



Republic of the Philippines
Quezon City
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TERMS OF REFERENCE

CONSULTING SERVICES FOR THE STRUCTURAL INVESTIGATION AND SEISMIC ASSESSMENT OF THE PARKING BUILDING AT AMORANTO SPORTS COMPLEX, BARANGAY PALIGSAHAN

1. INTRODUCTION

The Quezon City Government (QCG) is committed to the continuous improvement of the city's infrastructure, ensuring that public facilities remain safe, functional, and resilient. Maintaining the integrity of government-owned buildings is a priority, especially those that serve the public and must withstand various environmental and structural challenges.

As part of this commitment, QCG takes proactive measures whenever structural concerns arise. Whether these issues are observed, experienced firsthand, or reported, immediate action is taken to assess the situation. When necessary, expert opinions from qualified engineers and specialists are sought to conduct thorough evaluations and recommend appropriate interventions. This ensures that any structural issues are addressed efficiently, preventing further deterioration and reinforcing the safety of public structures.

By continuously implementing these measures, the city strengthens its dedication to public safety and infrastructure resilience. Through vigilant monitoring, expert collaboration, and timely interventions, it remains steadfast in its mission to provide secure and sustainable public facilities for its citizens.

This vigilant approach extends to all public facilities under the city's jurisdiction, including those within major community hubs such as the Amoranto Sports Complex. One of the structures within this complex is the Parking Building, which serves employees, visitors, and community who utilize the facility. In terms of its current building condition, numerous verbal reports from concerned employees have indicated that some structural elements are not properly connected by welds. Moreover, as part of the city's initiative to maintain public safety, an initial inspection was conducted, raising concerns about the building's physical condition. The inspection was limited to what was physically observable at the time, necessitating a more extensive review to assess whether the building remains structurally sound.

2. PROJECT DESCRIPTION AND RATIONALE

The Parking Building at Amoranto Sports Complex is a two-story building with a total floor area of approximately 6,000 square meters, primarily made from structural steel with a rooftop deck parking slot reserved for provision of future parking slots and at the same time access to the Amoranto Sports Arena. Completed in 2022, the building parking layout with a total capacity of 147 parking slots: 35 on the ground floor, 55 on the second floor, and 57 on the roof deck. The structural framework is divided by the building's main support consisting of steel columns, girders, and beams, and for the flooring system, the floor suspended slabs are made of reinforced concrete without a steel decking system.



In line to concerns raised, efforts have been made by conducting an initial visual inspection and gathering of the available as-built plans for the preliminary details of the project. As per inspection, the building's initial findings could be divided into four aspects: its physical conditions, floor system, load path distribution, and structural connections. For the physical condition, no major structural damage was observed but minor concerns such as hairline cracks on the slab were noticed. It can also be noted that the building is not yet fully utilized since its completion. In relation to the physical condition, the flooring material was observed to be made from reinforced concrete suspended slab, in which was unconventional as compared to the typical flooring system for a parking building. A parking building usually follows a composite floor decking system consisting of steel deck with concrete topping as its finished surface. While the current flooring system works, the absence of a steel deck may increase the risks of cracks on the slab and may affect the overall performance of the flooring system.

Another point of concern is the load path distribution on the elevated ramp of parking building, it was observed that the structural steel beams at the cantilevered section are discontinuous. The discontinuity was found due to the uneven cut of beams terminated by the cantilever steel section going to the steel column. Further, the uneven load distribution may transfer excessive stress to the girder instead of properly distributing it to the columns.

Lastly, the structural connections and bracings that also support the building from the effects of possible external loads such as the wind and earthquake load. From what was observed, the beam-column connections seem to be a shear connection and are not fully moment connections, which typically require bracing to counter the effects caused by horizontal loads (e.g., wind and earthquake load) and to ensure lateral stability. Moreover, shear connections can only transfer gravity loads and are unable to resist lateral forces. As for the existing, there is an absence of steel bracing, implying that the building might be susceptible to deformation, excessive lateral drift (sideways movement), and vibration.

Given these observations, and after due diligence, it has been deemed necessary to engage a comprehensive structural investigation and seismic assessment. This will allow for a thorough evaluation of the parking building's overall stability and safety, ensuring that any required reinforcements, retrofitting, or other interventions are based on accurate data and expert analysis. By proactively addressing these concerns, the Quezon City Government reinforces its commitment to structural integrity, public safety, and responsible infrastructure management.

3. OBJECTIVES

The QCG intends to engage the services of a consulting firm to conduct structural audit and investigation and prepare the appropriate structural repair and/or retrofitting design for the building.

The general objectives of the project are:

1. To obtain necessary data thru field investigations and determine the actual physical condition of the building;



- II. To perform a thorough structural and geotechnical investigation of the building, covering all key components including the foundation, steel framing system, connections, and load-resisting elements. The geotechnical investigation shall include assessment of soil conditions and soil bearing capacity. The scope shall involve detailed structural analysis, evaluation of material conditions (e.g., corrosion, fatigue), and code compliance review. The consultant shall prepare a comprehensive technical report presenting all findings, conclusions, and engineering recommendations to ensure the building's structural integrity, stability, and suitability for continued use or retrofitting, as needed;
- III. To acquire a Certificate of Structural Adequacy/Stability if the building is found structurally sound; and
- IV. To determine the structural load-bearing capacity and allowable service loads of the steel parking structure, ensuring compliance with applicable safety standards and codes. The assessment shall include evaluation of vehicular load capacity per level. If the structure needs repairs or retrofitting, the consultant shall recommend temporary load limits and safety measures to allow continued use while keeping risks to a minimum.
- V. To provide the most cost-efficient retrofit scheme to increase either global or local structural behavior of the inadequately reinforced main structural components, in order for the overall structure to attain the desired performance objective. (Conditional).

4. SCOPE OF SERVICES

The CONSULTANT shall perform required engineering services using a three-tiered process for seismic evaluation of the existing structure, covering:

A. TIER 1 – FIELD INVESTIGATION PHASE

It consists of qualitative checklist statements that allows a rapid evaluation of the structural and non-structural and foundation / geologic hazard elements of the building and site conditions. It is used to assess primary components and connections in the seismic force resisting system, as well as nonstructural systems, in compliance with ASCE 41-13. The results, findings and recommendations will be the basis in the design analysis procedure in TIER 2. The scope of work of the consultant shall include:

- Coordination with the Building Administrator or the QCG's authorized representative with regard to the scheduling of work so as to minimize, if not eliminate, any disturbance to the building occupants. As much as possible, work will be scheduled after office hours, weekends, and/or holidays;
- Ocular site inspection for verification of the actual conditions of the building and project site. During and prior to performing the investigation, the building administrator shall be properly coordinated to inform all concerned and offices which will be affected by the possible removal of architectural works to expose structural elements;
- Coordination with the Building Administrator for the method of temporary displacing any architectural finishes for possible



reinstallation prior to the opening of the ceiling, floor finishes and other architectural treatment of the existing building. Removal and restoration of architectural obstruction and elements will be by the QCG;

- Record of all structural and non-structural damages inclusive of sign for column settlements, if any. Any observed cracks (either temperature, minimal cracks and/or major damages) or deflections on structural and non- structural elements and structural modifications on the building will be mapped;
- Field measurements of the following for the purpose of verifying the structural as-built drawings:
 - Cross sectional dimension of Structural members;
 - Layout of existing building indicating center to center spacing of all columns and other vertical reinforced concrete elements;
 - Actual floor to floor heights of all levels from top of the structural slab to the level of the next structural slab immediately above; and
 - Center-to-center spacing of all beams and girders of any and their relative layout with reference to the column centerlines into which they are connecting.
- Exploratory investigation on the structural members like beams, columns, slabs, roof support, etc. to verify the as-built drawings which includes random testing as follows:
 - Concrete Compression Test
 - Rebound-Hammer Test
 - Rebar Tensile Test
 - Rebar Scanning Test
 - Structural Steel NDT
 - Welding Test
- Further verification of structural elements by chipping off a portion of the concrete cover to verify the details of reinforcing bars, if rebar scanning report is not reliable or deemed doubtful. This shall be done on strategic locations based of the prepared framing plans;
- Subsurface soil exploration through borehole drilling and standard penetration tests (SPT) to determine soil properties and bearing capacity;
- Laboratory soil testing, including:
 - Moisture Content
 - Atterberg Limits
 - Grain Size Analysis
 - Consolidation Test
 - Triaxial Shear Test;



- Groundwater level assessment to evaluate potential liquefaction, flooding risk, and foundation stability;
- Geophysical testing (if required), such as seismic refraction or electrical resistivity tests, to assess subsurface conditions and potential geologic hazards;
- Evaluation of foundation conditions, including existing footings, piles (if any), and soil settlement observations; and
- Preparation and submission of TIER 1 Report for Investigative Results, Material Test Results, Findings, and Recommendations.

B. TIER 2 – EVALUATION PHASE

A complete analysis of the building shall be performed with reference to the gathered data / information in TIER 1. Evaluation under TIER 2 is intended to identify building area(s) not requiring rehabilitation and assess the extent of damages for recommended of structural strengthening and retrofitting works. This would include:

- Preparation of Structural As-Built Drawings reflecting the actual conditions of the structure;
- Preparation of a full three-dimensional (3D) structural model using a suitable software (e.g., ETABS, STAAD) to simulate the behavior of steel members, connections, and foundations under various load combinations (linear analysis), utilizing the members indicated in the as-built drawings including foundation;
- Assessment of live loads considering the building's intended use as a vehicular parking facility, including evaluation of typical vehicle types, wheel loads, dynamic impacts, and expected usage patterns;
- Evaluation of the stress levels applied in the structural members subjected to different load combinations including seismic and wind loads, in compliance with relevant codes;
- Determination of structural adequacy through design analysis and calculation;
- Investigation of the actual capacity of the representative structural elements through the respective laboratory testing. Any uncertainties on the actual capacity may necessitate for actual load testing on the particular representative structural elements;
- Submission of Technical Report inclusive of the results of physical, theoretical and analytical investigations;
- Issuance of Certificate of Structural Adequacy/Stability if the building is found to be structurally sound and compliant to the latest National Structural Building Code of the Philippines (NSCP); and
- Preparation and submission of the TIER 2 Report for Structural Evaluation Results and Recommendations, including updated Structural As-Built Drawings. The Structural As-Built Drawings must be signed and sealed by a reputable and registered Civil/Structural Engineer.



C. TIER 3 — DETAILED EVALUATION PHASE (CONDITIONAL)

A comprehensive or detailed evaluation shall be undertaken after recognizing the deficiency(ies) in TIER 2. A Nonlinear Static Analysis Procedure shall be carried out to identify the areas that will require retrofitting and attain the life safety performance objective. This would include:

- Non-Linear Static Structural Analysis with an earthquake probability of 10% in 50 years equivalent to recurrence of 475 years on structures where deficiencies have been identified. The structure has to attain Life Safety Objective in this procedure;
- Verification of the following:
 - Stiffness of the structure through Global Building Checks using indicative factors such as seismic inter-story drift or wind displacement; and
 - Limit State of the structure either force-controlled or deformation- controlled members through Component Level Checks.
- Assessment of the structural limit state, identifying force-controlled and deformation-controlled members requiring intervention.
- Recommendation on remedial measures to strengthen structural members that are found to be structurally inadequate to resist the anticipated stresses and deformations (if necessary) with consideration on the minimum disturbance on the use of structure;
- Preparation of Final Report under TIER 3 duly signed and sealed by a reputable Civil/Structural Engineer and shall include but not limited to the following:
 - Scope and intent;
 - Site and building data;
 - Verified maximum allowable live load (kg/m²), including vehicular capacity per level and occupancy limits for future parking use;
 - List of assumptions (material properties, site soil conditions, etc.);
 - Structural deficiencies and required strengthening measures (if applicable)
 - Findings and recommendations; and
 - Appendices (references, material test results, calculations, checklists, summary data sheet and analysis procedure).
- Preparation of Repair Plans/Structural Retrofitting Drawings and other related documents for permitting and construction purposes duly signed and sealed a reputable Civil/Structural Engineer.
- During implementation / construction phase of retrofitting:
 - Attendance to weekly coordination meeting during design and construction phase;
 - Assistance to the Implementing Agency and other related trades in connection with Structural Details and Implementations;
 - Review and approval of shop-drawings and other submittals



- o Evaluation and recommendation on the tests result during construction.
- Issuance of Certificate of Structural Adequacy/Stability of the building after remedial measures has been implemented.

5. SUBMITTALS

The Consultant shall submit the following:

A. TIER 1 – SCREENING PHASE

- | | |
|-------------------------------------|--------|
| • Tier 1 Report (8.5in x 13in) | 2 Sets |
| • Material Test Results | 2 Sets |
| • Geotechnical Investigation Report | 2 Sets |
| • Electronic files of each document | 1 Set |

B. TIER 2 – EVALUATION PHASE

- | | |
|---|--------|
| • Structural As-Built Drawings (A3) | 2 Sets |
| • Tier 2 Report (8.5in x 13in) | 2 Sets |
| • Certificate of Structural Adequacy/Stability
duly signed and sealed by a structural engineer | 2 Sets |
| • Electronic files of each document | 1 Set |

C. TIER 3 — DETAILED EVALUATION PHASE (CONDITIONAL)

- | | |
|---|--------|
| • Tier 3 Final Report (8.5in x 13in) | 2 Sets |
| • Structural Retrofitting Drawings (20x30 Blueprint) | 8 Sets |
| • Design Calculations, Technical Specifications | 5 Sets |
| • Certificate of Structural Adequacy/Stability
duly signed and sealed by a structural engineer | 2 Sets |
| • Electronic files of each document | 1 Set |

6. PROCUREMENT OF CONSULTING SERVICES

For the purpose of procuring the services of Consultant / Contractor for this undertaking, the Revised IRR of the Republic Act 9184 shall govern. An "Instruction to Bidders" (ITB) shall be issued detailing the requirements and procedures as provided in the IRR, which includes the following:

- 6.1 The Quality-Cost based evaluation procedure shall be adopted in this bidding;
- 6.2 There should be only (3) three consultants to be shortlisted. The Eligibility criteria and rating system for short listing of consultants:
 - 6.2.1 Applicable experience of the consultant and members in case of joint ventures, considering both the overall experiences of the firm or, in the case of new firms, the individual experiences of the principal and key staff, including the times when employed by other consultants (Weight: 50%);



- 6.2.2 Qualification of personnel who may be assigned to the job vis-à-vis extent and complexity of the undertaking (Weight: 30%); and
- 6.2.3 Current workload relative to capacity (Weight: 20%).
- 6.2.4 The minimum Eligibility Score is 70%.
- 6.3 The technical proposal together with the financial proposal shall be considered in the evaluation of consultant / contractor. The technical proposals shall be evaluated first using the following criteria:
- 6.3.1 Quality personnel to be assigned to the project, ensuring the suitability of key staff to perform the duties required. This includes the general qualifications, competence, education, and training of key personnel, particularly Registered/Licensed Civil / Structural Engineers (CE/StrE) with expertise in structural auditing, analysis, and retrofitting; Registered/Licensed Civil Engineers specializing in Geotechnical Engineering, with expertise in soil investigation, foundation analysis, and geotechnical design; - (Weight 50%)
- 6.3.2 Experience and capability of the Consultant / Contractor which include records previous engagement and quality performance in similar and in other projects; relationship with the previous and current clients and overall work commitments, geographical distribution of current / impending projects and attention to be given by the Consultant / Contractor. The experience of the Consultant / Contractor to the project shall be considering both the overall experiences of the firm and the individual experiences of the principal and key staff including the times when employed by other consultants; and - (Weight 30%).
- 6.3.3 Plan of approach and methodology with emphasis on the clarity, feasibility, innovativeness and comprehensiveness of the plan approach and the quality of interpretation of the project problems, risks and suggested solutions. - (Weight 20%)
- 6.3.4 The minimum Technical Score is 70%.
- 6.4 All conditions for recommendations shall be in consideration with the minimum disturbance to the occupants both on the subject structure and other nearby buildings;
- 6.5 All procedures shall comply with the 'LIFE SAFETY OBJECTIVE' to ensure the structural integrity and safe occupancy of the multi-level steel parking;
- 6.6 The financial proposal of Consultant / Contractor who meet the minimum technical score shall be opened; and
- 6.7 In identifying the Highest Rated Bid, the Technical Proposal shall be given a weight 60% while the Financial Proposal shall have 40%.



7. STAFFING

The Consultant shall provide the following key staff positions:

I. STRUCTURAL ENGINEERING TEAM:

- **Principal Structural Engineer** – One (1) Registered Civil Engineer with at least fifteen (15) years of experience in the field of Structural Engineering. Must be an active member of ASEP (Association of Structural Engineers of the Philippines) and have completed at least five (5) similar structural investigation and retrofitting projects.
- **Senior Structural Engineers** – At least two (2) registered Civil Engineers with at least fifteen (15) years of experience in the field of Structural Engineering. Must be an active member of ASEP (Association of Structural Engineers of the Philippines) and have completed at least five (5) similar structural investigation and retrofitting projects.
- **Junior Structural Engineers** – At least two (2) registered Civil Engineers with at least five (5) years of experience in the field structural engineering, and should have completed at least five (5) similar structural investigation and retrofitting projects.

II. GEOTECHNICAL ENGINEERING TEAM:

- **Senior Geotechnical Engineer** – One (1) Registered/Licensed Civil Engineer with specialization in the field of geotechnical engineering and with at least ten (10) years of experience in the field of geotechnical investigation.
- **Geotechnical Engineer** – One (1) Registered Civil Engineer specializing in Geotechnical Engineering, with at least five (5) years of experience in geotechnical investigation.

III. SUPPORT STAFF (IF REQUIRED):

- **Drilling Rig Supervisor** – One (1) individual with a recognized certificate in geotechnical engineering-related training and at least five (5) years of experience in geotechnical investigation.
- **Drilling Rig Operator** One (1) individual with a recognized certificate in geotechnical engineering-related training and at least five (5) years of experience in geotechnical investigation.
- **Drilling Rig Crew** - One (1) individual with a recognized certificate in geotechnical engineering-related training and at least five (5) years of experience in geotechnical investigation.
- **Surveyor** – One (1) licensed Geodetic Engineer (if surveying is required for structural/geotechnical assessments).
- **CAD Technician** – One (1) with proficiency in AutoCAD, Revit, or equivalent software for preparing engineering drawings.

Notes:

I. Software Requirements:

The Consultant shall have complete computer facilities and related software for structural and geotechnical analysis. All structural modeling, analysis, and design shall comply with the latest edition of the National



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Structural Code of the Philippines (NSCP) and other applicable international standards.

The Consultant shall use structural engineering software that allows the application of NSCP design parameters for seismic, wind, and structural load analysis. The following industry-standard software, or equivalent, shall be used:

- Structural Analysis & Seismic Design: ETABS, STAAD, SAP2000, or other software capable of applying NSCP load combinations, seismic parameters, and structural design requirements.
- Geotechnical Analysis & Foundation Design: PLAXIS, GeoStudio, or equivalent software for soil-structure interaction, slope stability, and foundation design.

All computational models and simulations shall be accurate, well-documented, and verifiable to support design decisions in compliance with the latest NSCP.

ii. Field Surveys & Investigations:

- The Consultant shall provide the necessary staff and equipment to conduct all required field surveys, geotechnical investigations, and structural assessments to ensure the accuracy and integrity of the analysis.

8. PROJECT DURATION

The project must be completed in **ONE HUNDRED FIFTY (150) CALENDAR DAYS**. A detailed schedule of work and activity plan shall be prepared and submitted together with the Consultant's Proposal.

9. APPROVED BUDGET FOR THE CONTRACT

The approved budget is shown below in respective to phase(s) which includes the cost of all taxes, such as but not limited to value added levies and duties. Any and all taxes, charges, imposts and other legal exactions due or that may become due under this contract shall be for the account of the contractor / Consultant. The Implementing Agency shall withhold applicable withholding taxes, if any, from its payment to the Contractor/Consultant in accordance with the requirements of the law.



SCOPE OF WORKS	BUDGETARY ESTIMATES (PHP)	DURATION (CALENDAR DAYS)
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TIER 1 : FIELD INVESTIGATION PHASE

1. Visual Inspection		
2. Horizontal and Vertical Check Survey	8.00%	
3. Structural and Non-structural Records		
4. Geotechnical Investigation (2 Boreholes)	11.97%	
5. Concrete Coring/Compressive Strength Test (4 test locations) with restoration	2.51%	60
6. Concrete Hammer Test (20 location)	2.10%	
7. Reinforcing Bar Tensile Strength Test (4 test locations) with restoration	2.51%	
8. Rebar Scanning	3.14%	
9. Structural Steel Non-Destructive Testing	3.46%	
10. Welding Testing	3.46%	

TIER 2 : EVALUATION PHASE

1. Structural as-built Drawing		
2. Design Analysis (Linear Analysis) using three dimensional (3D) structural model with a reliable software	62.85%	30

SUB- TOTAL FOR TIER 1 & 2	100.00%	
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TIER 3 : DETAILED EVALUATION PHASE

AS DEEMED NECESSARY

1. Structural Design Analysis and Calculation	65.88%	
2. Structural Retrofitting Drawings		
3. Bill of Quantities/Cost Estimates	16.56%	60
4. Structural Design Analysis and Calculation		
5. Technical Specifications		
6. Construction Support	17.56%	As Needed



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Attendance to Coordination Meeting / Assistance
during Construction Phase / Approval of Shop Drawing

SUB – TOTAL FOR TIER 1 & 2

100.00%

The Approved Budget for the Contract is **TWO MILLION ONE HUNDRED FORTY-NINE THOUSAND SEVEN HUNDRED PESOS (Php 2,149,700.00)**, inclusive of all government taxes/fees.

No Price Adjustment

The project cost shall be fixed and there shall be no price adjustments applicable for the duration of the contract except when the operations costs are increased by more than 10% as a result of any extraordinary circumstances as determined by the National Economic Development Authority (NEDA). Pursuant to the provisions of RA 9184 and its IRR on contract price escalation, all contract price escalation shall be approved by the Government Procurement Policy Board (GPPB).

10. TERMS OF PAYMENT

Relative to the deliverables, the following are the terms of payment:

TIER 1 & 2

- 15% - Upon receipt of Notice to Proceed (NTP)
- 55% - Upon submission of Inception Report
- 30% - Upon submission of Technical Report / Certification of System Efficiency

TIER 3 (CONDITIONAL)

- 50% - Progress Report
- 50% - Upon submission of Technical Report / Structural Retrofitting Drawings / Certification of Structural Stability

11. OWNER PROVIDED ITEMS

In the execution of the work, the following items shall be provided by the QCG:

- Clearance in surveying the building, and access to various parts of the building; and
- Building technical personnel to provide site assistance and support throughout the duration of the site works.



12. CHANGES

All instructions for revisions to the drawings and other documents shall be authorized and issued under Quezon City Department of Engineering (QCDE).

Revisions to the drawings and other documents, at no fault of the CONSULTANT, during any Phase that will substantially affect the scope of the delivery of the services, as determined and agreed upon by both parties, shall be implemented by the CONSULTANT within the corresponding and reasonable extension of the period concerned at no additional cost to the QCG.

Major revisions may be pursued as a separate contract subject to the applicable provisions of the IRR of RA 9184.


13. PENALTIES FOR BREACH OF CONTRACT


Failure to deliver the services according to the standards and requirements set by the Quezon City Government shall constitute an offense and shall subject the Supplier to penalties and/or liquidated damages pursuant to RA 9184 and its revised Implementing Rules and Regulations.

14. TERMINATION

The guidelines contained in RA 9184 and its revised IRR shall be followed in the termination of any service contract. In the event the City terminated the Contract due to default insolvency, or for cause, it may enter into negotiated procurement pursuant to section 53 of RA 9184 and its IRR.

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City Engineer



TERMS OF REFERENCE

CONSULTING SERVICES FOR THE STRUCTURAL INVESTIGATION AND SEISMIC ASSESSMENT OF THE PARKING BUILDING AT AMORANTO SPORTS COMPLEX, BARANGAY PALIGSAHAN

I. RATIONALE/BACKGROUND OF THE STUDY

The Quezon City Government (QCG) is committed to the continuous improvement of the city's infrastructure, ensuring that public facilities remain safe, functional, and resilient. Maintaining the integrity of government-owned buildings is a priority, especially those that serve the public and must withstand various environmental and structural challenges.

As part of this commitment, QCG takes proactive measures whenever structural concerns arise. Whether these issues are observed, experienced firsthand, or reported, immediate action is taken to assess the situation. When necessary, expert opinions from qualified engineers and specialists are sought to conduct thorough evaluations and recommend appropriate interventions. This ensures that any structural issues are addressed efficiently, preventing further deterioration and reinforcing the safety of public structures.

By continuously implementing these measures, the city strengthens its dedication to public safety and infrastructure resilience. Through vigilant monitoring, expert collaboration, and timely interventions, it remains steadfast in its mission to provide secure and sustainable public facilities for its citizens.

This vigilant approach extends to all public facilities under the city's jurisdiction, including those within major community hubs such as the Amoranto Sports Complex. One of the structures within this complex is the Parking Building, which serves employees, visitors, and community who utilize the facility. In terms of its current building condition, numerous verbal reports from concerned employees have indicated that some structural elements are not properly connected by welds. Moreover, as part of the city's initiative to maintain public safety, an initial inspection was conducted, raising concerns about the building's physical condition. The inspection was limited to what was physically observable at the time, necessitating a more extensive review to assess whether the building remains structurally sound.

II. PROJECT DESCRIPTION

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Another point of concern is the load path distribution on the elevated ramp of parking building; it was observed that the structural steel beams at the cantilevered section are discontinuous. The discontinuity was found due to the uneven cut of beams terminated by the cantilever steel section going to the steel column. Further, the uneven load distribution may transfer excessive stress to the girder instead of properly distributing it to the columns.

Lastly, the structural connections and bracings that also support the building from the effects of possible external loads such as the wind and earthquake load. From what was observed, the beam-column connections seem to be a shear connection and are not fully moment connections, which typically require bracing to counter the effects caused by horizontal loads (e.g., wind and earthquake load) and to ensure lateral stability. Moreover, shear connections can only transfer gravity loads and are unable to resist lateral forces. As for the existing, there is an absence of steel bracing, implying that the building might be susceptible to deformation, excessive lateral drift (sideways movement), and vibration.

Given these observations, and after due diligence, it has been deemed necessary to engage a comprehensive structural investigation and seismic assessment. This will allow for a thorough evaluation of the parking building's overall stability and safety, ensuring that any required reinforcements, retrofitting, or other interventions are based on accurate data and expert analysis. By proactively addressing these concerns, the Quezon City Government reinforces its commitment to structural integrity, public safety, and responsible infrastructure management.

III. SCOPE OF WORK

A. OBJECTIVES

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The general objectives of the project are:



- I. To obtain necessary data thru field investigations and determine the actual physical condition of the building;
- II. To perform a thorough structural and geotechnical investigation of the building, covering all key components including the foundation, steel framing system, connections, and load-resisting elements. The geotechnical investigation shall include assessment of soil conditions and soil bearing capacity. The scope shall involve detailed structural analysis, evaluation of material conditions (e.g., corrosion, fatigue), and code compliance review. The consultant shall prepare a comprehensive technical report presenting all findings, conclusions, and engineering recommendations to ensure the building's structural integrity, stability, and suitability for continued use or retrofitting, as needed;
- III. To acquire a Certificate of Structural Adequacy/Stability if the building is found structurally sound; and
- IV. To determine the structural load-bearing capacity and allowable service loads of the steel parking structure, ensuring compliance with applicable safety standards and codes. The assessment shall include evaluation of vehicular load capacity per level. If the structure needs repairs or retrofitting, the consultant shall recommend temporary load limits and safety measures to allow continued use while keeping risks to a minimum.
- V. To provide the most cost-efficient retrofit scheme to increase either global or local structural behavior of the inadequately reinforced main structural components, in order for the overall structure to attain the desired performance objective, if necessary.

B. SCOPE OF CONSULTANCY SERVICES

The CONSULTANT shall perform required engineering services using a three-tiered process for seismic evaluation of the existing structure, covering:

I. TIER 1 – FIELD INVESTIGATION PHASE

It consists of qualitative checklist statements that allows a rapid evaluation of the structural and non-structural and foundation / geologic hazard elements of the building and site conditions. It is used to assess primary components and connections in the seismic force resisting system, as well as nonstructural systems, in compliance with ASCE 41-13. The results, findings and recommendations will be the basis in the design analysis procedure in TIER 2. The scope of work of the consultant shall include:

- Coordination with the Building Administrator or the QCG's authorized representative with regard to the scheduling of work so as to minimize, if not eliminate, any disturbance to the building occupants. As much as possible, work will be scheduled after office hours, weekends, and/or holidays;
- Ocular site inspection for verification of the actual conditions of the building and project site. During and prior to performing the investigation, the building administrator shall be properly coordinated to inform all concerned offices which will be affected by the possible removal of



architectural works to expose structural elements;

- Coordination with the Building Administrator for the method of temporary displacing any architectural finishes for possible reinstallation prior to the opening of the ceiling, floor finishes and other architectural treatment of the existing building. Removal and restoration of architectural obstruction and elements will be by the QCG;
- Record of all structural and non-structural damages inclusive of sign for column settlements, if any. Any observed cracks (either temperature, minimal cracks and/or major damages) or deflections on structural and non- structural elements and structural modifications on the building will be mapped;
- Field measurements of the following for the purpose of verifying the structural as-built drawings:
 - Cross sectional dimension of Structural members;
 - Layout of existing building indicating center to center spacing of all columns and other vertical reinforced concrete elements;
 - Actual floor to floor heights of all levels from top of the structural slab to the level of the next structural slab immediately above; and
 - Center-to-center spacing of all beams and girders of any and their relative layout with reference to the column centerlines into which they are connecting.
- Exploratory investigation on the structural members like beams, columns, slabs, roof support, etc. to verify the as-built drawings which includes random testing as follows:
 - Concrete Compression Test
 - Rebound-Hammer Test
 - Rebar Tensile Test
 - Rebar Scanning Test
 - Structural Steel NDT
 - Welding Test
- Further verification of structural elements by chipping off a portion of the concrete cover to verify the details of reinforcing bars, if rebar scanning report is not reliable or deemed doubtful. This shall be done on strategic locations based of the prepared framing plans;
- Subsurface soil exploration through borehole drilling and standard penetration tests (SPT) to determine soil properties and bearing capacity;
- Laboratory soil testing, including:
 - Moisture Content
 - Atterberg Limits
 - Grain Size Analysis
 - Consolidation Test
 - Triaxial Shear Test;
- Groundwater level assessment to evaluate potential liquefaction,



flooding risk, and foundation stability;

- Geophysical testing (if required), such as seismic refraction or electrical resistivity tests, to assess subsurface conditions and potential geologic hazards;
- Evaluation of foundation conditions, including existing footings, piles (if any), and soil settlement observations; and
- Preparation and submission of TIER 1 Report for Investigative Results, Material Test Results, Findings, and Recommendations.

II. TIER 2 – EVALUATION PHASE

A complete analysis of the building shall be performed with reference to the gathered data / information in TIER 1. Evaluation under TIER 2 is intended to identify building area(s) not requiring rehabilitation and assess the extent of damages for recommended of structural strengthening and retrofitting works. This would include:

- Preparation of Structural As-Built Drawings reflecting the actual conditions of the structure;
- Preparation of a full three-dimensional (3D) structural model using a suitable software (e.g., ETABS, STAAD) to simulate the behavior of steel members, connections, and foundations under various load combinations (linear analysis), utilizing the members indicated in the as-built drawings including foundation;
- Assessment of live loads considering the building's intended use as a vehicular parking facility, including evaluation of typical vehicle types, wheel loads, dynamic impacts, and expected usage patterns;
- Evaluation of the stress levels applied in the structural members subjected to different load combinations including seismic and wind loads, in compliance with relevant codes;
- Determination of structural adequacy through design analysis and calculation;
- Investigation of the actual capacity of the representative structural elements through the respective laboratory testing. Any uncertainties on the actual capacity may necessitate for actual load testing on the particular representative structural elements;
- Submission of Technical Report inclusive of the results of physical, theoretical and analytical investigations;
- Issuance of Certificate of Structural Adequacy/Stability if the building is found to be structurally sound and compliant to the latest National Structural Building Code of the Philippines (NSCP); and
- Preparation and submission of the TIER 2 Report for Structural Evaluation Results and Recommendations, including updated Structural As-Built Drawings. The Structural As-Built Drawings must be signed and sealed by a reputable and registered Civil/Structural Engineer.



III. TIER 3 — DETAILED EVALUATION PHASE

A comprehensive or detailed evaluation shall be undertaken after recognizing the deficiency(ies) in TIER 2. A Nonlinear Static Analysis Procedure shall be carried out to identify the areas that will require retrofitting and attain the life safety performance objective. This would include:

- Non-Linear Static Structural Analysis with an earthquake probability of 10% in 50 years equivalent to recurrence of 475 years on structures where deficiencies have been identified. The structure has to attain Life Safety Objective in this procedure;
- Verification of the following:
 - Stiffness of the structure through Global Building Checks using indicative factors such as seismic inter-story drift or wind displacement; and
 - Limit State of the structure either force-controlled or deformation-controlled members through Component Level Checks.
- Assessment of the structural limit state, identifying force-controlled and deformation-controlled members requiring intervention.
- Recommendation on remedial measures to strengthen structural members that are found to be structurally inadequate to resist the anticipated stresses and deformations (if necessary) with consideration on the minimum disturbance on the use of structure;
- Preparation of Final Report under TIER 3 duly signed and sealed by a reputable Civil/Structural Engineer and shall include but not limited to the following:
 - Scope and intent;
 - Site and building data;
 - Verified maximum allowable live load (kg/m^2), including vehicular capacity per level and occupancy limits for future parking use;
 - List of assumptions (material properties, site soil conditions, etc.);
 - Structural deficiencies and required strengthening measures (if applicable)
 - Findings and recommendations; and
 - Appendices (references, material test results, calculations, checklists, summary data sheet and analysis procedure).
- Preparation of Repair Plans or Structural Retrofitting Drawings (if found necessary) and other related documents for permitting and construction purposes duly signed and sealed a reputable Civil/Structural Engineer.
- During implementation / construction phase of retrofitting:
 - Attendance to weekly coordination meeting during design and construction phase;
 - Assistance to the Implementing Agency and other related trades in connection with Structural Details and Implementations;
 - Review and approval of shop-drawings and other submittals from the approved contractor during construction phase; and
 - Evaluation and recommendation on the tests result during construction.
- Issuance of Certificate of Structural Adequacy/Stability of the building after remedial measures has been implemented.



C. SUBMITTALS

The Consultant shall submit the following:

A. TIER 1 – SCREENING PHASE

- | | |
|-------------------------------------|--------|
| • Tier 1 Report (8.5in x 13in) | 2 Sets |
| • Material Test Results | 2 Sets |
| • Geotechnical Investigation Report | 2 Sets |
| • Electronic files of each document | 1 Set |

B. TIER 2 – EVALUATION PHASE

- | | |
|---|--------|
| • Structural As-Built Drawings (A3) | 2 Sets |
| • Tier 2 Report (8.5in x 13in) | 2 Sets |
| • Certificate of Structural Adequacy/Stability
duly signed and sealed by a structural engineer | 2 Sets |
| • Electronic files of each document | 1 Set |

C. TIER 3 — DETAILED EVALUATION PHASE

- | | |
|---|--------|
| • Tier 3 Final Report (8.5in x 13in) | 2 Sets |
| • Structural Retrofitting Drawings (20x30 Blueprint) | 8 Sets |
| • Design Calculations, Technical Specifications | 5 Sets |
| • Certificate of Structural Adequacy/Stability
duly signed and sealed by a structural engineer | 2 Sets |
| • Electronic files of each document | 1 Set |

D. OWNER PROVIDED ITEMS

In the execution of the work, the following items shall be provided by the QCG:

- Clearance in surveying the building, and access to various parts of the building; and
- Building technical personnel to provide site assistance and support throughout the duration of the site works.

E. CHANGES

All instructions for revisions to the drawings and other documents shall be authorized and issued under Quezon City Department of Engineering (QCDE).

Revisions to the drawings and other documents, at no fault of the CONSULTANT, during any Phase that will substantially affect the scope of the delivery of the services, as determined and agreed upon by both parties, shall be implemented by the CONSULTANT within the corresponding and reasonable extension of the period concerned at no additional cost to the QCG.

Major revisions may be pursued as a separate contract subject to the applicable provisions of the IRR of RA 12009.



IV. PROJECT STANDARDS AND REQUIREMENTS

A. KEY PERSONNEL – QUANTITY AND QUALIFICATIONS

The Consultant shall provide the following key staff positions:

I. STRUCTURAL ENGINEERING TEAM:

- **Principal Structural Engineer** – One (1) Registered Civil Engineer with at least fifteen (15) years of experience in the field of Structural Engineering. Must be an active member of ASEP (Association of Structural Engineers of the Philippines) and have completed at least five (5) similar structural investigation and retrofitting projects.
- **Senior Structural Engineers** – At least two (2) registered Civil Engineers with at least fifteen (15) years of experience in the field of Structural Engineering. Must be an active member of ASEP (Association of Structural Engineers of the Philippines) and have completed at least five (5) similar structural investigation and retrofitting projects.
- **Junior Structural Engineers** – At least two (2) registered Civil Engineers with at least five (5) years of experience in the field structural engineering, and should have completed at least five (5) similar structural investigation and retrofitting projects.

II. GEOTECHNICAL ENGINEERING TEAM:

- **Senior Geotechnical Engineer** – One (1) Registered/Licensed Civil Engineer with specialization in the field of geotechnical engineering and with at least ten (10) years of experience in the field of geotechnical investigation.
- **Geotechnical Engineer** – One (1) Registered Civil Engineer specializing in Geotechnical Engineering, with at least five (5) years of experience in geotechnical investigation.

III. DRILLING & FIELD INVESTIGATION TEAM:

- **Drilling Rig Supervisor** – One (1) individual with a recognized certificate (e.g, TESDA Crane Operator (NC II) National Certificate Level II) or equivalent, and at least one (1) year of experience in geotechnical investigation.
- **Drilling Rig Operator** One (1) individual with a recognized certificate (e.g, TESDA Crane Operator (NC II) National Certificate Level II) or equivalent, and at least one (1) year of experience in geotechnical investigation.
- **Drilling Rig Crew** – One (1) individual with a recognized certificate (e.g, TESDA Crane Operator (NC II) National Certificate Level II) or equivalent, and at least one (1) year of experience in geotechnical investigation.

IV. SUPPORT STAFF:

- **Surveyor** – One (1) licensed Geodetic Engineer (if surveying is required for structural/geotechnical assessments).
- **CAD Technician** – One (1) individual with a recognized certificate (e.g., TESDA Technical Drafting (NC II) National Certificate Level II) or equivalent, and at least one (1) year of experience in AutoCAD, Revit, or equivalent software for preparing engineering drawings.



Notes:

I. Software Requirements:

The Consultant shall have complete computer facilities and related software for structural and geotechnical analysis. All structural modeling, analysis, and design shall comply with the latest edition of the National Structural Code of the Philippines (NSCP) and other applicable international standards.

The Consultant shall use structural engineering software that allows the application of NSCP design parameters for seismic, wind, and structural load analysis. The following industry-standard software, or equivalent, shall be used:

- Structural Analysis & Seismic Design: ETABS, STAAD, SAP2000, or other software capable of applying NSCP load combinations, seismic parameters, and structural design requirements.
- Geotechnical Analysis & Foundation Design: PLAXIS, GeoStudio, or equivalent software for soil-structure interaction, slope stability, and foundation design.

All computational models and simulations shall be accurate, well-documented, and verifiable to support design decisions in compliance with the latest NSCP.

ii. Field Surveys & Investigations:

- The Consultant shall provide the necessary staff and equipment to conduct all required field surveys, geotechnical investigations, and structural assessments to ensure the accuracy and integrity of the analysis.

B. Deliverables

The Consultancy Services shall prepare three reports in three copies each that shall serve as supporting documents in their billing statement: (1) Inception Report; (2) Soil Investigation and Geotechnical Study Report for all proposed sites; and, (3) Structural Analysis and Design for each proposed building.

a. Inception Report (15%)

The Consultant is required to submit one (1) month after commencement of services. It shall outline a detailed work program and briefly describe the methodology and project schedule (GANTT and S-Curve) proposed to meet the terms of reference. The report shall include the initial findings as well as preliminary layout of the forms to be used for various investigations and calculations. Inception Reports shall be submitted in soft-bound copy with title of the report written at the spine.

b. Soil Investigation and Geotechnical Study Report (35%)

The Consultant shall prepare the final report in 3 bound copies to be submitted after the completion of consulting services/works. It shall include,



but not be limited to the following:

- I. Field Investigation and Methodology
- II. Borehole Drilling and Sampling
- III. Laboratory Testing
- IV. Regional Geology
- V. Vicinity Maps in scale of 1:50,000
- VI. Final Boring Logs (BL)
 - i. Job, boring, hole number, date, time, boring/drilling foreman and supervisor
 - ii. Weather condition
 - iii. Depth of water level
 - iv. Method of penetration and flushing system -Description of soil strata encountered
 - v. Depth of soil boundaries
 - vi. Size, type and depth of samples and sample number
 - vii. Type and depth of in situ test
 - viii. Standard Penetration Tests Resistance, 'N' values
 - ix. Detailed notes on boring/drilling procedure, casing sizes and resistance to driving, description of wash water or spoil from boring/drilling tools
 - x. Depth of boring
 - xi. Other relevant information such as RQD, percent core recovery, etc.
- VII. Final Laboratory Test Results (FLTR)
- VIII. Borehole Location Plan in scale of 1:250
- IX. Soil Profile along structures showing boring/drillings logs
- X. Recommendations if called for, such as type of proposed countermeasures/structures to address geological/geotechnical problems and foundation type.
- XI. Other relevant data
 - i. Photographs showing the borehole drilling and sampling at each proposed site shall be taken by the Consultant and form part of the report. The photographs to be taken shall depict the following:
 - Equipment used
 - Core drilling operation
 - Water level measurements
 - Performance of SPT sampling
 - All cores and SPT sample placed in core boxes
 - Date photographs were taken
 - Location or station

c. Structural Analyses and Design (50%)

The design and specifications shall conform to, but shall not be limited to the following standards set by the:

- I. National Building Code of the Philippines (NBCP), latest edition
- II. National Structural Code of the Philippines (NSCP), latest edition
- III. ASEP Earthquake Design Manual



- IV. ASEP Handbook on Computer-Aided Analysis and Design of RC Buildings
- V. ACI-318 2014, Building Code requirements for Structural Concrete

With respect to the actual implementation, applicable rules and regulations prescribed by the following agencies/and or embodied in the following shall be observed:

- I. Department of Public Works and Highways
- II. Department of Education
- III. Bureau of Fire Protection
- IV. Applicable Building Laws in the Province of Bataan/Local Government Unit

V. PROJECT DURATION

The project must be completed in **ONE HUNDRED FIFTY (150) CALENDAR DAYS** upon issuance of the Notice to Proceed. A detailed schedule of work and activity plan shall be prepared and submitted together with the Consultant's Proposal.

VI. APPROVED BUDGET FOR THE CONTRACT

The approved budget is shown below in respective to phase(s) which includes the cost of all taxes, such as but not limited to value added levies and duties. Any and all taxes, charges, imposts and other legal exactions due or that may become due under this contract shall be for the account of the contractor / Consultant. The Implementing Agency shall withhold applicable withholding taxes, if any, from its payment to the Contractor/Consultant in accordance with the requirements of the law.

SCOPE OF WORKS	PERCENTAGE ACCOMPLISHED	DURATION (CALENDAR DAYS)
TIER 1 : FIELD INVESTIGATION PHASE		
1. Visual Inspection		
2. Horizontal and Vertical Check Survey	4.65%	
3. Structural and Non-structural Records		
4. Geotechnical Investigation (2 Boreholes)	6.98%	60
5. Concrete Coring/Compressive Strength Test (4 test locations) with restoration	1.46%	
6. Concrete Hammer Test (20 location)	1.22%	
7. Reinforcing Bar Tensile Strength Test (4 test locations) with restoration	1.47%	



8. Rebar Scanning	1.83%	
9. Structural Steel Non-Destructive Testing	2.02%	
10. Welding Testing	2.02%	
TIER 2 : EVALUATION PHASE		
1. Structural as-built Drawing		
2. Design Analysis (Linear Analysis) using three dimensional (3D) structural model with a reliable software	36.63%	30
TIER 3 : DETAILED EVALUATION PHASE		
AS DEEMED NECESSARY		
1. Structural Design Analysis and Calculation	27.48%	
2. Structural Retrofitting Drawings		
3. Bill of Quantities/Cost Estimates	6.91%	60
4. Structural Design Analysis and Calculation		
5. Technical Specifications		
6. Construction Support		
Attendance to Coordination Meeting / Assistance during Construction Phase / Approval of Shop Drawing	7.33%	As Needed
GRAND TOTAL	100.00%	

The Approved Budget for the Contract is **TWO MILLION ONE HUNDRED FORTY-NINE THOUSAND SEVEN HUNDRED PESOS (Php 2,149,700.00)**, inclusive of all government taxes/fees.

No Price Adjustment

The project cost shall be fixed and there shall be no price adjustments applicable for the duration of the contract except when the operations costs are increased by more than 10% as a result of any extraordinary circumstances as determined by the National Economic Development Authority (NEDA). Pursuant to the provisions of RA 9184 and its IRR on contract price escalation, all contract price escalation shall be approved by the Government Procurement Policy Board (GPPB).



VII. BID EVALUATION METHODOLOGY

For the purpose of procuring the services of Consultant / Contractor for this undertaking, the New Government Procurement Act (Republic Act No. 12009) shall govern. An "Instruction to Bidders" (ITB) shall be issued detailing the requirements and procedures as provided in the IRR, which includes the following:

a. Quality-Cost Based Evaluation/Quality-Based Evaluation

Quality-Based Evaluation Procedure

- i. A two-stage procedure shall be adopted whereby each consultant shall be required to submit his technical and financial proposals simultaneously in separate sealed envelopes.
- ii. After receipt of bids, the technical proposals shall first be opened and evaluated. The BAC shall rank the consultants in descending order based on the numerical ratings of their technical proposals and identify the Highest Rated Bid: Provided, however, That the Highest Rated Bid shall pass the minimum score indicated in the Bidding Documents.
- iii. The HoPE shall approve or disapprove the recommendations of the BAC within two (2) calendar days after receipt of the results of the evaluation from the BAC.
- iv. After approval by the HoPE of the Highest Rated Bid, its financial proposal shall then be opened. The BAC shall, within three (3) calendar days, notify and invite the consultant with the Highest Rated Bid for the opening of financial proposal for the purpose of conducting negotiations with the said consultant. In the letter of notification, the BAC shall inform the consultant of the issues in the technical proposal the BAC may wish to clarify during negotiations.
- v. Negotiations shall be in accordance with Section 33.2.5 of the IRR of RA 9184: Provided, That the amount indicated in the financial envelope shall be made as the basis for negotiations and the total contract amount shall not exceed the amount indicated in the envelope and the ABC as stated in the Bidding Documents.

Quality-Cost Based Evaluation Procedure

- i. The technical proposal together with the financial proposal shall be considered in the evaluation of consultants. The technical proposals shall be evaluated first using the criteria in Section 33.2.2 of the IRR of RA 9184. The financial proposals of the consultants who meet the minimum technical score shall then be opened.
- ii. The financial and technical proposals shall be given corresponding weights with the financial proposal given a minimum weight of fifteen percent (15%) up to a maximum of forty percent (40%). The weight of the technical criteria shall be adjusted accordingly such that their total weight in percent together with the weight given to the financial proposal shall add to one hundred percent (100%). The exact weights shall be approved by the HoPE upon the recommendation of the BAC and indicated in the Bidding Documents. The BAC shall rank the consultants in descending



order based on the combined numerical ratings of their technical and financial proposals and identify the Highest Rated Bid.

- iii. The HoPE shall approve or disapprove the recommendations of the BAC within two (2) calendar days after receipt of the results of the evaluation from the BAC.
- iv. After approval by the HoPE of the Highest Rated Bid, the BAC shall, within three (3) calendar days, notify and invite the consultant with the Highest Rated Bid for negotiation in accordance with Section 33.2.5 of the IRR of RA 9184, except for the financial proposal under item (e) thereof.

b. Shortlisting Requirement

i. Minimum Eligibility Score

The minimum Eligibility Score is 70%.

ii. Number of Consultant/s to be Shortlisted

The BAC shall draw up the short list of consultants from those who have been determined as eligible in accordance with the provisions of this IRR. The number of short-listed consultants, which shall be determined in the pre procurement conference, shall consist of three (3) to seven (7) consultants, with five (5) as the preferable number. Should only one (1) or less than the required number apply for eligibility and short listing, pass the eligibility check, and/or pass the minimum score required in the short listing, the BAC shall consider the same.

c. Eligibility Evaluation

i. Criteria and Rating System

The Eligibility criteria and rating system for short listing of consultants:

- 1. Applicable experience of the consultant and members in case of joint ventures, considering both the overall experiences of the firm or, in the case of new firms, the individual experiences of the principal and key staff, including the times when employed by other consultants.
- 2. Qualification of personnel who may be assigned to the job vis-à-vis extent and complexity of the undertaking and;
- 3. Current workload relative to capacity.

ii. Weights for Each Criterion

CRITERIA	WEIGHT
Experience of the consultant	50%
Qualification of personnel	30%
Current workload relative to capacity	20%
TOTAL	100%

C. Passing Score

The minimum Eligibility Score is 70%.



a. Technical Evaluation

i. Criteria and Rating System

The technical proposal together with the financial proposal shall be considered in the evaluation of consultant / contractor. The technical proposals shall be evaluated first using the following criteria:

1. Quality personnel to be assigned to the project, ensuring the suitability of key staff to perform the duties required. This includes the general qualifications, competence, education, and training of key personnel, particularly Registered/Licensed Civil / Structural Engineers (CE/StrE) with expertise in structural auditing, analysis, and retrofitting; Registered/Licensed Civil Engineers specializing in Geotechnical Engineering, with expertise in soil investigation, foundation analysis, and geotechnical design;
2. Experience and capability of the Consultant / Contractor which include records previous engagement and quality performance in similar and in other projects; relationship with the previous and current clients and overall work commitments, geographical distribution of current / impending projects and attention to be given by the Consultant / Contractor. The experience of the Consultant / Contractor to the project shall be considering both the overall experiences of the firm and the individual experiences of the principal and key staff including the times when employed by other consultants; and
3. Plan of approach and methodology with emphasis on the clarity, feasibility, innovativeness and comprehensiveness of the plan approach and the quality of interpretation of the project problems, risks and suggested solutions.

ii. Weights for Each Criterion

CRITERIA	WEIGHT
Quality personnel	50%
Experience and capability of consultant/contractor	30%
Plan of approach and methodology	20%
TOTAL	100%

iii. Passing Score

The minimum Technical Score is 70%.

b. Calculation of Rating

i. Weights for Technical and Financial

- a. The financial proposal of Consultant / Contractor who meet the minimum technical score shall be opened; and
- b. In identifying the Highest Rated Bid, the Technical Proposal shall be given a weight 60% while the Financial Proposal shall have 40%.



All conditions for recommendations shall be in consideration with the minimum disturbance to the occupants both on the subject structure and other nearby buildings;

All procedures shall be able to satisfy the "**LIFE SAFETY OBJECTIVE**" since the structure is one of the essential facilities;

VIII. TERMS OF PAYMENT

Relative to the deliverables, the following are the terms of payment:

TIER 1 & 2

15% - Upon receipt of Notice to Proceed (NTP) and submission of Inception Report

30% - Upon submission of Material Testing result and As-Built Structural Drawings

25% - Upon submission of Structural Analysis and Evaluation Report

TIER 3

20% - Upon submission of the Structural Design and Plans in accordance with the updated Philippine Structural Code

10% - Upon submission of the Detailed Engineering Documents, including the Bills of Quantities and Technical Specifications



IX. CANCELLATION/TERMINATION OF CONTRACT

A. PENALTIES FOR BREACH OF CONTRACT

Failure to deliver the services according to the standards and requirements set by the Quezon City Government shall constitute an offense and shall subject the Supplier to penalties and/or liquidated damages pursuant to RA 12009 and its revised Implementing Rules and Regulations.

B. TERMINATION

The guidelines contained in RA 9184 and its revised IRR shall be followed in the termination of any service contract. In the event the City terminated the Contract due to default insolvency, or for cause, it may enter into negotiated procurement pursuant to section 53 of RA 9184 and its IRR.

Prepared By:


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C.E., Planning and Design Division


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Submitted By:


Engr. **FREDISWINDA D.L. DE GUZMAN**
Head, Planning and Design Division

Approved By:


Atty. **MARK DALE DIAMOND P. PERRAL**
City Engineer



TERMS OF REFERENCE

CONSULTING SERVICES FOR THE STRUCTURAL INVESTIGATION AND SEISMIC ASSESSMENT OF THE PARKING BUILDING AT AMORANTO SPORTS COMPLEX, BARANGAY PALIGSAHAN

I. COST DERIVATION

SCOPE OF WORKS	BUDGETARY ESTIMATES (PHP)	DURATION (CALENDAR DAYS)
TIER 1 : FIELD INVESTIGATION PHASE		
1. Visual Inspection		
2. Horizontal and Vertical Check Survey	100,000.00	
3. Structural and Non-structural Records		
4. Geotechnical Investigation (2 Boreholes)	150,000.00	
5. Concrete Coring/Compressive Strength Test (4 test locations) with restoration	31,500.00	60
6. Concrete Hammer Test (20 location)	26,300.00	
7. Reinforcing Bar Tensile Strength Test (4 test locations) with restoration	31,500.00	
8. Rebar Scanning	39,400.00	
9. Structural Steel Non-Destructive Testing	43,400.00	
10. Welding Testing	43,400.00	
TIER 2 : EVALUATION PHASE		
1. Structural as-built Drawing		
2. Design Analysis (Linear Analysis) using three dimensional (3D) structural model with a reliable software	787,500.00	30
TIER 3 : DETAILED EVALUATION PHASE		
AS DEEMED NECESSARY		
1. Structural Design Analysis and Calculation	590,700.00	
2. Structural Retrofitting Drawings	148,500.00	60
3. Bill of Quantities/Cost Estimates		



Republic of the Philippines
Quezon City
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4. Structural Design Analysis and Calculation		
5. Technical Specifications		
6. Construction Support		
Attendance to Coordination Meeting / Assistance during Construction Phase / Approval of Shop Drawing	157,500.00	As Needed
GRAND TOTAL	2,149,700.00	