INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name:	**Unique Designers Ltd**
Address:	**Kalameshar K.B. Bazar Gulshan Gazipur Dhaka Bangladesh**
Assessor:	**Bureau Veritas**
Date:	**29 Apr 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:	Unique Designers Ltd
Address:	Kalameshar K.B. Bazar Gulshan Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Gazipur
Zip Code:	1704
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05-15-2014
Final Report Date :	07-12-2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	There are 5 buildings on the premises. These are: 1. Production Building 2. Child care and Security Building 3. R.M.S. and Time section 4. Utility shed 5. Generator shed
Number of Building Levels (Stories) :	The total number levels of the production building is 6 (G+5).
Approximate Building Area (SF) :	"Total Area: 158938 sft. 1. Production Building: 156310 sft, 2. Child care & Security Building: 800 sft, 3. R.M.S. & Time section Building: 300 sft, 4. Utility Shed: 870 sft, 5. Generator Shed: 658 sft." additional roof : 35775 sft
Date of Building Construction :	2000 (Verbally informed)
Date of Last Building Renovation/Addition :	In 2012 the authority construct 5th floor ware house at main production building as per the existing structural drawing signed by a structural engineer, also they write a note on the structural drawing "The foundation and structure has the provision of eight(8) storied building and approved as six(6) storied building from the authority of jurisdiction.
Is the Building mixed use?:	No
Ancillary Structures in Complex :	"There are 4 nos of ancillary structures as mentioned hereafter with their usage: 1. Child care & Security Building 2. R.M.S. & Time section Building 3. Utility Shed 4. Generator Shed"

Number of Ancillary Levels (Stories) :	1. Child care & security Building: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 2. R.M.S & Time section Building: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 3. Utility shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1. 4. Generator shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Ancillary Structures Area (SF) :	1. Child Care & Security Building: 800 sft, 2. R.M.S. & Time section Building: 300 sft, 3. Utility Shed: 870 sft, 4. Generator Shed: 658 sft.
Number of Occupants :	"Total no. of occupants: 2013 1. Production Building: 2001(GF: 440, 1st: 200, 2nd: 271, 3rd: 400, 4th: 689, 5th: 1), 2. Child Care & Security Building: 8, 3. R.M.S. & Time section: 2, 4. Utility Shed: 1, 5. Generator Shed: 1."
Exterior Facade Description :	Exterior masonry wall on concrete frame with sliding type glass window.
Structural System Description :	The structure is flat slab system and foundation is pile foundation system.

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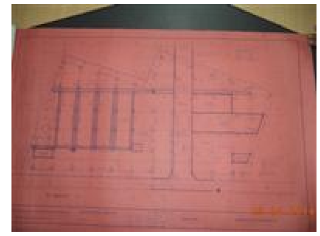
ALLIANCE FOR BANGLADESH WORKER SAFETY

ASSESSMENT FINDINGS

Structural System Design

Question:	Are the available FoS for the columns adequate based on Preliminary calculation?	
Priority Level:	High	
Non-Compliance Level:	3	
Description:	FoS were calculated using the minimum concrete material strength in the Alliance Standard Protocol (2370 psi). The FoS of Central Column is 2.18(Safe),for corner column is 3.30(Safe)and for edge column 1.75(Needs Evaluation) noted to have exceeded the acceptable limit. Immediate reduction of load required.	
Source of Findings:	Document Review: Based on document review and preliminary calculation for the FoS, edge columns are not adequate. , Uploaded Document: Uploaded calculation of FoS shows that the FoS of Edge Columns noted to have exceeded the acceptable limit. Immediate reduction of load required.	
Suggested Plan of Action:	Engage a qualified structural engineer and carry out structural assessment to identify what remedial action is appropriate, which may include retrofitting.Reduction of load is required before any other remedial action is undertaken based on detailed structural assessment.	
Suggested Deadline Date:	21 Aug 2014	
Standard:	Provide results of preliminary calculations in space provided. a) column capacity; FoS > 1.86 - Safe b) column capacity; FoS 1.5 -1.86 - Needs Evaluation c) Column capacity; FoS 1.25-1.5 - Needs Evaluation d) Column capacity; FoS <1.25 - Unsafe In case of a critically low FoS (<1.25), consider Immediate Escalation Protocol	
Question:	Has evidence of structural integrity been provided using a Preliminary Structural Assessment?	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Structural assessments are provided only for gravity load, but details of engineering analysis for wind load and earthquake have not been done.	
Source of Findings:	Document Review: Structural assessments are provided only for gravity load, but details of engineering analysis for wind load and earthquake have not been done.	
Suggested Plan of Action:	Details of engineering analysis for wind load and earthquake have to be done.	

Suggested Deadline Date:	21 Aug 2014	
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
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:	3	
Description:	Credible structural document does not indicate general conformance with BNBC 2006 or other comparable applicable international model building code.	
Source of Findings:	Document Review: From document review, credible structural document does not indicate general conformance with BNBC 2006 or other comparable applicable international model building code.	
Suggested Plan of Action:	Engage a qualified structural engineer 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:	21 Aug 2014	
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Is a clear and redundant load path to resist lateral loads provided?	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	The lateral load path is not apparent, and further information is required for understanding the redundancy.	
Source of Findings:	Document Review: In absence of the design report, the adequacy and redundancy of the lateral load path is not established., Visual Assessment: Visual inspection shows the structure is flat plate system without any shear wall., Visual Assessment: Visual inspection shows the structure is flat plate system without any shear wall.	
Suggested Plan of Action:	Have a qualified structural engineer complete further analysis of the structure and develop a remediation plan if required. Design report is to be prepared and submitted by the design engineer.	
Suggested Deadline Date:	21 Aug 2014	
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 8.3.3. 2006 BNBC Part 6 Section 1.5	

Question:	Are credible structural design documents available for review and kept on site?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Structural documents are available except for the design report.	
Source of Findings:	Document Review: Design report was not available in the structural documents.	
Suggested Plan of Action:	Have a qualified structural engineer prepare design report as per BNBC.	
Suggested Deadline Date:	21 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.19 Required Structural Documentation for New and Existing Factories	
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:	Documentation cannot 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.	
Source of Findings:	Document Review: Documents do not provide information about wind speed requirements of BNBC.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	21 Aug 2014	
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"	
Question:	Have provisions been made in floors or decks for a concentrated load (such as heavy equipment, water tanks, stored materials, etc) applied at a location wherever this load acting upon an otherwise unloaded floor would produce stresses greater than those caused by a uniform load?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	There are no provisions made at the roof level for the concentrated loads caused by 5 UPVC water tanks. No other concentrated loads that would cause	

	over stressing of the structure were observed in the building.	
Source of Findings:	Document Review: From the structural document, it is found that the provisions for concentrated loads, such as water tanks, have not been made., Visual Assessment: There are five plastic water tanks found on the top of the roof.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm and document that provisions have been made to accommodate concentrated loads. If provisions have not been made, have a qualified structural engineer develop a remediation plan.	
Suggested Deadline Date:	21 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14	
Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	Certificates of Occupancy are not available for review.	
Source of Findings:	Document Review: Occupancy certificates are not found in the submitted documents.	
Suggested Plan of Action:	Occupancy certificate needs to be collected from the proper authority.	
Suggested Deadline Date:	21 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
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:	2	
Description:	Standing water was found on the roof.	
Source of Findings:	Visual Assessment: Standing water was found on the roof.	
Suggested Plan of Action:	Under guidance from a qualified structural engineer, address all areas of needed maintenance by correcting the identified issues.	
Suggested Deadline Date:	21 Aug 2014	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	

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:	Plastic water tanks resting on the rooftop are not anchored or braced to adequately resist earthquake forces.
Source of Findings:	Visual Assessment: Few plastic tanks resting on the rooftop were found without adequate anchoring or bracing to resist earthquake forces.
Suggested Plan of Action:	Adequately anchor and brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard.
Suggested Deadline Date:	02 Oct 2014
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6

Question:	The exterior façade is free of cracking.
Priority Level:	Low
Non-Compliance Level:	1
Description:	Cracks have been observed in the exterior façade.
Source of Findings:	Visual Assessment: From visual observation, there are cracks in the exterior façade of the building.
Suggested Plan of Action:	Engage a qualified structural engineer provide further analysis of the identified cracks to determine the appropriate course of corrective action.
Suggested Deadline Date:	21 Aug 2014
Standard:	Alliance Standard Part 8 Section 8.2

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:	There is no program available to manage floor and roof live loads.
Source of Findings:	Document Review: There is no such program documented.
Suggested Plan of Action:	Develop a program to ensure that all live loads for which a floor/roof has been designed will not be exceeded. The designated Load Manager shall oversee

	this program and ensure it is enforced.	
Suggested Deadline Date:	07 Aug 2014	
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:	2	
Description:	No load plans have been prepared for each floor documenting the actual maximum operational loading that is intended or allowable on each floor.	
Source of Findings:	Document Review: No load plans are available.	
Suggested Plan of Action:	Have a qualified structural engineer develop Floor Loading Plans per the requirements of Part 8 Section 8.20.5.3	
Suggested Deadline Date:	21 Aug 2014	
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:	2	
Description:	Floor Load Plans are not posted as required.	
Source of Findings:	Visual Assessment: No load plans are found posted as required.	
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard.	
Suggested Deadline Date:	21 Aug 2014	
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:	2	
Description:	Storage of work materials and work products are not marked to indicate the acceptable loading limit, and each floor's load plan is not available on the floor.	

Source of Findings:	Visual Assessment: No marking was available in the floor to indicate the acceptable loading limit.	
Suggested Plan of Action:	Provide signage or the appropriate markings at all areas used for storage to indicate the acceptable loading limits detailed in the Load Plan.	
Suggested Deadline Date:	21 Jul 2014	
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:	2	
Description:	Factory Load manager or designated representative is not available.	
Source of Findings:	Document Review: The HR file of factory load manager or designated representative is not documented., Visual Assessment: Presence of factory load manager or designated representative is not evident.	
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.	
Suggested Deadline Date:	07 Aug 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	