

Shanta Denims Ltd (10180)

Plot #156 & 177, D.E.P.Z., Ganakbari, Savar

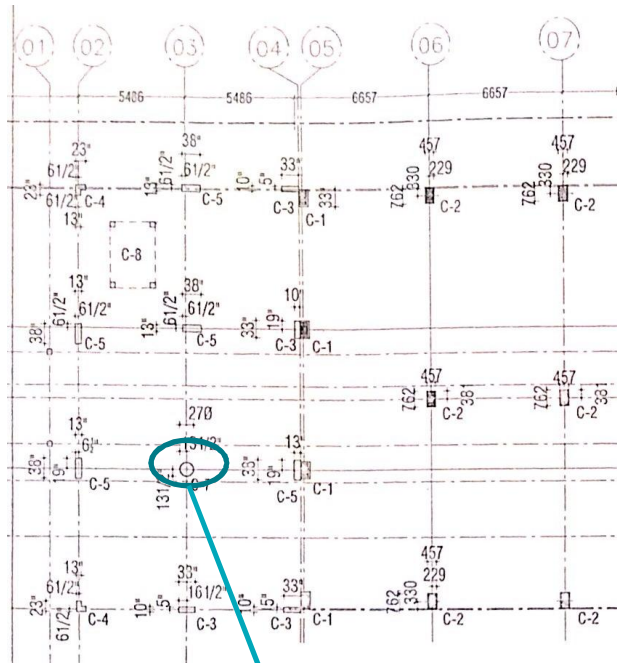
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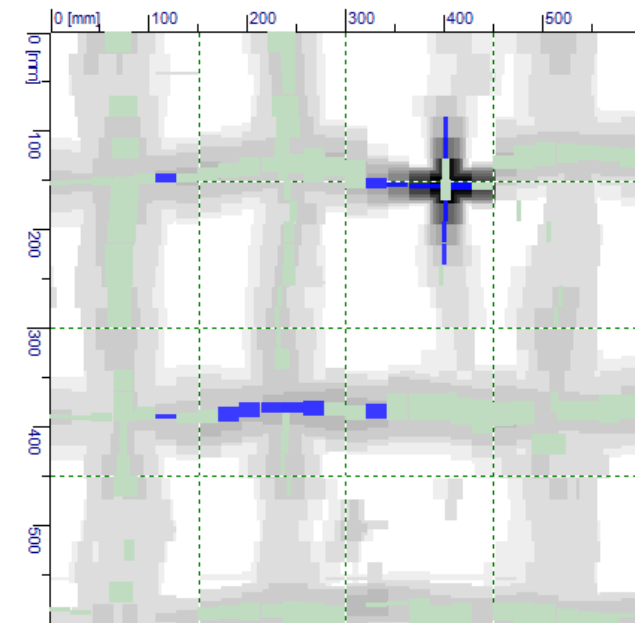
Identified Priority 1 Concerns

- Contradictions Between Design Drawings and Construction.



Small square column in place of larger circular column & deficient reinforcing

Priority 1 Concern



Numerous discrepancies between the construction and the structural plans were observed. Specifically concerning columns, we found in several instances, one 19" x 19" column with 12 vertical bars instead of the specified circular 24" dia column with 16 vertical bars. Regarding slabs, we measured 254 mm flat slabs at each level instead of 165 mm typical floor beam/slab shown by the drawings. The large degree of deviation from design drawings instills a great degree of uncertainty regarding the adequacy of construction to support the imposed loads.

Discrepancy Between Construction and Structural Documents

Identified Priority 2 Concerns

- High Column Stresses.

COLUMN SCHEDULE WITH DETAIL :-

NAME OF COLUMN	UPTO F.G.L	ABOVE F.G.L	
C-1			
C-2			
C-3			
C-4			
C-5			
C-6			
C-7			
C-8			Checked at  M.D. HELWA Assistant Engineer EPZ

Priority 2 Concern



Based upon the column sizes and reinforcing observed on-site (which differ from the drawings) the concrete column stresses are slightly higher than desirable.

High Column Stresses

Identified Priority 3 Concerns

- No Loading Plan.

Priority 3 Concern



Although slab loading was in general very light, there was some sporadic storage throughout the factory. There was no loading plan provided nor was there any evidence that load monitoring was taking place.

No Loading Plan or Storage Monitoring

Overall Stability System



For all floor levels above the Ground Floor, the majority of the slabs were constructed as a flat slabs. A proper lateral restraint system was not observed.

We require that the lateral stability of the structure be further investigated through a Detailed Engineering Assessment.



Lateral Restraint System

Water Ingress at Roof Level



The exposed portion of roof slab contained no waterproofing. However, no evidence of water infiltration was observed at the underside of the roof slab.

Roof Waterproofing System

Priority Actions

Problems Observed Summary

ITEM 1: (Priority 1) At both the West and East buildings, we find discrepancies between drawings and the observed construction. Column sizes, column reinforcing, number of stories and slab construction were all observed to deviate from the design documents.

ITEM 2: (Priority 2) High Columns Stresses. Although not definitive, Ferroscanning indicates reinforcement in the verified columns is less than shown on the Structural drawings. This in combination with the deviation in column size from the column schedule and the increased load imposed by the thickened slabs causes high column stresses.

ITEM 3: (Priority 3) No loading plans were provided nor were there any signs of ongoing load monitoring

Item 1 and actions

Large Degree of Deviation from Structural Design Documents.

Priority 1 (Immediate – Now)

- A Detailed Engineering Assessment (DEA) is to be commenced to assess the adequacy of the as-built construction of the East and West concrete buildings.

Priority 2 (within 6 weeks)

- The Detailed Engineering Assessment is to be completed and its actions and recommendations carried out.

Priority 3 (within 6 months)

- Complete the implementation of any works deemed necessary by the DEA.

Item 2 and actions

High Column Stresses; Drawing vs. Construction Discrepancies.

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 weeks)

- As part of the Detailed Engineering Assessment verify column size, reinforcing and concrete strength.
- Complete a detailed column design check based upon the as-built construction.

Priority 3 (within 6 months)

- Implement recommendations of the DEA.

Item 3 and actions

Lack of Loading Plan

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 weeks)

- Detailed Engineering Assessment to include evaluation of allowable floor live loads.
- Based upon Detailed Engineering Assessment and structural steel design documentation, formulate and begin the implementation of a floor loading plan for all floors within the factory complex.

Priority 3 (within 6 months)

- Actively monitor and enforce the loading plans.