

Barnali Textile and Printing Industries Ltd

Harizbagh, Godnail, Narayanganj, Dhaka

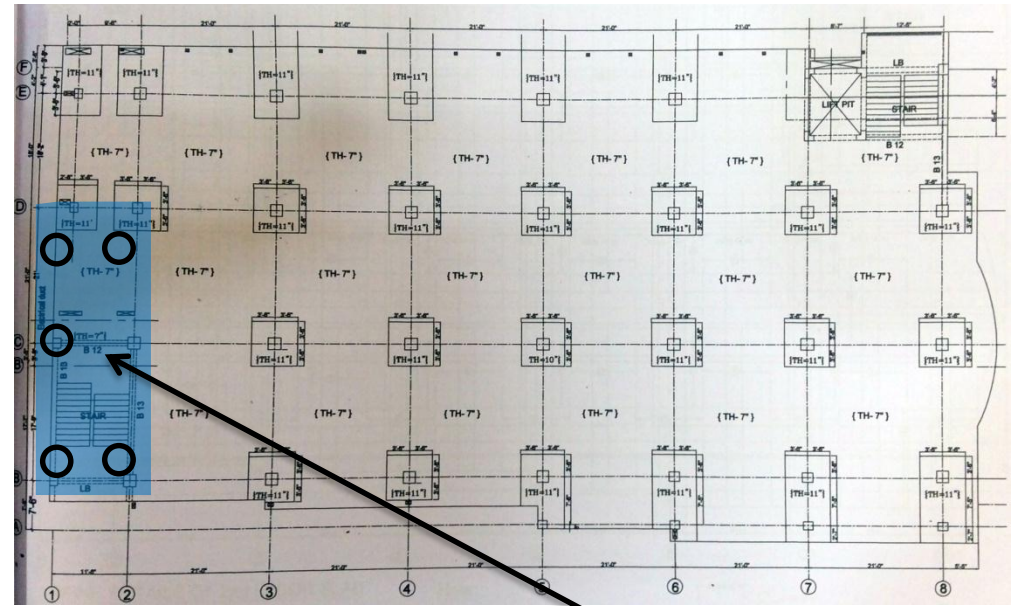
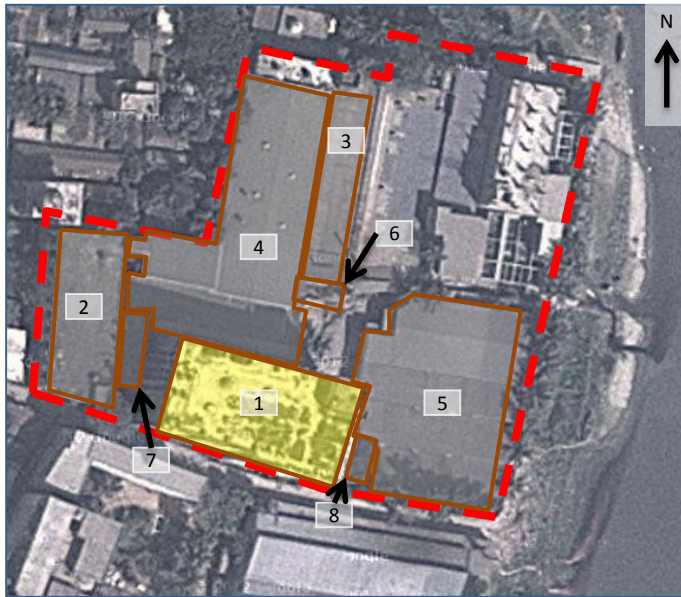
(23.644929, 90.517520)

18th March 2014



Observations

Building 1: High loading from water tanks



2no. 5000l tanks and 3no. 2000l tanks over stair core

Plastic water tanks in corner of building above stair core adds significant load to supporting structure. Tanks appear to be well placed near to columns.

Building 1: Loading – water tanks

Building 1: non-engineered ancillary buildings



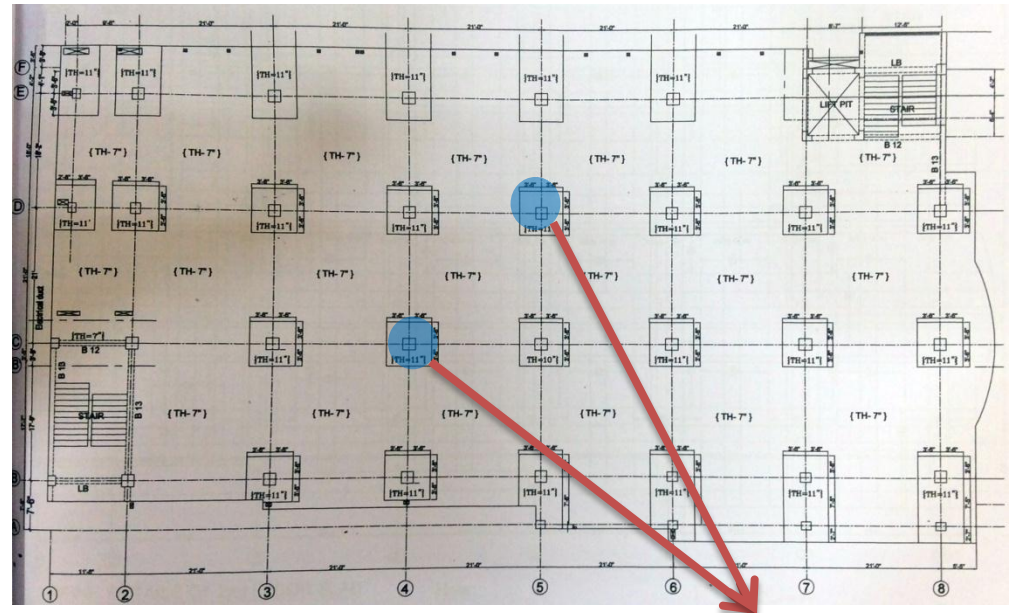
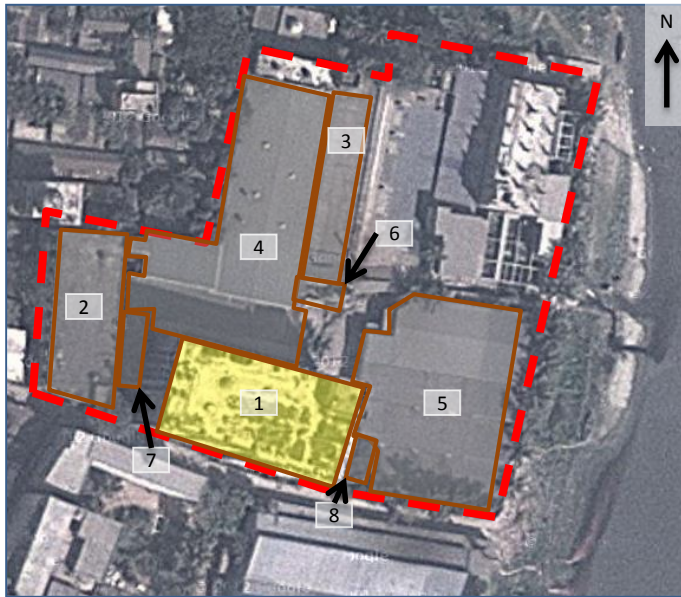
Non-engineered
additional structures

Various structures appear un-engineered and possibly unstable including an unbraced roof structure in a single storey lean-to on the ground floor beside building 1



Building 1: Various un-engineered structures

Building 1: concrete testing



Design drawings are in good agreement with as-built structure. Local breaking out confirms aggregate type is stone throughout, and scanning on several columns indicates reasonable levels of reinforcement.

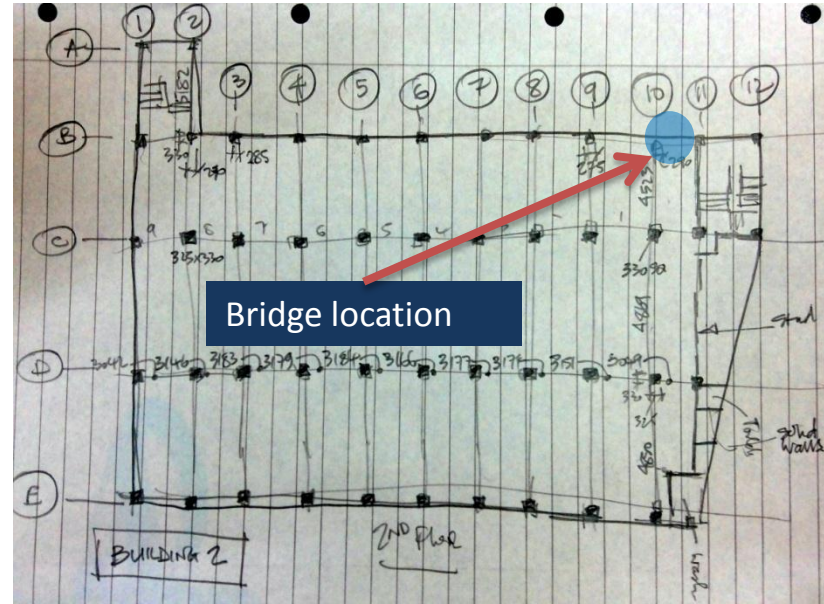
Building column tested at ground floor level



Concrete testing

Stone aggregate

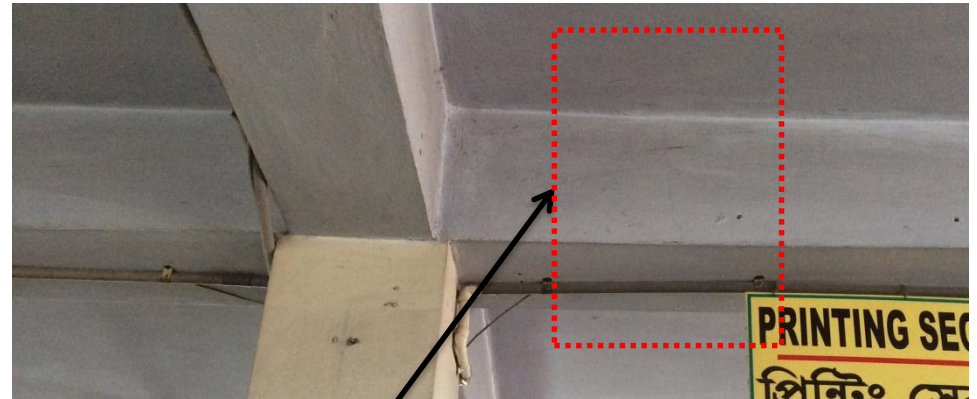
Building 2: deterioration of bridge structure



Bridge structure connecting Building 2 to Building 1 at level 2 appear to have inadequate protection from the environment and is beginning to corrode. The bridge did not appear to be heavily trafficked

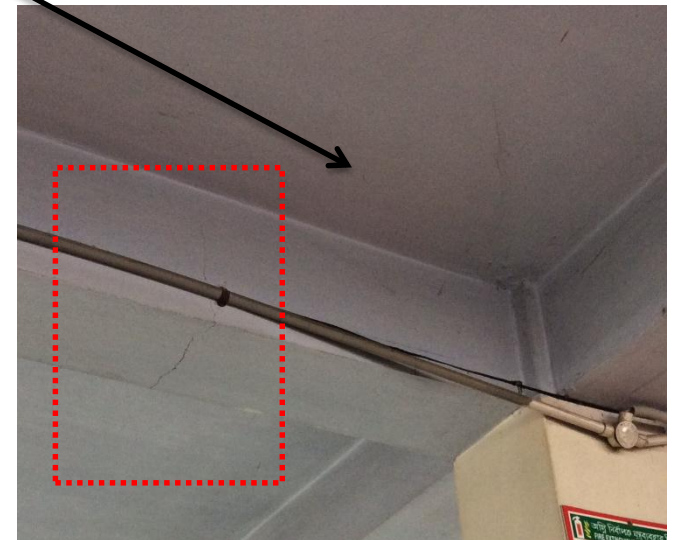
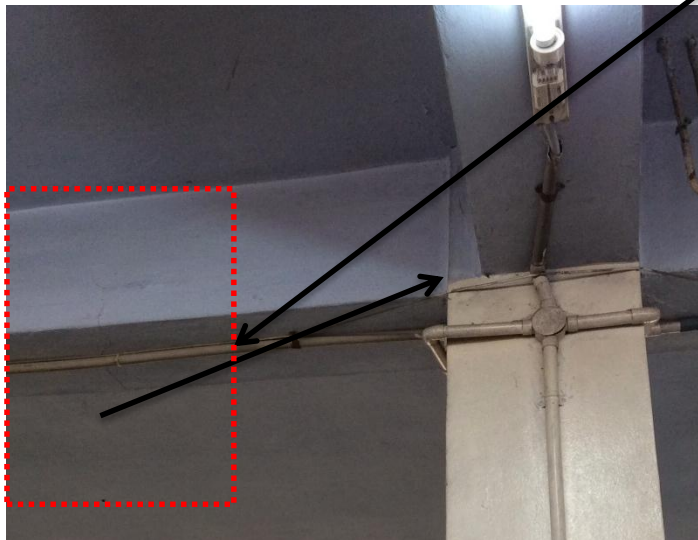
Building 2: Bridge structure deterioration

Building 2: Cracking on beams



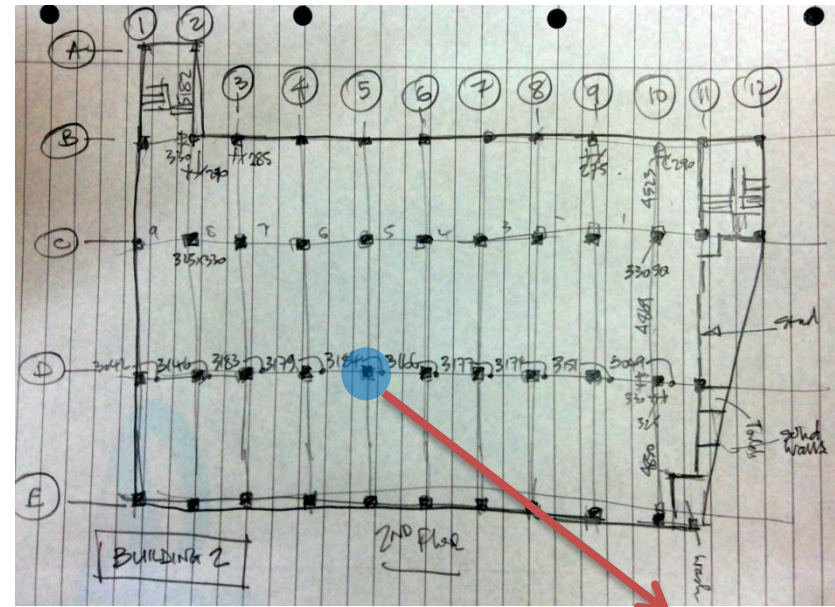
Beam cracking

Throughout Level 2 of Building 2 cracks were observed on beams on the underside of the Level 3 slab. Cracks were approximately 600mm to 1m from the ends of the beams



Building 2: Various un-engineered structures

Building 2: concrete testing



Architectural drawings quite different to the as-built structure, with actual structure having smaller grids and larger number of bays. Local breaking out confirms aggregate type is brick throughout, and scanning on several columns indicates typical levels of reinforcement.



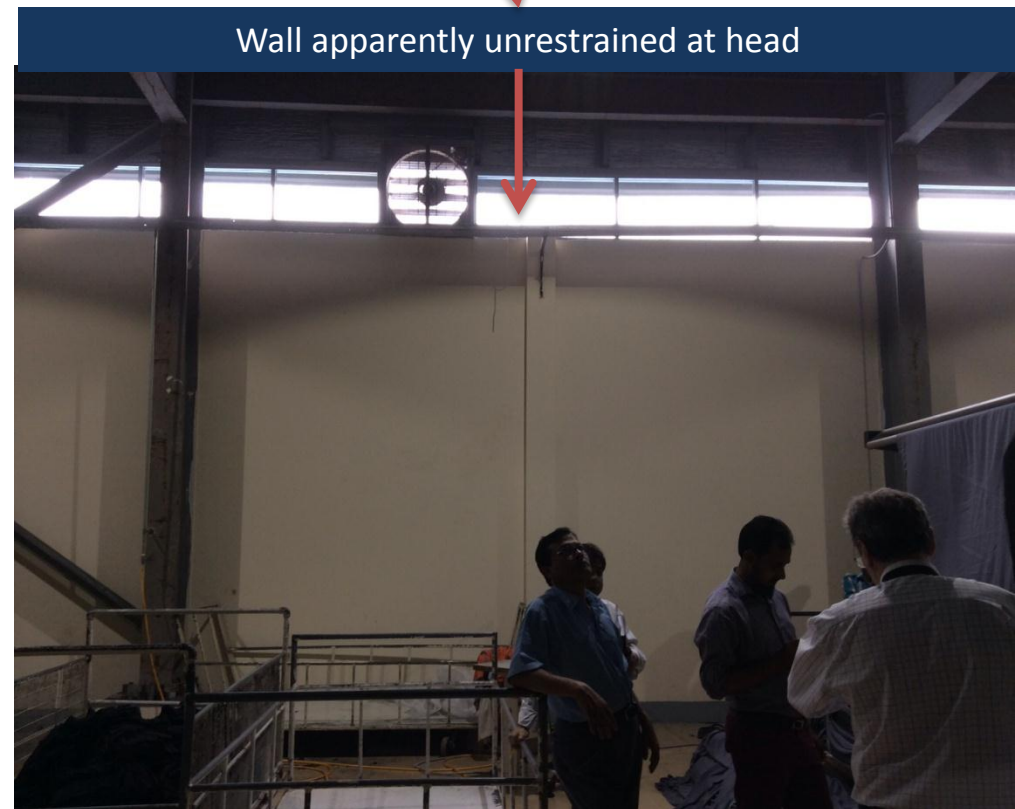
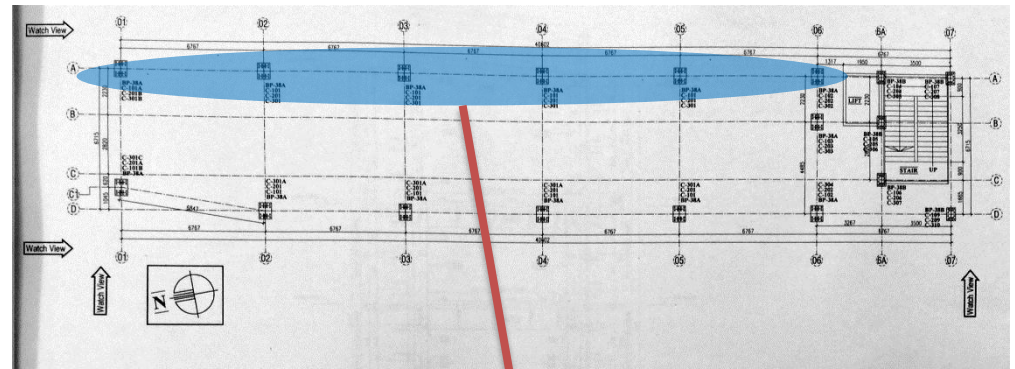
Brick aggregate

Building column tested at ground floor level



Building 2: Concrete testing

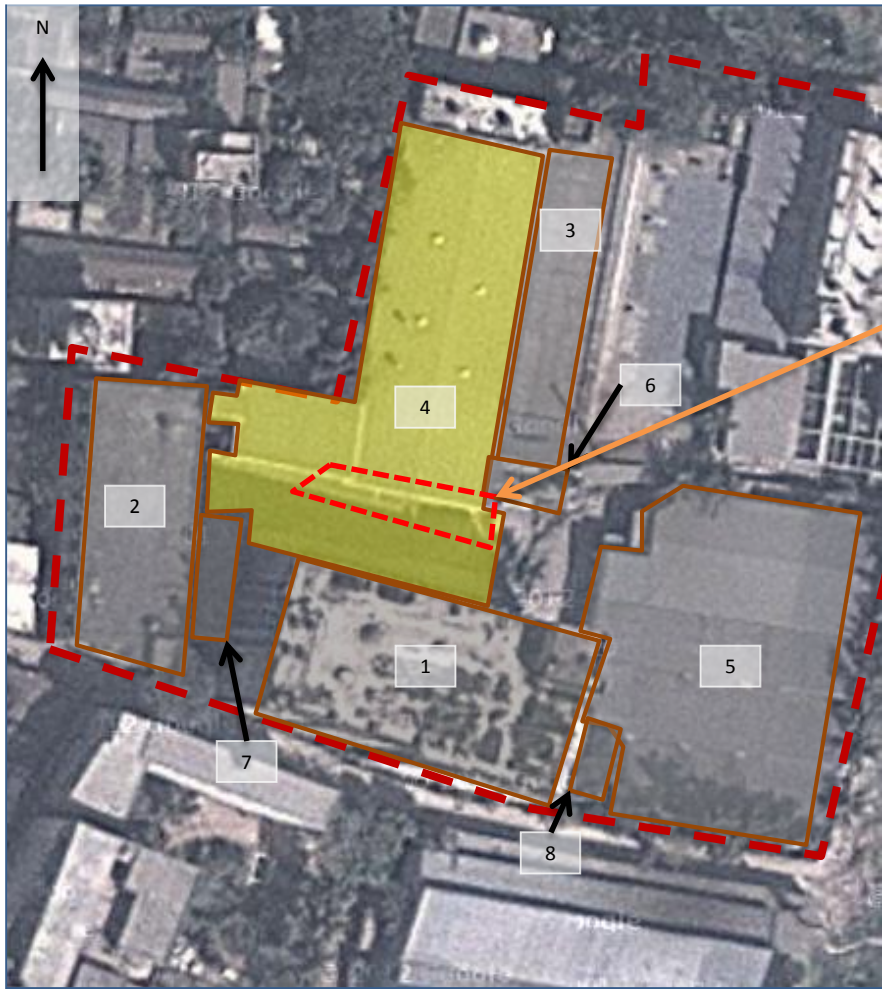
Building 3: unrestrained wall



Ties between steel structure and ground floor masonry walls were not visible. This masonry panel appears too large to be safe if unrestrained.

Building 3: unrestrained wall

Building 4: leaning gable column

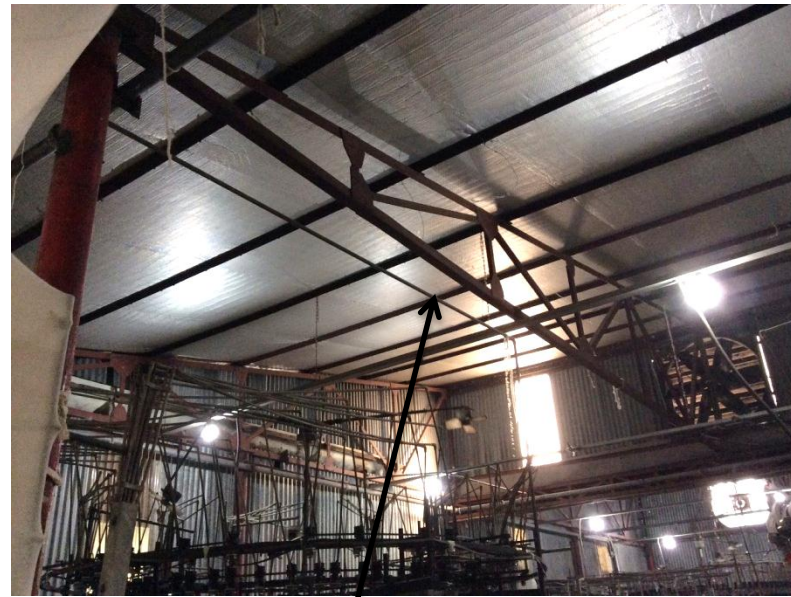


Wind post column at end of the portal frame appears to be leaning



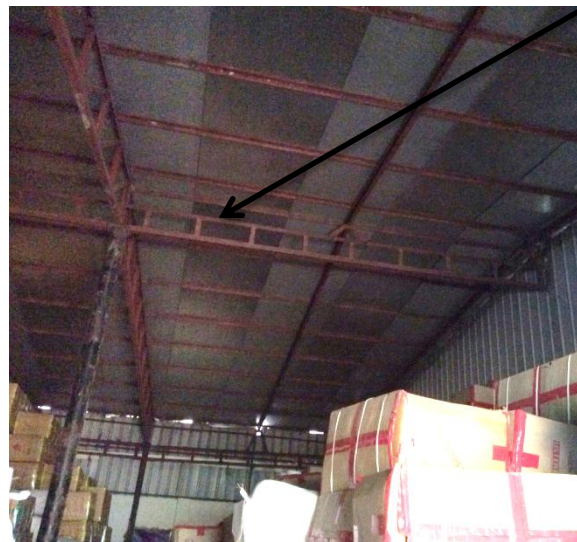
Building 4: Leaning column

Building 5: non-engineered roof structure



Possibly non-engineered structures

Building 5 is made up of various steel shed structures some of which appear un-engineered. Stability systems were not visible for some structures, and some connections appeared unconventional and unlikely to provide tying-down capacity where required



Building 5: Various un-engineered structures

Other ancillary buildings various non-engineered structures

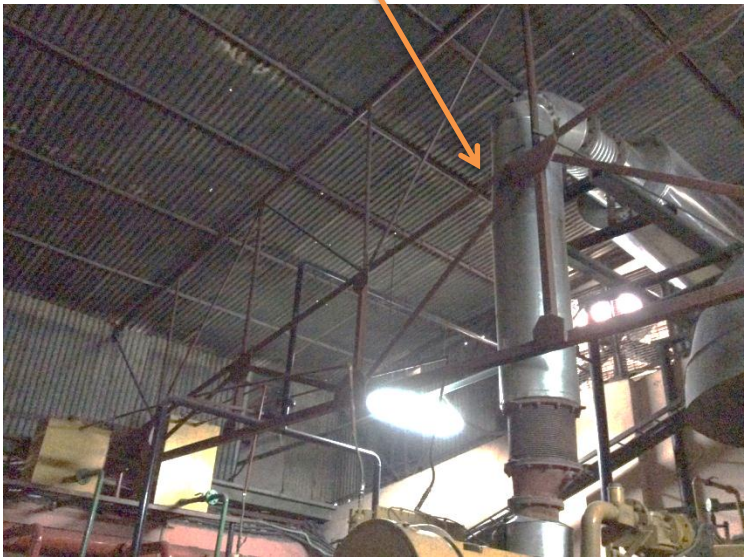


Various structures attached to the main buildings across the site appear un-engineered and possibly unstable. These include structures which appear to have been modified in an unplanned way during the life of the buildings (e.g. piggy back trusses) and structures supported off plant

Slender roof structure apparently supported by member attached directly to boiler



Piggy-back trusses



Other buildings: Various un-engineered structures

Priority Actions

Problems Observed

BUILDING 1

ITEM 1: Large water tanks at Roof Level

ITEM 2: Non Engineered Steelwork to ancillary buildings to Building 1.

BUILDING 2

ITEM 1: Corrosion on the bridge link to Building 1.

ITEM 2: Cracking in beams at Level 2 (supporting Level 3).

BUILDING 3

ITEM 1: Apparently unrestrained masonry walls at Ground.

BUILDING 4

ITEM 1: Gable Stanchion/Wind Post out of alignment.

BUILDING 5

ITEM 1: Non Engineered Steelwork to roof.

OTHER ANCILLARY BUILDINGS

ITEM 1: Non Engineered Steelwork to roofs.

Item No.	Observation	Recommended Action Plan	Priority
1	BUILDING 1 Large water tanks at Roof Level.	Building engineer to check the structures and made proposals for the reduction of loads, if required	6-months
2	BUILDING 1 Non Engineered Steelwork to ancillary buildings.	Building engineer to check the structures and propose additional strengthening and bracing as required.	6-months
3	BUILDING 2 Corrosion on the bridge link to Building 1.	Building engineer to check the structures and propose additional strengthening as required.	6-months
4	BUILDING 2 Cracking in beams at Level 2 (supporting Level 3).	Monitor cracks on beams. Engage an engineer to investigate if cracks are only in the plastering.	6-months
5	BUILDING 2 Cracking in beams at Level 2 (supporting Level 3).	Engage an engineer to advise on load reduction and repair and strengthening of the beams if required.	6-months
6	BUILDING 3 Apparently unrestrained masonry walls at Ground.	Building engineer to check the external wall elements and propose additional lateral restraints if required.	6-months
7	BUILDING 4 Gable Stanchion/Wind Post out of alignment.	Building engineer to check the structural capacity of the stanchion and make proposals for its realignment if required.	6-months
8	BUILDING 5 Non Engineered Steelwork to roof.	Building engineer to check the structures and propose additional strengthening and bracing as required.	6-months
9	OTHER ANCILLARY BUILDINGS Non Engineered Steelwork to Roofs.	Building engineer to check the structures and propose additional strengthening and bracing as required.	6-months