前言

Preface

淡江大橋為未來台灣北部地區可連接台 2 線、台 15 線、台 61 線 (西濱快速公路) 及台 64 線 (八里新店線快速公路) 之重要橋梁，並可利用台 64 線銜接國道高速公路系統。完工通車後可大幅縮短淡水與八里兩地之通勤距離，健全北部濱海地區高快速路網系統，改善淡海新市鎮聯外交通與台 2 線竹圍路段、關渡大橋壅塞情形，並提供淡水、北海岸地區往來台北港、桃園機場及大台北都會區之便捷公路。本工程將與淡海輕軌運輸系統共構，除可改善現有交通問題外，亦兼具公共運輸發展，並可串聯淡水河兩岸觀光遊憩活動及促進台北港特定區開發。主橋之設計將融合淡水夕照美景，形塑「淡水夕照新風貌，國家門戶新地標」。

歷經一年嚴謹之國際競圖作業，終於評選出首獎作品，本簡冊內容概述競圖內容相關訊息與辦理過程，並收錄了六個得獎團隊的設計創意精彩作品精選， 歡迎您與我們見證淡水風貌銳變的契機，與國家門戶新地標的誕生！

The future Danjiang Bridge will be an important bridge providing the critical link to a network of roads of northern Taiwan area consisting of Provincial Highway No.2, No.15, No.61 (West Coast Expressway) and No.64 (Bali-Xindian Expressway), including connection to the national highway system via Hwy. No. 64. Upon completion, the commuting distance between Tamsui and Bali will be dramatically reduced, and the northern Taiwan coastal highway/expressway road system will become more comprehensive. In addition, this convenient new route from Tamsui and the northern coast to Taipei Port, Taoyuan International Airport and metropolitan Taipei will improve Danhai New Town's external connection and alleviate congestion at Guandu Bridge and the Zhuwei section of Provincial Hwy. No.2. Together with the planned Danhai light rail system, Danjiang Bridge will contribute to the development of public transportation aside from improving existing traffic issues. It will also create synergy between recreational activities along the shores of Tamsui River and foster growth of the Taipei Port District. The design will integrate the fantastic Tamsui sunset and help make Danjiang Bridge a proud new landmark in Taiwan against the backdrop of Tamsui's famous sunset.

After one year rigorous process of international competition, the winner was selected. This concise album consists not only the project related contents and competition process stages but also the brilliant design proposals from outstanding awarded teams. Together, we will eye witness the turning-point of the transformation of Tamsui scene and the birth of new national gateway.

交通部公路總局西部濱海公路北區臨時工程處 謹誌
West Coast Expressway Northern Region Temporary Engineering Office,
Directorate General of Highways, MOTC

基地範圍及工程概要

The Scope and the Project Outline

工作範圍 Scope

工程位置說明

淡江大橋全線規劃位置 (2K+146~8K+165) 位於淡水河口，連接西部濱海公路之台 2 線、台 15 線、台 61 線西濱快速公路及台 64 線八里新店線快速公路，如下圖。

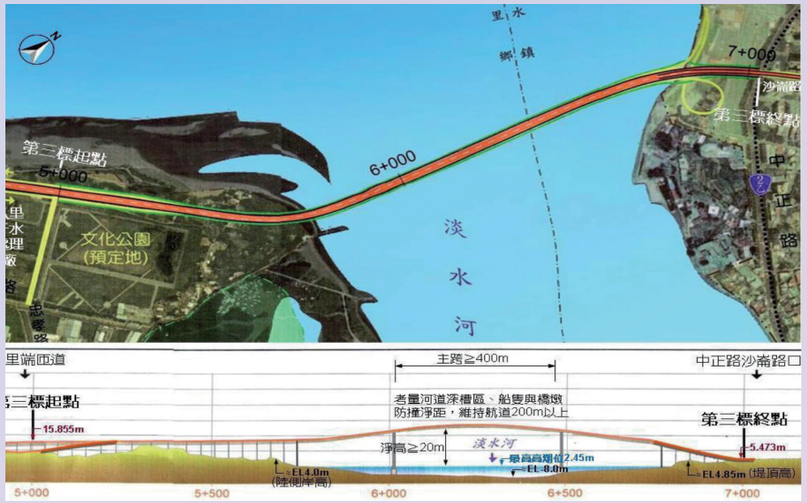
路線南起臺北港聯外道路 (台 61 甲線)，北迄至未來淡海新市鎮 1-3 道路止，全長約 6 公里，工程標別分為 - 第一標：臨港大道段，長約 0.46 公里；第二標：八里連絡道段 (長約 2.44 公里) 與淡水連絡道段 (長約 1.2 公里)；第三標：淡江大橋主橋段，長約 2 公里 (內含約 0.9 公里跨河主橋)，如下圖所示。本計畫為辦理淡江大橋工程之主橋段 (第 3 標) 工程。

Project Location

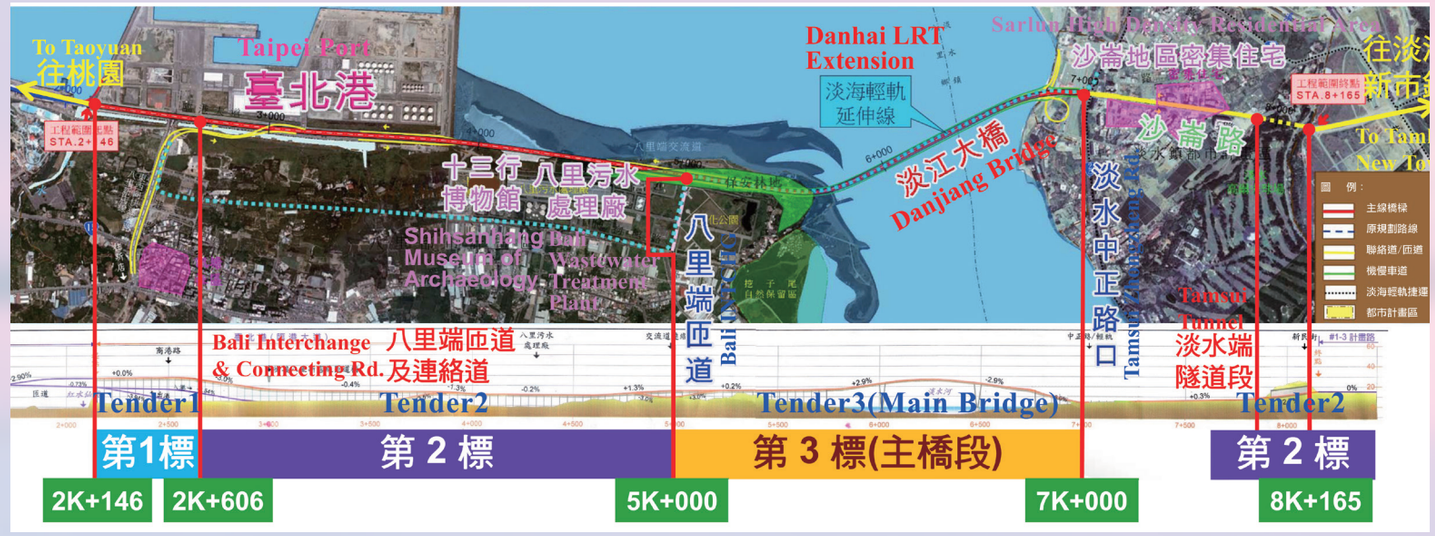
The full stretch of Danjiang Bridge (2K+146~8K+165) is located at the mouth of Tamsui River and will link Provincial Highway No.2, No.15, No.61 (Xibin Highway) and No.64 (Bali-Xindian Highway), which form part of the West Coast Expressway network (see illustration below).

With total lenth of 6 km, within the domain of way boundary line, the route begins from the Taipei Port external road (Provincial Highway No.61-Gia) to the south and extends northward to the future Danhai New Town Rd. No.1-3. The procurement is divided into three tenders.

Tender 1 comprises the Port Avenue Section with a distance of roughly 0.46 km. Tender 2 comprises the Bali Connection Road with a distance of roughly 2.44 km and Tamsui Connection Road with a distance of roughly 1.2 km. Tender 3 comprises Danjiang Bridge with a distance of roughly 2 km (including the 0.9 km river-crossing main bridge), as shown in following Fig . This Project pertains to Tender 3 - the main bridge of Danjiang Bridge.



←第三標示意圖
Tender 3 division of Danjiang Bridge



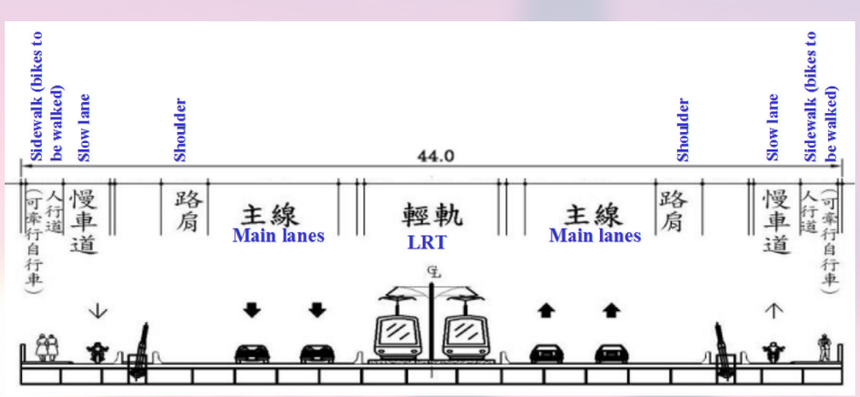
↑淡江大橋分標示意圖
Procurement division of Danjiang Bridge

工程概要 Project Outline

本 (第三) 標工程為 5K+000~7K+000（備註：實際里程範圍將視設計階段之界面協調決定），路線與交流道規劃分段，依據建設計畫內容及環差報告說明如下：

1. 八里端匝道及引橋段 (約為 5K+000~5K+800)
   八里端匝道為簡易鑽石型佈設，銜接八里污水廠及文化公園間既有道路，並於中央預留輕軌運輸系統共構空間。八里端引橋段自八里端匝道 (5K+050)，以橋梁型式興建沿文化公園海側高灘地，並持續東北行至淡江大橋南端 (5k+800)。本路段主線採單向各二車道，中央為八里輕軌延伸線，外側為上下匝道及機車、自行車道。

2. 淡江大橋主橋段 (約為 5K+800~6K+700)
   淡江大橋主橋長度約 900m，橋梁主跨至少 400m 長、航道淨高至少 20m，除需考慮公路運具，亦須考慮「淡海輕軌運輸系統八里延伸線」，橋梁載重應先行納入輕軌荷重進行橋梁結構設計，並符合各種位移限制，以確保列車運轉安全及旅客舒適性要求。主橋總寬為 44.0m 之斷面配置，於中央留設 8 公尺之輕軌共構空間，兩側各配置 2 線快車道、1 線機慢車道及人行道，如下圖，並需符合環境影響差異分析報告承諾事項。



←斷面配置圖
Bridge section

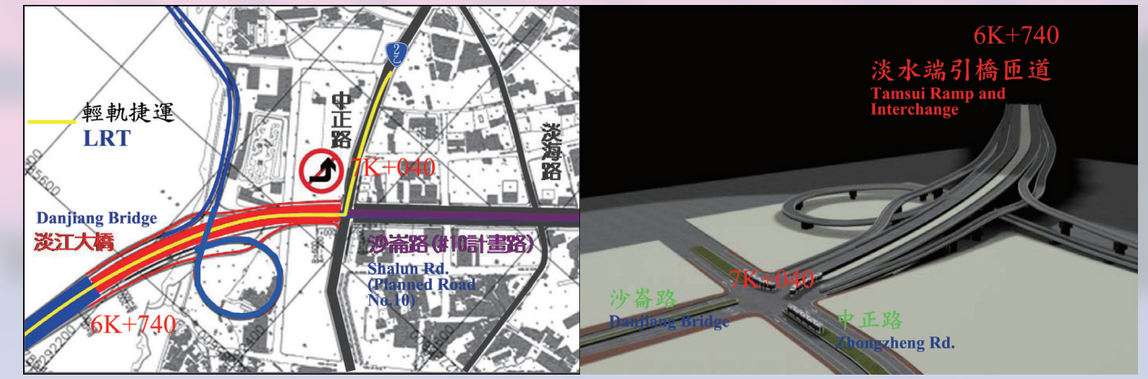
3. 淡水端引橋及匝道 (約為 6K+700~7K+000)：自淡江大橋北端至中正路口
   主線車道於淡江大橋主橋跨越淡水河口後分為內外側車道兩部分，中央車道雙向各 2 車道與預留輕軌運輸系統至沙崙路中正路口 (7K+040) 前下降至平面。下橋匝道並增設 1 右轉車道，提供往淡水老街及鄰近地區之轉向服務；原路口左轉往淡海及沙崙海水浴場方向之車流，於橋上及設置匝環道 (濱海匝道) 由主橋端接至既有道路。如右圖。

Tender 3 comprises the 5K+000~7K+000 (note: The route lenth shall be decided by the interface coordinating meeting in design stage.) section with planning for its route and interchange detailed below:

1.Bali interchange and ramp section (about 5K+000~5K+800)
The Bali interchange has a simplified diamond configuration and links existing roads around the Bali Wastewater Treatment Plant and Cultural Park. An 8-m wide lane is reserved at the center of the bridge for the Danhai LRT. The Bali Interchange is a bridge that links the Bali Interchange (5K+050) along the coastal highland at the Cultural Park northeastward to the south end of Danjiang Bridge (5k+800). This section contains two lanes in each direction with the LRT Bali Extension lane at center. On-off Ramp section at the outer side of bridge contains two lanes (one fast and one slow) in each direction.

2.Main section of Danjiang Bridge (about 5K+800~6K+700)
The main section of Danjiang Bridge is roughly 900 m long, with a minimum span of 400 m wide, and a minimum below-bridge ship clearance of 20 m. The factors of road vehicles and “Danhai LRT System Project Bali Extension” shall be taken into design consideration. The structural calculations must take loading from LRT System and comply with all kinds of limitation of displacement to ensure the safety of train operation and requirement of passenger comfortableness. The total width of the bridge is 44.0 m, with 8 m reserved in the center for LRT and 2 fast lanes, 1 slow lane and a sidewalk in each direction as per following Fig. The Review Comments and Committed Items on the Differential EIA Report must also be complied.

3.Tamsui Ramp and Interchange (6K+700~7K+000): From the north end of Danjiang Bridge to Zhongzheng Rd.
After Danjiand Bridge has crossed over the mouth of Tamsui River, the main road lane will be divided into inner and outer side lanes.
The central road lane (with two lanes on each side) and LRT tracks will descend down to plane level before the Shalun-Zhongzheng intersection (7K+040). A right-turn lane is added at the off-ramp to access the Tamsui Historical Street and neighboring areas. The original left-turn traffic to Danhai and Shalun Beach is directed to a new circular off-ramp (Binhai Interchange) that bypasses below the bridge to link to the existing road.



↑淡水端引橋及匝道示意圖 Tamsui Ramp and Interchange

競圖時程紀實

Timetable & Activities

推廣階段
Promotion Stage
2014/10/24~2015/01/21

本案為廣邀國際及國內傑出橋梁設計專業團隊參與競圖，分別辦理國內及國外之招商說明會：
In order to widely invite bridge design professional teams from all over the world to participate in this competition, the Entity conducted many national and foreign promotion conferences:

1. 國內說明會
National Promotion Conferences

城市 City	說明會辦理日期 Conducted Date	地點 Place
臺北（第一場） Taipei (First Conference)	2014年10月24日 2014/10/24	臺北國際會議中心 Taipei International Convention Center
臺北（第二場） Taipei (Second Conference)	2015年1月21日 2015/01/21	臺北國際會議中心 Taipei International Convention Center

2. 國際說明
Foreign Promotion Conferences

區域 District	國家/城市 Country/City	說明會辦理日期 Conducted Date	地點 Place
歐洲 Europe	德國 漢堡 Hamburg, Germany	2014年12月19日 2014/12/19	漢堡愛麗舍飯店 Grand Elysee Hamburg
亞洲 Asia	日本 東京 Tokyo, Japan	2015年1月9日 2015/01/09	東急飯店 The Capitol Hitel Tokyu
美洲 America	美國 舊金山 San Francisco, USA	2015年1月14日 2015/01/14	舊金山聯合廣場希爾頓酒店 Hilton San Fracisco Union Square

公告階段
Public Announcement
2015/02/17~2015/04/29

1 公告
Announcement of RFP 2015/02/17

・上網公開招標（www.djcomp.com.tw）
・ Tender announcement.（www.djcomp.com.tw）

2 領取競圖資料
Obtaining the RFP 2015/02/17 ~ 2015/04/29

A.網站領標： www.djcomp.com.tw。
B.電子領標：至政府電子採購網 http://web.pcc.gov.tw/ 領標。
A.Obtaining the RFP from the website: Available at www.djcomp.com.tw
B. Obtaining the RFP electronically: Available at the Governmente-Procurement System: http://web.pcc.gov.tw/

3 提出問題截止日
Deadline for Submitting Question about the RFP 2015/03/09

・投標廠商可於截止日前提出相關問題。
・ Tenderer could submit competition related questions before the deadline.

4 問題回答
Questions Answering Date 2015/04/02

・統一於網站上公佈答覆內容
・ Answers to submitted questions were published altogether on the competition website.

資格審查階段
Qualification Review Stage
2015/04/30 ~ 2015/05/06

5 繳交投標文件
Tender Submission Deadline 2015/04/30

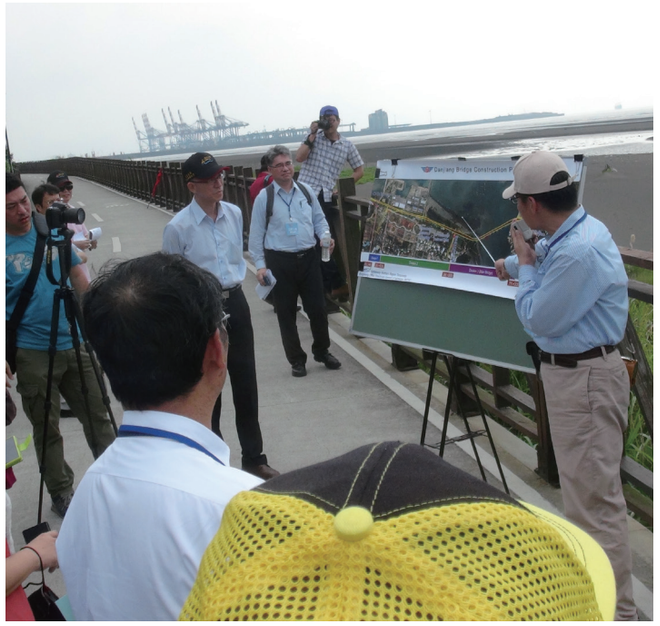
・投標廠商須於截止日前寄達「資格證明文件」與「淡江大橋橋型評選委員會審查樣品書圖」20份
・ The tenderer must submit tenderer qualification documents and 20 copies of DBPEC Bridge Profile Design Sample/Proposal prior to the submission deadline.

6 基本及特定資格審查
Basic & Specific Qualification Review : 2015/04/30

・共計有8組國際團隊投標，6組團隊通過審查。
・ 8 international tender teams participated in this competition. Six of them passed the review.

7 淡江大橋橋型評選委員會審查樣品書圖
DBPEC Bridge Profile Design Sample/ Proposal review:2015/05/04 ~ 2015/05/06

・6組國際團隊親自到台灣，面對評審簡報橋型初步設計。
・ 6 international tender teams arrived in Taiwan in person to conducted presentation of bridge profile preliminary design to jury.



8 公佈資格審查結果
Announcement of Qualification Review : 2015/05/08

・資格審查通過名單出爐，並於網站上公佈審查結果。
・The result of qualification review was announced and posted on the website.
・資格審查通過名單：（代表廠商）
— 亞新工程顧問股份有限公司（中華民國）
— Oriental Consultants Co., Ltd.（日本）
— 中興工程顧問股份有限公司 （中華民國）
— PACIFIC CONSULTANTS CO., LTD.（日本）
— 香港商艾奕康股份有限公司台灣分公司（美國）
— 台灣世曦工程顧問股份有限公司（中華民國）
・Qualified Tenderers：(Representative Tenderer)
— MAA Group Consulting Engineers (R.O.C.)
— Oriental Consultants Co., Ltd. (Japan)
— Sinotech Engineering Consultants, Ltd. (R.O.C.)
— PACIFIC CONSULTANTS CO., LTD. (Japan)
— AECOM ASIA COMPANY LIMITED (U.S.A.)
— CECI Engineering Consultants, Inc., Taiwan (R.O.C.)

9 入圍者基地探勘
Site visit 2015/06/01

・邀請六組資格審查合格團隊赴基地現場勘查，並聽取主辦單位的基地簡報、採購評選注意事項等。
・Six qualified tenderers were invited to conduct a site visit & had a meeting with the Entity, who explained the project site and procurement evaluation.

採購評選階段
Procurement Evaluation Stage
2015/08/03~2015/08/12

10 繳交規格投標文件
Specification Submission Deadline 2015/08/03

- 合格廠商應提送規格審查資料。
- The qualified tenderers were required to submit the additional specification documents.

11 規格標審查
Specification Review 2015/08/03

- 六組合格團隊通過規格標審查。
- Six qualified Tenderers passed the qualification review.

12 採購評選
Procurement Evaluation: 2015/08/10~08/12

- 每組團隊在約90分鐘內，以圖板、模型直接向評審團提出簡報。
- 評審以序位法，依招標內容進行評比。
- Each of the qualified tenderers delivered a presentation to the jury with materials including design drawings, models, and animations within about 90 minutes .
- The tenderers were ranked by jury based on design content,creativity, team profile, ...etc.

13 公佈評選結果
Announcement of the Winners 2015/08/12

- 最後以臺灣的投標廠商：中興工程顧問股份有限公司及共同投標團隊：德國的Leonhardt Andra und Partner Beratende Ingenieure VBI AG 奪得第一名，本案最特別的是與獲得2004年普立茲克建築獎的伊拉克裔國際知名建築師Zaha Hadid 合作設計，以淡水地方雲門舞者柔軟的身影為設計概念，創造出「寧靜的舞者」流線橋型，橋型與夕照共融，其作品深獲評審青睞而獲得第一名。
- Representative Tenderer: Sinotech Engineering Consultants, Ltd.(R.O.C.) and Joint Tenderer: Leonhardt Andra und Partner Beratende Ingenieure VBI AG (Germany) won First Prize. In particular,the team cooperated with the 2004 Pritzker Architecture Prize winner Zaha Hadid architect. The key design concept was the soft dancer's figure of Cloud Gate and created "The serene dancer" romantic streamline bridge profile. The design goal was the co-fusion of bridge profile and Tansui Sunset. Finally, the project was highly appreciated by all of jury members and won the first prize.
- 2015/08/12下午4時隨即舉辦記者會，由評審主席楊永斌宣佈首獎得主。
- A press conference was held in the afternoon of 2015/08/12,where the Jury Chair Mr. Yang, Yong-Bin announced the First Prize winner.

後續活動階段
Follow-up Activities

14 「淡江大橋」國際競圖得獎作品展（淡水場）
Danjiang Bridge International CompetitionAward-Winning Projects Exhibition (Tamsui)

展出時間：2015年8月29日~ 2015年9月4日
展出地點：新北市淡水區淡水文化園區
（C棟藝文展演空間）
Date: 2015/8/29~ 2015/9/4
Location: Building C, Cultural Exhibition Area (Shell Warehouse),Tamsui Cultural Park, Tamsui District, New Taipei City

15 「淡江大橋」國際競圖得獎作品展（八里場）
Danjiang Bridge International Competition Award-Winning Projects Exhibition (Bali)

舉辦時間：2015年9月19日~2015年9月25日
舉辦地點：新北市八里區中庄活動中心（四樓展覽廳）
Date: 2015/9/19~2015/9/25
Location: 4F Exhibition Center, Zhuang Community Center, Bali District, New Taipei City

評選委員簡介
The Jury

專家委員

楊永斌（召集人）
台灣大學土木系終身特聘教授
奧地利國家科學院院士

Prof. Frieder Seible（美國籍）
Monash University 副校長（專長結構模式模擬與分析）
美國國家工程學院院士
曾任美國加州大學聖地牙哥分校工學院院長

Prof. Edward John Jaselskis（美國籍）
North Carolina State University
土木與環境工程學系教授（專長營建管理）

張基義
交通大學建築研究所教授
前台東縣副縣長（兼）文化處處長
交通大學建築研究所所長

黃煌煇
成功大學水利及海洋工程學系教授
國家工學博士
成功大學前校長

機關委員

夏明勝（副召集人）
公路總局副局長

高宗正
新北市副市長

徐景文
行政院公共工程委員會技術處處長

鄧文廣
公路總局副總工程司兼代新工組組長

陳美秀
觀光局北海岸及觀音山國家風景區管理處處長

地方文史藝術 工作者

蘇文魁
淡江中學校史館館長

謝德錫
殼牌故事館館長
淡水文化基金會常務董事

周宗賢
淡江大學歷史學系榮譽教授

張寶釧
曾任淡水古蹟博物館館長
台北縣文化局主任祕書

楊正雍
楊正雍陶藝工作室創辦人
本土陶藝家

First Prize
第一名

代表廠商 Representative Tenderer

中興工程顧問股份有限公司（國籍：中華民國）

Sinotech Engineering Consultants, Ltd. (**Nationality: R.O.C.**)

共同投標廠商 Joint Tenderer

Leonhardt Andrä und Partner Beratende Ingenieure VBI AG（國籍：德國 **Nationality: Germany**）

計畫團隊 Project Team

扎哈－哈迪德建築師事務所（國籍：英國）

Zaha Hadid Architects (**Nationality: United Kingdom**)

設計概念
Design Concepts

創意橋型及內涵

淡江大橋：寧靜的舞者

單塔造型與淡水夕陽及觀音山互相眺望

建築藝術與地區文化精神緊密結合

全世界最長跨度之不對稱斜張橋

在地文化和設計連結

單一橋塔位置：從老街及重要景點均有清晰的日落景致、從漁人碼頭回望觀音山清晰的山形

與在地社區融合：景觀和燈光

觀景平台：在白天給行人和單車騎士提供休憩的場所、在傍晚欣賞日落景致的絕佳場所

Creative Bridge Profile and Connotation

Danjiang Bridge—The serene dancer

Single Tower in Harmony with the Sunset View and Mt. Guanyin

Blending Architectural Art into the Spirit of Regional Culture

The World's Longest Asymmetrical Cable-Stayed Bridge

Connection between local culture and design

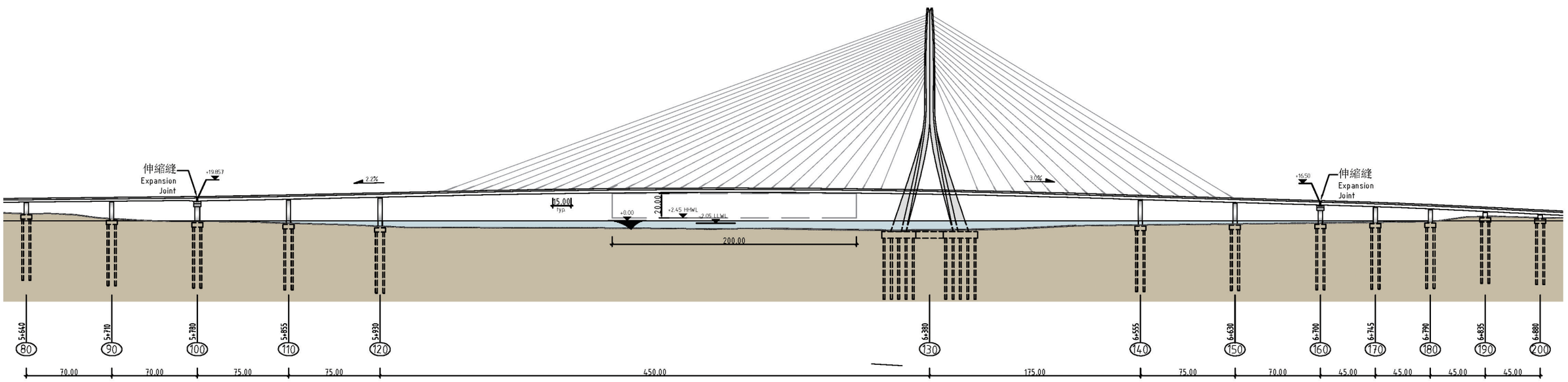
Positioning of the single mast: clear view of the sunset from Old Street and other key locations and unobstructed view of Mount Guanyin from Fishermen Village

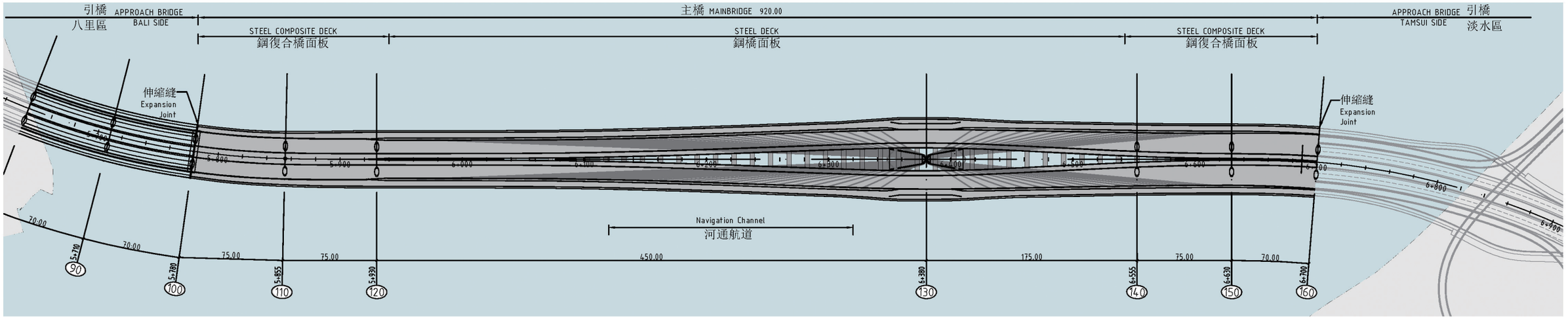
Integration of local communities: landscape and lighting

Viewing platform: a resting place for cyclists and pedestrians during the day and a prime location to admire the sunset at dusk.

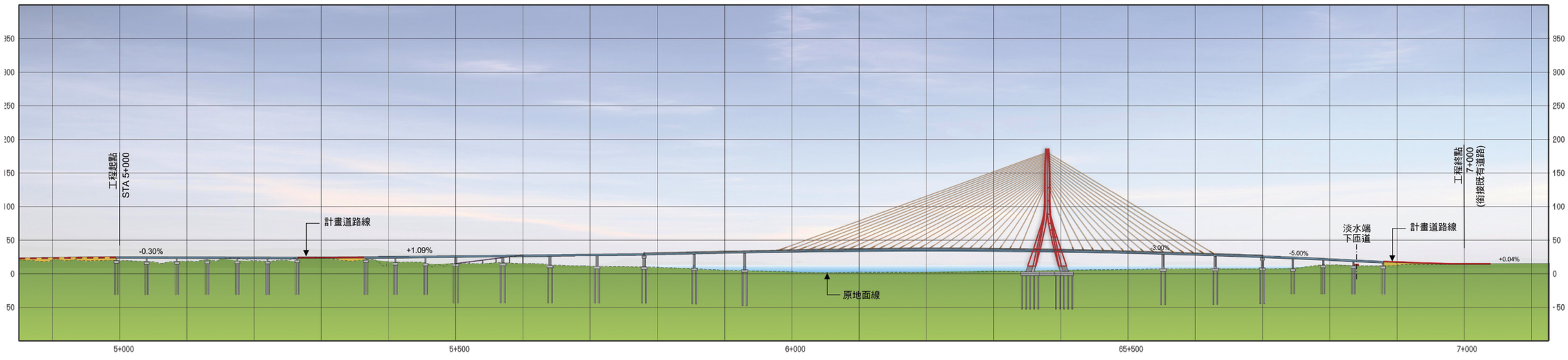
淡江大橋 | Danjiang Bridge

橋樑全區配置暨平面和立面設計 Bridge Plan & Elevation Design





全區平立面設計 Site Plan and Elevation Design



Second Prize
第二名

代表廠商 Representative Tenderer

台灣世曦工程顧問股份有限公司（國籍：中華民國）

CECI Engineering Consultants, Inc., Taiwan (Nationality: R.O.C.)

共同投標廠商 Joint Tenderer

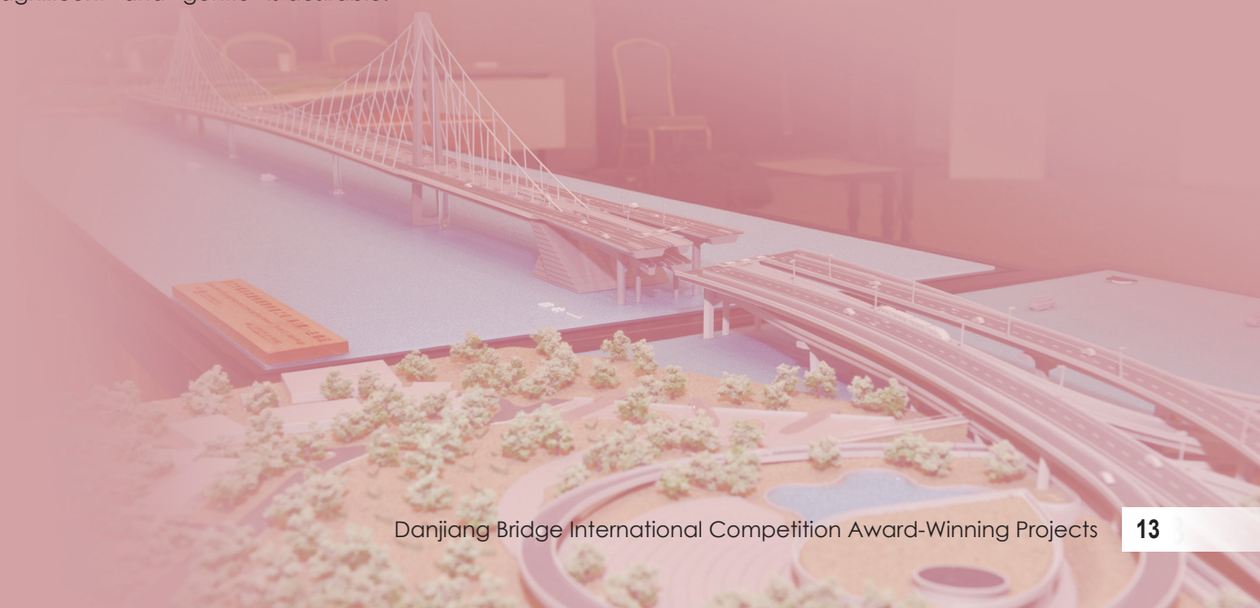
NIPPON ENGINEERING CONSULTANTS CO., LTD.（國籍：日本 Nationality: Japan）

設計概念
Design Concepts

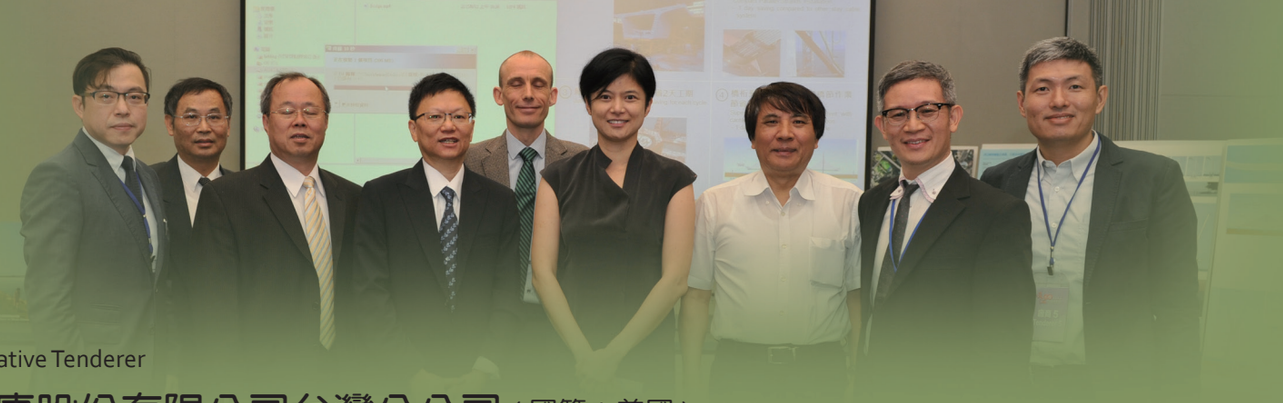
主橋設計意涵

諧和融入廣闊開展河口與山巒遠景天際線所構築的豐沛自然景觀，串聯橋址及兩岸的過去、現在與未來，設定「延伸—共存—連接」作為概念關鍵詞；橋型具雄偉尺度而能展現開展大器形態之門戶意象，並與橋址自然景觀相稱。

The bridge merges with the rich natural landscape which consists of wide estuary and the skyline of distant mountains. On the other hand, considering the past, the present and the future prospect, the concept keywords of “EXTENSION – SYMBIOSIS – CONNECTION” has been set for the project. From these factors, we think bridge type of “magnificent” and “gentle” is desirable.



Third Prize
第三名

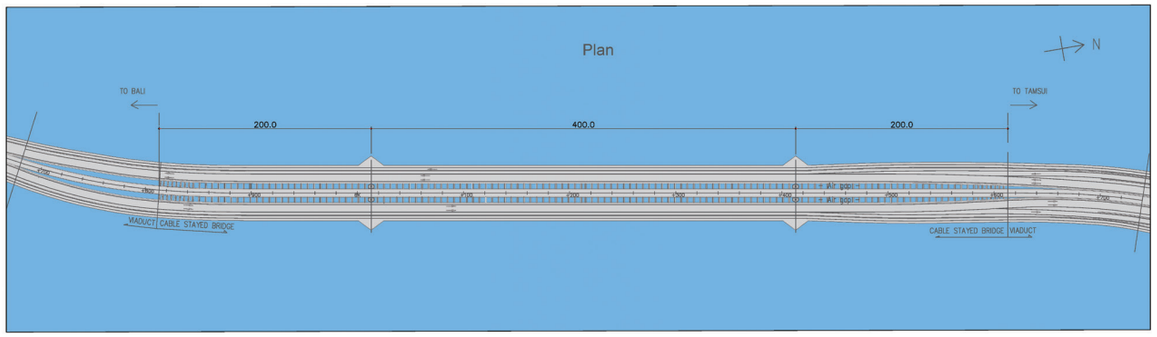


代表廠商 Representative Tenderer
香港商艾奕康股份有限公司台灣分公司（國籍：美國）
AECOM ASIA COMPANY LIMITED (Nationality: U.S.A.)
共同投標廠商 Joint Tenderer
萬鼎工程服務股份有限公司（國籍：中華民國）
Resources Engineering Services Inc. (Nationality: R.O.C.)

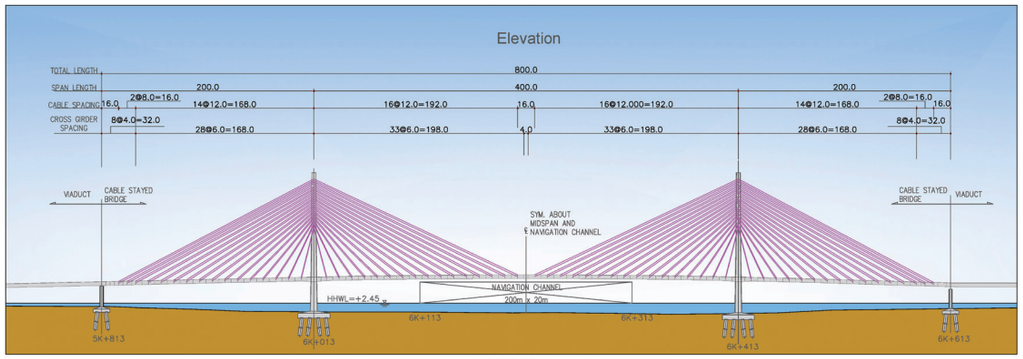
設計概念
Design Concepts

通透 是我們對河口文化地景最誠心的承諾

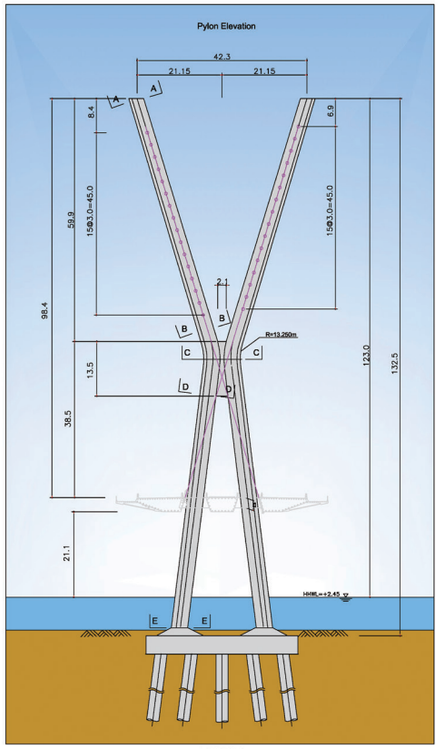
Transparency is the most sincere commitment we have for the culture and scenery along the river



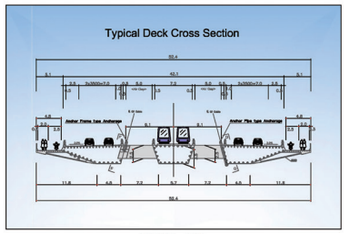
主橋平面圖



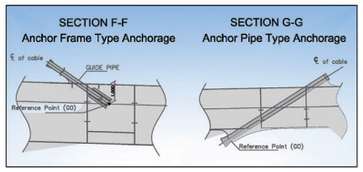
主橋立面圖



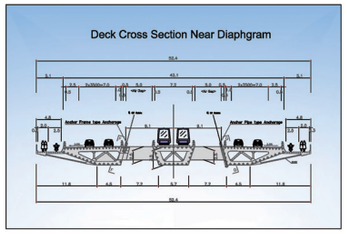
橋塔結構立面圖



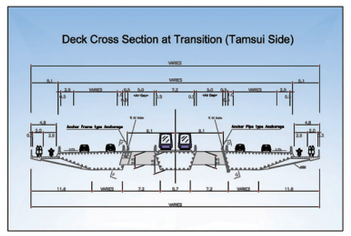
橋桁剖圖（標準）



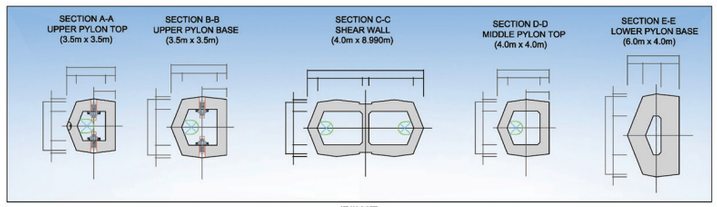
斜張吊索錨定圖



橋桁剖圖（橫梁段）



橋桁剖圖（漸變段）



橋塔剖圖

模型圖 Bridge Scheme

Fourth Prize
第四名

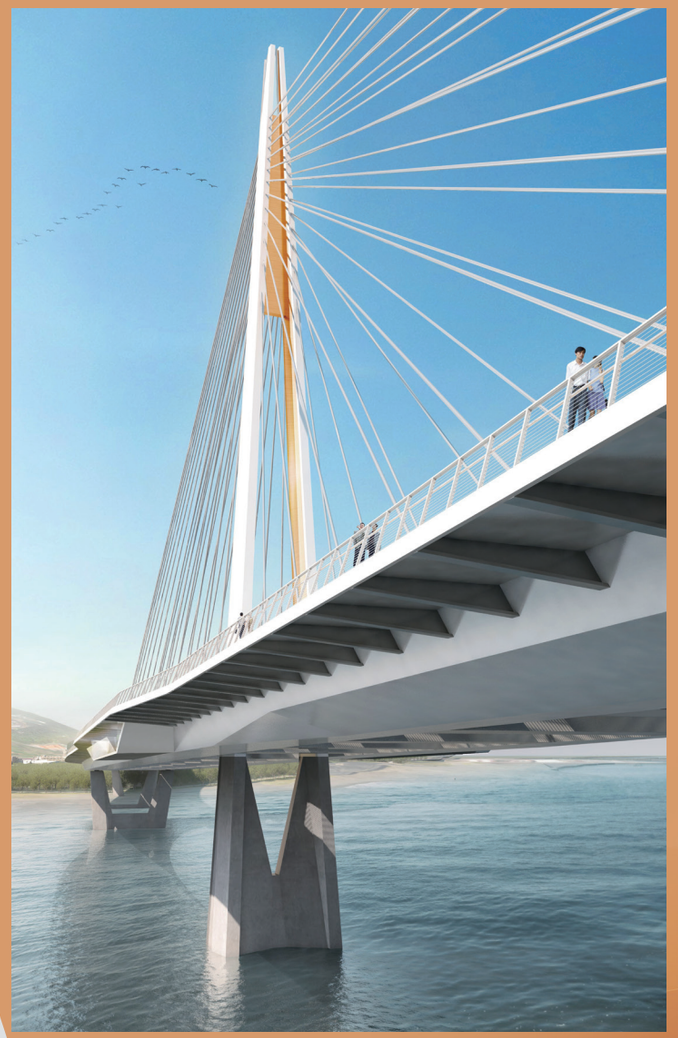
代表廠商 Representative Tenderer

亞新工程顧問股份有限公司（國籍：中華民國）

MAA Group Consulting Engineers (Nationality: R.O.C.)

共同投標廠商 Joint Tenderer

COWI A/S（國籍：丹麥 Nationality: Denmark）



設計概念
Design Concepts

願景：國家門戶新地標 - 淡水夕照新風貌

Vision: A New Landmark of Taiwan – A New Scenic View of Tamsui Sunset

Fifth Prize
第五名

代表廠商 Representative Tenderer

Oriental Consultants Co., Ltd.（國籍：日本 **Nationality: Japan**）

共同投標廠商 Joint Tenderer

泰興工程顧問股份有限公司（國籍：中華民國）

Pacific Engineers & Constructors, Ltd. (**Nationality: R.O.C.**)

Pyunghwa Engineering Consultants Ltd.（國籍：韓國 **Nationality: Korea**）

俯視
Bird's-eye view

Fifth Prize
第五名

代表廠商 Representative Tenderer

PACIFIC CONSULTANTS CO., LTD.（國籍：日本 **Nationality: Japan**）

共同投標廠商 Joint Tenderer

台聯工程顧問股份有限公司（國籍：中華民國）

Taiwan Engineering Consultants Group (**Nationality: R.O.C.**)

禹安工程顧問股份有限公司（國籍：中華民國）

Yuang Engineering Consultants, LTD. (**Nationality: R.O.C.**)