

## **SPECIFICATION AND ACTIVITY SCHEDULE FOR:**

### **STRUCTURAL INTEGRITY AND CONDITION ASSESSMENT OF PORT CONTROL BUILDING, PORT OF PORT ELIZABETH**

#### **1. SCOPE OF WORKS AND GENERIC CONDITIONS OF CONTRACT**

The scope of work detail the structural integrity and condition assessment of the Port Control Building, located in the Port of Port Elizabeth.

##### **1.1. BACKGROUND AND PURPOSE**

The Port Control Building, situated at the end of Charl Malan Quay in the Port Elizabeth Harbour, was constructed in 1983. The 44.3m high building consists of an elevator and staircase shaft that forms the spine/core of the structure. Two floors surround the base of the structure, utilized for offices, living courters and recreational purposes. The top four floors are utilized as a radio equipment room, ablutions facilities, observation room/deck and roof level for radars and antennae.



**Figure 1:** Port of Port Elizabeth Port Control Tower

During condition assessments, various forms of structural distress was noted, which includes cracking of windows, rupture of column tiles, separation of precast parapet walls and cracks around elevator doors (refer to Annexure A). Additionally, building occupants have reported movement/sway during high wind conditions. Most structural members are however covered by finishes, which limited the information obtained from visual condition assessments.

The purpose of this specification is to detail work required of a Professional Service Provider (PSP) to perform a condition and structural integrity assessment of the Port Control building.

## 1.2. CONCISE DESCRIPTION OF WORK TO BE PERFORMED

The scope of works comprises of the following:

- Conduct condition assessment of the building.
- Perform structural modelling and dynamics analysis of the structure.
- Conclude adequacy and integrity of structural members.
- Recommendation of repair/remedial measures required.
- Prepare condition and structural integrity engineering report.
- Development of specifications and scope of works document.
- Drafting of applicable engineering/construction drawings.
- Develop cost estimate for repair/remedial measures required.

## 1.3. SPECIFICATIONS

It is expected that the appointed Service Provider shall adhere to the following specifications:

- The condition assessment and structural dynamic analysis of the building must be executed by a Professionally Registered Structural Engineer, with proven experience in condition assessment and dynamic analysis of structures.
- The appointed Service Provider is required to detail the methodology used in the assessment of port control structure. It is envisaged that non-destructive testing techniques shall be used. Any removal of finishes or necessary destructive work required shall be made good by the appointed Service Provider.
- The appointed Service Provider will be responsible for obtaining all data deemed necessary to perform the structural dynamic analysis. Transnet National Ports Authority (TNPA) will provide all available as-built drawings to the appointed Service Provider.
- The appointed Service Provider is required to facilitate skills/knowledge transfer to a selected TNPA Engineer during the execution of the project. The aspects of the skills transfer program must be aligned to the ECSA Exit Level Outcomes from Group A (Engineering Problem Solving) for registration as a professional-relevant to the identified person's qualification. The training program will be discussed and agreed upon at the kick-off meeting. The program is to be structured and must have measurable project-based outcomes for the identified candidate.

The condition and structural integrity engineering report are expected to detail the following:

- Condition assessment methodology, findings and possible cause/s.
- Structural dynamic analysis methodology, data obtained, calculations and analysis results.
- Conclude on integrity and adequacy of structural elements based on assessment findings and analysis results.
- Recommendation of repair/remedial measures, including expected implementation duration and costs.

The engineering report are to include the following as annexures:

- Specifications and scope of work documents detailing the proposed repair/remedial measures, including priced Bill of Quantities.
- Engineering/construction drawings (as required).

#### 1.4. LOCATION AND SITE ACCESS

The site is located on Charl Malan Quay in the Port of Port Elizabeth. Access to the site is restricted and requires prior approval from TNPA. A compulsory site visit shall be arranged by TNPA Procurement.



**Figure 2:** Site locality map

#### 1.5. WORKING HOURS

Working hours shall be from 08h00 to 16h30, Monday to Friday.

## 1.6. STAND DOWN

TNPA's Representative may, for the duration as seen fit, stand down the site or any part of the site. TNPA will not pay for any period of stand-down of the site.

## 1.7. PAYMENTS

The appointed Service Provider must invoice TNPA in a form approved by TNPA (quoting the purchase order number) for all payment under the Contract after completion of works. Payments will be made by TNPA within 30 days and at the end of the month from receipt of the Service Provider's invoice, provided that the content of the invoice has been certified as correct by the TNPA Representative.

## 1.8. TERMINATION OF CONTRACT

TNPA will endeavor to give notice of a likely termination date for the period of the Contract. Either party may terminate the Contract by providing the other with 1 (one) weeks' notice. Despite anything in the Contract to the contrary, TNPA may, by providing written notice to the Service Provider, terminate the Contract immediately if the appointed Service Provider:

- Suffers an insolvency event;
- Refuse to comply with any reasonable instruction or direction of the TNPA Representative; or
- Is in breach of this Contract and has failed to rectify the breach following a written request to do so by TNPA.

## 1.9. INDEMNITY AND INJURY MANAGEMENT

The appointed Service Provider and any persons from the Service Provider working on site must first ensure that they provide their signatures on the indemnity form before entering the site.

## 1.10. COMPLIANCE

The appointed Service Provider must ensure that he/she complies with all legislation including the occupational health and safety acts, equal opportunity legislation, road traffic acts, motor vehicle (third party insurance), transport acts, industrial agreements, registered workplace agreements of employer-employee agreements, the Safety, Health and Environment (SHE) requirements and all lawful direction of the TNPA Representative application to the Contract. The appointed Service Provider must obtain all necessary permits, licenses, and approvals, give all notices required to be given and pay all applicable relevant fees in connection with

the Contract and provide evidence of compliance to the TNPA or the TNPA's Representative on request. The Service Provider shall comply with the Port of Port Elizabeth's SHEQ regulations and requirements. The Service Provider shall submit a SHE file for approval and as required by the TNPA Port of Port Elizabeth SHEQ department.

1.11. PARKING

Parking will be available at the site.

1.12. PRICING INSTRUCTIONS

Pricing assumptions mean the criteria as set out below, read together with all parts of this specifications document. It is assumed in the Contract that the Tenderer has taken the criteria into account when developing their rates and prices.

The terms "Schedules of Quantities" and "Bills of Quantities" shall have the same meaning. The title "Engineer" shall be interpreted as "Project Manager". The Bill of Quantities contains only brief descriptions to identify the salient items required and the Tenderer is referred to the Generic Conditions of Contract, Scope of Work, and drawings for the full requirements. The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices to be paid by the Employer for the work described under the various items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Where an item in the Bill of Quantities refers to a specific measurement and payment clause, the rate or price of the item shall also include all costs stated in the particular payment clause. Such reference will be to the relevant Pricing Assumption item. The reference clauses indicated are not necessarily the only sources of information in respect of scheduled items. Further information and specifications may be found elsewhere in the Contract documents. A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price is entered is deemed to be covered by the other prices or rates in the Bill of Quantities but the rate, where applicable, will nevertheless be taken as nil and no claim will be considered should the number of such items increase or decrease. Unless otherwise stated, items are measured net following the drawings and as specified and no allowance has been made for waste. Rates and prices shall include for the waste of whatever nature and all necessary straight cutting (notwithstanding any trade custom to the contrary). Where items in the Bill of Quantities include a reference to trade names or

proprietary brands, the reference is used to establish the required type and quality of the product on which the price is based. Where items in the Bill of Quantities have no applicable measurement and payment clause reference the rate or price for the item shall be the fully inclusive rate or price for the work described including all materials, labour, plant, equipment, overheads, and profit as applicable.

## **2. ACTIVITY SCHEDULE**

This Activity Schedule shall be read in conjunction with this specifications document and the Request for Quotation (RFQ) clauses.

<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>TOTAL AMOUNT</b>
<b>1.</b>	<b><u>Preliminary and General</u></b>	
1.1	Health and Safety file	
<b>2.</b>	<b><u>Condition and structural integrity assessment</u></b>	
2.1	Condition assessment	
2.2	Structural modelling and dynamic analysis	
2.3	Optioneering of repair/remedial measures and recommendations	
2.4	Engineering report	
2.5	Specification and scope of work document	
2.6	Detailed cost estimate	
2.7	Engineering/construction drawings	
	<b>Sub-total</b>	
	<b>VAT 15%</b>	
	<b>Grand total</b>	

## **3. SIGN-OFF AND APPROVAL OF SPECIFICATION**

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**JP Rust**

Project Manager

Date:

\_\_\_\_\_  
**Sonwabile Gojo**

Project Engineer

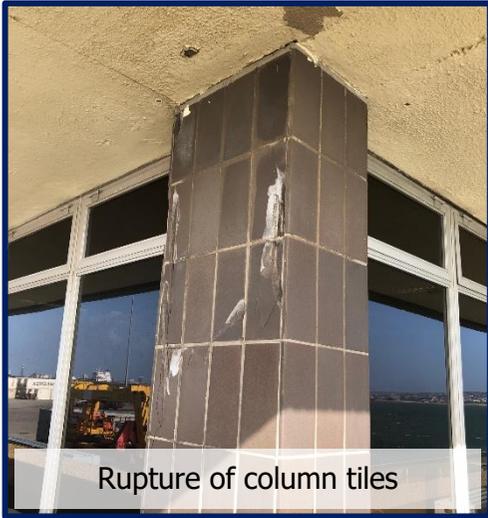
Date:

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**Tumelo Manaka**

Port Engineer

Date:

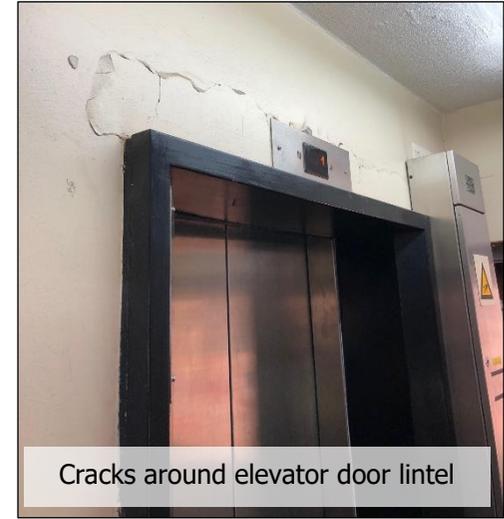
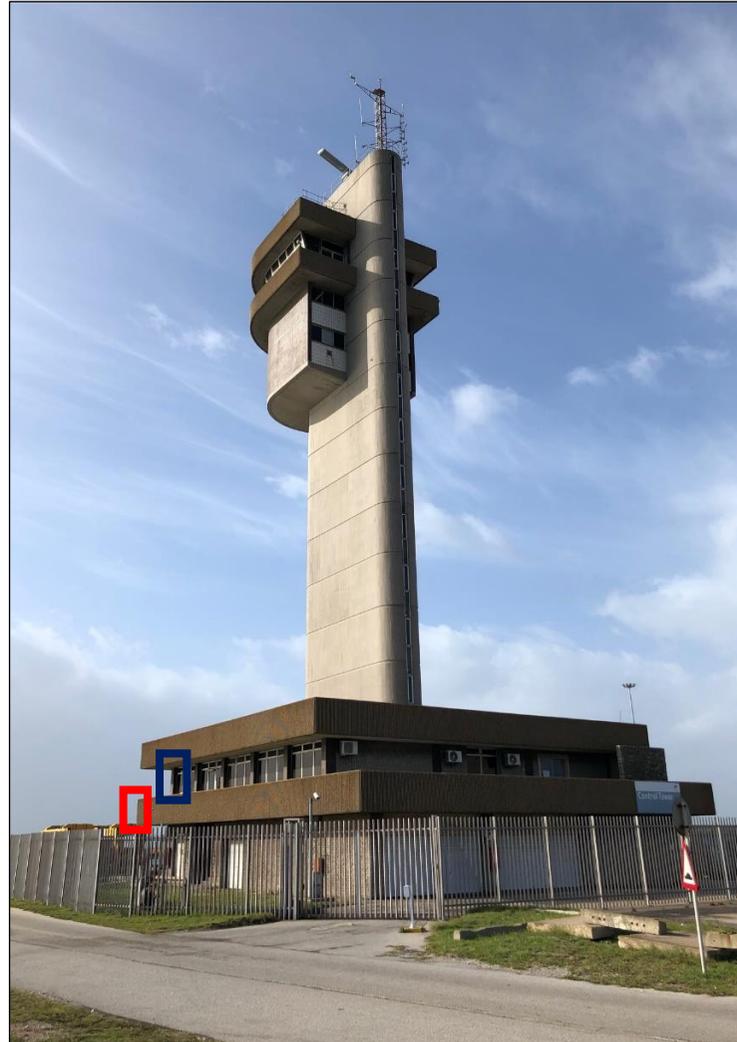
**ANNEXURE A:**



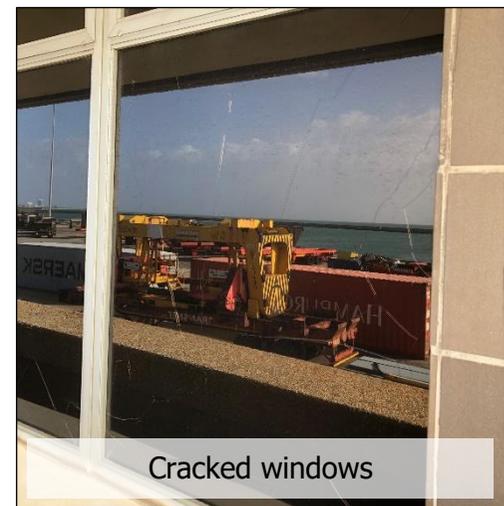
Rupture of column tiles



Separation of precast parapet wall



Cracks around elevator door lintel



Cracked windows