

**Requirements on Content of Structural Appraisal Report
(for application on using a new FS water tank of Utmost Size
for fire hydrant/hose reel, hose reel and sprinkler systems)**

(1) Location of FS Water Tank

The location of the new FS water tank shall be selected among all possible areas where,

- (a) there are adequate existing supporting structural columns underneath to sustain all the additional structural loading, or
- (b) the span of existing/new supporting beam/columns underneath is able to sustain the additional structural loading, or
- (c) it is feasible to add structural steel beams or supporting steel members/ frames to sustain the additional structural loading.

(2) Calculation Procedure

- (a) Detail structural calculations and procedures shall be shown.
- (b) Structural framing plan and architectural layout plan showing the exact position of the new FS water tank and all existing structural elements, particularly those slabs, beams, columns and walls affected, shall be included.
- (c) The calculation shall not only take into account the load effects of the predetermined capacity of the new FS water tank but also includes an assessment of the load effects of tank capacities for each step up size tank of 500 litres incrementally up to the utmost size.
- (d) A summary table showing the comparison of all the existing column loadings, spare loading/capacity on existing columns and all the newly added column loadings should be included.
- (e) The report shall be signed by a Registered Structural Engineer (RSE).
- (f) Reference can be made to PNAP APP-117 regarding the structural requirements for Alteration and Addition works in existing buildings.

(3) Appraisal on Condition of Existing Structural Elements

When submitting the Structural Appraisal Report, the RSE should include, if appropriate, results of any tests that he/she has carried out for ascertaining the structural condition of existing elements likely to be affected by the works and any planned remedial works, if required. The contents of the report should also include the

following:

- (a) Adequate photos showing the existing structural elements, including their soffits, likely to be affected by the works are in sound condition;
- (b) Layout of floor plans showing where the photos are taken and pointed in such direction; and
- (c) Column/wall/beam/slab marks are to be located and inserted on the photos.

(4) Additional Sections

The following sections shall form part of the content of the structural appraisal report and should be included in the end page/paragraph of the structural appraisal report (*do not sign and insert this sheet to the submitted structural appraisal report*).

(a) Recommendation

In accordance with the above calculations, it is only structurally feasible for this building to install one new *concrete/fibre glass FS water tank of the utmost size _____ litres.

(b) Certification

I hereby certify that the content of this structural appraisal report has been checked and to the best of my knowledge is true and accurate.

(Full Name)

Registered Structural Engineer

(Certificate Registration Number)*BSc(Eng), MSc(Eng), PhD, MIStructE,
MHKIE

*(delete those abbreviations or items if not applicable)