Project: RFQ165 Macau International Airport- Construction Works for New Hangar

Date: 31 May 2013

Subject: Tender Clarification No.1

01 Allow any alternative design for composite beam and slab for the structural steel works at annex building?

Response:
No.

02 Allow any alternative design for the hangar roof in different roof profile. For example, to propose an arch shape roof profile, which is very similar to the existing hangar.

Response:
No.

03 What is the obstacle limitation surface (OLS) at Macau Airport? Any restriction for the mobile crane operation? For example, the crane’s boom length is about 36m from ground level, will this length over the OLS?

Response:
The crane’s boom length of 36m is acceptable. The other cases are based on ICAO requirement.

04 The 2 hours fire rated is not achievable for those steel sections at existing design (for example CHS) less than 8mm wall thickness. What is the alternative? Is that acceptable if apply 1 hour fire rated for those steel sections less 8mm wall thickness? Or only follow and satisfied the Macau Local regulation is acceptable?

Response:
The fire-resistive constructions shall comply with Macau local codes and adopted international standards where applicable (refer to the Framework of Applicable Building Codes and Standards in the Tender Document Section 5.2 – Architectural Design Notes). The hour rating of the fire-resistive constructions shall follow the respective applicable standards. The circular hollow sections utilized in the space frame which only support the hangar roof are required to be 1 hour rated per NFPA 409 Table B.2, Construction Type II - 222.
05 Any fire rated required for those space frame nodes? If yes, how many hour(s)?
Response:
Per NFPA 409 Table B.2, Construction Type II - 220, the roof/roof-ceiling assembly
and the ‘Beams, Girders, Trusses, and Arches’ that supporting the roof only are
required to be 1 hour rated.

06 Any fire rated required for hangar door? If yes, how many hour(s)?
Response:
Please follow the NFPA requirement.

07 Allow metal steel roof or wall cladding as an alternative for aluminum roof or
wall cladding?
Response:
No.

08 Can the hangar door re-design to 6 leaf door instead of 5 leaf door? By using
this configuration, 2 leaf door can share a track, total 3 numbers of tracks is
required instead of 5 numbers. As a result, the hangar becomes more spares.
Response:
No.

09 In each tender document, such as “Bid Form”, “Bid Security”, the employer
should be “Macau International Airport Co., Ltd. (CAM)” or “CAM-Sociedade
Do Aeroporto Internacional de Macau S.A.R.L.”
Response:
Both “Macau International Airport Co., Ltd. (CAM)” and “CAM-Sociedade Do
Aeroporto Internacional de Macau S.A.R.L.” can be used.

10 In structural drawing, the steel works grade is described in S345 (Steel
Structural) and S235JR (Spaceframe). But in EN standard, the closest standard
is S355 and S275JR. So which standard should be use? Please clarify it.
Response:
Chinese Standard Q345 for steel structure. Contractor can use S355. Steel grade
S235JR for spaceframe is specified in BS EN 10210:2006 and BS EN 10219:2006.
In structural drawing, C1 Column is in size “BH800x800x40x30”, but in BQ Structural part the description is “BH1000xBH1000x50x50”. Please clarify it.

Response:
C1 Column size is “BH800x800x40x30”.

In structural drawing, C1 Column bottom plate is “900x900x40”, but in BQ structural part the description is “1450x1450x100”. Please clarify it.

Response:
Please follow the structural drawing. C1 Column bottom plate is “900 x 900 x 40”.


Response:
High resolution A9-5 series drawings will be provided in Addendum No.3.

In structural drawings, No.S3-5 D4, the PFC 300x90x48.6KG can’t find in each country specification. The closest size of this channel is 300x90x41.4KG. Please clarify it.

Response:
PFC300x90x48.6KG can be found out in Market.

If it would be airside controlled area in site construction area; and if the workers need to register permanent access card or not. Please clarify.

Response:
Basically, the construction area is in the control area, not airside area. However, some necessary works, for example, interfacing work, connection work, etc. would be undertaken in the airside area. Thus, the contractor needs to apply the access card.

The service connection out of the building such as Water supply, drainage, FS is included in the project? Or contractor only install pipes and ducts out of building, then connection is responsible by other contractor. Please clarify.

Response:
The project is including the connection works.
017 The concrete sidewalk pavement around the Hangar building can’t be found at the BQ. If it included in this project. Please clarify.

Response:
The concrete sidewalk pavement is included in the project. They will be listed in Addendum No.3.

018 For HVAC system, please clarify the AC indoor units drain location point and size at the drawings.

Response:
The AC indoor units drain location point and size shall be coordinated on site and further developed on construction drawings provided by the contractor.

019 For HVAC system, please clarify the size of the outdoor intake/discharge louver at the drawings.

Response:
The size of the outdoor intake/discharge louver, please refer to architectural drawings and elevations.

020 For the Mechanical drawing no.1524. Please clarify the system valve sets location such as the gate valve, check valve, etc.

Response:
The system valve sets shall be located inside plant room. For detailed quantity please refer to Tender Addendum no.2.

021 Would you accept alternative design for the hangar roof in different roof profile instead of specified space frame profile. For example, to propose a arch shape roof profile, which is similar to the existing hangar at the Macau Airport.

Response:
No.

022 Any restriction for the height of carnage which used for installation work.

Response:
Refer to question number 3.
023 Should 2 hours fire rated not be achievable for the roof structure, what would be an alternative.

Response:
Per NFPA 409 Table B.2, Construction Type II - 220, the roof/roof-ceiling assembly and the ‘Beams, Girders, Trusses, and Arches’ that supporting the roof only are required to be 1 hour rated.

024 Any fire rated requirement for hangar door.

Response:
Refer to question number 6.

025 Would you consider an alternative for roof/wall cladding.

Response:
No.

026 What is the thermal insulation requirement for roof/wall cladding.

Response:
The metal roof assembly shall provide a heat transfer coefficient (U-value) less than or equal to 0.312W/m^2K. The exterior wall assembly at the annex block shall provide a heat transfer coefficient (U-value) less than or equal to 0.528 W/m2K. Comply with ASHRAE Standard 90.1-2010 Building Envelope Requirements for Climate Zone 2A (hot & humid) metal buildings. The exterior wall at unconditioned hangar bay has no specific thermal insulation requirements.

027 Quantity for item B2.2 in Bill of Quantities: Calculated quantity for excavation is much higher than 1856m3, which is shown in Bill of quantities. Shall we include all cost for excavation based on the previously provided quantity or you will provide a new quantity?

Response:
The estimated quantity for excavation shall be 28817m3. Refer to Addendum No. 3 Section 6 Bill of Quantities B2.2. However, the bidders shall include all cost of excavation associated with their specific construction methods and detailed calculations.
Specification for the items as following:
- F1.2.1.14 EF-G-7
- F1.2.1.15 EF-G-10
- F1.2.1.16 EF-G-1
- F1.2.1.17 EF-1-1, 2-1
- F1.2.1.18 EF-1-2, 2-2
- F1.2.1.19 EF-1-3, 2-3

Response:
Please refer to Addendum No.2 Section 5-06 Mechanical Page no.1516.

Drawing MH-F0-01

Please advise and clarify the requirement on item (13) on submission of construction drawing to Macau FSD, and Third Party Consultant prior installation approval prior to installation.

Response:
Contractor shall submit NFPA standard compliance Construction Drawing to the Third Party Reviewer to ensure the compliance of proposed fire and life safety system, equipment and material installation details and that the respective performance requirements as defined in the Statutory and Tender Documents are fulfilled. All these project related submission materials shall be in English and shall be signed-off by appropriate parties or technicians responsible for the detailed design and quality assurance of the systems. The Contractor shall only install these systems per Third Party Reviewer approved designs.

The list of NFPA standard compliance Construction Documents to be submitted by the Contractor for review shall be discussed with the Third Party Reviewer and shall include but not limited to:

- Hangar Bay foam-water suppression system and hand hose system construction drawings for compliance with NFPA 409 and its adopted standards;
- Annex building sprinkler compliance construction drawings for compliance with the NFPA 13 and its referenced standards;
- Fire Detection and Actuation System construction drawings for compliance with NFPA 72 and its adopted standards throughout the facility.

030 Drawing MH-F0-02
During tender briefing, it stated provision should allow for sprinkler and hydrant extension of 3rd floor. Please advise requirement.
Response:
The contractor should allow provision for the fire pump in capacity for further extension on annex with 20 m static height for sprinkler in Light Hazard design and standpipe / hose reel system as Macau code requirement.

031 Drawing MH-F0-02
Notes 13, stated the contractor shall submit detail hydraulic calculation for combined sprinklers and standpipe system ……….for approval prior to installation. Please advise detail of work required.
Response:

032 Drawing MH-F0-03
Notes 14, conceptual fire alarm matrix…., and third party consultant for approval by this contract at construction stage. Please advise detail of work required.
Response:
The list of NFPA standard compliance Construction Documents to be submitted by the Contractor for review shall be discussed with the Third Party Reviewer and shall include but not limited to:
Fire Detection and Actuation System construction drawings for compliance with NFPA 72 and its adopted standards throughout the facility.

The contractor shall allowed provision to prepare document required under NFPA 72: 2013 section 7.2, such as the sequence of operation specific under item (4)

033 Drawing MH-F4-02
Please clarify any special requirement for detail A, B and AA showed on the drawing.
Response:
The contractor shall allow provision to design their own support framing for the fire services piping to the space frame and structural. The associated loading, fixing detail etc. are required to submit to Architectural and Third party reviewer for approval before commencement of work.
034  Drawing MH-F4-04
Please clarify the requirement of the 47K EOL showed on detail 5 and 6.
Response:
The contractor should allow provision of monitoring of circuit integrity and to ensure
the wiring continuity when the connection to the initiating devices is lost. Detail of
application please refers to NFPA 72: 2013 section 17.

035  Drawing MH-F0-06
Please clarify the requirement and provide schematic between power supply
from main switch board, emergency generator and CEM transformer.
Response:
Please refer to electrical drawing and fire service design notes in Addendum No.2 &
No.3 for the general criteria. Bidders shall be aware that the power supply shall meet
NFPA 409, NFPA 20 and adopted NFPA 70 requirements as well as local regulation
requirements.

036  About Section 5-06 Mechanical, we found that there is a missing page no. 1516
in the part of “Equipment Schedule”. Please provide it for our reference.
Response:
Missing Page no. 1516 will be provided in the Addendum No.2.

037  With reference to the tender documents for the captioned tender, we would like
to seek your clarification for the following:

a  Steel Member Size Discrepancies

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b  Concrete Element Size Discrepancies

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<td>3400(w)x1500(H)</td>
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<td>L2-2 rev.1</td>
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Response:
Q1. BR2 shall be PFC 300x100x45.5kg/m.
Q2. MAT2-Column N1 shall be 1500x1500x1500(H).
Q3. MAT3 shall be 3400(w) x 1500(H).

038 Please provide the relocation plan for those relocation items shown on the site demolition plan (A1-0 rev.1).

Response:
The existing cable duct, fire main and water main shall be relocated to the drive way to the south of the existing pump room. Refer to the utility relocation plan in Addendum No.2. The phrasing of ‘existing light pole to be relocated’ shall be changed to ‘existing light pole base to be demolished’. Refer to A1-0 Rev.3 in Addendum No.3. The existing sprinkler main called out was originally planned to serve the New Hangar. The Contractor awarded shall verify its exact location and connectivity in field, and shall coordinate its relocation per actual installation of the sprinkler service at the New Hangar. The existing storm water gully called out was originally planned to serve the road outside the New Hangar site. The Contractor awarded shall verify its exact location and connectivity in field, and shall coordinate its relocation with the actual installation of new perimeter pavement around the New Hangar.

039 With reference to the tender documents for the captioned tender, we would like to seek your clarification for the following:
a Concrete Element Size Discrepancies

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Response:
Q1. MAT1 shall be 800mm in thickness.
Q2. LW1 shall be 300mm in thickness.
BQ Item E: Electrical

040 BQ Item E1.4.6 of 200º IP55 isolating switch for roller door, will it be the power for the sliding hangar door as described per Arch BQ Item, A4.13?
Response: Yes.

041 Is the XRFR being the room for housing all ELV servers and racks?
Response: No, the room is transformer room.

042 Concerning the lighting fixture and power switches inside the daily fuel tank room adjacent to emergency generator room, where it should be explosion proof type?
Response: Yes, it is explosion proof type.

043 Power supply for hand dryer inside all lavatories not yet shown on electrical drawings?
Response: Please refer to Addendum No.2.

BQ Item G: Fire Services

044 As of Dwg MH-F2-2-0 Ground Floor for FH/HR having 9 nos. Of Street Hydrant (SFH) where the Schematic Dwg MH-F0-01,02,03 & 04 not shown?
Response: Please see updated drawing MH-F2-2-0 rev 2, MH-F2-2A to D rev 2 in Addendum No. 2 which showed updated layout of the Street Hydrant and associated underground pipe work arrangement. The contractor is required to coordinate with Airport to seek approval and detail connection to existing utility services. Design and installation requirement should meet with local codes.

045 Please provide the B.Q. for the “Bondex” and “Nelson” stud which to be used for the composite slab shown on the drawings S3-03 rev.1 & S3-04 rev.1.
Response: ‘Bondex’ or ‘Nelson’ or equivalent quality shear stud are acceptable. They will be listed in BQ rev 3 in Addendum No. 3.

046 Please kindly clarify the discrepancy of the excavation volume between B.Q. (B-46/103, item B2.2) shown 1856m3 and drawing shown around 28817m3.
Response: The estimated quantity for excavation shall be 28817m3.