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15.APRIL.2014

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Identified Priority 1 Concerns

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1st Priority 1 Concern

Excessive Storage Height of Fabric on Level 2

Each roll of fabric is estimated to weigh approximately 40kg. As they are stacked 6 rolls high, and arranged 6 rolls per layer, the weight of each layer is approximately 240kg, resulting in a total weight of 1,440kg (14.1kN) per stack.

Based on a plan area of 1.4m x 1.4m per stack, the equivalent live load per stack is estimated to be:

$14.1kN/(1.4x1.4)m^2$ = 7.1kPa.

The allowable live load should be a max. of 3.0kPa

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Identified Priority 3 Concerns

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1st Priority 3 Concern

Based on the load rundown analysis of the building the column stress checking analysis gives a YELLOW status result, all floor loadings must be carefully monitored.
The construction of steel framed roof for the dining hall on the roof floor is on the permit drawings.

The steel roof construction is not on the permit drawings

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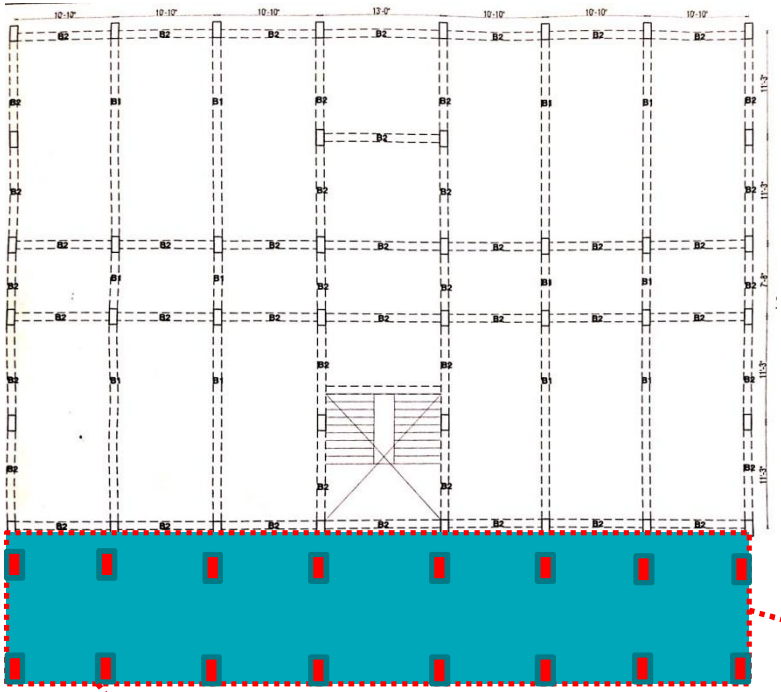
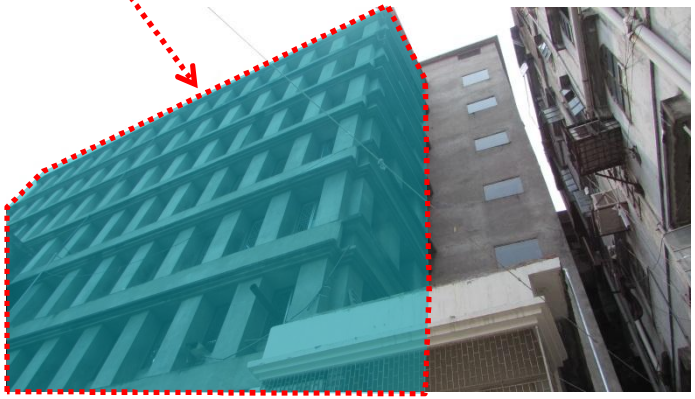
2nd Priority 3 Concern



The front extension has been added to the original building. This part of the building has no structural design drawings or as-built drawings, the Factory Engineer is to review and check its structural capacity and stability.



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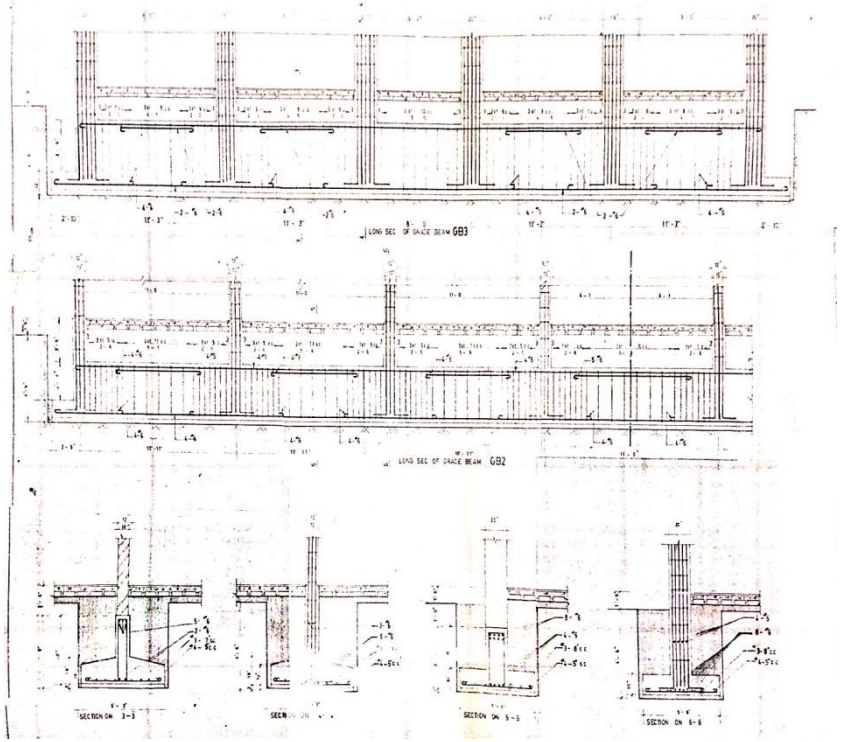
3rd Priority 3 Concern

The overall stability of the front extension is our main concern. There is a of lack of lateral support system information. No structural drawings show any form of lateral support design.



We require that these items be investigated as part of a Detailed Engineering Assessment.

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Priority Actions

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Problems Observed Summary

ITEM 1: (1st Priority 1) Storage heights of fabric in storage rooms on 2nd floor appear to be excessive.

ITEM 2: (1st Priority 3) Typical columns have low factors of safety with regard to their loading capacity and the steel roof framed construction is not on the current permit drawings.

ITEM 3: (2nd Priority 3) There are no design or as-built drawings for the front extension.

ITEM 4: (3rd Priority 3) A lack of lateral support system.

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Item 1 and actions

Storage heights of fabric in storage rooms on 2nd floor appears to be excessive

Priority 1 (Immediate – Now)	• Immediately reduce stacking height of fabric rolls to ensure total load does not exceed 3.0kPa
Priority 2 (within 6 – weeks)	• Mark the maximum allowable height of fabric stacking to ensure full compliance
Priority 3 (within 6-months)	• Establish and maintain a set of loading plans for each floor level.

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Item 2 and actions

Preliminary load take-down calculations suggest that typical columns have very low factor of safety with regard to their loading capacity. The steel framed roof extension is not on the permit drawings.

Priority 1 (Immediate – Now)	• None required
Priority 2 (within 6 – weeks)	• Carry out intrusive testing of structure to determine actual concrete and rebar strengths. • Carry out a full survey of all structural elements and check the loading capacity of the whole structural system. • The Factory Engineer to review design, loads and columns stresses in the entire building.
Priority 3 (within 6-months)	• Consider demolishing the steel framed roof extension.

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Items 3 & 4 and actions

There are no design drawings or as-built drawings for the front extension, there is a lack of any recognisable lateral support system.

Priority 1 (Immediate – Now)	• None.
Priority 2 (within 6 – weeks)	• The Factory Engineer is to carry out thorough load checking of the entire structure, including slabs, beams and columns based on BNBC regulations and produce as-built drawings.
Priority 3 (within 6-months)	• In conjunction with the building survey, building engineer to produce an accurate set of as-built structural records

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