

Gartex Garments Ltd.

1731, Mostofa Hakim College Road, Cornel Hat, North Kattali, Pahartali, Chittagong.
(22.372642N, 91.769580E)

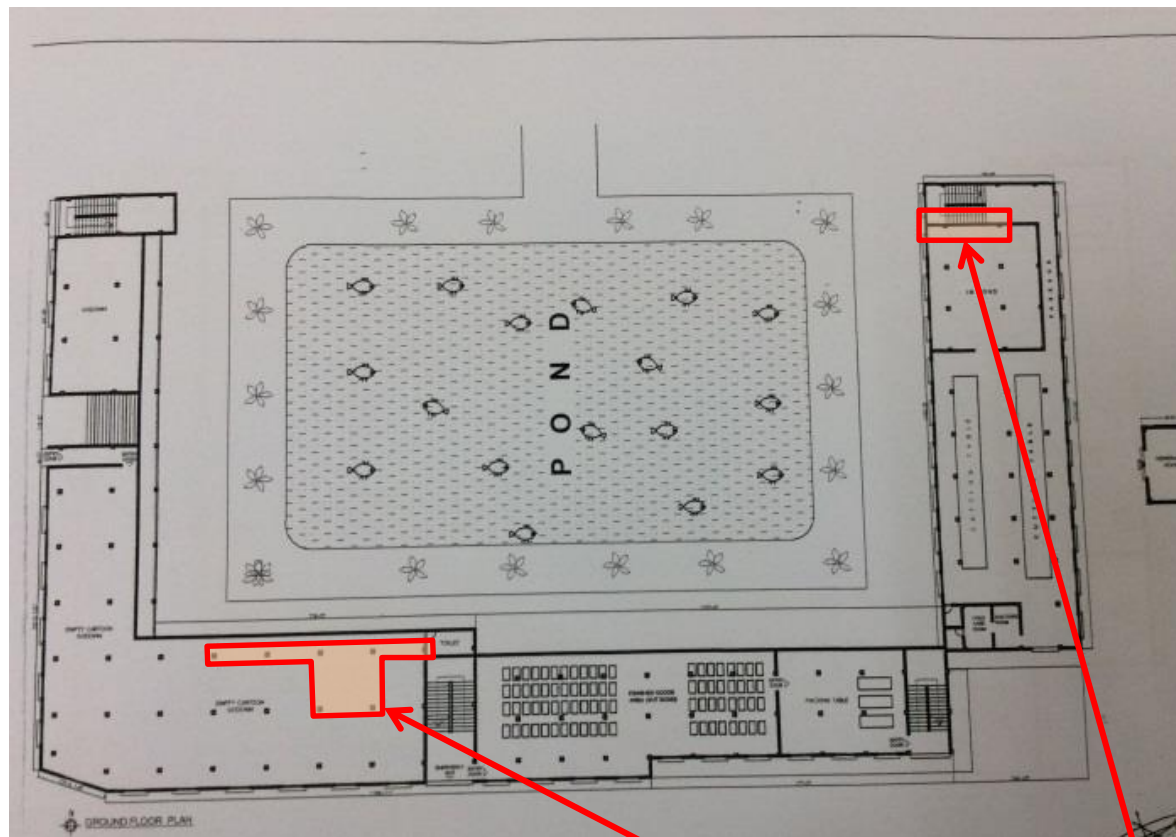
17th May 2014



Observations

**High stress levels
in some columns**

Stress levels were calculated to be high in specific areas within the building.

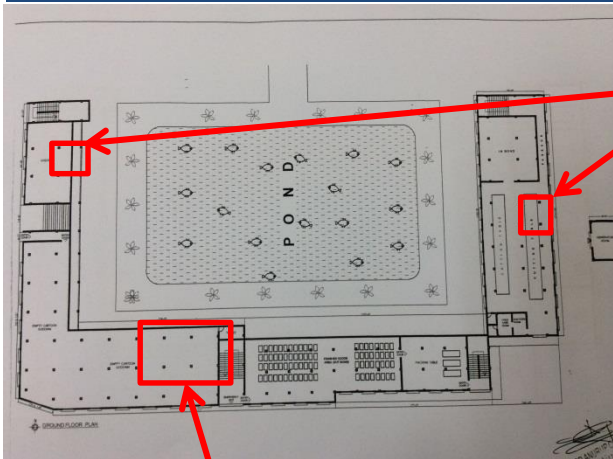


High stress levels in these locations

Observations

Localised high loading on floors

Various areas across the building see significantly increased loadings relative to the typical factory-floor loads – most notably this can be seen beneath the water tank, which is elevated on a concrete stand above the roof level and 2 tanks placed on the roof slab.



Water Tanks
on roof slab

Concrete stand for water tank above

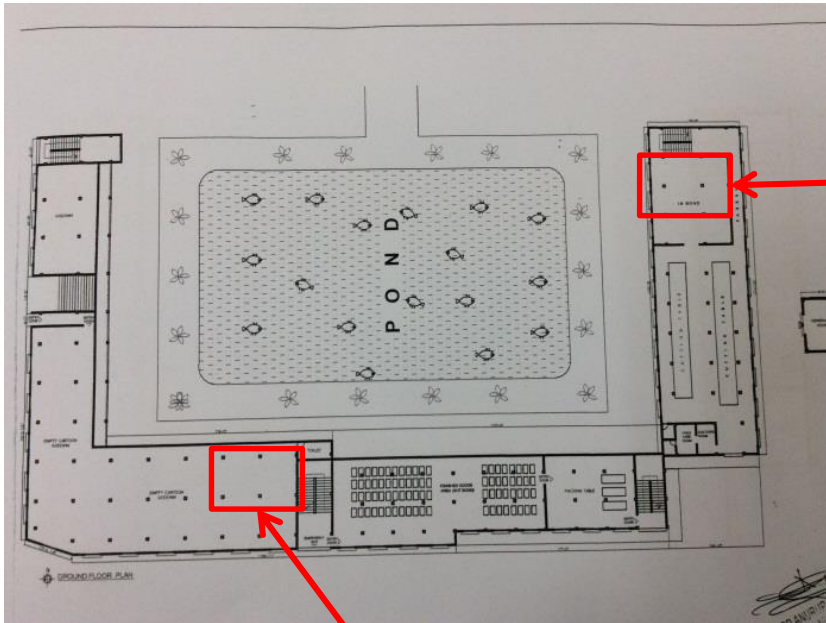
Area in which water tank loading (roof level) and concrete build-up for toilets (Level 2 and Roof) are situated.



Storage below

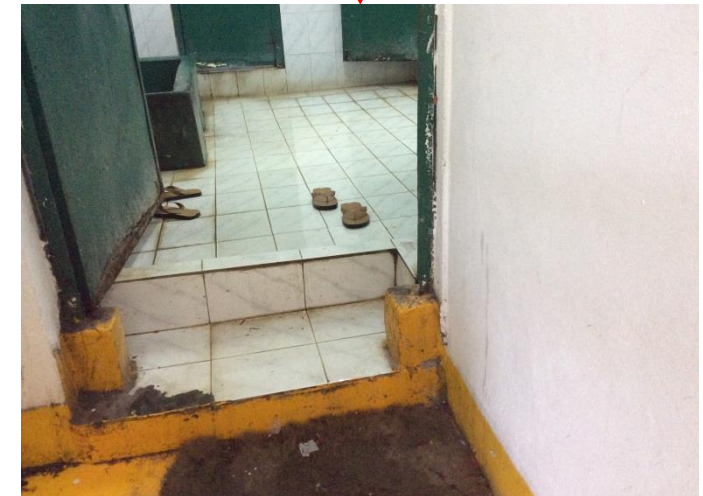
Observations

Toilet areas, which contain masonry partitions and significant build-up at floor level, are inflicting significantly higher loads in certain locations.



Toilet area situated next to masonry wall for staircase, resulting in increased loads on Levels 1 & 2

Typical build-up arrangement



Area in which water tank loading (roof level) and concrete build-up for toilets (Level 2 and Roof) are situated.

Observations

Hairline cracking on beams and slabs

Observations



Vertical cracks (possibly resulting from thermal effects) appear in a significant number of beams, although the majority have been painted over. These occur more frequently at higher levels than lower down the building.



A small number of cracks were found in slabs. This crack was observed on the ceiling of Level 2, directly beneath the Roof Level Toilets, which were actually used as storage space.

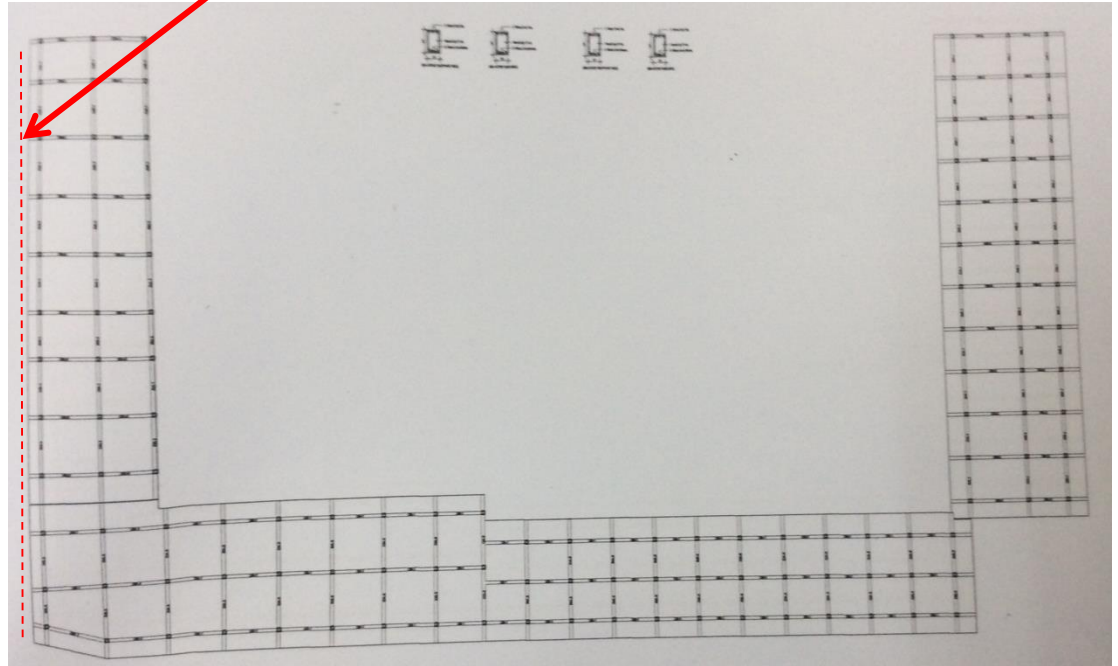
Observations

Discrepancies between drawings and site observations

Observations

There were several discrepancies between site observations and structural/architectural drawings.

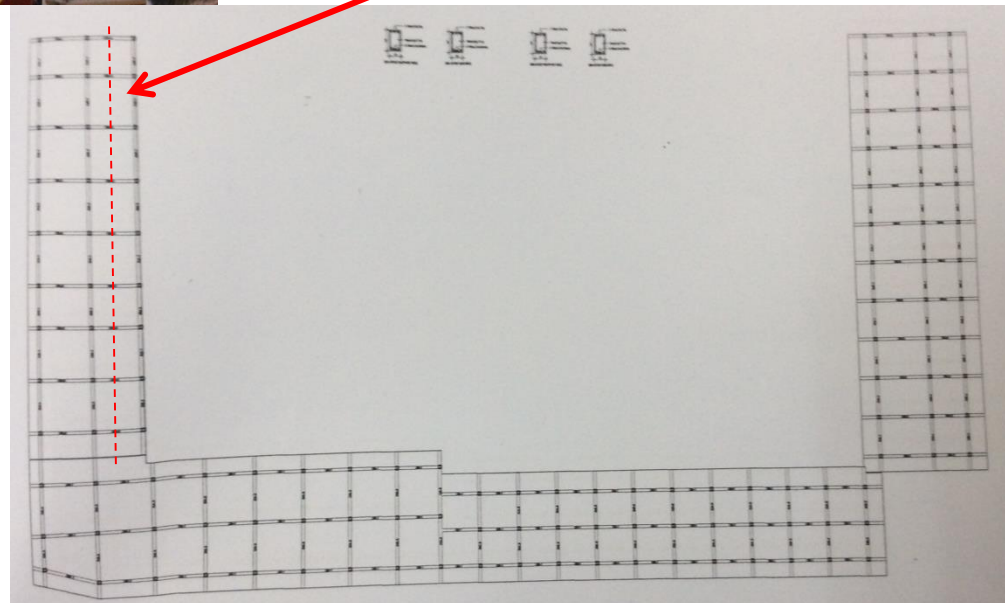
Rendered brick columns have been constructed beneath cantilevers at ground level on this line.



Observations Building 1



Beams are discontinued at the line indicated here on Level 1 and 2, indicating that the building may originally have been constructed to this line.



Observations Building 1

Steel roof connections to columns appear non-engineered

Observations

These connections are formed by welds between the steel beams and the reinforcement protruding from the columns.



Observations

Priority Actions

Problems Observed

ITEM 1: Stress levels in Columns

ITEM 2: Hairline cracking on beams and some slab soffit areas

ITEM 3: High loading due to water tanks and toilets.

ITEM 4: Differences between drawings and actual construction

ITEM 5: Steel roof connections to columns appear non-engineered

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Stress levels in Columns	Building Engineer to review design, loads and stresses in columns in the area noted.	6-weeks
2	Stress levels in Columns	Building Engineer to verify insitu concrete strength by taking 100mm diameter cores from 4 columns.	6-weeks
3	Stress levels in Columns	Building Engineer to verify grade of steel reinforcement and no. and diameter of main column bars.	6-weeks
4	Stress levels in Columns	Make structural alterations if required as advised by Engineer.	6-months
5	Hairline cracking on beams and some slab soffit areas	Monitor cracks on beams. Building Engineer to investigate if cracks are only in the plastering.	6-months
6	Hairline cracking on beams and some slab soffit areas	Building Engineer to advise on load reduction and repair and strengthening if required.	6-months
7	High Loading due to Water Tanks and toilets	Building engineer to check the capacity of the slab to carry the concentrated loading and remove/reduce the loading	6-weeks
8	Differences between actual construction and information on design drawings	Building Engineer to survey the structure and prepare a full set of “as-constructed” drawings.	6-months
9	Steel roof connections to columns appear non-engineered	Building Engineer to check the capacity of the lightweight roofs and make any necessary alterations.	6-months