

AAT + GEC
ที่ปรึกษาโครงการ ฯ และเขียน TOR
งานออกแบบรายละเอียดและจัดทำเอกสารประกวดราคา

General Engineering Consultant (Consultant for SBIA Project, first and second phases)
Naco Netherlands Airport Consultants B.V. (Lead firm)
Louis Berger International ,INC.(Lead firm)
In associated with
Design 103 Ltd.
Asian Engineering Consultants Corp.,Ltd.
Index International Group Co.,Ltd.
Team Consulting Engineers Co.,Ltd.

AAT + Electrowatt + Fellow
ผู้ออกแบบรายละเอียด และจัดทำเอกสารประกวดราคา

Design Engineer (Designer for PWD work)
Electrowatt Consulting Services (Thailand) Ltd.
(Lead firm)
Fellow Engineering Consultants Co.,Ltd.

โครงสร้างของสัญญาระหว่างการท่าอากาศยาน (AAT)
กับ
กลุ่มบริษัทต่างๆที่เกี่ยวข้องกับงานออกแบบและก่อสร้างระบบจ่ายไฟฟ้าและเครือข่ายท่อร้อยสาย

AAT Airport Authority of Thailand (ทอท การท่าอากาศยานแห่งประเทศไทย)
NBIA New Bangkok International Airport
บมท บริษัทท่าอากาศยานสากลกรุงเทพแห่งใหม่ จำกัด เป็นบริษัทลูกของ ทอท
SBIA Second Bangkok International Airport
โครงการก่อสร้างท่าอากาศยานสากลกรุงเทพแห่งที่ 2

AAT (NBIA) + TAPC ที่ปรึกษาการควบคุมงานก่อสร้าง ฯ

TAPC (construction supervision for PWD work)
Team Consulting Engineering and Management Co.,Ltd.
(Lead Firm)
ATT Consultants Co.,Ltd.
Project Planning Services Co.,Ltd.

AAT (NBIA) + ITD + NCC ผู้รับจ้างงานก่อสร้าง ฯ

ITD-NCC Joint Venture (Contractor for PWD work)
Itatian Thai Development PLC. (Lead firm)
Nishimatsu Construction Co.,Ltd.

AAT + GEC
ให้เป็นที่ปรึกษาโครงการ ฯ และเขียน TOR
งานออกแบบรายละเอียดและจัดทำเอกสารประกวดราคา

AAT + Electrowatt + Fellow
ให้เป็นผู้ออกแบบรายละเอียด
และจัดทำเอกสารประกวดราคา

AAT (NBIA) + PMC *****
ให้เป็นที่ปรึกษารับบริหารโครงการก่อสร้าง ฯ

AAT (NBIA) + TAPC
ให้เป็นที่ปรึกษาทางด้านควบคุมงานก่อสร้าง ฯ

AAT (NBIA) + ITD + NCC
ให้เป็นผู้รับจ้างงานก่อสร้าง ฯ

- Agreement for Engagement of Consultant
- Letter of Award
- Conditions of Agreement
- Attachments or the Appendices of the Contract as follows:
 - Appendix A: Scope of Services ,Term of Reference/ TOR , Consultant 's Technical Proposal submitted in the Selection Date and accepted by the Employer/NBIA
 - Appendix B: Working Programme
 - Appendix C: Consultant 's Personnel/Staff and Managing Schedule
 - Appendix D: Remuneration and Method of Payment , Consultant 's Commercial Proposal submitted in the Selection Date including the revised remuneration after negotiation price etc.
 - Appendix E: Form of Advance Payment Bond
 - Appendix F: Form of Retention Bond
 - Appendix G: Document Evidencing the Registration Company , Power of Attorney

- Agreement for Engagement of Design Engineer
- Conditions of Agreement
- Attachments or the Appendices of the Contract as follows:
 - Appendix A: Scope of Services and Work Schedule , Term of Reference/ TOR - TOR (TOR-020 May 1995) - Design Engineer's Technical Proposal submitted in the Selection Date
 - Appendix B: Design Engineer's Personnel/Staff and Manpower Schedule
 - Appendix C: Remuneration and Method of Payment Design Engineer's Commercial Proposal submitted in the Selection Date
 - Appendix D: Form of Retention Bond
 - Appendix E: Document Evidencing the Registration Company , Power of Attorney

- Agreement for Engagement of Consultant
- Conditions of Agreement
- Attachments or the Appendices of the Contract as follows:
 - Appendix A: Scope of Services and Work Schedule , Term of Reference/ TOR - TOR (TOR- June 1999) - Consultant 's Technical Proposal submitted in the Selection Date and accepted by the Employer/NBIA
 - Appendix B: Consultant 's Personnel/Staff and Manpower Schedule
 - Appendix C: Remuneration and Method of Payment Consultant 's Commercial Proposal submitted in the Selection Date including the revised remuneration after negotiation price etc.
 - Appendix D: Form of Advance Payment Bond
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 - Appendix F: Document Evidencing the Registration Company , Power of Attorney

- Agreement for Engagement of Consultant
- Letter of Award
- Conditions of Agreement
- Attachments or the Appendices of the Contract as follows:
 - Appendix A: Scope of Services , - Term of Reference (TOR), - Consultant 's Technical Proposal submitted in the Selection Date and accepted by the Employer/NBIA
 - Appendix B: Working Programme
 - Appendix C: Consultant 's Personnel/Staff and Managing Schedule
 - Appendix D: Remuneration and Method of Payment Consultant 's Commercial Proposal submitted in the Selection Date including the revised remuneration after negotiation price etc.
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 - Appendix G: Document Evidencing the Registration Company , Power of Attorney

- Contract Agreement
- Letter of Acceptance
- Condition of Contract and the Appendices thereto, Power of Attorney , Document Evidencing the Registration of the Parties
- Attachments of the Construction Contract as follows:
 - Tender Documents
 - Volume I : Instruction to Tenderers and Condition of Contract
 - Volume II :Technical Specification General Requirements
 - Volume III: Bill of Quantities
 - Volume IV: Drawings
 - Addendum No 1-2-3
 - Contractor's Documents submitted on Tender Submission Date as required by ITT
 - 1. Technical Proposal:
 - Letter of Submission of the Tender
 - Power of Attorney, Tender Security, Overall Index of Documents, Photocopy of Certificate of Company Registration, Photocopy of Company License/ Vat Registration, Letter from Banker for Line of Credit , Joint Venture Agreement / Consortium Agreement, Confidentiality Agreement, Non-Collusion Certification, Letter of Undertaking for Counter purchase, Affidavit of Site Inspection and Clarification, Acknowledgement of Addenda, Acknowledgement of Answer and Clarification, Certification of Special Privilege of Immunity, Project Programs (Bar Chart Program, Network Program, S- Curve), Method Statement, Work Execution Procedures, Quality Assurance Plan and Procedure, Document Control Procedure, Progress Monitoring and Control Procedure, Construction Plan, Environmental Protection Management Plan , Technical Information
 - 2 : Commercial Proposal
 - Form of Tender ,Priced Bill of Quantities, Daywork Rates, Monthly Cash flow, Priced List of Test Equipment, Spare Parts and Consumables
 - 3. Post Tender Correspondence for example: Contractor's Letter regarding Confirmation of Clarification

Final Design by Electrowatt
16116 Part 2 Product 2.01 Materials
A. Duct System No. 1 - 15

ประเด็นที่เป็นปัญหาในการร้องเรียน
Lock Spec

At Tender Stage
Addendum 2 (Corresp. P. 466-477)
Addendum 3 (Corresp. p.569)

At Construction Stage
Technical Bid Evaluation Report
page 6/15 No. 2-2.1-2.2
Correspondent p 621 & 631 - 633

Appendix A page 1 : However, in case of any discrepancies or for purposes of litigation, the order of recognition of these documents is as follows:
- 1.TOR-020, May 1995 , 2.The Technical Proposal of August 16, 1995

CHAPTER 2 SCOPE OF SERVICES
ข้อ 2.1 B DUCTBANK NETWORK
1. Concrete encased duct system for 24 kV power cabling ,2. Concrete encased duct system for 115 kV power cabling,3. Concrete encased duct system for communication and information cabling
ข้อ 2.3.1 DUCTBANK NETWORK General
A (pvc or other suitable material) concrete encased duct bank system shall be designed for all 24 kV power distribution systems except the airside 24 kV ring systems between the AFL buildings which will be installed in trenches
A (pvc or other suitable material) concrete encased duct bank system shall be designed for the second 115 kV underground incoming feeder
A (pvc or other suitable material) concrete encased ductbank system shall be designed for the telecommunications, information and airport management cable systems running between the various buildings

CHAPTER 3 DESIGN STAGES
3.3.1 FINAL DESIGN General The final design shall consist of detailed design drawings, based on approved preliminary designs, setting forth in detail construction requirements for the permanent power distribution .system and ductbank network.

CHAPTER 5 STANDARDS AND SPECIFICATIONS
5.1 GENERAL The Conditions of Contract, contained in the Procurement Regulations of the Office of the Prime Minister, issued in 1992, shall be used in the Contract Documents.
5.3 MECHANICAL AND ELECTRICAL WORKS
The design shall be based on the following standards and regulations: • Thai Industrial Standards (TIS). • Metropolitan Electricity Authority (MEA).
Mechanical and electrical standards shall be in accordance with ISO, IEC and US standards when not in contradiction to the Thai standards.

Technical Proposal Vol 3
by
Electrowatt + Fellow

TECHNICAL PROPOSAL VOLUME III Appendix K: Technical Approach to Design
3.1.2 115 kV Ductbank Cable Size Selection : 115 kV ductbank shall be design for ...etc....The design will employ a 2 x 3,140 mm HDPE ductbank as per M.E.A. standard

3.2 Cable Installation
National Electrical Code ,article 710-3, cable installation in airport runway.including adjacent defined areas where trespass is prohibit.cable shall be permitted to be buried not less than 457 mm deep and without raceways,concrete encasement,or equivalent.
However,for SBIA the higher standard requirement than those of NEC regarding cable installation is applied. That is .all cables; powers and communications, shall be installed in encased concrete ductbank network. Means shall be provided for ease of future expansion and maintenance as well.

3.3.2 DuctbankReinforced concrete encasement shall be provided for all ductbank located under aircraft pavements.
3.3.2.1 Materials a) Non-metallic pipe : Pipe shall be manufactured in accordance with the latest Thai Industrial Standards. Pipe diameter 100 mm shall be PVC type; pipe diameter larger than 100mm shall be HDPE type.

AAT (NBIA) + PMC ที่ปรึกษารับบริหารโครงการ

PMC (Project Management Consultant for SBIA Project in third/last phase)
Pacific Consultants International (Lead Firm)
Roge and Associates Co.,Ltd.
Epsilon Co.,Ltd.
Asian Engineering Consultants Co.,Ltd.

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