

# Nexus Sweater Ind.(pvt.) Ltd. Nexus Fashion Ltd. Nexus Knit

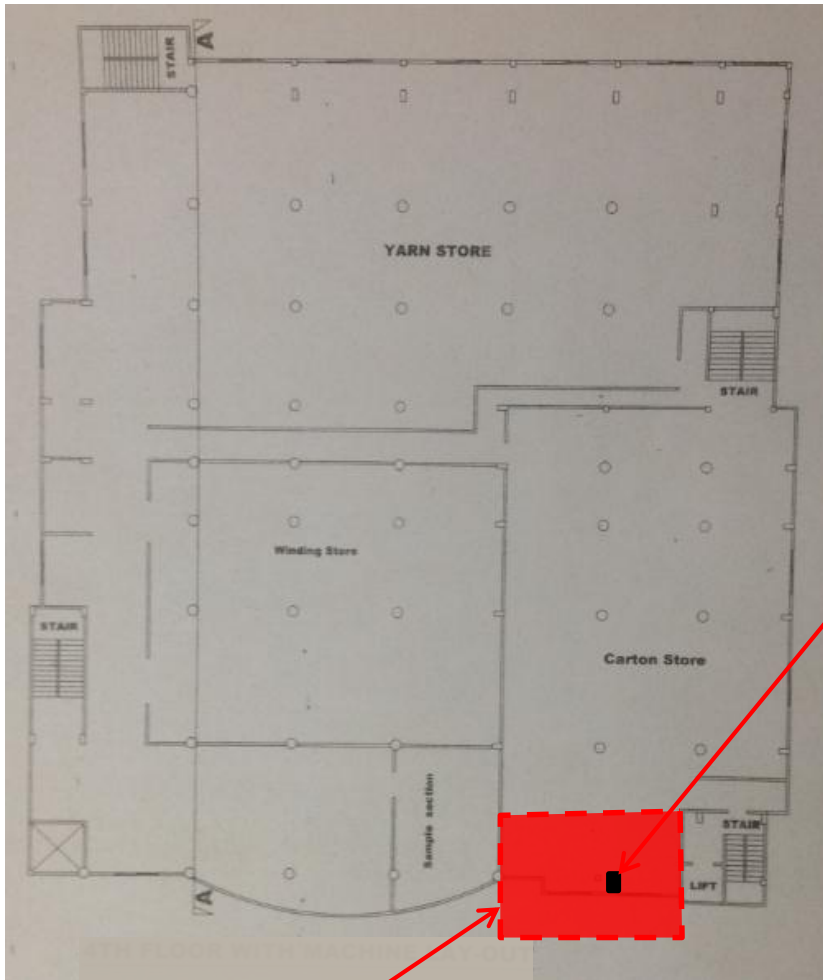
Nexus Tower, Vogra, Joydebpur, Gazipur, Dhaka  
(+23.9785N, 90.3754E)

28 September 2013



# Building Observations

**Remove all load from cantilever  
area identified**



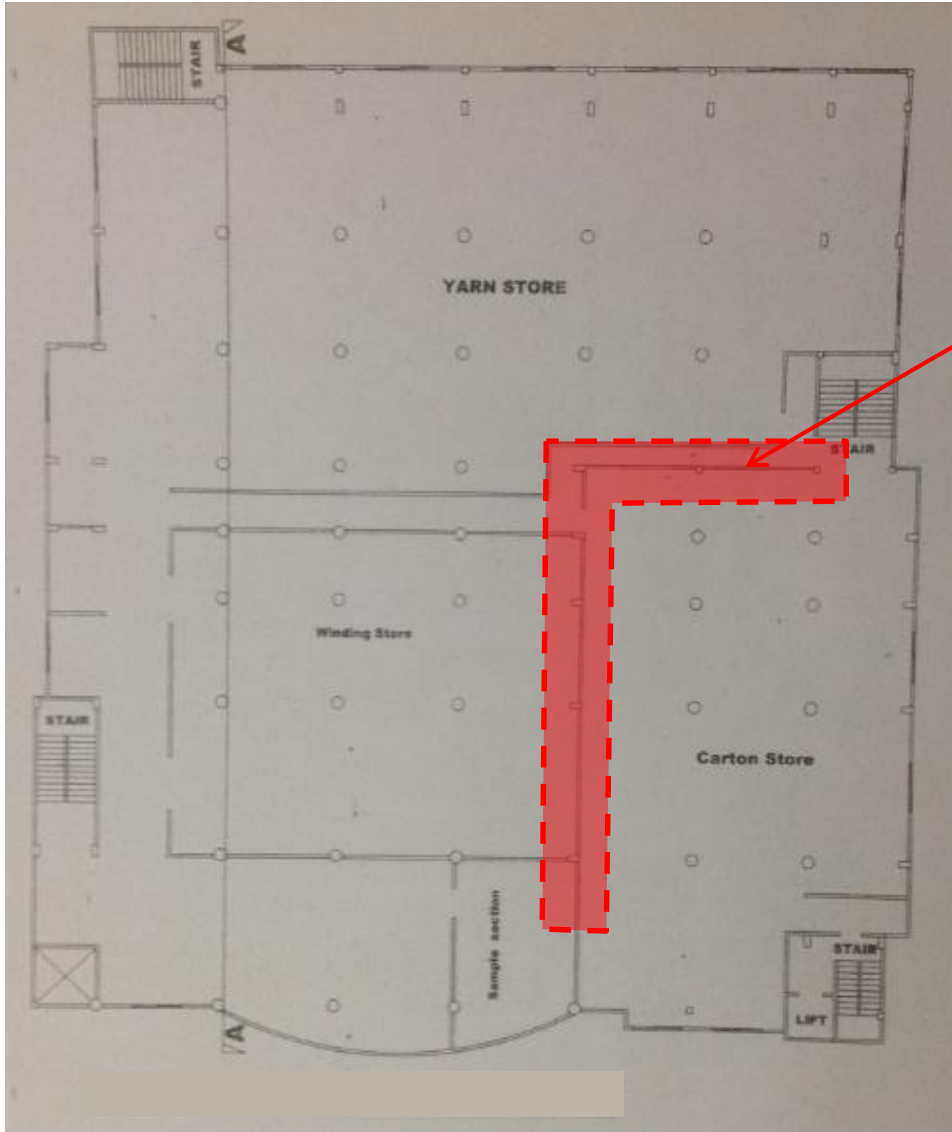
**Cursory calculations indicate that the column working stress at ground floor is at a high level.**

**Building Engineer is to perform detailed calculations and concrete tests to prove column size; Columns to be reinforced if required**

**Immediately remove all load from all suspended levels in area highlighted**

**Remove load from cantilever area**

# **Verify concrete stresses in rectangular columns along joint between Phase I and II**



**Building Engineer is to verify in-situ strengths of concrete in highlighted area and compare with stresses in columns. Detailed Engineering Assessment required for building**



**Verify concrete stresses in rectangular columns along joint between Phase I and II**

# Limit density of loading in remaining cantilever areas



**Critical area where loading must be reduced to 1.5 kN/m<sup>2</sup>**

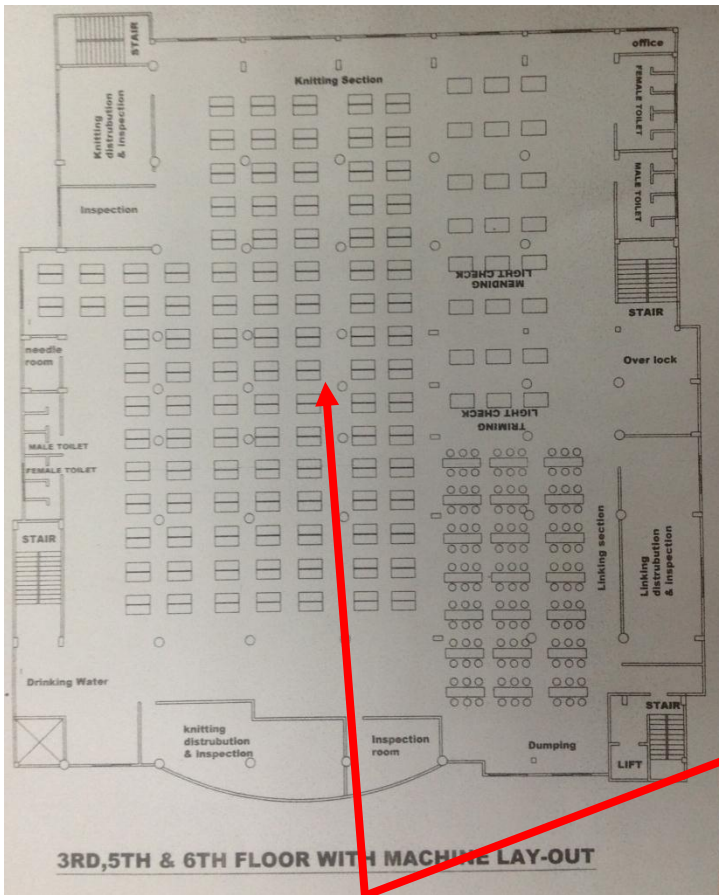
**Plan and height restrictions to be introduced in cantilever area to prevent future overloading**

**Investigate reason for cracking in topping slab  
and determine allowable floor load capacity**



**Cracking in slab finishes  
on all levels**

**Cracking in slab finishes (top of slab)**



**Building Engineer to carry out Punching Shear Checks.**

**Determine allowable floor load capacity and check Punching Shear Stress over Columns at upper floors**



# Verification of stability of steel roof after removing part of the metal deck diaphragm



Former roof diaphragm is discontinued in the current situation.

**Check on roof stability required**

**Provide water tightness to roof slab**



**Damaged roof surface (due to former roof construction) may result in corrosion of reinforcement**



**Water may cause damage and corrosion of reinforcement**

**Provide measures to avoid water damage on high level roof where water is ponding at cantilever (additional roof outlet)**



**Sediments from water ponding in cantilever area, where no roof drainage outlet is present.**

## **Water ponding**



**Water damage in walls and ceiling**

## **Water Damage and Risk of Corrosion**

# Priority Actions

# Problems Observed

**ITEM 1:** Immediately remove all load from cantilever area identified and verify column size

**ITEM 2:** Verify concrete stresses and in-situ strengths for certain rectangular columns

**ITEM 3:** Reduce loading in remaining cantilever areas

**ITEM 4:** Investigate reason for cracking in slab and determine allowable floor load capacity including punching shear checks.

**ITEM 5:** Verification of stability of steel roof

**ITEM 6:** Provide water tightness to roof slab

**ITEM 7:** Provide measures to avoid water damage on high level roof where water is ponding at cantilever

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Immediately remove all load from cantilever area identified and verify column size	Remove all loading and storage from the cantilever area adjacent to stairs for all suspended floors	<b>Immediate - Now</b>
2	Immediately remove all load from cantilever area identified and verify column size	Factory engineer to review design, loads and column stresses in area identified	<b>Immediate - Now</b>
3	Immediately remove all load from cantilever area identified and verify column size	Verify in-situ concrete stresses either by cores or existing cylinder strength data	<b>Immediate - Now</b>
4	Immediately remove all load from cantilever area identified and verify column size	Carry out remedial / strengthening works if required	<b>6-weeks</b>
5	Immediately remove all load from cantilever area identified and verify column size	Building Engineer to establish allowable floor loading plans based on cantilever slab and support column capacity.	<b>6-weeks</b>

Item No.	Observation	Recommended Action Plan	Recommended Timeline
6	Immediately remove all load from cantilever area identified and verify column size	Implement allowable floor loading plans.	6-weeks
7	Immediately remove all load from cantilever area identified and verify column size	Regular inspection of load management	6-months
8	Verify concrete stresses and in-situ strengths for certain rectangular columns	Factory engineer to review design, loads and column stresses in area identified above.	Immediate - Now
9	Verify concrete stresses and in-situ strengths for certain rectangular columns	Verify in-situ concrete strengths either by cores or existing cylinder strength data for identified rectangular columns.	Immediate - Now
10	Verify concrete stresses and in-situ strengths for certain rectangular columns	A Detail Engineering Assessment of full building to be commenced, see attached Scope	Immediate - Now
11	Verify concrete stresses and in-situ strengths for certain rectangular columns	Detail Engineering Assessment to be completed Create controlled loading plans for all floors designating where storage can be placed and can not be placed	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
12	Verify concrete stresses and in-situ strengths for certain rectangular columns	Create controlled loading plans for all floors designating where storage can be placed and can not be placed	6-weeks
13	Verify concrete stresses and in-situ strengths for certain rectangular columns	Carry out strengthening as required	6-months
14	Reduce loading in remaining cantilever areas	Reduce loading at cantilever area to no more than 1.5kN/m <sup>2</sup>	Immediate - Now
15	Reduce loading in remaining cantilever areas	Building Engineer to establish allowable floor loading plans based on support column and slab capacity.	6-weeks
16	Reduce loading in remaining cantilever areas	Implement allowable floor loading plans.	6-weeks
17	Reduce loading in remaining cantilever areas	Regular inspection of load management	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
18	Investigate reason for cracking in slab and determine allowable floor load capacity including punching shear checks.	Remove the topping finishes at several locations and determine if cracking in the slab finishes is continuous through the structural slab.	6-weeks
19	Investigate reason for cracking in slab and determine allowable floor load capacity including punching shear checks.	Building Engineer to calculate the safe loading limit and carry out punching shear checks. Allowable floor loading plans to be prepared to establish where storage loads may be placed.	6-weeks
20	Investigate reason for cracking in slab and determine allowable floor load capacity including punching shear checks.	Regular inspection of load management	6-months
21	Verification of stability of steel roof	Verification of roof stability and load take down. Add additional bracing or other strengthening if required.	6-months
22	Verification of stability of steel roof	Steel structure should be designed by the Building Engineer and, if required, upgraded to support code vertical and wind loads.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
23	Provide water tightness to roof slab	Repair roof slab topping to ensure water tightness	6-months
24	Provide measures to avoid water damage on high level roof where water is ponding at cantilever	Roof drainage system to be extended to include area with ponding	6-months
25	Provide measures to avoid water damage on high level roof where water is ponding at cantilever	Building Engineer to inspect areas with water damage, propose measures to prevent further damage and carry out repair works.	6-months