



ALIB Composite Ltd

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17th February 2020





Observations



Lateral stability system in short direction(E-W direction)

Observations



Typical beam layout plan

Moment resisting frame action acting on N-S direction only.

Observations



Beams with fixed connection in N-S direction



No vertical bracing/lateral load resting system in any long direction.



Apparently partial moment resisting frame action at E-W direction that may affect the stability.

Building engineer is required to check the overall stability system.

Observations



Adequacy of the connections

Observations



Shear connection of Cantilever Sub-beams to main beams at West direction (Grid 1-A~C). These sub-beams were found in slightly deflected. Building engineer is required to check the adequacy of the connections and the deflections.



Most of the columns are bolted column splice (moment connection).

Apparently, some of the column-column welded joints are inadequate for resisting moment. Building engineer is required to check the adequacy of these connections considered in the design review.



Welded column without splice



Corrosion in steel members

Observations



Corrosion in steel beam at toilet Zone.



Corrosion in steel column at toilet Zone.

Severe corrosion in steel members was observed at toilet area. The extent of corrosion to be investigated by a qualified structural engineer.



Bolt missing in connection

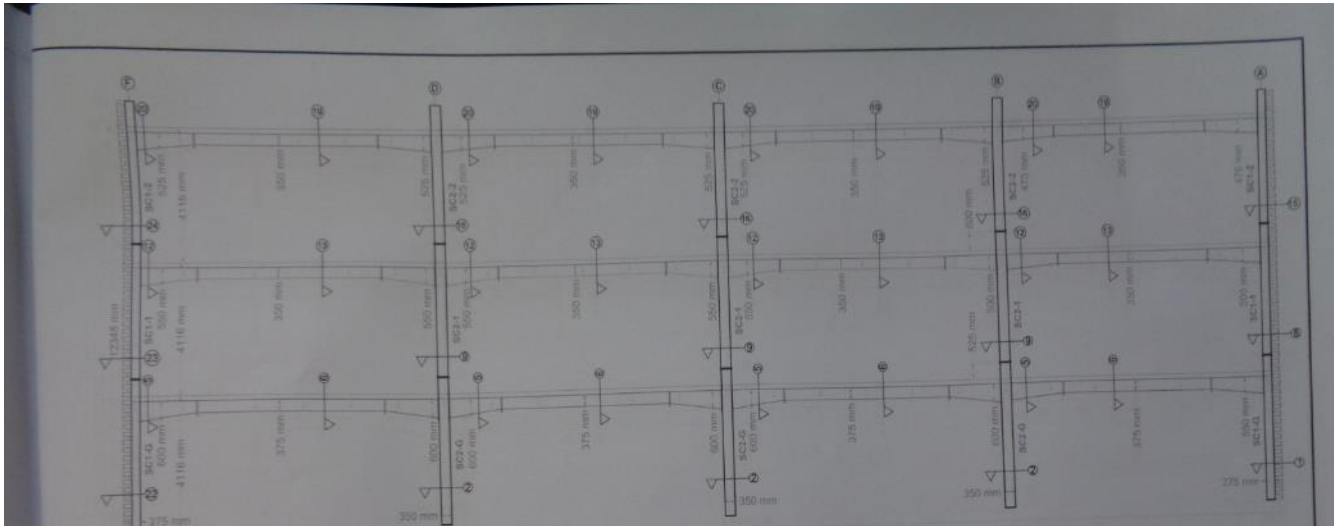


Bolt was found missing. Building engineer is required to reinstall the bolts.

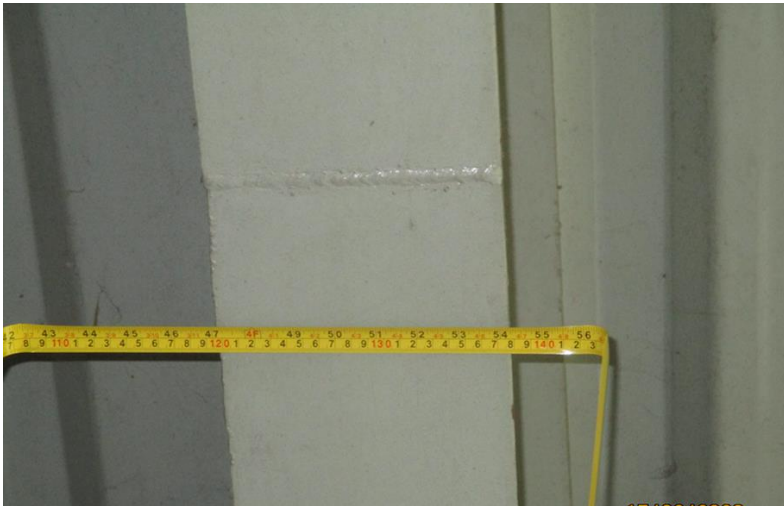


Discrepancies in as built drawings

Observations



Typical frame section



Bottom flange of some beams
measure 175 mm instead of 200 mm

Observations

LEGENT OF SECTION at 2ND FLOOR
(GRID - 02)

SECTION	D	Br (mm)	Tw (mm)	Tf (mm)
15 - 15	275	200	8	10
16 - 16	350	300	8	10
17 - 17	325	250	8	10
18 - 18	250	200	8	10
19 - 19	350	200	6	8
20 - 20	525	200	8	8
24 - 24	275	200	8	10
Joist	250	125	5	5



Beam column schedule



Non-engineered roof of utility shed

Observations



Non-engineered roof observed on utility shed. Building engineer is required to replace the non-engineered shed.

Observations



Priority Actions



Problems Observed

1. Lateral stability system in Short direction(E-W direction).
2. Adequacy of the connections.
3. Corrosion in steel member.
4. Bolt missing in connection.
5. Discrepancies in as-built drawings.
6. Non-engineered roof of utility shed.



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Lateral stability system in Short direction(E-W direction)	Building engineer is required to check the overall lateral stability system of the building.	6-weeks
2	Lateral stability system in Short direction(E-W direction)	Carry out remedial works where required.	6-months
3	Adequacy of the connections	Building engineer is required to check the adequacy of column splice joint connection considered in design review.	6-weeks
4	Adequacy of the connections	Building engineer is required to check the cantilever beam connections adequacy and the deflections.	6-weeks
5	Adequacy of the connections	Carry out remedial works where required.	6-months
6	Corrosion in steel members	Building engineer is required to take necessary action to prevent further corrosion and repair the corroded steel members with suitable method.	6-weeks
7	Bolt missing in connection	Building engineer is required to identify the missing bolt locations and install them.	6-weeks
8	Discrepancies in as-built drawings	Building engineer is required to survey the structure and prepare an accurate as-built drawings.	6-weeks
9	Non-engineered roof of utility shed	Building engineer is required to replace the non-engineered shed.	6-weeks