

# Snowtex Outerwear Ltd. (11803)

B 65/3, Lakuriapara, Dhulivita, Dhamrai, Dhaka Aricha Highway Road, Dhaka 1350

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27.August.2014

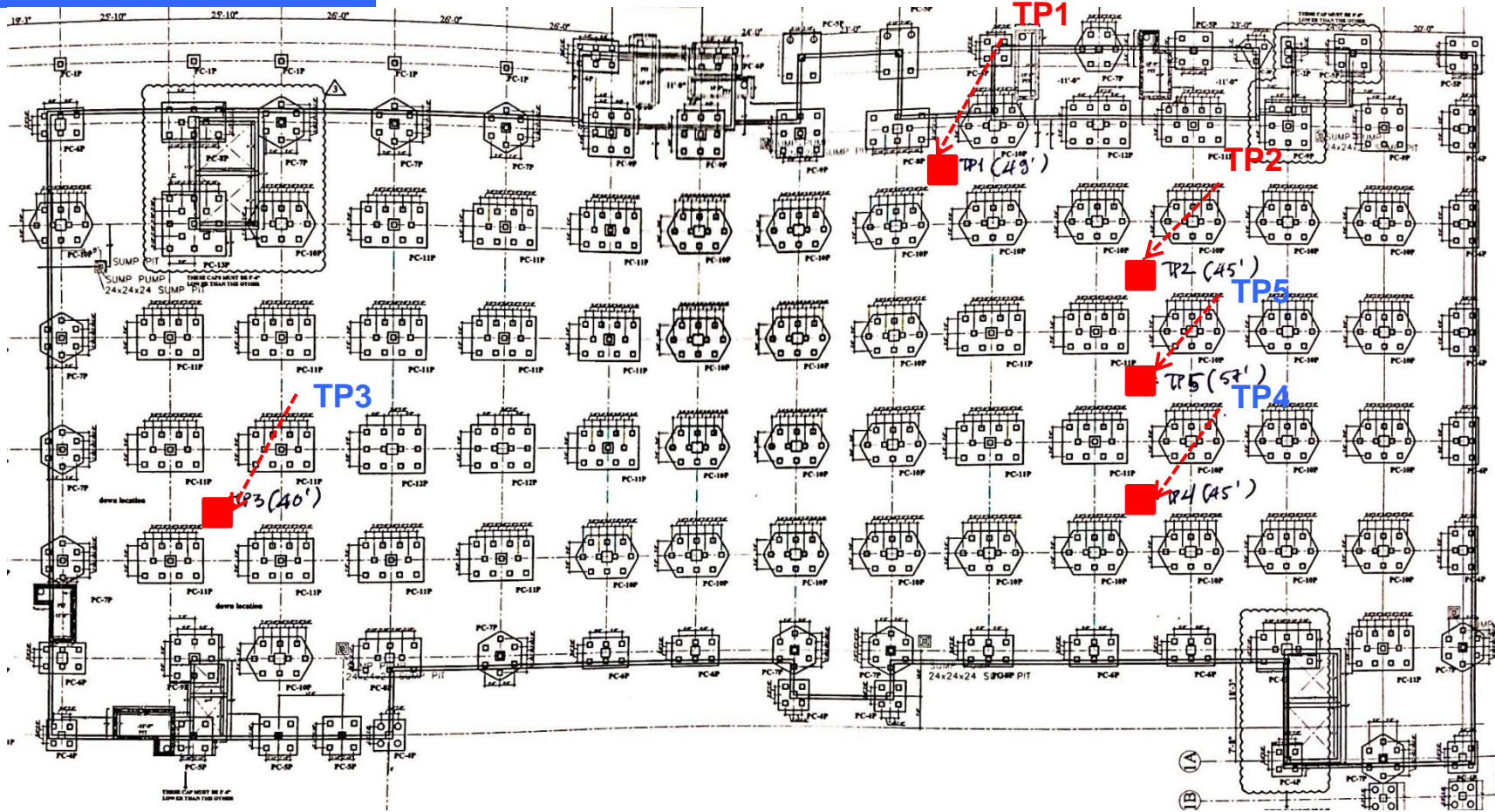


# Identified Priority 1 Concerns

(None)

# Identified Priority 2 Concerns

# 1st Priority 2 Concern



■ Test pile location

The foundations appear to be under designed with a pile capacity problem. See next page for details.

## 1<sup>st</sup> Priority 2 Concern (continued)

Pile ID	Pile Length (m)	Pile capacity (Ton)
TP3	12.2	32
TP4	13.7	55
TP5	17.4	58

We suggest that the pile foundation should be carefully reviewed and checked again using the existing pile capacity at a 13.7m length.

The Building Engineer should then revise the foundation capacities and determine any implications on floor loading, or number of floors.

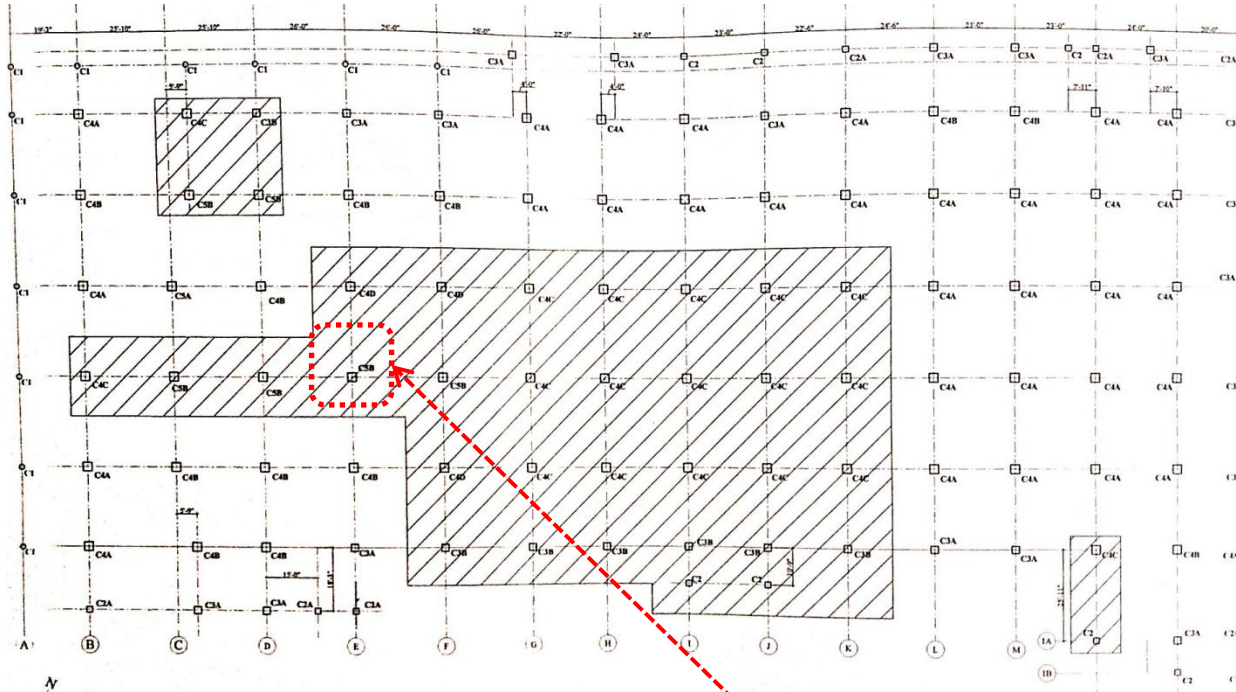
We require that these items be investigated in an Engineering Assessment

According to the Building Engineer and the Structural drawing, all the piles were driven to 13.7m. Therefore according to the soil report the pile design capacity is 55 Ton.

There are several problems with the soil report:

1. The test piles are not evenly spread over the building footprint.
2. The test piles are of different lengths.
3. The pile design loading does not consider the change in ground conditions throughout the site.
4. Test data was only provided for 3 piles.

## 2<sup>nd</sup> Priority 2 Concern



Column Layout Plan

Column to be checked

Based on the load rundown analysis of column C4D in the building with live load 120psf (6.0kPa) as the Building Engineer advised, the column appears to be overstressed.

**NOTE:** We were advised that the imposed loadings for each floor are 120psf (6kPa)

### 3<sup>rd</sup> Priority 2 Concern



The exact floor loads are unknown and need to be verified.

Produce loading plans for each floor to make sure of no overloading.

## 4<sup>th</sup> Priority 2 Concern



Inadequate steel detailing to any of the shed buildings.

## 5<sup>th</sup> Priority 2 Concern

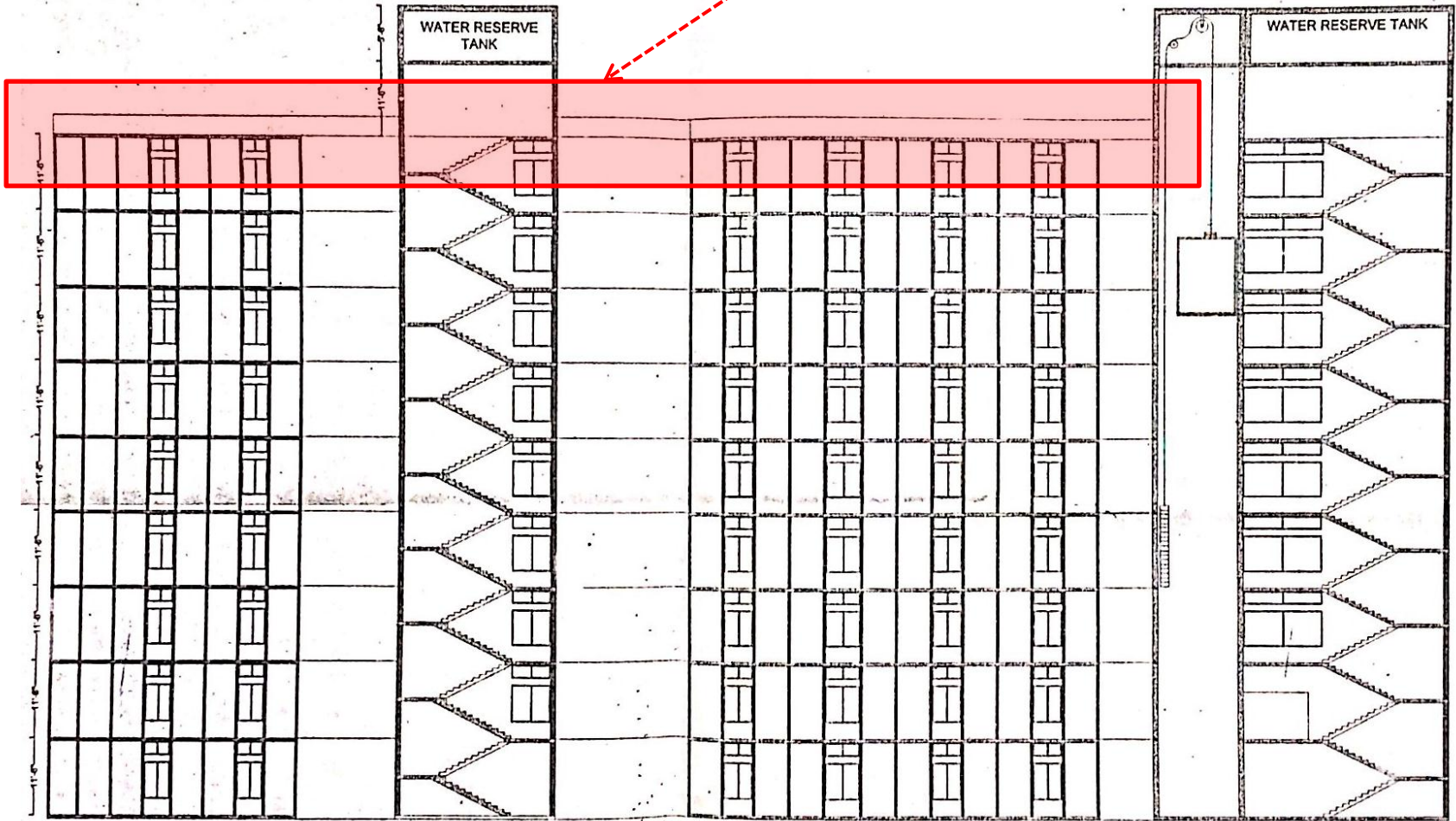


Several temporary buildings around the complex.



6<sup>th</sup> Priority 2 Concern

Additional storey shown on section D-D



SECTION DD  
SCALE 3" = 32' 0"

There are errors in the sections on the building permission drawings with the number of storeys.

# Overall Stability System



  
MD ALL ASGAR  
B.Sc. Engr. (Civil)  
IEB-M-15112  
DMINB/CE-0149

  
MD SHAHRIAR PARVEZ  
B.Sc. Engr. Civil (BUET)  
M.I.E B-23758 (Structure)

The building did not feature any core or shear walls. Stability was achieved through sway action between beams and columns and masonry infill walls.

A 3D analysis has been carried out however, we were shown no concrete frame design based on this analysis.

We require that this item is investigated in an Engineering Assessment

  
on Fire and Building Safety in Bangladesh



# Water Ingress at Roof Level



No permanent roof currently exists as construction is ongoing, therefore no waterproofing membrane exists on the upper floor of the building. This means that any cracks in the surface finishes on the roof will allow water to seep into the concrete slab beneath the finishes, and cause corrosion of the reinforcing steel. We would recommend a waterproof membrane is applied to the roof of the building at the end of construction, or an upper level if construction is to stop for more than one year.

# Priority Actions

## Problems Observed Summary

- ITEM 1: (Priority 2) No obvious stability system to any building in the complex.**
- ITEM 2: (Priority 2) The foundations appear to be under designed with a pile capacity problem.**
- ITEM 3 (Priority 2) The columns would appear to be overstressed if the floor loads were the actual suggested design loads of 120psf.**
- ITEM 4: (Priority 2) The exact floor loads are unknown and need to be verified.**
- ITEM 5: (Priority 2) Inadequate steel detailing to any of the shed buildings.**
- ITEM 6: (Priority 2) Several temporary buildings around the complex.**
- ITEM 7: (Priority 2) There are errors in the sections on the building permission drawings with the number of storeys.**
- ITEM 8: (Priority 3) No waterproofing membrane to the roof.**

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Priority 2 - No obvious stability system to any building in the complex.	Building Engineer to analyse and check the structural system under lateral wind and seismic loads to verify the building's adequacy.	6-weeks
2	Priority 2 - No obvious stability system to any building in the complex.	Based on the analysis result, consider strengthening works or other required actions.	6-months
3	Priority 2 - The foundations appear to be under designed with a pile capacity problem.	The piled foundations should be careful reviewed to determine the existing pile capacity based on a 13.7m pile length.	6-weeks
4	Priority 2 - The foundations appear to be under designed with a pile capacity problem.	Based on the analysis result, consider any implications on floor loading, or number of floors.	6-months
5	Priority 2 - The columns would appear to be overstressed if the floor loads were the actual suggested design loads of 120psf.	Building Engineer to review and check the structural capacity of the columns. Verify the actual concrete and rebar strength of the existing columns. Reduce the live load for all floors to 2.0kPa (40psf) until the review is complete.	6-weeks
6	Priority 2 - The columns would appear to be overstressed if the floor loads were the actual suggested design loads of 120psf.	Once the re-analysis is complete re-confirm the actual allowable floor loadings.	6-months
7	Priority 2 - The exact floor loads are unknown and need to be verified.	Produce loading plans for each floor of the building as per design live load based on the findings from items 2 & 3.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
8	Priority 2 - Inadequate steel detailing to any of the shed buildings.	Building Engineer to review and check the stability structure of the building under wind load and the steel to masonry connections.	6-weeks
9	Priority 2 - Inadequate steel detailing to any of the shed buildings.	A bracing system needs to be provided and the connections need to be repaired properly. Steel – masonry connections to be strengthened accordingly.	6-months
10	Priority 2 - Several temporary buildings around the complex.	Building Engineer to inspect all “Temporary Buildings” to establish present condition. Demolish or repair “Temporary Buildings” as necessary.	6-weeks
11	Priority 2 - There are errors in the sections on the building permission drawings with the number of storeys.	One section of the drawing needs to be revised to show 6 storeys throughout to avoid any misunderstanding in the construction process.	6-weeks
12	Priority 3 - No waterproofing membrane to the roof.	A waterproof membrane needs to be applied to the roof of the building at the end of construction, or an upper level if construction is to stop for more than one year.	6-months