Fakir Fashion Ltd.(Extension)

Dohargaon, Baliapara, Rupgonj.
(23.784312N, 90.587404E)
21st June 2017

ACCORD
on Fire and Building Safety in Bangladesh

Building Information

Shed-02 (Screen Printing & Embroidery Shed) and Shed-2 (Printing And Embroidery-Extension) : The shed is a single story steel portal frame structure.

Shed-03 (Warehouse: Yarn & Grey Fabrics): The shed is a single story steel portal frame structure.

Shed-04 (Warehouse: Knitting, Process Unit and Chemical) : The shed is a single story steel truss structure supported by steel columns.

Shed-05 (Knitting shed): The shed is a single story steel portal frame structure used for Knitting purpose.

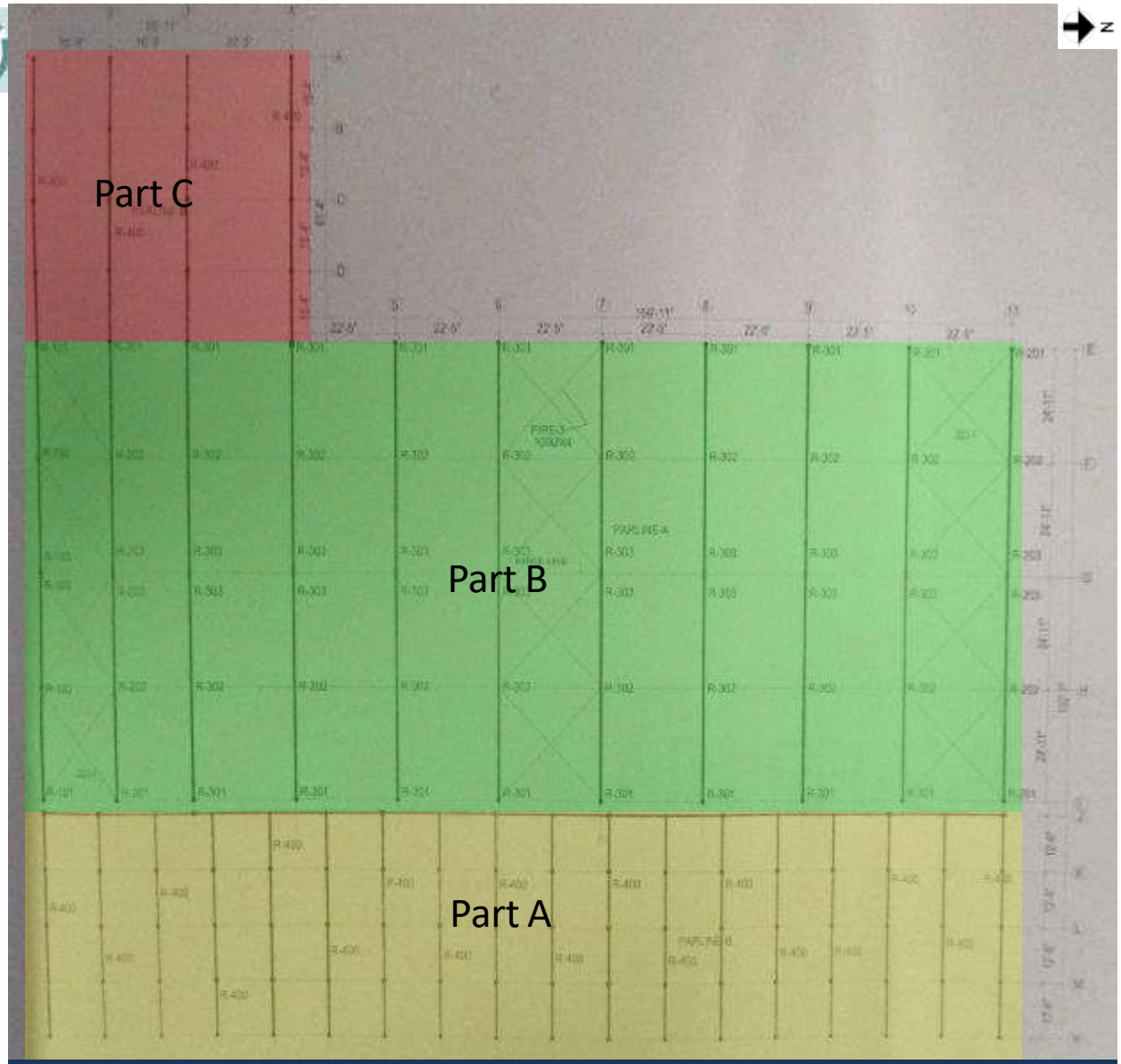
Shed-10 (Warehouse: Yarn): The shed is a single story steel portal frame structure with separate racking floor.

Building-05 (Utility Building): This is a 3-storied RCC structure used for generator, compressor, dryer room and office purposes.

Observation

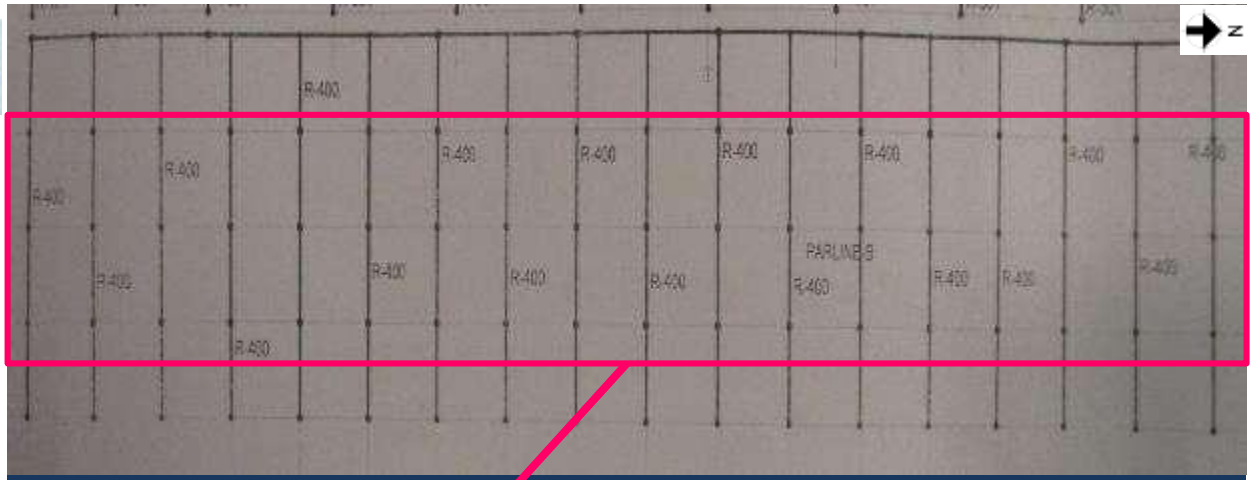
Shed-2 (Screen Printing And Embroidery Unit)

Discrepancies between provided drawing and on site condition



Column layout

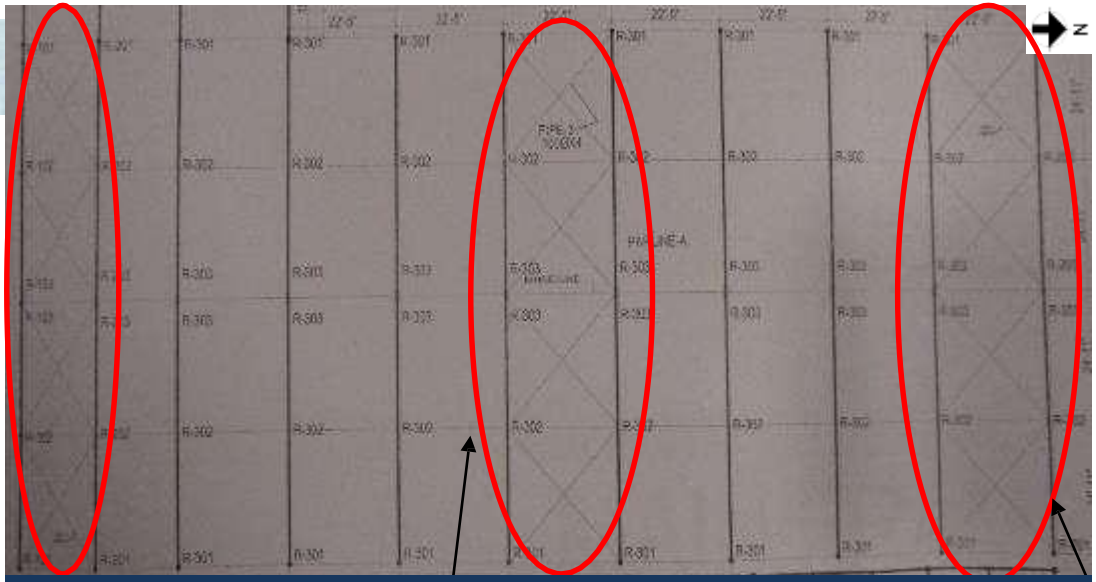
Observation: Discrepancies between provided drawing and on site condition



Column layout of Part A

In the marked zone, two steel pipe columns had found instead of three steel pipe columns. Factory is required to update the as-built drawing and assess the stability against vertical and horizontal load.

Observation: Discrepancies between provided drawing and on site condition



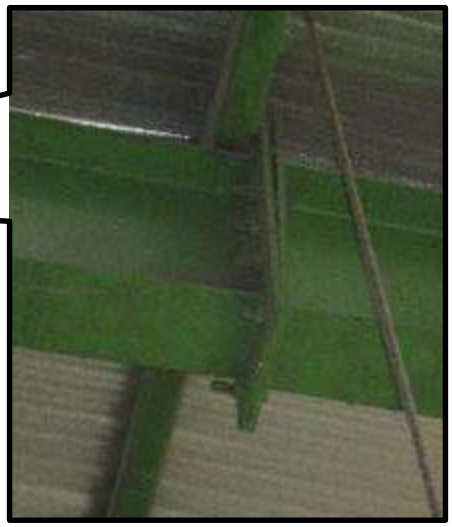
Bracing layout of Part B

No horizontal bracing was found on site where as in provided drawing, the horizontal pipe bracings were shown. Factory is required to install the bracing according to structural drawing.

No horizontal pipe bracing was observed

Observation: Discrepancies between provided drawing and on site condition

Missing bolt and loose connection on Part B



Loose connections were found in several locations in Part B which may produce excessive shear stress in the bolt. The factory is required to take necessary steps for tightening the connection.

Missing bolts were found in column rafter joint.

Observation: Missing bolt and loose connection on Part B

Distorted column at end bay on Part B

Column layout of the Part B

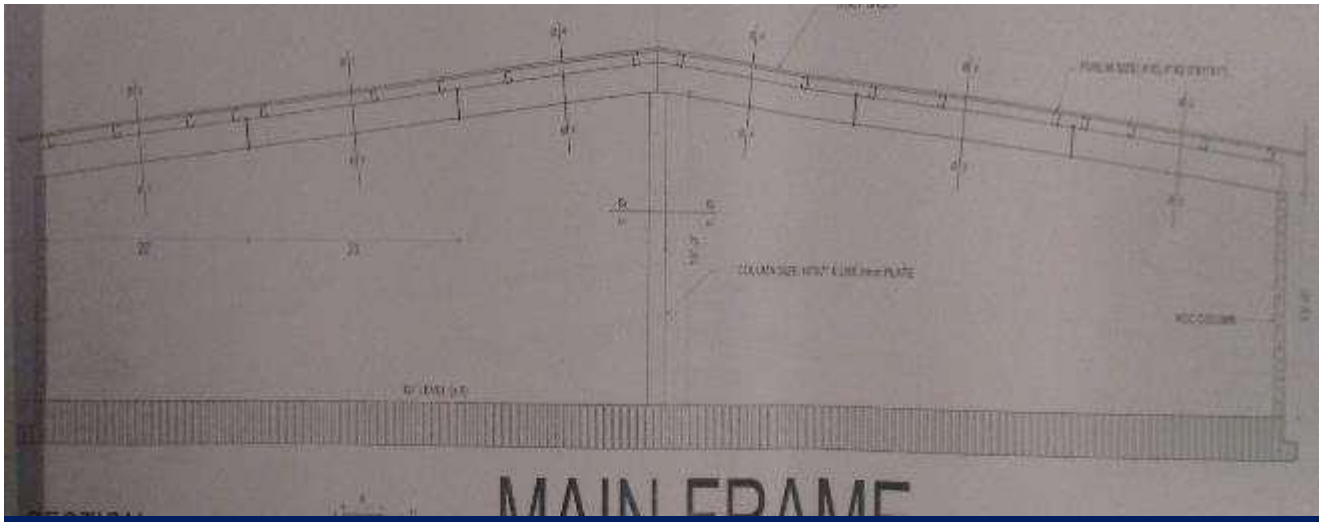
Column top broken at the joint of rafter at north end bay

Column top broken at the joint of rafter at south end bay

On the end bay, some portion of the top of RCC column was found broken. The factory engineer is required to assess the capacity of the column and rafter against vertical and lateral load as rafter not properly rested on column.

Observation: Distorted column at end bay on Part B

Missing information in as-built drawing



Main frame of part B

No joint detail was found in provided drawing. Factory engineer is required to update the as-built drawing.

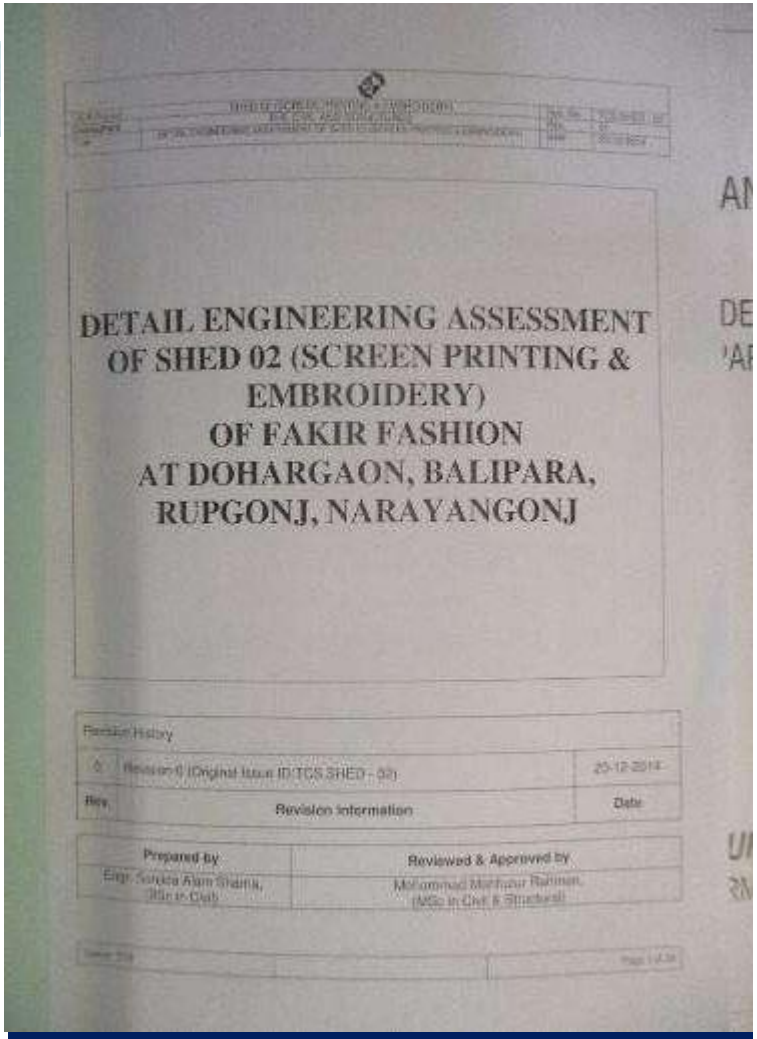
RC column and rafter joint on end bay

RC column and rafter joint on edge

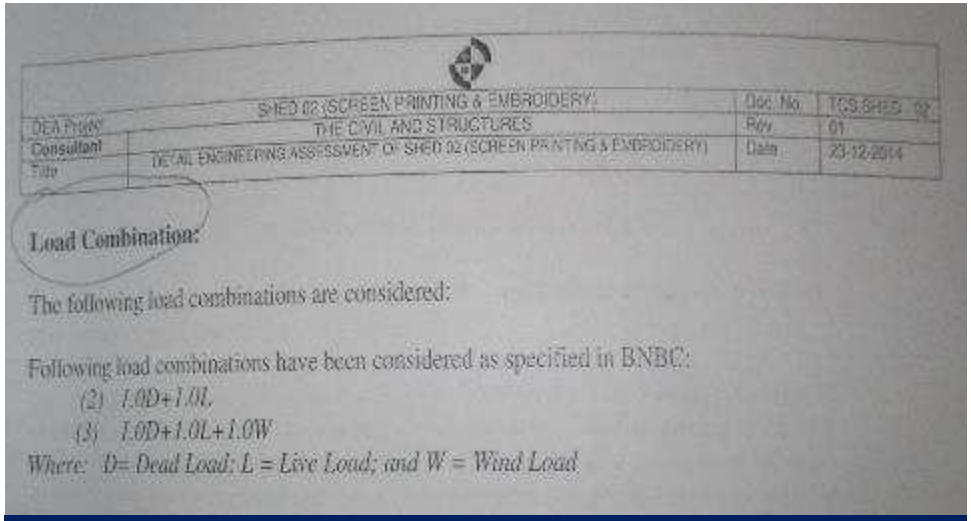
Steel column rafter joint at middle

Observation: Missing information in as-built drawing.

DEA Report required to be reviewed by ACCORD



DEA report of the shed



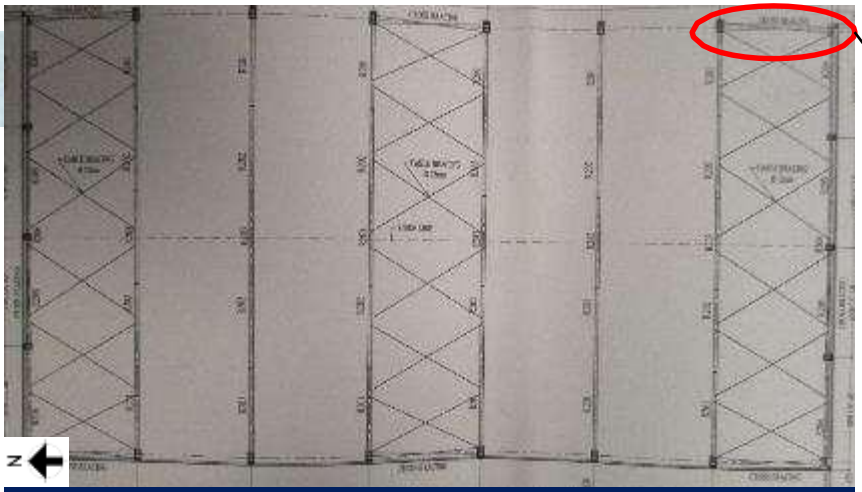
Load combination used in analysis

Factory provided DEA report for the shed during inspection where factory engineer assessed the shed without earthquake loading. In addition, factory could not provide any FEA model for the shed. Factory is required to revise the report with considering the earthquake in load combination and discrepancy which are mentioned earlier and submit the report to ACCORD for further review.

Observation: DEA Report required to be reviewed by ACCORD

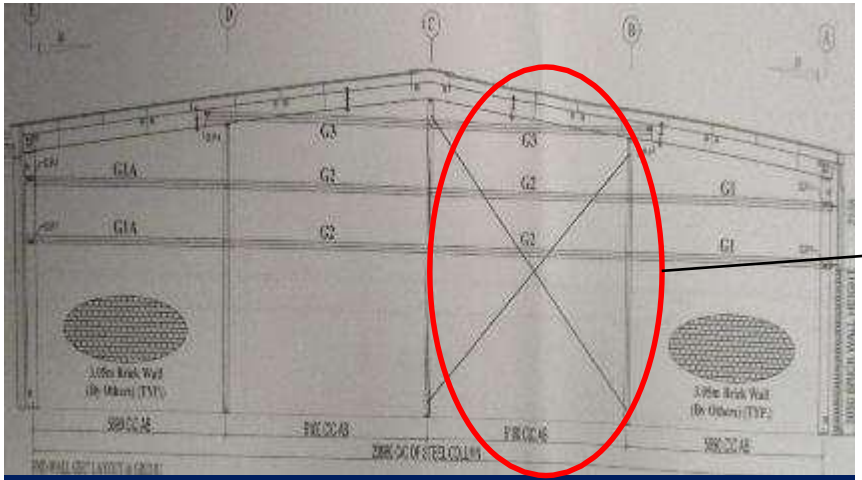
Shed-2 (Printing And Embroidery-Extension)

Discrepancies between provided drawing and on site condition



Bracing layout in provided drawing

No vertical bracing was observed on east side

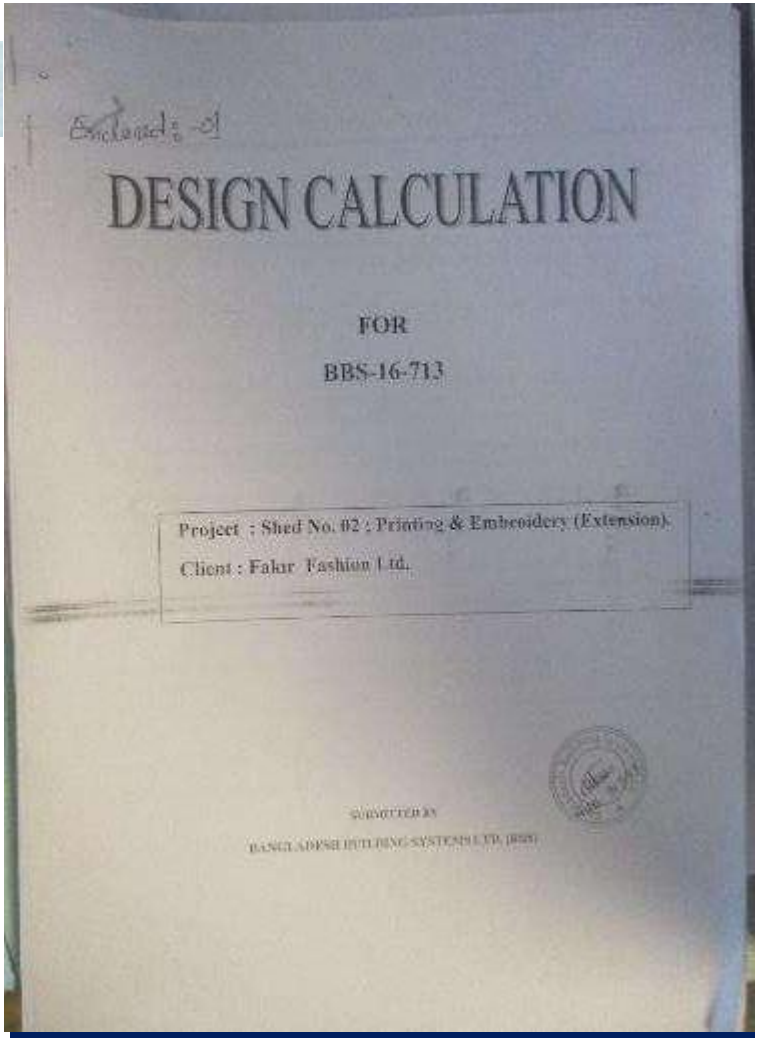


Vertical bracing in provided drawing

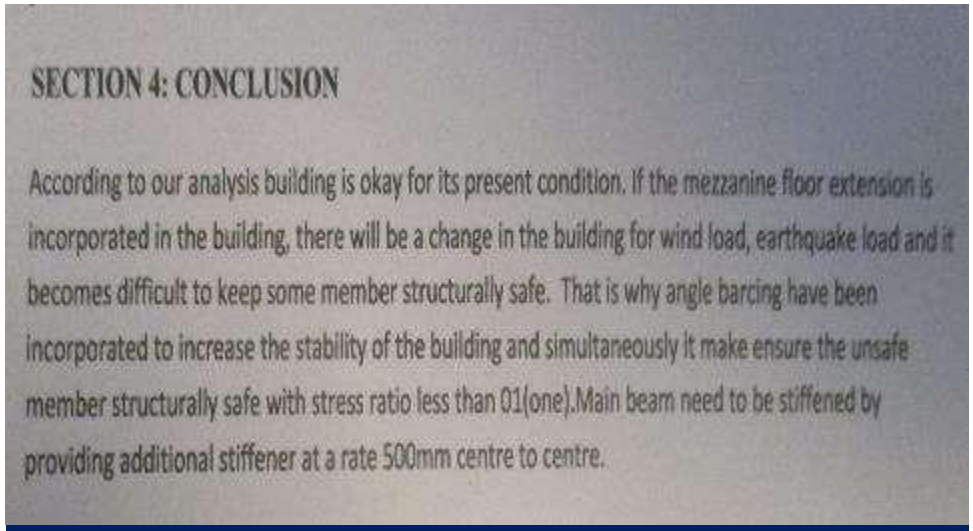
The location of vertical bracing was not matched with provided drawing.

Observation: Discrepancies between provided drawing and on site condition

DEA Report required to be reviewed by ACCORD



DEA report of the shed



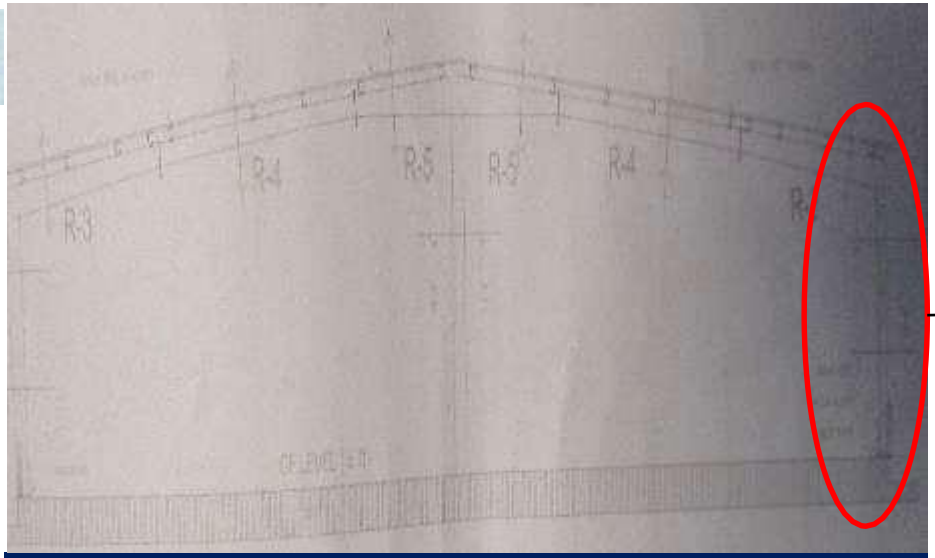
Retrofitting recommendation in DEA report

According to the provided DEA report, considering mezzanine floor, the angle bracing and addition of stiffener with the main beam is recommended. But retrofitting drawing was not provided along with the report. For that, DEA report is required to review by ACCORD. Factory is required to revise the report according to earlier mentioned discrepancy and submit to ACCORD for further review.

Observation: DEA Report required to be reviewed by ACCORD

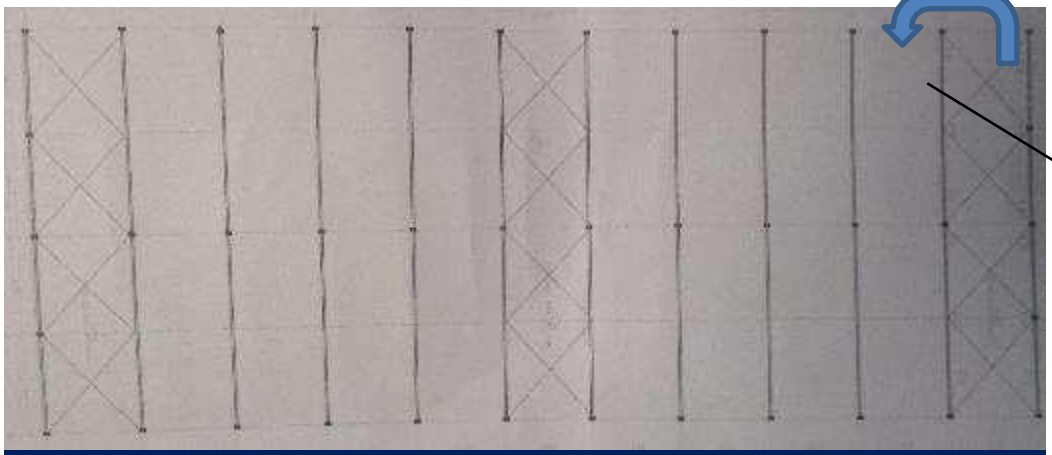
Shed-3 (Yarn And Grey Fabrics Warehouse)

Discrepancies between provided drawing and on site condition



Portal frame in provided drawing

Edge columns were found tapered whereas in provided drawing , those column were shown as straight section.



Roof bracing layout in provided drawing

Roof bracing were found installed different location and not as per provided drawing.

Observation: Discrepancies between provided drawing and on site condition

Stability/Capacity check for customized steel racks

Customized steel racking system is used for storage with an upper platform over the entire area. A capacity check should be carried out.

Observation: Stability/Capacity check for customized steel racks

Shed-4 (Knitting Process Unit And Chemical Warehouse)

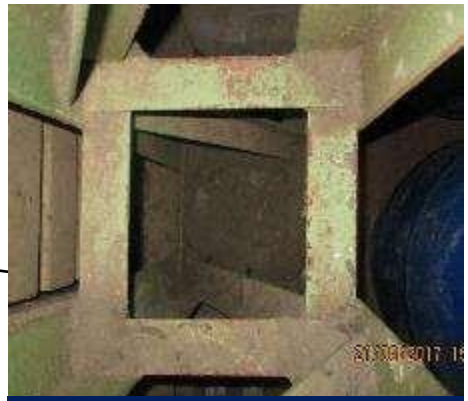
Missing information in as-built drawing

Typical internal truss frame

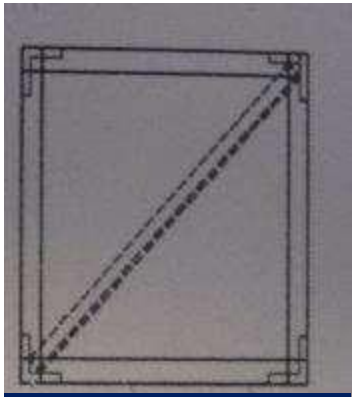
Edge of truss is supported by RCC column

Section of steel truss frame was not present in provided drawing. Also, no joint detail and column section was observed in the drawing. Factory is required to update as-built drawing and check the capacity against lateral and vertical load.

Truss is supported by steel lacing column



Cross section of steel column on site which is different than provided drawing

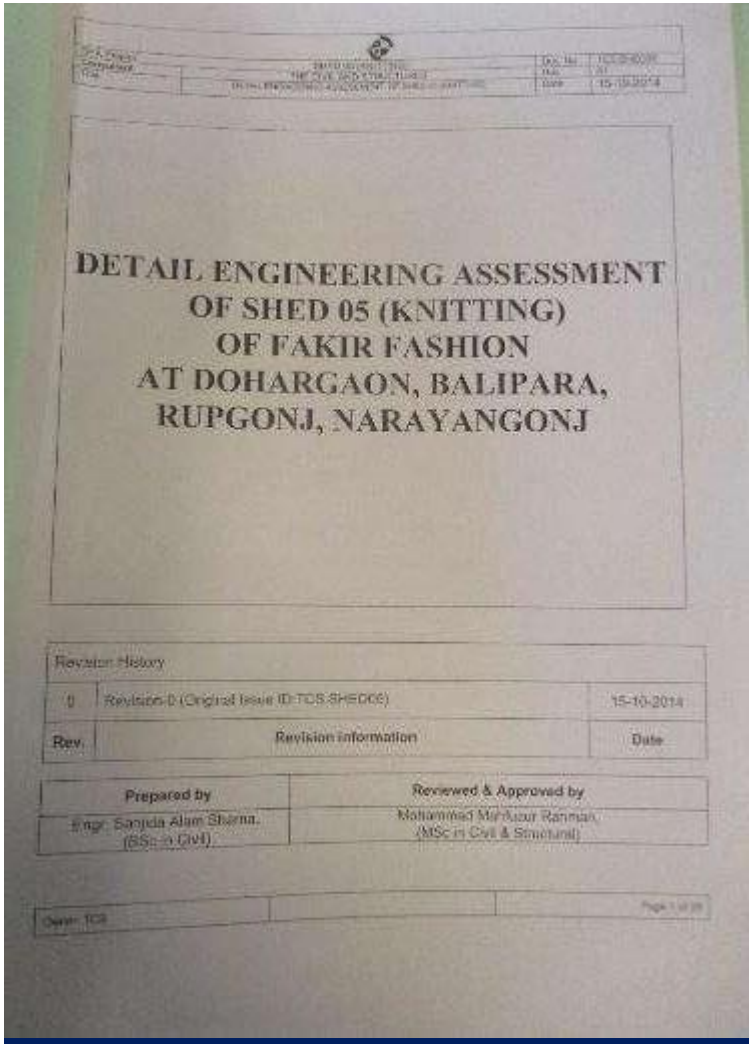


Cross section of steel column in provided drawing

Observation: Missing information in as-built drawing

Shed-5 (Knitting)

DEA Report required to be reviewed by ACCORD

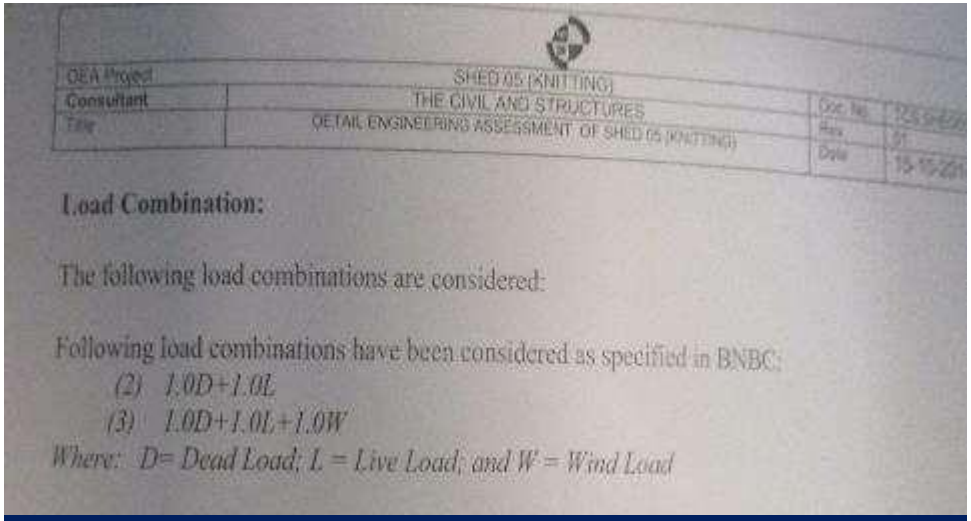

DETAIL ENGINEERING ASSESSMENT
OF SHED 05 (KNITTING)
OF FAKIR FASHION
AT DOHARGAON, BALIPARA,
RUPGONJ, NARAYANGONJ

Revision History

Rev.	Revision information	Date
0	Revision-0 (Original Issue ID:TCS SHED05)	15-10-2014

Prepared by	Reviewed & Approved by
Engr. Sanjida Alam Shama, (BSc in Civil)	Mohammad Manzoor Rahman, (MSc in Civil & Structural)

DEA report of the shed


DEA Project: SHED 05 (KNITTING)
Consultant: THE CIVIL AND STRUCTURES
Title: DETAIL ENGINEERING ASSESSMENT OF SHED 05 (KNITTING)

Load Combination:

The following load combinations are considered:

Following load combinations have been considered as specified in BNBC:

(2) 1.0D+1.0L

(3) 1.0D+1.0L+1.0W

Where: D= Dead Load; L = Live Load; and W = Wind Load

Load combination used in analysis

Factory provided DEA report for the shed during inspection where factory engineer assessed the shed without earthquake loading. In addition, factory could not provide any FEA model for the shed. Factory is required to revise the report with considering the earthquake loading in load combination and submit the report to ACCORD for further review.

Observation: DEA Report required to be reviewed by ACCORD

Shed-10 (Warehouse-Yarn)

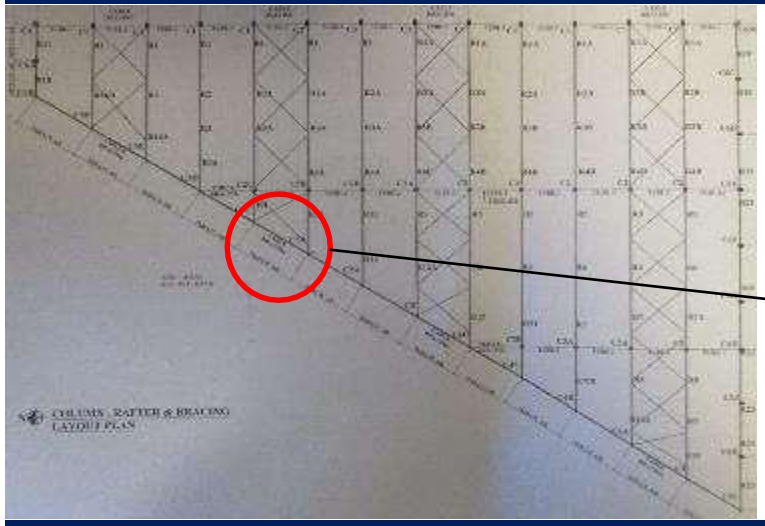
Capacity check for customized steel racks

Customized steel racking system is used for storage with an upper platform over the entire area. There was no specific loading plan for the rack supported floors. A capacity check should be carried out for a specific live loading limit.

Observation: Capacity check for customized steel racks

Loose and missing bracing

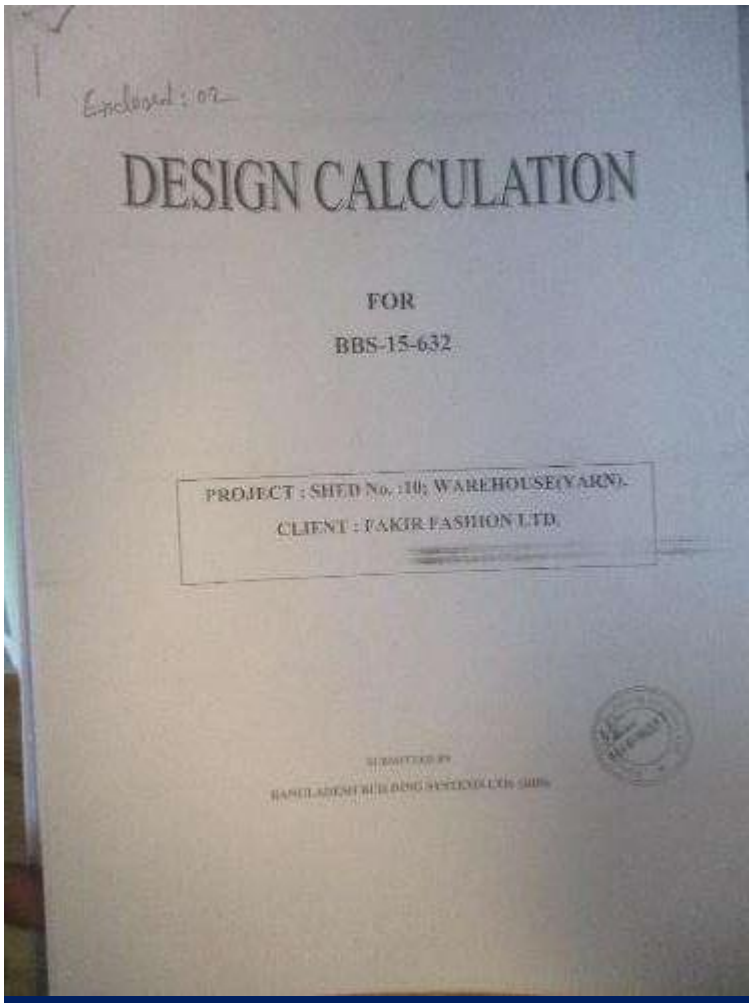
Most of the vertical and roof bracings had found loosely tied. The loose bracings are required to be tighten for acting as a part of stability system.



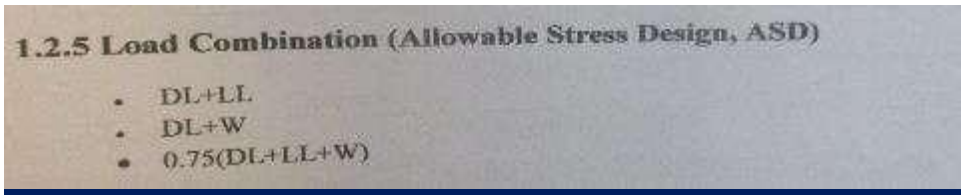
Vertical bracing was found missing in one location. Factory is required to install the bracing according to the drawing.

Observation: Loose and missing bracing

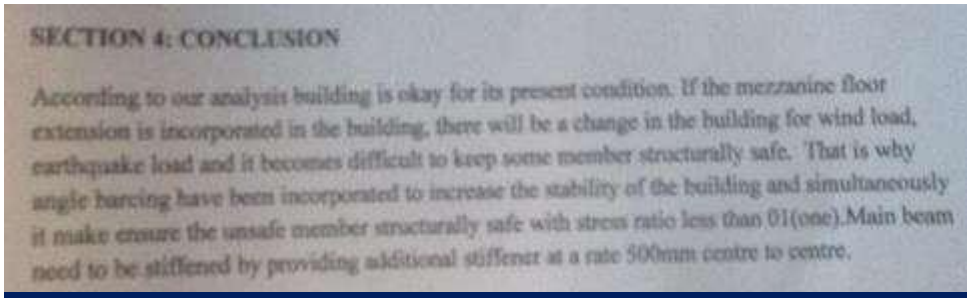
DEA Report required to be reviewed by ACCORD



DEA report of the shed



Load combination used in analysis



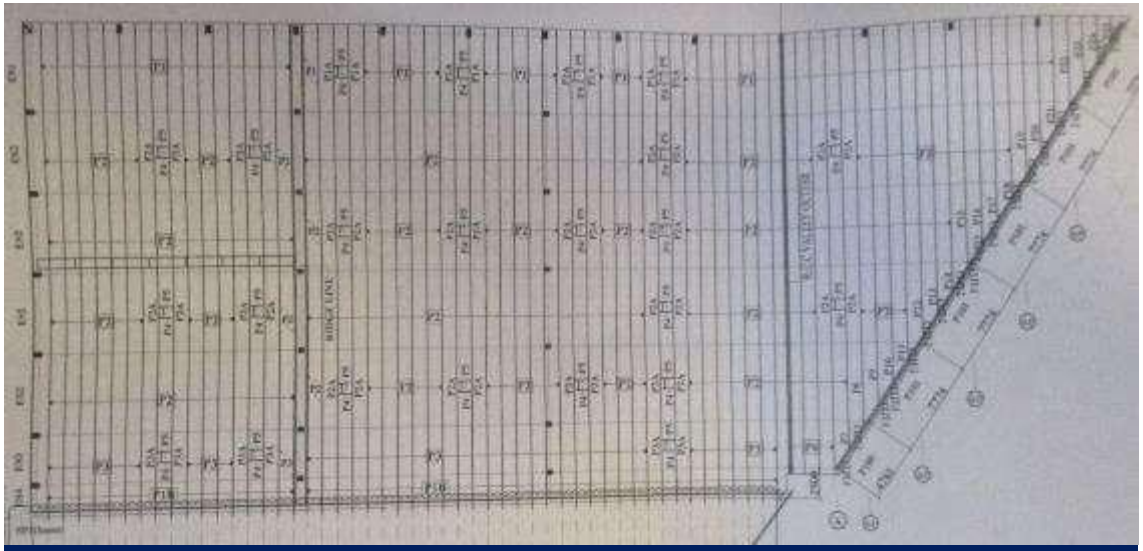
Retrofitting recommendation in DEA report

According to the provided DEA report, considering mezzanine floor, the angle bracing and addition of stiffener with the main beam is recommended. But retrofitting drawing was not provided along with the report. For that, DEA report is required to review by ACCORD. Factory is required to revise the report according to earlier mentioned discrepancy and submit to ACCORD for further review.

Observation: DEA Report required to be reviewed by ACCORD

Shed-10 (Warehouse-Yarn Extension)

Discrepancies between provided drawing and on site condition



No bracing layout was found in the provided drawing

Roof bracing was observed on several location

Roof bracing was observed on site which were not present in provided drawing. Factory is required to update the drawing and check the stability against lateral loading.

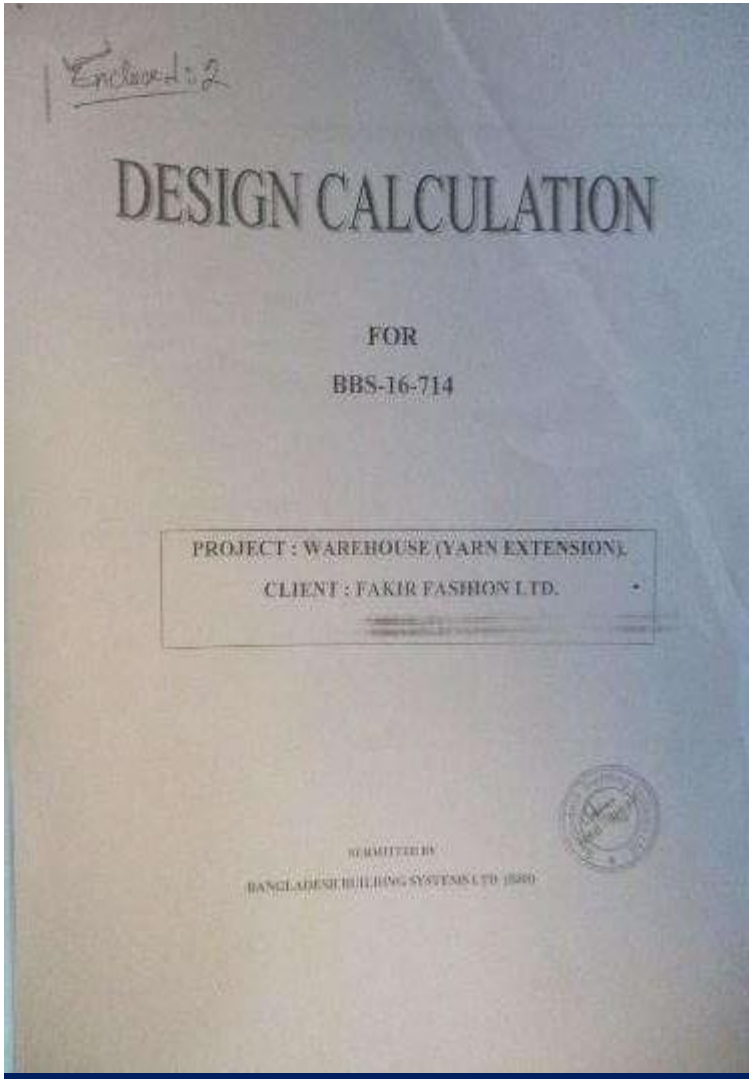
Observation: Discrepancies between provided drawing and on site condition

Capacity check for customized steel racks

Customized steel racking system is used for storage with an upper platform over the entire area. There was no specific loading plan for the rack supported floors. A capacity check should be carried out for a specific live loading limit.

Observation: Stability/Capacity check for customized steel racks

DEA Report required to be reviewed by ACCORD


Enclosed: 2

DESIGN CALCULATION

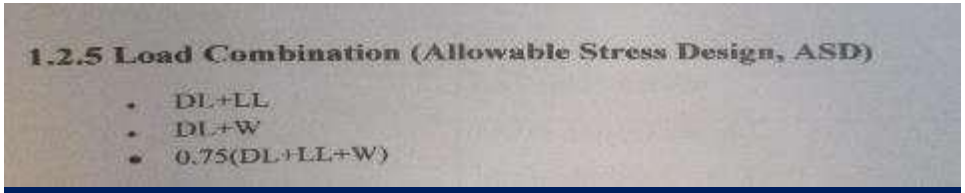
FOR

BBS-16-714

PROJECT : WAREHOUSE (YARN EXTENSION)

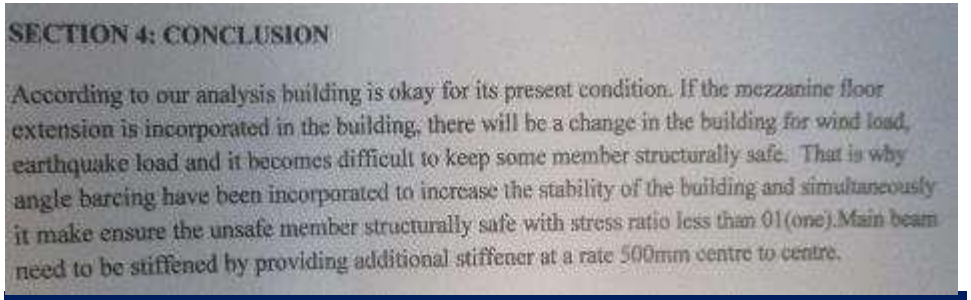
CLIENT : FAKIR FASHION LTD.

DEA report of the shed


1.2.5 Load Combination (Allowable Stress Design, ASD)

- DL+LL
- DL+W
- 0.75(DL+LL+W)

Load combination used in analysis


SECTION 4: CONCLUSION

According to our analysis building is okay for its present condition. If the mezzanine floor extension is incorporated in the building, there will be a change in the building for wind load, earthquake load and it becomes difficult to keep some member structurally safe. That is why angle barcing have been incorporated to increase the stability of the building and simultaneously it make ensure the unsafe member structurally safe with stress ratio less than 01(one).Main beam need to be stiffened by providing additional stiffener at a rate 500mm centre to centre.

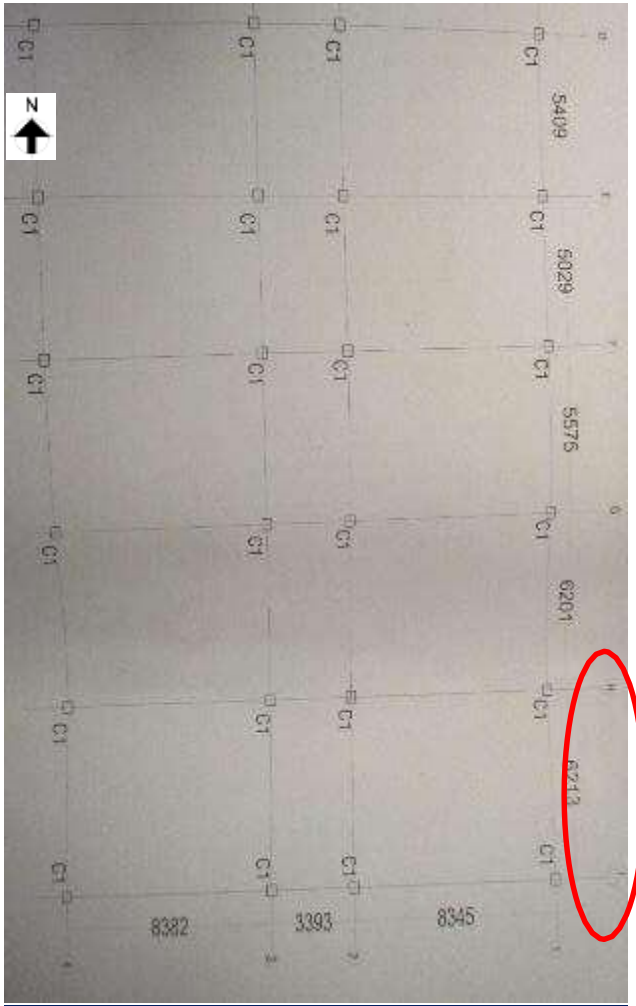
Retrofitting recommendation in DEA report

According to the provided DEA report, considering mezzanine floor, the angle bracing and addition of stiffener with the main beam is recommended. But retrofitting drawing was not provided along with the report. For that, DEA report is required to review by ACCORD. Factory is required to revise the report according to earlier mentioned discrepancy and submit to ACCORD for further review.

Observation: DEA Report required to be reviewed by ACCORD

Building-5 (Utility building)

Discrepancies between provided drawing and on site condition



Column Layout in provided drawing

Two column of the south side stair case were not mention in provided drawing . Factory is required to update the as-built drawing

Observation: Discrepancies between provided drawing and on site condition

Utility: (Extended For Boiler And Generator)

Lack of as-built documentations

No as-built drawing was provided during inspection. Factory is required to produce as-built drawing for the building.

Observation: Lack of as-built documentations

Problems Observed

Shed-2 (Screen Printing And Embroidery Unit) :

Item 1: Discrepancies between provided drawing and on site condition

Item 2: Missing bolt and loose connection on Part B

Item 3: Distorted column at end bay on Part B

Item 4: Missing information in as-built drawing

Item 5: DEA Report required to be reviewed by ACCORD

Shed-2 (Printing And Embroidery-Extension) :

Item 6: Discrepancies between provided drawing and on site condition

Item 7: DEA Report required to be reviewed by ACCORD

Shed-3 (Yarn And Grey Fabrics Warehouse):

Item 8: Discrepancies between provided drawing and on site condition

Item 9: Stability/Capacity check for customized steel racks

Shed-4 (Knitting Process Unit And Chemical Warehouse):

Item 10: Missing information in as-built drawing.

Shed-5 (Knitting) :

Item 11: DEA Report required to be reviewed by ACCORD

Problems Observed

Shed-10 (Warehouse-Yarn) :

Item 12: Capacity check for customized steel racks

Item 13: Loose and missing bracing

Item 14: DEA Report required to be reviewed by ACCORD

Shed-10 (Warehouse-Yarn Extension) :

Item 15: Discrepancies between provided drawing and on site condition

Item 16: Capacity check for customized steel racks

Item 17: DEA Report required to be reviewed by ACCORD

Building-5 (Utility building) :

Item 18: Discrepancies between provided drawing and on site condition

Utility: (Extended For Boiler And Generator) :

Item 19: Lack of as-built documentations

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Discrepancies between provided drawing and on site condition (Shed-2: Screen Printing And Embroidery Unit)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
02	Discrepancies between provided drawing and on site condition (Shed-2: Screen Printing And Embroidery Unit)	Factory engineer to check the stability of the steel shed under lateral and vertical loads.	6-weeks
03	Discrepancies between provided drawing and on site condition (Shed-2: Screen Printing And Embroidery Unit)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
04	Missing bolt and loose connection on Part B (Shed-2: Screen Printing And Embroidery Unit)	Reinstated the missing bolts with appropriate ones according to the suggestion of factory engineer.	Immediate - Now
05	Distorted column at end bay on Part B (Shed-2: Screen Printing And Embroidery Unit)	The factory engineer is required to assess the capacity of the column and rafter against vertical and lateral load as rafter not properly rested on column.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Distorted column at end bay on Part B (Shed-2: Screen Printing And Embroidery Unit)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
07	Distorted column at end bay on Part B (Shed-2: Screen Printing And Embroidery Unit)	The factory engineer is required to assess the capacity of the column and rafter against vertical and lateral load as rafter not properly rested on column.	6-weeks
08	Distorted column at end bay on Part B (Shed-2: Screen Printing And Embroidery Unit)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
09	Missing information in as-built drawing (Shed-2: Screen Printing And Embroidery Unit)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
10	DEA Report required to be reviewed by ACCORD (Shed-2: Screen Printing And Embroidery Unit)	Complete the review of revised Detail Engineering Assessment with ACCORD	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	DEA Report required to be reviewed by ACCORD (Shed-2: Screen Printing And Embroidery Unit)	Complete the remedial works arise from Detail Engineering Assessment.	6-months
12	Discrepancies between provided drawing and on site condition Shed-2: Printing And Embroidery-Extension)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
13	Distorted column at end bay on Part B (Shed-2: Screen Printing And Embroidery Unit)	The factory engineer is required to assess the capacity of the column and rafter against vertical and lateral load as rafter not properly rested on column.	6-weeks
14	Distorted column at end bay on Part B (Shed-2: Screen Printing And Embroidery Unit)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
15	Missing information in as-built drawing (Shed-2: Screen Printing And Embroidery Unit)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	DEA Report required to be reviewed by ACCORD (Shed-2: Screen Printing And Embroidery Unit)	Complete the review of revised Detail Engineering Assessment with ACCORD	6-weeks
17	DEA Report required to be reviewed by ACCORD (Shed-2: Screen Printing And Embroidery Unit)	Complete the remedial works arise from Detail Engineering Assessment.	6-months
18	Discrepancies between provided drawing and on site condition (Shed-3 (Yarn And Grey Fabrics Warehouse)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
19	Discrepancies between provided drawing and on site condition (Shed-3 (Yarn And Grey Fabrics Warehouse)	Factory engineer to check the stability of the steel shed under lateral and vertical loads.	6-weeks
20	Discrepancies between provided drawing and on site condition (Shed-3 (Yarn And Grey Fabrics Warehouse)	Carry out remedial works resulting from engineering assessment if necessary.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
21	Stability/Capacity check for customized steel racks (Shed-3 (Yarn And Grey Fabrics Warehouse)	Factory engineer to check the stability/capacity of the steel racks under lateral and vertical loads.	6-weeks
22	Stability/Capacity check for customized steel racks (Shed-3 (Yarn And Grey Fabrics Warehouse)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
23	Missing information in as-built drawing (Shed-4 (Knitting Process Unit And Chemical Warehouse)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
24	Missing information in as-built drawing (Shed-4 (Knitting Process Unit And Chemical Warehouse)	Factory engineer to check the stability of the steel shed under lateral and vertical loads.	6-weeks
25	Missing information in as-built drawing (Shed-4 (Knitting Process Unit And Chemical Warehouse)	Carry out remedial works resulting from engineering assessment if necessary.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
26	DEA Report required to be reviewed by ACCORD (Shed-5 (Knitting)	Complete the review of revised Detail Engineering Assessment with ACCORD	6-weeks
27	DEA Report required to be reviewed by ACCORD (Shed-5 (Knitting)	Complete the remedial works arise from Detail Engineering Assessment.	6-months
28	Capacity check for customized steel racks (Shed-10 (Warehouse-Yarn)	Factory engineer to check the capacity of the steel racks under lateral and vertical loads.	6-weeks
29	Capacity check for customized steel racks (Shed-10 (Warehouse-Yarn)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
30	Loose and missing bracing (Shed-10 (Warehouse-Yarn)	Loose bracings are required to be tighten.	Immediate - Now
31	Loose and missing bracing (Shed-10 (Warehouse-Yarn)	Install the missing bracing according to drawing	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
32	DEA Report required to be reviewed by ACCORD (Shed-10 (Warehouse-Yarn)	Complete the review of revised Detail Engineering Assessment with ACCORD	6-weeks
33	DEA Report required to be reviewed by ACCORD (Shed-10 (Warehouse-Yarn)	Complete the remedial works arise from Detail Engineering Assessment.	6-months
34	Discrepancies between provided drawing and on site condition (Shed-10 (Warehouse-Yarn Extension)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
35	Discrepancies between provided drawing and on site condition (Shed-10 (Warehouse-Yarn Extension)	Factory engineer to check the stability of the steel shed under lateral and vertical loads.	6-weeks
36	Discrepancies between provided drawing and on site condition (Shed-10 (Warehouse-Yarn Extension)	Carry out remedial works resulting from engineering assessment if necessary.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
37	Capacity check for customized steel racks (Shed-10 (Warehouse-Yarn Extension)	Factory engineer to check the capacity of the steel racks under lateral and vertical loads.	6-weeks
38	Capacity check for customized steel racks (Shed-10 (Warehouse-Yarn Extension)	Carry out remedial works resulting from engineering assessment if necessary.	6-months
39	DEA Report required to be reviewed by ACCORD (Shed-10 (Warehouse-Yarn Extension)	Complete the review of revised Detail Engineering Assessment with ACCORD	6-weeks
40	DEA Report required to be reviewed by ACCORD (Shed-10 (Warehouse-Yarn Extension)	Complete the remedial works arise from Detail Engineering Assessment.	6-months
41	Discrepancies between provided drawing and on site condition (Building-5 (Utility building)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks
42	Lack of as-built documentations (Utility: (Extended For Boiler And Generator)	Factory engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
43	Lack of as-built documentations (Utility: (Extended For Boiler And Generator)	Factory engineer to check the stability of the building under lateral and vertical loads.	6-weeks
44	Lack of as-built documentations (Utility: (Extended For Boiler And Generator)	Carry out remedial works resulting from engineering assessment if necessary.	6-months

Survey Limitations and Assumptions

This report is for the private and confidential use of Accord for whom it was prepared together with their professional advisors as appropriate. It should not be reproduced in whole or in part or relied upon by third parties for any use without the express written permission of ACCORD.

This report can be used in discussion with the supplier or factory owner as a means to rectify or address any observations made. The report is not comprehensive and is limited to what could be observed during a visual inspection of the building.

This Report is not intended to be treated as a generalised inspection and does not cover the deterioration of structural members through dampness, fungal or insect attack, nor does it deal with problems and defects of a non-structural nature. Other non structural aspects of the building such as fire safety have not been assessed in this survey.

Except as otherwise noted, drains and other services were not viewed or tested during our inspection and are therefore similarly excluded from this Report. We have not inspected any parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

External inspection of the façade walls has generally been carried out from ground level only by visual sighting. No opening up works were carried out (except as noted) and we rely on the Architects and Engineers drawings provided to us for our views on concealed parts of the structure and in particular foundations. Strengths of materials and components are untested and we recommend that the factory owners Building Engineer carries out insitu testing over and above those suggested to satisfy themselves with the material strengths and component details.

Recommendations, where given, are for the purpose of providing indicative advice only, are not exhaustive, relate solely to identifying key and obvious structural defects as identified in this presentation, and do not take the form of or constitute a specification for works. We take no responsibility for the works as constructed. This report does not interfere with the factory owners Building Engineers responsibility for the structural performance of this building, The Building Engineer remains fully responsible for the structural adequacy of the building.

This report does not comment in detail on the future seismic performance of the building and only highlights the fact that the building may experience significant damage or collapse in a seismic event along with many others in the Dhaka region.

The observations in this report are based on the Engineering Judgement of the lead surveyor/engineer at the time of the survey. We assume in making these observations that no covering up of faults defects, filling or plastering over cracking or significant repair work has been carried out by the building owner. Any future alteration or additional work by the building owner will void this report.