

# Report on the existing condition assessment of Equatorial Convention Centre



Prepared for:

Ministry of Housing and Infrastructure

by



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## Executive Summary

The Equatorial Convention Centre (ECC) is in good structural condition. Its building frame and Envelope retains its structural and functional integrity.

Damage to the exterior surface is due to lack of maintenance and care. Visual deterioration of the internal spaces are also due to lack of care and maintenance and infestation of rodents.

The building retains its capacity to be returned to its designed use with maintenance repair. The building has the structural and functional integrity to be repurposed for another use, though its impacts on the existing structure must be studied in detail.

## General condition and any Deficiencies

### Purpose and Scope

The purpose of this study is to establish the current condition of the Equatorial Convention Centre (ECC) and to ascertain the physical and structural condition of the building for re-establishing a use for the structure. The proposed use of the structure at the initial declaration of the project was to convert the structure into a hospital. A re-purposing that is very far removed from the original design intent of the building. This report does not address the re-purposing of the building and its intended use in anyway. As the design or modifications that is to be brought to the building was also not available to the author's at the time of writing this report, the condition of the building is assessed in the general background that it is to be converted to a health facility in a general sense.

### Description and Condition

The following is a general description of the current state of the building and its surrounding site. These general description are based on specific structured assessments of all components of the building individually. The detailed inspection and findings matrix is attached as Appendix A to this report.

### Site

The ECC site was originally marshy wet land reclaimed for the specific purpose of building this structure. Reclamation being restricted and contained to the buildings footprint and footpaths. The remaining area of the site is still marshy wet lands, landscaped with fresh water ponds. The marshy ponds was designed to be and act as access restrictions to the building. Thus removing the necessity for boundary walls and other physical structures to control access to site. The building is easily accessed through wide gateways and paths 2 each on the eastern and western faces of the block.



The present general condition of the site is extremely poor. The site is in this condition by pure neglect and no attempt being made to maintain or even prevent damage to the site and exposed elements of the site, as a result

- All walkways and pathways have lost levelness and is now loose and rough

- Paving bricks and blocks has been intentionally removed from pathways leaving voids and dangerous obstacles
- Nature has reclaimed the site to its original marsh land condition, all areas are overgrown.
- The landscaping of the site has lost all plan and concept and is wild overgrown.
- Pathways, emergency access points and curbs are now lost to overgrown vegetation.
- All external security cameras and lights without exception has been vandalized and most removed
- External electrical grid need complete replacement as it has been vandalized
- The wide terracotta decorative arrival area for general public is mostly intact, but some sections need replacement. The structure seems to have been used for motorcycle trick stunt driving. Burned tire tracks are evident some fresh some fading in all areas of the terrazzo work.

### Frame and Envelope

The frame and envelope of the structure must to separate to two distinctly different conditions by necessity.

#### *The external face of the envelop*

The external face of the buildings frame and envelop is in a depressing and decrepit condition purely out of neglect and total lack of care and maintenance. The building has not had any benefit of even general housekeeping. The north face of the building is covered in spider nest, and rodent excrement. The southern face has been vandalized with graffiti.

As result of this the external faces of the building, is in very bad visual state. Most notably



- Some vertically placed ceramic tiles has come loose of the building
- All door hardware on the external is now rusted and needs complete replacement
- The lights including those on the buildings ceiling soffits are now completely damages and most vandalized and need complete replacement.
- The curtain wall envelope is discolored due to accretion of dust and weathering and exposure to sun without any care.
- Wood and laminate doors exposed to the elements needs replacement

#### *The integrity of the building envelope.*

Despite the depressing visual look of the unmaintained exterior of the building, the building envelope is surprisingly sound and intact. The integrity of the envelope is sound and is in a serviceable condition.

The note that;

- There is no evidence of water intrusion through any of the curtain wall or any of the cladding systems.
- None of the internal finished are “weathered”
- Where the envelopes integrity has been compromised, both in the VIP section external facing wooden doors, it is in the form of rodents eating through the wooden doors, and creating an access for themselves.

- The roof is also in excellent condition, the aluminum roofing sheets show no damage and is in good condition.
- The flashing in galvanized steel shows rust patched and should be services and managed through a regular maintenance and upkeep programme.
- The exposed steel support frames for the air conditioners heat exhnage units on the roof need immediate servicing, through its integrity is not compromised and is still fit for purpose after servicing.
- The gutters need cleaning.

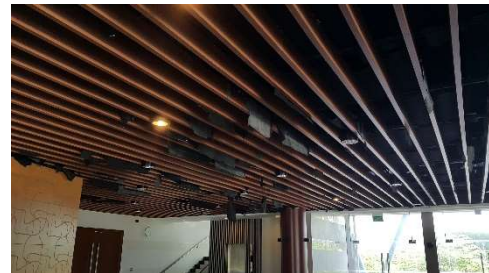
As a general statement the building envelope and frame is intact, and in a serviceable condition. It can be brought to use, by simple maintenance repair that should have been carried out building.

### Interior Elements

The interior elements of the building is also in a very visual state due to neglect. In the opinion of the inspectors the dismal visual condition of the building's interior elements is not due to the deterioration of loss of integrity of the building, but can be completely attributed to neglect and lack of care and maintenance. The inspector's wish to highlight these items specifically

#### *Ceiling backdrop of the entrance foyer.*

The cloth/woven material backdrop material of the general entrance foyer has completely disintegrated in the strong reflected sunlight and UV in the general entrance foyer with is large glass doors. This material does not seem to be UV resistance and is falling apart under its own weight. However this is restricted to that material only. The integrity of the ceiling structure, or the lighting and climate control infrastructure it supports is not affected. Should the re-purposing of the building require this ceiling to be exactly as it was, then it need the fabric material replaced, and no other changes.



We also not that all the fabric in the lounge chairs stacked near glass doors exposed to the sun and UV radiation is showing similar disintegration and would now be unusable without replacement of the fabric. These assets show no other damage, and all these lounge sofa's now need major repair simply for the lack of care of covering them protecting them from direct sunlight. The author's highlight this case as an example of the issues in the building, most simply arising out of neglect and lack of care.

#### *Rodent infestation*

The ENTIRE building is infested with rodents. There is NO AREA or ROOM or closet that is not covered in rodent excrement. This seems to be even worse in the VIP section of the building. There is evidence that the rodent infestation extends to the space between the masonry walls and the wooden framed wood and veneer clad false wall claddings of the main hall and VIP sections.

Rodents run free on all ceiling surfaces of the building. We found rodent excrement in every space we inspected including panel rooms, air-circulation plant rooms, VIP facilities, toilets and even broom cupboards.

### *Toilets*

When we arrived for inspection all toilets were locked, and was opened by the MNDF security upon request. Strangely most toilets is cluttered and pile with empty plastic desalinated water bottles. Some seems to be quite new and recently discarded. The inspection team feels that most of the toilets have seen recently. This case is not strange considering that according to the caretakers, the building is not too infrequently used for weddings and wedding receptions, hence it makes sense that some of the toilets block were made available to the users.

The building has a fully functioning plumbing system. BUT it is intentionally unplugged. AND our inspections leads us to believe that these systems have not been accessed in the recent period, and the system as stayed unplugged.

However the toilet blocks have been in use with the aid of small desalinated water bottles, which clutters and pile up in all toilets blocks. This leads inadequately flushed toilet facilities, resulting in staining, and the seizing up of all the fittings, and generally bad visual and smelly condition of almost all the toilets.

The toilets of the VIP area does not seem to have been used, and is in clean (except for rodent excrement) but dry condition.



### *Plumbing, HVAC and Electrical*

The plumbing, HVAC and Electrical System of the building is very well preserved.

#### *Plumbing System.*

The plumbing system in the building is completely functioning. The water supply system was found to be intentionally unplugged. On energizing, we found both primary and standby pumps of the well water and rainwater line fully functional. Minimal work will be required to bring the system back on to its present designed services. We advise that any additional services planned for the re-purposing of the building be built on a separate network, thus preserving the integrity is the present water supply system.

#### *HVAC system.*

The HVAC system is also intact and is in operating condition.

The cooling systems and Air circulation system is in good working condition.

Some Air-conditioning cassette systems need servicing, however all except one unit

we tested during the inspection is working, and need routine maintenance. Generally the HVAC system is working condition.

Any re-purposing of the building would almost certainly require, the complete dismantling of the ducting and services of almost the entire system. Hence the fact that the HVAC system is in a very good



working condition would probably mean little significance to the re-purposing as the system has to be dismantled, and re-purposed with the new design of the building.

### *Electrical System.*

The electrical system of the building is also found to be in good working condition except one major exception. Our inspection found that the sections of the building left dark or systems unable to be switched on were just simply due to a tripped circuit breaker. When switched on all circuits worked. None tripped due to short circuits while testing.



The exception to the case was the main hall lighting system. The system is designed to be operated by programmable switching unit, and not by a manual switching system. Our inspection leads up to believe that the programming unit has now been removed and the switching system is compromised. It appears that the issue is the programmable switching system and not the backing electrical system.

According the information provided by the client at the time of inspection, this hall would be completely re-purposed with an additional floor. This would entail that the present lighting control system, the lights, ceiling and all services including the HVAC system in the hall has to be entirely redone. Hence the fact that the central halls light switching system is now not programmable is moot, as the entire system has to be replaced, with the planned re-purposing of the building.

### *Elevators*

Both elevators in the building was found to be in full working condition. In general the lifts are kept switched off from the mains, and hence is not in normal. On our inspections we found that they could be simply energized by switching on from the mains, and all systems seemed to be operational.

#### *Fire/Life Safety*

Our inspection found the fire pump and firefighting physical infrastructure to be in good condition. We found the fire alarm system locked and switched off from the distribution board. Upon energizing the system switches on and goes into a self-check mode. The system self-checks all sensors and does not report any sensor errors. The system then asks for authorization codes to continue the initialization. We were unable to find a manual or locate a person with either the key to the system panel or had any knowledge of the system codes. Hence the system could not be checked further.

It is expected that the re-purposing of the building would need to add on the fire sensor systems of the building. The fire alarm system currently in place would therefore have to add on to or replaced in the re-purposing of the building. We recommend that the system be checked by either the manufacturers of the system or the party that installed the alarm system.

## Specific Condition of any limiting findings

### Rodent infestation.

As reported previously, the entire building is infested with rodents. As the building is primary a structural frame with cast in place slabs, and masonry wall, most of which is clad with false surfaces, there are many gaps and pockets within the building. It is evident the rodent infestation is spread to all there voids.

If as informed by client, the building is to be repurposed as a healthcare facility, then it would require that all these false surfaces and cladding be opened, inspected cleaned and treated to clear all rodents.



### Finishes not appropriate

Many of the finishes of the building are decorative finishes. Perhaps not the most appropriate for a healthcare facility, whose surfaces must give priority to cleanliness and ability to be cleaned that be decorative. In this context, wall papers and fabric finished of the building may have to be completely replaced.

## STRUCTURAL CONDITION OF THE BUILDING.

The building is primary 2 buildings placed next to each other

The VIP section of the building being a single story building with isolated footings, concrete columns and a steel truss roofing system. Masonry walls with cladding and a false ceiling.

The Main building is a two story building with isolated foundation pads, concrete columns, cast in place slabs topped with a structural steel roofing frame.

To ascertain the condition of the building, it was decided that the inspection would be carried out in two parts.

1. Five location
  - a. 5 columns
  - b. 5 beams
  - c. 5 slab test points

Would be chosen at random before visiting site. This would mean that these 5 locations would not be prejudiced by the visual condition of the building when we arrive for the inspection.

2. If any of the non-destructive tests conducted on these five locations revealed less than design and expected results then the tests was to be further widened to take more samples from other locations



Test were conducted with a Schmidt hammer on the location as shown in the attached in Appendix B

### State of the Structural Frame.

The structural frame of the building was found to be in excellent condition. NO signs of structural distress was noted at any location in the building. The visual condition of the elements was also in excellent condition.

All location gave excellent strengths, and on detail visual inspections, the inspectors were satisfied that the buildings structural frame is in very good condition.



### Test results.

The results of the nondestructive testing carried out on the locations in attached in appendix B. Average concrete strengths were in excess of 40MPa. Simple reverse calculation were done on the as build drawings with the test results obtained, and for loading conditions for a conference hall, safety factors of more than 2 were arrived at.

We have not analyzed the structure for any loading conditions associated with the proposed repurposing of the buildings as planned changes to the structure was not available at the time of writing this report. We do not envisage a significantly higher live load from a health care facility. However, depending of the facility to be build, significantly higher dead loads due to specialist equipment may come to be placed on the existing structure during repurposing.

Based on non-destructive test result we can confidently recommend that the existing building in its current state and condition and without modifying structural elements, be reverse analyzed during repurposing using a concrete strength of 30MPa.

### Specific Conditions to be considered while repurposing the building.

#### Foundations of the proposed deck

At the time of conducting the client informs that the repurposing will include the construction of an independent load bearing floor within the existing conference hall. We the authors wish to recommend that

1. This proposed new deck does not place any structural loads or transfer any structural loads onto the existing building.
2. Consider that the building is constructed on reclaimed marshy ground and that a significantly different bearing loads transferred to the ground may result is differential settlement of the existing building and the new load bearing floor.

#### Steps built into the mezzanine gallery within the main conference hall

The steps in the mezzanine floor main gallery at the back of the main of the conference are built into the slab. Special attention be placed on the connection of these steps to the proposed new load bearing floor to be constructed in the main hall.

### HVAC and Electrical system.

We envisage that the current HVAC system in the building will have to go through an almost dismantling and redesigning to make it appropriate for a health care facility. We recommend that the appropriateness of the current system for a healthcare environment be assessed in the repurpose planning stage of the building.

The current electrical system is designed for the power demands on the facility as a conference center. Repurposing of the facility for a healthcare facility would in all probability involve a complete redesign of the electrical system.

### Conclusions

Based on our inspection and findings, we find that the building's structural is in very good condition. That it remains safe for use for its present use with high factors of safety. We conclude (not having done specific analysis for the new repurposed use) that the building as it is, building structure will be capable of safely carry general live loads of a healthcare facility. Specific loads associated with major machinery and other specific dead loads could be analyzed for safety with a concrete strength of 30MPA.

That the buildings defects and visual deterioration is due to neglect and not due to loss in integrity of the building frame or envelope of infrastructure of the building.

Exhibits

Photographs

Nondestructive test results.