRT station that was in operation.

In addition, for the construction of normal shield tunnels, the space between the two tunnels must be a two times of diameter or more and 6m larger than the shield tunnel drilling. However, this shield tunnel was only 2.5m at its narrowest point, and the depth of cover soil was also less than 6m. The construction, therefore, had the double risks of proximity and shallowness, giving it a high degree of difficulty, and making it a considerably challenging construction project. During the process of construction, in addition to geological improvement to increase soil strength, an internal support system was also simultaneously set up in the first tunnel, and through the collective efforts of all of the personnel, the surface subsidence was kept within the contractual management value of 40mm. The related tasks were completed on schedule and in accordance with quality standards and won the approval of all of the construction units.