



Republic of the Philippines  
Philippine Economic Zone Authority

## **ELIGIBILITY DOCUMENTS**

CONSULTANCY SERVICES FOR  
THE TIER 2 STRUCTURAL  
INTEGRITY STUDY AND  
RETROFIT DESIGN  
OF PEZA-BCEZ SFB  
NO. 1  
(RE-BID)

**(BC – 2018 – 08- 011)**

November 2018

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# *Section I. Request for Expression of Interest (EOI)*

## **CONSULTANCY SERVICES FOR THE TIER 2 STRUCTURAL INTEGRITY STUDY AND RETROFIT DESIGN OF PEZA-BCEZ SFB NO. 1 (RE-BID) (BC – 2018 – 08- 011)**

1. The PHILIPPINE ECONOMIC ZONE AUTHORITY (PEZA) – BAGUIO CITY ECONOMIC ZONE (BCEZ) intends to apply the sum PhP5,561,230.08, inclusive of all applicable government taxes and charges, professional fees, and other incidental and administrative costs, as the Approved Budget for the Contract (ABC), to payments under the Contract for the subject consulting services. Proposals received in excess of the ABC shall be automatically rejected at the opening of the Financial Proposals.

2. The PEZA-BCEZ now calls for the submission of EOI and eligibility requirements for **TIER 2 STRUCTURAL INTEGRITY STUDY OF PEZA-BCEZ SFB - 1 (Re-Bid)**. The contract shall be completed within 150 days.

Application for eligibility will be evaluated based on a non-discretionary “pass/fail” criterion. Eligibility Documents of interested Consultants must be duly received by the PEZA-BCEZ Bids and Awards Committee (PEZA-BCEZ BAC) on or before November 14, 2018 at 1:00 P.M., Opening of Eligibility Documents shall be on November 14, 2018 at 1:30 P.M., at the following address:

3/F PEZA-BCEZ Administration Building Loakan Road, Baguio City  
+63 (74) 447-4155  
+63 (74) 447-3333

3. Interested Consultants may obtain further information from PEZA-BCEZ and acquire a complete set of Proposal/Bidding Documents at the address given above from Mondays to Fridays, 8:00 A.M. to 5:00 P.M., starting November 5, 2018 upon payment of the applicable fee for the Proposal/Bidding Documents in the amount of PhP 10,000.00. The Proposal/Bidding Documents may also be downloaded free of charge from the Philippine Government Electronic Procurement System (PhilGEPS) and PEZA websites, provided that Consultants shall pay the applicable fee for the Proposal Documents not later than the submission of their proposals.

4. The PEZA-BCEZ-BAC shall draw up the short list of Consultants from those who have submitted EOI, including the Eligibility Documents, and have been determined as eligible in accordance with the relevant provisions of Republic Act (RA) No. 9184, or the Government Procurement Reform Act (GPRA), and its 2016 Implementing Rules and Regulations (IRR). The short list shall consist of three (3) to seven (7) prospective Consultants who will be entitled to submit proposals. The criteria and rating system for shortlisting are as follows:  
Rating Factor (Hurdle Rate: 70%) Weight

A. Applicable experience of the Firm	60
• Years in consulting industry	
• Similar and relevant experience	
B. Qualification of Organic/Permanent Personnel who may be assigned	30
• Related Experience	
• Education	
• Training Acquired	
C. Job Capacity	<u>10</u>
TOTAL	100

5. The selection process will be conducted through open competitive selection/bidding procedures using non-discretionary “pass/fail” criterion as specified in the Revised IRR of RA 9184. This procurement activity is open to all interested Local Consultants only.

6. Proposals shall be evaluated using the Quality-Cost Based Evaluation/Selection (QCBE/QCBS) procedure at a weight ratio of 80% for the Technical Proposal and 20% for the Financial Proposal. The criteria and rating system for the evaluation of proposals shall be provided in the Instructions to Proponents/Bidders.

7. PEZA-BCEZ reserves the right to reject any and all proposals, including that of a single eligible proponent, waive any minor deviation in the submitted documents which will not materially affect the substance of the proposal, annul the procurement/bidding process, or not award the contract without thereby incurring any liability to the affected participating Consultant/s.

8. For further information, please contact the PEZA-BCEZ-BAC Secretariat.

Mark B. Liwen

BAC Secretariat

Bids and Awards Committee at bcezbacsec@peza.gov.ph or mark.liwen@peza.gov.ph

1/F PEZA-BCEZ Administration Building Loakan Road, Baguio City

+63 (74) 447-4155

+63 (74) 447-3333

(SGD)

ATTY. RENE U. BAYSA  
Chairperson, PEZA-BCEZ  
Bids and Awards Committee

# ***Section II. Eligibility Documents***

## **1. Eligibility Criteria**

- 1.1. The following persons/entities shall be allowed to participate in the bidding for Consulting Services:
  - (a) Duly licensed Filipino citizens/sole proprietorships;
  - (b) Partnerships duly organized under the laws of the Philippines and of which at least sixty percent (60%) of the interest belongs to citizens of the Philippines;
  - (c) Corporations duly organized under the laws of the Philippines and of which at least sixty percent (60%) of the outstanding capital stock belongs to citizens of the Philippines;
  - (d) Cooperatives duly organized under the laws of the Philippines; or
  - (e) Persons/entities forming themselves into a joint venture, *i.e.*, a group of two (2) or more persons/entities that intend to be jointly and severally responsible or liable for a particular contract: Provided, however, That Filipino ownership or interest thereof shall be at least sixty percent (60%). For this purpose, Filipino ownership or interest shall be based on the contributions of each of the members of the joint venture as specified in their JVA.
- 1.2. When the types and fields of Consulting Services involve the practice of professions regulated by law, those who will actually perform the services shall be Filipino citizens and registered professionals authorized by the appropriate regulatory body to practice those professions and allied professions specified in the **EDS**.
- 1.3. If the Request for Expression of Interest allows participation of foreign consultants, prospective foreign bidders may be eligible subject to the conditions stated in the **EDS**.
- 1.4. Government owned or –controlled corporations (GOCCs) may be eligible to participate only if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law, and (c) are not attached agencies of the Procuring Entity.

## **2. Eligibility Requirements**

- 2.1. The following eligibility requirements, together with the Eligibility Documents Submission Form, shall be submitted on or before the date of the eligibility check specified in the Request for Expression of Interest and Clause 5 for purposes of determining eligibility of prospective bidders:

(a) Class “A” Documents –

Legal Documents

- (i) PhilGEPS Certificate of Registration and Membership in accordance with Section 8.5.2 of the IRR, except for foreign bidders participating in the procurement by a Philippine Foreign Service Office or Post, which shall submit their eligibility documents under Section 24.1 of the IRR, provided, that the winning Consultant shall register with PhilGEPS in accordance with Section 37.1.4 of the IRR;

Technical Documents

- (ii) Statement of the prospective bidder of all its ongoing and completed government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid, within the relevant period provided in the **EDS**. The statement shall include, for each contract, the following:
- (ii.1) the name and location of the contract;
  - (ii.2) date of award of the contract;
  - (ii.3) type and brief description of consulting services;
  - (ii.4) consultant’s role (whether main consultant, subconsultant, or partner in a JV)
  - (ii.5) amount of contract;
  - (ii.6) contract duration; and
  - (ii.7) certificate of satisfactory completion or equivalent document specified in the **EDS** issued by the client, in the case of a completed contract;
- (iii) Statement of the consultant specifying its nationality and confirming that those who will actually perform the service are registered professionals authorized by the appropriate regulatory body to practice those professions and allied professions in accordance with Clause 1.2, including their respective curriculum vitae.

(b) Class “B” Document –

If applicable, the Joint Venture Agreement (JVA) in case the joint venture is already in existence, or duly notarized statements from all the potential joint venture partners in accordance with Section 24.1(b) of the IRR of RA 9184.

- 2.2. The eligibility requirements or statements, the bids, and all other documents to be submitted to the BAC must be in English. If the eligibility requirements or statements, the bids, and all other documents submitted to the BAC are in foreign language other than English, it must be accompanied by a translation of the documents in English. The documents shall be translated by the relevant foreign government agency, the foreign government agency authorized to translate documents, or a registered translator in the foreign bidder's country; and shall be authenticated by the appropriate Philippine foreign service establishment/post or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. The English translation shall govern, for purposes of interpretation of the bid.
- 2.3. Prospective bidders may obtain a full range of expertise by associating with individual consultant(s) and/or other consultants or entities through a JV or subcontracting arrangements, as appropriate. However, subconsultants may only participate in the bid of one short listed consultant. Foreign Consultants shall seek the participation of Filipino Consultants by entering into a JV with, or subcontracting part of the project to, Filipino Consultants.

### **3. Format and Signing of Eligibility Documents**

- 3.1. Prospective bidders shall submit their eligibility documents through their duly authorized representative on or before the deadline specified in Clause 5.
- 3.2. Prospective bidders shall prepare an original and copies of the eligibility documents. In the event of any discrepancy between the original and the copies, the original shall prevail.
- 3.3. The Eligibility Documents Submission Form shall be signed by the duly authorized representative/s of the Bidder. Failure to do so shall be a ground for the rejection of the eligibility documents.
- 3.4. Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the duly authorized representative/s of the prospective bidder.

### **4. Sealing and Marking of Eligibility Documents**

- 4.1. Prospective bidders shall enclose their original eligibility documents described in Clause 2.1, in a sealed envelope marked "ORIGINAL – ELIGIBILITY DOCUMENTS". Each copy thereof shall be similarly sealed duly marking the envelopes as "COPY NO. \_\_\_ - ELIGIBILITY DOCUMENTS". These envelopes containing the original and the copies shall then be enclosed in one single envelope.
- 4.2. The original and the number of copies of the eligibility documents as indicated in the **EDS** shall be typed or written in ink and shall be signed by the prospective bidder or its duly authorized representative/s.
- 4.3. All envelopes shall:

- (c) contain the name of the contract to be bid in capital letters;
- (d) bear the name and address of the prospective bidder in capital letters;
- (e) be addressed to the Procuring Entity's BAC specified in the **EDS**;
- (f) bear the specific identification of this Project indicated in the **EDS**; and
- (g) bear a warning "DO NOT OPEN BEFORE..." the date and time for the opening of eligibility documents, in accordance with Clause 5.

4.4 Eligibility documents that are not properly sealed and marked, as required in the bidding documents, shall not be rejected, but the bidder or its duly authorized representative shall acknowledge such condition of the documents as submitted. The BAC shall assume no responsibility for the misplacement of the contents of the improperly sealed or marked eligibility documents, or for its premature opening.

## **5. Deadline for Submission of Eligibility Documents**

Eligibility documents must be received by the Procuring Entity's BAC at the address and on or before the date and time indicated in the Request for Expression of Interest and the **EDS**.

## **6. Late Submission of Eligibility Documents**

Any eligibility documents submitted after the deadline for submission and receipt prescribed in Clause 0 shall be declared "Late" and shall not be accepted by the Procuring Entity. The BAC shall record in the minutes of submission and opening of eligibility documents, the Bidder's name, its representative and the time the eligibility documents were submitted late.

## **7. Modification and Withdrawal of Eligibility Documents**

7.1. The prospective bidder may modify its eligibility documents after it has been submitted; provided that the modification is received by the Procuring Entity prior to the deadline specified in Clause 5. The prospective bidder shall not be allowed to retrieve its original eligibility documents, but shall be allowed to submit another set equally sealed, properly identified, linked to its original bid marked as "ELIGIBILITY MODIFICATION" and stamped "received" by the BAC. Modifications received after the applicable deadline shall not be considered and shall be returned to the prospective bidder unopened.

7.2. A prospective bidder may, through a letter of withdrawal, withdraw its eligibility documents after it has been submitted, for valid and justifiable reason; provided that the letter of withdrawal is received by the Procuring Entity prior to the deadline prescribed for submission and receipt of eligibility documents.

7.3. Eligibility documents requested to be withdrawn in accordance with this Clause shall be returned unopened to the prospective bidder concerned. A



prospective bidder that withdraws its eligibility documents shall not be permitted to submit another set, directly or indirectly, for the same project. A prospective bidder that acquired the eligibility documents may also express its intention not to participate in the bidding through a letter which should reach and be stamped by the BAC before the deadline for submission and receipt of eligibility documents.

## **8. Opening and Preliminary Examination of Eligibility Documents**

- 8.1. The BAC will open the envelopes containing the eligibility documents in the presence of the prospective bidders' representatives who choose to attend, at the time, on the date, and at the place specified in the **EDS**. The prospective bidders' representatives who are present shall sign a register evidencing their attendance.

In case the submitted eligibility envelopes cannot be opened as scheduled due to justifiable reasons, the BAC shall take custody of the said envelopes and reschedule the opening on the next working day or at the soonest possible time through the issuance of a Notice of Postponement to be posted in the PhilGEPS website and the website of the Procuring Entity concerned.

- 8.2. Letters of withdrawal shall be read out and recorded during the opening of eligibility documents and the envelope containing the corresponding withdrawn eligibility documents shall be returned unopened to the withdrawing prospective bidder.
- 8.3. The eligibility documents envelopes and modifications, if any, shall be opened one at a time, and the following read out and recorded:
- (h) the name of the prospective bidder;
  - (i) whether there is a modification or substitution; and
  - (j) the presence or absence of each document comprising the eligibility documents vis-à-vis a checklist of the required documents.
- 8.4. The eligibility of each prospective bidder shall be determined by examining each bidder's eligibility requirements or statements against a checklist of requirements, using non-discretionary "pass/fail" criterion, as stated in the Request for Expression of Interest, and shall be determined as either "eligible" or "ineligible." If a prospective bidder submits the specific eligibility document required, he shall be rated "passed" for that particular requirement. In this regard, failure to submit a requirement, or an incomplete or patently insufficient submission, shall be considered "failed" for the particular eligibility requirement concerned. If a prospective bidder is rated "passed" for all the eligibility requirements, he shall be considered eligible to participate in the bidding, and the BAC shall mark the set of eligibility documents of the prospective bidder concerned as "eligible." If a prospective bidder is rated "failed" in any of the eligibility requirements, he shall be considered ineligible to participate in the bidding, and the BAC shall mark the set of eligibility documents of the prospective bidder concerned as "ineligible." In either case,

the BAC chairperson or his duly designated authority shall countersign the markings.

## **9. Short Listing of Consultants**

- 9.1. Only prospective bidders whose submitted contracts are similar in nature and complexity to the contract to be bid as provided in the **EDS** shall be considered for short listing.
- 9.2. The BAC shall draw up the short list of prospective bidders from those declared eligible using the detailed set of criteria and rating system to be used specified in the **EDS**.
- 9.3. Short listed consultants shall be invited to participate in the bidding for this project through a Notice of Eligibility and Short Listing issued by the BAC.

## **10. Protest Mechanism**

Decision of the Procuring Entity at any stage of the procurement process may be questioned in accordance with Section 55 of the IRR of RA 9184

## *Section III. Eligibility Data Sheet*

<b>Eligibility Documents</b>	
1.2	<p><i>Principal or Project Director - A registered Civil Engineer with at least fifteen (15) years of experience in the field of Structural Engineering. Should be an active/registered member of ASEP and a member of good standing of PICE (Accredited Professional Organization of Civil Engineers). With experience as Structural Audit Project Principal for at least five (5) projects.</i></p> <p><i>Senior Structural Engineer [at least two (2)] - A registered Civil Engineer with fifteen (15) years of experience in civil/structural design or structural audit of structural steel and reinforced concrete structures. Should be an active/registered member of ASEP and a member of good standing of PICE (Accredited Professional Organization of Civil Engineers). With experience as Senior Structural Engineer for Structural Audit project of at least five (5) projects.</i></p> <p><i>Jr. Structural Engineer [at least two (2)] - A registered Civil Engineer with more than five (5) years of experience in civil/structural design or structural audit of structural steel and reinforced concrete structures. Should be an active/registered member of ASEP and a member of good standing of PICE (Accredited Professional Organization of Civil Engineers).</i></p>
1.3	No further instructions.
2.1(a)(ii)	The statement of all ongoing and completed government and private contracts shall include all such contracts within fifteen (15) years prior to the deadline for the submission and receipt of eligibility documents.
2.1(a)(ii.7)	<p><i>State acceptable proof of satisfactory completion of completed contracts.</i></p> <p><i>Acceptable proof of satisfactory completion of completed contracts:</i></p> <p><i>a) For completed government contracts – Certificate of Completion and Final Acceptance</i></p> <p><i>b) For completed private contracts – Certificate of Satisfactory Completion and Final Acceptance or Official Receipts representing full payment of the contract cost.</i></p>
4.2	Each prospective bidder shall submit one (1) original and two (2) copies of its eligibility documents.

4.3(e)	<p><i>State the Bids and Awards Committee of the Procuring Entity concerned with the Project.</i></p> <p><i>Baguio City Economic Zone- Bids and Awards Committee</i></p>
4.3(f)	<p><i>No further instructions</i></p>
5	<p>The address for submission of eligibility documents is <i>BAC Secretariat 1/F Philippine Economic Zone Authority – Baguio City Economic Zone Administration Building Loakan Road Baguio City.</i></p> <p>The deadline for submission of eligibility documents is <i>14 November, 2018 at 1:00 PM.</i></p>
8.1	<p>The place of opening of eligibility documents is at <i>3<sup>rd</sup> Floor Conference Room.</i></p> <p>The date and time of opening of eligibility documents is <i>14 November, 2018 at 1:30 PM.</i></p>
9.1	<p>Similar contracts shall refer to the Structural Investigation of Buildings.</p>
9.2	<p><i>Please refer to the Request for EOI</i></p>

**Form A**

***Eligibility Documents Submission Form***

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*[Date]*

*[Name and address of the Procuring Entity]*

Ladies/Gentlemen:

In connection with your Request for Expression of Interest dated *[insert date]* for *[Title of Project]*, *[Name of Consultant]* hereby expresses interest in participating in the eligibility and short listing for said Project and submits the attached eligibility documents in compliance with the Eligibility Documents therefor.

In line with this submission, we certify that:

- a) *[Name of Consultant]* is not blacklisted or barred from bidding by the GOP or any of its agencies, offices, corporations, or LGUs, including foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, and that each of the documents submit; and
- b) Each of the documents submitted herewith is an authentic copy of the original, complete, and all statements and information provided therein are true and correct.

We acknowledge and accept the Procuring Entity's right to inspect and audit all records relating to our submission irrespective of whether we are declared eligible and short listed or not.

Yours sincerely,

Signature

Name and Title of Authorized Signatory

Name of Consultant

Address

## Form B

### Relevant Services Carried Out That Best Illustrate Qualifications

Using the format below, provide information on each project for which your firm/entity, either individually, as a corporate entity, or as one of the major companies within an association, was legally contracted.

Project Name:		Country:
Location within Country:		Professional Staff Provided by Your Firm/Entity(profiles):
Name of Client:		N <sup>o</sup> of Staff:
Address:		N <sup>o</sup> of Staff-Months; Duration of Project:
Start Date (Month/Year):	Completion Date (Month/Year):	Approx. Value of Services (in Current US\$):
Name of Associated Consultants, if any:		N <sup>o</sup> of Months of Professional Staff Provided by Associated Consultants:
Name of Senior Staff (Project Director/Coordinator, Team Leader) Involved and Functions Performed:		
Narrative Description of Project:		
Description of Actual Services Provided by Your Staff:		

Consultant's Name: \_\_\_\_\_

## Form C

### Format of Curriculum Vitae (CV) for Proposed Professional Staff

Proposed Position: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Name of Staff: \_\_\_\_\_

Profession: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Years with Firm/Entity: \_\_\_\_\_ Nationality: \_\_\_\_\_

Membership in Professional Societies: \_\_\_\_\_

Detailed Tasks Assigned: \_\_\_\_\_

#### Key Qualifications:

*[Give an outline of staff member's experience and training most pertinent to tasks on project. Describe degree of responsibility held by staff member on relevant previous projects and give dates and locations. Use about half a page.]*

#### Relevant Certification

Description	Date Passed	Issued by:

#### Experience:

Position Head	Company/Organization & Location	Major Tasks	Dates (month & year)

#### Relevant Training

Course Description	Training Institution / Venue	Inclusive Dates of Training	No.of Training Days

**Education:**

[Summarize college/university and other specialized education of staff members, giving names of schools, dates attended, and degrees obtained. Use about one quarter of a page.]

School	Degree/Honors Received	Dates

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**Employment Record:**

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organizations, titles of positions held, and locations of projects. For experience in last ten years, also give types of activities performed and client references, where appropriate. Use about two pages.]

**Employment Record:**

Dates	Position Held	Company/Organization & Location	Major Tasks

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**Experience as Structural Audit Principal or Project Director for at least five (5) projects:**

Dates	Position Held	Name of Project	Project Owner

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**Experience as Senior Structural Engineer for at least five (5) projects:**

Dates	Position Held	Name of Project	Project Owner



**Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

\_\_\_\_\_ Date: \_\_\_\_\_  
*[Signature of staff member and authorized representative of the firm]* *Day/Month/Year*

Full name of staff member: \_\_\_\_\_

Full name of authorized representative: \_\_\_\_\_

## Form D

### SUMMARY OF PROPOSED KEY PERSONNEL

Proposed Position	Name	Educational Attainment	No. of years of experience like/ same work/position as proposed position	No. of years of experience with the same/similar work as the Project	No. of years with the Organization/Consultant
Principal or Project Director					
Senior Structural Engineer					
Junior Structural Engineer					

# TERMS OF REFERENCE

## CONSULTING SERVICES FOR THE TIER 2 STRUCTURAL INTEGRITY STUDY AND RETROFIT DESIGN OF PEZA-BCEZ SFB NO. 1

### 1. OBJECTIVES

The core objectives of the study are the seismic evaluation and retrofit-design of the PEZA-BCEZ Standard Factory Building No. 1 based on ASCE/SEI 41-17 Standard "Seismic Evaluation and Retrofit of Existing Buildings". It will be performed with the end view of providing plans, data evaluation, analysis and issuance of appropriate recommendations to ensure stability of the building based on current standards. The assessment results will be the bases of the structure's management.

The structural assessment of the existing building will follow the procedures of seismic evaluation and retrofit outlined in the ASCE/SEI 41-17 Standard.

The seismic evaluation and retrofit-design process in This Study shall consists of:

- (1) Updating of Tier 1 Screening Procedure conducted in 2010; and
- (2) Tier 2 Deficiency-Based Evaluation Procedure.

The Performance Objective in This Study shall be the Basic Performance Objective for Existing Buildings (BPOE).

The main objective of the project is to conduct a structural investigation and evaluation of the structural integrity of the structure and identify, if necessary, the most suitable and economical rehabilitation measures. The detailed structural retrofitting recommendation will be in conformity with the latest structural design code.

### 2. PROCUREMENT OF SERVICES

BCEZ will procure and engage the services of a consultant with at least fifteen (15) years of experience in the field of structural investigation and evaluation of buildings, with at least five (5) similar projects, from which at least one (1) with any government agencies, GOCCs and LGUs.

### 3. SCOPE OF WORK

#### GENERAL

The Consultant shall provide a core team of experienced and competent technical personnel who will:

- a. Determine the actual condition of the building and obtain necessary data thru field investigations employing established and accepted procedures for structural investigation and evaluation of existing buildings

- b. Determine the most appropriate and economically feasible approach for the building in accordance with current standards.
- c. Come up with a complete report containing data gathered, analysis and recommendations necessary to achieve structural soundness of SFB No. 1.
- d. Issue a certificate of Structural Adequacy if the building is found to be structurally sound.
- e. Structural Retrofitting design drawings with Detailed Estimate signed and sealed by Structural Engineer if found structurally unsound
- f. Recommendation for carrying capacity/additional load that can be accommodated by the building in case Automatic Fire Suppression System (AFSS) will be installed in SFB 1.

**SPECIFIC:**

- a. Ocular Inspection to verify actual conditions of the building and project site. All available data shall be gathered: As-Built Structural Plan, Architectural Plans, Soil Data, Previous Structural retrofit Design Analysis, initial structural integrity study report/ findings, etc. For this purpose, it is necessary that the consultant update the study/findings of Tier 1 conducted in 2010.
- b. As-built and Levelling Survey to determine the current condition of the building and identify any observed settlement  
The output data shall be a 3D cad drawing and a 3D virtual image which can be readily opened in AutoCAD recap
- c. Geotechnical Investigation and in situ shear wave velocity measurement (uphole seismic , downhole seismic, crosshole seismic, microtremor array)  
This will determine the general subsurface condition relevant to the assessment of the structural integrity of the structure.

**Boreholes for log investigation:**

1. To obtain in situ shear wave velocity profile up to bedrock or minimum of 30 meters.
2. The required depth of boreholes is up to bedrock with a total length of 120 meters depending on actual site conditions (e.g. 4 boreholes with 30m depth per hole / 2 boreholes with 60m depth per hole/etc.).
3. Locations of boreholes (depending on site conditions):
  - Ideally, there should be boreholes for both ends of PEZA SFB 1 and SFB 2 in case of 4 boreholes.
  - There should be one borehole at each end of PEZA SFB 1 and SFB 2 in case of 2 boreholes.
  - Consultant shall coordinate with PEZA in the determination of location of boreholes in case above conditions are not feasible.
4. Upon boring of first hole, contractor shall discuss with PEZA prior to proceeding with subsequent boring process.

d. Performance of non-destructive tests:

1. In-situ strength determination of concrete
2. Re-bar scanning for 60 locations  
-Ideally, location should be distributed as follows:

1<sup>st</sup> Floor – 30 - 40;

2<sup>nd</sup> Floor – 10 - 20;

3<sup>rd</sup> Floor – 10 – 20;

-In case, there will be changes in the number and locations of boreholes, the contractor shall properly coordinate this with the Engineering and Maintenance Division

3. Concrete breakout with restoration

- e. Vibration Performance testing
- f. Building EKG (ambient vibration testing and system identification)
- g. Preparation of a full 3-D structural model of the building using computer program applicable to ASCE/SEI 41-17 Standard.
- h. Gravity and lateral analyses of the structure. Lateral analysis will include wind and earthquake forces
- i. Seismic assessment of different structural members subjected to different local combinations
- j. Perform computations to determine structural adequacy
- k. Submission of a technical report incorporating the result of physical and theoretical investigations
- l. Structural analysis calculations
- m. Structural Retrofitting design drawings and Detailed Estimate signed and sealed by Structural Engineer

In conducting the study, the Consultant shall undertake site inspection of the entire building. All columns, beams and girders, walls and floor slabs of the entire building shall be inspected. Structural and non-structural damages including settlements, if any shall be documented including the extent of damages: temperature, minimal cracks and/or major damages that will be referred to in the recommendation for structural strengthening and retrofitting works. Any observed cracks or deflections on structural and non-structural elements and structural modifications on the building will be mapped.

Field measurements/tests of the following shall be done for the purpose of verifying the structural as-built drawings.

1. Cross-sectional dimension of structural members;
2. Layout of existing building indicating centre-to-centre spacing of all columns and other vertical reinforced concrete elements;

3. Actual floor to floor heights of all levels from top of the structural slab to the level of the next structural slab immediately above;
4. Centre-to-centre spacing of all beams and girders of any and their relative layout with reference to the column centre lines into which they are connecting.
5. In the verification of as-built drawings, an exploratory investigation shall be conducted on structural members like beams, columns, slabs, roof support, etc. which includes random testing as follows:
  - a. Concrete Compression Test
  - b. Rebar scanning
  - c. Controlled concrete breakout investigation

At least three (3) core samples per floor shall be extracted and subjected to compression testing. Core testing may be substituted with partial penetration method depending on the availability of testing locations.

Chipping of concrete cover of structural elements and other non-destructive testing may be performed to verify details of reinforcing bars based from the result of scanning if scanning report is not reliable or deemed doubtful. This shall be done on strategic locations based of the prepared framing plans.

Available building plans shall be utilized in the verification of as-built structural framing. The verified structural frames, physical dimensions, and number of reinforcements shall be reflected. The consultant shall also conduct ground survey to determine any settlement or movement. Elevations per building floor level shall be recorded starting from a benchmark in the ground floor up to the roof deck.

In the conduct of structural design analysis, the consultant shall check design capacities of all major structural elements such as but not limited to the column, beams and girders and shear walls. It shall make an assessment of the structural adequacy and safety to resist governing load combinations using the latest computer software for the vertical loads and earthquake based on the provisions of ASCE/SEI 41-17.

The Consultant shall prepare and submit a Comprehensive Final Report of findings, assessments of structural safety and adequacy and recommended mitigating measures as necessary. The report shall include the structural performance and safety of the building during a major earthquake.

#### **4. CONDITIONS**

##### **1. Restoration Works**

All parts of the building and its surroundings where samples are taken for testing shall be restored by the Consultant to its original condition using the same material and strength at his own expense.

##### **2. Material Testing**

The cost of laboratory testing of samples by an accredited laboratory shall be included in the bid proposal of the Consultant. The Consultant shall be responsible in all his reports, analysis, recommendations, plans and drawings and other documents related to the scope of services and during the conduct of investigation and evaluation of the building.

### 3. Coordination Meetings

There shall be proper coordination and meetings between the consultant and the client's representative prior to and during the conduct of the investigation. Advisories shall be relayed to building tenants stating therein the schedule of removal of floor finishes and other architectural works and conduct of necessary tests of the exposed structural elements. The advisories shall include timetables of reinstallation of displaced finishes.

It is mandatory for the Consultant to coordinate with the client's representative with regard to scheduling of works. This is to minimize disturbance to the building occupants' operations. As much as possible, work will be scheduled after office hours, weekends, and/or holidays.

4. All technical documents submitted by the Consultant shall be reviewed and approved by the PEZA

## 5. STAFFING

The Consultant shall provide staff for the following key staff positions:

Principal or Project Director - A registered Civil Engineer with at least fifteen (15) years of experience in the field of Structural Engineering. Should be an active/registered member of ASEP and a member of good standing of PICE (Accredited Professional Organization of Civil Engineers). With experience as Structural Audit Project Principal for at least five (5) projects.

Senior Structural Engineer [at least two (2)] - A registered Civil Engineer with fifteen (15) years of experience in civil/structural design or structural audit of structural steel and reinforced concrete structures. Should be an active/registered member of ASEP and a member of good standing of PICE (Accredited Professional Organization of Civil Engineers). With experience as Senior Structural Engineer for Structural Audit project of at least five (5) projects.

Jr. Structural Engineer [at least two (2)] - A registered Civil Engineer with more than five (5) years of experience in civil/structural design or structural audit of structural steel and reinforced concrete structures. Should be an active/registered member of ASEP and a member of good standing of PICE (Accredited Professional Organization of Civil Engineers).

## **6. COMPUTER FACILITIES**

The Consultant shall have complete computer facilities and shall use suitable software on structural engineering with specific capability in seismic analysis and design of structures. As a minimum, Consultant is expected to use computer modelling program applicable to ASCE/SEI 41-17 Standard.

The Consultant shall provide personnel and equipment necessary for all field survey/geotechnical investigations including administrative and technical support staff as required such as drivers, secretarial/encoders, draftsmen and/or CAD Operators.

The contractor shall show proof of authorized use of application/program.

## **7. SUBMITTALS**

The Consultant shall submit reports for findings and evaluation on the structural assessment of structural performance and safety of the building during a major earthquake including site specific seismic hazard evaluation to assess ground shaking response of the site complying with the requirement of ASCE/SEI 41-17.

1. Study Methodology detailing scope of work prior to the conduct of the study
2. Bi-Monthly Progress / Accomplishment Report.
3. Report of structural findings and evaluation on the structural assessment of structural performance and safety of the building during a major earthquake.
4. After the required investigations, assessments, survey review, computation and analysis, the Consultant shall come up with the Final Comprehensive Report with recommendations for necessary structural retrofitting, repairs and/or building load adjustment if deemed necessary.
5. Certificate of Structural Adequacy/Stability if the building is found to be structurally sound and compliant to ASCE/SEI 41-17.
6. Recommendation for carrying capacity/additional load that can be accommodated by the building in case Automatic Fire Suppression System (AFSS) will be installed in SFB 1.
7. Structural Retrofitting design drawings and Detailed Estimate signed and sealed by Structural Engineer

## **6. PROJECT DURATION**

1. The structural study must be completed in One Hundred Twenty (120) calendar days. A detailed schedule of work and activity plan shall be prepared and submitted together with the Consultant's Proposal.
2. The Consultant shall commence work three (3) days after the date of receipt of Notice to Proceed or Contract/Job Order whichever comes first.



## **7. INSTITUTIONAL AGREEMENT**

1. BCEZ shall provide any available building plans to be utilized as reference for the study
2. BCEZ, through its Engineering and Maintenance Division, shall initiate the conduct of the following:
  - a. Conduct Pre-Audit meeting to discuss details in undertaking the scope of work and work-schedule and to establish coordination flow process and house rules.
  - b. Hand-over the necessary plans (i.e. As-Built) available to the Consultant prior to its conduct of structural audit.
  - c. Monitoring of the consultant's progress in the conduct of the structural investigation.
  - d. Provide access, work permits, gate pass, authorization and clearance to the building work area in coordination with building occupants.

