INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name:	**Garment Export Village Ltd**
Address:	**Maa Tower, KBM RD, Tongi IND Area, (Near national tubes) Tongi Tongi, Gazipur Dhaka Bangladesh**
Assessor:	**EIMS**
Date:	**09 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:	Garment Export Village Ltd
Address:	Maa Tower, KBM RD, Tongi IND Area, (Near national tubes) Tongi Tongi, Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Tongi, Gazipur
Zip Code:	1710
Audit Duration:	11 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	21 April 2014
Final Report Date :	14 May 2014
Are all Action Items From Previous Assessment Completed?:	No
Buildings in Complex :	One (1)
Number of Building Levels (Stories) :	Ten (10) (including a mezzanine floor)
Approximate Building Area (SF) :	2,13,670 sft
Date of Building Construction :	2005
Date of Last Building Renovation/Addition :	No Renovation or Addition
Is the Building mixed use?:	No
Ancillary Structures in Complex :	None
Number of Ancillary Levels (Stories) :	Not applicable
Approximate Ancillary	Not applicable

Structures Area (SF) :	
Number of Occupants :	around 3000
Exterior Facade Description :	Brick masonry infill with window openings
Structural System Description :	Column supported flat plate with edge beam and footing foundation

ASSESSMENT FINDINGS

Structural System Design

Question:	Has evidence of structural integrity been provided using a Preliminary Structural Assessment?	
Priority Level:	High	
Non-Compliance Level:	1	
Description:	The previous assessment performed by BUET concluded for detail analysis of the building for checking adequacy of the structural elements.	
Source of Findings:	Document Review: Previous assessment performed by BUET	
Suggested Plan of Action:	Factory management must follow the CAPs of previous assessment.	
Suggested Deadline Date:	15 Jun 2014	
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Where density of operations, storage of materials, or equipment weights require live load capacity in excess of 2.0 kN/m2 (42 psf), do the design documents confirm that the required load capacity exists? Or has the load capacity been analytically confirmed and certified by an Alliance-qualified structural engineer?	
Priority Level:	Medium	
Non-Compliance Level:	3	
Description:	Load capacity exceeded the limit (2.0 kN/m2 or 42 psf) in mezzanine floor, 8th and 9th floor to the extent of 50 psf. However the average LL of the building is calculated to be 42 psf.	
Source of Findings:	Visual Assessment: Photograph of overloading at mezzanine floor	
Suggested Plan of Action:	Have a qualified structural engineer confirm that capacity to support the load is available. Load Plans complying with Alliance Standard Part 8 Section 8.20.4.3 should also be developed.	
Suggested Deadline Date:	15 Jun 2014	
Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads	
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:	Supplied drawing did not indicate which code they followed.
Source of Findings:	Document Review: Structural drawing
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:	15 Jun 2014
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:	Wind load and storm surge loading are not mentioned in the drawings of the building.
Source of Findings:	Document Review: Structural drawing
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the building under seismic loading.
Suggested Deadline Date:	15 Jun 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:	Are Certificates of Occupancy available for review?
Priority Level:	Low
Non-Compliance Level:	2
Description:	Certificates of occupancy are not available for review.
Source of Findings:	
Suggested Plan of Action:	Provide certificates of occupancy for review
Suggested Deadline Date:	15 Jun 2014

Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
Question:	Are the performance of key structural elements such as columns, slender columns, flat plates and transfer structures satisfactory?	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Performance of flat plate was satisfactory. However, live load has to be reduced within the limit for long-term durability of the flat plate structure. State of slender columns to be further assessed in detailed assessment.	
Source of Findings:	Visual Assessment: Photograph of slender column	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm structural performance of the structure.	
Suggested Deadline Date:	15 Jun 2014	
Standard:	Alliance Standard Part 8 Section 8.3.3	
Question:	Is the structural system free of distress, settlement, shifting, or cracking in columns or walls?	
Priority Level:	High	
Non-Compliance Level:	1	
Description:	Crack between column and wall was observed in ground floor.	
Source of Findings:	Visual Assessment: Photograph of crack between column and wall in ground floor	
Suggested Plan of Action:	Have a qualified structural engineer provide further testing and analysis of distress, settlement, shifting, or cracking in columns or walls and provide a remediation plan to correct noted issues.	
Suggested Deadline Date:	15 Jun 2014	
Standard:	Alliance Standard Part 8 Section 8.3.3	

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:	Water intrusion was found at outer side of toilet. Water ponding was found at back side of the building due to lack of maintenance.
Source of Findings:	Visual Assessment: Photograph of water intrusion at outer side of toilet, Photograph of water ponding at backside of building
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:	15 Jun 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:	Unbraced storage rack was found on ground floor, level-3 and level-4.
Source of Findings:	Visual Assessment: Photograph of unbraced storage rack at ground floor
Suggested Plan of Action:	Develop engineered plans to brace all non-structural elements to resist earthquake forces to comply with the BNBC and Alliance Standard. Install anchor and braces as shown on approved plans.
Suggested Deadline Date:	15 Jun 2014
Standard:	Alliance Standards Part 8 Section 8.18 Seismic Bracing of Key Non-Structural Elements and 2006 BNBC Part 6

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 was no program in place to ensure the live loads for which a floor or roof has been designed. So it is required and it should be marked in all floors including roof.
Source of Findings:	Visual Assessment: Site visit on April 09, 2014

Suggested Plan of Action:	Develop a program to ensure that all live loads for which a floor or roof has been designed for will not be exceeded. The designated Load Manager shall oversee this program and ensure it is enforced.
Suggested Deadline Date:	15 Jun 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:	Load plan is not available.
Source of Findings:	Visual Assessment: Site visit on April 09, 2014
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:	15 Jun 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:	No floor load plan was posted on the floors.
Source of Findings:	Visual Assessment: Site visit on April 09, 2014
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard. Floor plans should be visibly posted on each level of the building.
Suggested Deadline Date:	15 Jun 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 areas are required to be marked to indicate acceptable loading limits per the load plans.	
Source of Findings:	Visual Assessment: Site visit on April 09, 2014	
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:	15 Jun 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:	No factory load manager was onsite full time. So, a factory load manager is required to check whether the loads exceed or not as per floor load plan.	
Source of Findings:	Visual Assessment: Site visit on April 09, 2014	
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:	15 Jun 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	