



**NATIONAL CENTER FOR MENTAL HEALTH
PLANNING AND DEVELOPMENT SECTION
TERMS OF REFERENCE**

**PROJECT : STRUCTURAL ASSESSMENT/INVESTIGATION OF THE EXISTING
PAVILION 6 EXTENSION BUILDING**
LOCATION : NCMH Compound, 9 de Pebrero, Mauway, Mandaluyong City

I. PROJECT BACKGROUND

A. RATIONALE

The National Center for Mental Health (NCMH) being the premiere specialty hospital for mental health is continuously embarking on a modernization and upgrading of facilities and programs. In line with this NCMH included in the Five Year Development Plan and in the hospital Three Year Rolling program (TRIP) the Construction of the Geriatric Psychiatric Complex Building to be built in the current location of Pavilion 6 extension or if possible that the existing building be converted to a new purpose and continue the construction until the said becomes habitable. The NCMH intends to apply the sum of Nine Hundred Seventy Five Thousand Pesos Only (Php 985,000.00) being the Approved Budget for the Contract for the procurement and implementation of the Structural Assessment/Investigation of the Existing Pavilion 6 Extension Building for the proposed Continuation of the above mentioned project.

A Structural Assessment/Investigation is a planning tool used to determine a historic building or structure's structural condition by analyzing and evaluating foundation, framing and other construction system associated in the project. Structural Investigation report is a document detailing the current condition and integrity of the building. It will give us detailed information on what needs to be fixed before we continue the construction phase of the said project. This activity is one of the recommendations of the Structural Engineer form HFEP-MO-DOH

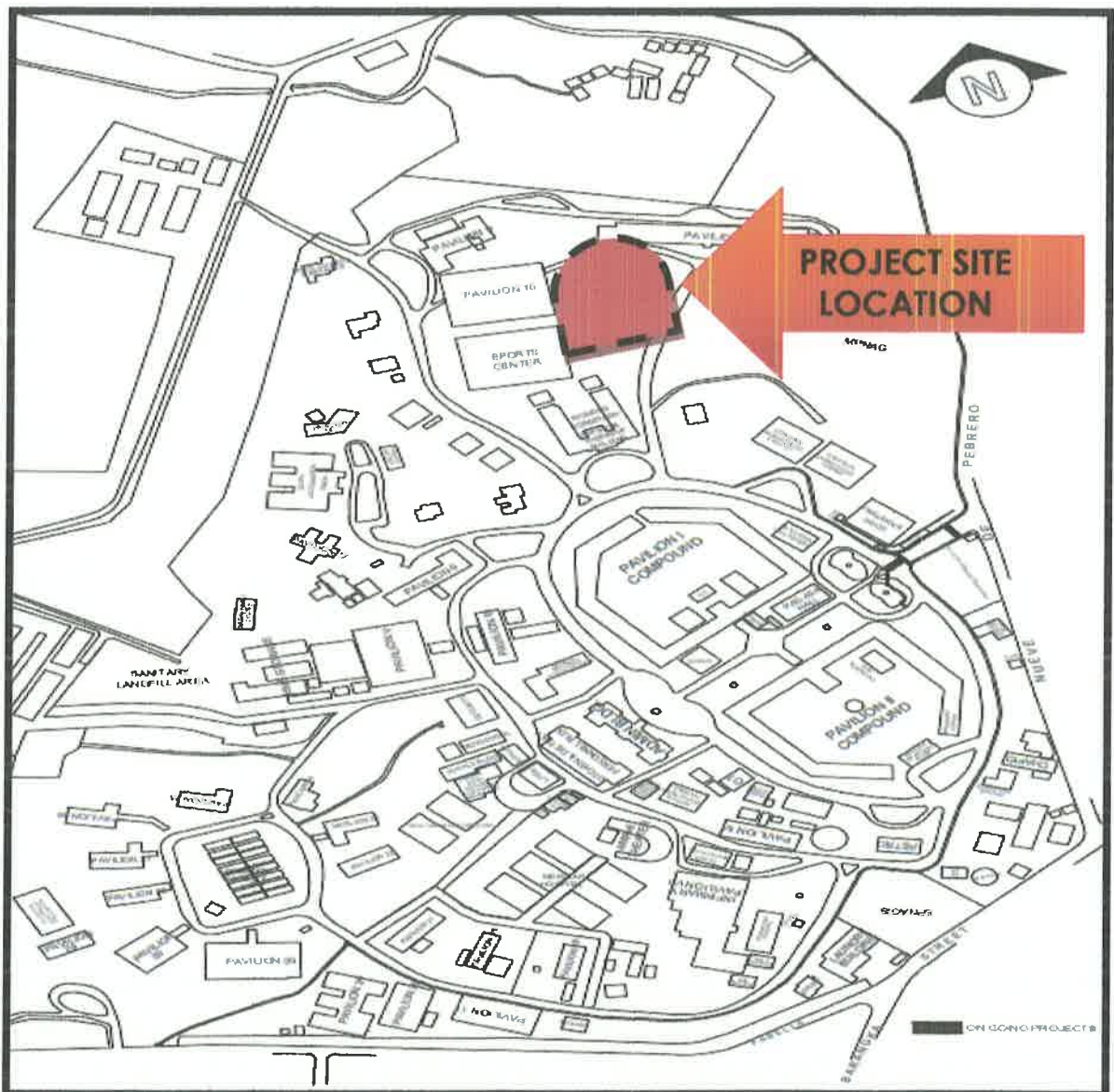
during his ocular inspection in the area. This will serve as our basis of the proposed project design.

The site location is within the National Center for Mental Health, Nueve de Pebrero St., Barangay Mauway, Mandaluyong City and with an area of Two Thousand Nine Hundred Square Meters (2,900. Sq.m.). The building is a single storey building made of concrete, steel framings and rib type roofing.

II. PROJECT DURATION

- FORTY FIVE (45) CALENDAR DAYS

III. PROJECT LOCATION



NCMH SITE DEVELOPMENT PLAN

IV. SCOPE OF WORKS

- a. Determine the vulnerability of the structure
- b. Determine the structural integrity against Service Level Earthquake (SLE) and its possible impact to the user's and its impact to the operation of the building.
- c. Determine the structural integrity against Maximum Considered Earthquake (MCE) and its possible impact to users and the operation of the building.
- d. Determine the condition of the entire building/structure.
- e. Determine conformance of the design and construction of the building.
- f. Determine the as-built plan of the building.

V. DETAILED STRUCTURAL INVESTIGATION / ASSESSMENT REQUIREMENTS

- a. Structural Investigation / assessment requires Ocular Inspection to document the condition of the existing building to include the location of cracks on concrete, corrosion on reinforcing steel bars and assess the structural defects on the structure especially the deflection on beams and slabs, alignment of columns and other important parts related in the building.
- b. The contractor should gather data and other relevant information in the performance of the detailed structural analysis.
- c. The contractor will extract samples of concrete in beams, slabs, columns and footings, using a concrete coring/drilling machine. The method of sampling shall comply with ASTM C42M and the result will be used in the analysis of the building. Determine the actual compressive strength of in-situ concrete cored samples. Conduct a rebound hammer test on hardened concrete as per ASTM C805M to assess the in-situ uniformity of concrete and to define variations in concrete quality of the structure.

- d. The contractor will conduct rebar scanning using a rebar scanner on the structural components such as beams, slabs, shear wall, columns and other structural members to determine the actual number of reinforcing bars of the said members. The structural components will be scanned to determine the actual numbers of rebars installed including ties and stirrups, including the actual sizes used.
- e. The contractor will extract samples of steel bars to determine actual tensile and ultimate strength of the reinforcing main bars in conformance with the ASTM A370. The result will be used in the analysis of the building. Determine the tensile strength of the extracted samples of reinforcement bars.
- f. The contractor shall perform the structural analysis to determine actual strength of the slabs, beams, columns and shear wall. The result of the concrete test and rebar test will be used in the analysis of the building.
- g. The contractor will submit the final result of the Structural Assessment, any structural deficiencies in the structural components such as beams, columns, shear wall and slabs, the contractor will provide recommendations to comply with the safety requirements of the code.

VI. REPORTS AND DELIVERABLES

- a. Inception Report at least three (3) sets
 - The Inception Report shall be contained of the details gathered during the meetings with the client, client's requirements and design parameters, design assumption and design methodologies to be used in the structural assessment.
- b. Preliminary Report at least three (3) sets
 - The Preliminary Report shall be contained of the initial findings of the existing condition of the structure based on the results of the material testing, and other relevant information gathered on site.

c. Final Report at least Three (3) sets

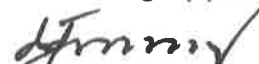
- The Final Report shall be contained of the final results of the analysis and recommendation based on the Engineering Practice and to the most economical strengthening techniques. These documents shall be Signed and Sealed by a Professional Civil Engineer with specialization in Structural Engineering and must be an accredited / member of the Association of Structural Engineers of the Philippines (ASEP).

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