

Epyllion Knitwears Ltd (10294)

Plot #1/6. Road #6, Sections #7, Mirpur 1/A

(+23.820271N, +90.364182E)

27.APRIL.2014

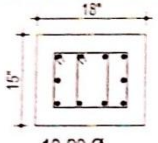
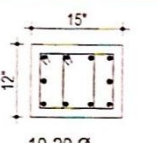
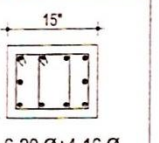
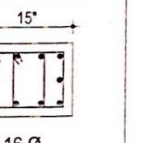
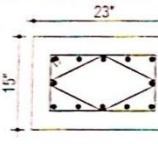
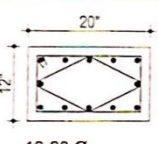
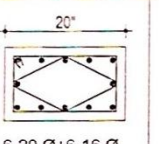
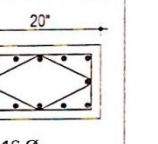
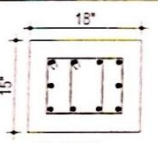
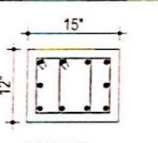
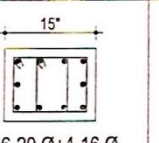
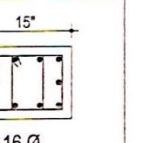
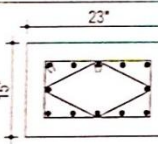
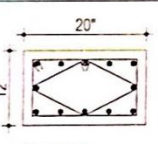
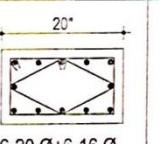
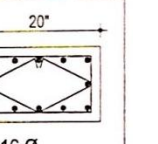


Identified Priority 1 Concerns

Building 1 – High Column Stresses

Priority 1 Concern

Building 1

SCANNING OF COLUMN BARS				
Column	Below P.L	Gr. to 2nd Floor	3rd to 5th Floor	Above 5th Floor
Col. C1	 10-20 Ø	 10-20 Ø	 6-20 Ø+4-16 Ø	 10-16 Ø
Col. C2	 12-20 Ø	 12-20 Ø	 6-20 Ø+6-16 Ø	 12-16 Ø
Col. C3	 10-20 Ø	 10-20 Ø	 6-20 Ø+4-16 Ø	 10-16 Ø
Col. C4	 12-20 Ø	 12-20 Ø	 6-20 Ø+6-16 Ø	 12-16 Ø
NOTE: BARS WERE DETECTED BY BAR SCANNER AND ALSO BY EXPOSING CONCRETE COVER FOR FEW COLUMNS				



Based upon observed loadings in combination with material strengths assumed for brick aggregate concrete and steel reinforcing procured prior to 2005, the column stresses developed within the columns of Building 1 are much higher than allowable.

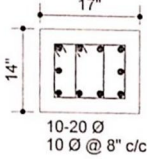
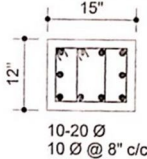
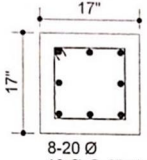
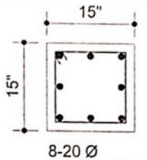
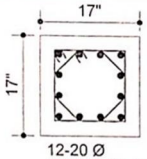
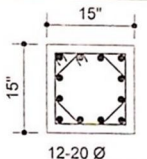
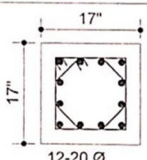
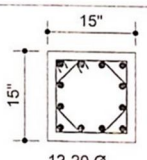
High Column Stresses

Identified Priority 2 Concerns

Building 3 - High Column Stresses

Buildings 1, 2 & 3 – No Loading Plan & High Storage Levels

Priority 2 Concern

COLUMN MARK	SCHEDULE OF COLUMN SIZE & REINFORCEMENT	
	BELOW P.L.	P.L. TO 3RD FLOOR
C1	 10-20 Ø 10 Ø @ 8" c/c	 10-20 Ø 10 Ø @ 8" c/c
C2	 8-20 Ø 10 Ø @ 8" c/c	 8-20 Ø 10 Ø @ 8" c/c
C3	 12-20 Ø 10 Ø @ 8" c/c	 12-20 Ø 10 Ø @ 8" c/c
C4	 12-20 Ø 10 Ø @ 8" c/c	 12-20 Ø 10 Ø @ 8" c/c

Building 3



Based upon observed loadings in combination with material strengths assumed for brick aggregate concrete and steel reinforcing procured prior to 2005, the column stresses developed within the columns of Building 3 are slightly higher than allowable.

High Column Stresses

Priority 2 Concern

Building 1, 2 & 3



Storage loading was observed to be generally light throughout the factory buildings. However, in some instances excessive storage loads were observed. A loading plan of 'existing' loads was available. However, no loading plan was provided which encompassed the maximum allowable loads for the floors within the factory. Additionally, no load monitoring appeared to be in effect.

High Column Stresses

Identified Priority 3 Concerns

Buildings 1, 2 & 3 - Steel Canopies
Building 3 – Extended Stair/Elevator Core

Priority 3 Concern

Building 1, 2 & 3



At the roof level of each building, stair core extensions typically had a poorly framed steel canopy around their perimeter.



Poorly Framed Steel Canopies

Priority 3 Concern

Building # 3



At Building #3 the stair/elevator core has been extended above the top of the roof level stair to accommodate the elevator machine room. However, there has been no elevator installed.

Stair/Elevator Core Extension

Overall Stability System



Buildings 1, 2 & 3

All buildings within the Epyllion complex were constructed using R.C. beam/column frames. This construction is considered to provide at least a measure of lateral stability. But there was no other lateral support system observed.

Lateral Restraint System



Water Ingress at Roof Level



Buildings 1, 2 & 3



The exposed portion of roof slab had no waterproofing protection. However, no evidence of water ingress was observed at the underside of the roof slab.

Roof Waterproofing System

Priority Actions

Problems Observed Summary

ITEM 1: Priority 1 – Building 1 - Concrete stress levels, checked under current guidelines, indicate that the columns have Factors of Safety much lower than required.

ITEM 2: Priority 2 – Building 3 – Concrete stress levels checked under current guidelines, indicate that the columns have Factors of Safety slightly lower than required.

ITEM 3: Priority 2 – Buildings 1, 2 & 3 – Although an ‘existing’ loading plan was provided there was no loading plan developed from a structural capacity perspective. Some storage loads were present at the time of inspection, however, there did not appear to be any load monitoring in effect.

ITEM 4: Priority 3 – Buildings 1, 2 and 3 – Structural steel canopies at the roof level were poorly framed.

ITEM 5: Priority 3 – Building 3 – The elevator/stair core at the front of the building has been extended by at least one additional storey.

Item 1 and actions

Building 1 – High concrete column stress levels.

Priority 1 (Immediate – Now)

- Limit live loads (workers, equipment & storage) within Building 1 to a maximum of 2.0 kPa per floor level.
- Verify in-situ material properties by testing 100mm dia. concrete cores of at least 4 columns.

Priority 2 (within 6 – weeks)

- Commence a Detailed Engineering Assessment of the entire structure.
- Create and actively manage loading plans for all floors

Priority 3 (within 6-months)

- Maintain and enforce the loading plans.

Item 2 and actions

Building 3 - High Column Stress

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 weeks)

- Factory Engineer to review design, loads and column stresses.

Priority 3 (within 6 months)

- Complete implementation of any works deemed necessary by Factory Engineer's review.

Item 3 and Actions

Presence of storage loads and lack of proper capacity based loading plan.

Priority 1 (Immediate – Now)

- Limit storage loads throughout the factory.

Priority 2 (within 6 weeks)

- Factory Engineer to review and revise the existing loading plans for all floor plates giving consideration to slab, beam and column capacities.

Priority 3 (within 6 months)

- Maintain and actively monitor the revised loading plan.

Item 4 and actions

Poorly framed steel canopies at roof level.

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 – weeks)

- Factory Engineer to review the steel canopy construction and assess adequacy for wind loads.

Priority 3 (within 6-months)

- Carry out any remedial works deemed necessary by the Factory Engineer.

Item 5 and actions

Building 3 - Extended Stair/Elevator Core

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 – weeks)

- None

Priority 3 (within 6-months)

- Remove additional Stair/Elevator core levels above the roof-level stair enclosure.