Life Textile (Pvt) Ltd. (10140)

69,70,71 Bscic Industrial Estate, Konabari, Gazipur

(+24.009422N, 90.321693E)

15.APRIL.2014

Identified Priority 1 Concerns

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Priority 1 Concern

The central columns are significantly overloaded and have a factor of safety less than 1.25.

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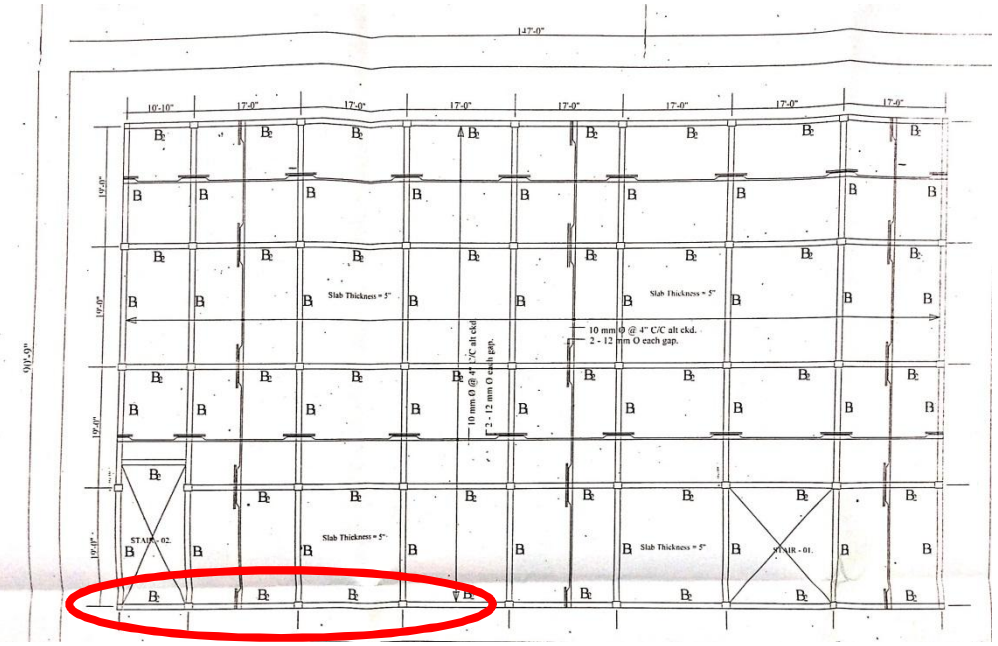
2nd Priority 1 Concern



Records drawings do not match as built conditions. Cantilevers were not shown on the as built drawings, the grid sizes are larger than the record drawings and the columns are larger than the record drawings.

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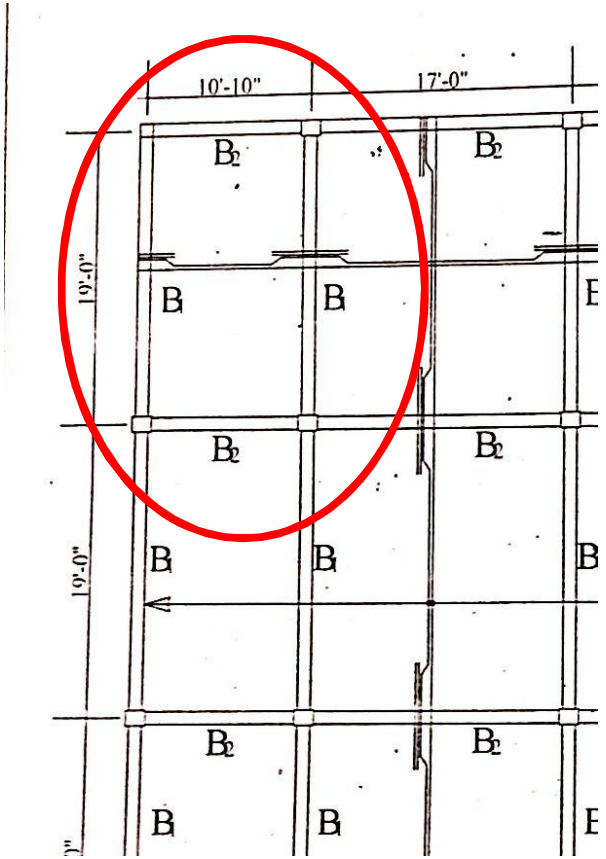
The toilet block to East side of building is not built in accordance with the structural drawings. This cantilevers out by 3m with gallows brackets. There is visible significant deflection in the slab between supports.



3rd Priority 1 Concern

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Identified Priority 2 Concerns

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Multiple cracks to beam and slab were observed at all floors. The beams had shear and flexural cracks, suggesting overloading. The slabs were cracking over the beams, suggesting inadequate tensile reinforcement. Much of the factory had been recently decorated making it difficult to observe all of the cracking. The crack to the beam shown in red for clarity.

Priority 2 Concern

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Materials lift did not appear to be adequately detailed or connected to primary structure. There was extensive damage and corrosion to the steelwork.

Priority 2 Concern

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Identified Priority 3 Concerns

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Steel staircase from sixth floor to roof at NW corner is not adequately detailed or connected to the slab. It would appear to be held by one M8 bolt and several tack welds to the reinforcement.

Priority 3 Concern

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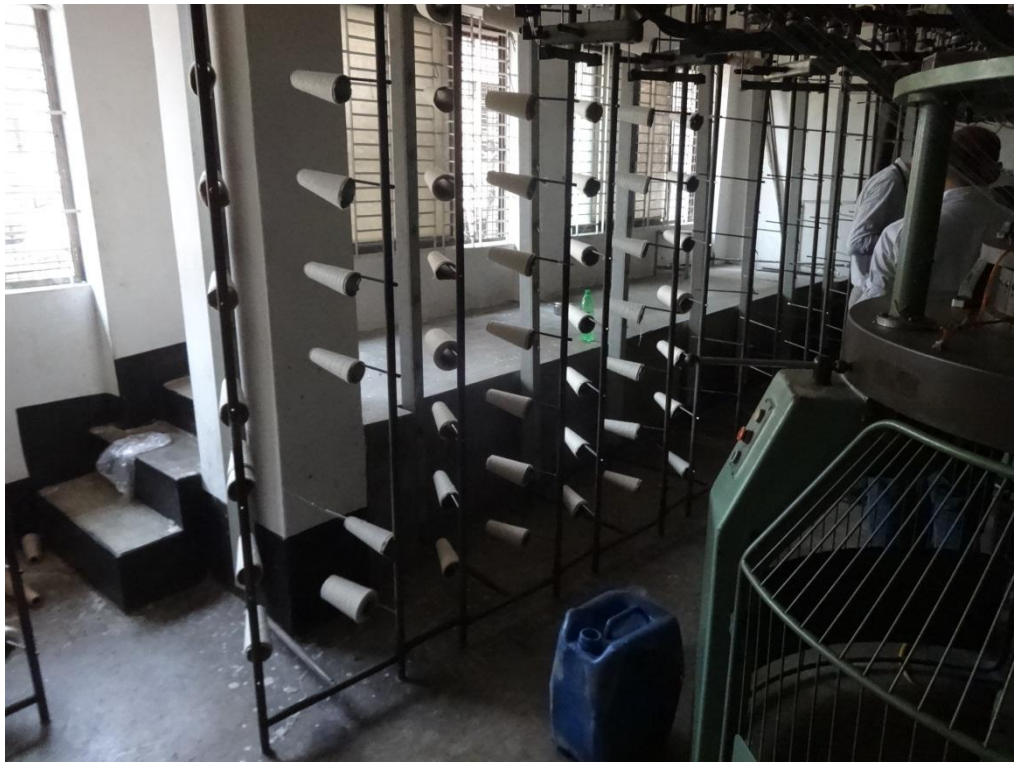

Priority 3 Concern

At first floor level a masonry up-stand has been constructed on top of the cantilever. This adds approximately 15kN/m^2 of dead load to the tip of the cantilever, and neither the up-stand or the cantilever is shown on the structural drawings.

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Overall Stability System

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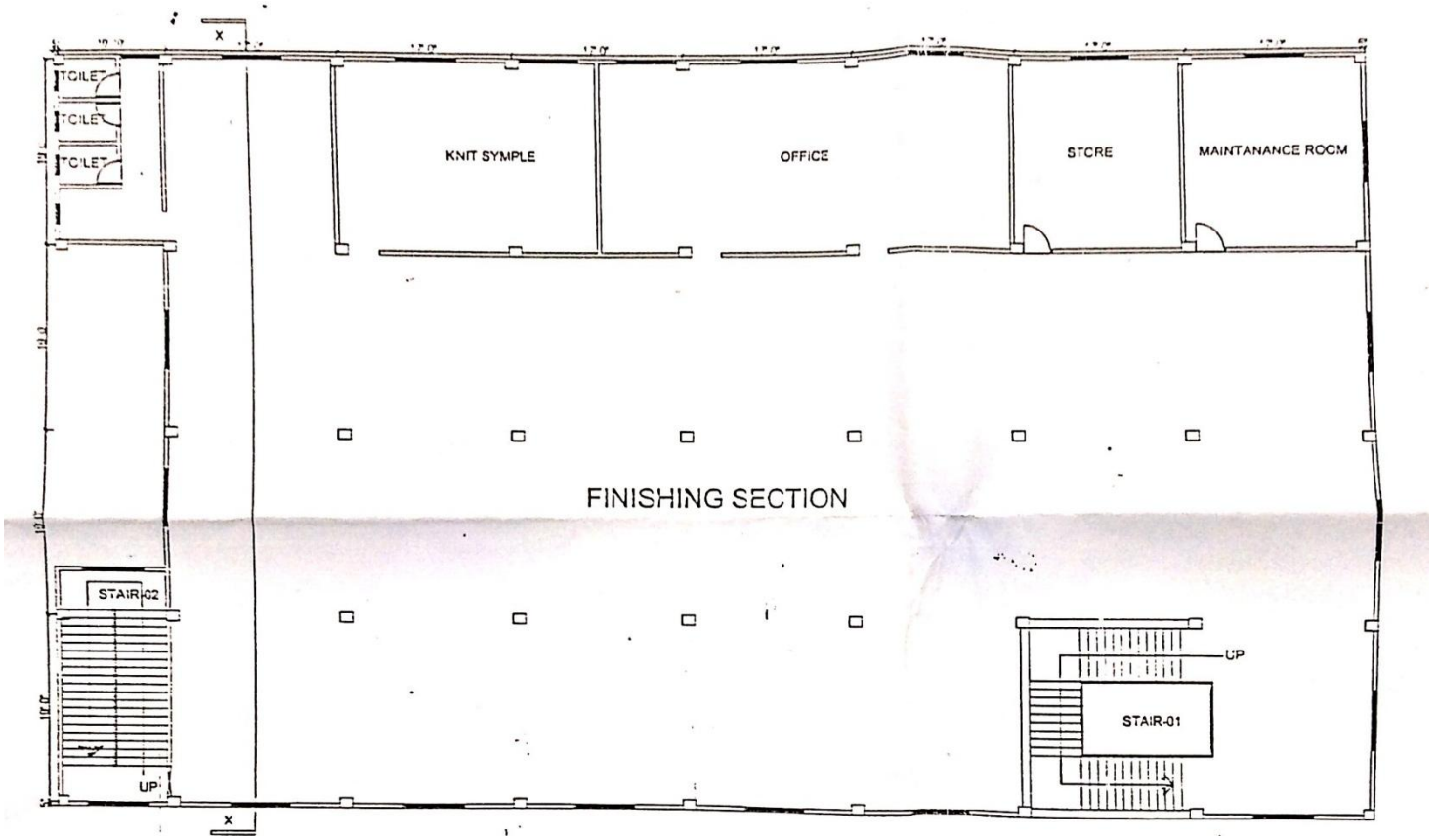

We require that these items be investigated in a Detailed Engineering Assessment

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

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Water Ingress at Roof Level

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No waterproofing membrane was visible on the roof 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 long-term soaking of the slab.

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Priority Actions

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Problems Observed Summary

ITEM 1: The interior columns are overloaded.

ITEM 2: The existing structural drawings do not match the building.

ITEM 3: Toilet block at SE corner showed signs of excessive slab deflection and seems inadequately designed (additionally type of construction was not shown on the structural drawings).

ITEM 4: Cracks observed in the beams and slabs.

ITEM 5: Materials lift is in a deteriorated condition and is inadequately designed and detailed.

ITEM 6: New steel staircase at roof improperly anchored to slab.

ITEM 7: A large concrete up-stand at the 1st floor not shown on structural drawings.

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Item 1 and actions

The interior columns are overloaded.

Priority 1 (Immediate – Now)	• The interior columns are overloaded and therefore we recommend the 4th, 5th, 6th, and roof slabs be evacuated and all imposed loading is removed down to 0 kPa.
Priority 2 (within 6 – weeks)	• A detailed engineering assessment be carried out to more accurately determine the load carrying capacity of the columns. • Load plan diagrams are prepared and posted.
Priority 3 (within 6-months)	• Remedial action be carried out as required to ensure the structural integrity of the building and the safety of its occupants.

Item 2 and actions

The existing structural drawings do not match the building.

Priority 1 (Immediate – Now)	• Structural Engineer to review the actual site conditions and configuration of the building and revise the drawings.
Priority 2 (within 6 – weeks)	• N/A
Priority 3 (within 6-months)	• N/A

Item 3 and actions

Toilet block at SE corner showed signs of excessive slab deflection and seems inadequately designed (additionally type of construction was not shown on the structural drawings).

Priority 1 (Immediate – Now)	• Due to the excessive slab deflection and the lack of information shown on the structural drawings we recommend the toilet block be evacuated and kept unoccupied.
Priority 2 (within 6 – weeks)	• An engineering assessment be carried out to determine the structural integrity of the SE corner toilet block.
Priority 3 (within 6-months)	• Remedial action be carried out as required to ensure the structural integrity of the building and the safety of its occupants.

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Item 4 and actions

Cracks observed in the beams and slabs.

Priority 1 (Immediate – Now)	• N/A
Priority 2 (within 6 – weeks)	• An engineering assessment be carried out to determine the cause of cracking and to ensure structural integrity.
Priority 3 (within 6-months)	• Remedial action be carried out as required to ensure the structural integrity of the building and the safety of its occupants.

Item 5 and actions

Materials lift is in poor condition and seems inadequately designed.

Priority 1 (Immediate – Now)	• N/A
Priority 2 (within 6 – weeks)	• An engineering assessment be carried out to determine the structural integrity of the materials lift.
Priority 3 (within 6-months)	• Remedial action be carried out as required to ensure the structural integrity of the lift.

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Item 6 and actions

New steel staircase at roof improperly anchored to slab.

Priority 1 (Immediate – Now)	• N/A
Priority 2 (within 6 – weeks)	• N/A
Priority 3 (within 6-months)	• An engineering assessment be carried out to determine the structural integrity of the steel staircase.

Item 7 and actions

A large concrete up-stand at the 1st floor not shown on structural drawings.

Priority 1 (Immediate – Now)	• N/A
Priority 2 (within 6 – weeks)	• N/A
Priority 3 (within 6-months)	• An engineering assessment be carried out to determine the structural integrity of the elements supporting the concrete up-stand.