

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Dhakarea Limited (Yupoong Inc.)**

Address: **23-27 Dhaka Export Processing Zone DEPZ,
Ganakbari, Ashulia, Savar Ashulia, Savar Dhaka
Bangladesh**

Assessor: **Shaheedullah**

Date: **16 Mar 2014**





Introduction to the Report

The following report contains a site profile and summary of non-conformities identified during an onsite assessment commissioned by the Alliance for Bangladesh Worker Safety (Alliance) and conducted by a third-party Qualified Assessment Firm (QAF). The assessment was conducted against the Alliance for Bangladesh Worker Safety Assessment Protocols (APs) and Fire Safety and Structural Integrity Standard, which is harmonized with the factory assessment guidelines developed by Bangladesh University of Engineering and Technology (BUET) for the Bangladesh National Tripartite Plan of Action (NTPA). The goal of the Alliance process is to provide clear and practical technical requirements by which Bangladeshi Ready Made Garment (RMG) Factories producing for Alliance members may be consistently and fairly evaluated for fire, structural, and electrical safety in a non-duplicative manner. Each assessment will prompt action plans that will be used by RMG factories to systematically and sustainably improve safety conditions for garment workers. Beyond tracking and reporting on action steps taken in a transparent manner, the Alliance organization and its members will seek to further support factory improvements through technical assistance, training, implementation support for functional Worker Committees, and in some cases financial assistance and wage support for workers if factories are closed for remediation.

The contents of the report do not constitute a guarantee of compliance with the applicable laws, the Alliance Standard or the absolute or continued safety against fire, electrical and/or structural integrity issues that may lead to injury or loss of life. The report is designed to provide a non-exhaustive summary of risk issues, based on a limited sampling and duration of time onsite by the named QAF. Neither the QAF nor the Alliance can certify or guarantee the quality, outcome, or effectiveness of actions taken in response to the report.

For more information and report feedback please go to: www.bangladeshworkersafety.org.





GENERAL INFORMATION

General Information	
Factory Name:	Dhakarea Limited (Yupoong Inc.)
Address:	23-27 Dhaka Export Processing Zone DEPZ, Ganakbari, Ashulia, Savar Ashulia, Savar Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Ashulia, Savar
Zip Code:	1349
Audit Duration:	3 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	March 16, 2014
Final Report Date :	January 13, 2015
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	Five nos. Building in the complex.
Number of Building Levels (Stories) :	Three nos. Main factory building. B#1: one-storied steel shed, L-1 B#2: Two-storied R.C (GF RC column and 1st steel column with roof covered by CI, L-2 sheet), B#3: Four-storied R.C Building covered by CI sheet, L-4
Approximate Building Area (SF) :	Total area 2,76,415 SFT. B#1: 49,600 SF, B#2: GF-1st: 74,050 SF in each floor, B#3: GF-3rd: 18,980 SF in each floor. And Ancillary B#4: 2,675 SF, B#5: 120 SF
Date of Building Construction :	B#1: Constructed eleven years ago (2003), B#2: Constructed ten years ago (2004), B#3: Constructed three years ago (2011).
Date of Last Building Renovation/Addition :	No sign of renovation or addition was noticed
Is the Building mixed use?:	No
Ancillary Structures in Complex :	Two nos. ancillary structures in complex
Number of Ancillary Levels (Stories) :	One-storied R.C building, B#4 (Generator and sub-station), L-1 and One-storied RCC security room, L-1
Approximate Ancillary Structures Area (SF) :	Ancillary structure area 2,795 SF 1. B#4: 2675 SF 2. B#5: 120 SF (Security room)

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Number of Occupants :	Total occupant of the factory is 3,416 person. Building-1: 1,202, Building-2:GF: 399, 1st: 1,216, Building-3: GF: 315, 1st: 284, 2nd+3rd: Dining facility.
Exterior Facade Description :	paint on steel (composed of non combustible/non flammable materials)
Structural System Description :	1.B#1: Steel framing system with I-joist columns, girders, MS truss MS purlin with rooftops covered by CI sheet and RC spread footing. 2.B#2: RC framing system at ground floor with RC columns, beams, slab and RC spread footing. Steel framing system at 1st floor with I-joist columns, girders, MS truss MS purlin with rooftops covered by CI sheet. 3.B#3: RC framing system upto 2nd floor with RC columns,beams,slab and RC spread footing. Steel framing system at 3rd floor with I-joist columns, girders, MS truss MS purlin with rooftops covered by CI sheet. 4.B#4: RC framing system with RC columns, beams, slab and RC spread footing



ASSESSMENT FINDINGS

Structural System Design

Question:	Are credible structural design documents available for review and kept on site?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Most of credible structural design documents are available for review and kept on site. As built drawings have not been provided.	
Source of Findings:	Document Review: Document review on site	
Suggested Plan of Action:	Engage a qualified structural engineer for prepare credible as-built documents based on the requirements of Part 8 Section 8.19 of the Alliance Standard.	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.19 Required Structural Documentation for New and Existing Factories	
Question:	Can credible structural documentation indicating general conformance with 2006 BNBC or other comparable applicable international model building code be produced?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	During inspection, design parameters were not available for building 3 and 4 in drawing. This question is not applicable for building 1,2&5 as they are built before 2006	
Source of Findings:	Document Review: Seen all documents	
Suggested Plan of Action:	A qualified structural engineer shall engaged to develop the required documents to confirm the structural integrity of the buildings. Documents must comply with Alliance Standard Part 8 Section 8.19 and 8.20	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Can documentation be provided that the building is compliant with the requirements for wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3?	
Priority Level:	Medium	



Non-Compliance Level:	2
Description:	Design parameter not mentioned in drawings
Source of Findings:	Document Review: Document review on site
Suggested Plan of Action:	Assign a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading and storm surge loadings. Prepare document in compliance with the requirements stated for wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3.
Suggested Deadline Date:	28 Feb 2015
Standard:	2006 BNBC Part 6 Section 1.5. Compliance may be waived if the Factory Owner provides satisfactory evidence of a cyclone operations plan that includes full evacuation of the factory in advance of any approaching cyclone"

Structural System Construction

Question:	Are all non-structural elements suspended from, attached to, or resting atop the structure adequately anchored and braced to resist earthquake forces?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Non-structural elements of storage racks have been found un-adequately anchored and braced for resist earthquake forces at ground floor in building -2
Source of Findings:	Visual Assessment: Visual inspection on site
Suggested Plan of Action:	A qualified structural engineer shall be engaged to adequately anchor and brace the truss and water tank to resist earthquake forces to comply with the BNBC and Alliance Standard (Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6)
Suggested Deadline Date:	28 Feb 2015
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6
Question:	Have all areas of needed maintenance, including areas with efflorescence, dampness, standing water on rooftops, and corrosion been addressed.
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Standing water was observed on the over head RC water reserve tanks at building-2(Back side)
Source of Findings:	Visual Assessment: Visual inspection on site
Suggested Plan of Action:	Under guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues in according with





	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Structural Safety Programs		
Question:	Is a program in place to ensure that the live loads for which a floor or roof is or has been designed will not be exceeded?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	No load management program is currently in place	
Source of Findings:	Document Review: Document review on site	
Suggested Plan of Action:	Produce, establish and enforce a written policy and procedure to ensure that the live loads, as detailed in the load plans for each floor, are not exceeded in according to Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.	
Question:	Have Load Plans been prepared for each floor documenting the actual maximum operational loading that is intended and/or allowable on each floor.	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	The Load plans have not been found.	
Source of Findings:	Document Review: Document review on site	
Suggested Plan of Action:	Have a qualified structural engineer develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3. Load plans need to be prepared for each floor, detailing the maximum operational load for specific high load areas on the floor and the entire floor. These load plans should be posted throughout the assembly and production floors, at a conspicuous space near the specific high load areas and in the general floor areas.	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans)	
Question:	Are Floor Load Plans posted as required?	
Priority Level:	Low	
Non-Compliance Level:	1	



Description:	Floor load plans not posted according to Alliance Standards Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans)	
Source of Findings:	Document Review: Document review on site	
Suggested Plan of Action:	Load plans must be prepared by a qualified engineer and posted clearly on each floor and as necessary to distribute floor loads to comply with the floor loading plans as per Alliance Standard Part 8 Section 8.20.5.3	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.20.5.3	
Question:	Are areas used for storage of work materials and work products, clearly marked to indicate the acceptable loading limits as described in the Load Plan for that floor?	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	Areas used for storage of work materials and work products have not been clearly marked to indicating the acceptable loading limits	
Source of Findings:	Visual Assessment: Visual inspection on site	
Suggested Plan of Action:	Provide the load plans, signage, plus highlight these areas by physical marking; using different contrasting colours or materials so they are easy to differentiate between the storage areas, the normal working sections and the means of egress pathways.	
Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings	
Question:	Is a designated representative (Factory Load Manager), who is onsite full time, trained regarding the structural floor capacity, and serves as an ongoing vendor resource and monitor of operational factory floor loadings?	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	Factory Load Manager not available.	
Source of Findings:	Document Review: Document review on site	
Suggested Plan of Action:	Designate a representative as the Factory Load Manager. The Factory Owner shall ensure that at least one individual, the Factory Load Manager who is located onsite full time at the factory, is trained in calculating operational load characteristics of the specific factory. The Factory Load Manager shall serve as an ongoing resource to RMG vendors and be responsible to ensure that the factory operational loads do not at any time exceed the factory floor loading limits as described on the Floor Loading Plans.	

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Suggested Deadline Date:	28 Feb 2015	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	