

Zaheen Knitwears Limited (11497)

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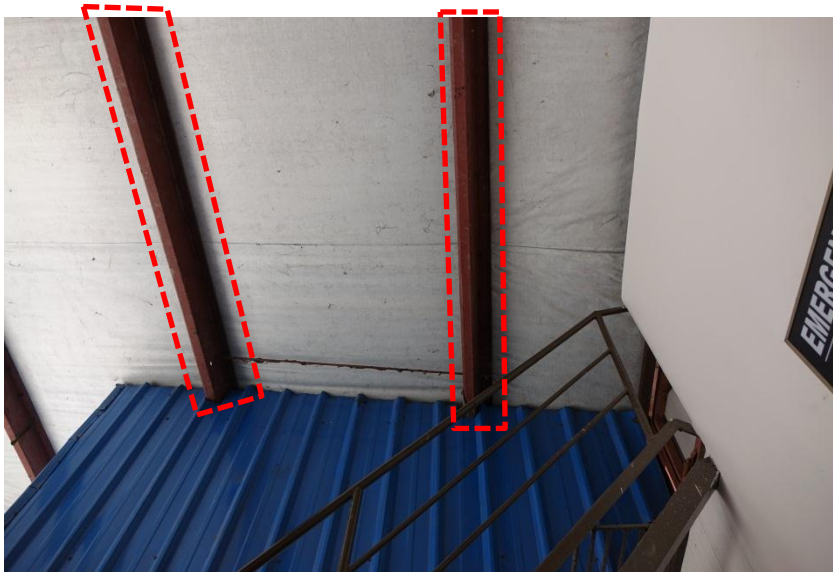
Identified Priority 3 Concerns

1st Priority 3 Concern



The roof of the Building 1 is currently a steel roof instead of a concrete roof. We noticed that some of the purlins (Z-shaped) have buckled. This is due to the lack of bracing of the purlin.

Suitable lateral bracing should be provided to prevent buckling of these purlin members.



Some of the purlins at roof of Building 1 have buckled

2nd Priority 3 Concern



On 2nd floor of the factory building 1, a number of cracks were noticed in some beams. The cracks have since been repaired, but it is unknown the reason for the appearance of these cracks. Investigation of the reason for the cracks should be carried out.

Cracks were noticed in some beams

3rd Priority 3 Concern

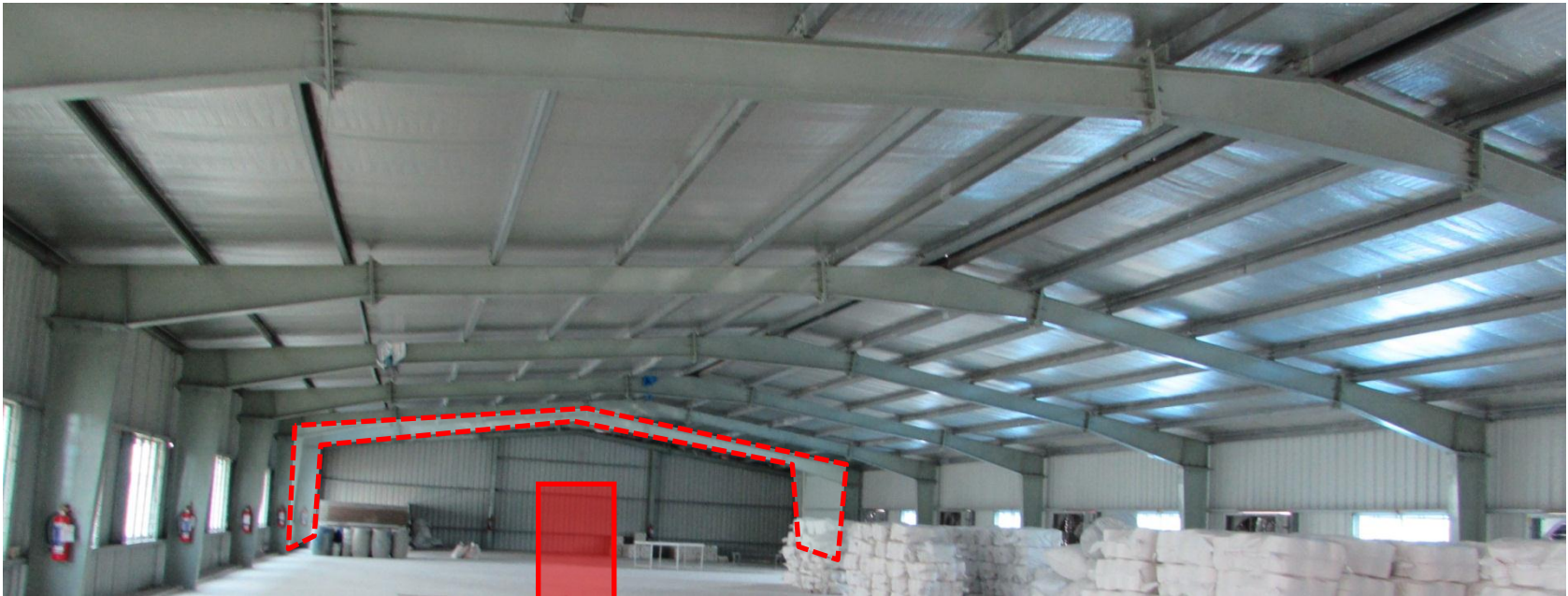


In the garment building 2 (printing), the building mezzanine is a concrete slab with permanent steel formwork, and supported by steel beams and columns. However, it is noticed that the steel beams are not fireproofed in any way.

It is recommended that the floor support system should be fireproofed to at least 1 hour fire resistance period for both flame and heat insulation.

No fireproofing of steel support members for M/F slab at Building 2

4th Priority 3 Concern



In Building 2, lateral bracing has been provided beneath the mezzanine floor slab only. Bracing should also be added on the roof, as well as the upper vertical portion of the frame, as shown in the photos.

Bracing has been omitted above the mezzanine, and from the roof.

We noticed that the quality of the structural documentation was very poor, incomplete and almost incomprehensible. Also, of the 8 buildings observed on site, only the main building (01) and the printing building (02) had some level of documentation, with all other buildings with no documentation at all.

Of the two buildings with documentation, there are problems associated with the following:

- Inconsistent structural details, and inconsistent structural notes
- Lack of references on the framing plans to structural RC details
- Column details do not indicate clear rebar layouts
- All Structural connection details of building 2 missing
- All Footing details of building 2 missing

The original building designers should be consulted to provide the full set of as-built details to a sufficiently high standard for record purposes.

Priority Actions

Problems Observed Summary

- ITEM 1: (1st Priority 3) Some of the purlins at R/F of Building 1 have buckled**
- ITEM 2: (2nd Priority 3) Previous cracks were noticed in some beams on 2/F ceiling**
- ITEM 3: (3rd Priority 3) No fireproofing was observed for the mezzanine floor supporting structure of Building 2**
- ITEM 4: (4th Priority 3) Lateral bracing has been omitted above the mezzanine, and from the roof of Building 2**
- ITEM 5: (5th Priority 3) Quality of structural documentation is of a very poor standard, and almost incomprehensible**

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	(1st Priority 3) Some of the purlins at R/F of Building 1 have buckled	Carry out the strengthening work to provide lateral buckling restraint system	6-months
2	(2nd Priority 3) Previous cracks were noticed in some beams on 2/F ceiling	Carry out full survey of all structural elements to check for cracking and remove surface finishes to expose concrete Ensure that there are no design deficiencies associated with the observed defects, and carry out suitable repairs to the structural elements. Regularly inspect repaired structural elements for re-occurring damage	6-months
3	(3rd Priority 3) No fireproofing was observed for the mezzanine floor supporting structure of Building 2	Carry out the necessary measures for fire protection system of steel beams to ensure minimum fire protection of at least 1 hour	6-months
4	(4th Priority 3) Lateral bracing has been omitted above the mezzanine, and from the roof of Building 2	Factory to retain a structural engineer to design a lateral load resisting system in compliance with BNBC 2006.	6-weeks
5	(4th Priority 3) Lateral bracing has been omitted above the mezzanine, and from the roof of Building 2	Carry out the strengthening work to provide the bracing system	6-months
6	(5th Priority 3) Quality of structural documentation is of a very poor standard, and almost incomprehensible	Based on the results of the detailed structural survey, the building engineer and architect are to prepare accurate structural and architectural records for the building, reflecting accurately the as-built condition	6-months