

Tusuka Apparels Ltd/Jeans & Polo Ltd

BSCIC Industrial Area, Tongi, Gazipur, Dhaka
(23° 53' 35.26"N, +90° 24' 56.68"E)

3 February 2014



Building Observations

**Columns appear to be stressed in excess of
normal design limits**



Cursory calculations indicate that column size appears to be smaller than required by code for the applied dead and live load, assuming typical concrete strength

Building Engineer to perform detailed calculations and concrete tests to prove column size and (if required) :

- Reduce loads by preparation of allowable floor loading plans
- Carry out strengthening works

Brick aggregate seen when plaster removed.

Columns appear to be stressed in excess of normal design limits

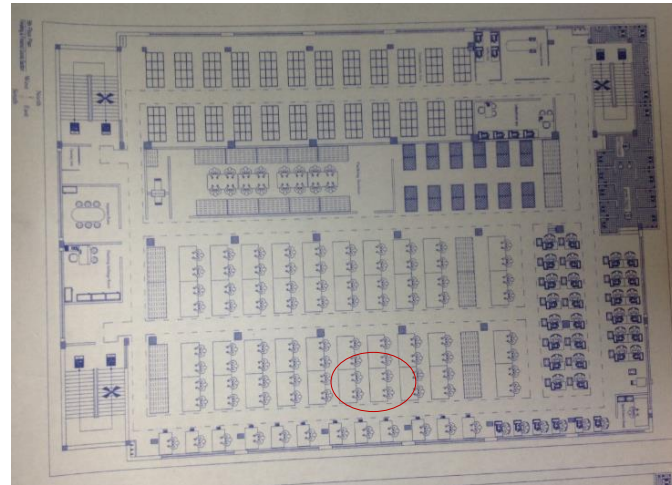
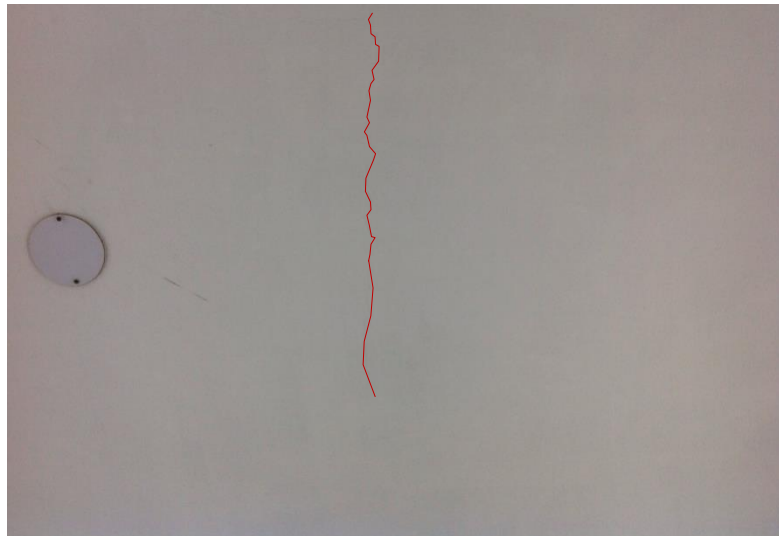
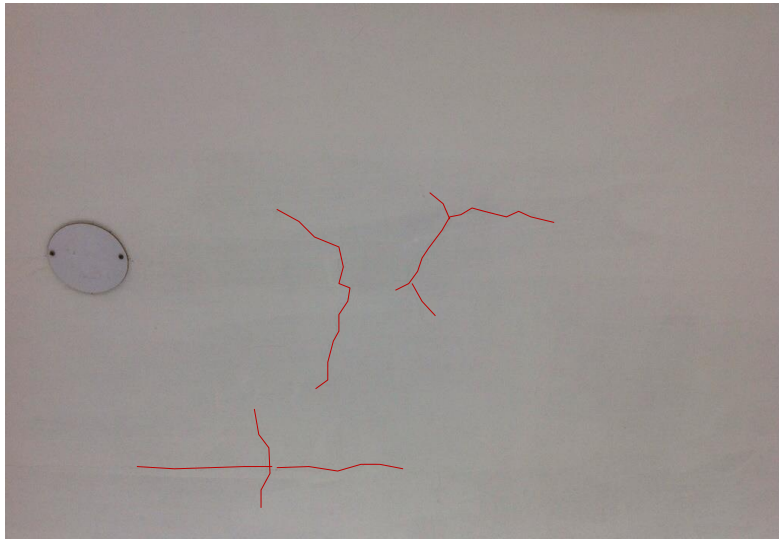
**Cracking to concrete beams on the underside
of 2nd, 4th and 5th floors**

**Cracking to concrete slab on the underside of
the 5th floor**

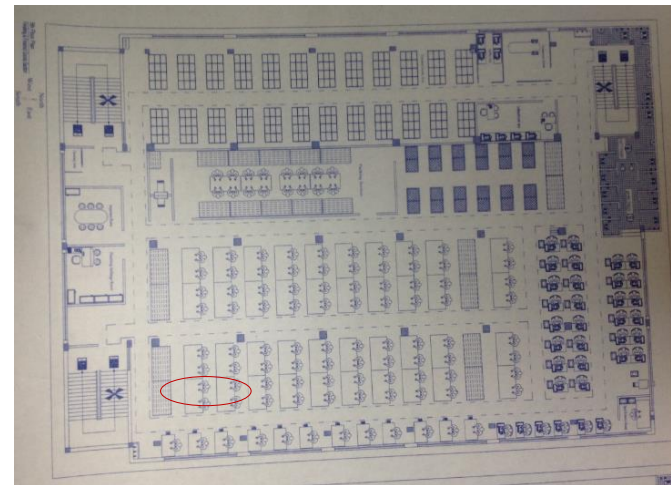


Hairline crack in finishes to underside of beams close to the midspan is quite typical. This example is on the underside of the 2nd Floor. Similar examples seen on the underside of the 2nd, 4th & 5th Floor.

Cracking to concrete beams and slab



**Underside of 5th floor slab (Seen from 4th floor)
Building Engineer to assess.**



Cracking to concrete beams and slab

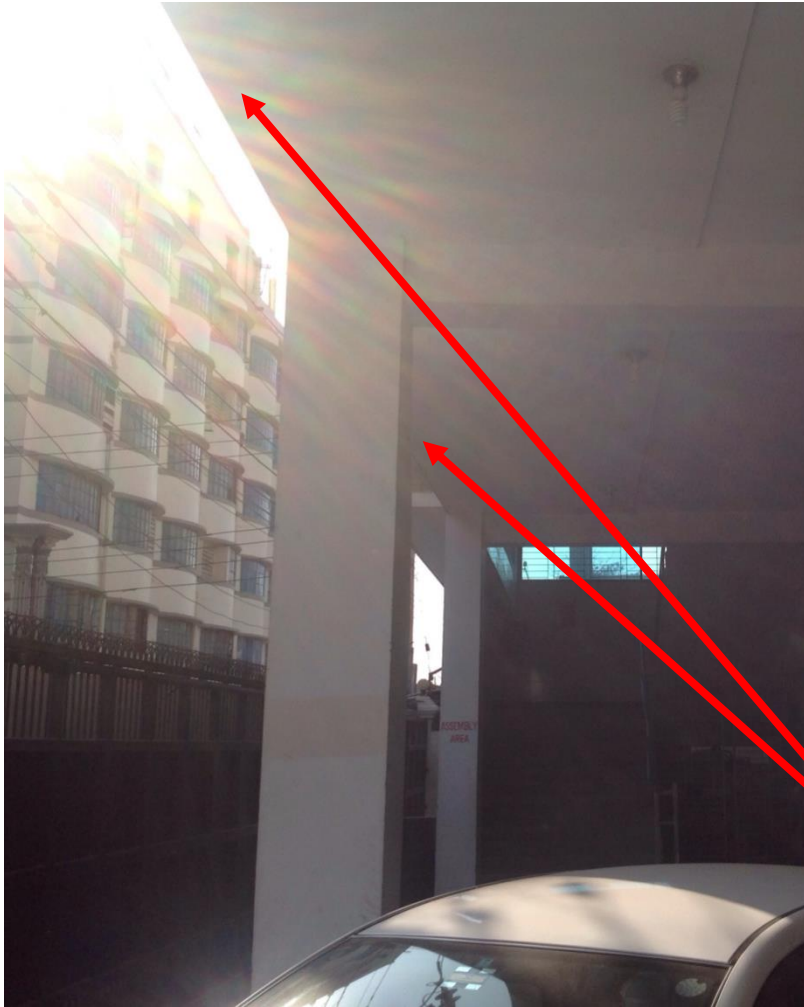
**Lightweight steel roof does not appear to
have adequate bracing to resist high wind
loading**



**No obvious stability system or bracing provided orthogonal to roof portals.
Reliance on diaphragm action through purlins and metal deck?
Requirement for bracing system to be assessed by Building Engineer.**

Steel roof to Dining/Storage Area

Perimeter beam on soffit of 1st floor at south elevation may be missing



**Large opening.
Downstand beams provided elsewhere
but not provided here.
Building Engineer to assess.**

Potential Soft Storey Effect

Priority Actions

Problems Observed

ITEM 1: Columns appear to be stressed in excess of normal design limits – Building Engineer to verify concrete stresses, in-situ concrete strength and reinforcement provided

ITEM 2: Cracking to concrete beams and slab on the underside of 2nd, 4th and 5th floors

ITEM 3: Lightweight steel roof does not appear to have adequate bracing to resist high wind loading

ITEM 4: Perimeter beam on soffit of 1st floor at south elevation may be missing

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Columns appear to be stressed in excess of normal design limits – Building Engineer to verify concrete stresses, in-situ concrete strength and reinforcement provided	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
2	Columns appear to be stressed in excess of normal design limits – Building Engineer to verify concrete stresses, in-situ concrete strength and reinforcement provided	Verify insitu concrete strength either by cores or existing cylinder strength data for 6 columns.	6-weeks
3	Columns appear to be stressed in excess of normal design limits – Building Engineer to verify concrete stresses, in-situ concrete strength and reinforcement provided	Verify that reinforcement content in columns at 4 locations at ground floor is per the design drawings.	6-weeks
4	Columns appear to be stressed in excess of normal design limits – Building Engineer to verify concrete stresses, in-situ concrete strength and reinforcement provided	Produce and actively manage Allowable Floor Loading plans for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
5	Cracking to concrete beams and slab on the underside of 2nd, 4th and 5th floors	Sections of plaster finish to beams/slab to be removed to investigate if cracks penetrate the building structure.	6-weeks
6	Cracking to concrete beams and slab on the underside of 2nd, 4th and 5th floors	Building Engineer to carry out design check on beams/slab to confirm that these cracks are non-structural.	6-months
7	Cracking to concrete beams and slab on the underside of 2nd, 4th and 5th floors	Building Engineer to issue details of repair works to be completed	6-months
8	Check required to confirm that lightweight steel roof has adequate bracing to resist high wind loading	Steel roof should be designed by the Building Engineer and, if required, upgraded to support code vertical and wind loads or the area should be vacated and removed – specifically the requirement for lateral bracing to be reviewed.	6-weeks
9	Perimeter beam on soffit of 1st floor at south elevation may be missing	Building Engineer to survey locations of perimeter beams to south elevation and carry out a design check on the 1st floor slab to check if remedial works are required.	6-weeks