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桃園國際機場第三航站區 委託總顧問技術服務之工作項目(草案)

Scope of Work for the Technical Service of General Consultancy Services (Draft)

1 工作項目 Scope of Work

1.1 總顧問之工作說明

General Description of the General Consultant (GC)

總顧問之工作為協助機場公司管理第三航站區發展專案之實施，以確保專案可順利推動執行，其主要工作項目包含以下三點：

- 第三航站區綜合規劃作業
- 環境影響評估作業
- 設計與施工階段之專案管理作業

前述作業事項於本文件 1.2-1.4 列有概略說明。

第三航站區發展專案共分為 2 階段執行。第一階段為「規劃階段」，內容包含綜合規劃作業與環境影響評估作業；第二階段為「設計與施工階段」，內容包含設計、施工與試營運等。於第一階段中，總顧問將作為專業技術顧問或工程師，辦理第三航站區綜合規劃；於第二階段中，總顧問將協助機場公司，管理開發第三航站區設計與建設之期程、預算、品質等各項目。

GC will assist Taoyuan International Airport Corporation Ltd (TAC) in managing the Taoyuan International Airport Terminal 3 Area Development Project (the T3 Project) implementation to ensure the successful completion of the T3 project. GC Services will consist of three general functions:

- Master Planning of the Terminal 3 Area
- Environment Impact Analysis
- Project Management in the Stage of Design and Construction

These services are outlines in 1.2-1.4 of this document.

The T3 Project consists of two phases. The 1st phase is “Planning Phase”, it includes “Terminal Area Master Planning” and “EIA”, and the 2nd phase is “Design ~ Construction phase” which includes “design”, “construction” and “commissioning”. In the 1st phase GC shall serve as professional consultant / engineer to create the master plan for T3 Project. While, in the 2nd phase the GC shall serve as TAC’s representative who will manage schedule, budget and quality of the design and construction work in the T3 Area Development Project.



1.2 航站區綜合規劃

Terminal Area Master Planning

1.2.1 航站區綜合規劃之說明

General Description of the Terminal Area Master Planning

航站區綜合規劃位處綱要計畫與建築設計階段之間，其功能為定義第三航站區發展專案之詳細內容，並針對各主要設施規劃明確之開發概念、設施量體規模、功能需求及設計摘要。航站區綜合規劃中，亦應規劃各種系統計畫以滿足各設施之功能需求，同時建立可行之財務計畫。

總顧問應針對第三航站區及各設施之開發提供專業技術服務，並執行以下工作項目。

The Terminal Area Master Planning is a step between conceptual plan and architectural design to define details of all development projects in Terminal 3 Area. It requires a clear set of development concept, physical quantities, functional requirement and design brief that has been defined for the terminal and each of the major facilities in the Terminal3 Area. It also requires that advanced planning related to the functional requirements of every elements of the system has been completed, that the plan of finance is well established.

GC shall be served professional technical services to develop master plan for whole Terminal 3 area and each facility in the area. GC shall provide following tasks.

1.2.2 基地勘查與各類調查

Inspecting the Construction Site

a) 開發場址調查

Construction site survey

b) 工址地質調查

Geotechnical survey

c) 勘查開發場址之現狀結構與既有設施

Inspecting existing structure and facilities in construction site

1.2.3 航空運量預測與設施容量評估

Air Traffic Demand forecast and Airport Facilities Capacity Analysis

a) 航空運量分析

Air traffic demand analysis

b) 航空運量預測(年運量、尖峰運量等)

Air traffic demand forecast (annual traffic, peak traffic)

c) 空側設施之容量評估

Capacity assessment for airside facilities



- d) 陸側設施之容量評估
Capacity assessment for landside facilities
- e) 第三航站區各設施之容量規劃
Capacity planning for all facilities in Terminal 3 area

1.2.4 第三航站區各設施營運與開發構想

Operational Concept and Development Concept of the T3 Area

- a) 第三航廈與既有航廈之營運構想
Operational concept for Terminal3 and existing terminals
- b) 第三航站區之開發構想
Development concept for Terminal3 Area
- c) 各設施與系統之開發構想
Development concept for each construction items and systems
 - i. 第三航廈與候機廊廳
Terminal3 and concourse
 - ii. 第三航廈相關之空側設施
Airside facilities belong to Terminal3
 - iii. WC 滑行道
WC Taxiway
 - iv. 旅客運輸系統
People Mover Systems(PMS)
 - v. 地面運輸中心
Ground Transportation Center(GTC)
 - vi. 複合式商業設施
Commercial Building(CB)
 - vii. 交通動線
T3 Area's Road System
 - viii. 機場所有 IT 系統
All IT components in the airport

1.2.5 主要設施與設備之規劃圖說製作

Drawing the Master Plan of Facilities and Systems

- a) 第三航站區之綜合規劃圖說製作
Master plan of Terminal 3 area development
- b) 第三航廈與候機廊廳之綜合規劃圖說製作
(另包含空側設施、交通動線、旅客運輸系統及 WC 滑行道)
Master plan of Terminal 3 and concourse
(incl. related facilities : airside facilities, T3 area's road system, PMS and WC)



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- c) 地面運輸中心之綜合規劃圖說製作
Master plan of GTC
- d) 複合式商業設施之綜合規劃圖說製作
Master plan of CB
- e) 機場 IT 系統之綜合規劃圖說製作
Master plan of IT components in the airport

1.2.6 建設計畫

Construction Planning

- a) 規劃第三航站區之開發期程計畫
Setting up the master schedule for all development in Terminal3 area
- b) 開發期程計畫之風險評估
Risk analysis for master schedule
- c) 規劃階段性施工計畫與協調作業
Construction phasing and coordination
- d) 建設量體與費用評估
Estimation of construction volume and expense

1.2.7 財務規劃

Financial Planning

- a) 建立財務模型與基本假設
Evaluate financial model and the assumptions
- b) 以分析性測試及敏感度分析評估計畫之財務可行性
Assess the financial feasibility of whole development by performing analytical test and sensitive analysis
- c) 評估並量化建設所需資金
Quantify the amount of funding required to implementation
- d) 考量及分析資金籌措方案
Consider and analyze options of financial resources to implement the development

1.2.8 撰寫重大建設計畫並協助送審交通部

Submit the Planning Report (Incl. Construction Plan and Financial Plan) to MOTC for Approval



1.3 環境影響評估

Environmental Impact Analysis (EIA)

1.3.1 環境影響評估之工作說明

General Description of the EIA

環境影響評估作業及環評報告均須依據我國環境影響評估法與相關施行細則進行，且環評報告必須呈行政院環境保護署核定。因此，總顧問須代表機場公司呈交環評報告予環保署，並包含以下工作事項。

Environmental Impact Analysis and its report must follow Environmental Impact Analysis Act and related rules in Taiwan. Furthermore, EIA report must be submitted and approved by Environmental Protection Administration, Executive Yuan. Therefore, GC shall implement EIA and related survey behalf of TAC to submit the report to EPA. GC shall provide following tasks.

1.3.2 專案背景及內容概述

Project Description

1.3.3 環境現況調查

Environment Description

1.3.4 環境影響預測、分析及評定

Assessment of Anticipated Environment Impact

1.3.5 減輕或避免環境影響之因應對策

Mitigation Measures for Anticipated Environment Impact

1.3.6 替代方案分析

Alternatives Analysis

1.3.7 建立綜合環境管理計畫

Developing Environment Management Program

1.3.8 撰寫環評報告並協助送審環保署

Submit the EIA Report to EPA (Environmental Protection Administration) for approval

1.4 專案管理

Project Management

1.4.1 專案管理之工作說明

General Description of the Project Management

總顧問作為機場公司之代表，應確保其獨立性質及所提供服務之成本效益；於第三航站區開發專案中，必須協調、整合與管理各專業團隊，控制整體專案成本，並審查所有招標文件內所估列費用，以確保專案由啟動至完工間均滿足所有目標與規定。



總顧問應履行下述所有工作項目，同時為掌控專案執行效率與確保可及時完工，應提供必要之相關服務。總顧問應作為機場公司之委任代表，並依循議定之行政程序，針對參與專案之建築工程師、建設承包商、建設監造商、供應商及其它參成員負指導、協調、監督及管理之責。

GC, both acting on behalf of and representing TAC, has the duty of providing a cost effective and independent service correlating, integrating and managing different disciplines and expertise, controlling overall project cost, reviewing all cost estimates of the bidding documents, to satisfy the objectives and provisions of the T3 Project from inception to completion.

GC shall perform all services described below, as well as related services necessary for the efficient and timely implementation of the T3 Project. GC shall act as the delegated representative of the TAC in matters related to the T3 Project, and shall direct, coordinate, supervise and manage the architect engineers, construction and construction supervision contractors, suppliers and other parties on the TAC's behalf, in accordance with agreed administrative procedures.

1.4.2 採購策略建立

Procurement Strategy

a) 規劃建設分包並定義具體工作範圍

Planning construction packages and define its physical areas of work

b) 規劃主要設備與系統之採購分包

Planning purchase packages for major equipment and system category

c) 建立投標評估之程序

Establish tender evaluation procedures

d) 採購進度報告

Procurement progress reporting

e) 協助處理採購相關議題

Assist other procurement relevant issues

1.4.3 各階段招標、決標之諮詢及審查

Evaluation/Examination and Consultancy on Tender Process

a) 招標文件之準備或審查

Preparation and examination of tender documents

b) 協助辦理招標作業之招標文件之說明、澄清、補充或修正

Assistance in the handling of tendering procedure as regards the explaining, clarifying, supplementing or amending the invitation documents.



- c) 協助辦理投標廠商資格之訂定及審查作業
Assistance in the handling of tendering procedure as regards the formulation and examination process on the qualification of providers.
- d) 協助辦理投標文件之審查及評比
Assistance in the evaluation/examination of submission documents and the evaluation of tenders.
- e) 助辦理契約之簽訂
Assistance in the signing of contract.
- f) 協助辦理器材、設備、零件之採購
Assistance in the procurement of relevant materials, equipment and parts.
- g) 其他與招標、決標有關且載明於招標文件或契約之專案管理服務
Other project managements relevant to invitation to tender and awarding of tender prescribed in the tender documentation or contract.

1.4.4 設計之諮詢及審查

Design Consultancy and Examination

- a) 專業服務及技術服務廠商之工作成果審查、工作協調及督導
Evaluation/examination on the design results, coordination and supervision on the works of various professional services and technical services providers.
- b) 材料、設備系統選擇及採購時程之建議
Recommendation on the selection of materials, equipment system and the schedule of the procurement.
- c) 計畫總進度表之編擬
Formulation of the overall progress chart of the plan.
- d) 設計進度之管理及協調
Management and coordination of the progress of the design.
- e) 設計、規範與圖樣之審查及協調
Evaluation/examination and coordination of the design, specifications (including the specification guidelines) and drawings.
- f) 設計工作之品管及檢核
Quality control and acceptance check for the design.
- g) 施工可行性之審查及建議
Recommendation and evaluation/examination on the feasibility of construction implementation
- h) 專業服務及技術服務廠商服務費用計價作業之審核
Audit on the procedure as regards the calculation of service fees for professional and technical service provider.



- i) 發包預算之審查
Evaluation/examination and formulation of budget as regards the tender of construction project and equipment.
- j) 發包策略及分標原則之研訂或建議，或分標計畫之審查
Recommendation and formulation of tendering strategy and the principles of separate tender, or evaluation/examinations of separate tender plans.
- k) 文件檔案及工程管理資訊系統之建立
Establishment of document files and information system on construction management.
- l) 其他與設計有關且載明於招標文件或契約之專案管理服務
Other project managements relevant to the design prescribed in the tender documentation or contract.

1.4.5 施工督導與履約管理之諮詢及審查

Evaluation/examination and consultancy relating to the supervision of work and the management of contract performance

- a) 各工作項目界面之協調及整合
Coordination and consolidation of the interface of various work items.
- b) 施工計畫、品管計畫、預訂進度、施工圖、器材樣品及其他送審資料之複核
Audit of implementation plan, quality control plan, estimated schedule, work drawings, sample of materials and equipment and other materials submitted for examination.
- c) 重要分包廠商及設備製造商資歷之複核
Audit on the qualification of major sub-contractors and equipment manufacturers.
- d) 施工品質管理工作之稽核
Audit on the management of quality control of work.
- e) 工地安全衛生、交通維持及環境保護之稽核
Audit on the health and safety, maintenance of traffic and environmental protection at the construction site.
- f) 施工進度之查核、分析、督導及改善建議
Evaluation/examination, analysis, supervision and improving suggestions on the work schedule.
- g) 施工估驗計價之複核
Audit on changes in the construction expense
- h) 契約變更之處理及建議
Recommendation and handling of changes in the contract.
- i) 契約爭議與索賠案件之協助處理(但不包括擔任訴訟代理人)
Evaluation/examination and evaluation on claims and disputes over the contract,



excluding to be the legal representative.

j) 竣工圖及結算資料之複核

Audit on the drawing of the completed work and the information on settlement.

k) 給排水、機電設備、管線、各種設施測試及試運轉之督導及建議

Supervision and recommendation on the testing of drainage, electrical, piping and all kinds of equipment and trial operation.

l) 協助辦理工程驗收、移交作業

Assistance in the handling of acceptance and transfer of the project.

m) 特殊設備圖樣之審查、監造、檢驗及安裝之監督

Evaluation on the drawings, supervision and inspection for special equipment, or supervision on its installation.

n) 計畫相關資料之彙整、評估及補充

Compilation, evaluation and supplementation of relevant materials of the plan.

o) 其他與施工督導及履約管理有關且載明於招標文件或契約之專案管理服務

Other project managements relevant to the construction supervision and management of the performance of the contract prescribed in the tender documentation or contract.

1.4.6 營運籌備及建立維護策略與程序

O&M (Operation and Maintenance) readiness and Strategy

a) 建立營運維護策略

Developing operation and maintenance strategies for each facilities

b) 設備運轉及維護人員訓練

Training of operation and maintenance staff of equipment.

c) 運轉及維護手冊之編擬

Formulation of operation and maintenance manuals.

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