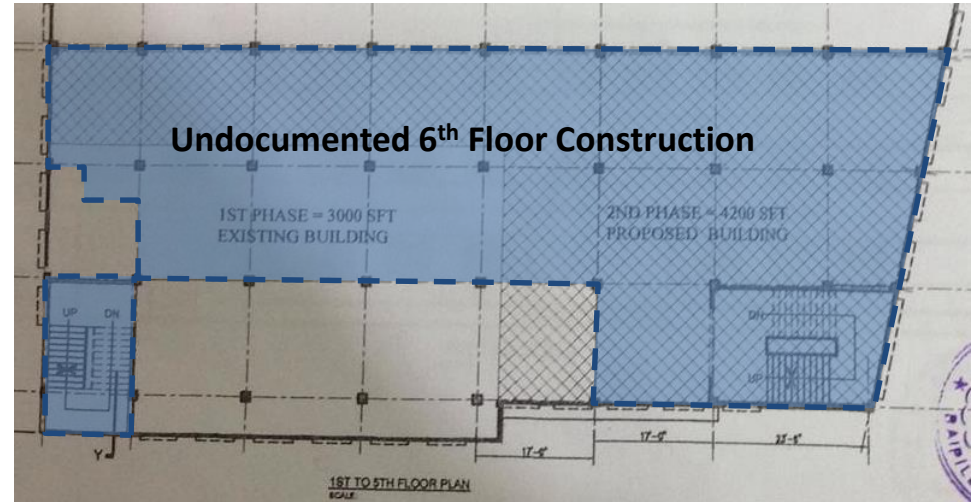


S.B. Knitting Ltd.

Baipal Notunpara, New DEPZ, Savar, Dhaka
(23.94544, 90.27674)
15th April 2014



Undocumented Vertical Extension



Vertical extension on roof comprising lightweight steel trussed roof on concrete columns with brick masonry infill. Typical Slab used to transfer masonry perimeter wall loads to columns. No structural or design documentation provided for extension.



Lateral Stability system for 6th floor structure not clear.

Tie-downs for wind uplift on roof not detailed or apparent during inspection.



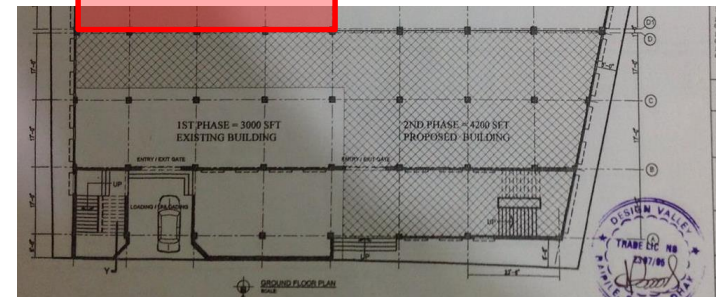
Non-Engineered Adjoining Shed Structures



**Non Engineered shed,
connected to main
building façade.**

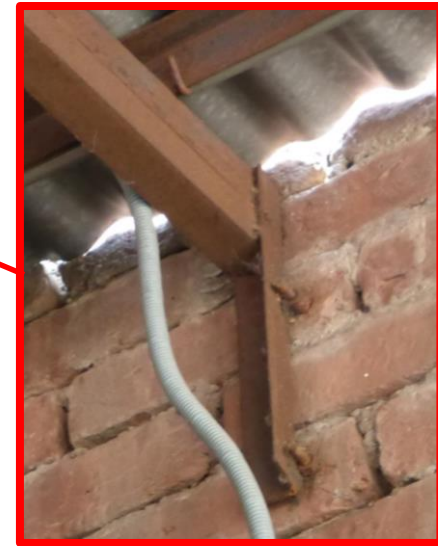
**Damage and distress to
reinforced concrete and
masonry cantilevered
walls**

**Threading Area
& toilet in Non
Engineered
Shed**



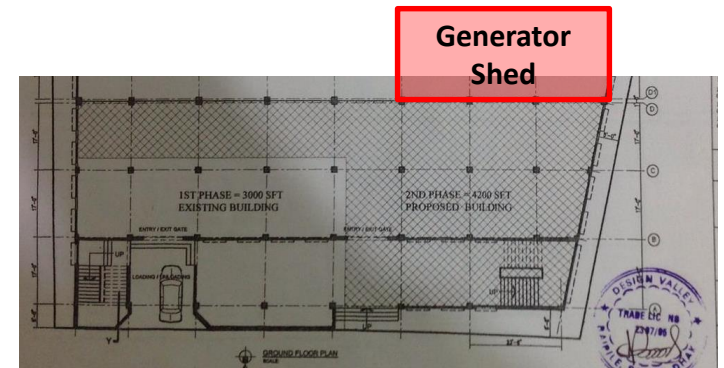


**Non Engineered trusses and internal posts.
No roof bracing system evident.
Distress and distortion of structural steelwork
evident
Purlins appear to be undersized for cantilever spans.**



Non Engineered shed,
connected to main
building façade.

Building Generator
located in shed.



Localised Areas of High Loading



**Areas of localised high loading on suspended structure observed throughout building.
No load management procedure evident.**



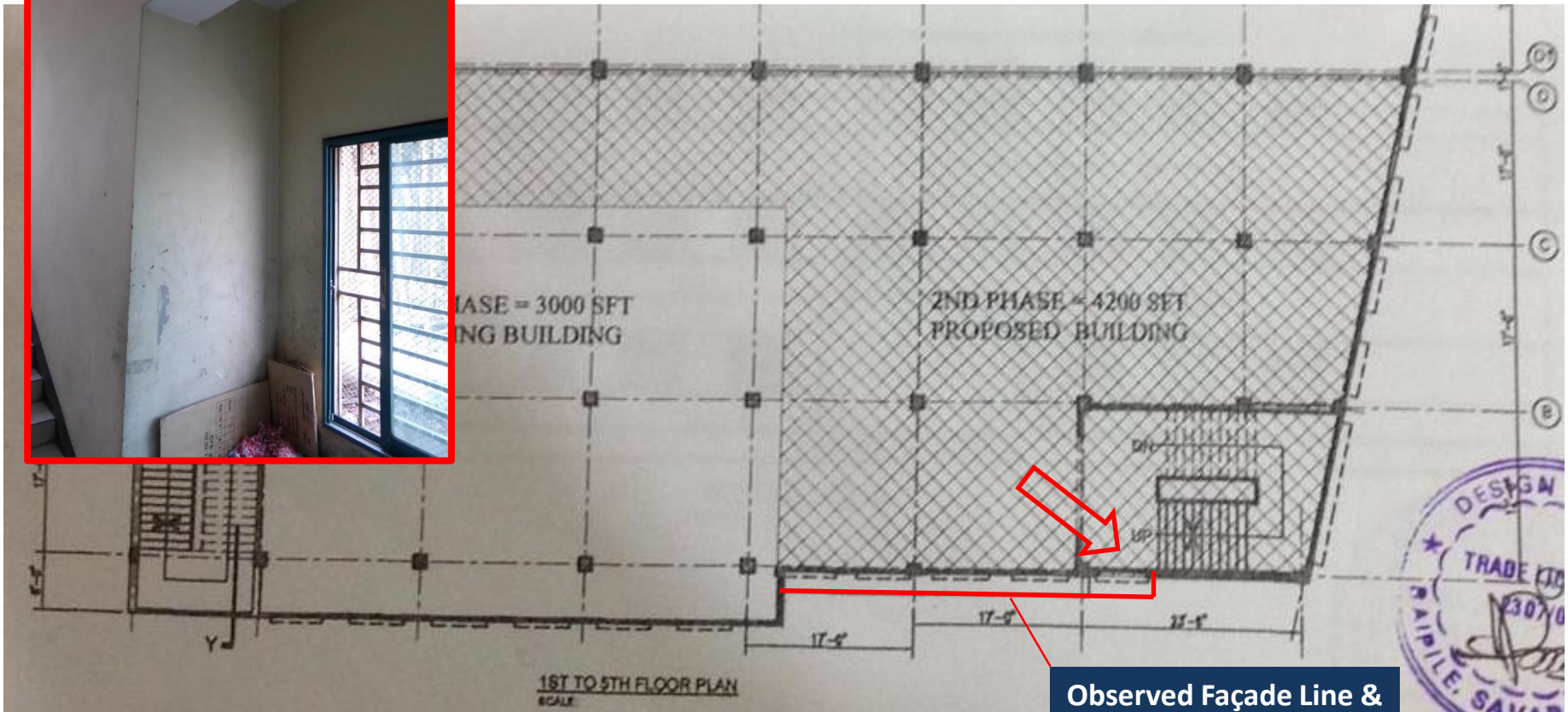
Numerous areas where load is stored on landings and half landings in both staircores.

Issue is raised insofar as it relates to loading. Building manager to review with their fire safety engineer soonest in relation to fire safety issues.



Toilet drainage infrastructure contained above structural slab level using multiple solid buildups. Additional loading from solid buildups (210mm on 255mm screed recorded) and solid partition walls recorded on bay containing toilet block.

Undocumented Horizontal Extension



Observed Façade Line & additional Cantilever

Non-engineered External Storage Sheds



Non Engineered bamboo framed storage sheds.

Local construction techniques, not normally occupied by factory workers. Not considered assessed as part of this report.

Evidence of Distress in Façades and Solid Internal Partitions



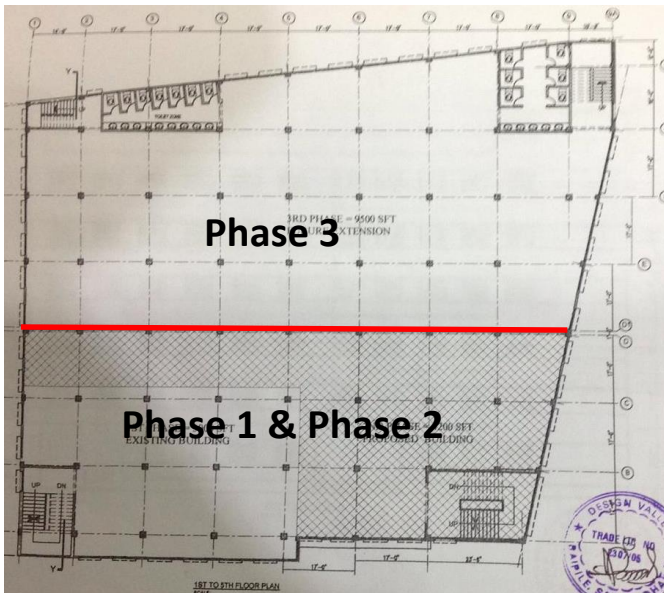
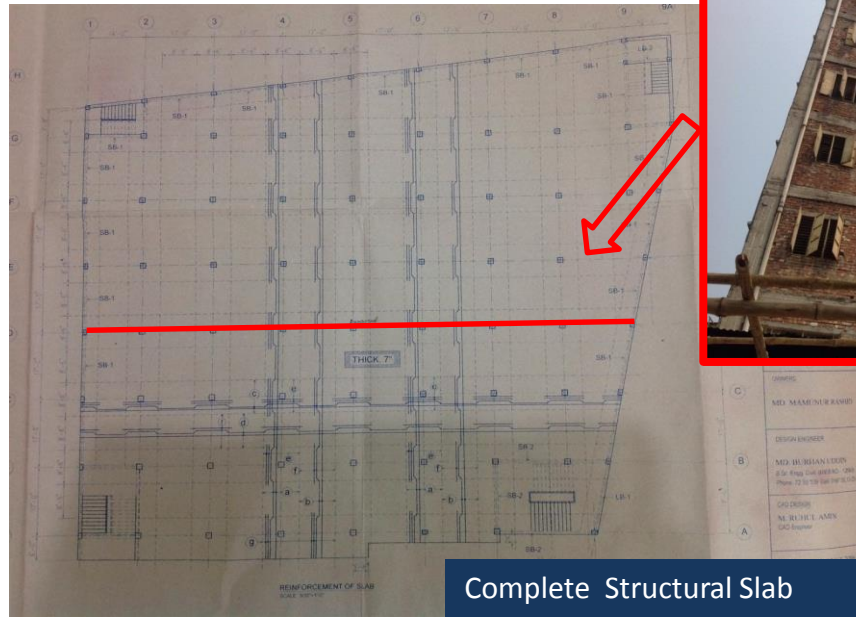
Evidence of distress on the rendered masonry façade where it is supported on both perimeter beams and flat slab cantilevers.

Cracking likely related to deflection of façade support structural elements, lateral load capacity of façade panel and differential thermal movement of façade and structure.



Evidence of significant prior distress and repair to internal partitions constructed without deflection heads to structural slabs.

Discrepancies between Construction and Design Drawings



Structural slab design based on multiple spans in 2 directions.

Phase 2 completed without continuity reinforcement for Phase 3.

Reinforcement modifications to phase 2 slab (e.g. additional first internal span requirements) not recorded.

Details for perimeter beam on façade not noted.

Existing perimeter column not sized as an internal column.

Reinforcement included for new phase 3 column on shared pad (currently encased in brick chip concrete and used to support shed structures).

Problems Observed

1. Undocumented vertical extension.
2. Non-Engineered adjoining shed structures.
3. Localised areas of high loading.
4. Undocumented horizontal extension.
5. Non-engineered external storage sheds.
6. Evidence of distress in façades and solid internal partitions.
7. Discrepancies between construction and design drawings.

Item No.3	Observation	Recommended Action Plan	Recommended Timeline
1	Undocumented vertical extension	Building engineer to verify structural design of additional structures, with particular attention to structural stability and roof tie-down	6-weeks
2	Undocumented vertical extension	The building engineer should check the level 6 structural arrangement and confirm that the main building structure is capable of safely supporting the additional structures.	6-weeks
3	Undocumented vertical extension	Implement any actions arising from the Engineering assessments of the additional construction and supporting slab structure.	6-months
4	Non-Engineered adjoining shed structures	Building engineer to review the structures and structural design of the adjoining sheds in detail, with particular attention to the larger shed used for production operations. Structural stability, vertical load paths, steelwork connection details, to be specifically addressed	6-weeks
5	Non-Engineered adjoining shed structures	Carry out all recommendations from building engineer's assessment	6-months
6	Non-Engineered adjoining shed structures	Prepare appropriate structural as built drawings incorporating the completed structural frame once strengthening works are incorporated.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Localised areas of high loading	Maintain current use of the floors and do not change use or increase occupation or loading prior to completion of safe loading plans by the building engineer	Immediate - Now
8	Localised areas of high loading	Building Engineer to create controlled loading plans for all floors, which account for existing solid partition loads, extra finishes, heavy fixed items etc. and are based on the structural capacity of supporting slabs, beams and columns in the as built arrangement	6-weeks
9	Localised areas of high loading	Factory management to display plans and educate all relevant factory management on implementation	6-weeks
10	Localised areas of high loading	Continue to implement load plan	6-months
11	Undocumented horizontal extension	Building engineer to verify structural design of additional cantilever and façade load position	6-weeks
12	Undocumented horizontal extension	Building Engineer to check loading on adjacent columns on basis of as built structural arrangement	6-weeks
13	Undocumented horizontal extension	Implement any actions arising from the engineering assessment of the additional as built structure	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
14	Non-engineered external storage sheds	Building engineer to review all temporary structures on site and certify that building are fit for purpose and safe for occasional staff access	6-weeks
15	Non-engineered external storage sheds	Carry out strengthening or demolitions as advised by the building engineer	6-weeks
16	Non-engineered external storage sheds	Implement building manager's plans for appropriate permanent structures required to meet factory storage requirements	6-months
17	Evidence of distress in Facades and solid internal partitions	Building engineer to review façade panel design and ensure adequate capacity for applied lateral loads	6-weeks
18	Evidence of distress in Facades and solid internal partitions	Building management to continually monitor condition of façade and advise building engineer should any significant of cracking facades or solid partitions take place	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
19	Discrepancies between construction and design drawings	Building engineer to review the structures and structural design for the beam, column and slab arrangement where the original structural design was modified for the construction of Phase 2	6-weeks
20	Discrepancies between construction and design drawings	Carry out any actions arising from the building engineer's assessment of the as constructed bay adjacent to Phase 3.	6-months
21	Discrepancies between construction and design drawings	Prepare structural as built drawing for the structure completed to date incorporating changes for original design highlighted in this report	6-months
22	Discrepancies between construction and design drawings	Prior to any phase 3 construction commencing, modify design to reflect the new structural arrangements on the Phase 2 to Phase 3 interface. Prepare new designs for double column, new slab span arrangement and check capacity of pad foundation for double column arrangement	6-months