

# Essential Clothing Ltd. (Extension)

Akulichala, Sakashor, Maddha Para, Kaliakoir Gazipur, Dhaka, Bangladesh.

(24.063389, 90.314813)

23 January 2023



## **Building Information:**

**Building-4 (Printing Shed with Security Building):** A single storied structure.

**Building-5 (Dining Building):** A single storied structure.

**Building-10 (Diesel Storage Room):** A single storied structure.

**Building-11 (ETP Blow Room):** A single storied structure.

**Building-13 (Over Head Water Reservoir):** A single storied structure.

# Observations

# **Retrofitting design requires detail review**

**Observation: Building-4**

**ENGINEERING ASSESSMENT REPORT ON  
ESSENTIAL CLOTHING LTD**

Project Name: Single Storey Printing Building (Building-4)  
Location: Akulichala, Sakashor, Maddha Para, Kaliakoir, Gazipur  
Client: Essential Clothing Ltd  
Revision No: N/A  
Date: November 2022  
Factory ID: 24541



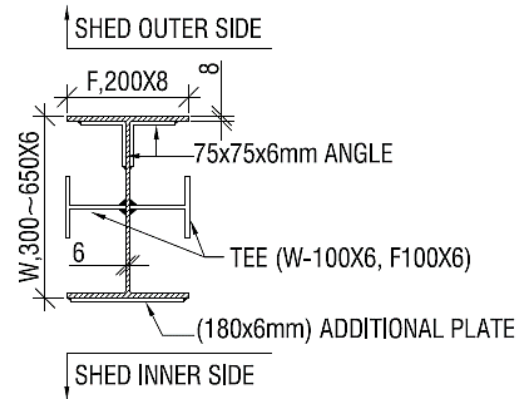
Submitted by



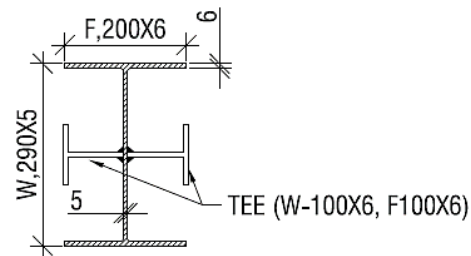
**STHAPONA CONSULTANTS**

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Reg. Address: Ka-147, Kuril, Vatara, Dhaka-1229  
Office: +880-1762-777 666. Email: design@sthaponabd.com

**Design report of Building-4**



**DETAILS OF STEEL COLUMN (SC1A)  
MEZZANINE FLOOR TO ABOVE LEVEL**



**DETAILS OF STEEL COLUMN (SC2A)  
MEZZANINE FLOOR TO ABOVE LEVEL**

**Retrofitting sections**

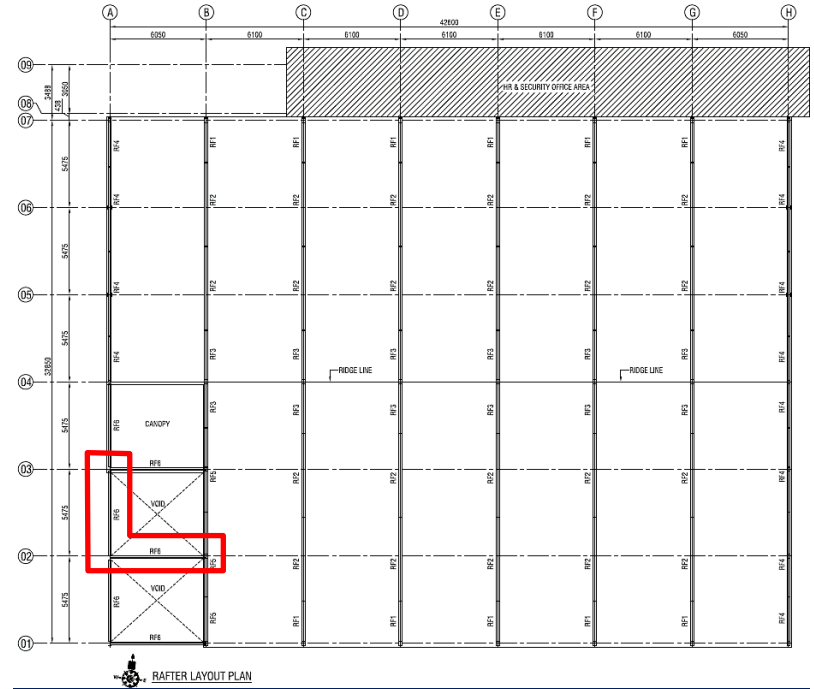
The factory conducted retrofitting with some irregular sections which are modeled with equivalent sections in the analysis software. During inspection Engineering Assessment (EA) report was available onsite. The factory is required to submit the EA report to the RSC for detail review.

# **Mismatch between as-built drawing and onsite conditions**

**Observation: Building-4**



The rafter of loading-unloading zone

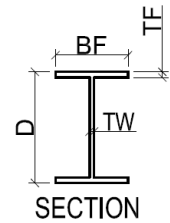


Rafter layout plan

The flange of RF6 rafter was measured 100 mm instead of 150 mm.  
The building engineer is required to survey the structures and prepare accurate as-built drawings and submit to RSC.

SCHEDULE OF STEEL RAFTER

| NAME | D (mm)  | TW (mm) | BF (mm) | TF (mm) |
|------|---------|---------|---------|---------|
| RF1  | 700~300 | 6       | 200     | 8       |
| RF2  | 300     | 6       | 200     | 8       |
| RF3  | 640~300 | 6       | 200     | 8       |
| RF4  | 250     | 5       | 175     | 6       |
| RF5  | 300     | 5       | 200     | 7       |
| RF6  | 250     | 5       | 150     | 4       |



Rafter size in drawing

## **Corrosion in steel members**

**Observation: Building-4**

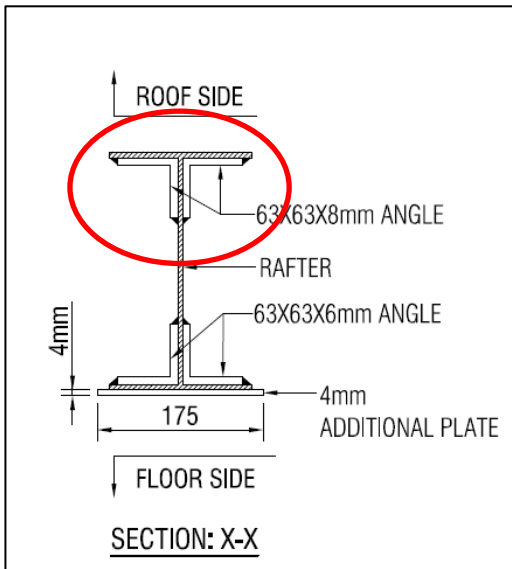


Appearance of corrosion in steel members

The factory is required to remove the corrosion and apply suitable corrosion resistance coating to the steel members.

# **Mismatch between retrofitting drawing and onsite condition**

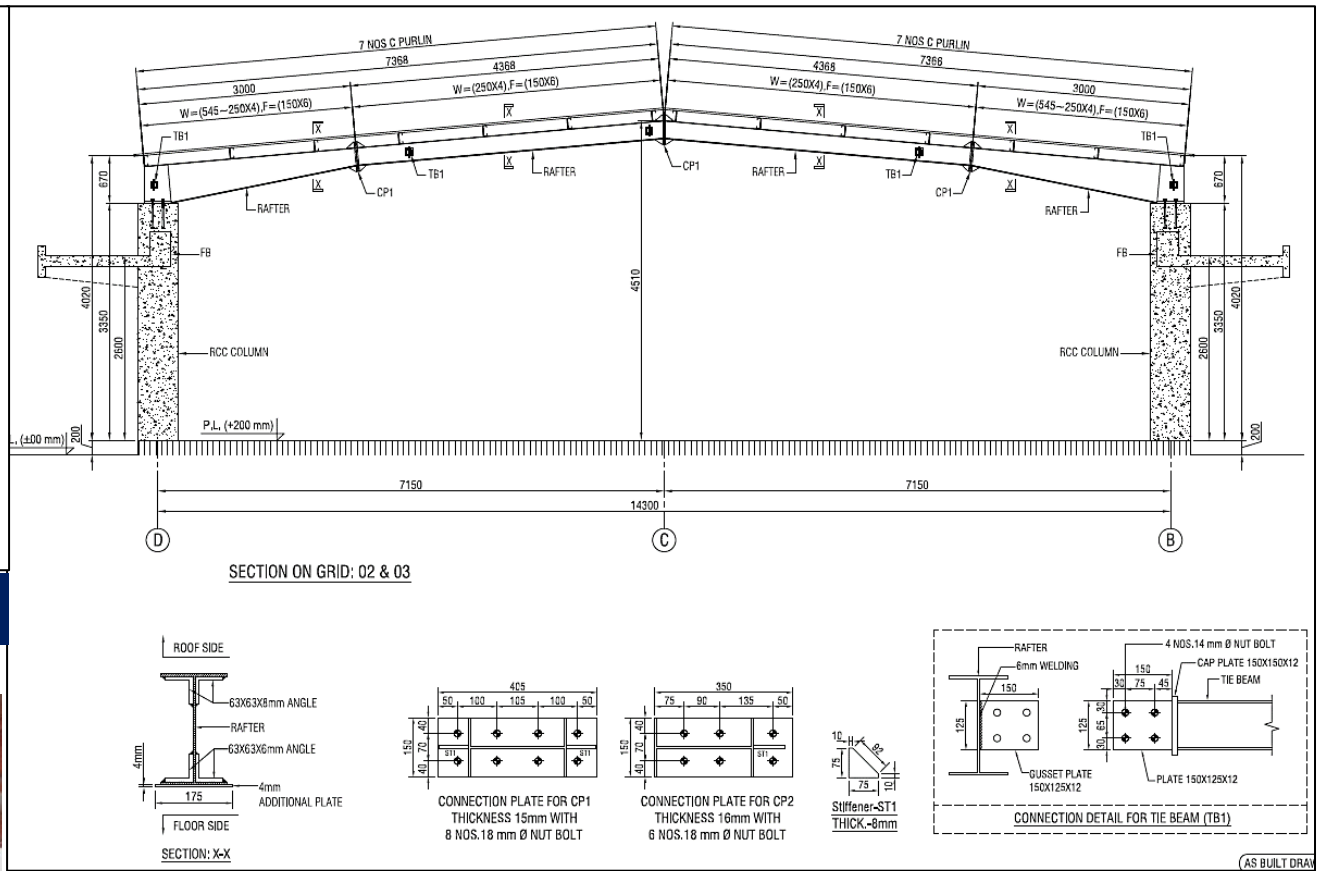
**Observation: Building-5**



## Retrofitting Rafter Section



Retrofitting Rafter



## Frame section

As per retrofitting scheme, additional angle section was required to be added both up & down sides of the steel rafter, but angle section added only to the downside rafter. The building engineer is required to check the adequacy of the current steel rafter and update the EA documents accordingly.

## **Loose cable bracings at roof**

**Observation: Building-5**



Loose cable bracing at roof.

The factory is required to tighten the loose bracings.

# **Dampness on brick walls**

**Observation: Building-5**



Dampness observed on RC portion of Dinning Shed. The factory is required to seal the source of water and repair the damp areas with the suggestion of building engineer.

# Unbraced rooftop water tanks

**Observation: Building-5**



Unbraced plastic water tanks on roof

The factory is required to provide necessary bracing to the steel platform and plastic water tanks with the suggestion of building engineer.

## Observation: Building-5

# Tests carried out



Brick aggregate in column of Building-4



Stone aggregate in retrofitting column  
of Building-5



Brick aggregate in column of Building-13



Rebar checked by ferro scanner

# Problems Observed

## **Building-4:**

Item 1: Retrofitting design requires detail review.

Item 2: Mismatch between as-built drawing and onsite conditions.

Item 3: Corrosion in steel members.

## **Building-5:**

Item 4: Mismatch between retrofitting drawing and onsite conditions.

Item 5: Loose cable bracings at roof.

Item 6: Dampness on brick walls.

Item 7: Unbraced rooftop water tanks.

# Priority Actions

| Item No. | Observation                                                               | Recommended Action Plan                                                                                                                                                                         | Recommended Timeline |
|----------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 01       | Retrofitting design requires detail review (Building-4).                  | <ul style="list-style-type: none"> <li>The factory is required to submit the Engineering Assessment (EA) to the RSC for detail review.</li> </ul>                                               | (6-weeks)            |
| 02       | Retrofitting design requires detail review (Building-4).                  | <ul style="list-style-type: none"> <li>The factory is required to submit the Engineering Assessment (EA) to the RSC for detail review.</li> </ul>                                               | (6-months)           |
| 03       | Mismatch between as-built drawing and onsite conditions (Building-4).     | <ul style="list-style-type: none"> <li>The building engineer is required to prepare accurate as-built drawings and submit to RSC.</li> </ul>                                                    | (6-weeks)            |
| 04       | Corrosion in steel members (Building-4).                                  | The factory is required to remove the corrosion and apply suitable corrosion resistance coating to the steel members.                                                                           | (6-weeks)            |
| 05       | Mismatch between retrofitting drawing and onsite conditions (Building-5). | The building engineer is required to prepare accurate retrofitting drawings, check the design and submit the design documents (EA & retrofitting drawings) report to the RSC for detail review. | (6-weeks)            |

| Item No. | Observation                                                               | Recommended Action Plan                                                                                                                                                                        | Recommended Timeline |
|----------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 06       | Mismatch between retrofitting drawing and onsite conditions (Building-5). | Carry out remedial action if required.                                                                                                                                                         | (6-months)           |
| 07       | Loose cable bracings at roof (Building-5).                                | <ul style="list-style-type: none"> <li>The factory is required to tighten the loose bracings.</li> </ul>                                                                                       | (6-weeks)            |
| 08       | Dampness on brick walls (Building-5).                                     | <ul style="list-style-type: none"> <li>The factory is required to seal the source of water intrusion and repair the damp areas with the suggestion of building engineer.</li> </ul>            | (6-weeks)            |
| 09       | Unbraced rooftop water tanks (Building-5).                                | <ul style="list-style-type: none"> <li>The factory is required to provide necessary bracing to the steel platform and plastic water tanks with the suggestion of building engineer.</li> </ul> | (6-weeks)            |